

SAFETY ELEMENT

INGLEWOOD GENERAL PLAN

=====

SAFETY ELEMENT

=====

INGLEWOOD GENERAL PLAN

ADOPTED JULY 1995

Prepared by
Community Development and Housing Department
City of Inglewood

One Manchester Boulevard
Inglewood, California 90301

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	Purpose of Safety Element	1
B.	Compatibility of Safety Element With General Plan	2
C.	Goals of the Safety Element	5
D.	Summary of Policies	6
II.	NATURAL HAZARDS	9
A.	Seismic Background	10
1.	Terrain	10
2.	Geology	10
3.	Surface Soils	11
4.	Ground Settlement	13
5.	Seismic Hazards	14
6.	Newport-Inglewood Fault Zone	17
7.	Faults In and Near Inglewood	19
8.	San Andreas Fault System	23
9.	Earthquake History	24
10.	Measuring Earthquake Magnitudes	25
B.	Major Seismic Event	27
1.	San Andreas Fault vs. Newport-Inglewood Fault	27
2.	Seismic Effects on Building Safety	28
3.	Critical Facilities: Seismically Sound	29
4.	Transportation Routes	31
5.	Evacuation Routes	33
6.	Utility and Communication Lifelines	36
C.	Seismic Mitigation Measures	43
1.	Building Safety	43
2.	Critical Facilities	45
3.	Water Availability	46
4.	Communications	47
5.	Gas and Oil	49
6.	Waste Water	49
7.	Electrical Power	50
D.	Tsunamis	51
E.	Storms and Flooding	52
1.	Tornados	52
2.	Hurricanes	53
3.	Precipitation and Flooding	53
F.	Damage to Natural Environment	55
G.	Disaster Assistance	56

III. MAN-MADE HAZARDS	58
A. Air Safety	59
1. Plane Crash	59
2. Mitigation Measures	59
B. Rail Safety	61
1. Train Accident	62
2. Mitigation Measures	62
C. Fire Safety	64
1. Fire Danger	64
2. Mitigation Measures	65
D. Hazardous Materials	68
1. Hazardous Materials Danger	68
2. Mitigation Measures	69
E. Oil Wells and Pipelines	71
1. Oil Hazards	72
2. Mitigation Measures	73
F. Crime Prevention and Public Safety	75
1. Crime Statistics	75
2. Mitigation Measures	76
G. Medical Emergencies	80
1. Local Trauma Centers	80
2. Mitigation Measures	80
IV. GENERAL MITIGATION MEASURES	82
V. REFERENCES	86

FIGURES

Figure 1. Vicinity Map	--
Figure 2. Types of Surface Soil	12
Figure 3. Faults and Fault Zones	18
Figure 4. Local Earthquake Fault Traces	20
Figure 5. Sites of Critical Facilities	30
Figure 6. Evacuation Routes and Potential Blockages	35
Figure 7. Water Distribution System	37
Figure 8. Major Electrical Power Lines and Facilities	41

APPENDIX

Negative Declaration	89
City Council Resolution	91

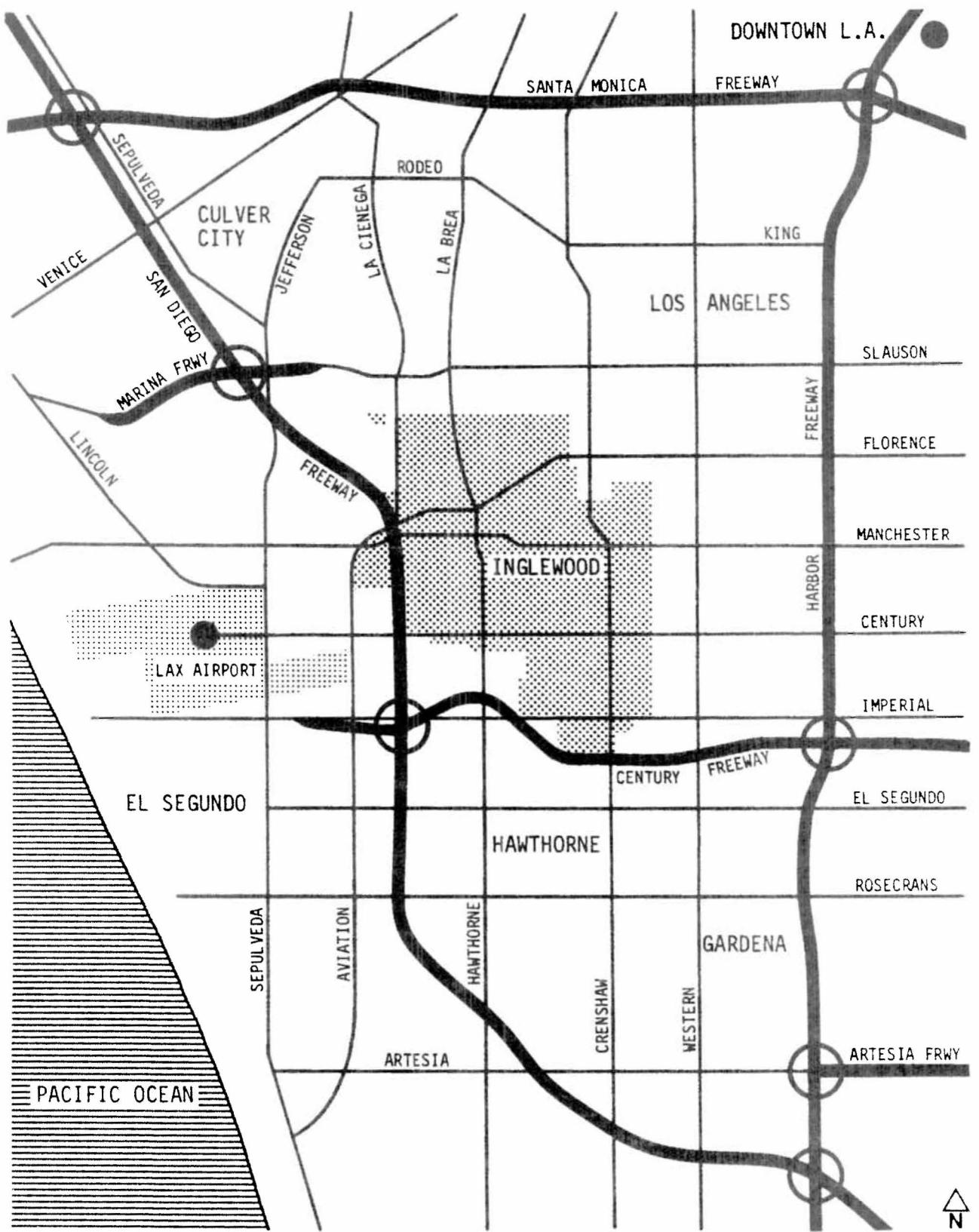


FIGURE 1.

VICINITY MAP
SHOWING FREEWAYS AND
SELECTED REGIONAL ARTERIALS

1 MILE

=====

I. INTRODUCTION

=====

A. PURPOSE OF SAFETY ELEMENT

The purpose of the Safety Element is to plan for the welfare and safety of the citizens of Inglewood and their property, and to protect the community from any unreasonable risks associated with a variety of natural and man-made disasters, including, but not limited to, earthquakes, flooding, fires, and airplane crashes. Section 65302(g) of the California Government Code requires that a Safety Element be prepared. Being one of the seven elements that comprise the Inglewood General Plan, the Safety Element was formerly two separate elements: Seismic Safety and Public Safety. These elements are now combined into one because of the importance of, among other variables, seismic activity as it relates to and affects most public safety concerns.

B. COMPATIBILITY OF SAFETY ELEMENT WITH THE GENERAL PLAN

The Safety Element is directly associated with the other elements of the General Plan since safety is a factor upon which many other strategies, functions, programs, and projects are based. The identification of natural and man-made hazards in the Safety Element influences a variety of decisions affecting the policies and programs of the other mandated elements (Circulation, Conservation, Housing, Land Use, Noise, and Open Space), many of which would be hard to attain without an emphasis on ensuring safety. The relationships between the Safety Element and the other elements are discussed below.

1. LAND USE ELEMENT

The Land Use Element is the guide for long-range planning in the City of Inglewood upon which the preservation of existing uses and the development of new uses should occur. The Land Use Element and the Safety Element are compatible because safety issues are important in determining the viability of continuing existing uses as well as the establishment of future uses. Identification of critical safety considerations in the Safety Element will directly affect such land use decisions as:

- What uses should be allowed to be developed under the flight approaches to Los Angeles International Airport?
- What uses should be permitted adjacent to sites that may handle hazardous materials?

Providing a mechanism for determining appropriate land uses as well as giving serious consideration to safety issues can be achieved

because of the compatibility of these two elements.

2. CIRCULATION ELEMENT

The Circulation Element identifies the primary arterial routes in the City in order to efficiently coordinate land use development decisions and accessibility. Circulation and safety considerations, such as establishing evacuation routes in the event of a major disaster, are very important. Other possible circulation/safety issues include:

- Developing mitigation measures to minimize the chances of a train wreck involving a motorist or pedestrian.
- Identifying major thoroughfares where heavier traffic volumes could increase the likelihood of accidents.

Therefore, the purpose of the Circulation Element is consistent with the goals of the Safety Element.

3. HOUSING ELEMENT

The primary purpose of the Housing Element is to implement a comprehensive program to ensure that all citizens can be provided decent and affordable housing. There is compatibility with the Safety Element because the Safety Element provides mitigation measures for the preservation and safety of residential structures such as requiring all residential structures to meet building code and seismic standards.

4. CONSERVATION ELEMENT

The purpose of the Conservation Element is to conserve, protect, develop and utilize natural resources. Since the Safety

Element is concerned with protecting the City from risks associated with various hazards, it is compatible with the Conservation Element because the mitigation measures used to protect the City can also protect valuable resources. Air quality, for instance, has become an increasing focus of conservation efforts. Provisions in the Safety Element can lessen the chances of hazards that may introduce toxins into the air.

5. OPEN SPACE ELEMENT

The Open Space Element focuses on the maintenance, preservation and management of natural resources, open space and recreational areas for economic and aesthetic considerations. The compatibility between the Open Space Element and the Safety Element is achieved through the Safety Element's objective of minimizing risks to publicly accessible sites in the City including parks and other recreational facilities.

6. NOISE ELEMENT

The Noise Element identifies sources of noise in a community that could cause problems and seeks ways in which to mitigate them. There are areas in which noise and safety issues are related. For example, the Safety Element addresses the issues of air traffic over the City and the potential for an airplane crash to occur in the City. The Noise Element seeks to reduce the noise levels from aircraft. Modifications to airport landing operations and hours of operations could reduce both noise levels and hazards for landing aircraft.

C. GOALS OF THE SAFETY ELEMENT

The Safety Element is designed to ensure that the citizens of Inglewood can be protected from unreasonable risks caused by natural and manmade disasters. The City's goals are to minimize the dangers associated with natural and manmade hazards by implementing standards, regulations and laws that will reduce loss of life, injuries and property damage resulting from disasters, and to provide for the continuity of government operations and civilian life during and after a major disaster.

D. SUMMARY OF POLICIES

It is a general policy of the City of Inglewood to provide appropriate services and support to combat any disasters, and to protect the citizenry from significant adverse impacts arising from any disasters. The following policies, which are addressed further within the text of this document, can help the City of Inglewood meet these safety goals:

1. Provide measures to reduce seismic impacts.

- Ensure that all potentially hazardous buildings are reinforced or demolished.
- Restrict new structures for human occupancy from being constructed across active faults.
- Require geological and soils engineering investigations in high risk fault areas.
- Study the need for a seismic overlay zone that would prohibit certain types of inappropriate development within this zone.
- Ensure that all utility lifelines, critical facilities, and places of assembly are seismically sound.

2. Promote public safety as it relates to the various modes of transportation.

- Avoid the siting of new schools, hospitals and other critical facilities under flight approaches.
- Ensure that railroad track maintenance and rail speed along all rail lines are monitored by the appropriate agencies.

3. Incorporate methods to increase water availability.

- Develop alternative water sources to be used when disasters cause water shortages.
- Strengthen Mutual Aid Agreements with other cities and governmental agencies in order to receive adequate water in case of an emergency.

4. Provide alternative communication options.

- Develop a secondary, back-up Communications Center in the event that all primary communication systems are not operable.
- Strengthen the Radio Amateur Civil Emergency Services (RACES) system.

5. Reduce the adverse impacts of hazardous materials.

- Ensure that hazardous materials are located at safe distances from residences, schools, hospitals and large assemblages of people; and that they are located in zones that are appropriate for their use.
- Continue monitoring the hazardous materials locations so that the safety of the public will be maintained.

6. Public safety personnel provide improved response and services to the community.

- Evaluate new methodologies and technologies that might improve services to the community and reduce the response times of both the Fire and Police Departments.
- Promote fire and crime prevention through public educa-

tion programs.

- Provide sufficient manpower and equipment to respond adequately to fire emergencies and civil disturbances.

II. NATURAL HAZARDS

Due to their unpredictability and force, natural hazards have the potential to cause serious destruction and major losses of life to a community. The natural phenomenon that poses the greatest danger to the citizenry of Inglewood is an earthquake. The primary focus of this subsection is devoted to seismic concerns. The other natural hazards are briefly addressed at the end of this section.

A. SEISMIC BACKGROUND

An earthquake is defined as a series of elastic waves that travel through the crust of the earth, caused by a sudden release of strain that has accumulated along geologic faults, or by volcanic action, that result in sudden movements in the earth's surface. The terrain and geology of an area can magnify or diminish the effects of an earthquake.

1. TERRAIN

The City of Inglewood is comprised of three main topographical terrains: (1) the Baldwin Hills located north of Centinela Creek, (2) the southern Morningside Park area known as the Rosecrans Hills, and (3) the Inglewood-Torrance coastal plain.

The Baldwin Hills represent the highest and steepest terrain conditions within the City. Slopes within the hills are generally no steeper than 20 percent. The sides of the steeper drainages rarely exceed a slope of 33 percent.

The Rosecrans Hills, along with the Baldwin Hills, are part of the Newport-Inglewood uplift, a belt of discontinuous low hills that extend from the Santa Monica mountains southeastward across the Los Angeles Basin to Newport Beach.

The Inglewood-Torrance plain is nearly flat with a gentle slope to the southwest of 50 to 75 feet per mile. This plain merges with the El Segundo sand hills along the coast west of the city.

2. GEOLOGY

The Inglewood area is underlain by a thick (10,000 to 12,000

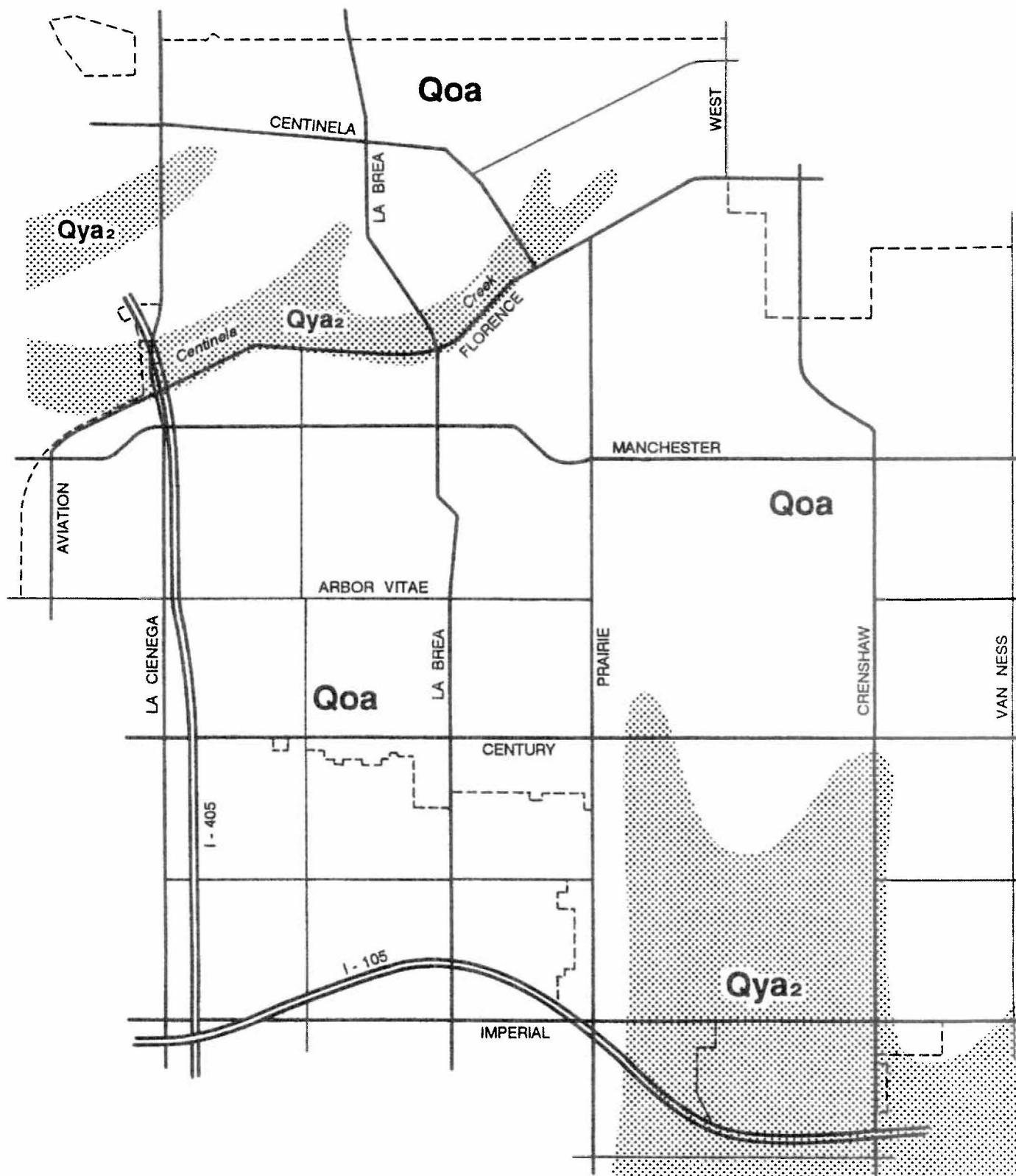
feet) section of Tertiary and Quaternary marine and continental sedimentary rocks deposited on an igneous-metamorphic basement complex within the Los Angeles sedimentary basin.

The Tertiary rocks, consisting primarily of sandstone, siltstone and shale, are almost entirely of marine origin and range in age from Eocene to Pliocene. The Quaternary rocks consist of shallow marine sandstone and siltstone and continental siltstone, mudstone and gravels.

3. SURFACE SOILS

Surface soils characteristics which are critical for evaluating earthquake hazards deal primarily with their resistance to ground shaking. Figure 2 shows the two types of soils underlying the Inglewood area which are briefly described below. Both soil types are alluvium which offers poor resistance to ground shaking and can even amplify some surface motion. According to the USGS (Professional Paper 1360), mean subsurface shear-wave velocities through Inglewood soils are calculated to be 350 to 375 meters per second which is relatively low (loose wet sand is 230 m/sec while solid bedrock is over 1600 m/sec). Lower subsurface shear-wave velocities signify a propensity for greater amplification of ground motion.

Possible liquefaction of these soils has been significantly reduced due to water wells lowering the area's water table. According to the USGS (Professional Paper 1360), all of Inglewood is classified as having either Very Low susceptibility or (in the most southern part of Inglewood) Low susceptibility to liquefac-



SOURCE USGS

Qoa UNDIFFERENTIATED LATE PLEISTOCENE ALLUVIUM

Qya₂ LATE HOLOCENE ALLUVIUM

FIGURE 2. TYPES OF SURFACE SOILS (Generalized Depiction)

tion. The one significant exception is the former water course of the Centinela Creek which has a Very High susceptibility rating. However, concrete culverts to capture water runoff along this course and the lowered water table may have lessened this susceptibility.

a. *UNDIFFERENTIATED LATE PLEISTOCENE ALLUVIUM* (Qoa):

Alluvium composed of gravel, sand, silt and clay which are moderately to well consolidated, often slightly cemented with localized areas well cemented.

b. *LATE HOLOCENE ALLUVIUM* (Qya₂): Alluvium composed of

recent (less than 1000 years age) gravel, sand, silt and clay deposits that are unconsolidated and uncemented, often in areas historically subject to flooding. Thickness of these deposits is often shallow (0 to 3 meters) overlying Late Pleistocene alluvium.

4. GROUND SETTLEMENT

There are three types of potential settlement hazards resulting from soil conditions: subsidence, loading settlement and seismically-induced settlement.

a. *SUBSIDENCE*. Subsidence is ground settlement that results over time from the extraction of ground water or oil. This is a phenomenon that usually extends over a large area and occurs on a gradual basis so the settlement effects on a single site, relative to its immediate neighbors, may be negligible as the neighboring properties are also subsiding. There is no historic evidence of subsidence problems in Inglewood although an area of the Baldwin Hills, one to two miles northwest of Inglewood, has experienced

subsidence as severe as one-quarter inch per year due to decades of oil extraction.

b. *LOADING SETTLEMENT.* Loading settlement is associated with weak, clay soils near the ground surface and is generally induced by the weight of buildings. The only area in Inglewood known to have the potential for such settlement is along the course of the former Centinela Creek, which is partly due to the soil and partly due to poorly compacted fill placed along the creekbed in the early decades of this century. Structures built in this area either require construction on pilings or require soil compaction to depths of twenty or thirty feet as determined by individual site soil testing.

c. *SEISMICALLY-INDUCED SETTLEMENT.* Seismically-induced settlement results from the consolidation or compaction of loose sandy soils during earthquake shaking. Except for the course of the former Centinela Creek described above, soil conditions in Inglewood should not generally have the potential for such settlement. The area of relatively loose surface soil in southern Inglewood is quite shallow, overlying well consolidated alluvium. However, soils testing on individual sites is the only effective manner to specifically identify the potential for such settlement.

5. SEISMIC HAZARDS

a. *FAULTING.* From a geologic point of view, the area is dominated by the Newport-Inglewood Zone of folding and faulting. This zone of deformation is a recent geologic feature and affects the youngest geological strata with the possible exception of

recent alluvial materials within present stream drainage. Figure 4 shows major active and potentially active faults in Southern California.

Numerous individual faults have been recognized and named within the Newport-Inglewood fault zone, primarily as a result of geologic discoveries during local exploration for oil or ground water investigations.

b. *FAULTS AND FAULT CLASSIFICATIONS.* Faults are defined as a fracture in the earth's crust following a boundary between rock masses that have shifted. Faults, based on their apparent state of activity, are generally classified as *active*, *potentially active* or *inactive*.

An *active fault* is one that has moved recently and is likely to move again. For planning purposes, "active fault" is usually defined as one that shows movement within the last 11,000 years and can be expected to move within the next 100 years. Because of difficulties in determining the precise age of faulting or faulted formations, an active fault is limited to one which exhibits historic activity (such as the San Andreas, Newport-Inglewood and San Jacinto faults).

A *potentially active fault* is either: (1) a fault that last moved within the Quaternary Period (approximately the last two million years); or (2) a fault which, because it is judged to be capable of ground rupture or shaking, poses an unacceptable risk for a proposed structure.

An *inactive fault* shows no evidence of movement in recent geologic time and no potential for movement in the near future.

c. *AGE OF FAULTING.* The geologic process of faulting and folding associated with the Newport-Inglewood zone of deformation has been active at least since early Pliocene time. Based on recorded earthquake epicenters and reported movement of surface or near-surface faulting, the Newport-Inglewood zone is still active today.

Geologic evidence of recent faulting has been obtained by surface mapping and from sub-surface data of domestic water wells. Water well data gathered in the Centinela well field adjacent to the Potrero Fault indicates that upper Pleistocene sediments are offset by the Potrero Fault and that the base of the lower Pleistocene aquifers are offset as much as 100 feet at a depth of only 300 feet.

d. *SUB-SURFACE HYDROLOGY.* The Newport-Inglewood Fault is also a barrier to water movement as established by pumping tests on wells located across the fault. The offset of Pleistocene aquifers by movement on the Inglewood Fault is also confirmed by water well data in the vicinity of Centinela Creek. According to the Safety Element Technical Report, late Pleistocene strata have been offset as much as 100 feet by faulting in the Baldwin Hills. It is also noted that, at the Centinela Spring site (in Centinela Park), Pleistocene strata exposed in the creek bottom terminate abruptly on the west against alluvium, a condition which is interpreted as an indication of relatively late movement on the Potrero Fault. The existence of a well preserved 50-foot high fault scarp along the Potrero Fault, south of Centinela Creek is also evidence that recent faulting has occurred.

6. NEWPORT-INGLEWOOD FAULT ZONE

The Newport-Inglewood Fault Zone (NIFZ), sometimes referred to as the Newport-Inglewood Zone of Deformation, is a zone of discontinuous folds and faults which stretches across the Los Angeles basin in a northwest-southeast direction from Beverly Hills to Newport Beach. (As a point of reference with other fault systems in Southern California, see Figure 3.)

The deformation along NIFZ has been caused by displacement in the basement rocks and the overlying 10,000 to 12,000 feet of softer Tertiary and Quaternary sediments. The marine and continental sedimentary rocks have been warped and faulted forming such hills as the Baldwin, Rosecrans and Dominguez. Thus, the hills are judged to be very young. This structural zone is exemplified by the young age of sedimentary rocks involved in the deformation, the observed regional and local changes in surface elevation along and across the zone, and the abundance of earthquake epicenters over the last 60 years closely associated with this zone (See Figure 3). This deformation is considered presently and potentially active geologically and seismically.

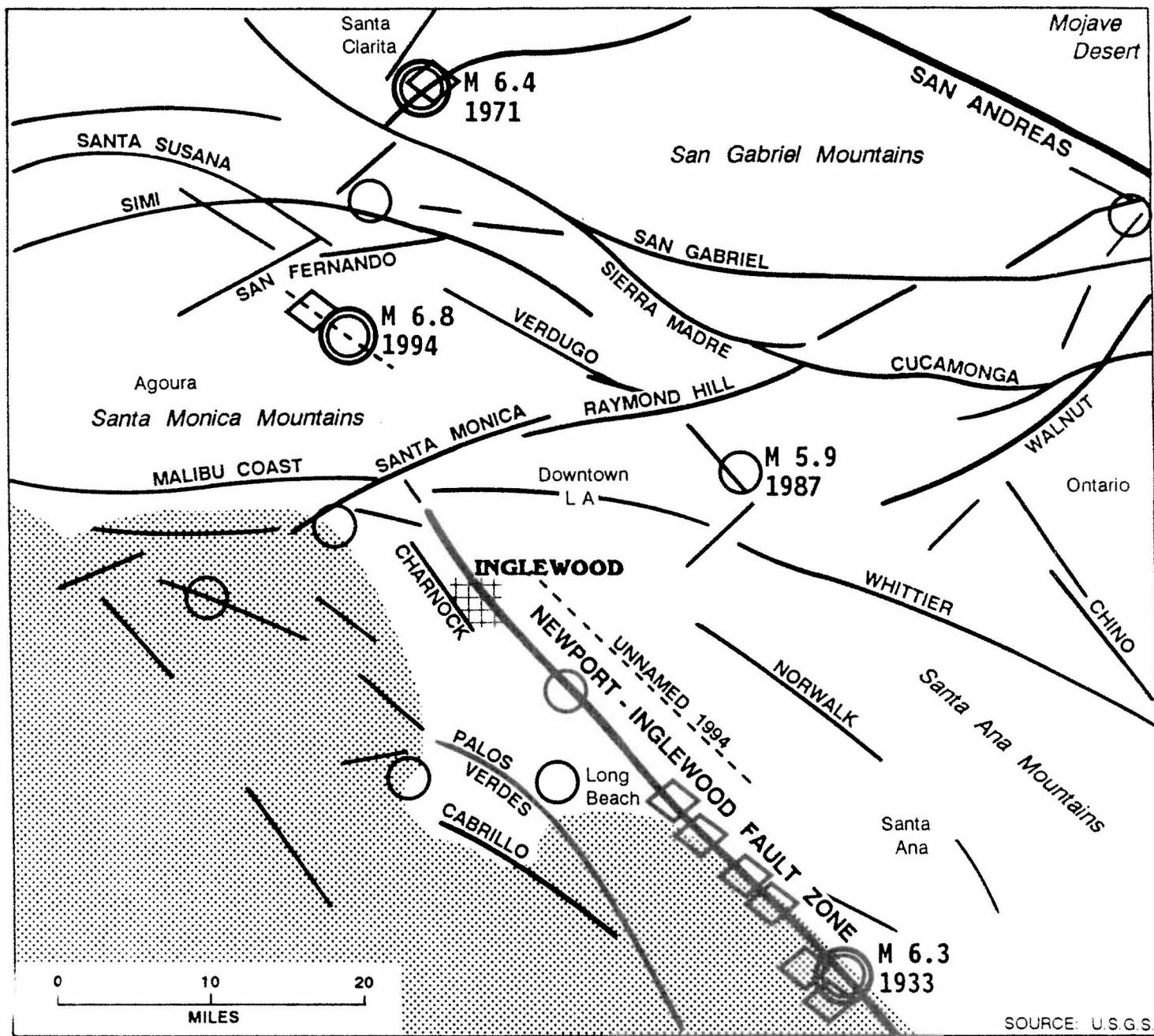


FIGURE 3. FAULTS AND FAULT ZONES SHOWING EPICENTERS OF EARTHQUAKES EXCEEDING MAGNITUDE 5.0

7. FAULTS IN AND NEAR INGLEWOOD

It is appropriate to separately discuss each of the fault traces associated with the Newport-Inglewood Fault Zone. These are illustrated in Figure 4, Earthquake Fault Traces - Inglewood.

a. *NEWPORT-INGLEWOOD FAULT.* The Newport-Inglewood Fault, unknown until 1920, extends through the City of Inglewood. This major fault is parallel to the San Andreas system and lies partly under the Pacific Ocean. The trace on land starts near Newport Beach and extends northward along the Pacific coastline, past Signal Hill through Inglewood and the Baldwin Hills to a point somewhere near Culver City. Several moderate earthquakes and numerous smaller shocks have been recorded in proximity to the Newport-Inglewood zone and may have originated on the deeper faults within the zone. A quake along this fault, whose epicenter was southeast of Long Beach, was responsible for extensive damage to Long Beach, Compton and Santa Ana in 1933. Earthquake epicenters recorded since 1933 that fall along or near the Newport-Inglewood zone have been plotted on Figure 3.

b. *INGLEWOOD FAULT.* The Inglewood Fault, one local component of the Newport-Inglewood Fault, is well exposed in the Baldwin Hills where it has been mapped by the United States Geological Survey (Castle, 1959). North of Centinela Creek, the fault offsets geologic units of Pleistocene age and is marked by a westerly-facing scarp which dies out to the south with only a small break in slope extending south of Centinela Creek. There is no physical evidence that the fault cuts recent alluvial deposits. There was

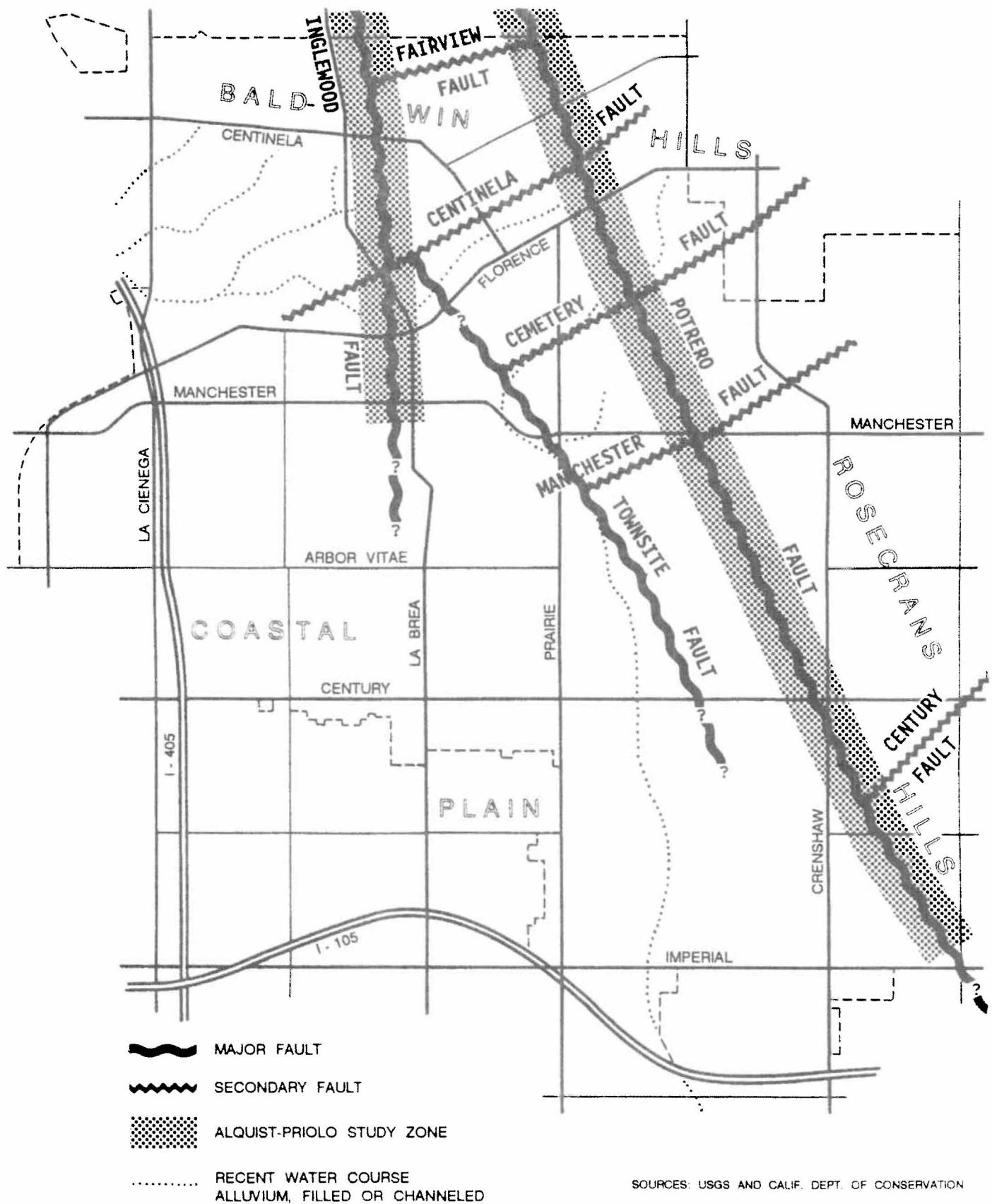


FIGURE 4. LOCAL EARTHQUAKE FAULT TRACES

SOURCES: USGS AND CALIF. DEPT. OF CONSERVATION

ample evidence of surface displacement along the fault line across the Baldwin Hills, north of Centinela Creek following the 1920 Inglewood earthquake.

An in-depth review of available published and unpublished geologic reports and maps shows that within the geologic community there is diverse opinion as to whether the fault extends south of Centinela Creek along its established trend, or whether it is offset by the Centinela Creek Fault and becomes the Townsite Fault, which trends to the southeast across Hollywood Park. The Inglewood Fault has been mapped through the Inglewood Civic Center, south of Centinela Creek, and is shown to similarly extend to the south on the Alquist-Priolo "Earthquake Fault Zones" map for the Inglewood Quadrangle. The Inglewood Fault is shown to be offset by the Centinela Fault and coincides with the mapped trace of the Townsite Fault (See Figure 4).

A review of the well logs from city water wells suggests that the Lynwood and Silverado aquifers are offset approximately 18 and 38 feet in depth respectively, immediately south of Centinela Creek and in line with the southern projection of the Inglewood Fault. This apparent offset suggests that the fault may extend to the south under the Civic Center area. Unfortunately, there is not sufficient geologic data available in the area south of Centinela Creek to fully resolve this question.

c. *TOWNSITE FAULT.* Another local component of the Newport-Inglewood Fault is the Townsite Fault which is well defined in the deep sub-surface in the area of the Potrero oil field and has been

identified in the near surface in several groundwater investigations. Aerial photographs flown in 1928 and 1934, prior to the construction of the Hollywood Park racetrack, reveal a probable surface trace of the fault traversing what is now the infield of the racetrack. The trace showed up as an abrupt change in soil color, probably due to variations in water saturation. The fault extends from its intersection with the Centinela Fault in Centinela Creek, towards the southeast across the racetrack, and appears to die out south of Century Boulevard; therefore, its potential for being active is uncertain without further investigation.

d. *POTRERO FAULT.* The Potrero Fault, a major local component of the Newport-Inglewood Fault, traverses the eastern portion of the City in a northwest-southeast direction. It is well defined in the subsurface by oil well data from the Potrero oil field where it consists of a zone 100 to 200 feet wide. It is also known to cut Pleistocene aquifers in the Centinela Creek area where historically it was responsible for the existence of the Centinela Spring. Prior to the development of water wells east of the fault, which have greatly depleted the aquifer and lowered the water table, the Centinela Spring once yielded in excess of 125 miner's inches of water (over one thousand gallons per minute). At its intersection with the Centinela Fault, the Potrero Fault is either offset or bent so that its northern extension is displaced to the east.

South of Centinela Creek, along the east side of the Hollywood Park racetrack property, the fault is marked at the surface by an impressive westward-facing scarp about 50 feet high. Near its

southern end, both topographic and subsurface evidence of its position disappear. The fault bends to the east and extends toward the Avalon-Compton Fault southeast of the City of Inglewood.

e. *CHARNOCK AND OVERLAND FAULTS.* The Charnock Fault also trends northwest-southeast and passes just to the west of the City boundary. Because it affects Pleistocene aquifers, it is also a relatively recent fault. The Charnock Fault, and the Overland Fault which lies between the Charnock and Inglewood Faults to the north of the City, may be related to the active Newport-Inglewood zone, although neither traverse the City of Inglewood.

f. *TRANSVERSE FAULTS.* Five northeast-southwest trending faults cut or intersect the major northwest-southeast trending faults within the city limits. These faults are known from north to south as the Fairview, Centinela, Cemetery, Manchester and Century Faults. Little geologic data is available on these faults. They have generally been mapped on the basis of topographic expression with meager subsurface data from water wells and ground water studies. See Figure 4 for their locations. These faults are believed to be secondary faults to the major northwest-southeast trending set which sub-parallel the overall Newport-Inglewood zone. They are significant in that it is believed that movement on one of the major faults could trigger movement on one or more of these transverse faults.

8. SAN ANDREAS FAULT SYSTEM

The dominant fault in California is the San Andreas Fault

which includes a shear zone extending some 650 miles southeasterly through the state along the Coast Range of central California through the San Gorgonio Pass area of southern California. South of the pass the fault widens and several parallel faults branch out to form the San Andreas system. Its depth is unknown; however, it probably extends 20 to 30 miles into the earth's crust.

A significant earthquake (magnitude 7) occurred in 1857 on the fault segment north of San Bernardino and numerous moderate earthquakes have occurred at the rate of approximately one every ten years along the fault system south of San Bernardino. There are also many other faults in Southern California which are considered potentially active and which could be a potential source of earthquakes. Other than the Newport-Inglewood Fault, these faults would not be expected to affect the Inglewood area to the extent that a major earthquake on the San Andreas system would. (See Figure 3).

9. EARTHQUAKE HISTORY

Inglewood has been subjected to numerous earthquakes during the short duration of Southern California's recorded history, as have all the other cities in the area.

In this century, four quakes on the Newport-Inglewood Fault have been recorded with magnitudes of 4.7 or greater on the Richter Scale, with the 1933 Long Beach earthquake recording a magnitude of 6.3. Though no direct measurements were recorded at the time, it has been estimated that the 1920 Inglewood earthquake would have recorded a magnitude of 4.7. The two other events were both in 1941 (magnitudes 4.9 and 5.4).

10. MEASURING EARTHQUAKE MAGNITUDES

There are two basic systems for measuring earthquakes, the Modified Mercalli Intensity Scale and the Richter Magnitude Scale.

a. *MODIFIED MERCALLI INTENSITY SCALE.* The Modified Mercalli Intensity Scale measures the intensity of an earthquake's effects in a given locality, and is perhaps much more meaningful to the layman and emergency planner because it is based on actual observations of earthquake effects at specific places.

Because the data used from assigning intensities can only be obtained from direct, first hand reports, considerable time (weeks or months) is sometimes needed before an intensity map can be assembled for a particular earthquake.

The most commonly used adaptation covers the range of intensity from the conditions of "I" (not felt except by very few persons favorably situated) to "XII" (total damage, lines of sight disturbed, objects thrown into the air). While an earthquake has only one magnitude, it can have many intensities, which decrease with distance, from the epicenter.

b. *RICHTER MAGNITUDE SCALE.* The Richter Magnitude Scale, named after the late Dr. Charles F. Richter, Professor Emeritus of the California Institute of Technology, measures the energy of an earthquake at its source, not at any distance from the epicenter, and is the scale most commonly used and often misunderstood. On this scale, the earthquake's magnitude is expressed in whole numbers and decimals. It may be noted with an "M" before the number so that an M 6.7 event would indicate a 6.7 Richter Scale quake. However, Richter magnitudes can be confusing and misleading

unless the mathematical basis for the scale is understood. It is important to recognize that magnitude varies logarithmically with the wave amplitude of the quake recorded by the seismograph. Each whole number increase of magnitude on the scale represents an increase of 10 times in the measured wave amplitude of an earthquake, and an increase of about 32 times the amount of energy released by the quake. Thus, the amplitude of an 8.3 earthquake releases about one million times more energy than one of magnitude 4.3.

Richter magnitudes are not used to estimate resulting earthquake damage. An earthquake in a densely populated area, which results in deaths, considerable damage to older structures and infrastructure (e.g. the January 17, 1994, earthquake in the San Fernando Valley) may have the same magnitude as an earthquake that occurs in a barren, remote area where it does nothing more than displace a few rocks and frighten the wildlife.

B. MAJOR SEISMIC EVENT

During a major earthquake the number of casualties in the City of Inglewood would be largely determined by the time of the event and whether the event was on the San Andreas Fault System or the Newport-Inglewood Fault Zone (NIFZ). Following any major earthquake, the Inglewood Fire Department will dispatch vehicles to survey the entire city to identify any locations of damage or injury. If an earthquake occurs during peak daytime hours when government buildings, schools, commercial buildings, industrial facilities, freeways, etc. are fully occupied, the casualty total would be much greater than if the earthquake occurs at night. Most residential buildings in Inglewood are one-story and relatively few exceed two-stories, and virtually all are of light-weight wood frame construction so fatalities and injuries would certainly be less if a major earthquake were to hit along the NIFZ when most people are at home.

1. SAN ANDREAS FAULT vs. NEWPORT-INGLEWOOD FAULT

The casualties from a major seismic event on the San Andreas would be far less than those that could be expected from a scenario earthquake on the NIFZ. The fatalities occurring as a result of the event itself are estimated to be on the order of 10 to 20 persons throughout Inglewood during working hours and approximately half that number, or 5 to 10 persons, during nighttime hours. A larger number of injuries resulting from fire and building damage, as well as secondary complications such as heart attacks, could be expected to add 40 to 60 casualties to the total. A daytime event

could add somewhat to these numbers. A reasonable estimate of 50 to 100 injuries requiring treatment, with most of them being minor, is postulated.

An earthquake on the Newport-Inglewood Fault Zone could be another matter altogether. Depending on the location of the epicenter, and the particular fault trace involved, casualties would be much higher. For comparison, the Whittier quake in 1987 which was a M 5.9 event with 4 to 5 seconds of ground shaking resulted in the death of 10 persons. By contrast, an earthquake on the Newport-Inglewood Fault Zone potentially as severe as M 7 event with ground shaking lasting 25 seconds would greatly increase the number of casualties.

Estimates of fatalities as a result of immediate ground shaking would vary between 100 to 200 during the nighttime hours and 150 to 250 during daytime hours. These estimates are consistent with the fatalities incurred in major earthquakes in populous centers around the world. The death toll from the quake itself could be as estimated above with fatalities from secondary complications almost doubling these ranges from 200 to 400 during nighttime hours and 300 to 500 during daytime hours. Injuries requiring treatment under the conditions of the scenario quake would average about four times the death toll resulting in injuries needing treatment of 800 to 1,000 immediately during evening hours and 1,200 to 2,000 during daytime hours.

2. SEISMIC EFFECTS ON BUILDING SAFETY

The damage to structures in a major earthquake represents the

greatest danger for loss of life and injuries to the citizenry of Inglewood. Older buildings and buildings that are not structurally (seismically) sound, fires, and chemical and gas leaks heighten the potential for casualties and property damage during an earthquake. The City of Inglewood is working diligently to ensure that all structures in the City meet the requirements of the Uniform Building Code (UBC). Through March 1995, the Building and Safety Division records indicate that 49 of 59 structures constructed of unreinforced masonry brick have been structurally strengthened to mitigate their potential for seismic collapse. The remaining structures are in the construction phase or their retrofit plans are being reviewed. Any such structure that would fail to be structurally strengthened would be required to be demolished. There are also three unreinforced single family residences that are exempt from this mandatory retrofit requirement.

3. CRITICAL FACILITIES: SEISMICALLY SOUND

Critical facilities are those facilities in which damage or malfunction during an earthquake would have serious and far-reaching consequences. Generally included in this category are hospitals, fire, police and emergency service facilities; utility facilities, such as water, electricity, natural gas and sewage disposal; hazardous material sites; and communication and transportation facilities (See Figure 5). It is imperative that places of assembly (e.g. Hollywood Park Racetrack and the Forum) and the aforementioned critical facilities take precautionary measures to minimize the potential devastating effects of an earthquake.

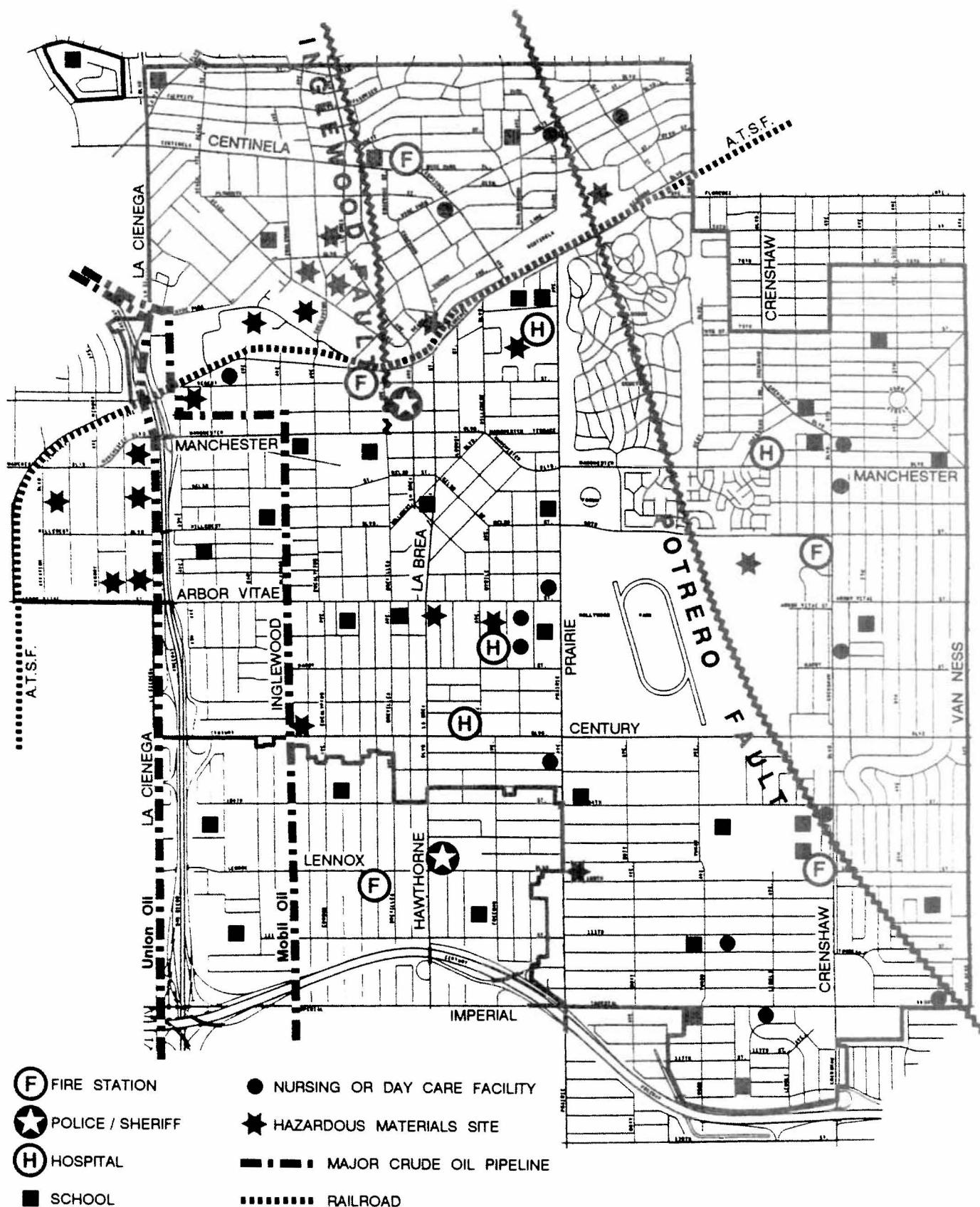


FIGURE 5. SITES OF CRITICAL FACILITIES

All of the critical structures and places of assembly in the City of Inglewood meet the stringent seismic standards set forth by the UBC and all applicable state and local entities. However, there still exists a very real possibility that the hospitals could sustain heavy damage if a major earthquake occurred in this region along the Newport-Inglewood Fault. It is estimated that a major seismic event within 5 miles of the NIFZ would cause a hospital bed loss inside that 5 mile area of over 50 percent. Therefore, medical facilities outside the city boundaries would have to be used to care for the injured on an area-wide basis. In contrast, a major seismic event along the San Andreas should not cause the adverse impact on the hospitals located inside the City. However, medical facilities within the City would receive the injured from other areas of the Southern California region. Presently, there are 441 hospital beds at Centinela Hospital, 402 beds at Daniel Freeman Memorial Hospital, and 50 beds at Kaiser Permanente Hospital. Inglewood has approximately 8.4 beds per 1,000 population which is almost double the South Bay ratio of 4.3. Nonetheless, a severe tremor in this region could overburden the City's medical facilities with casualties being brought in from outside the City.

4. TRANSPORTATION ROUTES

There are three different surface modes of transportation through the City of Inglewood. There are the surface streets with several major arteries, the San Diego (Interstate 405) Freeway and the Century/Anderson (Interstate 105) Freeway which includes a light rail transit line, and the Santa Fe (ATSF) railroad.

a. *ARTERIAL SURFACE ROUTES.* There are some major arteries that could be damaged because they are located across or in proximity to the NIFZ and the Potrero Fault. Such damage could occur to Centinela Avenue, Florence Avenue, Manchester Boulevard, Century Boulevard, and Imperial Highway if a major seismic event were to occur. (See Evacuation Routes below.)

b. *FREEWAYS.* The San Diego Freeway runs along the western portion of the City traversing in a north-south direction. Segments of the freeway system have bridge structures which could be subject to possible damage during a major seismic event, as occurred to portions of the Los Angeles freeway system in the January 17, 1994, earthquake. In order to substantially reduce the likelihood of such failures, all of the freeway bridges and connector ramps in the Inglewood area have been retrofitted by Caltrans to withstand strong temblors.

The newly opened Century/Anderson Freeway south of Inglewood has been constructed to the latest seismic standards and does not require retrofitting. Within the median of this freeway is a light rail transit line proposed to open in 1995.

c. *RAILROAD.* The main Atchison, Topeka and Santa Fe freight line serving the Los Angeles and Long Beach harbors currently wends its way through the westerly portion of the Los Angeles Basin near the coast, passing through the City of Inglewood approximately along Florence Avenue and Aviation Boulevard. (See Figure 6.) A proposed rail corridor along Alameda Avenue, to be jointly used by all the rail companies, may provide more direct access to the

harbors from central Los Angeles. If the Alameda corridor is developed, the ATSF line through Inglewood will probably be abandoned. However, until it is abandoned, it will continue to be an important carrier of supplies and materials that would be needed in the event of a major disaster in the region.

For planning purposes for a major seismic event on the NIFZ, severe damage could be expected to both the roadbeds and bridge structures of all rail lines located within a 2 kilometer wide fault zone where surface displacements averaging 1 meter or more are projected. Virtually all of Inglewood lies within such a fault zone. Damage to bridge supports, approach fills and roadbeds can also be anticipated in areas of potential ground failure. In the event of damage to waste water or water lines, leaking pipes and structures could undermine roadbeds, bridge supports or exacerbate damage from other sources. Rail facilities are highly vulnerable to closure by collapse or major damage to freeway overcrossings and other grade separations. For example, the lengthy span over the San Diego Freeway may be weakened or damaged sufficiently to limit its usefulness before a survey and repairs are completed. Complete restoration of rail service throughout the area will take an uncertain period of time. The ATSF tracks in the City of Inglewood are certainly susceptible to such damage or interruption of service.

5. EVACUATION ROUTES

Assuming "worst case" displacement and surface rupture in both vertical and horizontal directions in the 2 kilometer high-risk

area, substantial damage is anticipated to surface streets and arteries. There is expected to be some damage to major arteries where the streets intersect the high risk fault zone. Major east-west arteries like Florence Avenue, Manchester Boulevard, Century Boulevard, and Imperial Highway are expected to sustain some damage.

The General Plan guidelines require that evacuation routes be identified. Emergency corridors that can be most readily opened immediately following a seismic event are illustrated on Figure 6.

The arterial streets that can be used for evacuation to the south are Inglewood Avenue, La Brea Avenue/Hawthorne Boulevard, Prairie Avenue and Crenshaw Boulevard. La Cienega Boulevard, Crenshaw Boulevard, Van Ness Avenue and West Boulevard will allow evacuation to the north. Florence Avenue, Manchester Boulevard, Century Boulevard and Imperial Highway can enable evacuation to the east, east of the Potrero Fault. West of the fault, Centinela Avenue, Manchester Boulevard, Century Boulevard and Imperial Highway can be used. Actually, since Inglewood's arterial streets form a grid system offering possible evacuation in all directions, traffic can be rerouted from any closed street to many alternative routes. Furthermore, the closure of any of the four freeways (Santa Monica, Harbor, Century/Anderson, and San Diego) that surround Inglewood will probably put additional diverted traffic onto the surface arterial streets, with any such detours being jointly established by Caltrans and the cities of Inglewood and Los Angeles. Similar mutual cooperation between Caltrans and city governments successfully rerouted traffic following the collapse of various portions

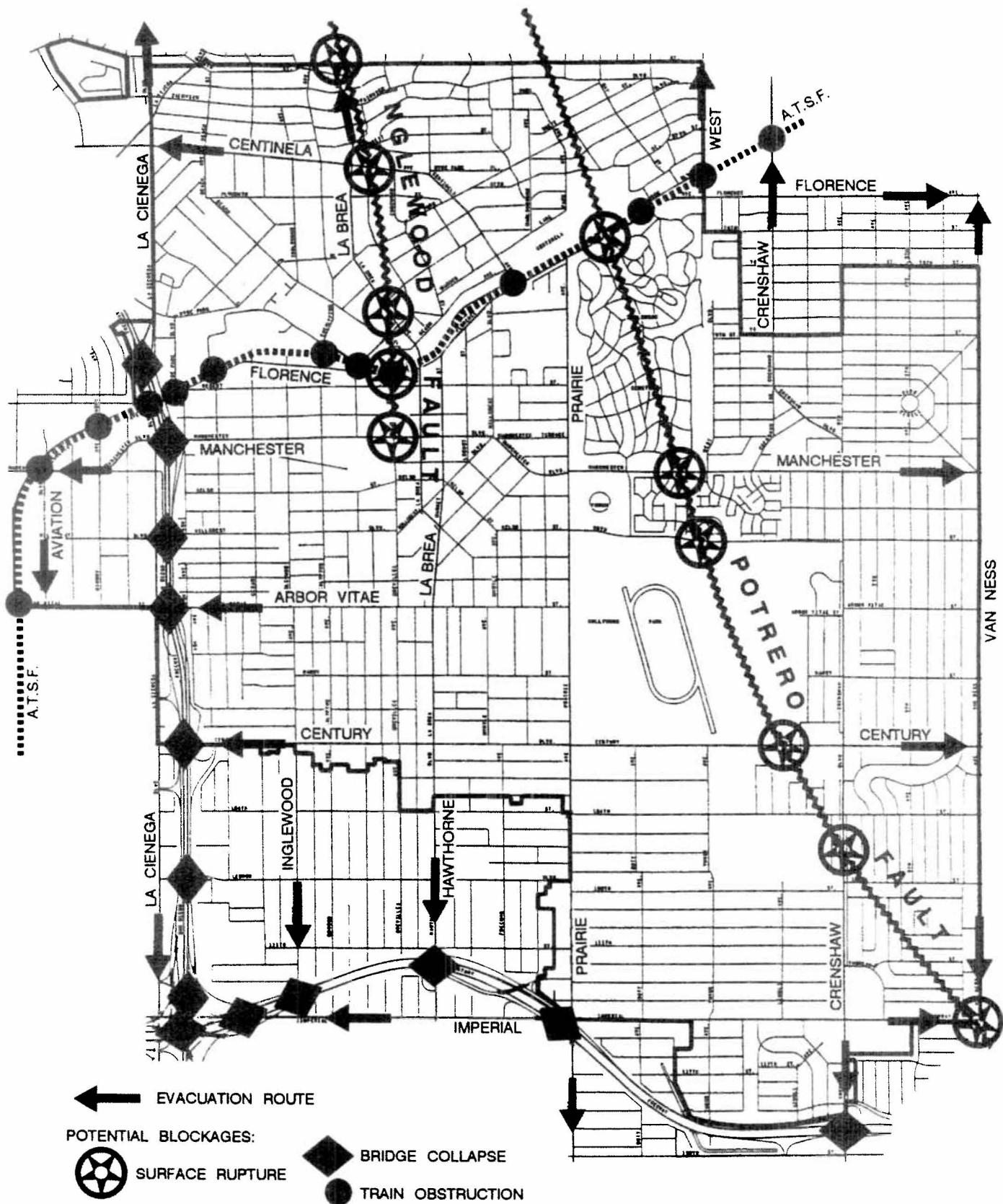


FIGURE 6. EVACUATION ROUTES AND POTENTIAL BLOCKAGES

of the Los Angeles freeways after the January 17, 1994 earthquake.

6. UTILITY AND COMMUNICATION LIFELINES

There is a distinct possibility that a major seismic event occurring on the San Andreas Fault would have an adverse effect on the delivery of utility services to the City of Inglewood. Such critically important utilities as water, electrical power, telephone service, oil and gas pipelines, as well as other important functions and services, would be adversely impacted if a major earthquake struck this region.

a. WATER

Major water lines and facilities provide the sole distribution network for domestic and fire flow needs in Inglewood (See Figure 7). Seismic ground rupture could easily cripple portions of this local distribution system.

Southern California is very dependent on water being imported from outside this region. A major earthquake would possibly interrupt the delivery of this water and thereby severely impact this regional distribution system. If water delivery to the City of Inglewood were reduced or cut-off entirely, the City would have to conserve and ration its own limited water supply for an indefinite period of time.

Following an earthquake it should be assumed that the municipal water wells would be contaminated with bacteria, until proven otherwise. Water usage for cooking drinking or washing would require boiling or addition of a small amount of disinfectant, i.e. iodine tablets or chlorine bleach.

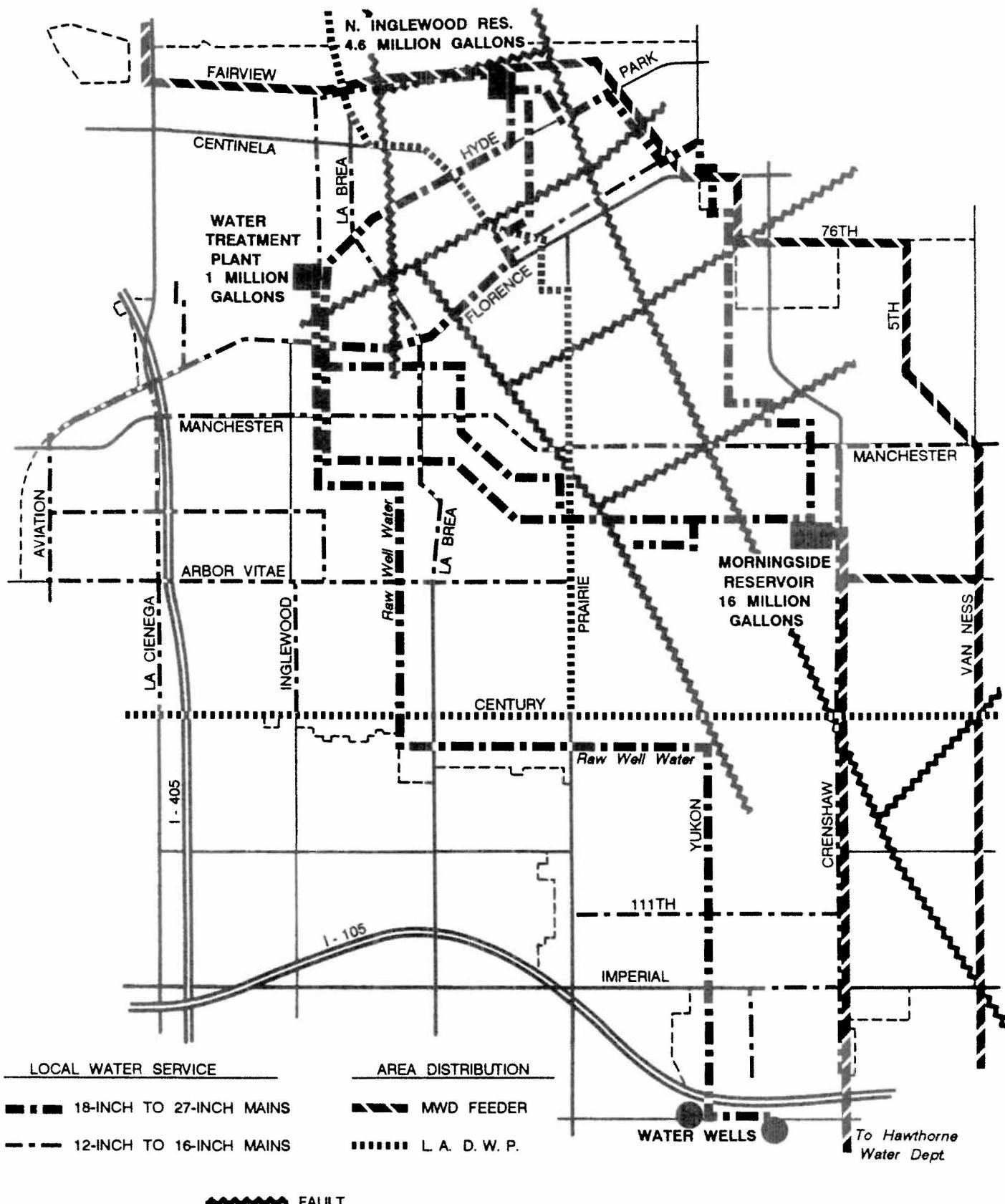


FIGURE 7. WATER DISTRIBUTION SYSTEM

The City of Inglewood has two reservoirs and a water treatment plant where water is stored. The North Inglewood Reservoir has a storage capacity of 4.6 million gallons. The Morningside Reservoir has a storage capacity of 16 million gallons. The water treatment plant has a reservoir with a storage capacity of 1 million gallons.

Typically, Inglewood water customers utilize about 11 million gallons per day which means there is at least two days of stored water capacity. However, the imposition of strict water rationing measures would significantly increase the number of days that stored water would be available for basic domestic needs and for firefighting. The loss of electrical power would limit the City's ability to pump water. The North Inglewood Reservoir, being built on one of the highest sites in Inglewood, would provide some water flow to much of the City for a limited time until electricity could be restored to the pumping facilities.

b. TELEPHONE SERVICE

It is projected that telephone service would be temporarily disrupted during a major earthquake. The disruption would primarily result from an abundance of calls into this region and into the City of Inglewood overloading telephone circuits. Long distance use would also be adversely impacted. However, as has been experienced in recent urban earthquakes, telephone switching facilities located near epicenters can suffer significant damage and deprive some neighborhoods and communities of telephone service for many days. One major telephone facility is located in downtown Inglewood near the southern end of the Inglewood Fault.

c. NATURAL GAS PIPELINES

While gas mains should survive severe ground shaking intact, more serious faulting and surface ruptures would increase the likelihood of damage occurring to these gas lines. Fortunately, gas supplies can be rerouted in minutes during an emergency. Local distribution lines are also at risk of being damaged although the greatest hazard is when an earthquake generates sufficient movement in structures to cause house lines to rupture or separate. This can lead to fires that may be difficult to suppress if local water mains are also damaged.

When gas service is interrupted, it may take considerable time to restore service to all customers because a member of the Southern California Gas Company must inspect each site to check on the integrity of house connections and to light extinguished gas pilot lights, etc.

d. WASTE WATER

There is a 10 to 12 foot diameter Los Angeles County outfall sewer trunk that crosses the 2 kilometer high risk zone traversing north Inglewood from east to west. A pump station is located near the intersections of La Cienega Boulevard, Hyde Park Boulevard and the San Diego Freeway. Even though the line is constructed of reinforced concrete, it should be anticipated that substantial damage to this line could occur as a direct result of shearing from severe ground shaking and surface rupture in the 2 kilometer high risk zone. Since this line traverses a mostly residential area, it could generate on-going health problems and objectionable odors for

many weeks after the scenario earthquake. The County would immediately shut down the line, limiting any continuing flow of effluent but not eliminating the health and odor problems. Evacuation might be necessary for affected residents and the area sealed off for public safety.

e. ELECTRICAL POWER

There are many components in the electrical service process, and transmission substations are the most vulnerable element in the electrical power delivery system. Major substations contain banks of switches, circuit breakers, massive transformers, control equipment, and tall high-voltage porcelain insulators that are particularly vulnerable to earthquake shaking. There are no major substations inside the City limits, but there are two minor substations. Both substations lie within the 2 kilometer high risk zone and one is virtually located upon the Inglewood Fault. (See Figure 8.) Damage to major substations outside the City boundaries could cause power shortages to the citizens of Inglewood. It is estimated that a major earthquake in this region could disrupt electrical power to consumers in the City of Inglewood for approximately one week.

f. RADIO SYSTEMS

It is projected that a major seismic event would reduce available radio systems approximately 25 percent during the first twelve hours after a major earthquake struck. It is imperative that the damaged radio systems be repaired as soon as possible in order to maximize the chances of lives being saved. It is quite

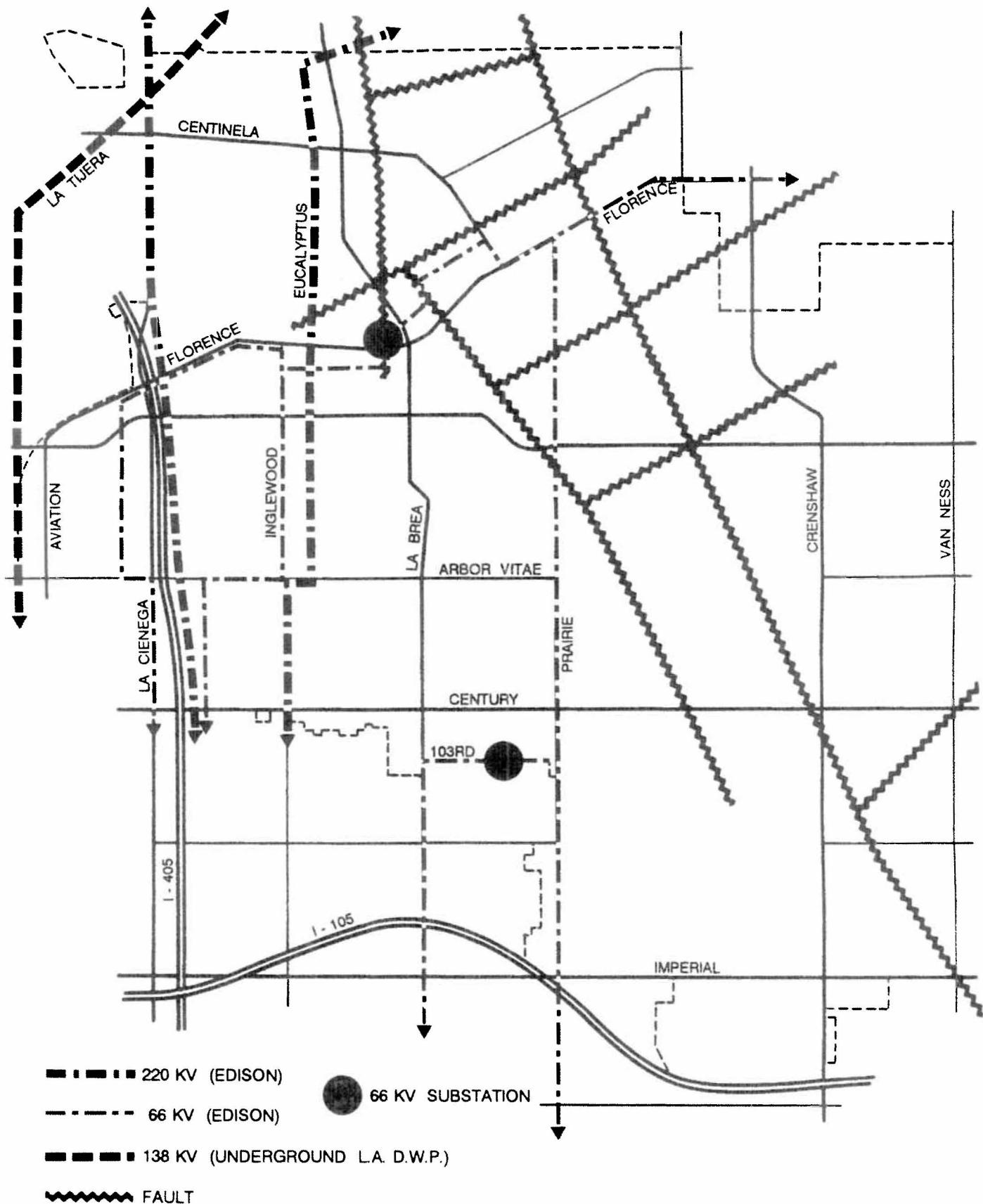


FIGURE 8. MAJOR ELECTRICAL POWER LINES AND FACILITIES

possible that the majority of communication taking place immediately after a major earthquake will be via radio. Radio systems can keep the public abreast of the latest developments and provide valuable instruction to the public as well as to public safety personnel. Due to overloading of operating capacity after an earthquake, radio efficiency will wane until the system is repaired.

C. SEISMIC MITIGATION MEASURES

Proper preparedness planning can minimize the adverse impacts of a seismic event. Following a seismic event, swift and efficient response and recovery procedures are critical to the maintenance of a community. To minimize the adverse impacts of a seismic event, the City of Inglewood should continue, undertake, and/or promote the following:

1. BUILDING SAFETY

- Compliance with Senate Bill No. 547, passed by the State Legislature in 1986, that requires all cities in seismically active areas to identify potentially hazardous buildings and adopt a mitigation program by January 1, 1990: The City of Inglewood adopted Ordinance No. 87-33 which required that all unreinforced masonry buildings be reinforced or demolished. There were five building classifications and five different submission and compliance dates. All owners of buildings that needed reinforcement were required to obtain a permit from the Building and Safety Division by December 1992 or demolish the building. The City offered financial assistance in conjunction with this Ordinance.
- Continued enforcement of the Alquist-Priolo "Earthquake Fault Zones" Act. This Act was adopted in 1972 to mitigate the hazards of surface fault ruptures along active faults in California. Locating certain types of new structures across traces of specified active faults

is prohibited (See Figure 4). The City's Building and Safety Division is responsible for enforcing this Act.

- The City shall continue to enforce the grading and excavation provisions and the foundation footing and retaining wall design standards of the Uniform Building Code that require geological and soils engineering investigations, particularly in areas such as the Potrero and Inglewood Fault high risk areas.
- The City shall use the latest State-approved edition of the Uniform Building Code and other applicable seismic design information to keep the City building code provisions up-to-date to meet potential seismic conditions resulting from future earthquakes.
- The City shall periodically review subdivision requirements and other codes to improve requirements for safety and seismic safety as new information becomes available.
- The City should study the need for a seismic overlay zone, to be added to the zoning ordinance in which certain types of development are not allowed, such as public buildings, and public or private places of assembly.
- The Building and Safety Division shall require a soils report for new buildings. Problems of expansive soil and cohesionless sand conditions will be primary considerations for the soils engineer. The potential of liquefaction or ground settlement could be examined through this process.

- The following studies should be obtained or utilized when available. Each of these studies is preventative in nature and aimed at increasing the City of Inglewood's ability to react to a major seismic event.
 - Geologic drillings and other geologic studies of the area to more adequately determine the extent of faults, types of ground and groundwater conditions.
 - Studies to determine changes occurring in local ground subsidence and elevation conditions.
 - Geologic-seismic studies on any substantial public or private development in any fault area.
 - Continued strong motion monitoring and placement of strong motion monitoring equipment in major new buildings.
 - Gathering, compilation, and interpretation of local and regional geologic seismic data as it becomes available.
- The Building and Safety Division shall maintain the tagging system that is used to identify buildings damaged in an earthquake.
- The City should ensure that the Centinela Adobe historic site and any historical sites identified in the future be seismically reinforced.

2. CRITICAL FACILITIES

- All critical structures and places of assembly should have disaster preparedness plans that would aid them

during a major emergency. These plans should be reviewed periodically and updated where applicable. The seismic component of the plan should be detailed and comprehensive.

- Sites for new critical facilities, or for enlargements of existing facilities, shall comply with the requirements of Title 24 of the California Administrative Code regarding geologic, seismic and geotechnical investigations of the sites prior to the design and development of the facilities.

3. WATER AVAILABILITY

- The City of Inglewood must plan for alternative sources of water when seismic events and other emergencies cause water shortages. The following recommendations should be explored, implemented and/or continued:

- The City should install a self-generation pumping system to retrieve water from municipal reservoirs in the event that outside water or water pressure is interrupted.
- The City should conduct an inventory of swimming pools so that they could be used as an alternative water source, particularly for fire suppression.
- The Fire Department should be provided with adequate suction hoses that could transport water to the City of Inglewood from adjacent areas.
- The City should seek to strengthen the Mutual Aid

Agreements with other cities and government agencies in order to receive adequate water, as well as the use of aerial water tankers and helicopters needed to control possible fires caused by a seismic event or other emergencies.

- The City could maximize its water use efficiency by reducing its water need through the administration and enforcement of its 1993 xeriscape (drought-tolerant landscaping) ordinance and through the enactment of an ordinance that would require water-efficient shower-heads and toilets.
- The City should continue to periodically inspect its reservoirs to ensure that they are seismically strong and will lessen the chances of a breakage during a seismic event.

4. COMMUNICATIONS

- The City of Inglewood should continue its program to have emergency communication services readily available in the event of a seismic event. Some of these are as follows:
 - The Radio Amateur Civil Emergency Services (RACES) team should be strengthened where possible. The RACES system becomes very vital during a major earthquake when other modes of communication are not operating.
 - Cellular telephone companies should increase the capacity of the cellular system for the City during

a seismic event or other serious emergency. While not as reliable as the RACES system, it serves well in emergencies because it is not dependent on a cable for connection.

- The City should develop a secondary, back-up communications center for the Emergency Operating Center (E.O.C.) in the event that all primary communication systems are not operable.
- The City should develop a program to train repair personnel at the E.O.C. to ensure that the communication system can be maintained during an emergency.
- All City communication stations and equipment should be installed, braced and maintained to ensure seismic resistance, and should be routinely tested to ensure emergency preparedness.
- The City of Inglewood should coordinate with Pacific Bell Telephone to develop a capability for switching City emergency telephone operations to a secondary site in the event of damage to City switchboard facilities. As many of the existing incoming City emergency telephone numbers as can be accommodated should be transferable to either the back-up communications center or back-up switchboard locations in the event of a temporary outage. Presently, the City has a battery-operated back-up system that could be used if the primary phone system were inoperable.
- The City of Inglewood should participate in the Hospital Emergency Administrative Radio (HEAR) system for the

implementation of two-way paramedic radio contact with the Hospital Council Area Control Station located at Centinela Hospital.

- The E.O.C. radio monitoring capability should be expanded to include monitoring of the HEAR system and the paramedic-hospital radio frequency.

5. GAS AND OIL

- The City of Inglewood should work closely with the Southern California Gas Company to educate the citizens of ways to properly secure appliances and water heaters to decrease the likelihood of fires starting during and after an earthquake. During an earthquake, fires rarely start due to breakage of underground distribution systems; they are generally started by overturned appliances and water heaters.
- The City should coordinate with the Southern California Gas Company to ensure that all underground gas pipelines and valves are seismically sound.

6. WASTE WATER

- The City of Inglewood and Los Angeles County should continue to periodically inspect the sewer system to ensure that it is seismically sound which would minimize the chance of a rupture occurring during a seismic event.
- A quick, efficient evacuation might be necessary if a major sewer rupture occurred during a seismic event. City personnel should be properly trained to complete an

effective evacuation.

7. ELECTRICAL POWER

- Since both minor transmission substations lie within or directly adjacent to the 2 kilometer high risk zone, the City of Inglewood and the Southern California Edison Company (SCE) must continually monitor and upgrade the substations to make them as seismically sound as possible.
- The City and SCE should research the feasibility of relocating the substations out of the 2 kilometer high risk zone and into an area where the seismic risk and potential damage is reduced.
- The City and SCE should continually upgrade and/or develop back-up electrical power sources that will readily provide power during a major seismic event. SCE provides two circuits to the local hospitals. If one circuit fails during a seismic event or other emergency, the other circuit provides power.
- The City should continue to coordinate with SCE which has crews properly trained and ready to respond to any seismic event or other emergency.

D. TSUNAMIS

A tsunami is a large ocean wave generated by an underwater earthquake or volcanic eruption. Tsunamis are among the most destructive and deadly natural disasters to ravage coastal areas. Although most coasts of the Pacific basin have a long history of tsunami-caused death and destruction, tsunami damage to coastal California has been relatively slight in historical time. The only tsunami to cause extensive damage to California since 1812 was generated by the 1964 Alaska earthquake to Crescent City, where waves as high as 23 feet overwhelmed 30 blocks of the city. The effects of this tsunami extended as far south as Los Angeles but there was no damage.

The hazards from tsunamis are somewhat reduced in Southern California because of its wide physiographical offshore borderland. Predictive models for distantly generated tsunamis indicate that wave heights of 6.5 feet are exceeded on the average of once every 500 years, except locally along Santa Monica Bay, San Pedro Bay and the Ventura County coast, where wave heights of approximately 10 feet are exceeded on the average of once every 500 years.

There is no immediate danger to Inglewood from this type of natural hazard. If a major tsunami would strike this region, Inglewood would not suffer any direct damage because it is not a coastal city. The City's elevation ranges from approximately 50 to 250 feet above sea level and it is located over 4 miles inland from the Pacific Ocean. However, persons from beach communities may be evacuated into Inglewood as a precaution or in the aftermath of a tsunami.

E. STORMS AND FLOODING

As if being compensated for the potential hazards created by the area's earthquake faults, Inglewood has been given such an accommodating climate and topography that potential damage from wind, rain or flooding is very minor. The vagaries of weather can always produce winds of such magnitude that there could be resulting damage or injury. However, the most common high winds in this area, the Santa Ana winds generated by high pressure cells over the interior deserts, are generally most destructive within or below mountain canyons and passes. Inglewood, being located in a broad, flat coastal plain, does not experience anything near the peak wind speeds produced elsewhere by the Santa Ana winds. Broken tree branches and an occasional uprooted tree are usually the worst damage experienced in Inglewood. Storms that have the potential to cause substantial damage, albeit extremely rare, include tornados, hurricanes and heavy rains.

1. TORNADOS

While small tornados are occasionally seen in the flat plain areas of southern California, the nearby mountainous topography tends to disrupt the massive air layers that are necessary to generate the huge tornado vortexes that occur in the midwestern states. Damage from local tornados usually involves lifting aluminum patio roofs, scattering lawn furniture and breaking tree branches. Potential damage and injury from a tornado can be similar but much more localized than that of an earthquake. Therefore, the City's preparedness measures for an earthquake will

readily accommodate any serious tornado event.

2. HURRICANES

The probability of a hurricane hitting the southern California coast is unlikely. While many severe hurricanes are spawned off the southern Mexican and Central American coasts, they inevitably follow a west to northwest track away from Mexico and more towards the Hawaiian Islands. Southern California usually receives just peripheral effects of these hurricanes in the form of rain or high humidity. Fortunately, due to modern meteorological and satellite technologies, the tracks of hurricanes can be monitored and anticipated. In the remote likelihood that a hurricane would veer towards the southern California coast, there should be ample time to advise the populace to take necessary safety precautions and to secure their properties.

Except for beach communities, most of southern California--including Inglewood--is too high to be affected by hurricane-induced storm surges that might inundate low coastal land with sea water. Evacuation of the populace from Inglewood and most communities would not be necessary.

3. PRECIPITATION AND FLOODING

There is definitely no possibility for Inglewood, with its Mediterranean climate, to be affected by blizzards or ice storms. The only form of precipitation that could create hazardous conditions is heavy rain. However, Inglewood averages only about 14 inches of rain annually.

The City of Inglewood is mostly situated at the upper portions

of local watersheds and is not located in any identified 50-year or 100-year flood plain. Therefore, any flooding that may occur would be very localized and would be caused by very rare instances of extremely heavy rainfall, particularly in the event of blocked storm drain openings, or by the rupture of one or more of the City's reservoirs. In these instances there could be some traffic circulation problems, but not critical in nature. Local topography and storm drain/flood control channels in the area should quickly dissipate any such flooding.

F. DAMAGE TO NATURAL ENVIRONMENT

The City of Inglewood and any immediately adjacent territory are fully urbanized environments. There are no remaining areas of forests or habitats for native flora or fauna that would be subject to any potential hazards.

G. DISASTER ASSISTANCE

Most major natural disasters will result in the damage and/or loss of public facilities and private property, both residential and commercial. Additionally, such damage will probably cause the displacement of residents and businesses. Once the initial tasks of rescue, fire suppression and evacuation are completed immediately after a disaster, the City of Inglewood will need to address the tasks of repair, reconstruction and rehousing. Materials, equipment and manpower are available in this large urban area; however, funding is the critical component necessary to commence such rebuilding. While private insurance should meet part of the need, public assistance will inevitably constitute a significant proportion of post-disaster funding for construction and housing.

The City of Inglewood, in concert with other participating agencies at the county, state and federal levels of government, will rely upon and utilize all available funding sources including, but not limited to, the following:

Federal Sources:

Community Development Block Grants (U.S. Dept. of Housing and Urban Development)

Federal Emergency Management Agency (FEMA)

Small Business Administration (SBA)

Home Investment Partnership Act (HOME)

State Sources:

Office of Emergency Services (OES)

Department of Housing and Community Development

Office of Historic Preservation (Dept. of Parks & Recreation)

CALTRANS (Department of Transportation)

Local Sources:

Inglewood Redevelopment Agency (Tax increment funds, limited to properties, businesses and residents within Inglewood's five redevelopment project areas.)

Inglewood Neighborhood Housing Services, Inc.

Other Potential Assistance:

Special Assessment Districts (voluntary participation by assessed property owners)

Public Purpose Bonds and General Obligation Bonds (require two-thirds approval by voters)

Waiver of city fees for plan checking and building permits.

III. MAN-MADE HAZARDS

Man-made hazards are dangers or accidents caused by human error or the failing of machinery or structures that man has created. Man-made hazards take many forms, not all of which can be addressed in this document. The primary focus of this section will be to provide descriptions of the more probable man-made hazards and emergencies, their potential effects, and the mitigation measures to be used to minimize the effects of these man-made dangers.

A. AIR SAFETY

Inglewood, located in proximity to the Los Angeles International Airport (LAX), must be concerned with the possibility of an airplane crash. Because the airplane approaches to the LAX runways pass over the greater portion of the City and because LAX has an extremely high volume of air traffic daily, there is the unfortunate probability that a plane will eventually crash in the City of Inglewood.

1. PLANE CRASH

According to Claire and Associates (See References Section), a major air crash could be expected to occur in Inglewood on the average of once every 10 years, although--to date--there never has been a crash of a commercial airliner. A "worst case" scenario of a jumbo jet crash might cause over 400 casualties on impact. The casualty figure would include people hurt or killed on the ground. The casualty estimate could be much higher if a jumbo jet crashed into a high-density multiple-family residential area of the city and a sweeping fire raged out of control for a period of time before it could be contained.

2. PLANE CRASH: MITIGATION MEASURES

Air safety originates with regularly conducted mechanical inspections of all aircraft by private and regulatory entities, and continues with the professional operation of aircraft by the airline companies. To decrease the probability of an air disaster and to minimize the adverse impacts of an air crash if it should occur, the City of Inglewood should continue, undertake, and/or

promote the following:

- All public safety personnel should participate in periodic emergency response drills in order to determine their specific roles during an air disaster. Although it is highly unlikely that an airplane crash can be predicted, periodic preparedness drills can ensure that the coordination and communication between public safety personnel, local hospitals, the airport, other local governments, etc., will operate efficiently and smoothly. Decreased response times by public safety personnel to an air disaster would save lives and reduce injury and property damage.
- All disaster respondents (public safety personnel, volunteers, etc.) should be in uniform dress or identification (colored vests, etc.) so that there can be an immediate distinction between them, the victims of an air disaster, and the public who should be kept from the crash site.
- Relocation of existing schools and intensive land uses in the crash zones should be implemented wherever feasible.
- The placement of new schools, hospitals and other critical facilities should be avoided under flight approaches.

B. RAIL SAFETY

The Atchison Topeka and Santa Fe (ATSF) Railroad has the only rail right-of-way through the City of Inglewood. The rail line roughly traverses the City in a northeast-southwest direction. The rail line primarily runs adjacent to Florence Avenue and Aviation Boulevard. Of the twelve street crossings in Inglewood, the two with the largest traffic volumes are La Brea Avenue and La Cienega Boulevard. Other important crossings are at Centinela Avenue, Manchester Boulevard and Arbor Vitae Street. (See Figure 6.) Trains travel through the City an average of twice a day Monday through Saturday (one trip each direction). The length of the train can vary from just a few freight cars to as many as 90 cars per trip. There are no passenger train cars.

All of the intersections have automated crossing gates and "RR" designations painted on the streets leading to each railroad crossing with the exception of a minor crossing north of Florence Avenue at the end of Cedar Avenue that does not have the painted designation between the crossing and the private property which the crossing serves.

As discussed earlier in the seismic hazard section, there is a proposal to relocate this freight line to the Alameda Street corridor. This corridor, which will be jointly used by several rail companies, will provide a more direct rail route from the Los Angeles and Long Beach harbors to central Los Angeles, completely bypassing Inglewood. If the Alameda corridor is developed, the ATSF rail line through Inglewood will probably be abandoned. Nonetheless, until such abandonment occurs, it is necessary for the

City of Inglewood to maintain standards for the operation of the rail line and to be able to respond to possible rail accidents.

1. TRAIN ACCIDENT

According to ATSF the trains that travel the Los Angeles-Inglewood-Harbor corridor had no reportable accidents since 1989. (The Federal Railway Administration considers a reportable accident as one that causes at least \$5,700 worth of damage.) However, the possibility still exists that a train wreck could occur, probably caused by derailment. Derailments can be the result of poor track maintenance, poor train operation, or collision with a vehicle at a grade crossing.

2. TRAIN ACCIDENT: MITIGATION MEASURES

Similar to air safety, rail safety begins with periodic mechanical inspections of all trains by private and regulatory entities, and continues with the proper handling of trains from one destination to another. To reduce the probability of a rail-related disaster and to minimize the adverse impacts of a train wreck, the City of Inglewood should continue, undertake, and/or promote the following:

- Conduct regular, efficient maintenance of trains, tracks, and railroad appurtenances. Regular inspections will decrease the probability of train derailments and accidents.
- Train operators must adhere to speed limits and all safety standards.
- Train operators must be careful, alert, and free of

substances that could impair their ability to operate the train capably.

- The City of Inglewood and ATSF must ensure that all crossing gates are fully operational and that all railroad designations and warning signs are clearly visible.
- Motorists should be advised with signs that queuing across railroad tracks is prohibited. Citations should be issued to those motorists found violating this prohibition.
- Levels of railroad track maintenance and rail speed along all rail lines should be monitored through liaison between the City, the Public Utilities Commission and the railway company. Records of compliance with existing Federal and State rail safety regulations should be provided by these agencies.
- Liaison between the City, the railway company and the Los Angeles County Metropolitan Transportation Authority (MTA) that currently owns the right-of-way, should be established to coordinate future opportunities for developing grade separations between any rail line and adjacent streets and land uses. The MTA might utilize portions of the rail right-of-way for passenger light rail transit.

C. FIRE SAFETY

The City of Inglewood is a fully developed urban community that has a mixture of residential, commercial, and industrial buildings. The buildings range in size from small, one-story single-family dwellings, to heavily used multi-storied residential, commercial and industrial buildings.

1. FIRE DANGER

In this fully urbanized environment, fires pose a very significant danger. In 1992 in the City of Inglewood, there were 695 fires, in 1993 there were 629 fires, and in 1994 there were 607 fires (an average of 1.8 responses per day over these three years). Most fires are either structural or automobiles, although the above numbers include trash and brush fires. Approximately fifty percent of all structural fires are started by arsonists. However, arson-related fires have declined in the City in recent years. While significant damage occurs infrequently, it is most likely to occur where industrial chemicals and fuels are used, stored or transported. Such dangers, however, are mitigated by the stringent enforcement of State requirements and of the City's Fire Code, Building Code and Zoning Code.

Presently, there are no buildings or facilities in the City requiring special on-site firefighting personnel or equipment. The most challenging structures are two 14-story office buildings on La Cienega Boulevard north of Century Boulevard. Fortunately, most large structures in Inglewood have been constructed in recent decades, so they are provided with fire stairwells and exits; they

usually have adequate exterior clearances and accessibility for fire fighting equipment; and many have interior fire sprinkler systems. Throughout the City, residential structures are set back from property lines and are thereby separated from neighboring structures to minimize the potential for fire spread. The City's extensive grid pattern of streets provides a natural system of "firebreaks" in both commercial and residential areas in addition to excellent accessibility for fire fighting equipment. Municipal water pressure is satisfactory to fight fires in the City.

The City of Inglewood has its own fully staffed and equipped Fire Department with 86 personnel (officers, fire engineers, suppression persons, and paramedics) trained for low and medium density urban structural fire fighting and other emergencies. Inglewood has four fire stations that are on 24-hour alert and have an average response time of approximately four minutes. The dispersed siting of the stations aids the Fire Department in responding quickly to calls.

In the event of a major emergency, the City of Inglewood Fire Department is a participant in the Automatic Aid Agreement with Los Angeles County and the Mutual Aid Agreement with other cities in the South Bay region. Their emergency Response Plan covers an area extending from Santa Barbara County to the north, to all South Bay cities to the south, to a portion of San Bernardino County to the east, as well as all areas to the Pacific Ocean on the west.

2. FIRE DANGER: MITIGATION MEASURES

The following represent ways in which the potential for fires

and the hazards of fires can be reduced:

- Continue the ongoing program of fire prevention. Fire prevention is a broad field that covers a number of operations for reducing the probability of fire hazards in the city. Most prominent in this field is the use of fire personnel and support personnel to conduct regular on-site inspections of private property (commercial, industrial and residential) throughout the City.
- Continue the Building and Safety Division review of development plans for conformance with fire codes to minimize fire hazards. This review includes assuring sufficient maneuvering area for fire equipment and protecting adjacent properties from exposure with fire-retarding building materials and designs, in addition to the periodic review and upgrading of the fire codes.
- Continue a strong arson investigation program. The Fire Department has an arson unit that investigates fire sites to determine if a fire was accidental or intentionally started. The unit works closely with the Inglewood Police Department, the Inglewood Property Maintenance Division, WE TIP (confidential information hotline), and the media in order to identify, arrest and convict arsonists.
- Continue to upgrade flow capacity and line pressure in the City's water mains to meet ever-growing needs created by an increasing population and additional development.
- Continue to conduct pre-planning exercises for emergen-

cies for all significant fire hazards which involve dangers to large numbers of persons or residential neighborhoods.

- The City must continue to provide sufficient manpower and equipment and to ensure that Fire Department personnel are trained to meet all of the emergency situations upon which they may be called to respond.
- The City should continue to support and participate in mutual aid agreements with the fire departments of neighboring cities and Los Angeles County.
- The Fire Department should continue to offer its current public information programs and classes to residents, businesses and schools that promote fire safety, the maintenance and use of fire extinguishers, first aid, and cardiopulmonary resuscitation (CPR). The latter classes are supplemented with written materials provided by the American Red Cross.

D. HAZARDOUS MATERIALS

Hazardous materials can potentially pose severe dangers to a community. The control, regulation and management of hazardous materials is essential to protect a community from toxic exposures and spills and from explosions.

1. HAZARDOUS MATERIALS DANGER

Relative to other cities, Inglewood does not have a major problem with the storage or use of hazardous or extremely toxic materials. Inglewood has no petrochemical refineries, smelters or other heavy industries. However, there are some concentrations of hazardous materials used by local businesses that could pose a serious threat to the public safety. Additionally, the Santa Fe tracks constitute a potentially major problem as substantial quantities of hazardous and toxic materials are transported through Inglewood by railroad to and from the Los Angeles Harbor and the industries of the South Bay region.

The Inglewood Fire Department has identified approximately 250 businesses operating in the City that use, store and/or create some quantity of hazardous materials. Most of these are very small amounts of flammable materials, usually fuels or solvents placed in underground or above ground tanks. Figure 5 shows the locations of "high" hazardous materials and the locations of hospitals, day care facilities and nursing homes. This information was compiled prior to the preparation of this document and is subject to subsequent change. For updated information on the locations of hazardous materials, the Inglewood Fire Department should be consulted.

2. HAZARDOUS MATERIALS: MITIGATION MEASURES

The increasing uses of hazardous materials has created new public safety concerns. The following measures represent ways that can minimize the dangerous aspects of hazardous materials:

- Enforcement of the State law that requires businesses involved with hazardous materials to disclose the quantities of hazardous materials, their locations, their disposal and a management plan designed to decrease risks to the public.
- Private businesses and government agencies must continue to update and prepare the proper emergency responses in the event of a spill or explosion.
- The City of Inglewood Fire Department is the local administrative authority which, under the provisions of state law SB 1082, makes them responsible for regulating hazardous uses. The Fire Department regularly surveys the hazardous materials locations to enhance the safety of the public and the community.
- The City must have continuous coordination among its staff (e.g. Planning Division, Fire Department, etc.) to ensure that hazardous material operations are located in zones and facilities that are appropriate and safe for such use.
- The City must ensure that these uses are located safe distances from residences, schools, hospitals, large assemblages of people, etc.
- The City must inform the public of the potential perils

that accompany hazardous material sites. Public awareness as acquired through public education programs will enable the citizenry to learn to protect themselves by observing and implementing safety procedures during a spill or explosion.

E. OIL WELLS AND PIPELINES

The City of Inglewood is located within the southern portion of a large oil field that includes the Baldwin Hills to the northwest. At present, there are three active oil extraction sites in Inglewood: Hollywood Park north parking lot (90th Street), the Getty/Potrero site (also 90th Street) immediately northeast of Hollywood Park, and the Mobil Oil site bounded by Beach Avenue, Inglewood Avenue and Hyde Park Boulevard. Each site has multiple oil wells. The approval of a fourth site east of the Inglewood Park Cemetery (near Victoria Avenue) is pending, while necessary CEQA documents are being reviewed. Oil and any gas extracted at these sites are not retained in large on-site storage tanks but are piped directly to area refineries (none located in Inglewood) after being temporarily stored in small tanks (e.g. 500 barrels). These small tanks are appropriately bermed to contain any potential oil leakage.

Two major crude oil pipelines pass through western Inglewood (See Figure 5). Unocal (Union Oil) operates a 12-inch crude oil pipeline while a 16-inch diameter pipe capable of transporting 95,000 barrels of crude oil per day was recently constructed by the Mobil Oil Corporation from its oil fields in central California to its refinery in Torrance. An extensive environmental impact report including spill and other hazard mitigation measures was prepared for the pipeline so this Safety Element will just briefly summarize the safety issues and mitigation measures.

1. OIL HAZARDS

The primary hazards associated with oil wells and pipelines are fire and oil spills. Secondary hazards are the release of fumes into the air and the possible escape of oil into storm drain systems that could eventually lead to the contamination of the beaches and ocean.

Fortunately, oil is not stored on-site (except in small tanks while being pumped to off-site facilities) so there is no opportunity for a major oil leak or massive oil tank fire. Also, due to the age and depletion of this oil field, the remaining oil and gas are no longer under sufficient pressure for a well to blow out in the event it is damaged. For these reasons, any oil leak or spill will be small and readily contained within existing berms and a fire at any well will remain localized and can be contained and extinguished by the Inglewood Fire Department. The separation maintained between these wells and adjacent properties will probably preclude the need for the fire department to evacuate residents or businesses near these wells in the event of a fire, although it would be prudent to have persons immediately downwind avoid the smoke and fumes from burning crude oil.

In accordance with State law, the oil corporations have established procedures to respond to any pipeline failure and any resulting oil spill. As soon as a spill location is identified, the pumping stations will be shut down and oil containment activities will be commenced. Also, following any earthquake of magnitude 6.0 or greater in the vicinity, pumping is automatically stopped until it is determined that pumping can safely resume.

Containment will often entail the construction of earthen berms and or sandbag barriers. If the spill enters any water course, diversion and containment booms can be placed across the water course to minimize the escape of oil downstream. Once contained by berms, barriers and/or booms, the oil can then be removed. Depending on the location, size of spill, and type of threatened environment, the Inglewood Fire Department and Public Works Department and the Los Angeles County Flood Control District will be notified and will respond with equipment and personnel as needed.

2. OIL HAZARDS: MITIGATION MEASURES

In addition to the applicable mitigation measures for fire danger described above, the following are ways to reduce the potential for oil well and pipeline hazards:

- The City must require compliance by oil well drilling and operating companies with all requirements of the California Department of Conservation, Division of Oil and Gas, and to all provisions of the Oil Well Permit issued for each new well by the Inglewood City Council, including:
 - No oil well shall be drilled within 75 feet of any adjoining property or within 100 feet of any building (not part of the drilling operation) or within 300 feet of any school or place of public assemblage.
 - Embankments, berms, sumpholes and other protective measures will be installed by the well operator to

protect the site and the vicinity from possible contamination from oil spillage and related hazards.

- At all times, the well sites shall be available for inspection by the Inglewood Fire Department, the Engineering Department and the Division of Building and Safety.
- Well casings and casing joints shall conform to State standards and, upon abandonment, shall be plugged with cement and capped with concrete per these specific standards.
- The City should not issue any Special Use Permit to establish a new oil extraction site without thorough investigation and evaluation of the site and surrounding environment, of potential hazards and of appropriate mitigation measures, as also required by CEQA. If potential hazards cannot be reasonably mitigated, the Special Use Permit should not be granted by the City.
- Oil pipeline companies must continually monitor their pumping operations, periodically inspect the pipelines and periodically review and update their emergency response measures.

F. CRIME PREVENTION AND PUBLIC SAFETY

Inglewood is a fully developed urban city that has various issues regarding community protection that are not unlike other southern California cities. Crime and its impact on the community is of paramount concern to the Inglewood Police Department which is responsible for the preservation of law and order, as well as protecting the public health, safety, morals, peace and general welfare of the community.

1. CRIME STATISTICS

To enhance its ability to combat crime and serve Inglewood's citizenry, the Police Department added 20 new sworn officers in 1990 to enlarge its personnel to 211 police officers. This increase of officers has improved the Department's service to the community. The Police Department now has a three minute (or less) response time on emergency calls and a ten minute response time for non-emergency calls.

Unfortunately, crime continues to be a major problem in Inglewood so demands on police services have not diminished. In 1994, there were 7,284 Part I (major) crimes reported in Inglewood. This constituted a 14 percent decrease from the previous year (8,460 Part I crimes) and a 25 percent decrease from 1992 (when there was urban rioting throughout Los Angeles County in April/May 1992). Part I crimes include homicide, rape, robbery, burglary, aggravated assault, larceny, auto theft and arson. The significance of crime is apparent when Inglewood is compared with six other southern California cities of similar size (100,000 to 125,000 population).

Comparative numbers for 1994 were not available for the preparation of this document.

	Part I Crimes per 100,000 Population	
	1992	1993
Inglewood	8,590	7,817
El Monte	6,291	5,588
Escondido	7,851	7,849
Fullerton	7,283	6,821
Irvine	4,506	3,956
Orange	6,107	5,626
Simi Valley	3,485	2,902

The City of Los Angeles had 9,017 Part I crimes per 100,000 population in 1993.

2. MITIGATION MEASURES:

The following represent methods in which police services and efficiency to the community may be enhanced and the crime rate reduced.

- Evaluate new methodologies and technologies that might improve services to the community, reduce response times, and reduce crime rates.
- Improve existing public/police liaison programs. Create new community relations program.
- Provide sufficient manpower and the necessary special equipment to respond to emergencies of unlawfulness.
- Ensure that Police Department personnel are trained to meet all of the situations to which they may be called upon to respond.
- Continue the comprehensive and effective "sting" operations (police posing as drug buyers to arrest drug sellers) and "reverse-sting" operations (police posing as

drug sellers to arrest buyers) that have been instituted to combat drug traffic activity in the City.

- Increase the scope of the Repeat Offender Profile and Evaluation (ROPE) program that identifies and tracks offenders who are committing multiple felonies and are responsible for a disproportionate amount of crime in the City of Inglewood. Vigorous law enforcement, prosecution and supervision is intended to deter habitual offenders from committing additional crimes.
- Continue to monitor and gather information on gangs through the Police Department's Gang Intelligence Unit in order to anticipate and prevent their criminal activities and rid the City of their adverse impacts.
- The Police Department should continue to offer services and programs designed to promote public safety and improve community relations and involvement. The following are the services and programs that the Police Department currently provides:

- ***NEIGHBORHOOD WATCH***

A program that brings members of neighborhoods together to mutually supervise activities occurring around their neighbors' homes to deter residential crime and to alert police of possible criminal activity. There are approximately 250 organized Neighborhood Watch clubs in the City of Inglewood.

- ***PROPERTY OWNER ASSISTANCE PROGRAM***

A program that assists owners to alleviate "rock

house" cocaine sales problems by providing narcotic abatement actions based on mutual cooperation with the Police Department, the court system and the City Attorney's office.

- *VICTIMS ASSISTANCE PROGRAM*

A program that provides counseling for victims of crime and provides information and such resources to victims as food, clothing, shelter, financial compensation, medical aid, etc., where applicable.

- *POLICE CLERGY COUNCIL*

Composed of the Chief of Police, one Captain, the President of the Police Association, the Commanding Officer of Community Affairs Division, the Program Specialist and 15 religious leaders from the Inglewood community, the council convenes once a month. This group identifies and discusses problems that cause social unrest in the community and quietly seeks ways to correct them. The religious leaders of the City use this group to speak to issues of community concern regarding Police Department personnel, Police programs, patrol patterns, etc. This group has been valuable in keeping open channels of communication between the Police Department, the religious community and the citizenry of Inglewood.

- *POLICE ACTIVITIES LEAGUE*

Police officers voluntarily participate in a year-

round after school program known as the Police Activity League (PAL) where the officers serve as mentors for minors and provide them with recreational activities, movies, refreshments, slide shows, and conduct discussion "rap" sessions.

- *MERCHANTS AGAINST CRIME (M.A.C.)*

The M.A.C. group is composed of one Police Captain, one Police Sergeant, one Police Program Specialist, one City Councilmember, merchants in downtown Inglewood and an Inglewood Chamber of Commerce representative. They meet on a monthly basis to help give structure and leadership advice to the merchants conducting business in downtown Inglewood and to the Chamber of Commerce.

- *DRUG ABUSE RESISTANCE EDUCATION (D.A.R.E.)*

A program that educates young people regarding the dangers of drug use. Many thousands of children in Inglewood schools have participated in this highly successful program.

G. MEDICAL EMERGENCIES

Trauma centers have been an extremely important component of emergency medical treatment and services in the United States. However, the exorbitant costs of operating these centers has caused many medical facilities to close their trauma centers. This unfortunate trend will have dire consequences to the health of those injured and needing immediate medical treatment. Many citizens could sustain permanent physical injury or death because of the lack of available trauma centers.

1. LOCAL TRAUMA CENTERS

In 1988, the City of Inglewood experienced the loss of its local trauma center at Daniel Freeman Memorial Hospital. Persons visiting or residing in Inglewood who are injured and need the care of a trauma facility are generally transported to the Martin Luther King Jr. General Hospital located approximately five miles east of Inglewood in an unincorporated area of Los Angeles County, to the Harbor-U.C.L.A. Medical Center located approximately seven miles south of Inglewood also in an unincorporated area, or to the U.C.L.A. Medical Center in western Los Angeles, about nine miles to the northwest.

2. MEDICAL EMERGENCIES: MITIGATION MEASURES

The following represent ways in which the severe effects of injury to citizens caused by accidents and crime can be lessened:

- The City of Inglewood must work diligently with private citizen groups, medical facilities, and other governmental agencies to establish at least one trauma center

- inside or very near the city boundaries.
- The City must convene with neighboring cities to ensure that additional trauma centers will be established in their locales so that there are not just a few, widely dispersed centers that can be overwhelmed with injury patients, particularly in the event of a major disaster (e.g. earthquake, plane crash).
 - Funding from the state and federal governments should be requested to help establish new trauma centers, to reestablish those that have recently closed and to prevent any further closures of the existing facilities.

=====

IV. GENERAL MITIGATION MEASURES

=====

To minimize the adverse impact of all potential disasters, the City of Inglewood should continue, undertake and/or promote the following:

A. The City of Inglewood Disaster Preparedness Team composed of representatives from all City departments. The goals of the Team are to:

- 1) Prepare City agencies to adequately respond to disasters.
- 2) Help citizens prepare themselves and reduce dependence on limited City resources.
- 3) Reduce personal injury to City employees during a disaster.
- 4) Reduce damage to City property.
- 5) Provide for continuity of government during a major disaster.
- 6) Facilitate recovery of government, business and residents.

One of the Team's major objectives is to identify the number, needs, and/or special skills and resources of all City employees. Special skills, in addition to regular employee duties, can be very beneficial during an earthquake or other disaster. In September 1990, the Team conducted a major plane crash scenario involving

City staff, local medical personnel, as well as participants from other agencies. Other emergency drills and procedures are scheduled for the future.

- B. The City's Emergency Operations Plan which should be reviewed and updated periodically to ensure that the citizens of Inglewood can function and be protected for a minimum of three days without outside aid in the event of a major disaster.
- C. A plan for the evacuation of residences and businesses in the event of a continuing emergency or contamination.
- D. The development of community programs that train volunteers to assist police, fire, and civil defense personnel to perform effectively after natural or manmade disasters.
- E. A public safety disaster information release program for use in emergencies.
- F. Future disaster readiness programs that continue to emphasize preparedness, response and recovery. There should be both pre-event planning and post-event planning in these programs.

Pre-event preparation should include the following:

- 1) A pre-event ordinance that empowers responsible City departments to respond to a major emergency without being hindered by delays awaiting bureaucratic authorizations.
- 2) A general rebuilding plan that would expedite the reconstruction of this city in the event that there

was severe damage to buildings during an emergency.

- 3) A recovery organization that would make critical assessments during and immediately after a major emergency and then lay the groundwork and direction so that the rebuilding process could take place. This organization would also provide emotional, psychological and financial support for the victims of a major emergency.

Post-event preparation should incorporate the following:

- 1) A reconstruction team that would be directly responsible for the hands-on rebuilding of the city. It would provide crucial technical and planning assistance.
- 2) A system that would allow adjustments to the pre-event general rebuilding plan. The rebuilding plan would have to be modified in ways that reflect the crisis and the need.
- 3) A recovery organization comparable to that for the pre-event preparation (number 3 above).

- G. New outreach efforts to the private sector to enhance emergency planning, disaster readiness exercises, and measures for post-disaster business resumption.
- H. Neighborhood support organizations that can aid the greater population during an emergency.
- I. Program to increase public awareness and preparedness by establishing methods to distribute disaster information and safety tips to the general public and the schools.

- J. The identification of critical emergency supply needs and how to prioritize their transportation and distribution during emergencies.
- K. Continued communication and cooperation with all levels of government agencies responsible for the enforcement of federal, state, and local health, safety, and environmental laws.

=====

V. REFERENCES

=====

Much of the geological and seismic information provided in the Safety Element is taken from the 1989 Technical Report prepared by Claire Associates, Incorporated. The geological and seismic information in this Element is primarily presented in summary form. For additional information on a specific topic or issue, the Technical Report or other geological and seismic reference materials can be consulted. The most recent technical document available in the Inglewood Planning Division is the Supplemental Information report, dated February 18, 1994, prepared by California Registered Geologists Arthur O. Spaulding and Thomas L. Wright as an attachment to the Environmental Impact Report prepared for the proposed Victoria Project Site exploratory oil well drilling operations.

Another major reference document is the U.S. Geological Survey Professional Paper 1360 entitled "Evaluating Earthquake Hazards in the Los Angeles Region--An Earth-Science Perspective" (1985).

OTHER REFERENCE SOURCES:

United States Geologic Survey (USGS)

State of California

Department of Conservation
Division of Mines and Geology
Division of Oil and Gas
Department of Transportation (CALTRANS)
Public Utilities Commission

City of Inglewood

Fire Department
Police Department
Engineering Department
Public Services Department
Community Development and Housing Department
Building and Safety Division
Planning Division

Utilities

Inglewood Water Department
Southern California Water Company
Los Angeles City Department of Water and Power
Metropolitan Water District
Southern California Edison Company
Southern California Gas Company
Pacific Bell Telephone Company
Los Angeles County Flood Control District
Los Angeles County Division of Waste Management

Other

Atchison, Topeka and Santa Fe Railroad
Atlantic Richfield Oil Corporation
Los Angeles City Department of Airports
Mobil Oil Corporation
Union Oil Corporation



CITY OF INGLEWOOD CALIFORNIA
ONE MANCHESTER BOULEVARD / INGLEWOOD, CALIFORNIA 90301-1750
FAX (310) 412-5188



NEGATIVE DECLARATION

Prepared in accordance with California Administrative Code Section 15000 ff, and the Inglewood City Council Resolution No. 6631, the following Negative Declaration is made. This Declaration is documentation that when final, no Environmental Impact Report is required for the specific project.

Project Title (& No.) Revised Safety Element of the Inglewood General Plan

Location Applicable City-wide

Project Sponsor City of Inglewood

Address One Manchester Boulevard, Inglewood CA 90301

Agency Contact William Barnett, Associate Planner Telephone (310) 412-5230

Project Description:

Revised Safety Element to supersede previously adopted Public Safety and Seismic Safety elements, in conformance with State general plan guidelines. Purpose of Element is to identify potential public and environmental hazards and risks to permit subsequent avoidance of such hazards, to adopt mitigation measures, and/or to prepare emergency response plans.

Reasons for Issuance:

1. The Element is in compliance with State general plan guidelines.
2. The Element is itself a mitigation measure to protect the public safety and the environment from adverse impacts and hazards.

Findings:

It has been determined that the proposed project will have no significant adverse impact upon the environment.

Signature L. Paice

Title Planning Manager

Date May 8, 1995

1 RESOLUTION NO. 95-81

2 A RESOLUTION OF THE CITY COUNCIL OF THE
3 CITY OF INGLEWOOD, CALIFORNIA, AMENDING
4 THE INGLEWOOD GENERAL PLAN BY ADOPTING
5 A REVISED SAFETY ELEMENT

6 WHEREAS, Section 65302(g) of the Government Code of the State
7 of California requires the inclusion of a Safety Element in the
8 General Plan; and

9 WHEREAS, on June 7, 1995, the Planning Commission of the City
10 of Inglewood, California, conducted a legally noticed public
11 hearing to consider the approval of a Safety Element to supersede
12 the Public Safety Element adopted in 1974 and the Seismic Safety
13 Element adopted in 1973; and

14 WHEREAS, the Planning Commission adopted Resolution No. 1069
15 approving and recommending approval of the revised Safety Element
16 to the Inglewood City Council and reciting certain findings and
17 determinations therefor; and

18 WHEREAS, the City Council of the City of Inglewood has now
19 concluded a legally noticed public hearing to consider the recom-
20 mendations of the Planning Commission and any reports and testimony
21 presented; and

22 WHEREAS, the City Council concurs with the findings, deter-
23 minations and recommendations of the Planning Commission;

24 NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF INGLEWOOD,
25 CALIFORNIA, DOES RESOLVE AS FOLLOWS:

26 SECTION 1. The City Council hereby approves the Safety
27 Element specified herein to be an amendment to the General Plan of
28 the City of Inglewood, superseding and replacing the previously
29 approved 1974 Public Safety Element and the 1973 Seismic Safety
30 Element.

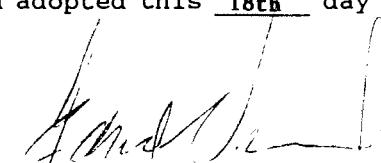
31 SECTION 2. A review of the amendment has resulted in the
32 determination that there will be no resultant significant adverse
33 impact upon the environment and therefore a Negative Declaration

1 stating this shall be filed with the County of Los Angeles.

2 SECTION 3. The Director of Community Development and Housing
3 is hereby instructed to file with the City Clerk a copy of the
4 amendment to the comprehensive General Plan as approved by the City
5 Council and set forth in Section 1 of this resolution. Upon the
6 filing of the amendment with the City Clerk, the revised Safety
7 Element shall become and thereafter be a part of the Inglewood
8 General Plan heretofore approved and adopted.

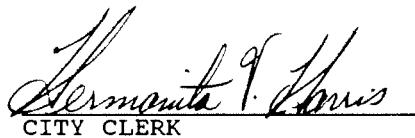
9 SECTION 4. The City Clerk shall certify to the adoption of
10 this resolution and, thenceforth and thereafter, the same shall be
11 in full force and effect.

12 Passed, approved and adopted this 18th day of July,
13 1995.



14
15
16 MAYOR OF THE CITY OF INGLEWOOD, CALIFORNIA

17 ATTEST:

18 
19
20 CITY CLERK

21 (SEAL)
22
23
24
25
26
27
28
29
30
31
32