

CITY OF SANTA MARIA
GENERAL PLAN

SAFETY ELEMENT

City of Santa Maria
110 East Cook Street
Santa Maria, CA 93454

Prepared by:

Community Development Department
110 South Pine Street, #101
Santa Maria, CA 93454
(805) 925-0951

Project Staff:

Marc P. Bierdzinski, AICP, Project Planner

William H. Orndorff, Director
James W. Stern, Assistant Director

Adopted November 21, 1995
City Council Resolution No. 95-149

PREFACE

The Safety Element was last revised by the Santa Maria City Council on April 21, 1987. This document updates the Safety Element adopted in 1987 and provides new information, and develops new goals, policies, objectives and implementation programs.

The goals, policies, objectives and implementation programs in the Safety Element Update are based on the findings contained in the Background Information Report (BIR). The BIR is included as the technical appendix to the Safety Element Update.

The previous Safety Element addressed safety hazards associated with Geology, Wildland/Urban Fires, Flooding and Emergency Services. The Safety Element Update addresses these hazards along with the following: Electromagnetic Fields, Oil Wells and Oil Sumps, Landfill Gas Migration, Safe Drinking Water Standards, Aircraft Safety, and Hazardous Materials.

The Safety Element Update fulfills the requirements of State Planning and Zoning Law (Government Code Section 65302(g)) which mandates that a local agency's general plan include a safety element.

TABLE OF CONTENTS

I.	INTRODUCTION	Page
	A. Introduction	S.1
	B. Assumptions	S.1
II.	SAFETY ELEMENT	
	A. Introduction	S.2
	B. Findings and Planning Considerations	S.2
	1. Geology/Seismology	S.2
	2. Flooding/Dam Inundation	S.8
	3. Wildland and Urban Fires	S.10
	4. Electromagnetic Fields	S.10
	5. Oil Wells and Oil Sumps	S.14
	6. Landfill Gas Migration	S.15
	7. Safe Drinking Water Levels	S.16
	8. Aircraft Safety	S.17
	9. Hazardous Materials	S.21
	10. Emergency Services	S.23
	C. Goals, Policies, Objectives, and Programs	S.30

LIST OF FIGURES

Figure No.	Title/Description	Page
SE-1	Local Fault Map	S.4
SE-2	Geologic Hazards Map	S.5
SE-3	Planning Area Floodplains	S.9
SE-4	PG&E Electrical Transmission Lines	S.12
SE-5	Magnetic Fields	S.13
SE-6	Airport Hazard Zones	S.18
SE-7	Santa Maria Public Airport Safety Areas	S.20

LIST OF TABLES

Table No.	Title/Description	Page
SE-1	Active and Potentially Active Faults - Central California Coast Area	S.3
SE-2	URM Classifications	S.7

APPENDIX

Background Information Report

I. INTRODUCTION

A. INTRODUCTION

The Safety Element is a comprehensive long range planning document which sets forth goals, policies, objectives, and implementation programs to protect the community from unreasonable risks associated with the following: seismically and geologically induced hazards, flooding, wildland and urban fires, electromagnetic fields, oil wells/sumps, landfill gas migration, safe drinking water, aircraft safety, and hazardous materials. The Safety Element also describes the emergency response capabilities of the various disaster service agencies in the Planning Area.

The Safety Element will assist in the allocation of public resources in the Planning Area to develop information regarding safety hazards and thereby provide a systematic approach to protecting the public health, safety, and welfare from such hazards.

B. ASSUMPTIONS

The Safety Element is based on certain information, considerations, and assumptions which will allow the City of Santa Maria to introduce safety considerations into the planning process in order to reduce loss of life, injuries, damage to property, and economic dislocations resulting from hazards within the Planning Area. These are:

- 1) Existing and future safety hazards and associated risks are based on the latest scientific and technical data available at the time of preparation of this report.
- 2) Hazards such as earthquakes, flooding, or wildland fires do not occur with any regularity and the goals, policies, objectives, and programs of the Safety Element are based on the probability that a particular hazard event may occur.
- 3) The Safety Element is consistent with, and takes into account, the goals, policies, objectives, and programs contained in the other Elements of the City's General Plan.
- 4) Based on the growth rate assumptions from the Land Use Element of the General Plan and the Sphere of Influence Study, the City's population is expected to be about 82,400 in the year 2000 and 100,000 by the year 2010. According to the 1994 Growth Forecast prepared by the Santa Barbara County Association of Governments, Orcutt is expected to have a population of about 37,600 by the year 2010. The population of the Santa Maria/Orcutt area is therefore projected to be 137,600 by the year 2010.

II. SAFETY ELEMENT

A. INTRODUCTION

California Planning and Zoning Law (Government Code Section 65302(g)) states that local jurisdictions must have a safety element for the protection of the community from unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards, and other geologic hazards known to the City; flooding; and wildland and urban fires. The mapping of known seismic and other geologic hazards must also be included. The safety element shall also address evacuation routes, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

The Safety Element Update includes the above mentioned topics and also includes an analysis of the hazards associated with electromagnetic fields, oil wells/sumps, landfill gas migration, safe drinking water levels, aircraft safety, and hazardous materials. A description of emergency procedures during a disaster is also provided.

B. FINDINGS AND PLANNING CONSIDERATIONS

This section provides a summary of findings and planning considerations for each identified safety hazard. Please refer to the technical appendix¹ for a complete discussion of these topics.

1. Geology/Seismology

The Santa Maria Valley is an east-west trending alluvial² valley bounded to the north by the San Rafael Range and to the south by the Casmalia Range and the Solomon Hills.

The Santa Maria River traverses the valley from east to west, emptying into the Pacific Ocean just west of the town of Guadalupe. The Santa Maria River is formed by the convergence of the Cuyama and the Sisquoc Rivers at Fugler Point near Garey.

The Santa Maria basin is a significant hydrocarbon (i.e. oil and gas) producing coastal (and off-shore) basin in California. The basin lies at the juncture between the northwest-trending southern Coast Range province and the east-west-trending Transverse Range province. The basin contains a relatively thick Miocene through Holocene age sequence of sedimentary rocks, some of which are prolific petroleum producing formations, and others that are highly productive ground water aquifers.

The Santa Maria Valley is within a structural fold³ and thrust fault area; the axes of most of the structural elements in the region run northwest-southeast, parallel to the valley. The Santa Maria basin and adjacent southern Coast Ranges have been subjected to considerable uplift⁴ during the last 2 to 5 million years, and are considered to be seismically active. Relatively little direct evidence of active faulting (such as offset of bedding or structures observed at a surface fault) has been observed in the region; however, broad bands of seismicity unrelated to surface faults and other evidence indicate the region is seismically

¹ Background Information Report

² Sand and gravel transported by a river and deposited at points along a flood plain

³ Rock layers that are arched or bent

⁴ The movement of an area upwards as a result of earthquakes or folding

active. Namson and Davis⁵ interpret the data as indicative of a seismically active, basement-involved fold and thrust belt⁶, where the main seismic activity may be associated with "blind" thrust faults.⁷ These are the type of faults that caused the Coalinga and Northridge earthquakes.

Several active, potentially active and inactive faults exist within the basin and region. An active fault is defined as a fault which is or has been active during the last 11,000 years. A potentially active fault is a fault that was active between 11,000 to 500,000 years ago. An inactive fault is a fault which has not moved in the last 500,000 years. Table SE-1 lists the active and potentially active faults in the region.

**TABLE SE-1
ACTIVE AND POTENTIALLY ACTIVE FAULTS
CENTRAL CALIFORNIA COAST AREA (1)**

Fault	Distance from City Limits	Status
San Andreas	40 miles northeast	Active
Nacimiento-Rinconada	18 miles northeast	Active
Hosgri	17 miles west	Active
Santa Ynez (West)	29 miles south	Active
Big Pine	43 miles southeast	Potentially Active
Santa Maria	Within City Limits	Potentially Active
Santa Maria River	0.5 miles north	Potentially Active
Bradley Canyon	5 miles east	Potentially Active
Casmalia	5 miles south	Potentially Active
Lion's Head	7 miles south	Potentially Active

(1) Source: Namson and Davis (1990), PG&E (1988).

Within the Planning Area, faults generally trend northwest. The major faults include the Santa Maria Fault, the Santa Maria River Fault, and the Casmalia Fault (Figures SE-1 and SE-2). None of these faults qualify for Earthquake Fault Zone status as identified by the State Geologist under the Alquist-Priolo Earthquake Fault Zones Act.

Groundshaking

Available geologic information indicates that the potential for strong ground shaking in coastal southern California is high. The potential for severe ground shaking would occur as a result of movement along one of the major California faults (e.g. San Andreas) and such movement could generate significant damage throughout the City. More recently, however, scientists theorize that unmapped "blind" thrust faults may have a greater potential for movement than major, known faults. Santa Maria has a 40 percent chance of experiencing peak ground accelerations at least 20 percent of gravity. That is enough shaking to cause structural damage.⁸

⁵ Namson and Davis, 1990, Late Cenozoic Fold and Thrust Belt of the Southern Coast Ranges and Santa Maria Basin, California: AAPG Bulletin, v. 74, p. 467-492

⁶ Rocks layers which exhibit folding and thrust faulting

⁷ Faults that do not reach the surface

⁸ Southern California Earthquake Center, 1995

Figure SE-1
Local Fault Map

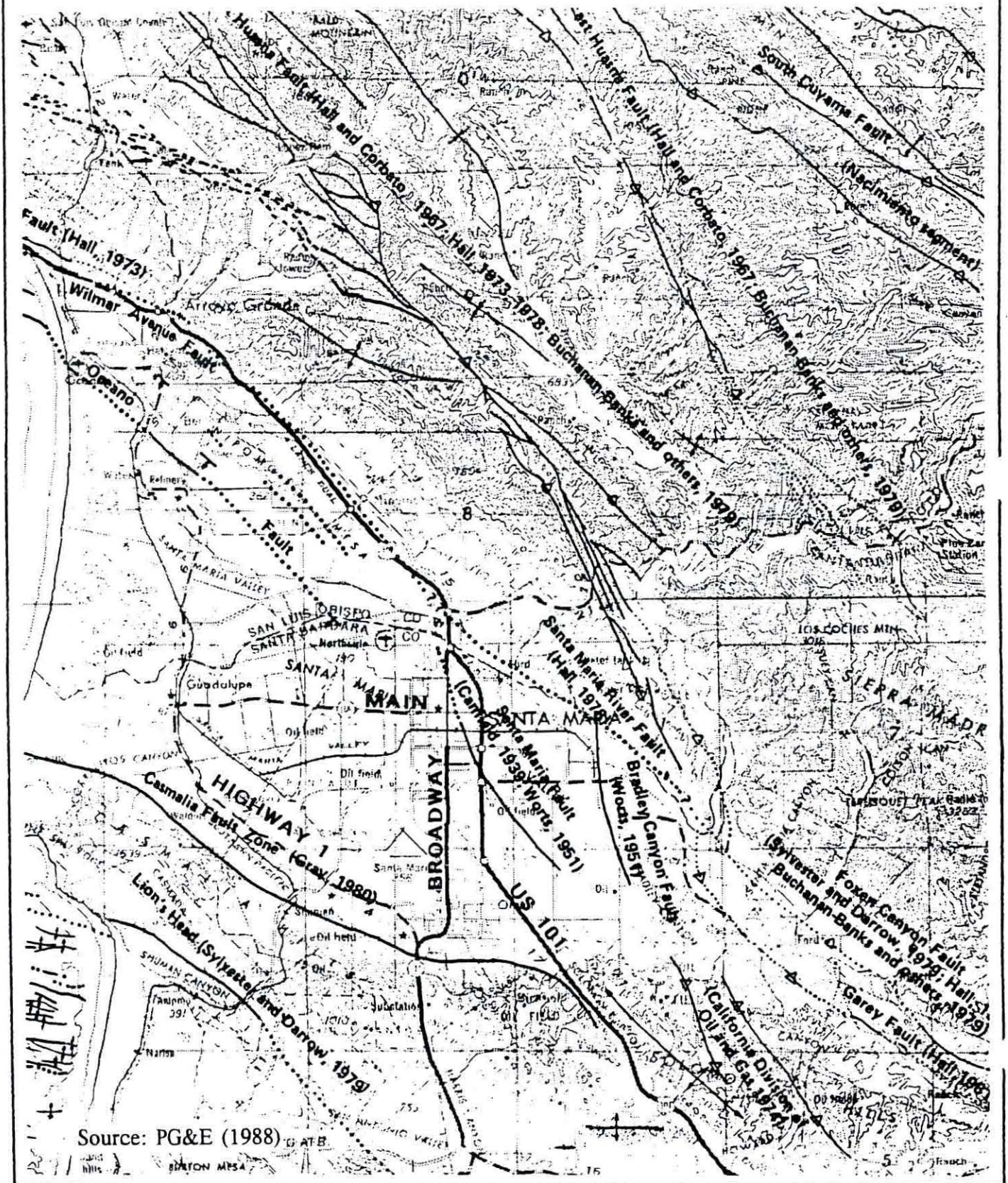
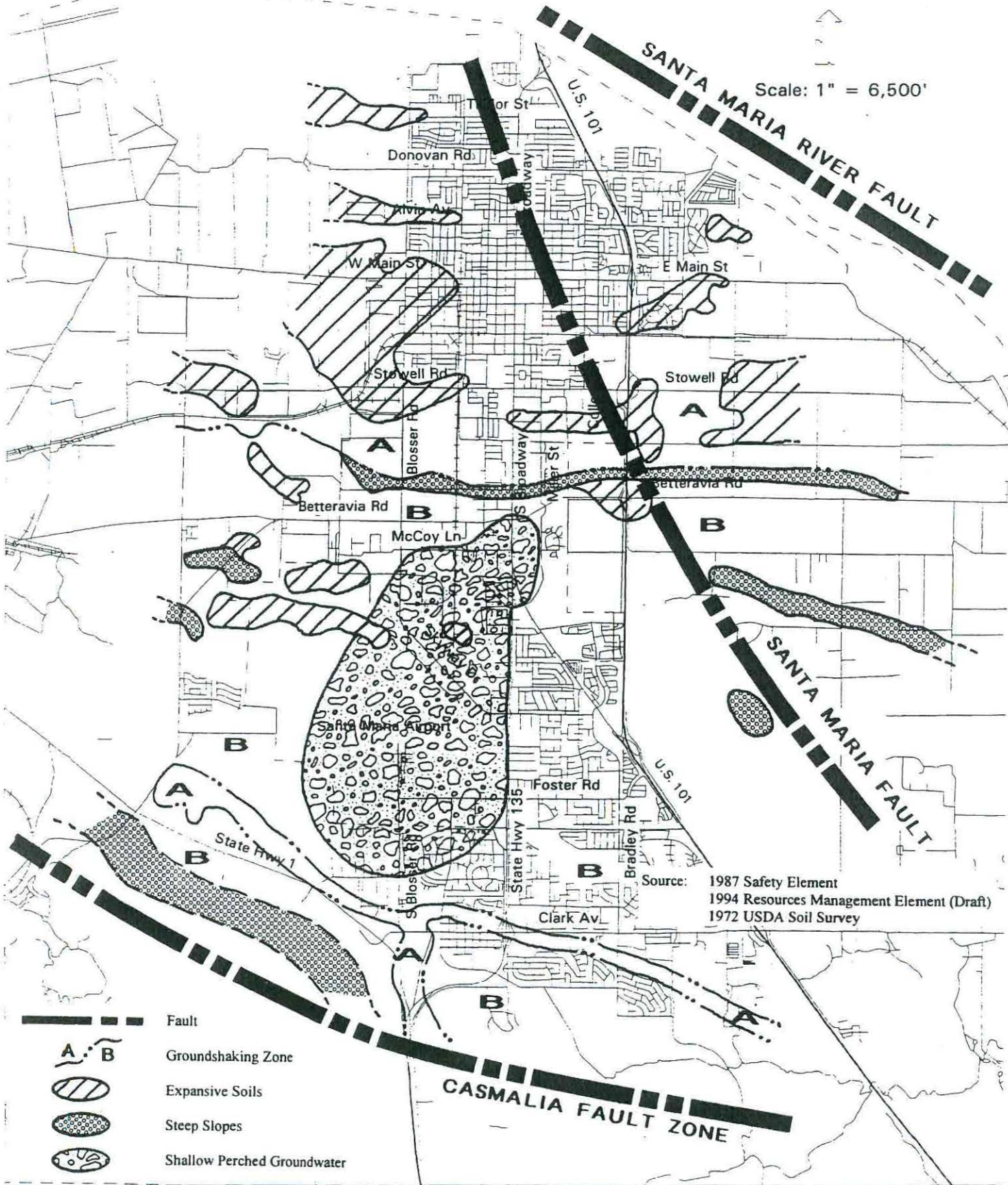


Figure SE-2
Geologic Hazards Map



Santa Maria can be divided into two distinct seismic zones (Figure SE-2):

Zone A - All areas underlain by Holocene age alluvium.

Zone B - All areas underlain by Pleistocene age non-marine terrace deposits.

Zone A is considered the most hazardous zone with respect to groundshaking potential.

Landslides

Landslides and mudslides could potentially occur in areas with steep slopes or in areas containing escarpments (Figure SE-2). The only potential area within the City Limits is the escarpment that runs in an east-west direction in the southern portion of the City.

Liquefaction

Liquefaction⁹ potential from groundshaking is generally low in the Planning Area due to the relatively deep groundwater levels that are ordinarily over 70 feet below the ground surface. However, several areas of perched groundwater in the vicinity of the Santa Maria Public Airport could cause liquefaction during an earthquake (Figure SE-2).

Subsidence

The Santa Maria area has not had significant subsidence¹⁰ problems despite historical oil drilling in the area. Although subsidence could occur, it is perceived to be an insignificant risk due to the absence of reported problems. Since both oil drilling by private parties and groundwater extraction largely by private parties have occurred in the southern portion of the city, pumping activities will be considered in the event subsidence problems occur.

Expansive Soils¹¹

Based on the "Soil Survey of Northern Santa Barbara Area, California", United States Department of Agriculture, July 1972, the following soils in the planning area have a moderate to high potential for expansiveness:

Narlon sand (NvC), hardpan variant - Low to high potential.

Pleasanton sandy loam (PnA, PnC) - Low to moderate potential.

Sorrento loam (SvA, SvC) - Moderate potential.

Figure SE-2 shows the general location of these soils.

Unreinforced Masonry

On December 5, 1989, the Santa Maria City Council adopted an unreinforced masonry implementation ordinance¹². The ordinance adopted standards and a time schedule for reinforcing URM buildings based on the type of building and its occupant load.

⁹ The transformation of water saturated sand and silt from a solid to a liquid during an earthquake

¹⁰ Sinking of the ground surface

¹¹ Expansive soils swell when wet and shrink when dried

¹² Ordinance Number 89-29, Municipal Code Section 9-1.221

The City has identified 28 URM buildings within the City. These buildings are described in the technical appendix. Three buildings are designated as Class II, twenty-one buildings are designated as Class III, and four buildings are designated as Class IV. No buildings are designated as Class I (Table SE-2).

**TABLE SE-2
URM CLASSIFICATIONS**

Rating Classification	Occupant Load	Submittal Deadline for Rehab Plans	Building Permit Issuance Deadline	Commence Within	Complete Within
I	Any	1/1/93	1/1/1995	180 days	3 years
II	100 or more	1/1/93	1/1/1995	180 days	3 years
III	20 to 100	1/1/93	1/1/2000	180 days	3 years
IV	Less than 20	1/1/93	1/1/2000	180 days	3 years

Radon Gas

Santa Barbara County has been designated as Zone 1 which is the zone with the highest potential for radon concentrations. The EPA and the State Department of Health Services decided to designate Santa Barbara County as Zone 1 based on the elevated radon levels that are associated with the Rincon Shale geologic formation. This rock unit is widely scattered across southern Santa Barbara County, but is not present in the Santa Maria area.

Although the above information appears quite specific, it cannot be applied to determine radon levels of a neighborhood, housing tract, or individual house. The only way to determine if a house has elevated indoor radon levels is to test. Testing consists of gathering a sample of air and having it analyzed for radon gas.

Damage Scenario

Based on the City's proximity to the southern San Andreas Fault (40 miles) and other unmapped underground faults, and considering the soil structure of the area, the Planning Area could receive a shaking intensity that could cause the overthrow of movable objects, the falling of plaster, general panic, and damage to buildings. For most of Santa Maria, the intensity of this anticipated earthquake could cause disruption beyond anything recently experienced in the area and would require total integrated planning and response from both the public and private sectors in order to minimize possible deaths, injuries and property destruction.

U.S. Highway 101. Considerable damage to road surfaces, overpasses and bridges would be expected in all areas of liquefaction, possibly restricting east-west access to and from the Marian Medical Center.

Airport. The Santa Maria Airport would be seriously affected due to its location in an area that is subject to liquefaction because of the sandy soil and high (perched) water table. It is questionable whether the airport could be used for any major logistical resupply except by helicopter.

Santa Maria Valley Railroad/Southern Pacific Railroad. Southern Pacific mainline railroad service would be disrupted by surface ruptures, landslides, rockfalls, failures of overpasses and slides at the ends of tunnels. It is doubtful that rail service to Santa Maria could be restored in less than 8 to 10 days.

Electrical Power. A short term, and potentially long term effect, would be major power outages and power reductions in most areas of the Central Coast. Those lines that remain intact might be rendered temporarily out

of service after each aftershock. The major long-term impact would be on distant power sources, both due to the reduction in transmission capacities and the probable shortage of generator fuel. Transmission lines in Santa Maria would stand a good chance of being one of the earlier facilities restored.

Natural Gas. Major pipelines leading to the area as well as those in the area could be ruptured. It is uncertain how long the areas could be supported by underground storage.

Petroleum Fuels. The processing of petroleum fuels in the area is uncertain. If this source of fuels became unavailable, extremely serious consequences could result due to the inability to resupply fuels by land transport.

Telephone Systems. Any surviving telephone service would be overloaded by calls from both inside and outside the area.

Radio Systems. Public safety radio systems would continue to function within the Planning Area. Microwave channels would be disrupted.

Commercial Broadcasters. Lack of emergency power would restrict the operation of some television and radio stations. The scarcity of fuels and the unavailability of resupply would limit the operational time of emergency generators.

Water Supply and Waste Disposal. A major earthquake would seriously disrupt the water distribution system. The Wastewater Treatment Plant would probably suffer some damage and could be inoperative. Lack of electrical power also would cause the plant to shut down. Collection lines throughout the area could be impaired causing significant contamination problems.

2. Flooding/Dam Inundation

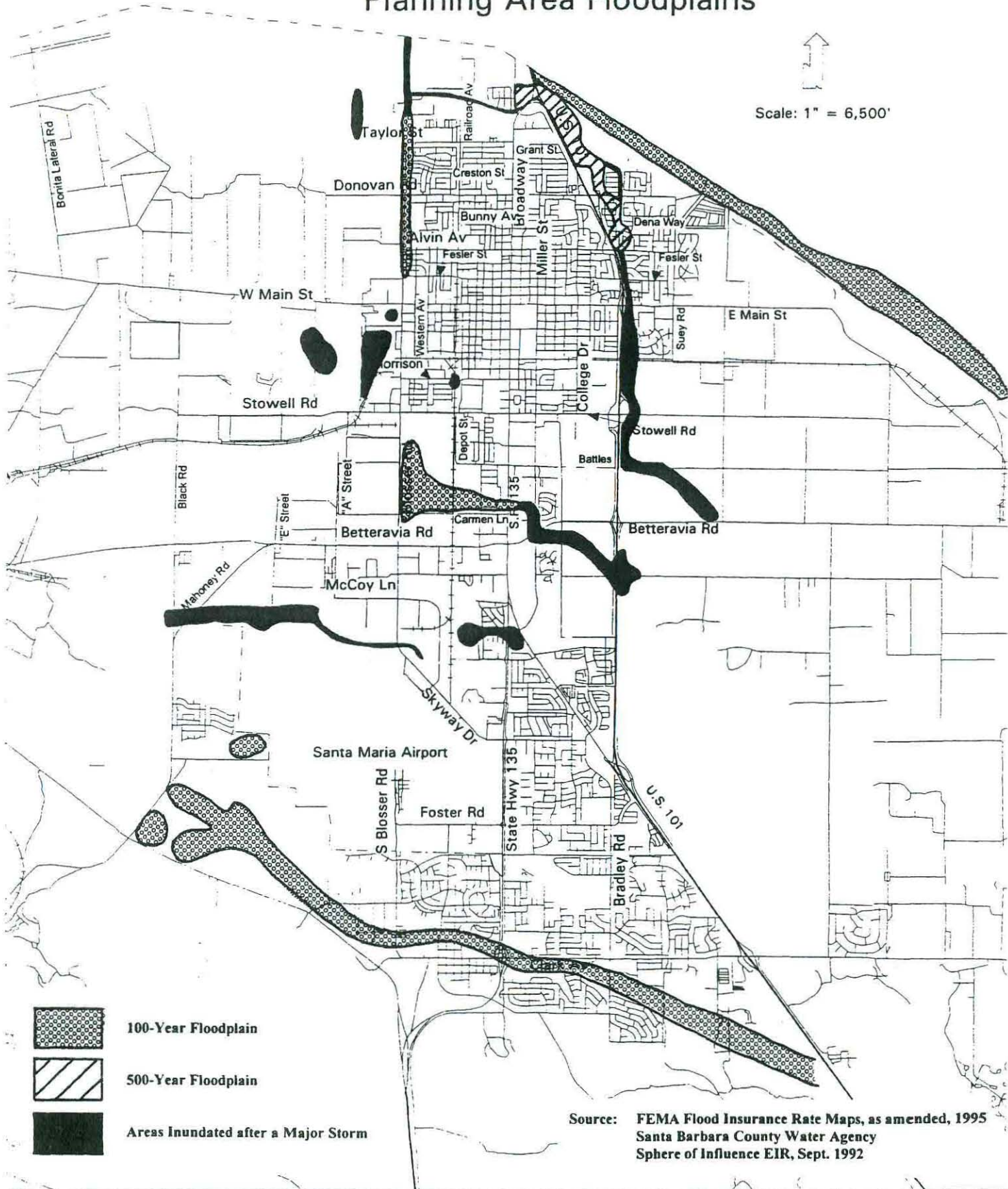
Flooding hazards within the Planning Area consist of localized and widespread flooding due to storms, failure of the Santa Maria Levee, and from dam inundation caused by the failure of Twitchell Dam. The potential for flooding and dam inundation comes from storm water that is collected in the 260 square mile Santa Maria Valley watershed that is located in both Santa Barbara and San Luis Obispo Counties. The Sisquoc River and Cuyama River watersheds combine to form the Santa Maria Valley watershed.

Flooding

The flooding associated with the 100-year storm is of primary consideration. The 100-year flood determination is the accepted standard for flood protection by agencies involved in the assessment of flood risks. The Department of Housing and Urban Development (HUD), in their issuance of flood insurance as part of the Flood Protection Disaster Act of 1974, has adopted the 100-year flood level as the determinant of the floodplain area having a hazard potential requiring specific or protective measures. The City has also adopted the 100-year flood plain through its participation in the Flood Insurance Rate Program administered by the Federal Emergency Management Agency.

Flood prone areas in the Planning Area are noted in Figure SE-3. The 100-year flood plain is generally in the areas of the Santa Maria River and the Orcutt Creek. The Santa Maria River Levee, built by the U.S. Army Corp of Engineers, is designed to protect the City from the 100-year flood. The Flood Control District patrols the levee any time there is more than a few hundred cubic feet per second flowing in the river. Levee erosion has been experienced and if the levee was allowed to rupture, would create major flooding problems east of U.S. Highway 101. However, the levee does not prevent localized flooding from the various flood control facilities in the Planning Area. These local facilities include a series of storm drains, open channels, and retardation basins. Localized flooding cannot be accurately mapped as it depends on the magnitude and location of the causative storm.

Figure SE-3
Planning Area Floodplains



I. INTRODUCTION

A. INTRODUCTION

The Safety Element is a comprehensive long range planning document which sets forth goals, policies, objectives, and implementation programs to protect the community from unreasonable risks associated with the following: seismically and geologically induced hazards, flooding, wildland and urban fires, electromagnetic fields, oil wells/sumps, landfill gas migration, safe drinking water, aircraft safety, and hazardous materials. The Safety Element also describes the emergency response capabilities of the various disaster service agencies in the Planning Area.

The Safety Element will assist in the allocation of public resources in the Planning Area to develop information regarding safety hazards and thereby provide a systematic approach to protecting the public health, safety, and welfare from such hazards.

B. ASSUMPTIONS

The Safety Element is based on certain information, considerations, and assumptions which will allow the City of Santa Maria to introduce safety considerations into the planning process in order to reduce loss of life, injuries, damage to property, and economic dislocations resulting from hazards within the Planning Area. These are:

- 1) Existing and future safety hazards and associated risks are based on the latest scientific and technical data available at the time of preparation of this report.
- 2) Hazards such as earthquakes, flooding, or wildland fires do not occur with any regularity and the goals, policies, objectives, and programs of the Safety Element are based on the probability that a particular hazard event may occur.
- 3) The Safety Element is consistent with, and takes into account, the goals, policies, objectives, and programs contained in the other Elements of the City's General Plan.
- 4) Based on the growth rate assumptions from the Land Use Element of the General Plan and the Sphere of Influence Study, the City's population is expected to be about 82,400 in the year 2000 and 100,000 by the year 2010. According to the 1994 Growth Forecast prepared by the Santa Barbara County Association of Governments, Orcutt is expected to have a population of about 37,600 by the year 2010. The population of the Santa Maria/Orcutt area is therefore projected to be 137,600 by the year 2010.

II. SAFETY ELEMENT

A. INTRODUCTION

California Planning and Zoning Law (Government Code Section 65302(g)) states that local jurisdictions must have a safety element for the protection of the community from unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards, and other geologic hazards known to the City; flooding; and wildland and urban fires. The mapping of known seismic and other geologic hazards must also be included. The safety element shall also address evacuation routes, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

The Safety Element Update includes the above mentioned topics and also includes an analysis of the hazards associated with electromagnetic fields, oil wells/sumps, landfill gas migration, safe drinking water levels, aircraft safety, and hazardous materials. A description of emergency procedures during a disaster is also provided.

B. FINDINGS AND PLANNING CONSIDERATIONS

This section provides a summary of findings and planning considerations for each identified safety hazard. Please refer to the technical appendix¹ for a complete discussion of these topics.

1. Geology/Seismology

The Santa Maria Valley is an east-west trending alluvial² valley bounded to the north by the San Rafael Range and to the south by the Casmalia Range and the Solomon Hills.

The Santa Maria River traverses the valley from east to west, emptying into the Pacific Ocean just west of the town of Guadalupe. The Santa Maria River is formed by the convergence of the Cuyama and the Sisquoc Rivers at Fugler Point near Garey.

The Santa Maria basin is a significant hydrocarbon (i.e. oil and gas) producing coastal (and off-shore) basin in California. The basin lies at the juncture between the northwest-trending southern Coast Range province and the east-west-trending Transverse Range province. The basin contains a relatively thick Miocene through Holocene age sequence of sedimentary rocks, some of which are prolific petroleum producing formations, and others that are highly productive ground water aquifers.

The Santa Maria Valley is within a structural fold³ and thrust fault area; the axes of most of the structural elements in the region run northwest-southeast, parallel to the valley. The Santa Maria basin and adjacent southern Coast Ranges have been subjected to considerable uplift⁴ during the last 2 to 5 million years, and are considered to be seismically active. Relatively little direct evidence of active faulting (such as offset of bedding or structures observed at a surface fault) has been observed in the region; however, broad bands of seismicity unrelated to surface faults and other evidence indicate the region is seismically

¹ Background Information Report

² Sand and gravel transported by a river and deposited at points along a flood plain

³ Rock layers that are arched or bent

⁴ The movement of an area upwards as a result of earthquakes or folding

active. Namson and Davis⁵ interpret the data as indicative of a seismically active, basement-involved fold and thrust belt⁶, where the main seismic activity may be associated with "blind" thrust faults.⁷ These are the type of faults that caused the Coalinga and Northridge earthquakes.

Several active, potentially active and inactive faults exist within the basin and region. An active fault is defined as a fault which is or has been active during the last 11,000 years. A potentially active fault is a fault that was active between 11,000 to 500,000 years ago. An inactive fault is a fault which has not moved in the last 500,000 years. Table SE-1 lists the active and potentially active faults in the region.

**TABLE SE-1
ACTIVE AND POTENTIALLY ACTIVE FAULTS
CENTRAL CALIFORNIA COAST AREA (1)**

Fault	Distance from City Limits	Status
San Andreas	40 miles northeast	Active
Nacimiento-Rinconada	18 miles northeast	Active
Hosgri	17 miles west	Active
Santa Ynez (West)	29 miles south	Active
Big Pine	43 miles southeast	Potentially Active
Santa Maria	Within City Limits	Potentially Active
Santa Maria River	0.5 miles north	Potentially Active
Bradley Canyon	5 miles east	Potentially Active
Casmalia	5 miles south	Potentially Active
Lion's Head	7 miles south	Potentially Active

(1) Source: Namson and Davis (1990), PG&E (1988).

Within the Planning Area, faults generally trend northwest. The major faults include the Santa Maria Fault, the Santa Maria River Fault, and the Casmalia Fault (Figures SE-1 and SE-2). None of these faults qualify for Earthquake Fault Zone status as identified by the State Geologist under the Alquist-Priolo Earthquake Fault Zones Act.

Groundshaking

Available geologic information indicates that the potential for strong ground shaking in coastal southern California is high. The potential for severe ground shaking would occur as a result of movement along one of the major California faults (e.g. San Andreas) and such movement could generate significant damage throughout the City. More recently, however, scientists theorize that unmapped "blind" thrust faults may have a greater potential for movement than major, known faults. Santa Maria has a 40 percent chance of experiencing peak ground accelerations at least 20 percent of gravity. That is enough shaking to cause structural damage.⁸

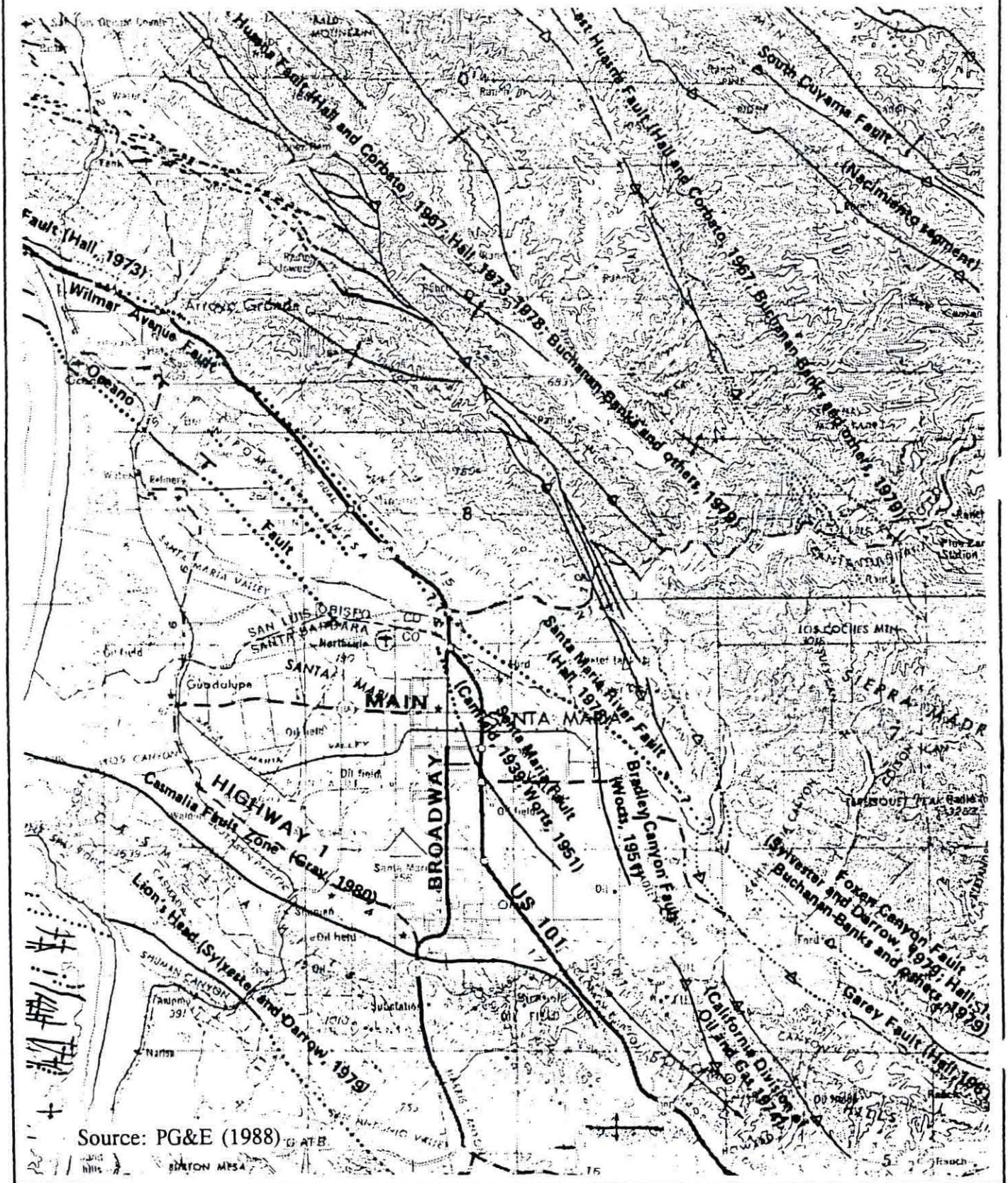
⁵ Namson and Davis, 1990, Late Cenozoic Fold and Thrust Belt of the Southern Coast Ranges and Santa Maria Basin, California: AAPG Bulletin, v. 74, p. 467-492

⁶ Rocks layers which exhibit folding and thrust faulting

⁷ Faults that do not reach the surface

⁸ Southern California Earthquake Center, 1995

Figure SE-1
Local Fault Map



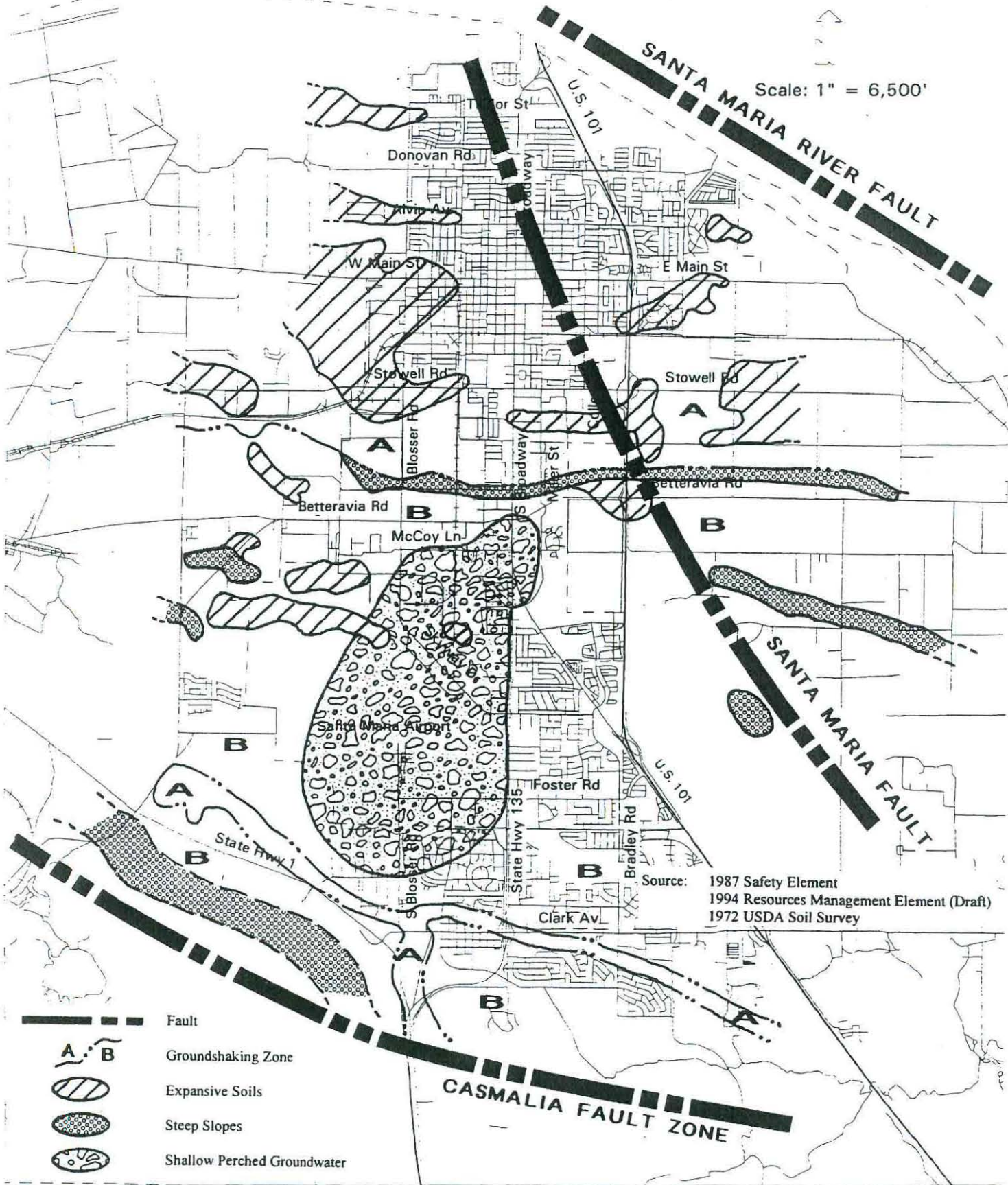
Source: PG&E (1988) GATB

BIRTON MESA

15

5

Figure SE-2
Geologic Hazards Map



Santa Maria can be divided into two distinct seismic zones (Figure SE-2):

Zone A - All areas underlain by Holocene age alluvium.

Zone B - All areas underlain by Pleistocene age non-marine terrace deposits.

Zone A is considered the most hazardous zone with respect to groundshaking potential.

Landslides

Landslides and mudslides could potentially occur in areas with steep slopes or in areas containing escarpments (Figure SE-2). The only potential area within the City Limits is the escarpment that runs in an east-west direction in the southern portion of the City.

Liquefaction

Liquefaction⁹ potential from groundshaking is generally low in the Planning Area due to the relatively deep groundwater levels that are ordinarily over 70 feet below the ground surface. However, several areas of perched groundwater in the vicinity of the Santa Maria Public Airport could cause liquefaction during an earthquake (Figure SE-2).

Subsidence

The Santa Maria area has not had significant subsidence¹⁰ problems despite historical oil drilling in the area. Although subsidence could occur, it is perceived to be an insignificant risk due to the absence of reported problems. Since both oil drilling by private parties and groundwater extraction largely by private parties have occurred in the southern portion of the city, pumping activities will be considered in the event subsidence problems occur.

Expansive Soils¹¹

Based on the "Soil Survey of Northern Santa Barbara Area, California", United States Department of Agriculture, July 1972, the following soils in the planning area have a moderate to high potential for expansiveness:

Narlon sand (NvC), hardpan variant - Low to high potential.

Pleasanton sandy loam (PnA, PnC) - Low to moderate potential.

Sorrento loam (SvA, SvC) - Moderate potential.

Figure SE-2 shows the general location of these soils.

Unreinforced Masonry

On December 5, 1989, the Santa Maria City Council adopted an unreinforced masonry implementation ordinance¹². The ordinance adopted standards and a time schedule for reinforcing URM buildings based on the type of building and its occupant load.

⁹ The transformation of water saturated sand and silt from a solid to a liquid during an earthquake

¹⁰ Sinking of the ground surface

¹¹ Expansive soils swell when wet and shrink when dried

¹² Ordinance Number 89-29, Municipal Code Section 9-1.221

The City has identified 28 URM buildings within the City. These buildings are described in the technical appendix. Three buildings are designated as Class II, twenty-one buildings are designated as Class III, and four buildings are designated as Class IV. No buildings are designated as Class I (Table SE-2).

**TABLE SE-2
URM CLASSIFICATIONS**

Rating Classification	Occupant Load	Submittal Deadline for Rehab Plans	Building Permit Issuance Deadline	Commence Within	Complete Within
I	Any	1/1/93	1/1/1995	180 days	3 years
II	100 or more	1/1/93	1/1/1995	180 days	3 years
III	20 to 100	1/1/93	1/1/2000	180 days	3 years
IV	Less than 20	1/1/93	1/1/2000	180 days	3 years

Radon Gas

Santa Barbara County has been designated as Zone 1 which is the zone with the highest potential for radon concentrations. The EPA and the State Department of Health Services decided to designate Santa Barbara County as Zone 1 based on the elevated radon levels that are associated with the Rincon Shale geologic formation. This rock unit is widely scattered across southern Santa Barbara County, but is not present in the Santa Maria area.

Although the above information appears quite specific, it cannot be applied to determine radon levels of a neighborhood, housing tract, or individual house. The only way to determine if a house has elevated indoor radon levels is to test. Testing consists of gathering a sample of air and having it analyzed for radon gas.

Damage Scenario

Based on the City's proximity to the southern San Andreas Fault (40 miles) and other unmapped underground faults, and considering the soil structure of the area, the Planning Area could receive a shaking intensity that could cause the overthrow of movable objects, the falling of plaster, general panic, and damage to buildings. For most of Santa Maria, the intensity of this anticipated earthquake could cause disruption beyond anything recently experienced in the area and would require total integrated planning and response from both the public and private sectors in order to minimize possible deaths, injuries and property destruction.

U.S. Highway 101. Considerable damage to road surfaces, overpasses and bridges would be expected in all areas of liquefaction, possibly restricting east-west access to and from the Marian Medical Center.

Airport. The Santa Maria Airport would be seriously affected due to its location in an area that is subject to liquefaction because of the sandy soil and high (perched) water table. It is questionable whether the airport could be used for any major logistical resupply except by helicopter.

Santa Maria Valley Railroad/Southern Pacific Railroad. Southern Pacific mainline railroad service would be disrupted by surface ruptures, landslides, rockfalls, failures of overpasses and slides at the ends of tunnels. It is doubtful that rail service to Santa Maria could be restored in less than 8 to 10 days.

Electrical Power. A short term, and potentially long term effect, would be major power outages and power reductions in most areas of the Central Coast. Those lines that remain intact might be rendered temporarily out

of service after each aftershock. The major long-term impact would be on distant power sources, both due to the reduction in transmission capacities and the probable shortage of generator fuel. Transmission lines in Santa Maria would stand a good chance of being one of the earlier facilities restored.

Natural Gas. Major pipelines leading to the area as well as those in the area could be ruptured. It is uncertain how long the areas could be supported by underground storage.

Petroleum Fuels. The processing of petroleum fuels in the area is uncertain. If this source of fuels became unavailable, extremely serious consequences could result due to the inability to resupply fuels by land transport.

Telephone Systems. Any surviving telephone service would be overloaded by calls from both inside and outside the area.

Radio Systems. Public safety radio systems would continue to function within the Planning Area. Microwave channels would be disrupted.

Commercial Broadcasters. Lack of emergency power would restrict the operation of some television and radio stations. The scarcity of fuels and the unavailability of resupply would limit the operational time of emergency generators.

Water Supply and Waste Disposal. A major earthquake would seriously disrupt the water distribution system. The Wastewater Treatment Plant would probably suffer some damage and could be inoperative. Lack of electrical power also would cause the plant to shut down. Collection lines throughout the area could be impaired causing significant contamination problems.

2. Flooding/Dam Inundation

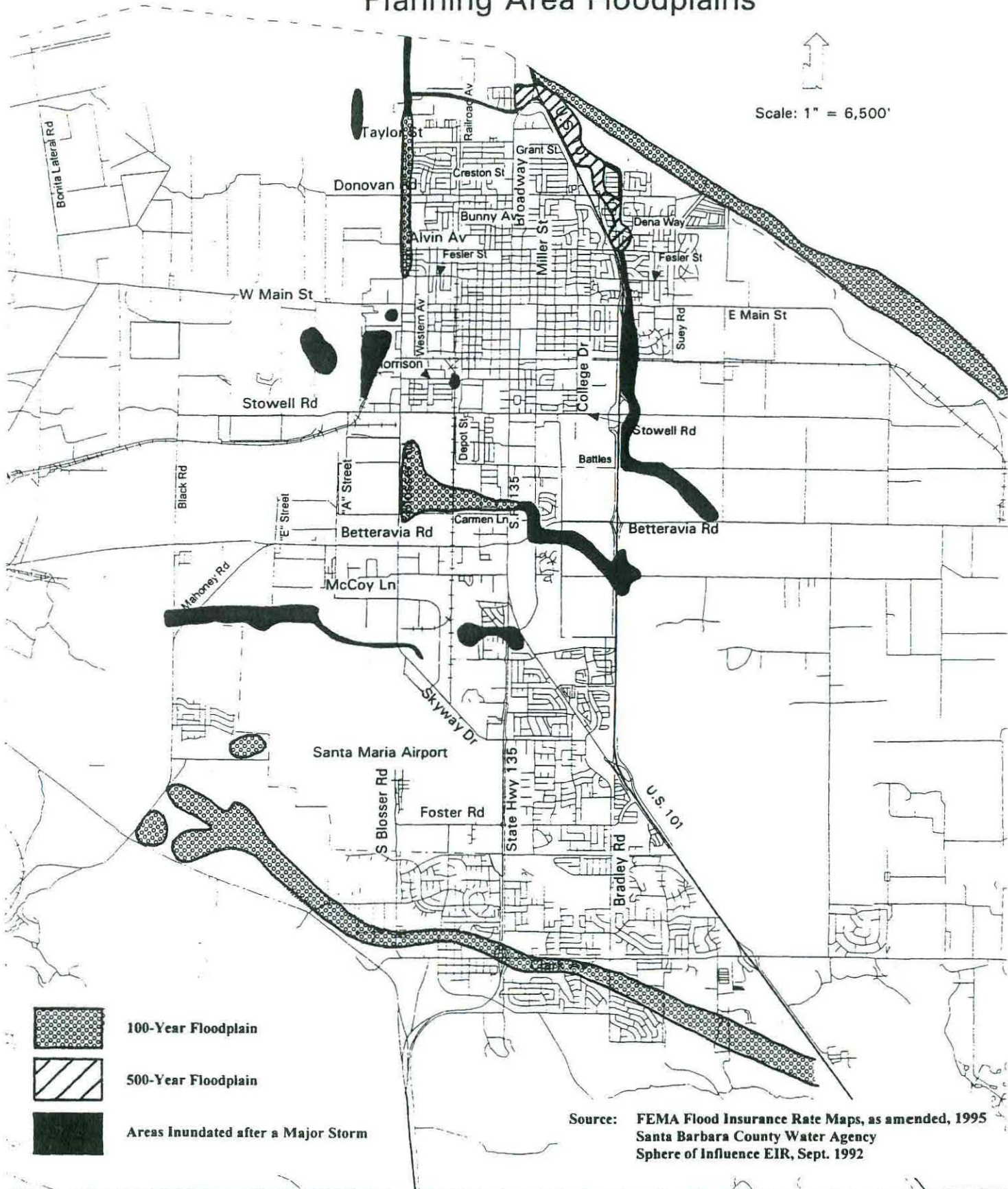
Flooding hazards within the Planning Area consist of localized and widespread flooding due to storms, failure of the Santa Maria Levee, and from dam inundation caused by the failure of Twitchell Dam. The potential for flooding and dam inundation comes from storm water that is collected in the 260 square mile Santa Maria Valley watershed that is located in both Santa Barbara and San Luis Obispo Counties. The Sisquoc River and Cuyama River watersheds combine to form the Santa Maria Valley watershed.

Flooding

The flooding associated with the 100-year storm is of primary consideration. The 100-year flood determination is the accepted standard for flood protection by agencies involved in the assessment of flood risks. The Department of Housing and Urban Development (HUD), in their issuance of flood insurance as part of the Flood Protection Disaster Act of 1974, has adopted the 100-year flood level as the determinant of the floodplain area having a hazard potential requiring specific or protective measures. The City has also adopted the 100-year flood plain through its participation in the Flood Insurance Rate Program administered by the Federal Emergency Management Agency.

Flood prone areas in the Planning Area are noted in Figure SE-3. The 100-year flood plain is generally in the areas of the Santa Maria River and the Orcutt Creek. The Santa Maria River Levee, built by the U.S. Army Corp of Engineers, is designed to protect the City from the 100-year flood. The Flood Control District patrols the levee any time there is more than a few hundred cubic feet per second flowing in the river. Levee erosion has been experienced and if the levee was allowed to rupture, would create major flooding problems east of U.S. Highway 101. However, the levee does not prevent localized flooding from the various flood control facilities in the Planning Area. These local facilities include a series of storm drains, open channels, and retardation basins. Localized flooding cannot be accurately mapped as it depends on the magnitude and location of the causative storm.

Figure SE-3 Planning Area Floodplains



Dam Inundation

Twitchell Dam is the closest potential source of dam inundation in the Planning Area. However, Twitchell Dam is not used for perennial water storage. The dam was constructed by the Bureau of Reclamation in 1958, and is primarily used for groundwater recharge and flood control. It is an earthfill dam, 216 feet in height, with a storage capacity of over 240,000 acre-feet. If Twitchell Dam is filled to capacity and the dam and the Santa Maria Levee fail, a significant portion of the City would be inundated by flood waters.¹³ However, the probability of total dam failure and levee failure is remote. In addition, the dam holds water only periodically and is not a reservoir.

3. Wildland and Urban Fires

Fires in undeveloped areas usually result from the ignition of grasses and brush material, and are often referred to as wildland fires. Wildland fires in the Santa Maria Planning Area are characterized as limited grassland and brush fires due to the absence of extensive tracts of mountainous, brush covered terrain. Factors influencing wildland fires in the Planning area are climate, vegetation, slope and human proximity.

The most significant wildland fire hazards in the Planning Area are associated with the coastal sage scrub and grass covered slopes in the Casmalia and Solomon Hills to the south of the City. In this area, the factors of vegetation, slope, and human proximity interact to create the most significant relative level of risk.

The oak savannah hillsides to the east of U.S. 101 and north of Clark Avenue represent another wildland fire hazard area. The native vegetation which remains in this general location could ignite and create a localized hazard. A fire in this vicinity would not be as vigorous as a similar outbreak in the Casmalia or Solomon Hills.

The Santa Maria Valley Oil Field represents another type of fire risk. The presence of flammable liquids and spark producing machinery create the possibility of fire initially fueled by residual petroleum that could spread to grasses and weeds growing near wells and pipelines.

The remaining areas of Santa Maria are generally protected from most aspects of grassland and brush fires. However, accumulating weeds along roadsides and in vacant lots make even urban locations potentially hazardous from a wildland fire standpoint. For these reasons, an enforceable weed abatement program is necessary to reduce these risks whenever structures are present.

The risk of urban fires is no greater than any other area. Fire codes and building setback restrictions are enforced along with the previously mentioned weed abatement program.

4. Electromagnetic Fields

Electromagnetic energy occurs over a broad range of frequencies. The frequencies, or Hertz (Hz), within the planning area range from 60 Hz associated with power transmission and electrical appliances to 3×10^{10} Hz associated with microwaves. In between these frequencies are EMFs generated by radio, television, and radar transmissions. In recent years, electric and magnetic fields (EMF) from these uses have come under scientific scrutiny regarding possible effects on human health.

EMF fields are found whenever electricity is used. This includes not only utility transmission and distribution lines, but also in the building wires in homes, offices and schools and in the appliances and machinery used in these locations. While concerns about EMF originally focused on

¹³

San Luis Obispo County Dam Failure Evacuation Plan, April 1991.

electric fields, much of the recent research has focused on magnetic fields.

The medical and scientific communities have been unable to determine that EMF causes adverse health effects or to establish any standard or level of exposure that is known to be either safe or harmful. Some studies have suggested an association between magnetic fields and certain cancers, while others have not. Laboratory experiments have shown that magnetic fields can cause biologic changes in living cells, but scientists are not sure whether this poses a risk to human health.

Numerous reports were released in 1992, 1993, and 1994, regarding EMFs. None of these reports have concluded that EMFs cause adverse health effects nor did they feel standards were appropriate or reasonable at this time. However, these reports have not ruled out that EMFs could cause adverse health effects.

No national, international or state long term exposure health-based EMF standards or regulations have been developed. Both the State Department of Health Services (DHS) and the Environmental Protection Agency (EPA) have stated that standards are not recommended at this time.

On January 15, 1991, the California Public Utilities Commission (CPUC) opened an investigation to consider its role in mitigating health effects, if any, of EMFs from utility facilities and power lines. A working group of interested parties, called the California EMF Consensus Group, was created by the CPUC to advise it on this issue.

Based on the work of the Consensus Group, written testimony, and evidentiary hearings, the CPUC in November 1993, issued an interim decision (93-11-01) to address public concern about possible EMF health effects from electric utility facilities. Among the findings:

- 1) We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure.
- 2) We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value.

Pacific, Gas and Electric (PG&E) is the local utility company that provides electrical power in the Planning Area. Since 1987, PG&E has had written company policies regarding EMF. PG&E has supported and funded medical, scientific and industry research on EMF for several years, and is continuing to do so.

Planning Area EMFs

Sources of EMF radiation in the Planning Area include electrical transmission lines, above and below ground electrical distribution lines, electric appliances, electric wiring in buildings, and electric industrial and office equipment. Any item associated with electricity gives off EMFs.

PG&E electrical transmission lines in the Planning Area are shown in Figure SE-4. These overhead lines basically follow Railroad Avenue, Blosser Road, and Battles Road. These lines have a frequency of 60 Hz and a voltage of 115 kilovolts. Figure SE-5 depicts the magnetic field at various distances from an electrical transmission line.

PG&E electrical distribution lines form a grid throughout the Planning Area. These lines also have a frequency of 60 Hz but have a voltage of 12 kilovolts. Both underground and aboveground lines generate EMFs. Figure SE-5 shows the magnetic field at various distances from an overhead distribution line.

Figure SE-4
PG&E Electrical
Transmission Lines

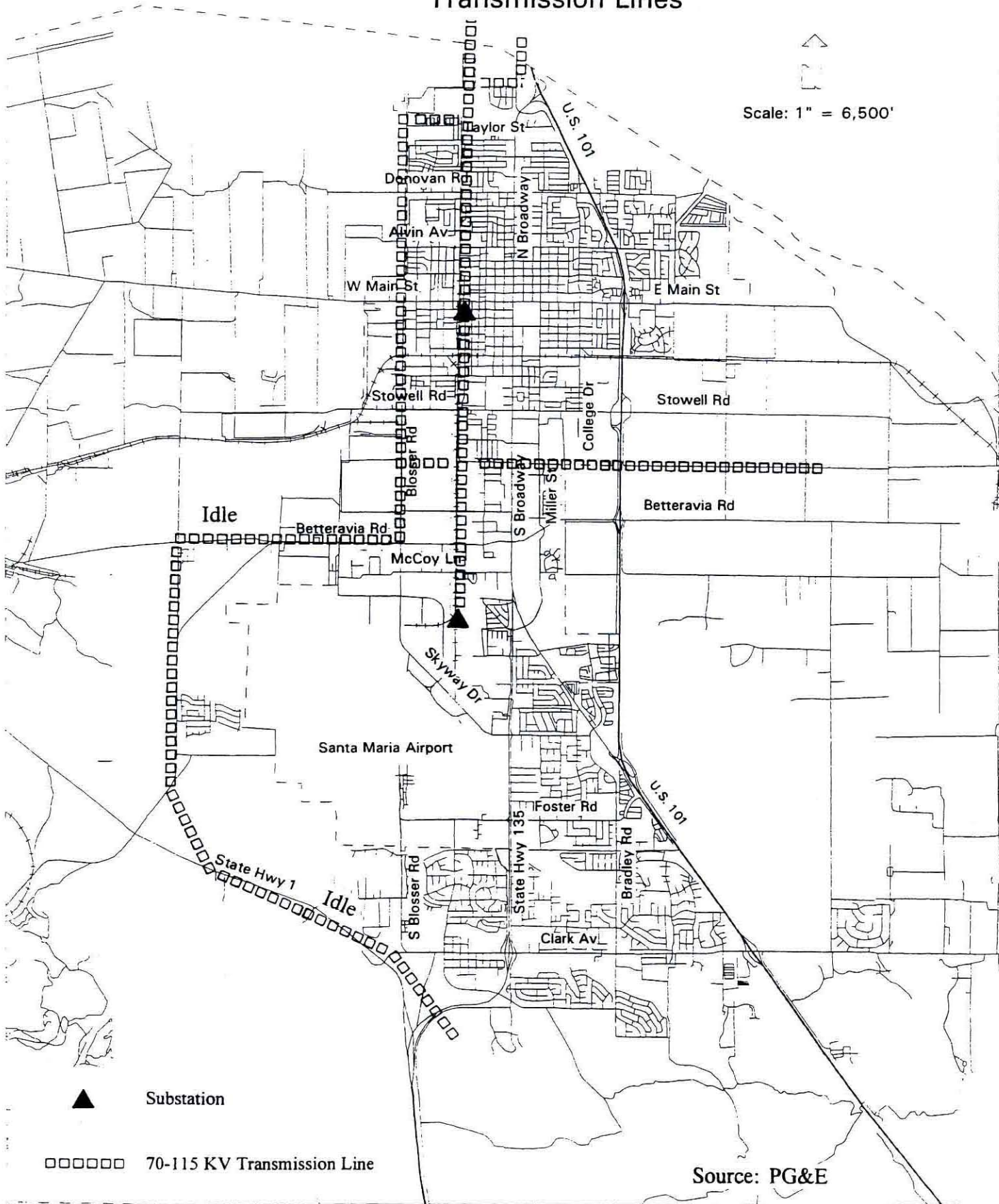
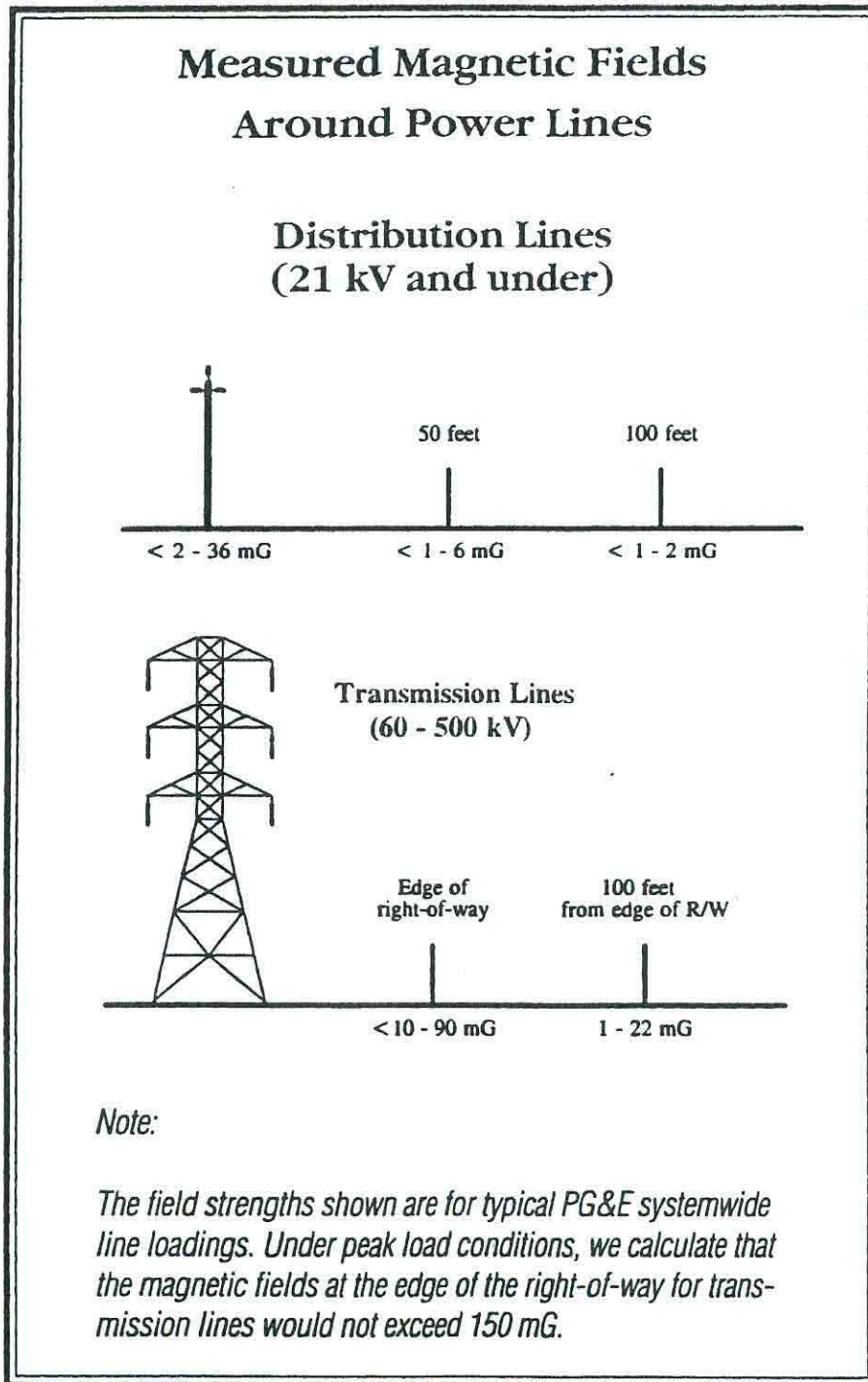


Figure SE-5

Magnetic Fields



Source: PG&E

5. Oil Wells and Oil Sumps

Oil production was one of the founding industries of the Santa Maria Valley. Two oil fields are located in the Planning Area: the Santa Maria Valley Field, and the Orcutt Field. These two fields contain over 1400 active and abandoned oil and injection wells. Generally, the oil producing area is located south of Stowell Road.

The source for local oil regulations is the Santa Barbara County Petroleum Ordinance No. 2795 (adopted in 1976, as amended), Regulations for Drilling, Producing, Operating, and Abandoning Petroleum Wells. Chapter 11 of Title 9 of the City's Municipal Code adopts the County ordinance as the "petroleum ordinance" of the City of Santa Maria. Chapter 11 also amends certain portions of the County's ordinance to apply specifically to the City of Santa Maria. The City has contracted with the County so that the County Petroleum Engineer acts in that capacity for the City.

New facilities (wells, tanks, etc.) must follow applicable regulations, including the Uniform Fire Code, and require permits from the County Petroleum Department and/or the California Division of Oil, Gas, and Geothermal Resources (CDOGGR). In addition, new facilities cannot be located within certain distances from roadways and existing buildings.

Abandonment of existing oil wells follow the applicable regulations of the County Petroleum Department and the CDOGGR.

In the event that the County Petroleum Department and/or the State Supervisor of Oil, Gas, and Geothermal Resources determines at any time that any well, or other operations covered by the ordinances, is endangering any fresh water body or strata, or that any oil field construction, improvement, or operation constitutes a safety hazard, or a substantial nuisance to the public, the County Petroleum Department or the State Supervisor of Oil, Gas, and Geothermal Resources shall have the right to compel the operator to make such modifications as may be required to correct such condition.

All oil field waste derived or resulting from, or connected with, the drilling or producing of any well, shall be discharged into a sump impervious to fluids. Such discharges shall be removed from the drillsite to authorized locations upon completion of the drilling.

Prior to enactment of County Petroleum Ordinance No. 2795, oil wells and associated facilities and sumps were not abandoned in accordance with current regulations. Improperly abandoned wells, improperly abandoned facilities, and abandoned oil sumps are all potential sources of safety hazards.

Prior to current abandonment procedures, oil wells were cut off below ground and capped. However, this procedure may not comply with the current abandonment standards. Improperly capped wells have the potential to leak methane gas which poses an explosion hazard. Section 3208.1 of the Public Resources Code authorizes the State Oil and Gas Supervisor to order the reabandonment of any previously abandoned well when construction of any structure over or near the well could result in a hazard. If the well is not reabandoned, sufficient clearance should be maintained between permanent structures and the well to allow future access.

The City's policy regarding abandoned oil wells depends on whether the well has been abandoned properly. If the well has been abandoned properly, or will be reabandoned, as determined by the CDOGGR, a ten foot wide radius "no build" easement measured from the well head shall be recorded when the well is on residentially zoned property. For non-residential property, the property owner has the choice of recording the 10 wide "no build" easement around the well, or installing a CDOGGR approved venting system over the well in which case a structure may be built over the well.

If the well will not be reabandoned, then a 10 foot wide radius "no build" easement is required to be recorded around the well for all properties, and the distance requirements of the CDOGGR must also be followed (see Figure 17 of the technical appendix).

In many cases, associated oil well facilities like pipes, concrete slabs, and equipment were abandoned in place and covered over with soil. This has led to subsidence problems when structures are built over these sites. These areas, when discovered, are required to be removed and the soil recompacted.

Most oil wells had associated oil sump areas where waste fluids and oil were deposited. In the past, these oil sumps were buried and not removed. Placement of structures over these areas could force the oil and waste fluids to the surface and will also contaminate the soil.

As part of the discretionary review process, the City requires a Phase I Environmental Assessment (EA) for all properties that have an existing or abandoned oil well, or are known to have oil drilling operations as shown in the Resource Management Element of the General Plan.

However, if a clearance letter from the State Division of Oil, Gas, and Geothermal Resources and/or the State Regional Water Quality Control Board is provided, a Phase I EA will not be required unless evidence of further soil contamination is discovered.

The City requires that all oil sumps or contaminated soil be remediated in accordance with State and County procedures. The State Regional Water Quality Control Board has the primary responsibility for overseeing the remediation process.

6. Landfill Gas Migration

The City of Santa Maria owns and operates a sanitary landfill located in the northeast portion of the City. In addition, abandoned landfill areas are located underneath Preisker Park and around the Santa Maria Public Airport. A hazard associated with existing and abandoned landfills is underground methane gas migration.

Landfill gas (LFG) results from the anaerobic¹⁴ decomposition of organic materials¹⁵ within a landfill. LFG is typically composed of 50 to 60 percent methane, 40 to 50 percent carbon dioxide and small percentages of other gases including nitrogen, propane, butane, ethane and chlorinated hydrocarbons and other organic gases.

The methane gas component of LFG can be explosive when concentrations reach a range of 5 to 15 percent by volume in air and are confined in an enclosed space with sufficient oxygen to sustain ignition. Ignition sources may include a spark from a standard light switch. In confined or semi-confined enclosures, methane and carbon dioxide may accumulate and create an asphyxiation hazard through oxygen displacement.

California Code of Regulations (CCR) under Title 14, Chapter 3, Article 7 apply to LFG production, containment, control, and utilization at Class III sanitary landfill sites. The CCR "Minimum Standards" are enforced by the California Integrated Waste Management Board (CIWMB) and the Local Enforcement Agency (LEA). For the City of Santa Maria, the LEA is the Santa Barbara County Environmental Health Division.

¹⁴ Living and reproducing in the absence of atmospheric oxygen

¹⁵ In the case of a landfill, "organic materials" refers to food waste, garden clippings, and other waste containing carbon-based compounds

LFG subsurface migration can be controlled through the natural containment properties of surrounding soils, a low permeability liner and by an LFG recovery system.

The Santa Maria Sanitary Landfill consists of an active and inactive area. The inactive area has a low LFG generation potential since a low volume of refuse was deposited here, the refuse was burned, and the burned refuse is very old. The highest potential for LFG migration occurs at the active portion of the landfill.

The Santa Maria Sanitary Landfill currently relies on natural soil containment of LFG. As part of an Air Solid Waste Assessment Test¹⁶ (SWAT) conducted for the landfill, elevated levels of methane ranging from 9.1 to 40.7 percent parts per million by volume (ppbv) were detected in four out of 20 perimeter soil gas monitoring probes. Two of the probes were located adjacent to the Santa Maria River levee, where the gas poses no significant threat to health and safety. The other two probes were located near the southeastern boundary of the active portion of the landfill, near some existing farm structures.

A subsequent landfill gas study conducted in 1992 detected methane in 11 of the 33 sample locations on the active portion of the landfill. Methane concentrations at these sites ranged from 29 to 62 percent ppbv. Most of the higher methane concentrations were located in the current disposal area of the landfill. The highest LFG concentration on the landfill property was recorded near the southwestern boundary, which indicates that LFG migration may have occurred off-site. The city has assumed for investigation purposes that landfill gas has migrated across the facility boundary. The level and extent of this migration is being studied. The city is taking appropriate steps to protect the public health and safety and to comply with regulations governing landfills.

Potential safety impacts from LFG generation and migration include explosive hazards to on-site and off-site structures, toxic gas emissions, ground water contamination, and damage to vegetation.

Continued and expanded waste disposal operations at the Santa Maria Sanitary Landfill will increase the amount of refuse placed in the landfill and the subsequent volume of LFG that is produced. Any LFG that does manage to migrate from the existing landfill or future expansion areas has the potential to concentrate in structures on or near the landfill. If either on-site or off-site structures overlie the path of methane gas migration, a potential for methane accumulations beneath or within such structures may result in explosive concentration levels (between 5 and 15 percent by volume). Such concentrations in combination with ignition sources (electrical outlets, space heaters) could result in a significant safety hazard.

The nearest off-site structure is a building located approximately 200 feet to the west of the active portion of the landfill. The nearest residences are located within a mobile home park and the Sierra Vista Estates project located approximately 200 feet to the southwest of the inactive portion of the landfill. The proximity of these structures to the landfill could result in potential gas migration impacts. However, the gas migration potential in this area of the inactive landfill is considered extremely low.

7. Safe Drinking Water Levels

In 1974, the Federal Safe Drinking Water Act (Act) was passed to establish standards for public drinking water. In 1986, the Act was amended to further safeguard the sources and treatment of water. The Environmental Protection Agency (EPA) and the State Department of Health Services (SDHS) set quality standards which require water suppliers to monitor and treat public drinking water for potentially harmful contaminants.

Drinking water standards in California are placed in two categories: primary and secondary. Safe levels are established for each contaminant in each category. Primary standards specifically relate to your health and are generally

¹⁶ Anthrosphere, Inc., 1988

based on health effects which may occur if a person were to drink two liters of water each day for 70 years.

Secondary standards relate to aesthetic qualities of water, including taste, odor, and color.

These standards, which are referred to as Maximum Contaminant Levels (MCLs), are continually reviewed and lowered, as lower detection levels become possible through innovations in laboratory technology.

Drinking water is provided to the Planning Area by the City of Santa Maria and the California-Cities Water Company. The City of Santa Maria serves the majority of users within the City Limits along with areas outside the City Limits subject to City Council approval through an Outside Users Utility Agreement. The California-Cities Water Company primarily serves the Orcutt area and some southern portions within the City Limits. The source of drinking water is groundwater beneath the Planning Area. Both water purveyors have numerous wells drilled into the groundwater basin. Please refer to the Resources Management Element of the General Plan for a complete description of water supply and groundwater resources.

The treatment of groundwater is currently minimal. Both the City and California-Cities Water Company only disinfect the water. The drinking water supply of both water purveyors does not violate any water quality standard set by the State of California or the Environmental Protection Agency.

If overdrafting of the groundwater basin continues, additional treatment of City water may be needed because of increased total dissolved solid (TDS) levels in the groundwater. Additional treatment will also be needed when the State Water Project water becomes available. The additional treatment will occur at a water treatment plant to be built in San Luis Obispo County.

8. Aircraft Safety

The Santa Maria Public Airport is located within the southern portion of the City of Santa Maria. The airport provides facilities for commuter airlines which serve Santa Maria with propeller driven aircraft. Four fixed base operators exist that offer flight instruction, aircraft rental and repair, and refueling services. The airport is served by an Federal Aviation Administration (FAA) control tower. In 1990, 178 general aviation aircraft were based at the airport.

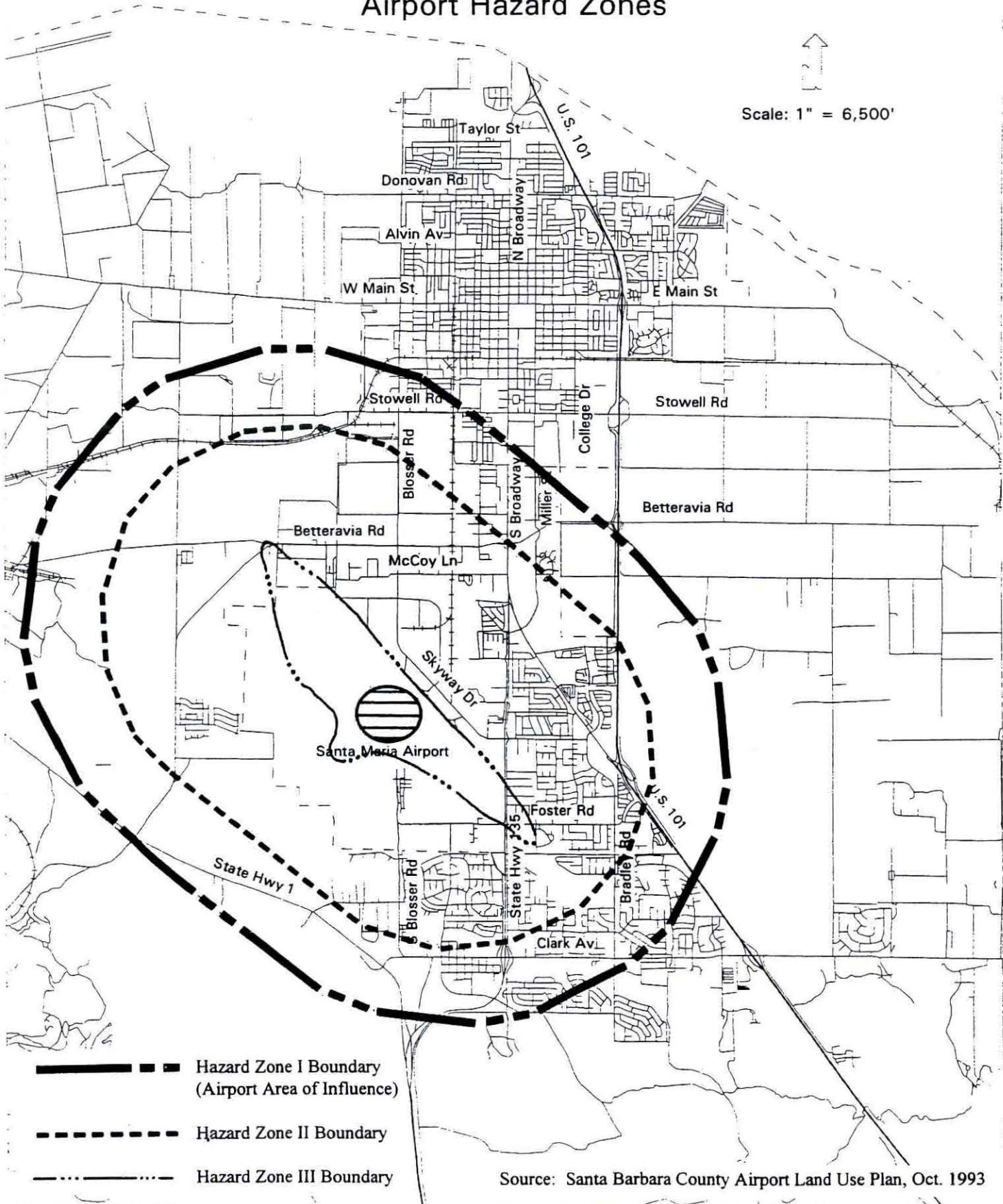
The airport has two runways: Runway 12-30 (primary runway); and Runway 2-20 (secondary runway). Runway 12-30 is used by air carrier aircraft and heavy general aviation aircraft. The precision instrument approach is to Runway 12 from the northwest. Runway 2-20 is primarily used by general aviation aircraft and during cross wind conditions.

Hazard Zones

The Airport Area of Influence is divided into three areas of major concern: height restrictions, safety, and noise. These concerns are grouped into three hazard zones around an airport. Hazard Zone I deals with height restrictions and is also the boundary of the Airport Area of Influence. Hazard Zone II contains policies regarding safety as well as height. Policies regarding height, safety and noise apply in Hazard Zone III. These zones are defined in the following text, and are shown on Figure SE-6.

Hazard Zone I defines the airspace requirement of an airport. Height limitation of structures within this zone is defined by an imaginary conical surface and a horizontal plane extending out from the end of the runway. The outer margin of the horizontal surface 150 feet above the established airport elevation defines the boundary of this zone.

Figure SE-6
 Airport Hazard Zones



- Hazard Zone I Boundary
(Airport Area of Influence)
- - - - -** Hazard Zone II Boundary
-** Hazard Zone III Boundary

Source: Santa Barbara County Airport Land Use Plan, Oct. 1993

Safety restrictions, as well as height restrictions, apply in Hazard Zone II. Hazard Zone II is divided into three safety areas which are based on degree of hazard. These safety areas are shown on Figure SE-7.

Safety Area 1 (Clear Zone). This is the most restrictive area as it is subject to the greatest danger. Clear zones are fan-shaped areas just beyond each runway end that are to be kept clear of any nonessential objects. They provide an additional margin of safety for aircraft landing on or departing from the runway.

In order to comply with Safety Area 1 (clear zone) requirements and minimize conflicting land uses near the airport runways, the City has a Clear Zone zoning designation that is located at the ends of both airport runways (Figure SE-7).

Safety Area 2 (Airport Approach). This area is an extension of the clear zone in which uses that do not result in the concentration of people or a particular fire hazard are generally allowed.

In order to comply with Safety Area 2 requirements, the City has developed the Airport Approach overlay designation (Figure SE-7). This overlay establishes regulations to minimize the hazard to safe landing and take-off of aircraft by limiting the height of buildings and uses within these areas. Allowed land uses within this zone are described in the Land Use Element of the General Plan. These uses include airport services, light industrial, heavy commercial manufacturing, and lower density residential.

Safety Area 3 (General). This area encompasses the remainder of Hazard Zone II and is the least restrictive. This is the area in which airport traffic patterns occur (Figures SE-6 and SE-7).

Within Hazard Zone III, land uses will be influenced by aircraft noise as well as height restrictions and safety. The boundary of this zone is determined by using the California Airport Noise Standard which sets forth the boundary as the 65 dB Community Noise Equivalent Level (CNEL) contour. Generally, residential uses, schools, hospitals, institutional uses and other uses that support a large concentration of people are prohibited in this zone.

Aircraft Safety

Nationwide, approximately 50 percent of civilian aircraft accidents occur within airport boundaries. Approximately 15 percent occur outside airport boundaries but within one mile of airports. Of these near airport accidents, approximately 60 percent are concentrated within narrow strips of land at both ends of the runway.¹⁷

Santa Barbara County has experienced no crashes involving public or scheduled air carriers in recent years. From 1960-1985, six forced landings have occurred at the Santa Maria Public Airport, all on airport property¹⁸ (Figure SE-6). Information from the National Transportation Safety Board indicates that since 1985, only one nonfatal incident occurred on airport property (the exact location is not known).¹⁹

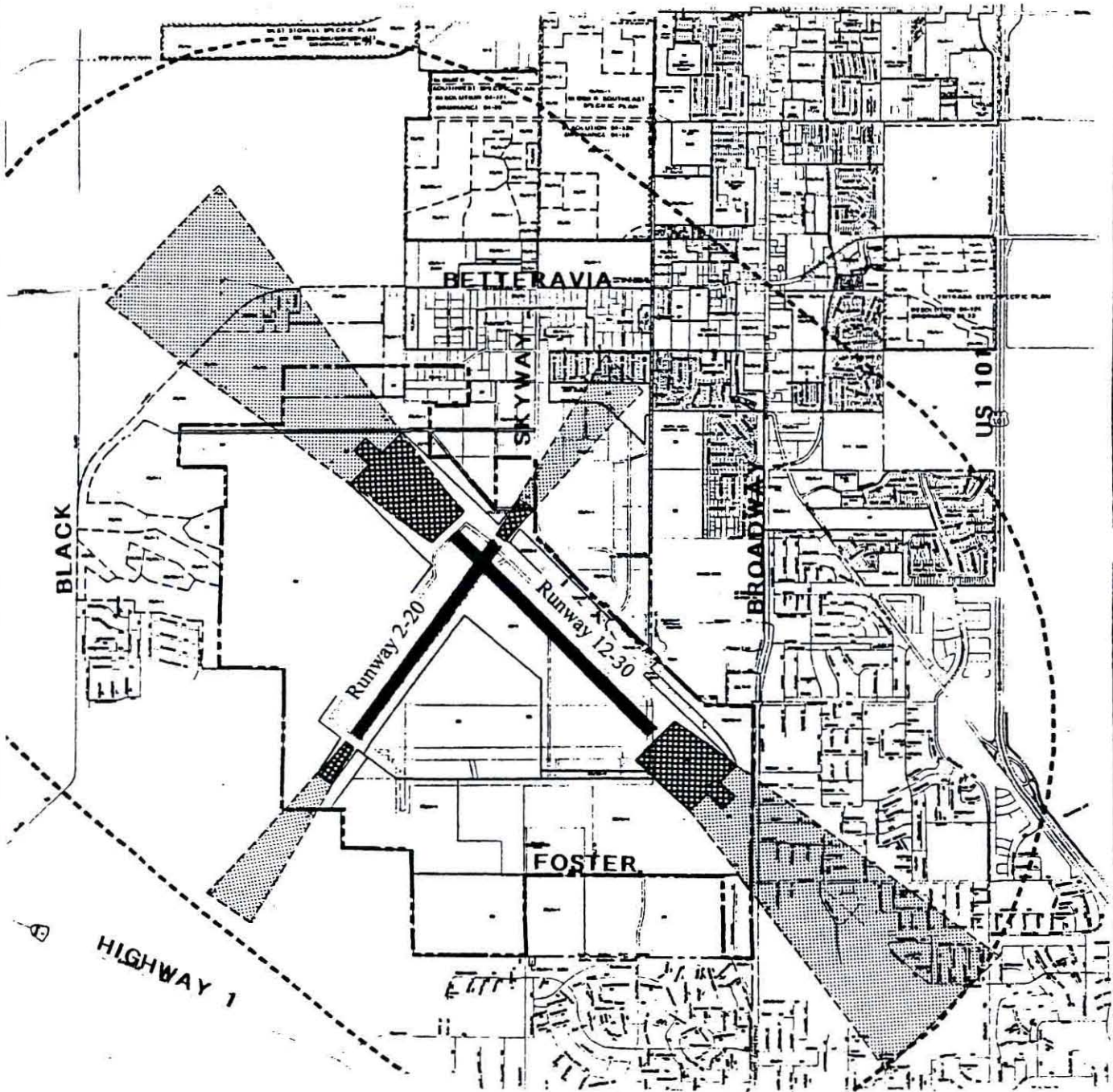
¹⁷ Airport Land Use Planning Handbook, Caltrans, December 1993


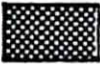


¹⁸ Draft EIR for the Santa Maria Research Park, Michael Brandman Associates, April 1990

¹⁹ Ibid

Figure SE-7

Santa Maria Public Airport Safety Areas



-  Airport Boundary
-  Safety Area 1/Clear Zone Zoning
-  Safety Area 2/Airport Approach Zoning
-  Boundary of Safety Area 3 and Hazard Zone II

↑
No Scale

Source: Santa Maria Zoning Map
Santa Barbara County Airport Land Use Plan, Oct. 1993

The runway clear zones (Safety Area 1) are all within airport property and are free from obstructions. The airport approach overlay areas (Safety Area 2) are also considered safe. Operational flexibility, however, has been compromised by urban encroachment to the north, east, and south of the airport. Runway 12 is rarely used for takeoffs due to the need of departing aircraft to climb out over urbanized areas. Commercial carriers typically do not land in the opposite direction on the same runway to avoid final approaches over the same urbanized area. Thus, safety has been achieved through operational limits which do not allow the best use of airport facilities.

Any aircraft incident could potentially be disastrous, resulting in injury or deaths. As noted previously, the potential for an aircraft incident is higher during the approach or departure portion of a flight than while an aircraft is at cruising altitude. This is due to aircraft being closer to the ground and to potential obstructions, heavier concentration of other aircraft in the vicinity of airports, and additional pilot workload at these times.

Although it is impossible to predict precisely how many and where future incidents will occur, it can be assumed that approximately 65 percent of all aircraft accidents will occur within 1 mile of the airport as noted earlier. Of these accidents, a vast majority will occur on or within 200 feet of the runway or taxiway, along the primary approach and departure flight tracks, or beneath a traffic pattern. Nonetheless, the risk of incident at any particular location cannot be predicted with complete certainty.

9. Hazardous Materials

Hazardous materials are found throughout the Planning Area. Used for various purposes, these materials can become dangerous if spilled, inappropriately used or disposed, or otherwise exposed to the public or the environment improperly. Federal, state, and local laws require the proper use, transportation, treatment, and disposal of hazardous materials.

The use and storage of hazardous materials is primarily regulated by the Uniform Fire Code. Transport of hazardous materials and waste on public streets is primarily regulated by the California Vehicle Code and the City's Municipal Code. Storage and disposal of hazardous wastes is primarily regulated by the Santa Barbara County Environmental Health Services Division through their Hazardous Waste Generator Program as authorized by the State Health and Safety Code.

Hazardous materials are used by numerous businesses in the Planning Area. Typical businesses include, but are not limited to, hospitals, dry cleaners, auto repair facilities, exterminators, medical labs, photographic studios, and gas stations. On a smaller scale, single family residences also use and store hazardous materials (pesticides, fertilizers, drain cleaners, etc.).

Any business that stores hazardous materials in accordance with Article 80 of the Uniform Fire Code must provide either a hazardous materials inventory statement (HMIS) or a hazardous materials management plan (HMMP) to the Fire Chief of the City of Santa Maria and the County of Santa Barbara. In addition, the City of Santa Maria Fire Department and the County of Santa Barbara Environmental Health Services (EHS) require a Business Plan in accordance with State Regulations for businesses that store and use hazardous waste.

Santa Barbara County's Site Mitigation Program administered by the EHS is responsible for the supervision of cleanup at contaminated sites throughout the County, including sites within the City Limits. The objective of the program is to identify contaminated sites, and to find a permanent remedy that is technologically feasible and reliable that effectively reduces the danger of contamination, and that adequately

protects public health, welfare, and the environment. A large percentage of the contaminated sites within the County are discovered by hazardous materials specialists while overseeing the abandonment of underground storage tanks. Site mitigation activities are also initiated as a result of complaints, inspections, tank tightness tests, and emergency responses.

The Planning Area has approximately 27 active underground tank cleanup sites and 29 active site mitigation cleanup sites according to the EHS's "Listing of Underground Tank Cleanup Sites" and "Listing of Site Mitigation Cleanup Sites," both reports as of August 9, 1995.

Once a potential contaminated site has been discovered, an evaluation to determine the extent of contamination at the site is conducted and information sufficient to identify the most appropriate response are developed. A typical evaluation consists of six phases: initial investigation; site assessment and characterization; remedial action; evaluation; public notification; and remediation.

The Santa Maria Sanitary Landfill currently operates a household hazardous waste transfer and storage facility. This facility is open to the public two days per month. In addition to collecting household hazardous waste, the facility conducts random, solid waste load checks for hazardous materials.

The landfill does not service hazardous waste generated by commercial and industrial uses. Businesses must hire a hazardous waste transporter to dispose of their hazardous wastes. This waste is either transported to the Chemical Waste Management/Kettleman Hills facility (north), or to a transfer station in Southern California, where it is shipped out of state.

Hazardous materials transported into or through the Planning Area include such commodities as the hypergolic fuel trucked to Vandenberg Air Force Base, anhydrous ammonia, gasoline, explosives, and aviation fuel. Natural gas liquids and liquid petroleum gases (e.g. propane, butane) are also transported through the Planning Area to Bakersfield, Los Angeles, and the Bay Area.

Hazardous materials that are radioactive, poisonous, or explosive are limited to using State Highway 101 through the Planning Area.²⁰ Within the City Limits, transport of any hazardous waste is prohibited on Donovan Road, Stowell Road, Main Street-State Highway 166, and Broadway-State Highway 135.²¹ However, these streets may be used for the transport of hazardous waste subject to the following exceptions:

- 1) They provide reasonable access to fuel, repair, rest, or food facilities designed and intended to accommodate commercial vehicle parking when access is consistent with safe vehicle operation and the facility is within one-half road mile of points of entry from a state or interstate highway being used.
- 2) Hazardous wastes which have a point of origin within the City Limits. Partially loaded waste vehicles may drive upon these streets when the vehicles have a destination within the City Limits.

Several steps are taken to ensure public safety when a hazardous materials spill occurs. If the spill is severe, or an immediate threat to the public, City Fire Department personnel will respond to the situation. The City Fire Department responds to several hazardous spill calls each year.

²⁰ California Vehicle Code and California Code of Regulations

²¹ Chapter 13 of Title 7 of the Santa Maria Municipal Code

If contamination of a site is discovered during the City's review of a project, either during plancheck or inspection, the City will notify the EHS. The City then requires a clearance letter from the EHS before permits will be issued or a project is finalized. The EHS is the lead agency involved and the City defers to them regarding hazardous material discoveries.

Hazardous Materials Emergencies

The increasing volume and variety of hazardous materials that are generated, stored or transported through the Planning Area have created potential threats to human health and the environment. Hazardous materials incidents differ from other emergency situations because of the unpredictable nature and the possibility of long range toxic effects. Incidents may occur at fixed facilities where the opportunity for the development of site-specific contingency plans is great. They may also occur at any place along any land, water or air transportation route and may occur in remote or treacherous areas, relatively inaccessible by ground transportation.

Although incidents may occur anywhere at any time, certain portions of the Planning Area are more likely to be the site of an accident involving hazardous materials.

U.S. Highway 101. U.S. Highway 101 is the primary truck route from Los Angeles to coastal Central California. Materials shipped include rocket fuel, explosives, compressed and liquified gasses, petroleum products, agricultural chemicals, industrial chemicals and hazardous waste.

Betteravia Road. Betteravia Road is the main link from U.S. Highway 101 to the western portion of the Planning Area, the Casmalia hazardous waste facility, and the area's agricultural industries. This route passes very few residential areas at this time but does traverse several blocks of commercial establishments and several miles of industrial and agricultural land uses.

Railroads. The main north-south Southern Pacific line is located nine miles west of the City. The industrial core of the City is served by the Santa Maria valley Railroad which carries agricultural products out of the area. Some petroleum products are transported to the main line from the east side of town through a mixture of residential, industrial, and commercial land uses.

Airport Industrial Zones. The airport area contains electronic component manufacturers, aircraft repair shops and specialized research facilities. Solvents, etching agents, stored fuel and radioactive material may be encountered.

10. Emergency Services

The City of Santa Maria's role and responsibilities in an emergency are described in Chapter 17 of Title 2 of the Municipal Code (Emergency Services). Detailed procedures and tactics are provided in the Multi-hazard Functional Plan (Plan), as adopted by City Council Resolution No. 89-25. This manual was revised by the City in October 1993. The Plan conforms to the State's emergency preparedness plans and is an extension of those plans. The City has also adopted the California Master Mutual Aid Agreement by Resolution No. 79-4845.

The City's emergency procedures will be activated under any of the following conditions:

- 1) On the order of the City's Director of Emergency Services, provided that the existence or threatened existence of a Local Emergency has been proclaimed in accordance with the City's Emergency Services Ordinance.
- 2) When the Governor has proclaimed a State of Emergency in an area that includes the City of Santa Maria.
- 3) By a presidential declaration of a National Emergency.

- 4) Automatically on receipt of an attack warning or the observation of a nuclear detonation.

For planning purposes, the State Office of Emergency Services (OES) has established three levels of emergency response to peacetime emergencies which are based on the severity of the situation and the availability of local resources (these levels do not directly correlate with the four classifications of nuclear power emergencies).

Level I. A minor to moderate incident wherein local resources are adequate and available. A Local Emergency may or may not be proclaimed.

Level II. A moderate to severe emergency wherein local resources are not adequate and mutual aid may be required on a regional or statewide basis. A Local Emergency will be proclaimed and a State of Emergency might be proclaimed.

Level III. A major disaster wherein resources in or near the impacted area are overwhelmed and extensive state and/or federal resources are required. A Local Emergency and a State Emergency will be proclaimed and a Presidential declaration of an Emergency or Major Disaster will be requested.

Local emergency operations in the City of Santa Maria will be managed in one of three modes, depending on the magnitude of the emergency: Decentralized Coordination and Direction; Centralized Coordination - Decentralized Direction; and Centralized Coordination and Direction (Please see the technical appendix for a definition of these terms).

The standardized Emergency Management System (EMS) consists of the emergency management staffs of all local jurisdictions, Operational Areas (Countywide), OES Mutual Aid Regions (two or more counties) and State Government. Local jurisdictions would be responsible for directing and/or coordinating emergency operations, with the other levels being responsible for coordinating and/or providing support to the local jurisdictions.

Under the standardized Emergency Management System, the City's Local Emergency Management Staff will be directed by the Emergency Services Director (City Manager), who will be responsive to the City Council. The Director will be supported by the Emergency Services Coordinator, Section Chiefs and functional Operations Coordinators.

The Santa Maria Emergency Management Staff will have the overall responsibility for the following:

- 1) Organizing, staffing, and operating the EOC.
- 2) Operating communications and warning systems.
- 3) Providing information and guidance to the public.
- 4) Maintaining information on the status of resources, services, and operations.
- 5) Directing overall operations.
- 6) Obtaining support for the jurisdiction, and providing support to other jurisdictions as required.
- 7) Analyzing contamination and other hazards and recommending appropriate countermeasures.
- 8) Collecting, evaluating, and disseminating damage assessment and other essential information.
- 9) Providing status and other reports to the Operational Area Emergency Management Staff (if activated) or the OES Mutual Aid Regional Office.

Overall management and coordination of the City's response to emergency situations is handled by the Emergency Services Director. The City Manager acts as the Emergency Services Director under authority from the City Council.

The Emergency Services Director is assisted in managing and coordinating emergency response efforts by the Emergency Services Coordinator. The Emergency Services Coordinator position is filled by the Administrative Analyst.

Incident Command System

Emergency procedures in the City of Santa Maria follow the Incident Command System (ICS). ICS is a management system designed to appoint personnel to specific emergency operational activities.

Santa Maria's ICS Command Staff is made up of the following personnel:

Incident Commander (City Manager)
Public Information Officer (City Librarian)
Liaison Officer (City Clerk)
Legal Officer (City Attorney)

Immediately under the Command Staff is the General Staff. This is made up of the following personnel:

Operations Section Chief (Police/Fire Chief)
Planning Section Chief (Community Development Director)
Logistics Section Chief (Recreation and Parks Director)
Finance Section Chief (Finance Director)

The Incident Commander (IC) has overall management responsibility for the incident, including the development and implementation of strategic decisions and approving the ordering and releasing of resources. The Command Staff element is provided to support the IC in handling such matters as public information, safety, and interagency liaison. Under the direction of the IC, Command and General Staff are responsible for the activation and release of emergency response personnel and providing for 24 hour staffing during emergency conditions. In incidents involving other agencies, a unified command element will evolve which will bring together multiple jurisdiction ICs to develop a common and consistent action plan to make the best use of all available resources.

General Staff

The Operations Section is headed by the Operations Section Chief (Police/Fire Chief) who is responsible for the management of all incident tactical activities.

The Planning Section is headed by the Planning Section Chief (Community Development Director) who is responsible for the collection, evaluation, dissemination and use of information about the development of the incident and status of resources.

The Logistics Section is headed by the Logistics Section Chief (Recreation and Parks Director) who is responsible for meeting the logistical needs of the Operations Section. This includes providing equipment and supplies, food and medical support to incident personnel, meeting communications requirements of the incident and, in conjunction with the American Red Cross, care and shelter operations.

The Finance Section is headed by the Finance Section Chief (Finance Director) who is responsible for participation in development and implementation of the incident action plan. This section will be activated at an incident when required for purposes of maintaining records on personnel and equipment time, for obtaining supplies and equipment from and providing payments to vendors, and for determining cost considerations or various alternative strategies associated with incident planning.

Operational Coordinators

Reporting to the General Staff are various Operational Coordinators. Operations Coordinators have been established to handle specific activities that may have to be performed in the event of an emergency. Each Operations Coordinator reports to a Section Chief of the General Staff unless otherwise noted.

Fire and Rescue. The local Fire and Rescue Coordinator, who is under the direction of the Operations Chief, will be responsible for all fire and rescue operations.

Law Enforcement and Traffic Control. The Santa Maria Police Division Chief is the Law Enforcement and Traffic Control Operations Officer under the direction of the Operations Section Chief.

Local Disaster Medical Coordinator. The Local Disaster Medical Coordinator is responsible for medical operations and assets.

Local Disaster Public Health Coordinator. A County Health Department representative acts as the Local Disaster Public Health Coordinator. This Coordinator is responsible for public health and safety operations.

Coroner. The County Coroner/Medical Examiner has the statutory responsibility and authority for dealing with deceased bodies.

Logistics/Care and Shelter. The Logistics/Care and Shelter Coordinator reports to the Logistics Section Chief and has the responsibility for coordinating local government resources, requesting and responding to mutual aid forces, and providing support to the American Red Cross. The American Red Cross is the official local disaster relief agency.

American Red Cross - The American Red Cross, as mandated by Federal Law and reaffirmed in Public Law, provides disaster relief in peacetime.

Police/Movement. The Local Movement Coordinator, under the direction of the Operations Section Chief, will be responsible for coordinating the movement of persons from hazardous areas to lower risk areas.

Rescue. Both the fire and police departments bear responsibility for rescue operations under the direction of the Operations Section Chief.

Public Works/Construction/Engineering. The Director of Public Works acts as the Public Works Coordinator and is responsible for engineering operations.

Finance/Resources and Support. The Resources and Support Coordinator, under the direction of the Finance Section Chief, will be assisted by the following Support Officers with the responsibilities as indicated.

Personnel - Coordinates the allocation of personnel.

Transportation - Coordinates the allocation of transportation resources required to move equipment, people, and essential supplies

Utilities - Coordinates the continued operation of water, gas, and electric utilities and, as required, and redirection of services.

Fire HazMat Team/Radiological Protection. The Emergency Services Coordinator or the Radiological Officer is responsible for preparing monitoring, decontamination, and radiological hazard assessments.

Emergency Operating Center (EOC)

The primary EOC is in the public safety classroom located at 314 West Cook Street. The alternate EOC is Santa Maria Fire Station #2 located at 416 West Carmen Lane. Operations activities are conducted from the respective Departments as outlined in pertinent Standard Operating Procedures (SOPs).

Logistics operates from its space within the Recreation and Parks Department building.

The EOC is activated under the following conditions under a request by the City Manager or the Police/Fire Chief:

- 1) An event with no warning creates widespread damage to buildings, utilities, and streets.
- 2) An incident in progress threatens the majority of the City.
- 3) An incident is in progress in Santa Maria and EOC activation is requested by the IC at the field command post.

Each Department within the City also has Standard Operating Procedures (SOPs) that each Department will follow in the event of an emergency situation. These SOPs detail staffing requirements and locations where staff should report in the event of an emergency.

Specific Emergencies

Hazards that pose a threat to the Planning Area include earthquakes, landslides, hazardous material incidents, wildfires, flooding/dam failures, war emergencies, the Diablo Canyon Nuclear Power Plant, and transportation incidents (aircraft/motor vehicles). Santa Maria is not impacted by such hazards as volcanoes, avalanches, or tsunamis. Earthquake, landslide, hazardous material incidents, wildfires, and flooding/dam failures are described in previous sections of this report.

Nuclear War Emergencies. Current State and Federal guidance assumes that a nuclear attack on the United States would be preceded by a period of increasing international tension. This guidance also assumes that sufficient time would be available for protective actions to be taken such as the construction of shelters and the temporary relocation of residents of possible target areas.

A lesser threat that has a greater probability of occurrence comes from terrorist organizations. These organizations could transport a small nuclear device to any part of the United States and detonate the weapon at the time and place of their choosing with little or no warning.

The City of Santa Maria is a potential target area because the airport is capable of supporting military aircraft. Although the airport is located at the southwest edge of the City, the City is within the blast and thermal effects zone of an accurately placed 1 megaton weapon.

Vandenberg Air Force Base (VAFB), located 10 miles southwest of the City, is a potential target because of the launching facilities and the long runway at the base. Santa Maria would be in the blast and thermal zone for any air burst at VAFB. With a ground burst at VAFB, Santa Maria may be shielded to a degree by the mountains to the south of the City. An error in targeting could easily shift a burst directly over the City.

Because no blast shelters have been identified, the probability of an individual surviving a 1 megaton airburst over the City is low (90% or more casualties). Among the survivors, thermal and blast injuries would be predominant and radiation injuries would be absent. Residual radiation should not be significant if the explosion occurs at the optimum altitude for maximum blast and thermal damage.

A low yield terrorist device would produce a zone of injuries or lethal radiation that would extend beyond its more limited blast and thermal effects zone. Burns and radiation injuries would be predominant if the device were placed at an elevated location. If it were detonated near ground level, the thermal and radiation effects would be restricted by the shielding properties of buildings. Residual radioactivity would remain at dangerous levels for an extended period of time at the explosion site.

Diablo Canyon Nuclear Power Plant Emergencies. Emergency response action plans are not required for the subject hazard since all of Santa Barbara County is beyond the Diablo Canyon Emergency Planning Zone. However, given the basically north-south transportation grid within the areas involved, in the event of an emergency in San Luis Obispo County involving the Diablo Canyon facility, the Santa Barbara County Operational Area would by default become a support/host area for evacuees. As a support/host area, a relocation center for school children has been designated at Allan Hancock College, and a reception center has been designated at the County Fairgrounds.

The federal government defines a 10-mile radius for the plume exposure pathway Emergency Planning Zone (EPZ) and a 50-mile radius limit for the Ingestion Pathway Zone (IPZ). The City is well beyond the 10-mile radius EPZ for plume exposure. However, the 50-mile radius IPZ does include the City's Planning Area. The principal exposure in the IPZ would be from ingestion of contaminated water or foods such as milk, fresh vegetables, or aquatic foodstuffs.

The State has defined two planning zones to facilitate emergency planning. The zones are the Basic Emergency Planning Zone (BEPZ) and the Public Education Zone (PEZ).

The BEPZ covers an area of about 15 miles to the north and east and 18 miles to the southeast of the plant. The BEPZ lies entirely within San Luis Obispo County.

The PEZ extends across the San Luis Obispo County boundary to include the Santa Maria Planning Area. Residents living within this zone receive information on nuclear power plant emergency planning zones. Protective actions for the public in the PEZ are not necessary.

Because of the distance of the power plant from the Planning Area, protective actions during the plume phase are not anticipated to be necessary in Santa Barbara County. However, the Planning Area could be directly affected by protective actions taken in San Luis Obispo County as noted below.

Evacuation is a major countermeasure to prevent or reduce exposure or contamination of the general public. The Planning Area could be affected by a directed or non-directed evacuation of the public from San Luis Obispo County, if evacuees are recommended to leave the area southbound on U.S. Highway 101 or State Route 1. Evacuees will affect traffic flow and some will need temporary lodging and board. The area could also be affected if individuals and/or automobiles leaving areas near the plant are contaminated with radioactive materials following an atmospheric release.

The use of protective clothing to prevent contamination of the skin would not be necessary in the Planning Area in a routine emergency response. However, protective clothing would be used in the decontamination of personnel and equipment transported into the Planning Area.

As an ingestion pathway consideration, the State may recommend covering stored livestock feed to limit or avoid contamination from airborne radioactive materials. As an ingestion pathway consideration, the State has the authority to prevent the sale, distribution, or consumption of contaminated water or foodstuffs. The Planning Area could be affected since the County lies within the Ingestion Pathway Zone.

Decontamination is the reduction or removal of radioactive material from a structure, area, object, or person. Decontamination may be required in the Planning Area for personnel and equipment that have been contaminated in areas close to the plant and transported into Santa Barbara County.

The predetermined evacuation routes leading from San Luis Obispo County into Santa Barbara County are U.S. Highway 101 and State Highway 1.

Transportation Emergencies. Transportation emergencies, other than those involving hazardous materials, can cause great loss of property or life.

The greatest loss of life can occur when commercial passenger carriers such as trains, airliners, or buses are involved. However, multiple vehicle automobile accidents also can result in a large number of injuries and fatalities. Mass casualty incidents quickly exhaust local resources and require mutual aid in order to transport and give emergency care to victims

Highway accidents can have an impact on the community beyond those problems caused by the immediate casualties. Commerce and personal business depends on functioning transportation routes. Restoration of traffic flow by bypassing the incident site should be accomplished as soon as feasible.

Santa Maria lies within a transportation corridor. U.S. Highway 101 carries a large volume of traffic every day of the year. This route is the primary route from Los Angeles to coastal Central California. It carries truck freight, private cars and passenger buses.

The Santa Maria Public Airport can accommodate aircraft as large as a DC-10 in an emergency. The airport is used by scheduled airlines, private airplanes, and helicopters. In addition to the locally generated flights, through commercial and private air traffic passes over Santa Maria. Spacecraft using Edwards Air Force Base can fly over the area during landings, as well as military aircraft en route to Vandenberg Air Force Base.

Other Emergencies. Although the Planning Area would not be impacted directly by volcanic eruptions or tsunamis, a request for mutual aid may occur, a disruption of the normal flow of goods or services may occur, or the City might be impacted by evacuees or the injured.

C. GOALS, POLICIES, OBJECTIVES, AND PROGRAMS

GOAL 1 - GEOLOGY/SEISMICITY

Minimize the community's risk from potential hazards associated with geologic or seismic activity.

POLICY 1

Maintain and enforce applicable building codes and other appropriate regulations to minimize the loss of life and damage to structures during an earthquake or other geologic disaster.

Objective 1.1.a - Geologic Hazards

Take the geologic constraints noted on Figure SE-2 into account during the development review process.

Objective 1.1.b - Uniform Building Code

Enforce the Uniform Building Code as it relates to seismic safety, including lateral forces, soil constraints, slope stability, and grading.

Objective 1.1.c - Radon Gas

Recognize that the Planning Area does not contain rock units that are associated with significant radon gas generation, and that the City of Santa Maria will continue to monitor the radon gas issue as it relates to the Planning Area.

Objective 1.1.d - Unreinforced Masonry Buildings

Require the rehabilitation of the 28 identified unreinforced masonry buildings in accordance with the adopted Unreinforced Masonry Ordinance by the dates outlined in the ordinance.

Objective 1.1.e - Existing Mobile Homes

Support legislation to require earthquake strapping retrofits for existing mobile homes prior to sale or change in ownership.

Objective 1.1.f - New Mobile Homes

Require all new mobile homes to install earthquake strapping.

Implementation Programs.

1. Continued adoption of the most recent editions of the Uniform Building Code, the Uniform Fire Code, the Uniform Housing Code, the Uniform Plumbing Code, the National Electrical Code, and the Hazardous Building Code.
2. Enforcement of the compliance schedule for unreinforced masonry buildings in accordance with the Unreinforced Masonry Ordinance (Section 9.1-221 of the Municipal Code).
3. Review geologic hazards and condition projects with appropriate mitigation measures through the land use and CEQA processes.
4. Review the location of critical facilities (i.e. schools, hospitals, public facilities, etc.) for consistency with the policies and objectives of the Safety Element.
5. Continue to provide information to the public regarding earthquake preparedness.
6. Construct all new buildings in conformance with the earthquake regulations of the most recent edition of the Uniform Building Code.

7. Review and update the Safety Element as new geologic information becomes available.
8. Inspect critical public facilities (roads, bridges, utilities, etc.) for structural integrity, and require correction as necessary (e.g. those owned and/or operated by the City, Caltrans, Santa Maria Valley Railroad, and Utility Companies).
9. Provide emergency east-west access across U. S. 101 from Bradley Road to Nicholson Avenue in the event the bridges at Main Street, Jones Street, and Alvin Avenue are destroyed.

Accomplishments to Date.

1. Adoption of an Unreinforced Masonry Ordinance that contains a compliance schedule for rehabilitation.
2. Adoption of the most recent editions of the Uniform Building Code, the Uniform Fire Code, the Uniform Housing Code, the Uniform Plumbing Code, the National Electrical Code, and the Hazardous Building Code.
3. Public education programs during earthquake preparedness month.

Anticipated Results.

1. The reduction in the number of deaths, injuries, and damage as a result of a seismic event.
2. The identification of all geologic hazards impacting the Planning Area.

GOAL 2 - FLOODING

Minimize the public's exposure to potential flooding and dam inundation hazards.

POLICY 2

Continue to participate in the National Flood Insurance Program and continue to consult with the Santa Barbara County Flood Control District with regard to land use planning in flood prone areas and near the Santa Maria River Levee.

Objective 2.1.a - Flooding

Require that all new structures located within the 100-year flood plain comply with flood standards which require the finish floor elevation to be constructed a minimum of 2 feet above the 100-year flood plain elevation.

Objective 2.1.b - National Flood Insurance Program

Continue to participate in the National Flood Insurance Program as administered by the Federal Emergency Management Agency in order that City residents may seek disaster relief in the event of a major flood.

Objective 2.1.c - Santa Maria River Levee

Require, where legal, feasible, and appropriate, a minimum 60-foot wide buffer area, measured from the toe of the Santa Maria River Levee, to provide access to the levee in the event that repairs are required, and coordinate the location of the buffer with the Santa Barbara County Flood Control and Water Conservation District and Water Agency.

Objective 2.1.d - Agricultural Runoff

Cooperate with and encourage the farming industry to address increased agricultural runoff as it affects urban areas.

Implementation Programs.

1. Review potential flooding hazards and condition projects with appropriate mitigation measures through the land use and CEQA processes.
2. Participate in the National Flood Insurance Program in conjunction with the Federal Emergency Management Agency.
3. Adopt the revised Drainage Report prepared by Penfield and Smith.

Accomplishments to Date.

1. Participation in the National Flood Insurance Program.
2. Developments adjacent to the Santa Maria River have dedicated 60 foot wide buffer zones next to the levee.
3. New developments in the 100-year flood plain have complied with the requirement that finish floor elevations be at least 2 feet above the 100-year flood plain elevation.

Anticipated Results.

1. Protection of the public from hazards associated with flooding.
2. Completion of city-wide storm drainage improvements.

GOAL 3 - WILDLAND/URBAN FIRES

Provide the public with maximum protection from wildland and urban fire hazards.

POLICY 3

Discourage construction of habitable structures in areas susceptible to wildland fires and assure the availability of adequate fire fighting capabilities.

Objective 3.1.a - Fire Suppression

Achieve a 5 minute response capability to all areas within the City Limits and maintain adequate water storage standards for fire flow pressure requirements.

Objective 3.1.b - Weed Abatement Program

Continue the weed abatement program to minimize the amount of ignitable material within the City Limits and support the efforts of the County of Santa Barbara to enforce a similar program outside of the City Limits.

Objective 3.1.c - Inspection Program

Maintain a fire inspection program to identify fire hazards in wildland areas and within and around buildings in urban areas.

Objective 3.1.d - Uniform Fire Code

Enforce the Uniform Fire Code as it relates to fire hazards, including hazardous activities involving fires, oil wells and oil pipelines, and the storage of explosive materials.

Objective 3.1.e - Wildland Fires

Ensure that habitable structures are not constructed in areas susceptible to wildland fire hazards.

Objective 3.1.f - Mutual Aid

Continue to assist and be assisted by other jurisdictions and the State of California in the event of a major fire through participation in the California Master Mutual Aid Agreement.

Implementation Programs.

1. Enforce fire safety standards of the Uniform Fire Code and other State and Federal regulations.
2. Continued adoption of the most recent edition of the Uniform Fire Code.
3. Continue the weed abatement program.
4. Continue and maintain the annual fire safety inspections of public and private buildings, and inspections relating to wildland fire hazards.
5. Review potential fire safety hazards and condition projects with appropriate mitigation measures through the land use and CEQA processes.
6. Maintain mutual aid agreements with surrounding jurisdictions.
7. Continue to study the effectiveness of fire sprinkler systems in new homes in order to reduce service demands, maintain existing service levels, and increase public safety.

Accomplishments to Date.

1. An ongoing weed abatement program.
2. Adoption of the most recent edition of the Uniform Fire Code.

Anticipated Results.

1. Reduce the risk of death, injury, or property damage from wildland and urban fires.

GOAL 4 - ELECTROMAGNETIC FIELDS (EMF)

Increase the public's awareness of the potential health effects of EMFs.

POLICY 4

Continue to monitor research regarding EMFs and, if necessary, develop standards as to the safe and unsafe exposure level from EMFs based on standards set by the California Department of Health Services and the Federal Environmental Protection Agency.

Objective 4.1.a - Public Information Program

Continue to research the health effects of EMFs and direct inquiries from the public to the Pacific, Gas, and Electric Company, the State Department of Health Services (DHS), and the Federal Environmental Protection Agency (EPA).

Objective 4.1.b - EMF Thresholds

Develop EMF threshold standards, such as setback or siting restrictions, based on health-based direction from the State Department of Health Services and the Federal Environmental Protection Agency, if such standards are adopted.

Objective 4.1.c - California Public Utilities Commission (CPUC)

Continue to support the CPUC in its "Prudent Avoidance" mandate to utility companies to consider EMFs in the design, planning, and construction of new, retrofitted, or upgraded facilities, and support the Pacific, Gas, and Electric Company (PG&E) in implementing the policies of the CPUC.

Objective 4.1.d - Setbacks

Encourage the siting of roadways, parking lots, and non-recreational open space next to 70-115 KV electrical transmission lines.

Implementation Programs.

1. Coordination with the CPUC, the State DHS, the EPA, and PG&E to keep informed on the latest developments regarding EMFs.
2. Adoption of EMF threshold standards if such standards are developed and approved by the CPUC, the State DHS, and the EPA.

Accomplishments to Date.

1. A compilation of data regarding the recent studies associated with EMFs.

GOAL 5 - OIL WELLS/OIL SUMPS

Minimize the public's exposure to potential hazards associated with existing and abandoned oil facilities.

POLICY 5

Continue to follow the regulations contained in the City's Petroleum Ordinance regarding existing oil field operations, and support the regulations of the California Division of Oil, Gas, and Geothermal Resources (CDOG) and the Santa Barbara County Environmental Health Division regarding abandoned oil facilities.

Objective 5.1.a - Existing and Proposed Petroleum Operations

Enforce the City's Petroleum Ordinance with respect to existing and proposed petroleum operations within the City Limits.

Objective 5.1.b - Abandoned Oil Wells/Residential Areas

Require 10 foot wide radius "no-build" easements around abandoned oil wells and the proper abandonment of the wells in accordance with the regulations of the CDOG.

Objective 5.1.c - Abandoned Oil Wells/Non-Residential Areas

Require 10 foot wide radius "no-build" easements around abandoned oil wells or the installation of a CDOG approved venting system over the well, and the proper abandonment of the wells in accordance with the regulations of the CDOG.

Objective 5.1.d - Abandoned Oil Sumps/Contaminated Areas

Require the remediation of all sites that contain oil sumps and/or contaminated soil in accordance with Federal, State, and local regulations.

Implementation Programs.

1. Enforcement of the City's Petroleum Ordinance (Chapter 11 of Title 9 of the Municipal Code).
2. Continue to have the County Petroleum Engineer act in that capacity for the City of Santa Maria.
3. Coordinate with CDOG, the County Petroleum Engineer, and the County of Santa Barbara Health Services Department on projects in areas with existing or past oil field activities.
4. Review oil well/sump safety hazards and condition projects with appropriate mitigation measures through the land use and CEQA processes.
5. Require a Phase I Environmental Assessment (EA) for all sites that contain an existing or abandoned oil well, or for a site within an area of known oil drilling operations, unless a clearance letter is received from the CDOG or the County of Santa Barbara Environmental Health Services Department.

Accomplishments to Date.

1. Adoption of a Petroleum Ordinance and the designation of the County Petroleum Engineer to act on the City's behalf.
2. Remediation of several oil sump/contaminated soil areas within the City Limits.
3. Recent projects have recorded 10 foot radius "no-build" easements over abandoned oil wells.

Anticipated Results.

1. The continued safe operation of existing and proposed petroleum related activities, the proper abandonment of oil wells, and the remediation of oil sumps and contaminated soil.

GOAL 6 - LANDFILL GAS

Take appropriate measures to prevent and remediate the effects of methane gas migration off-site from the Santa Maria Sanitary Landfill, or other abandoned landfill areas.

POLICY 6

Continue using monitoring wells around the perimeter of the landfill to detect possible methane migration off of the landfill property, and take appropriate action if methane is detected in any of the monitoring wells.

Objective 6.1.a - Landfill Gas (LFG)

Contain LFG on the landfill property and properly collect and dispose of the LFG before it becomes an explosive or nuisance hazard.

Implementation Programs.

1. Maintain the existing public and private LFG monitoring wells around the perimeter of the landfill.
2. Install an LFG collection system at the Santa Maria Sanitary Landfill.
3. Ventilate all structures on the landfill property to prevent the accumulation of LFG.

Accomplishments to Date.

1. Installation of 24 City owned LFG monitoring wells around the Santa Maria Sanitary Landfill.

Anticipated Results.

1. That no hazardous levels of LFG migrates off of the Santa Maria Sanitary Landfill property.

GOAL 7 - SAFE DRINKING WATER

Ensure that the potable water supply continues to meet all Federal and State water quality standards.

POLICY 7

Maintain the potable water supply by continued testing and remedial action, if necessary, in accordance with State and Federal regulations and continue to support the importation of State Water.

Objective 7.1.a - Drinking Water Standards

Monitor and treat, if necessary, public drinking water for potential harmful contaminants as determined by the Federal EPA and the State DHS.

Objective 7.1.b- State Water

Support the importation of State Water to aid in supplying potable water to the public and improving the overall quality of the groundwater.

Implementation Programs.

1. Continue testing of the drinking water supply in accordance with State and Federal standards.
2. Proper treatment of the drinking water supply, if necessary, to ensure that all monitored constituents remain below maximum contaminant levels.
3. Import State Water to improve overall water quality.

Accomplishments to Date.

1. Drinking water that does not exceed Maximum Contaminant Levels.

Anticipated Results.

1. Delivery of State Water.
2. Higher potable water quality.
3. Reduced water hardness.

GOAL 8 - AIRCRAFT SAFETY

Minimize the risk of potential hazards associated with aircraft operations at the Santa Maria Public Airport.

POLICY 8

Maintain and enforce the Clear Zone and Airport Approach Overlay zoning regulations and continue to consult with the Santa Maria Public Airport District (SMPAD) and the County of Santa Barbara Airport Land Use Commission (ALUC) with regard to land use planning within the Airport Area of Influence.

Objective 8.1.a - Land Use

Continue to enforce the Clear Zone and Airport Approach Overlay zoning regulations in the review of development projects.

Objective 8.1.b - Airport Area of Influence

Coordinate the review of development projects located in the Airport Area of Influence with the Santa Barbara County Airport Land Use Commission and the Santa Maria Public Airport District.

Implementation Programs.

1. Enforce the Clear Zone and Airport Approach Overlay zoning designations.
2. Review developments in the Airport Area of Influence with respect to aircraft safety hazards and condition projects with appropriate mitigation measures through the land use and CEQA processes.
3. Consult with the ALUC and SMPAD for projects within the Airport Area of Influence.

Accomplishments to Date.

1. Adoption of the Clear Zone and Airport Approach Overlay zoning designations.

Anticipated Results.

1. Reduce the risk of aircraft accidents through proper land use planning in the Airport Area of Influence.

GOAL 9 - HAZARDOUS MATERIALS

Minimize the community's risk from potential hazards associated with hazardous materials.

POLICY 9

Support the efforts of the City Fire Department, and coordinate efforts with the County of Santa Barbara Environmental Health Division and the California Highway Patrol, to require the proper use, transportation, treatment, and disposal of hazardous materials.

Objective 9.1.a - Hazardous Waste Storage

Require businesses that use and store hazardous materials to follow the regulations contained in the Uniform Fire Code and other appropriate State and Federal regulations.

Objective 9.1.b - Hazardous Waste Disposal

Comply with laws governing hazardous-waste management.

Objective 9.1.c - Hazardous Waste Transport

Plan for and provide a safe transport of hazardous materials and waste by designating safe truck routes that have limited or no exposure to residential areas.

Objective 9.1.d - Hazardous Waste Management

Continue to work with Santa Barbara County and the Southern California Hazardous Waste Management Authority to identify and promote safe, effective, economical, and feasible methods for managing the hazardous waste generated in the Planning Area.

Objective 9.1.e - Business Retention

Encourage businesses and industries that do not produce or use significant amounts of hazardous waste to locate in the Planning Area.

Implementation Programs.

1. Support State and County regulations with respect to the transportation, use, storage, treatment and disposal of hazardous materials and wastes.
2. Enforce the hazardous material regulations of the Uniform Fire Code and other State and Federal regulations.
3. Continued adoption of the most recent edition of the Uniform Fire Code.
4. Review developments with respect to hazardous materials and condition projects with appropriate mitigation measures through the land use and CEQA processes.

Accomplishments to Date.

1. The City of Santa Maria adopted the countywide Household Hazardous Waste Element in 1995.
2. In accordance with Article 80 of the Uniform Fire Code, industrial and commercial hazardous material users are required to provide the fire department with either a hazardous material inventory statement or a hazardous materials management plan that lists the hazardous materials used on the site, a description of where and how each is stored, and how each react in a fire.
3. Industrial and commercial hazardous material users are required to provide a Business Plan to the County Environmental Health Services Department.
4. The California Highway Patrol and the City's Municipal Code have designated appropriate hazardous material transport routes.

Anticipated Results.

1. Compliance with the County of Santa Barbara County Hazardous Waste Management Program.
2. Continued safe use, storage, transport, and disposal of hazardous materials.

GOAL 10 - EMERGENCY PREPAREDNESS

Maintain an emergency preparedness plan to respond to natural and man-made disasters.

POLICY 10

Maintain an up-to-date emergency preparedness plan that identifies the authority, responsibility, function, and operation of the City during an emergency.

Objective 10.1.a - Multihazard Functional Plan

Continue to follow the procedures and tactics detailed in the Multihazard Functional Plan during emergency situations associated with natural disasters, technological incidents, and nuclear defense operations, and update the Plan regularly as new information becomes available.

Objective 10.1.b - Emergency Preparedness

Organize city personnel for coordinated response in the event of a disaster or other emergency situation.

Objective 10.1.c - Mutual Aid

Continue to assist and be assisted by other jurisdictions and the State of California in an emergency through participation in the California Master Mutual Aid Agreement.

Implementation Programs.

1. Update the Multihazard Functional Plan on an as needed basis to reflect new information and technology.
2. Maintain the Emergency Services Ordinance codified as Chapter 17 of Title 2 of the City of Santa Maria Municipal Code.
3. Continue participation in the California Master Mutual Aid Agreement.
4. Perform emergency response preparedness exercises on a regular basis.
5. Update each Department's Standard Operating Procedures (SOP) on a regular basis and distribute the SOP's to employees so responsibilities during an emergency are known in advance.

6. Develop an information release program to familiarize the public with the Goals, Policies, and Objectives of the Safety Element. Special attention should be afforded to those groups particularly susceptible to seismic, flooding, fire and other hazards, including, but not limited to, school districts, agencies involved with the elderly, and agencies involved with the handicapped.
7. Review and update the Safety Element as new information becomes available.
8. Develop a program to strengthen the communication and understanding between agencies, both public and private, that must work together during an emergency.
9. Implement a Geographic Information System to keep track of the current status of infrastructure systems within the Planning Area.

Accomplishments to Date.

1. Emergency preparedness plans and procedures that are current and up-to-date.
2. A Master Mutual Aid Agreement between the City and the State of California and other local agencies.

Anticipated Results.

1. A coordinated emergency response effort between City departments, and between the City of Santa Maria and other agencies.
2. A reduction in deaths, injuries, and property damage as a result of a disaster.