



PUBLIC SAFETY ELEMENT

CITY OF OCEANSIDE, CALIFORNIA

Prepared by

Planning Department
City of Oceanside
May, 1975

Approved by

Planning Commission
City of Oceanside
Resolution No. 75-P27
June 2, 1975

Adopted by

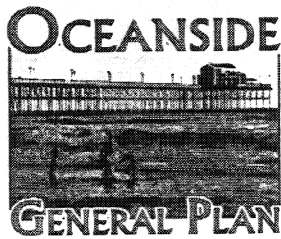
City Council
City of Oceanside
Resolution No. 75-110
September 9, 1975

Text Reformatted in 2002 by

Cotton/Bridges/Associates

Reformatting included the reorganization of the existing text, the addition of introductory material and revision of the Purpose and Authority, Scope and Content, and Relationship to Other General Plan Elements subsections.

(Figures were not reformatted.)



CITY OFFICIALS

City Council

Howard T. Richardson - Mayor
John A. Frenzel - Vice Mayor
William D. Bell
Carl E. Pruitt
Melvin J. Smith

Planning Commission

James E. O'Neal - Chairman
Jean E. Kreinbihl - Vice Chairman
Douglas M. Avis
William D. Blake
Rayford O. Scott
Walter G. Ulloa
George S. Washburn

Public Safety Element Advisory Committee

George S. Washburn, Chairman
Douglas M. Avis
Rayford O. Scott

City Manager

Lawrence M. Bagley

Contributing City Staff

Richard G. Aldrich, Water Superintendent
Lowell A. Rathbun, City Engineer
Jack E. Rosenquist, Fire Chief
Alton L. Ruden, Dir. Public Works
Clifford W. Shaw, Director of Building & Housing
Richard D. Thompson, Fire Marshall

Planning Department

Ralph T. Favia, Planning Director
Robert F. Gentles, Associate Planner
Louis N. Lightfoot, Project Planner (Safety)
Charles K. Ebner, Project Planner (Seismic) - Resigned March, 1975
Eitan M. Aharoni, Assistant Planner
Beverly D. Wood, Assistant Planner
Barbara K. Bishop, Secretary
Patricia A. Colling, Secretary
Sherrie L. Stockdale, Draftsperson



TABLE OF CONTENTS

SECTION	PAGE
INTRODUCTION	1
PURPOSE AND AUTHORITY	1
SCOPE AND CONTENT	2
RELATED PLANS AND PROGRAMS.....	2
RELATIONSHIP TO OTHER GENERAL PLAN ELEMENTS.....	4
LONG-RANGE POLICY DIRECTION	5
SEISMIC AND GEOLOGIC HAZARD	5
FIRE HAZARD	5
FLOODING HAZARD	5
PUBLIC SAFETY PLAN	6
SEISMIC AND GEOLOGIC HAZARDS	6
FIRE HAZARDS.....	16
FLOODING HAZARDS.....	27
CIVIL DISASTER PREPAREDNESS.....	31
APPENDIX	
APPENDIX A - BIBLIOGRAPHY	

LIST OF TABLES

TABLE	PAGE
TABLE PS-1 RECOMMENDED INVESTIGATIONS FOR VARIOUS GEOTECHNICAL PROBLEMS.....	14
TABLE PS-2 FIRE DEPARTMENT EQUIPMENT	24
TABLE PS-3 FIRE DEPARTMENT MANPOWER.....	24

LIST OF FIGURES

FIGURE	PAGE
FIGURE PS-1 SEISMIC HAZARDS	7
FIGURE PS-2 AREAS OF POTENTIAL HAZARDS	9
FIGURE PS-3 SLOPE STABILITY	11
FIGURE PS-4 GEOTECHNICAL EVALUATION	15
FIGURE PS-5 NATURAL FIRE HAZARDS.....	17
FIGURE PS-6 STRUCTURAL FIRE HAZARDS.....	19
FIGURE PS-7 NON-STRUCTURAL FIRE HAZARDS	21
FIGURE PS-8 FIREFIGHTING FACILITIES	23
FIGURE PS-9 NATURAL FLOODPLAINS	28
FIGURE PS-10 INUNDATION MAP FOR HENSHAW DAM	30
FIGURE PS-11 RELOCATION ROUTES & REFUGEE CENTERS	33

PUBLIC SAFETY ELEMENT

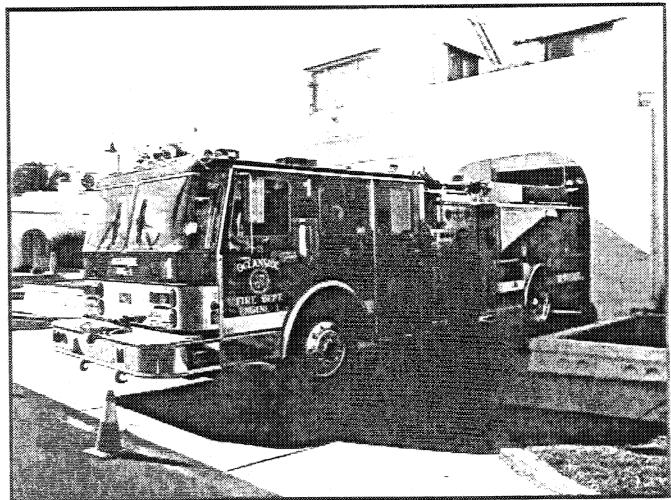
INTRODUCTION

Oceanside, like many other urban centers in California, is subject to certain potential hazards, such as earthquakes, fire, and flooding, the severity of which has a direct bearing upon the quality of life enjoyed by the City's residents. This severity is often directly proportional to the intensity and density of urban development and the proximity of the development to the hazard source. In many cases, however, corrective and preventive measures taken by the City and individual citizens can do much to eliminate or reduce the risk involved.

The purpose of the Public Safety Element of the General Plan is to identify these hazards, and develop appropriate mitigation measures that can and should be integrated into the planning and decision making processes of the City. Knowledge of the existing hazards and consideration of possible corrective action can do much to reduce loss of life, injuries, and property damage resulting from natural causes and man-made occurrences.

Purpose and Authority

The purpose of the Public Safety Element is to identify and address those features or characteristics existing in or near the City that represent a potential hazard to the community's citizens, sites and structures, public facilities, and infrastructure. The Safety Element establishes policies to minimize the danger to residents, workers, and visitors while identifying actions needed to manage crisis situations such as earthquakes, fires, and floods. A civil preparedness approach for the City is also addressed in the element.



Scope and Content

This Element is meant to serve as a guide for introducing safety considerations into the planning process in order to reduce loss of life, injuries, damage to property and economic and social dislocation resulting from fire, flooding, and seismic occurrences.

The planning area addressed in this element is the incorporated limits of the City of Oceanside and the sphere of influence as adopted by City Council Resolution 74-139 of June 26, 1974. The policies outlined herein cannot be directly applied to those areas outside the present City limits; however, the appropriateness of planning for areas beyond the City boundaries which may significantly affect a City's planning process is recognized by Oceanside and authorized by the State of California.

The major areas of concern addressed in this element are:

1. Seismic and Geologic Hazards
2. Fire Hazards
3. Flooding Hazard due to dam failure
4. Civil Disaster Preparedness

The Public Safety Element contains three sections: 1) Introduction; 2) Long-Range Policy Direction; and 3) the Public Safety Plan. Each of the four hazards identified above is defined, identified, and discussed in relation to its severity and probable frequency of occurrence within the element. Various levels of risk are discussed in the Plan section, and figures are included showing those areas of highest risk in the City. Possible mitigation and abatement measures are presented and safety criteria, standards, and policies are formulated, which represent Oceanside's approach toward consideration of safety factors and implementation of such factors into the City's planning process.

Related Plans and Programs

There are a number of existing plans and programs that directly relate to the goal and policies of the Public Safety Element. These plans and programs have been enacted through federal, State, and local legislation and are administered by agencies with powers to enforce federal, State, and local laws.

Oceanside Emergency Plan

The City of Oceanside has an Emergency Plan, which is currently being updated to plan for the year 2020. The plan identifies evacuation routes, emergency facilities, and City personnel and equipment available to effectively deal with emergency situations.

Master Plans of Drainage

The City's two Master Drainage Plans identify drainage deficiencies in the City's drainage system for Drainage Districts One and Five in one plan and Districts Two, Three, and Four in the other. The plans provide solutions to flood hazards in developed and undeveloped areas. The facilities proposed in the plans for undeveloped areas are based on future development consistent with present City land use policies. Cost estimates and financing recommendations have also been prepared for the proposed drainage facilities.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) was adopted by the State legislature in response to a public mandate for a thorough environmental analysis of projects that might adversely affect the environment. The provisions of the law, review procedures, and any subsequent analysis are described in the CEQA Statutes and Guidelines as amended in 1998. Safety hazards are recognized as environmental impacts under CEQA. Continued implementation of CEQA will ensure that City officials and the general public have information describing assessment and mitigation of potentially significant safety impacts associated with private and public development projects.

Seismic Hazards Mapping Act

Pursuant to the Seismic Hazards Mapping Act, the State Geologist compiles maps identifying seismic hazard zones. Development in seismic hazard areas is subject to policies and criteria established by the State Mining and Geology Board. Additionally, approval of development on a site within a seismic hazard area requires the preparation of a geotechnical report and local agency consideration of the policies and criteria set forth by the State Mining and Geology Board (Public Resources Code Section 2690 et. seq.).

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to identify earthquake fault zones along traces of both recently and potentially active major faults. Cities and counties that contain such zones must inform the public regarding the location of these zones, which are usually one-quarter mile or less in width. Proposed development plans within these earthquake fault zones must be accompanied by a geotechnical report prepared by a qualified geologist describing the likelihood of surface rupture.

Cobey-Alquist Floodplain Management Act

The Cobey-Alquist Floodplain Management Act encourages local governments to plan, adopt, and enforce land use regulations for floodplain management, in order to protect people and property from flooding hazards. This act also identifies requirements that jurisdictions must meet in order to receive State financial assistance for flood control.

National Flood Insurance Administration Program (NFIP)

Oceanside participates in the National Flood Insurance Program (NFIP), which is administered by the Federal Emergency Management Agency (FEMA). The NFIP program provides federal flood insurance and federally financed loans for property owners in flood prone areas. To qualify for federal flood insurance, the City must identify flood hazards areas and implement a system of protective controls. The Safety Element, the Flood Overlay Zoning District Regulations, and Chapters and Articles VI of the Municipal Code fulfill these requirements.

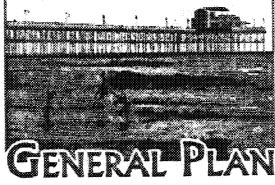
Relationship to Other General Plan Elements

The Public Safety Element is an independent element of the General Plan, though it is related to all of the other elements, creating a single General Plan document. One element that is directly related to the Public Safety Element is the Environmental Resource Management Element. Both elements address issues related to flooding and other environmental hazards.

The Public Safety Element also contributes to developing land use standards and policies. These criteria will relate type and intensity of use to the level of risk from fire, flooding, and seismic hazards, to the effect of development upon that risk, and to the availability of services and facilities to mitigate the hazards. As such, it serves as a direct source of data and City policies for developing land use districts and a circulation system as contained in the Land Use and Circulation Elements.

The findings contained in the Public Safety Element would also have a direct effect on implementation of those specialized land uses and facilities such as public buildings and utilities as outlined in the Community Facilities Element.

OCEANSIDE LONG-RANGE POLICY DIRECTION



Goals and Objectives are broad statements of the City's intent to mitigate or eliminate an identified risk. The actual programs to be developed are in the form of recommendations, contained in the following section (Public Safety Plan). In general terms, one goal will express Oceanside's approach to public safety:

GOAL: Take the action necessary to ensure an acceptable level of public safety for prevention and reduction of loss of life and personal property of the citizens of Oceanside.

To meet this goal, objectives must be specified to ensure appropriate action will be taken for mitigation within the hazard areas identified in Oceanside. These objectives are described below:

Seismic and Geologic Hazard

1. Consider seismic and geologic hazards when making land use decisions particularly in regard to critical structures.
2. Minimize the risk of occupancy of all structures from seismic and geologic occurrences.
3. Provide to the public all available information about existing seismic and geologic conditions.

Fire Hazard

1. Maintain the necessary equipment, personnel and water supply levels required for the current class 5 insurance rating over the entire City.
2. Continue an active and effective fire prevention program through public education, code enforcement, and inspection service.

Flooding Hazard

1. Consider the potential for flooding when making land use decisions.
2. Ensure public awareness of existing flooding hazards.

OCEANSIDE PUBLIC SAFETY PLAN



Seismic and Geologic Hazards

San Diego County is a region of known seismic activity. Earthquakes have been documented as far back as 1769 when the Portola expedition passed through this area of Alta California. The eastern portion of the region contains several sizable active faults, as does the ocean floor just five miles off shore (See Figure PS-1).

A full description and analysis of the seismic conditions within Oceanside are contained in a report entitled *Geotechnical Investigations for General Plan Revisions, Oceanside, California* prepared by Burkland and Associates, geologic engineers. The report is available from the Oceanside Planning Department. The information presented below is a summary of the major findings of that report.

Primary Effects

Primary seismic effects are caused by movement along an active fault. These movements can be sudden and severe as in an earthquake or slow and imperceptible as in fault creep. The movement along a fault can be horizontal, vertical, or a combination of both. The width of the ground rupture zone is usually less than 20 feet in rock, but can be up to 60 feet in soft, saturated soils.

There are no proven active or potentially active faults within the City of Oceanside or its sphere of influence. There is one active fault, the Rose Canyon fault, within a radius of 25 miles. This fault has been mapped approximately five miles offshore of the planning area by the U.S. Geological Survey. There has been a great deal of controversy about the location of the fault and whether a branch turns toward shore and enters the planning area. It is the firm conclusion of Burkland and Associates that this is not the case.

The earthquake history of the Rose Canyon fault is active. In 1812, San Juan Capistrano was destroyed by an epicenter on this fault, and this fault was also responsible for the Long Beach earthquake of 1933. An earthquake of a magnitude of 6.5 or greater with its epicenter on the Rose Canyon fault could result in secondary seismic effects in the planning area.

In addition to the Rose Canyon fault, there are four major active fault zones within 100 miles of Oceanside (Figure PS-1). They are the Elsinore fault zone, 25 miles from the coast; Agua Caliente fault zone, 33 miles from the coast; San Jacinto fault zone, 48 miles from the coast; and the San Andreas fault zone, 77 miles from the coast. The energy generated by a high magnitude (7.0 or greater on the Richter Scale) earthquake centered on any of these faults would be attenuated by the time it reached the planning area; however, certain portions of the planning area could be subject to damage from secondary seismic effects.

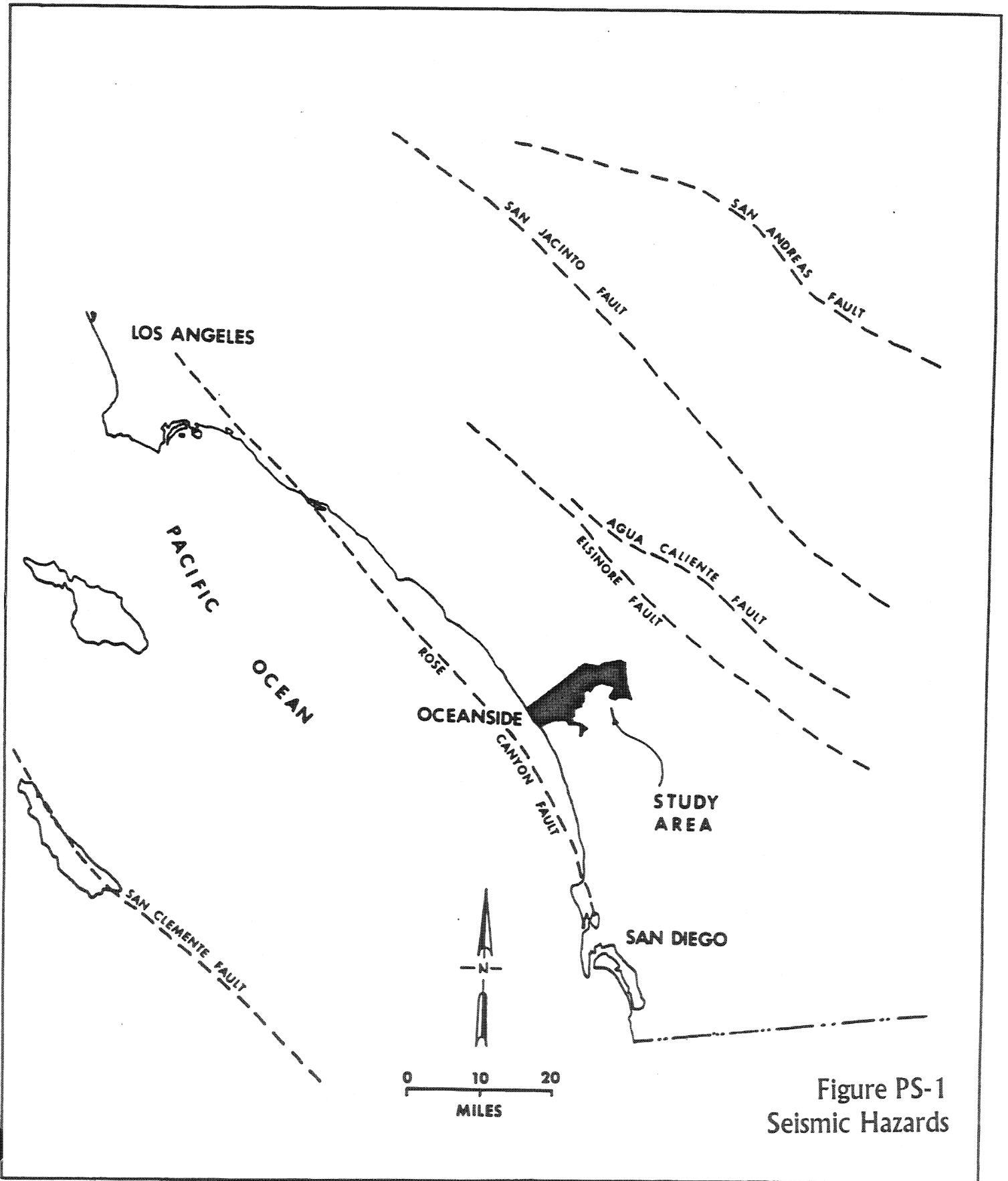


Figure PS-1
Seismic Hazards

The highest danger from primary seismic effects is surface faulting which tends to occur along lines of previous faulting. Since there are no known active or potentially active faults within the planning area, there is considered to be no potential for ground rupture.

Secondary Effects

The secondary effects of seismic occurrences are many; however, those pertinent to the Oceanside planning area are liquefaction, lurch cracking, lateral spreading, local subsidence (ground failure), landslides, vibrational damage, seiche, and tsunamis. There is a likelihood of each effect occurring, with some greater than others.

Figure PS-2 indicates those portions of the planning area susceptible to a moderate to major danger from several related secondary seismic effects. Generally, the greatest hazard from these effects exists in the alluvial areas west of El Camino Real, in and around the lagoons, and along the beach.

These secondary effects are described briefly here. More detailed description and analysis can be found in the Burkland report.

Liquefaction is a “quick” condition that can occur in certain types of saturated soils due to shaking during an earthquake. In this condition, the soils lose all of their cohesive strength causing them to be unable to bear the weight of overlying soils and structure.

Lurch cracking is the development of all types and sizes of fissures in the ground due to ground motion during an earthquake.

Lateral spreading is the movement of loose soils during an earthquake over low-angle slopes into open areas.

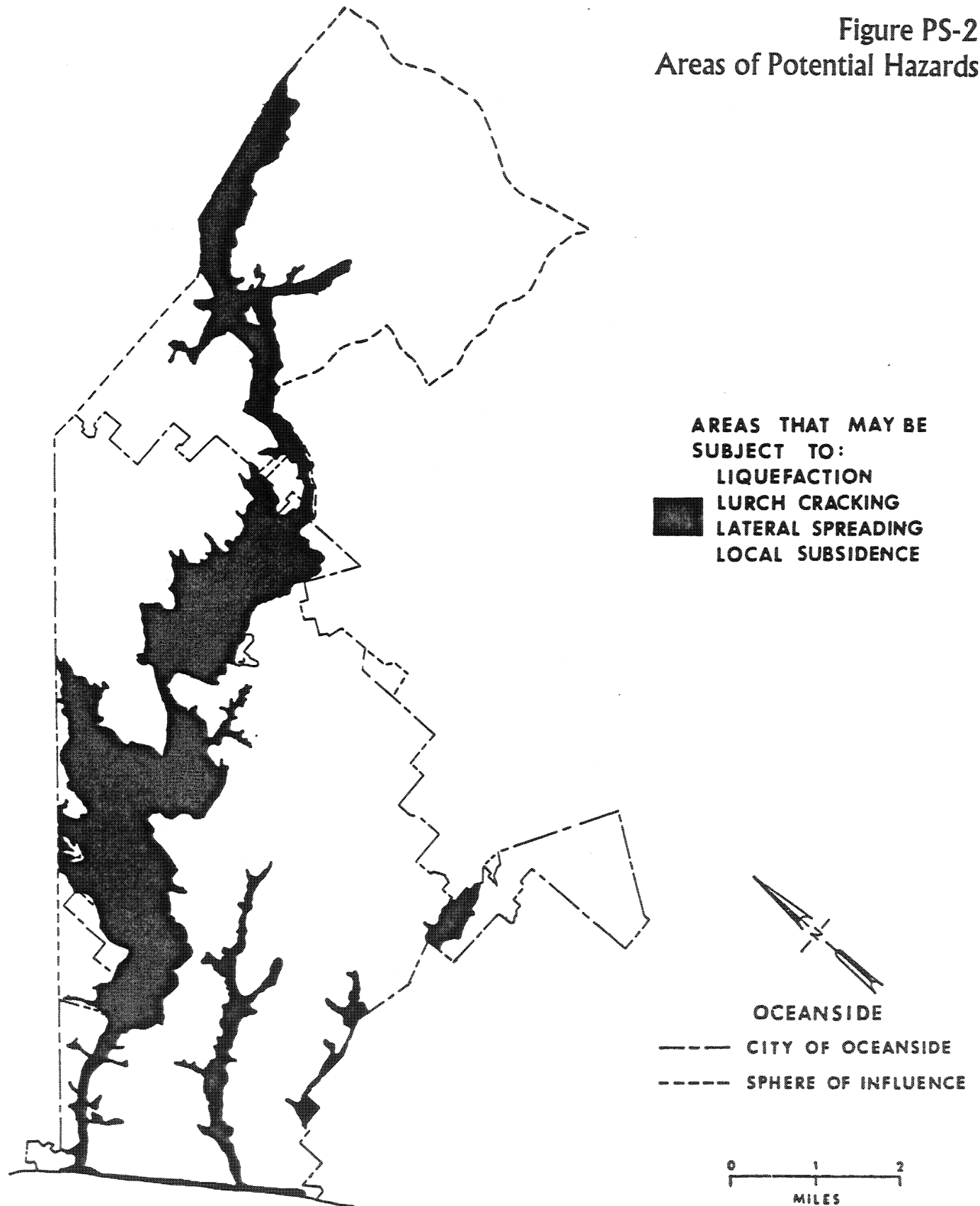
Local subsidence can occur during an earthquake when water is driven out of saturated soils causing the soils to become more compact.

Other secondary effects not indicated on Figure PS-2 are ground vibration, seiches, and tsunamis.

Structural damage due to **ground vibration** is caused by the transmission of earthquake vibrations from the ground into structures. The variables that determine the extent of damage are:

1. The characteristics of the underlying soils and/or rocks.
2. The design of the structure.
3. The quality of materials and workmanship used in construction.
4. The location of the epicenter and magnitude of the earthquake.
5. The duration and intensity of ground shaking.

Figure PS-2
Areas of Potential Hazards



The potential for structural damage due to ground vibration in the planning area is greatest in areas underlain by deep, soft, saturated alluvial soils and least in areas of hard bedrock. Generally, there is some degree of hazard from ground shaking for all locations within the planning area.

A *seiche* is an oscillating wave in an enclosed or restricted body of water generated by ground motion during an earthquake. The effect of these waves can be to cause the overflow of a lake, reservoir, or lagoon. There is a minimal potential for seiche to occur in the lagoons within the planning area.

A *tsunami* is a high ocean wave generated by a submarine earthquake or volcanic eruption. Such an event anywhere in the Pacific Ocean could threaten inundation of the beaches, lagoons, and harbor with waves up to 10 to 15 feet high. The planning area has not been affected by tsunamis in the past; however, this does not eliminate the potential danger. If a threat should occur, it would come from a distant point of origin, because the Rose Canyon fault is considered too close to shore and of such a structure as to probably not generate a tsunami.

Non-Seismic Geologic Hazards

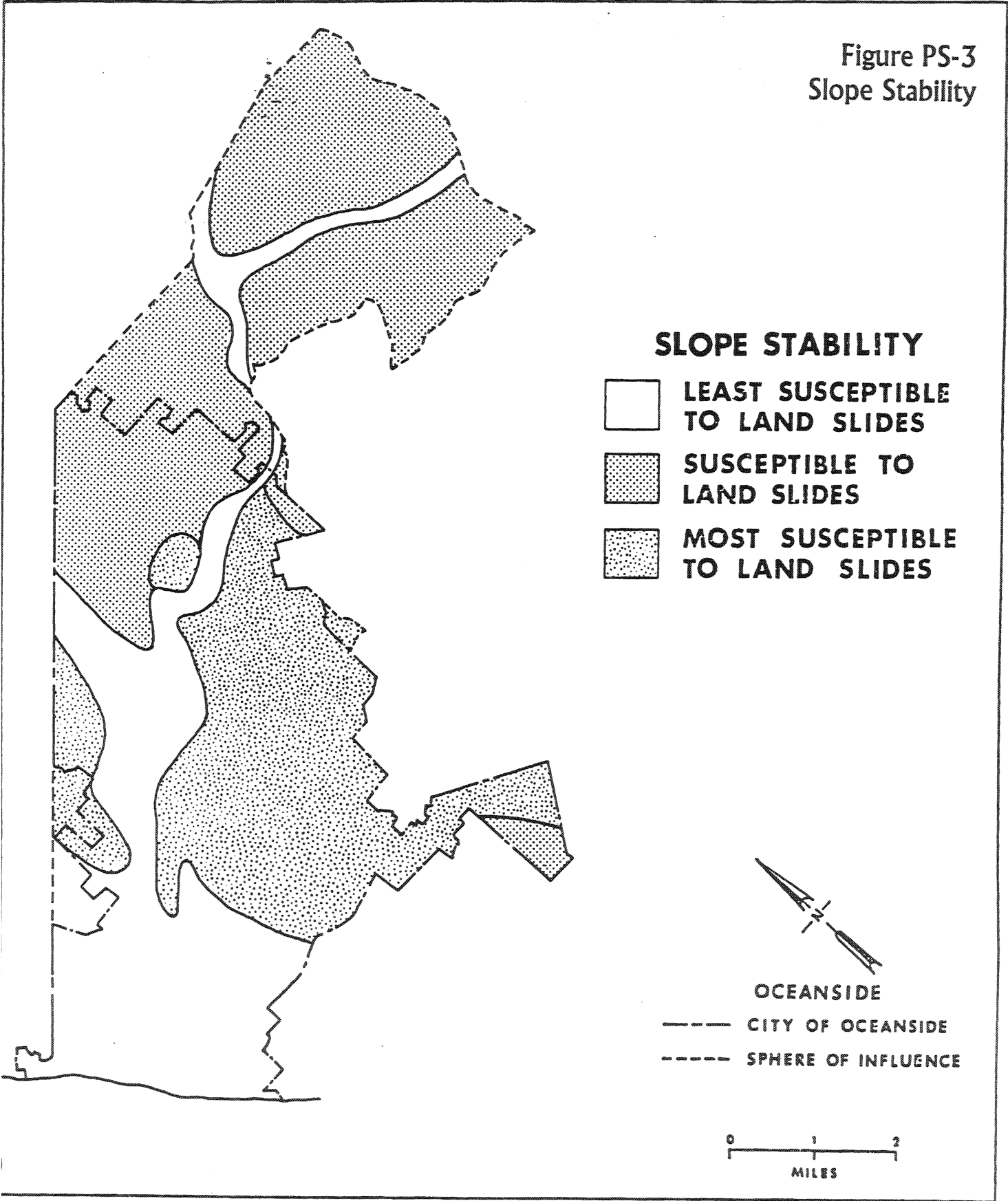
Non-seismic hazards of concern to Oceanside are slope instability, resulting in landslides and slope failure, and erosion. Often, these problems occur as the result of seismic activity, and therefore, their severity and probability for occurring can be related to the probability and severity of earthquakes. A brief description of each hazard is included here. Figure PS-3 shows those areas of the City with a potential for slope instability.

Slope Instability

Susceptibility of slopes to landslides and other forms of slope failure depends on several factors. These are usually present in combination and include, but are not limited to, steep slopes, condition of rock and soil materials, presence of water, formational contacts, geologic shear zones, and seismic activity. Development in a stable, ancient landslide area can result in re-activation of the slide. The La Jolla Group soils are most susceptible to slope instability.

There are no published reports of landslides occurring within Oceanside, nor is there evidence of any found in reconnaissance or aerial photographs. Minor slope movement is occurring throughout the City primarily as soil creep, slumping, and sloughing along road cuts and where soils have accumulated on steep slopes.

Figure PS-3
Slope Stability



Erosion

Erosion is a normal and inevitable geologic process whereby earth materials are loosened, worn away, decomposed or dissolved, removed from one place, and transported to another location. Precipitation, running water, waves, and winds are all agents of erosion. Ordinarily, erosion proceeds so slowly as to be imperceptible, but when the natural equilibrium of the environment is changed, the rate of erosion can be greatly accelerated. This can create aesthetic as well as engineering problems. Accelerated erosion within an urban area can cause damage by undermining structures, blocking storm sewers, and depositing silt, sand, or mud in roads, basements, and tunnels.

Oceanside is presently experiencing four erosion related problems. These include the accelerated erosion in the soft rocks of the La Jolla Group, rapid weathering of granite rocks, siltation of the lagoons, and rapid beach erosion. The most serious of these is the beach erosion, which not only threatens the personal safety and property of beach residents, but also detracts from the tourist industry of the City.

Abatement of Seismic and Geologic Hazards

The major limitation at this time to the elimination of seismic and geologic risk is that there is no available technological capability to control or reduce the actual occurrence of seismic hazards.

The abatement of seismic and geologic hazards is primarily accomplished by regulating land use to some degree in high-risk areas, and by proper engineering practices both before and during construction.

Land Use Regulation

At this time, Oceanside regulates development to a slight degree because of geologic criteria. This is done in the Land Use Element of the General Plan by calling for cluster development and slope preservation in those areas of the City that generally contain steep slope conditions. With the adoption of the Public Safety General Plan Element, those areas subject to a high degree of seismic and geologic problems should be more clearly defined. As indicated in the discussion on risk in the preceding chapter, building and land use types can be classified into three general groups based on their potential for disaster. It is recommended that all Group I buildings and land uses be prohibited in those areas of high seismic and geologic hazard. In addition, other approved development should be required to take the necessary engineering precautions to reduce risk to an acceptable level.

Engineering Practices

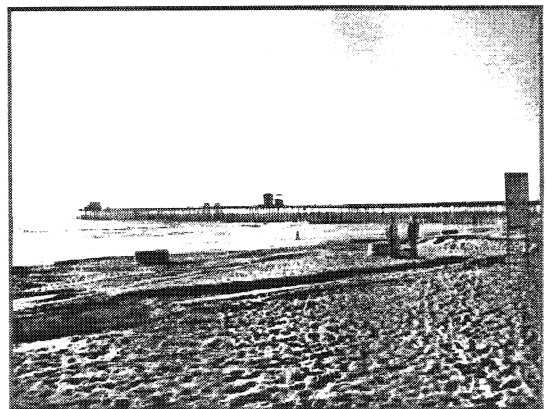
1. Grading Regulations - The City currently has a Grading Ordinance in place (Ordinance No. 73-46) that specifies some criteria concerning maximum slope, yards, storm run-off, slope stabilization, and treatment of expansive soils.

2. Soils and Geologic Testing - The City presently requires soil borings to be taken on all proposed building sites prior to the issuance of building permits. These borings are generally routine in nature and are used to identify water table levels and presence of expansive soils, uncompacted fill, etc. The Burkland report identifies several other geotechnical investigations that should be accomplished if a site has been identified as being particularly susceptible to certain geologic problems. Burkland surveyed the City and mapped the severity of problems throughout the City as shown on Figure PS-4. Table PS-1, when used in conjunction with Figure PS-4, identifies the suggested investigations that should be carried out dependent upon the nature of the problem and the type of land use proposed. It is recommended that the City consider adopting appropriate standards and procedures for geologic testing using the Burkland analysis as a guide.
3. Hillside Ordinance - Many cities have recently adopted or are considering special provisions governing development on slopes over a specified steepness (15-30 percent). Such regulations may prohibit development in part, specify development patterns and site layout, or regulate the amount of permissible cut and fill.

A hillside ordinance could be of benefit to Oceanside as a means of providing more precise implementation of the "cluster overlay" of the Land Use Element. A study should be authorized to explore the possibilities of developing hillside regulations for Oceanside as either a separate ordinance or as part of the Grading Ordinance.

4. Building Inspection - The building inspection program in Oceanside is presently geared toward correcting fire hazards and general structural deficiencies. No specific consideration is given to seismic considerations. It is recommended that consideration be given to identifying structures that constitute a seismic hazard and that public buildings so identified be corrected, demolished, or properly marked with warning signs. In addition, architectural appendages such as cornices and parapets should be periodically inspected for weakness and removed or strengthened if necessary.

5. Beach Erosion - As mentioned previously, the most severe erosion problem in the City is along the beachfront. Solutions to this problem have been under investigation by the Army Corps of Engineers for several years and include possible remedies as submerged breakwaters, a series of rock groins, and beach replenishment. A decision as to which method will prove workable for Oceanside has not



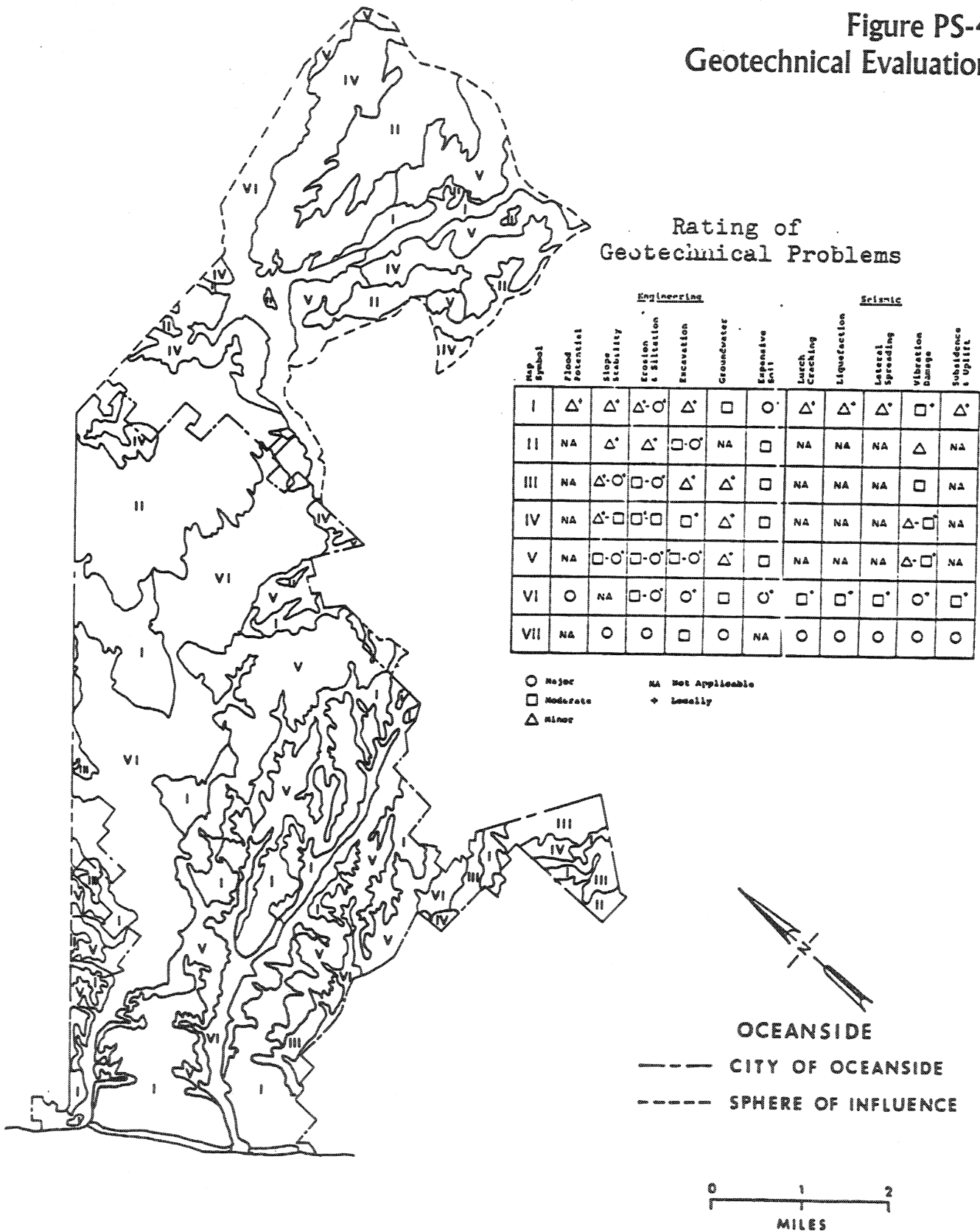
**Table PS-1
Recommended Investigations for Various Geotechnical Problems**

Map Symbol	Residential	High Rise	Critical Structures	Light Commercial	Heavy Industrial	Site Problems	Routine (R)	Erosion Control (EC)	Detailed (D)
I	EG-R SF-R SH-R EC-R SL-R F-R O-NA	EG-R SF-R SH-D EC-R SL-R F-R O-NA	EG-R SF-R SH-D EC-R SL-R F-R O-NA	EG-R SF-R SH-R EC-R SL-R F-R O-NA	EG-R SF-R SH-D EC-R SL-R F-NA O-NA	erosion siltation	drainage control landscaping	In addition to items under routine: erosion rates of rocks or soils siltation control	
II	EG-D SF-R SH-R EC-R SL-R F-NA O-NA	EG-D SF-R SH-D EC-R SL-R F-NA O-NA	EG-D SF-R SH-D EC-R SL-R F-NA O-NA	G-D SF-R SH-R EC-R SL-R F-NA O-NA	EG-D SF-R SH-D EC-R SL-R F-NA O-NA	faults landslides slope stability grading excavation drainage groundwater	reconnaissance of site review literature and maps prepare generalized geologic map review grading plans inspect during grading prepare Aas built@ geologic map	In addition to items under routine: aerial photograph interpretation prepare detailed geologic map determine subsurface structure analyze: fault potential, groundwater conditions, slope stability geophysical surveys to determine hard rock excavation methods	
III	EG-R SF-R SH-R EC-R SL-D F-NA O-NA	EG-D SF-D SH-D EC-R SL-D F-NA O-NA	EG-D SF-D SH-D EC-R SL-D F-NA O-NA	EG-R SF-R SH-R EC-D SL-D F-NA O-NA	EG-R SF-R SH-D EC-D SL-D F-NA O-NA	faults earthquake effects	generalized evaluation of potential primary and secondary earthquake effects	research earthquake records including site strong motion data establish maximum credible and design earthquakes geophysical investigation for fault locations, micro tremor data, and primary and shear wave velocities dynamic soil response tests computer analysis of dynamic response of soils and rocks	
IV	EG-D SF-R SH-R EC-R SL-D F-NA O-NA	EG-D SF-R SH-D EC-R SL-D F-NA O-NA	EG-D SF-D SH-D EC-R SL-D F-NA O-NA	EG-D SF-R SH-R EC-R SL-R F-NA O-NA	EG-D SF-R SH-D EC-R SL-D F-NA O-NA	soils and foundations	obtain soil samples from various depths, test for applicable engineering characteristics determine groundwater levels, drainage, slope conditions	In addition to items under routine: specialized sampling geologic analysis of rock structure and proposed slopes testing, permeability, dynamic response recommend specialized foundation designs	
V	EG-D SF-R SH-R EC-D SL-D F-NA O-NA	EG-D SF-D SH-D EC-D SL-D F-NA O-NA	EG-D SF-D SH-D EC-D SL-D F-NA O-NA	EG-D SF-R SH-D EC-D SL-D F-A O-A	EG-D SF-D SH-D EC-D SL-D F-NA O-A	slope stability	generalized analysis of stability based on geologic, soil, and groundwater data	In addition to items under routine: determine subsurface structure geologic analysis of rock structure and proposed slopes analysis of soil data for proposed slopes analyze potential seismic effects on slopes	
VI	EG-R SF-D SH-R EC-D SL-NA F-D O-NA	EG-D SF-D SH-D EC-R SL-NA F-D O-NA	EG-D SF-D SH-D EC-R SL-NA F-D O-NA	EG-R SF-D SH-D EC-D SL-NA F-D O-NA	EG-R SF-D SH-D EC-D SL-NA F-D O-NA	floor	U.S.G.S. Water Resources Division, flood maps California Division of Water Resources publications	determine flood potential based on 100-year or 1000-year storms analyze drainage basin characteristics	
VII	EG-R SF-D SH-D EC-D SL-D F-NA O-D	EG-D SF-D SH-D EC-D SL-D F-NA O-D	EG-D SF-D SH-D EC-D SL-D F-NA O-D	EG-D SF-D SH-D EC-D SL-D F-NA O-D	EG-D SF-D SH-D EC-D SL-D F-NA O-NA	beach and sea cliff erosion tsunami	U.S. Corps of Engineers, beach and sea cliff erosion data U.S. Coast and Geodetic Survey, tide, current and storm data California Division of Mines, tsunami hazards maps	In addition to items under routine: determine - longshore currents, maximum storm conditions, sand supply and movement, maximum wave heights, bottom topography, evaluate all control measures as to effects north and south of area, analyze tsunami hazard	

EG: Engineering Geologic SH: Seismic Hazard
SF: Soil and Foundation EC: Erosion Control
R: Routine O: Oceanographic
F: Flooding SL: Slope Stability
D: Detailed NA: Generally Not Applicable

Source: Burlingame & Associates, Geotechnical Evaluation Map

Figure PS-4
Geotechnical Evaluation



been made; meanwhile, the City has been replenishing the beach sand by dredging sand from the harbor entrance. The latter is only an interim solution.

Fire Hazards

The danger of fire is probably the most severe hazard faced by the residents of Oceanside. The probability of fire occurring is higher than for any other natural hazard. In 1974 alone, the Oceanside Fire Department answered 527 fire calls, which caused a total of \$382,303 in property losses. This amounts to a loss of over \$7.00 each for every man, woman, and child within the City.

Natural Hazards

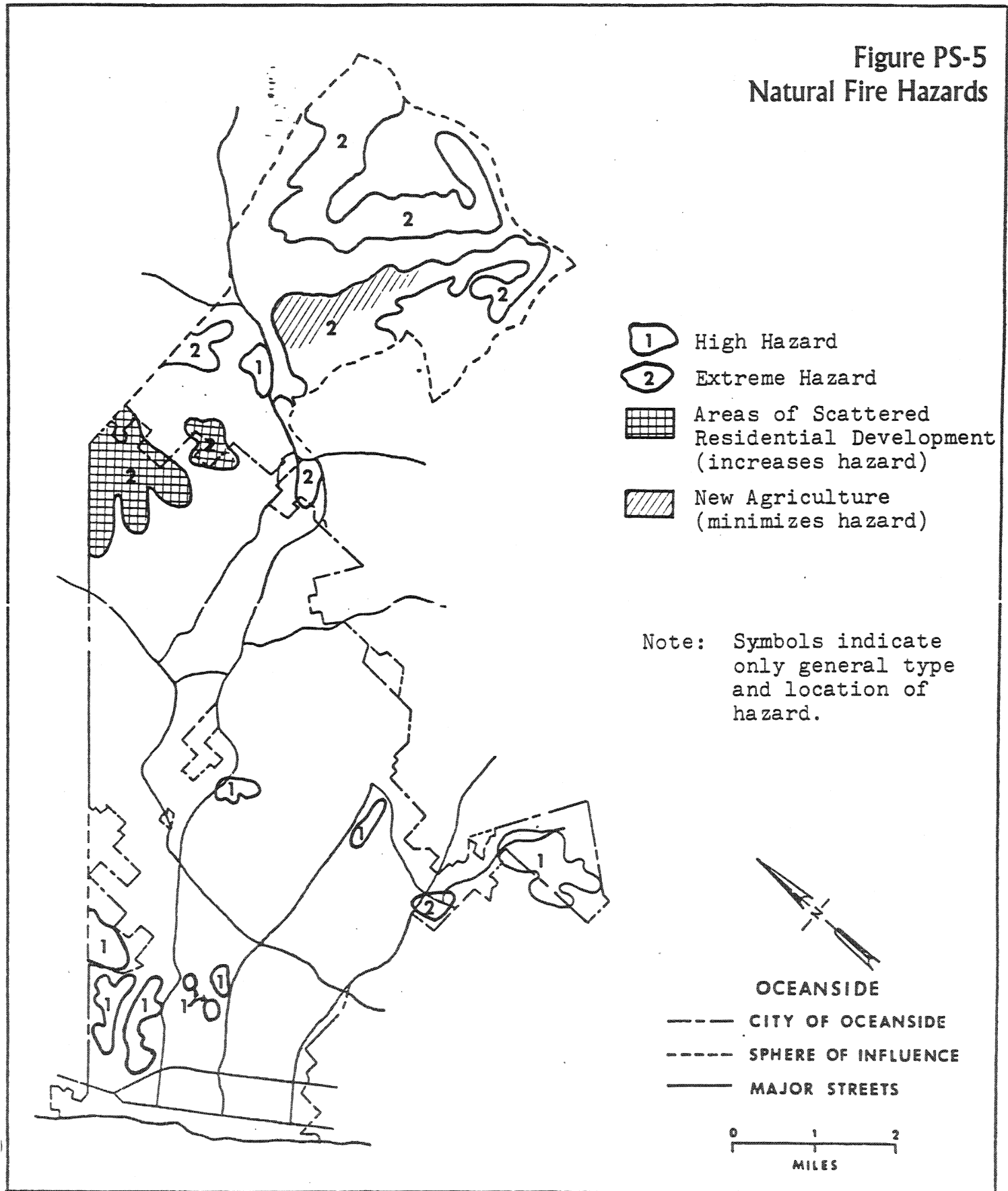
The threat of brushfire is endemic to the Southern California coastal area. Los Angeles County reports nearly 203,000 acres of brushland burned between 1967-1973. In San Diego County, there have been major fires in 1967, 1970, and 1971. The 1970 Laguna Fire resulted in the destruction of 383 homes, 1200 other structures, 225,000 acres of trees and other watershed, and numerous small dams, bridges, and roads, totaling an estimated \$45 million damage.

Responses to brushfires in Oceanside constitutes nearly 1/3 of all fire calls. The City has been very fortunate not to have experienced a major brushfire in recent years because the potential for one has been increasing steadily as residential development has increased into the outlying canyons and mesas. In 1974, there were 166 minor brush fires and grass fires within the City; 95 of these occurred between May and September, of which the highest number, 45, occurred in the month of July.

There are three primary factors that contribute to the brushfire threat in this area – vegetation, climate, and development patterns. The chaparral, sage, and other native vegetation of Southern California is dry and resinous, making it very combustible, especially during the hot summer months. The normal “fire season” is April through November when strong, hot winds of the “Santa Ana” variety compound the problem and can spread a minor fire into a major conflagration in minutes. The current practice of developing “canyon view” subdivisions introduces the potential for loss of homes and lives into the natural hazard. When this occurs, efforts to eliminate fires are often not accompanied by adequate brush and weed abatement and clearance measures. This results in an abnormally high buildup of fuel that increases the potential for a disastrous fire.

Brush fire hazards in Oceanside exist to some degree throughout the City; however, it is “high” only in areas in proximity to residential development. The hazard is rated “extreme” in those areas where the vegetation changes from grass and sage to the denser and more flammable chaparral; an even higher risk occurs where residential development is scattered on large lots, where more of the natural vegetation is preserved, than in the standard single-family development. Such an area of extreme hazard is the northern part of Morro Hills. Figure PS-5 indicates those areas of Oceanside where there is high risk of fire from natural hazards.

Figure PS-5
Natural Fire Hazards



Man-Made Structural Hazards

Fire hazardous structures constitute the greatest man-made fire hazard. These are primarily older structures, characterized by substandard wiring, open stairwells, and obsolete heating facilities. When ignited, fire spreads rapidly inside these structures. Major clusters of these buildings in the downtown area house a variety of commercial and professional uses on the ground floor and low-rent housing units for the poor and elderly on upper floors. A fire in this area could easily spread to other buildings.

High-rise structures, also often occurring in the downtown area, pose another structural hazard. Access of emergency equipment and personnel to the upper stories becomes increasingly difficult. At present, the Oceanside Fire Department can only reach the level of a third-story window (35 feet). Evacuation of a building's occupants, always a problem in high-rise structures, is not even possible at this time from the roof of a three-story building. Internal support systems of such buildings (elevators, ventilation, and water pressure) must also be designed to not fail during a fire when they are most critically needed.

Evacuation of occupants is of primary concern also in places of public assembly such as churches, schools, theaters, and other entertainment and recreation establishments. The concentration of large numbers of people in such facilities provides the potential for mass panic during a crisis such as fire, often resulting in more damage and injury than the fire itself. It is essential that such structures be designed with adequate, well-marked emergency exits and public address systems that would not be rendered inoperable because of fire.

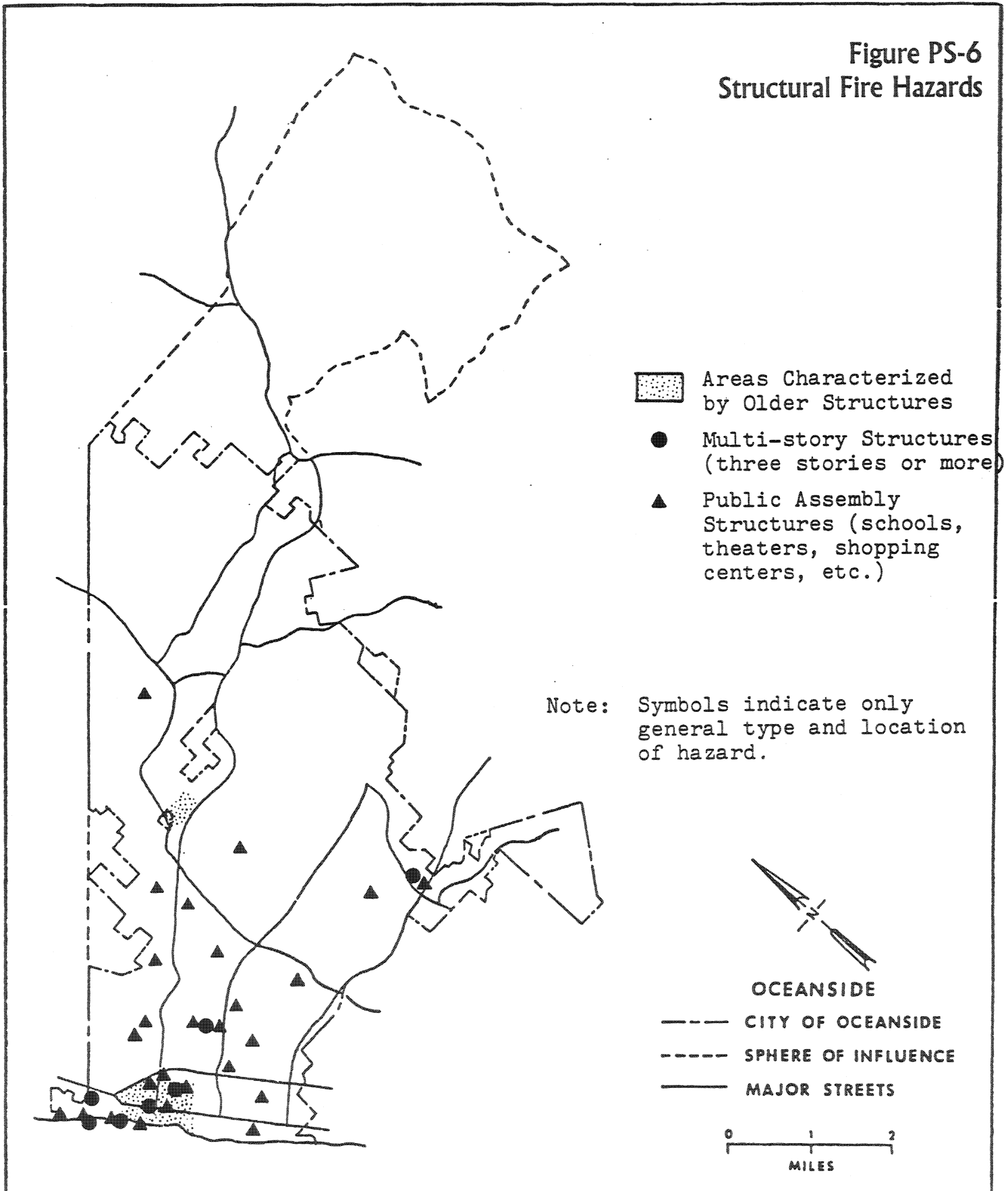
Not all structural hazards are limited to the downtown and other high-density areas. Suburban homes with untreated shake roofs and inadequate side yard access pose just as serious problems in fire control and occupant evacuation. Local Building and Zoning codes must, therefore, contain provisions for elimination of such problems.

In Oceanside, there are several areas where these structural hazards are cause for concern. New high rise construction among older substandard structures downtown is one such area. Any facility in the City designed to accommodate large numbers of people such as shopping centers and schools always contain the potential for disaster. These areas and others are indicated on Figure PS-6.

Man-Made Non-Structural Hazards

Non-structural hazards concern not only the juxtaposition of inherently hazardous to non-hazardous urban activities but also the entire urban infrastructure, including access and water supply, which must be adequate to serve the existing and expected intensity of development. Large industrial areas, often including the storage of noxious and flammable gases and liquids, are in themselves a fire hazard that is only compounded when located adjacent to large residential areas. Access points to any area must be adequate in size for the passage of emergency vehicles and adequate in number for the timely evacuation of residents and employees. Hydrants must be of adequate number and design and located properly. Water

Figure PS-6
Structural Fire Hazards



supply must be of sufficient quantity and pressure to meet the demands of fire fighting. Even the street naming, signing, and numbering must be designed to avoid confusion and allow easy identification of areas and structures where emergency assistance is required.

Oceanside, along with most cities, contains all of the above problems to some degree. The most serious of these is probably the inadequate water supply and pressure in the downtown area. The location of non-structural hazards is indicated on Figure PS-7.

Hazards Associated with Annexations of Land within the Eastern Sphere of Influence - San Luis Rey Downs Area

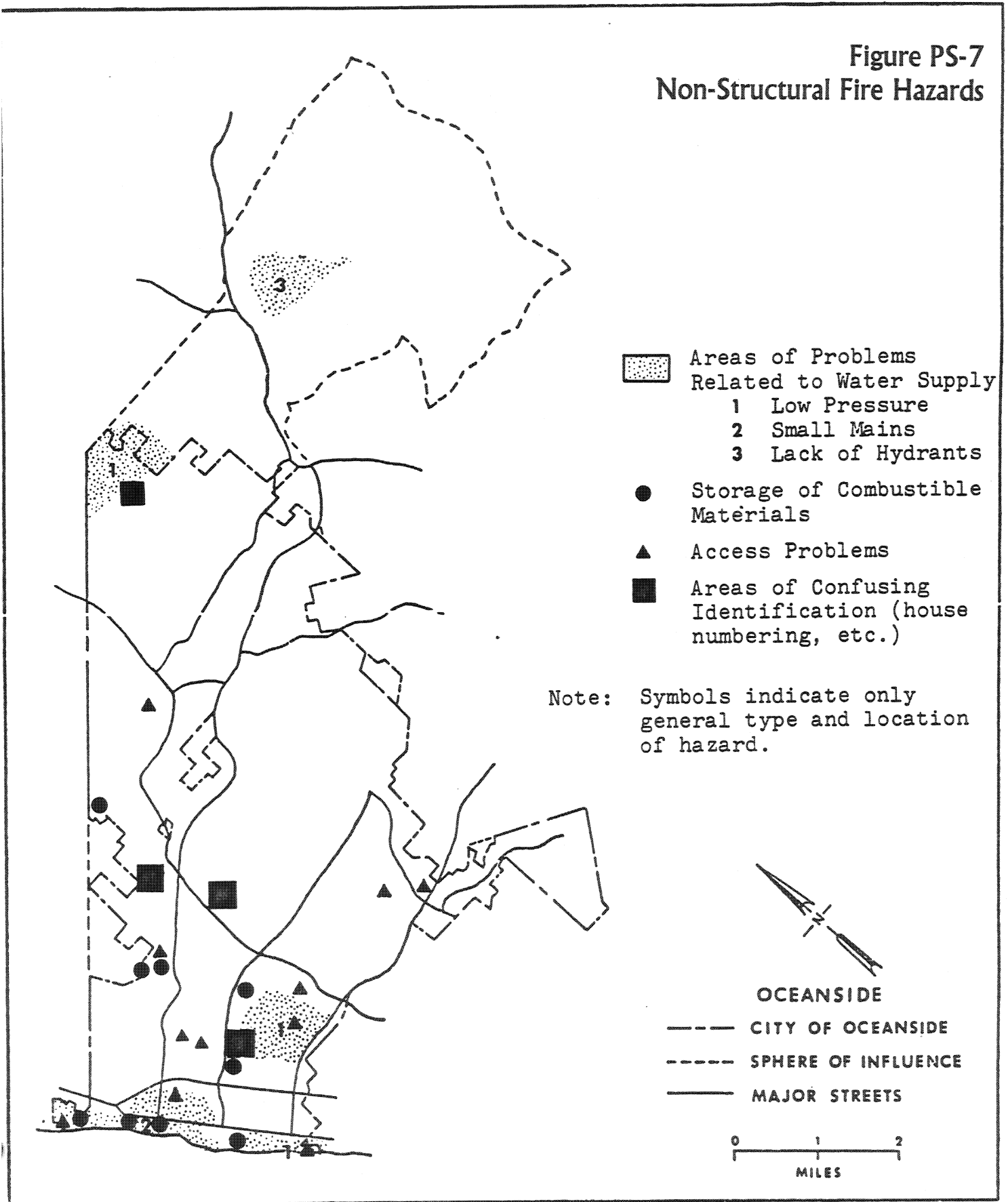
There are several particular problems which would be associated with fire protection for the San Luis Rey Downs area should it ever be annexed to the City. These are summarized as follows:

1. Response Time - from existing fire station #5, response time would be 12-18 minutes, which is over 2-3 times that for the rest of the City.
2. Hydrant Availability – golf club area and fairway estates are very poorly serviced.
3. Radio Communications – inadequate for entire area.
4. Development Patterns – expensive homes with heavy shake roofs often surrounded by heavy growth of natural brush.
5. Climate – very hot and dry during summer months, contributing to brushfire hazard.

The Oceanside Fire Department feels that trying to service this area with existing facilities would significantly decrease the level of service provided to the rest of the City. In addition, the overall insurance rating of the City would be lowered, thereby creating higher insurance rates for everyone. To correct the anticipated problems, they suggest the following steps to be taken upon annexation:

1. Construction of a fire station and purchase of all necessary equipment to furnish the station.
2. Purchase of an engine and all necessary equipment.
3. Purchase of an ambulance and all necessary equipment.
4. Purchase and installation of adequate fuel tanks.
5. Expansion of telephone and radio facilities.

**Figure PS-7
Non-Structural Fire Hazards**



6. Hiring, training, and equipping twelve (12) additional personnel.
7. Providing additional services such as supplies to the station and fire prevention activities.
8. Promotions of two (2) captains and (2) engineers.
9. Additional fire hydrants.

Abatement of Fire Hazards

Fire hazards mitigation measures fall into four broad categories as seen in the following four objectives of the Oceanside Fire Department:

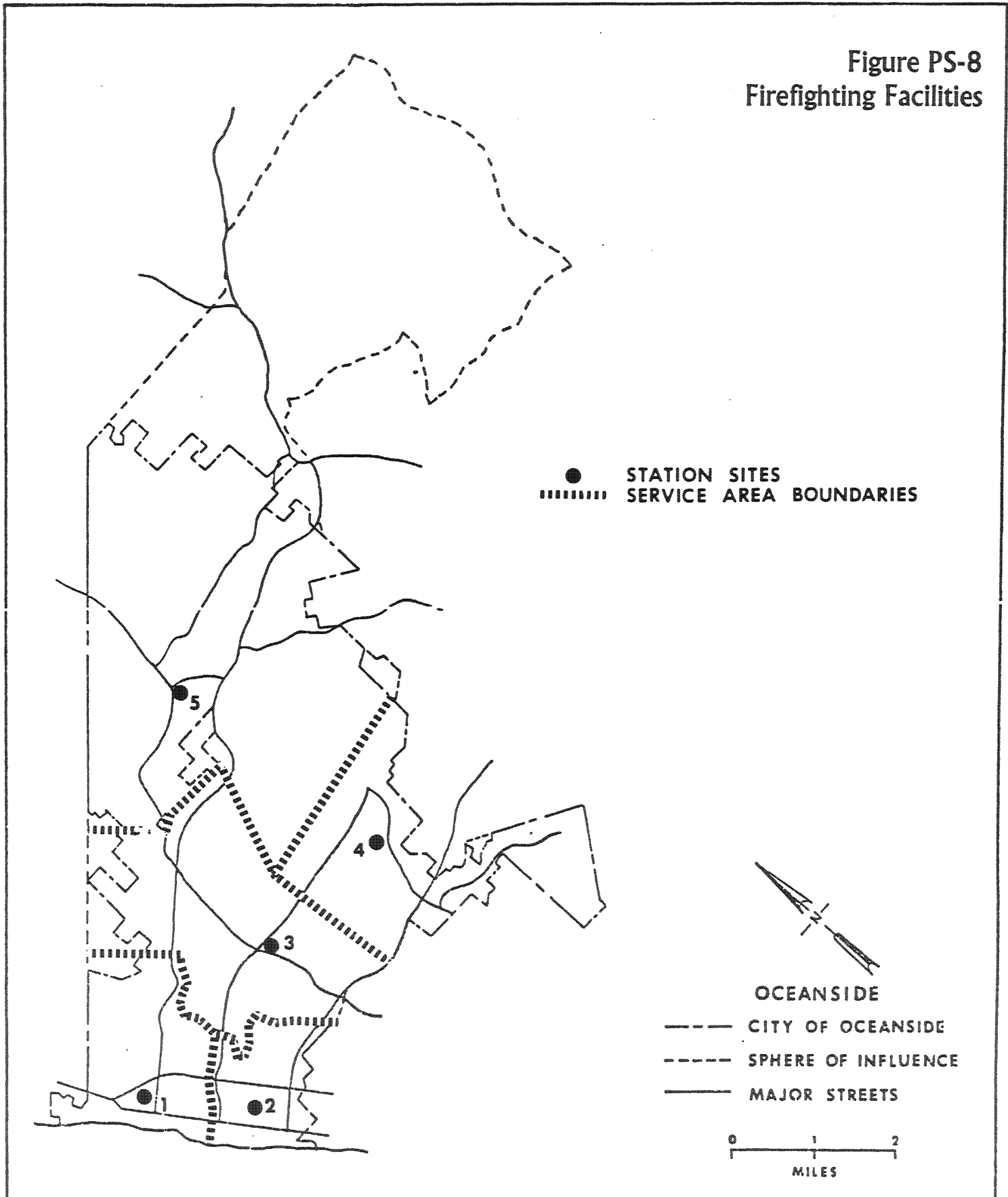
1. Prevent fires from starting.
2. Prevent loss of life and property when a fire does start.
3. Confine a fire to the place of its origin.
4. Put out the fire.

Firefighting Facilities

The City of Oceanside owns and operates five fire stations, providing a three- to five-minute response time to all areas within the City. The locations of the stations and their respective service areas are shown on Figure PS-8. Tables PS-2 and PS-3 indicate the equipment and manpower levels of the department at this time. The only serious deficiency as previously noted is the lack of an aerial ladder to service high rise structures. Steps have been taken, however, to correct this, and it is estimated that the department will acquire the ladder within the next two years.

The only other anticipated problem in providing adequate firefighting facilities for the City would occur upon annexation of any additional land to the east, particularly in the San Luis Rey Downs areas, as cited above.

Figure PS-8
Firefighting Facilities



**Table PS-2
Fire Department Equipment**

F-1 1966 Ford - Sedan Radio	F-18 1970 Mack - 1250 gal Pumper Radio
F-2 1948 Mack - 750 gal Pumper Radio	F-19 1958 International Grass Rig Radio
F-4 1953 Mack - 1000 gal Pumper Radio	F-20 1973 Dodge Ambulance Radio (radio prop. of S.D. County)
F-7 1955 International 6x6 Grass Rig Radio	F-21 1973 Chevrolet Van-Reserve Amb. Radio (radio prop. of S.D. County)
F-10 1963 Seagraves - 1250 gal Pumper Radio	F-22 1973 Dodge Wagon - Station wagon Radio
F-11 1965 Ford - Sedan Radio	F-23 1973 International - 1000 gal Pumper Radio
F-14 1967 Seagraves - 1250 gal Pumper Radio	F-24 1974 Dodge - Ambulance Radio (radio prop. of S.D. County)
F-16 1969 Dodge - Sedan Radio	F-25 1974 Matador - Sedan Radio
F-17 1970 Chevrolet Pick-up Radio	F-26 1974 Matador - Sedan Radio
Source: Oceanside Fire Department	

**Table PS-3
Fire Department Manpower**

1	Fire Chief
1	Assistant Chief
2	Battalion Chiefs
1	Fire Marshal
1	Training Officer
11	Captains
12	Engineers
49	Firemen
1	Full Time Secretary
1	Part Time Secretary
Source: Oceanside Fire Department	

Fire Prevention Measures - Structural Hazards

The Code of the City of Oceanside, Chapter 11, establishes criteria governing fire protection within the City. These criteria are supplemented in part by additional standards contained within the City Building Code, Subdivision, and Zoning Ordinances. The more significant measures adopted by the City are outlined below by appropriate code or ordinance sections.

- I. Uniform Code Adoptions – Adoption of Uniform Fire Code, 1971 edition, as recommended by the Western Fire Chiefs’ Association and the International Conference of Building Officials (Code Section 11.15) and adoption of Uniform

Building Code Standards, 1973 edition, published by International Conference of Building Officials (Code Section 6.1).

Adoption of the latest edition of the uniform codes is essential if the City is going to require the most modern practices of construction and fire prevention. Because the current fire code is four years old, a later edition should be reviewed and adopted if it is found to contain significant advances over those contained in the 1971 edition.

2. Access Standards – The City requires all roads and fire access lanes to be a minimum of 28 feet in width. It also specifies maximum distances of structures from access points, paving criteria for access roads, design criteria for turning areas, and minimum overhead clearances (Code Section 11.26).
3. Clearances Around Structures – Minimum front, rear, and side yard clearances are established by zone in the City's Zoning Ordinance. For residential structures, these are: 20 feet front yard, 15 feet rear yard and side yards equal to 10 percent of the lot width but not less than 3 feet (Zoning Ordinance Section 1701, et seq.). In addition, the City Code specifies minimum clearances around roof signs to be 3 feet in all directions (Code Section 3.24).

The minimum side yard clearance of 3 feet on lots of 30 feet in width or less poses some problems in enforcing firewall requirements of the Uniform Building Code. It also somewhat hampers firefighting operations, especially if extensive landscaping is present. The City should consider requiring a minimum 5-foot side yard on all lots regardless of lot width.

4. Alarm and Sprinkler Systems – All three-story apartments and hotels or those containing more than 15 or 20 units respectively must have alarm systems (Code Section 11.18). All non-residential structures 1,500 to 24,000 square feet in size must have fire detector systems. All structures over 15,000 square feet must be fully protected by an automatic fire sprinkler system ((UBC Section 38).
5. Establishment of Fire Zones – The City is divided into Fire Zones 1, 2, and 3 (Code Section 6.18 et. seq). Construction within these zones is regulated by the provisions of the Uniform Building Code.
6. Abatement of Substandard Structures – The City could abate substandard structures when they are obviously deteriorated to the point of being a menace to the public health and safety (UBC Section 203). Aggressive enforcement of this provision could probably help rid the City of many vacant, unsightly, and unsafe structures, especially in the downtown area. Another provision of the Code calls for bringing substandard buildings up to Code requirements when the cost of proposed renovations to such buildings exceeds more than 50 percent of building value (UBC Section 104 (a)). The City does actively enforce this provision.

Fire Prevention Measures - Non-Structural Hazards

1. Regulation of Flammable Liquids Storage – Such storage can only be done in an M zone, except that above-ground storage is strictly prohibited in the downtown area (Code Section 11.20). All such uses must be granted a Conditional Use Permit (Zoning Ordinance Article 15). Special requirements also apply to storage of such items in areas subject to flooding (UFC Appendix A, adopted by Code Section 11.18).
2. Water Supply – Water supply requirements are specified by land use type, the lowest being 1,000 gallons per minute for one and two-family residential development. Water mains must have a minimum inside diameter of 6 inches; one hydrant is required for every 90,000 square feet of net land area (80,000 square feet for industrial and commercial uses). Hydrant design and spacing is also specified (Code Section 11.26).

As indicated on Figure PS-6, there are a few areas of the City where the water supply is not up to code criteria. The problem in the downtown area, specifically, is caused by inadequate water mains (2" and 4"). The City should take action as soon as possible to correct these problems, especially in those downtown areas where other structural problems create a hazard in themselves.

3. Beach Fire Regulations – Campfires are prohibited on the Oceanside beach except in those areas designed by the City Parks and Recreation Department (Code Sections 19.2, 19.3).

Fire Prevention Measures - Natural Hazards

1. Weed and Rubbish Abatement – City Council can order removal of brush and rubbish after declaring such to be a hazard to the public welfare (Code Section 13.34, et seq.).
2. Suppression and Control of Hazardous Fire Areas – Special provisions limit activities and require brush removal within hazardous fire areas (UFC, Appendix E adopted by Code Section 11.18).
3. Construction of Firebreaks – Each year a 75 to 100 foot firebreak is constructed by Camp Pendleton along the Oceanside-Camp Pendleton boundary. This firebreak, in conjunction with the efforts of the Camp's eight engine companies (117 personnel) has been successful in preventing fires from spreading from Camp Pendleton to the City.

Flooding Hazards

In spite of its dry, coastal desert climate, the Southern California area is very susceptible to periodic damaging floods. The small amount of rainfall (10.7 inches per year) occurs primarily during the winter months, often concentrated in storm periods of several days duration. It is this heavy concentration of rainfall, coming at a time when the ground water level is seasonably high, that causes flooding to occur. Recent urban development on hillsides and in floodplains has increased the rate and amount of storm runoff, and the flood potential.

Natural Flooding

Floods have been recorded in San Diego County since 1770. The most disastrous occurred in 1862, 1916, and 1927; minor floods also occurred in 1938, 1961, and 1969. On the average, the County has been subjected to some degree of damaging flood once every 10 to 15 years.



Oceanside has not been exempt from flood damage. There are three flood prone areas within the City – San Luis Rey River Valley, Loma Alta Creek bed, and Buena Vista Creek bed. Of these, the largest is the San Luis Rey Valley, which is of regional significance and which historically receives heavy damage from flooding. In the 1916 flood, the San Luis Rey Valley was inundated virtually from bank to bank for about 1.5 miles, covering an area of about 1,000 acres. Most of the farms in the lower portion of the Valley were destroyed or damaged, and three to six feet of sand and silt remained when the flood water subsided. On March 8, 1968, an intense local storm flooded several areas of downtown Oceanside, inundating at least 100 homes and businesses, forcing radio station KUDE to shut down and disrupting traffic and business. The floods of 1969 caused \$2.7 million in public and private property damage in the

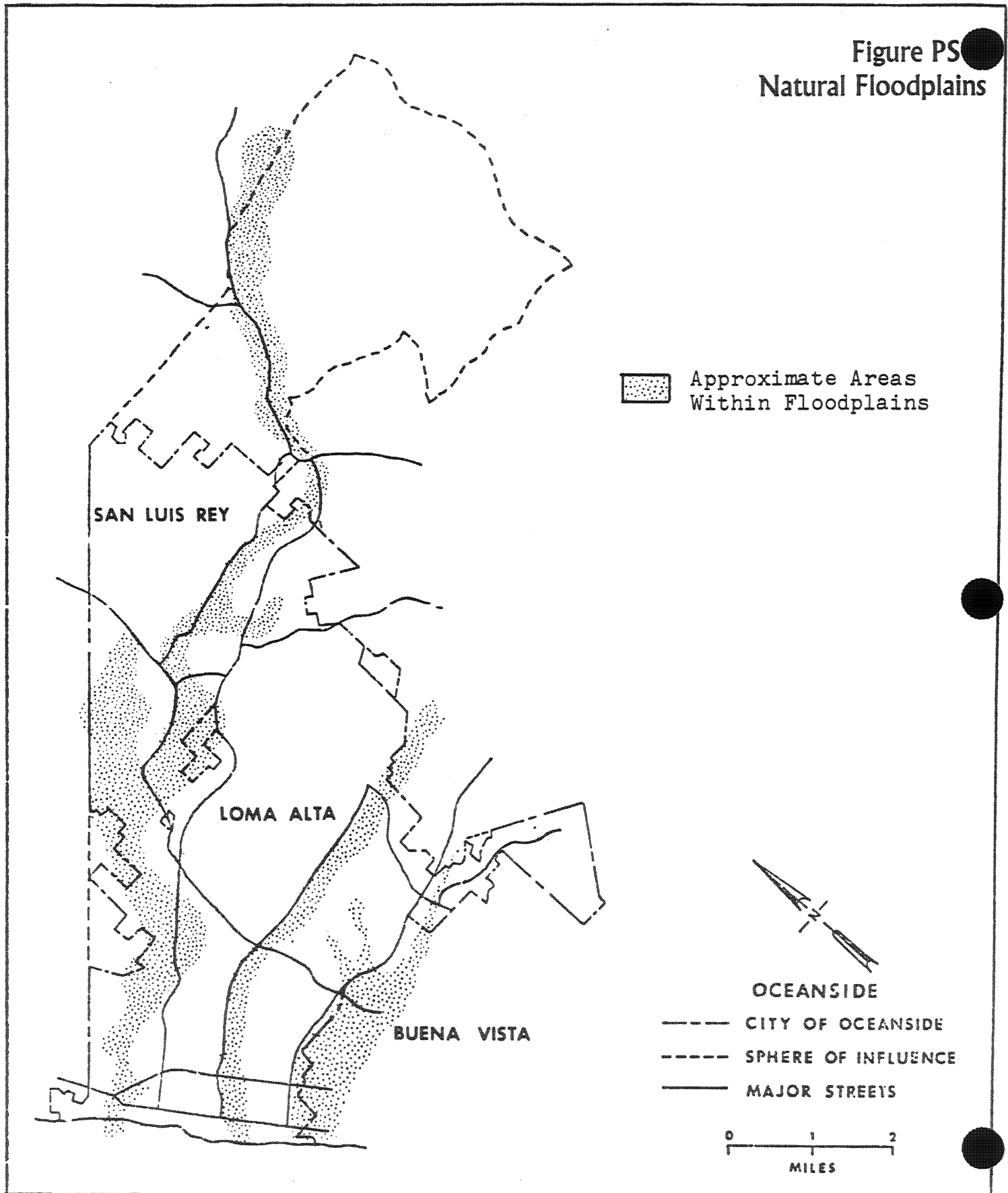
County, three-quarters of which occurred in the Santa Margarita and San Luis Rey basins.

The location and extent of the natural floodplains are shown schematically on Figure PS-9.

Flooding Due to Dam Failure

In addition to the hazards posed by natural flooding, the San Luis Rey Valley is also subject to flooding from failure of Henshaw Dam, the largest man-made reservoir in the County.

Figure PS
Natural Floodplains



Henshaw Dam, owned and operated by the Vista Irrigation District, was designed to create a lake with a capacity of 203,581 acre/feet of water (an acre-foot is the amount of water necessary to cover an acre of area to a depth of one foot: approximately 325,850 gallons). Since the dam's construction in 1922, the State has determined that its large capacity is not really necessary, and according to the irrigation district, action has been taken to limit the lake's capacity to 50,000 acre feet. This will require reconstruction of the spillway, and pending this, the State is limiting capacity to 18,000 acres feet.

Presently, Henshaw Lake contains only 5,200 acres feet. During the last 10 years, the water level has varied between 2,000 and 50,000 acres feet, averaging about 11,600 acres feet over any 12-month period. The irrigation district attempts to maintain a minimum level of 3,000 acres feet, relying on the seasonal rainfall and ground water from about 25 wells in the Henshaw basin. The lake is generally at its highest level during March and April and at its lowest level in September and October.

Henshaw dam is an earthfill dam that is not subject to the sudden catastrophic failure usually associated with concrete arch-type dams. Even if failure did occur, it would be of a slower, erosive type, resulting in less severe peak flows, allowing ample time for evacuation of downstream residents.

Figure PS-10 shows schematically the general area of the City that would be subject to flooding upon failure of Henshaw Dam from seismic activity or for any other reason (structural failure, sabotage, etc.).

Detailed inundation maps are available for study at the Oceanside Planning Department or from Vista Irrigation District. The inundation area shown assumes:

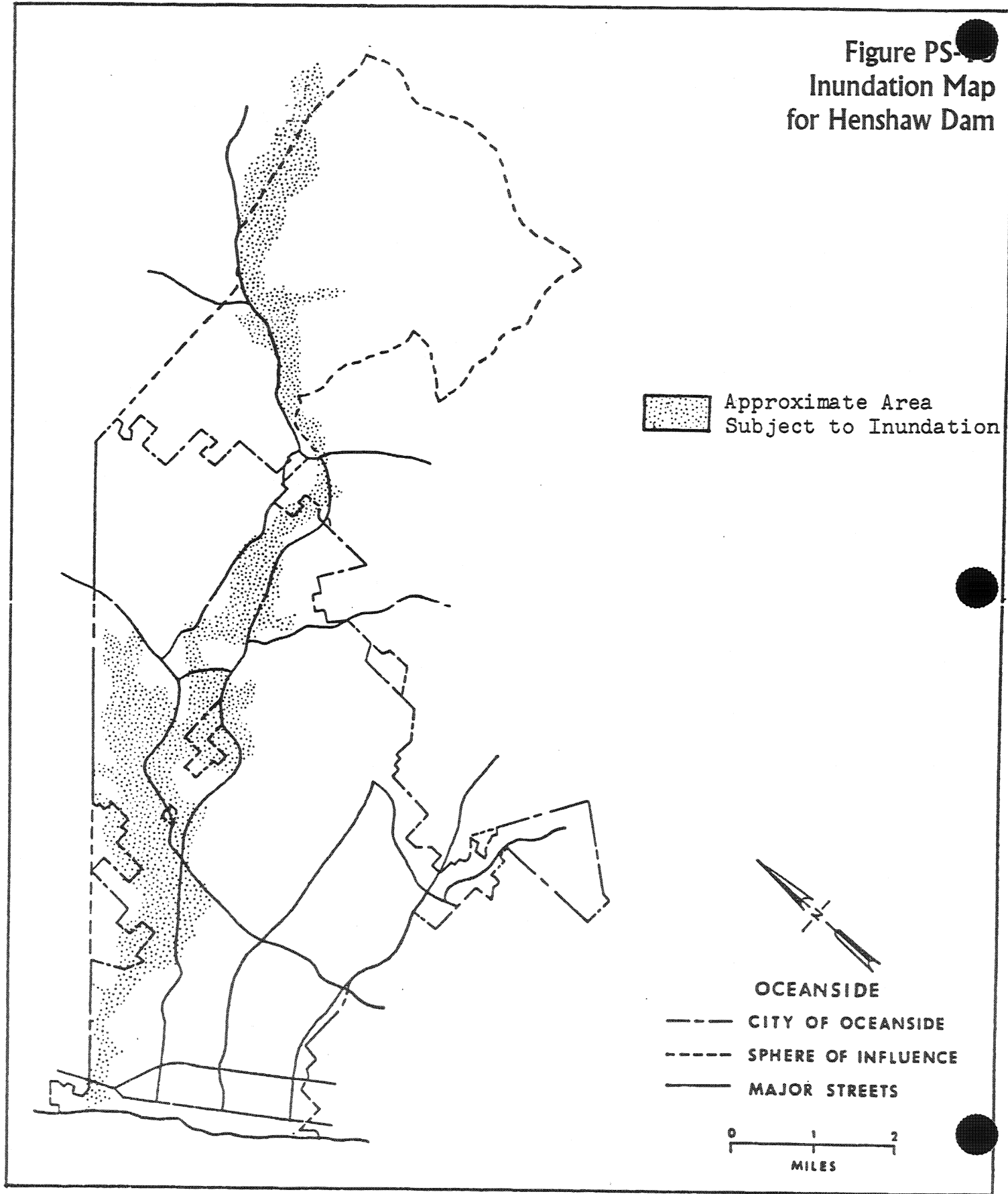
1. That Henshaw Lake will be at capacity of 50,000 acre feet, and
2. That a flood of a 10-year magnitude will be taking place in the Valley.

If either of these two conditions is not present at the time of dam failure, then, of course, the resulting flood would be less severe than the maps indicate.

Abatement of Flooding Hazard

As mentioned earlier, this element is concerned primarily with the flooding hazard presented by possible failure of Henshaw Dam. Mitigating this hazard could be accomplished through either modifications to the dam design, regulation of land uses in the potential inundation area, or construction of a river channel of sufficient size to handle anticipated flood flows.

Figure PS-10
Inundation Map
for Henshaw Dam



Modification to Dam Design

Henshaw Dam was originally designed to contain more than 200,000 acre feet of water. Recent State actions will cause the dam spillway to be redesigned for a capacity of only 50,000 acre feet. Until the modification can be accomplished, the State is limiting the capacity to 18,000 acre feet. This action in itself has greatly reduced the potential flooding hazard.

The dam will undergo inspection in the summer of 1975 for evidence of any signs of stress. No visible signs of stress have been observed thus far. If any structural deficiencies are found, corrective action will be taken.

Channel Construction

Oceanside has been advocating for several years the construction of a flood channel through the San Luis Rey Valley of sufficient size to handle a potential 100-year flood. This would be more than adequate size to handle any anticipated flooding caused by failure of the Henshaw Dam. Presently, City policy is to require adjacent property owners to construct reasonable channel improvements concurrent with development of their land. An application for financial assistance under the Federal Economic Development Act has been contemplated.

Land Use Regulation

Pending completion of the proposed flood channel, the best way to reduce the potential of life and property loss within the flood inundation area is to regulate land uses. Oceanside has recently received maps from the Army Corps of Engineers delineating the natural 100-year flood plain and floodway. These maps, together with the Henshaw Dam inundating maps, should indicate the areas of most severe flood potential; i.e., the flood way. Within these areas, all urban land uses should be prohibited, allowing only agricultural and other open space uses. Within areas of less severe hazards, Group I buildings should be prohibited and other development should be of low-density type.

Civil Disaster Preparedness

In spite of the preventive measures that may be taken by Oceanside, risk levels will never be reduced to zero. For this reason, the City is prepared to take the action necessary to minimize life and property damage.

Emergency Plan

On December 12, 1973, the City of Oceanside adopted an Emergency Plan that forms the basis for the conduct and coordination of emergency operations within the City. The plan is designed to permit the City to respond to earthquakes, tsunamis, flood, fire, accident, civil disturbance, storm, pollution, and epidemic. The plan has a threefold purpose:

1. Provide a basis for the conduct and coordination of operations and the management of critical resources during emergencies.
2. Establish a mutual understanding of the authority, responsibility, functions, and operations of civil government in the City of Oceanside during an emergency.
3. Provide a basis for incorporating into the City emergency organization those non-governmental agencies and organizations having resources necessary to meet foreseeable emergency requirements.

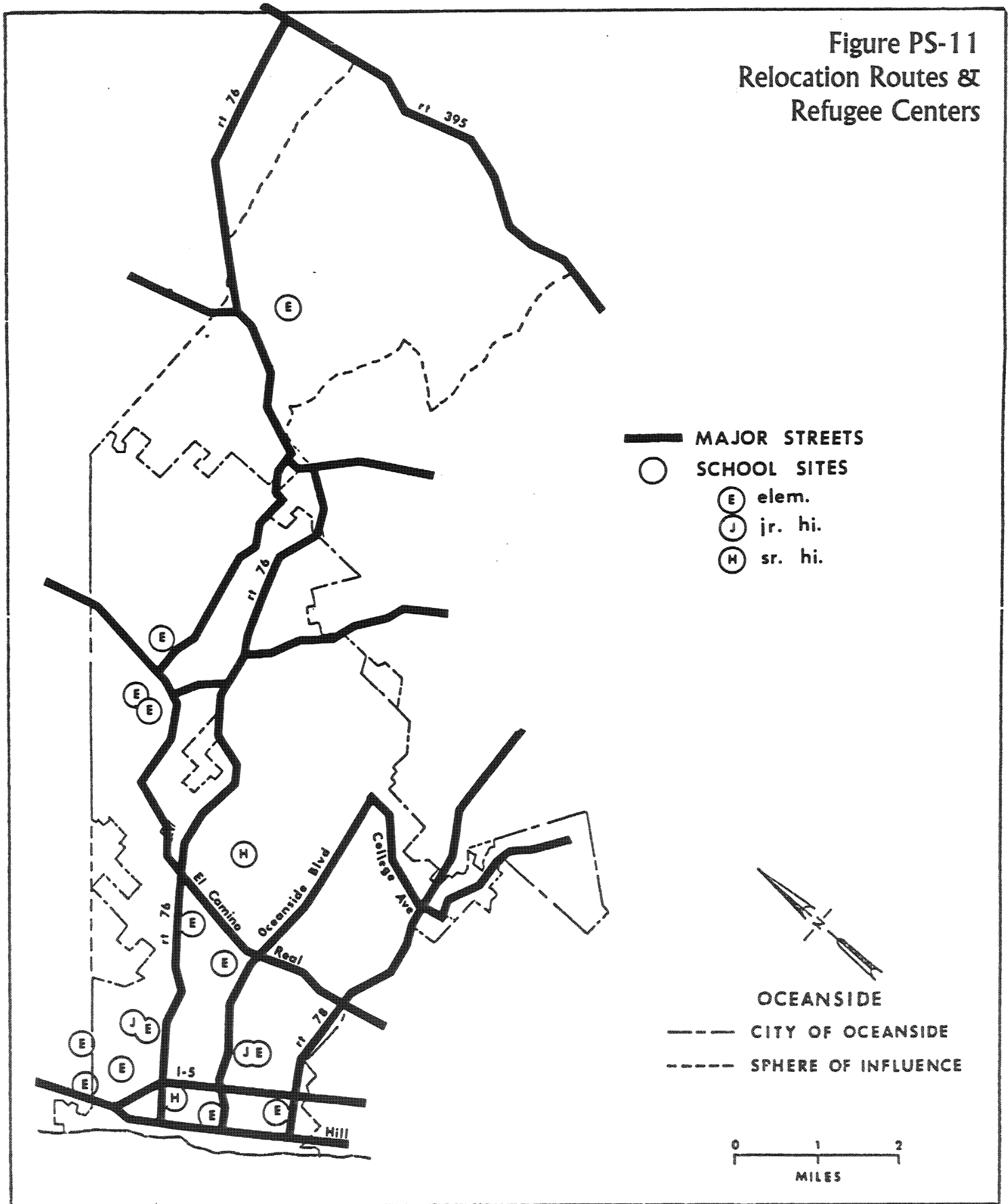
The plan provides for specific organization and tasking of City departments for emergency situations. Manpower requirements, equipment levels, and provisions for communications and mutual aid are also addressed. Copies of the plan may be examined at either the City Planning or Building Department offices.

Relocation/Evacuation Routes

In addition to the measures discussed in the Emergency Plan, relocation routes and refuge centers must be established for people who are forced from their homes during a disaster. The main through streets and highways within the City would, of course, be the primary relocation routes. The schools would serve as refuge centers, capable of providing food and shelter to many people. The routes and school sites are indicated on Figure PS-11.



Figure PS-11
Relocation Routes &
Refugee Centers





PUBLIC SAFETY ELEMENT APPENDIX



Appendix A - Bibliography

Bronson, Lansing H., Project Engineer, Vista Irrigation District, Various Interviews.

Burkland and Associates, Geotechnical Investigation for General Plan Revision, Oceanside, California, August 1974.

California, State of, Division of Forestry, A Fire Hazard Severity Classification System for California's Wildlands.

California, State of, Division of Mines and Geology, Guidelines to Geologic/Seismic Reports, November 1972.

California, State of, Office of Emergency Services, memorandum concerning Prototype City/County Fire Annex, December 20, 1973.

Carlsbad, City of, Preliminary Geologic and Seismic Safety Element, November 1974.

Comprehensive Planning Organization, Drainage and Flood Control Background and Policy Study, San Diego County, Volume I, May, 1970.

Comprehensive Planning Organization, Model Seismic Safety Element, Final Report, April 1974.

Comprehensive Planning Organization, Seismic Safety, 1974.

Council of Intergovernmental Relations, Guidelines for Local General Plans, State of California, Sacramento, September 1973.

El Cerrito, Richmond, and San Pablo, Cities of, The Seismic Safety Study of the General Plan, Tri-Cities Seismic Safety and Environmental Resources Study, September, 1973.

Geological Survey, Goals, Strategy, and Tasks of the Earthquake Hazard Reduction Program, Circular 701, 1974.

Institute for Disaster Preparedness, Recommendations for San Diego County, University of Southern California, 1975.

Public Safety Appendix

Joy, Joseph W., Tsunamis and Their Occurrence Along the San Diego County Coast, December, 21, 1967.

Kings, County of, Regional Planning Agency, Environmental Impact Report for the Seismic Safety Element of King's County General Plan, Hanford General Plan, Lemoore General Plan, and Corcoran General Plan, October, 1974.

Lafayette, City of, Environmental Impact Report, Geologic & Seismic Safety Element of the General Plan, August 1974.

Leet, L. Don, Sheldon Judson, Physical Geology, Prentice-Hall, Englewood Cliffs, N.J., 1971.

Los Angeles, County of, Safety Element (proposed), October 11, 1974.

Multi-Systems Associates, Environmental Impact Report, Third Phase Expansion of the Master Water Plan, August 1974.

National Academy of Sciences, Slope Protection for Residential Developments, 1969.

Oceanside, City of, Emergency Plan, December 1973.

Palm Springs, City of, Public Safety and Seismic Safety Elements, July 1974.

Petak, William J., Procedure for Developing A Seismic Safety Element for the General Plan, Fullerton, CA, June 1972.

San Diego, City of, Safety Element, September 1974.

San Diego, City of, Seismic Safety Element, September 1974.

San Diego Coast Regional Commission, Coastal Land Environment, April 1974.

San Diego Coast Regional Commission, memorandum concerning Coastal Land Environmental Element of the California Coastal Zone Conservation Plan, San Diego Region, May 30, 1974.

San Diego Coast Regional Commission, Geology, November 1974.

San Diego, County of, Department of Special Services, Flood Control Division, Storm Report, March 8, 1968.

San Diego, County of, Environmental Development Agency, Seismic Safety Element, January 1975.

San Diego, County of, Preliminary Public Safety Element, October 1974.