Multi Hazard Mitigation Plan
Revision #2.
Las Virgenes Unified School District (LVUSD)

Prepared By:

LVUSD Construction Department
4111 N. Las Virgenes Road
Calabasas, CA 91302
www.lvusd.org

Table of Contents

Chapter/Section **Page**

Table of Contents 1
i. Acknowledgements 3

Chapter 1 – The Planning Process 11

PART 1—INTRODUCTION **11**
1.1 The Purpose of the Plan. 11
1.2 The Planning Process 12
1.3 Public Involvement 13

Chapter 2 – Adoption by the District **14**

Chapter 3—District Profile **15**
3.1 District Profile 15

PART 2—RISK ASSESSMENT **17**

Chapter 4—Earthquake Risk Assessment **19**
4.2 Profiling Earthquake Hazard Events 30
4.3 Assessing Vulnerability Inventories and Mitigation Progress by Jurisdiction and Type of Construction 33
4.3 Section 1 – Existing Buildings 35
4.3 Section 2 - Utilities and Transportation 41
4.4 Mitigation Measures for Earthquake Hazards 41
4.4 Section 1 - Historical Developments in Earthquake Mitigation 41
4.4 Section 2 - California Earthquake Loss Reduction Plan 44
4.5 Local Capability Assessment 44
5.1 Identifying Fire Hazards 45
5.2 Profiling Fire Hazard Events 46
5.3 Assessing Fire Vulnerability and Losses by Jurisdiction 48
5.4 Section 1 – Wildfire and Human Development 48
5.4 Section 2 – The Fire Plan 49
5.4 Section 3 – Governmental Partnership 49
5.4 Section 4 – Building Codes, Zoning, and Residential Flammable Vegetation Regulations 51

Chapter 6 - Flood Risk Assessment **52**
6.1 Identifying Flood Hazards 52
6.2 Profiling Flood Hazard Events 52

6.3 Assessing Flood Vulnerability by School District 53

PART 3—MITIGATION STRATEGY & FUNDING 54

Chapter 7—State and District Mitigation Strategy 54
7.1 Hazard Mitigation Goals 55
7.2 District Priorities 58
7.3 District Capability Assessment 59
7.4 Local Capability Assessment 59

Chapter 8—Plan and Funding Sources 64
8.1a Priority Plan, Implementation, and Cost-benefit 71
8.1b Federal Funding Sources 72
8.2 State Funding Sources 76
8.3 Alternative Funding Sources 79

PART 4—MITIGATION AWARENESS AND LOCAL PLANNING 79

Chapter 9 - Mitigation Education and Awareness. 79
The District defers to State of California Program. 79

Chapter 10—Local Mitigation Planning Coordination 79
10.1 Local Planning and Technical Assistance 79

Chapter 11 - Monitoring, Evaluating, and Updating the Plan 80
11.1 Updating the Plan 80

Chapter 12 - Estimating Potential Losses of District Facilities 82
12.1 Losses of District Facilities 82

PART 5—APPENDICES 83
Glossary of Terms 83
Acronyms 85
Bibliography 87
Related Websites 88
Revised Local Hazard Mitigation Plan Review Crosswalk For Ca Local Governments In FEMA Region [IX] 89

i. Acknowledgements

LVUSD Construction Department
4111 N. Las Virgenes Road
Calabasas, CA 91302
http://www.lvusd.org

Board of Education at the time of Plan Adoption on October 26, 2004.	Judy Jordan, President Gordon Whitehead, Vice President Cindy Iser, Clerk Patricia Schulz, Member Terilyn Finders, Member
Board of Education at the time of Plan Revision #2 Adoption.	Cindy Iser, President Terilyn Finders, Vice President Patricia Schulz, Clerk Dave Moorman, Member Gordon Whitehead, Member
Hazard Mitigation Management	Dr. Sandra Smyser, Superintendent
Multi-Hazard Mitigation Plan Writing Team	The following staff were key writers of this Plan: Rodney Hippenhammer, Facilities Manager Tim Hoyt, Facilities Manager

Contributors

The following agencies and individuals contributed information used in this plan:

California Department of Forestry and Fire Protection
Rich Schell, Fire Chief
Jeff Harter, Battalion Chief
Melissa Frago, Deputy Fire Marshall I, State Fire Marshall

California Geological Survey
Michael Reichle, Acting State Geologist

California Seismic Safety Commission
Robert Anderson, R.G., C.E.G., Senior Engineering Geologist

Governor's Office of Emergency Services:
Edward Bortugno, Senior Geologist
Jim Barnes, Disaster Assistance Program Specialist II
Ken Worman, Hazard Mitigation Manager

Citizen Committee

Jeffrey L Allen

Howard I Littman

Jerome I. Orland

Sharon G. Pfeifer

Eric C. Smith

Jeffrey B. Thomas

ii. Summary

Purpose of the Plan

The Las Virgenes Unified School District is required to adopt a federally-approved District Multi-Hazard Mitigation Plan to be eligible for certain disaster assistance and mitigation funding. The overall intent of this Plan is to reduce or prevent injury and damage from natural hazards in the District. It identifies past and present mitigation activities, current policies and programs, and mitigation strategies for the future. This Plan also guides hazard mitigation activities by establishing hazard mitigation goals and objectives.

The Plan is a "living document" that will be reviewed and updated to reflect changing conditions and improved by new information, especially information on local planning activities.

The Plan:

- Documents hazard mitigation planning.
- Describes strategies and priorities for future mitigation activities
- Facilitates the integration of local City hazard mitigation planning activities into District efforts
- Meets state and federal statutory and regulatory requirements

The Planning Process

The Plan is an evaluation the hazards the District faces and the strategies, goals, and activities the District will pursue to address these hazards. The District implemented hazard mitigation planning process by:

- Providing outreach, technical assistance, and education at District.
- Providing the public with the opportunity to review and comment on this Plan

---

LVUSD Multi-Hazard Mitigation Strategy

The hazard mitigation strategy for Las Virgenes Unified School District is guided by a vision, a mission statement, and a set of goals.

Vision: A safe and resilient hazard mitigation program.

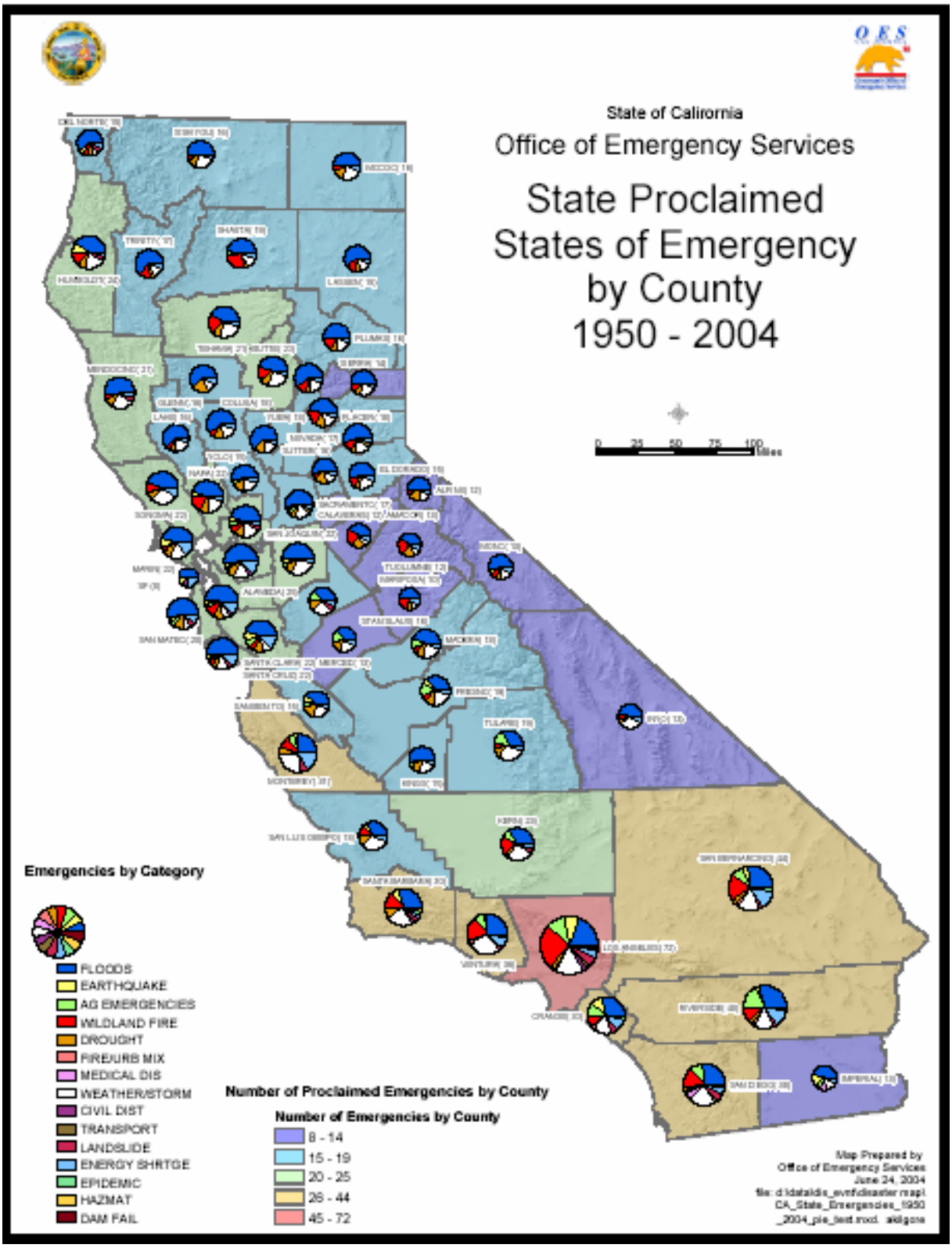
Mission: To integrate current laws and programs into a mitigation system that will guide the District in the reduction and prevention of injury and damage from natural hazards.

Goals:

- Save Lives and Reduce Injuries
- Avoid Damages to Property
- Protect the Environment
- Promote Hazard Mitigation as an Integrated Policy

These goals and their associated objectives are described below.

Map iii - States of Emergency



Continued on next page

ii. Summary

Goal 1: Save Lives and Reduce Injuries

California is the most populated state in the country, with over 36 million residents. Los Angeles County population is 10,103,000 with 68 emergencies. The primary goal of this District Multi-Hazard Mitigation Plan is the protection of our school children and staff.

Goal 1 Objectives

To achieve Goal 1, LVUSD intends to:

- Continually improve the understanding of the location and potential impacts of natural hazards, the vulnerability of building types, and the measures needed to protect life safety.
- Continually provide District Schools with updated information about hazards, vulnerabilities, and mitigation measures.
- Ensure that all state codes and standards are used to the protect life on our campuses.
- Ensure that all structures in the District meet minimum standards for life safety
- Identify and mitigate all imminent threats to life safety when building new structures.

Goal 2: Avoid Damages to Property

The Plan's stakeholders have agreed that enforcing building, mechanical, and fire codes is critical to protect lives and property and reduce seismic, fire and flood hazards. The State of California Title 24 Codes helps The School District to enforce minimum design and construct buildings that resist the forces of nature and ensure safety. The School District has no land use authority to require Cities within our District to keep buildings and development out of the most hazardous areas.

Earthquakes, floods, and other natural hazards disrupt the critical infrastructure of the Las Virgenes Unified District. Transportation routes, utilities, government facilities, and hospitals are critical to the District's ability to provide essential access and services. Therefore we look to our Cities to bring access and utilities to our schools.

The protection of property also includes the preservation of valuable operational data, historical information, and other non-structural assets. The District has anchored cabinets and servers to protect against earthquakes. We look to the Cities and Los Angeles County to incorporate mitigation activities that will protect us for area wide non-structural assets.

Continued on next page

Goal 2 Objectives

To achieve Goal 2, LVUSD intends to:

- Encourage property protection measures for the District and our structures located in or near hazard areas.
- Reduce all repetitive property losses due to flood, fire and earthquake.
- Research, develop, and adopt cost-effective standards to protect properties beyond the minimum of protecting life safety.
- Establish a partnership among all levels of government and the business community to improve and implement methods to protect property

Goal 3: Protect the Environment

LVUSD Citizens place a strong emphasis on the quality of the physical environment. It is a primary reason why people live in the School District.

Natural disasters not only destroy the man-made environment, but they can also adversely affect the physical environment. Earthquakes can collapse our School Buildings and wild fires from adjacent mountains shut down our schools. Storms with flooding can cause hillside failure and mold within our building. Debris from natural disasters can pollute the water supply, foul the land, and diminish air quality if not disposed of properly.

Goal 3 Objectives

To achieve Goal 3, LVUSD intends to:

- Ensure that all mitigation projects are reviewed for compliance with all applicable environmental laws.
- Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
- Ensure that all District hazard mitigation planning reflect the goal of protecting the environment
- Develop and implement wildfire mitigation and watershed protection strategies that keep wildfire, water damage, and wild life off of our Campuses.

Continued on next page

ii. Summary

Goal 4: Promote Hazard Mitigation as an Integrated Policy

Currently the state and its communities have implemented hazard mitigation polices and measures in an ad hoc fashion. New mitigation policies, programs, and projects are often developed in response to the latest disaster. As the population of the state continues to grow in areas most susceptible to natural and man-caused hazards, comprehensive hazard mitigation is becoming more imperative. Planning and education are the best steps toward increased awareness and integration for the Las Virgenes School District.

Goal 4 Objectives

To achieve Goal 4, LVUSD intends to:

- Include all schools in the District by this Local Hazard Mitigation Plan.
- Integrate hazard mitigation policies into building plans.
- Update the Multi-Hazard Mitigation Plan tri-annually to integrate hazard mitigation plan and the results of disaster-and hazard-specific planning efforts.
- Strengthen the message of hazard mitigation in disaster preparedness programs.

Planning Priorities

Based on the assessment of the District's risks and vulnerabilities, LVUSD has identified the following priorities for federal hazard mitigation funding:

- Protect lives and property at risk from imminent hazards created or exacerbated by disasters
- Protect vulnerable critical facilities.
- Reduce repetitive losses
- Improve understanding of natural hazards and the performance of hazard mitigation practices

ii. Summary

Program Objectives

The objectives of the LHMP Program are to:

- Integrate hazard mitigation activities in all school campuses.
- Maximize the use of hazard mitigation resources, grants, and funds to reduce the impact of future disasters in the District.
- Maintain collaborative and cooperative relationships with County and City emergency managers, land use planners, and the scientific and technical communities involved in hazard mitigation.
- Improve communications with stakeholders, legislators, and special interest groups involved in hazard mitigation.
- Develop a program of support for hazard identification and analysis and a risk-based approach to project identification, prioritization, and support within the School District.

Prioritization of Mitigation Activities

The following criteria will be used to prioritize local hazard mitigation activities for funding:

- Percent of school population at risk
- Frequency and likelihood of hazard
- Repetitive loss areas
- Community planning resources available
- Project urgency and cost benefit analysis
- Cost effectiveness of measure

Sources of Hazard Mitigation Funding

For further information about mitigation funding, please refer to the following sections of this Plan:

Section	Title	Page
10.1	Federal Funding Sources	
10.2	State Funding Sources	
10.3	Local Funding Sources	
10.4	Alternative Funding Sources	

Plan Maintenance Process

Because the Plan is a living document that reflects ongoing hazard mitigation activities, the process of monitoring, evaluating, and updating it will be critical to the effectiveness of hazard mitigation in California. To facilitate the District hazard mitigation planning process, the Plan will be reviewed every three years and any revisions will be provided to OES and FEMA in the form of a written report.

Chapter 1 – The Planning Process

PART 1—INTRODUCTION

Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process* ***shall*** *include:*
(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): *[The plan* ***shall*** *document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

1.1 The Purpose of the Plan.

Introduction

The District is required to have a FEMA-approved Multi-Hazard Mitigation Plan (Plan) to be eligible for certain disaster assistance and mitigation funding. This document fulfills FEMA requirements and provides direction and guidance on implementing hazard mitigation for the School District. The Plan reflects the District's cultural, societal, economic, and environmental values while also acknowledging the numerous regulatory and compliance issues facing government. It is intended to set the tone for the implementation of hazard mitigation practices that will be used to build a safe District.

The goal of the Plan is to reduce or prevent injury and damage from natural hazards in the School District. It describes past and current hazard mitigation activities and philosophies and outlines future mitigation goals and strategies. The Plan provides guidance for hazard mitigation activities while cementing partnerships among local, state, and federal agencies in this formal written document. The Plan is a "living document" that will be reviewed tri-annually and modified as necessary to reflect future changes and additional planning activities, especially at the local level.

The Plan:

- Documents area wide hazard mitigation system implemented in LVUSD
- Describes strategies and priorities for future mitigation activities
- Facilitates the integration of District hazard mitigation planning activities into statewide efforts
- Meets state and federal statutory and regulatory requirements

Meeting Federal Requirements

This Plan meets the requirements for a standard state plan under Interim Final Rule 44 CFR 201.4, published by FEMA on February 28, 2002. Adoption of the Plan by the District and approval by FEMA qualifies Las Virgenes Unified School District to obtain federal assistance for hazard mitigation and for the repair and replacement of school campuses damaged in natural disasters.

Plan Development Process

This Multi-Hazard Mitigation Plan was prepared by the Las Virgenes Unified School District.

1.2 The Planning Process

Introduction

Hazard mitigation planning is a dynamic process built on realistic assessments of past and present information that engages multiple partners to anticipate future hazards and provide meaningful strategies to address possible impacts and identified needs.

The hazard mitigation planning process involves:

- Organizing resources
- Assessing risks
- Developing mitigation strategies, goals, and priorities
- Adopting a plan
- Implementing the plan
- Monitoring progress
- Revising the plan as necessary

Various cities, state, and federal agencies, businesses, non-profit organizations, and others are involved in hazard mitigation planning efforts within the District.

Role of OES

The primary roles of OES in terms of this Plan is to ensure that the Plan meets FEMA requirements and is approved by FEMA

-

Implementation

This Plan outlines the District's understanding and evaluation of the hazards that are to be faced; and the strategies, goals, and activities it will pursue to address them.

-

1.3 Public Involvement

Introduction

The Las Virgenes Unified School District developed the following proposed public participation process.

The Public Involvement Process and review of existing information.

The proposed process for public involvement in the District hazard mitigation planning process includes:

- Review and comment by the District's Citizen's Committee.
- Distribution of the draft Plan by the District to our City stakeholders.
- Posting the draft Plan on the District website for comment.
- Press releases and public notices announcing the availability of the Plan.
- Sent the Las Virgenes – Malibu Council of Governments (COG) Administrator and the five City Representatives the draft District Multi-Hazard Plan for their review and comment. The District serves four of the COG's Cities and we are concerned with the same hazards. On October 19, 2004 and November 22, 2004, the COG held Planning Meetings with representatives from the Las Virgenes Municipal Water District, Staff from the various Cities, and Los Angeles County Representatives.
- Our discussions with the COG centered upon the protection of services coming to our various land parcels within the various City Boundaries.
- The District reviewed the State of California Multi-Hazard Mitigation Plan and compared it to the FEMA Crosswalk. The hazards were well documented by the State, so those plans, studies, reports, and technical documents were compared to District histories, geology reports, and topography for local hazard events. State Title 24 Code governs our building standards in regards to the District building's ability to resist hazards. The number of City Yearly Building Permits governs our planning for future classroom expansion, and the California Department of Education Policy and State Title 5 determines campus site approval. This means that all environmental hazards had to be reviewed and mitigation measures agreed by our School Board before approval will be given. City Master Plans and Zoning Code determine the available areas for school locations. Our safety evacuation plans due to earthquakes, fire, or flooding are done in coordination with County and City Fire and Police Codes and Policies.

Website

The District posted the School Board approved Plan on its website and invited comments. Reviewers are to submit comments to the District.

Public Notices

The District published a notice in the Acorn Newspaper that serves our area about the availability of the draft Plan, and the date for the Plan's Public hearing at a School Board Meeting.

Chapter 2 – Adoption by the District

Adoption by the Local Governing Body

***Requirement §201.6(c)(5)*:** *[The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).*

Plan Adoption

The Las Virgenes Unified School District Multi-Hazard Mitigation Plan (Plan) is a comprehensive description of the District's commitment to reduce or eliminate the impacts of disasters. The first Plan was adopted on October 26, 2004.

In adopting this Revised Plan dated November 2, 2005, the Las Virgenes Unified School District agrees to comply with all applicable state and federal statutes and regulations and will update the plan at least every three years. The Plan will be amended to reflect new or revised state and federal statutes and regulations. Future amendments will also reflect changes to organization or policy as appropriate.

I, **Patricia Schulz**, as Clerk of the Board do hereby formally adopt this Multi-Hazard Mitigation Plan on the following date: ____March 14, 2006___.

Signed____ (See hard copy.) _____
Patricia Schulz, Clerk, Board of Education

Chapter 3—District Profile

3.1 District Profile

Introduction

Las Virgenes Unified School District (District) includes the Cities of Calabasas, Agoura Hills, Westlake and Malibu.

California's Physical Geography

The District is in Los Angeles County, between the San Fernando Valley and Ventura County.

The Malibu Mountain range runs to the south and the San Gabriel Mountains run to the north.

Rivers and Lakes

The District has dry creeks, the Westlake Creek, and the Lindero Canyon Creek.

Climate

Climates vary depending on latitude, elevation, and proximity to the coast. Most of the District has rainy winters and dry summers. The influence of the ocean generally creates cooler summers and warmer winters along the coast, along with summer fog. California's mountain ranges influence the climate as well; moisture-laden air from the west cools as it ascends the mountains, dropping moisture.

The District is generally 10 degrees hotter and cooler than the City of Los Angeles.

California's Tectonic Plates

The infamous San Andreas fault is a lateral strike-slip fault that runs through the middle of Los Angeles County and just north of Las Virgenes Unified School District. As the two plates slide past one another, tension builds and potential energy is stored until something gives, releasing massive amounts of energy in the form of an earthquake. Earthquakes have claimed the lives of more than 3000 Californians in the past two centuries. The San Andreas is not the only active fault in Los Angeles County. The District is laced with numerous smaller faults that can cause earthquakes.

District's Economy

The School District Cities are Suburbs of Los Angeles with Software and Retail Companies.

District's Demographics and Schools.

The District's student population is 12,104 and is expected to grow to nearly 13,100 by 2020 and nearly 14,500 by 2050.

The student population ethnicity is:

Ethnicity	This District
African American	2%
Asian	7%
Filipino	1%
Hispanic	5%
Native American	0%
Pacific Islander	0%
White	84%
Mixed Race or No Response	1%

The Schools are as follows:

- Agoura High School
- Alice C. Stelle Middle School
- Bay Laurel Elementary School
- Calabasas High School
- Chaparral Elementary School
- Indian Hills Continuation High School
- Lindero Canyon Middle School
- Lupin Hill Elementary School
- Round Meadow Elementary School
- Sumac Elementary School
- White Oak Elementary School
- Willow Elementary School
- Wright (Arthur E.) Middle School
- Yerba Buena Elementary School

PART 2—RISK ASSESSMENT

Local Capabilities Assessment (State OES Requirement)

Requirement §201.4(c)(3)(ii): *– Of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.*

RISK ASSESSMENT: *§201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

Identifying Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the type … of all natural hazards that can affect the jurisdiction.*

Profiling Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.*

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): *The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area …*

Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): *[The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate …*

Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): *[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Introduction

Federal regulations require that the District undertake a risk assessment of the hazards and vulnerabilities that affect them as part of the hazard mitigation planning process to provide a factual basis for developing a mitigation strategy. The risk assessment process helps to prioritize jurisdictions and geographic areas to receive funding and technical assistance for conducting more detailed local risk and vulnerability assessments.

District Disasters since 1990

The 1994 Northridge Earthquake was declared a Federal Disaster on 1/17/94.
The 1995 CA Winter Storms was declared a Federal Disaster on 1/10/95.

Why Hazards Were Included in This Assessment

This risk assessment focuses on a number of different hazards, which were included in because:

- They have historically caused significant human and/or monetary losses
- Past events have led to the development of hazard mitigation recommendations
- They have the potential to cause significant human and/or monetary losses in the future.

Chapter 4—Earthquake Risk Assessment

4.1 Identifying Earthquake Hazards

4.1 Identifying Earthquake Hazards
Causes of Earthquakes: Plate Tectonics

California always has been seismically active because it sits on the boundary between two of the earth's tectonic plates. Most of the state - everything east of the San Andreas Fault - is on the North American Plate. Monterey, Santa Barbara, Los Angeles, and San Diego are on the Pacific Plate, which is constantly moving northwest past the North American Plate. The relative rate of movement is about two inches (50 millimeters) per year. Although the San Andreas Fault is considered the boundary between the two plates, some of the motion (also known as slip) is taken up on faults as far away as central Utah. In California, about forty millimeters per year of the slip occurs on the faults of the San Andreas system, and about ten millimeters per year occurs in the Mojave Desert and in the Basin and Range area east of the Sierra Nevada on a fault system known as the eastern California shear zone.

The constant motion of the plates causes stress in the brittle upper crust of the earth. These tectonic stresses build as the rocks are gradually deformed. The rock deformation, or strain, is stored in the rocks as elastic strain energy. When the strength of the rock is exceeded, rupture occurs along a fault. The rocks on opposite sides of the fault slide past each other as they spring back into a relaxed position. The strain energy is released partly as heat and partly as elastic waves called seismic waves. The passage of these seismic waves produces the ground shaking in earthquakes.

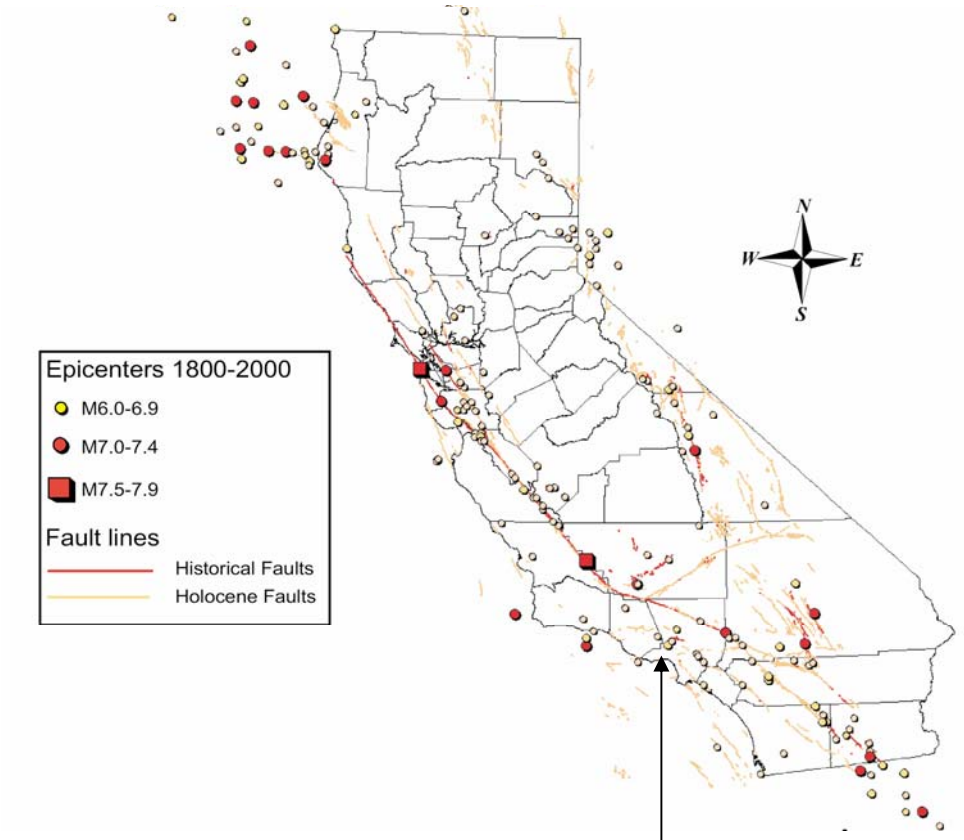
California has thousands of recognized faults, hundreds of which have names, but only some are known to be active and pose significant hazards. As was mentioned above, the motion between the Pacific and North American plates occurs primarily on the faults of the San Andreas system and the eastern California shear zone. Other faults have much lower rates of movement and correspondingly longer times between significant earthquakes.

Faults are more likely to have future earthquakes on them if they have more rapid rates of movement, have had recent earthquakes along them, experience greater total displacements, and are aligned so that movement can relieve the accumulating tectonic stresses. Geologists classify faults by their relative hazards. "Active" faults, which represent the highest hazard, are those that have ruptured to the ground surface during the Holocene period (about the last 11,000 years). In contrast, "potentially active" faults are those that displaced layers of rock from the Quaternary period (the last 1,800,000 years). Determining if a fault is "active" or "potentially active" depends on

Causes of Earthquakes: Plate Tectonics (continued)

geologic evidence, which may not be available for every fault. Although there are probably still some unrecognized active faults, nearly all the movement between the two plates, and therefore the majority of the seismic hazards, are on the well-known active faults.

Map 4.1A The Most Earthquake-Prone Areas in California



Las Virgenes Unified School District

4.1 Identifying Earthquake Hazards

Earthquake Hazards: Shaking

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales. One of the first was the Richter Scale, developed in 1932 by the late Dr. Charles F. Richter of the California Institute of Technology. The most commonly used scale today is the Moment Magnitude (Mw) Scale. Moment magnitude is related to the total area of the fault that ruptured and the amount of offset (displacement) across the fault. It is a more uniform measure of the energy released during an earthquake.

The other commonly used measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. In general, it decreases with distance from the source of an earthquake, but it may be increased or decreased by a number of factors. The California Strong Motion Instrumentation Program (CSMIP) records the intensity of shaking on the ground and in structures during earthquakes through a statewide network of strong motion instruments called the California Integrated Seismic Network (CISN). The measurements are used immediately after an event to assist in emergency response by agencies like OES.

Table 4.1A The Modified Mercalli Intensity Scale

Shaking intensity is often described using the Modified Mercalli Intensity Scale, which rates an earthquake's effects based on human observation. While an earthquake has only one magnitude it may have many intensity values, which will generally decrease with distance from the epicenter. The table below lists the Mercalli Scale's various intensity levels.

Intensity	Effects
I	Not felt except by a very few who are favorably situated.
II	Felt by persons at rest, on upper floors, or favorably placed.
III	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV	Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing vehicles rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frame creak.

V	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).
VII	Difficult to stand. Noticed by drivers of vehicles. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roofline. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments). Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII	Steering of vehicles is affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.

Intensity	**Effects**
IX	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.
X	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI	Rails bent greatly. Underground pipelines completely out of service.
XII	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

Earthquake "ShakeMaps"

Earthquake shaking is measured by instruments called accelerographs that are triggered by the onset of shaking and record levels of ground motion at strong motion stations throughout the state operated by the California Integrated Seismic Network (CISN). CISN includes stations operated by the California Geological Survey (CGS), the U.S. Geological Survey (USGS), the California Institute of Technology, and UC Berkeley. The CGS and the USGS rapidly convert the data from the accelerographs into "ShakeMaps" that show the distribution of earthquake shaking. ShakeMaps are used by emergency responders to evaluate the extent and variation of shaking within the area affected by an earthquake and to send resources to the areas that most likely sustained heavy damage. The maps also help identify vulnerabilities, which is useful in pre-disaster mitigation planning.

ShakeMaps, which are based on actual measured motions, are a major step forward in guiding emergency response to earthquakes. Areas of as-yet limited spacing distribution of strong motion stations still require estimation or interpolation, which can unnecessarily reduce accuracy. USGS and CGS produce their maps in addition to the intensity map, to guide response for specific types of structures (short, small structures versus tall, long structures).

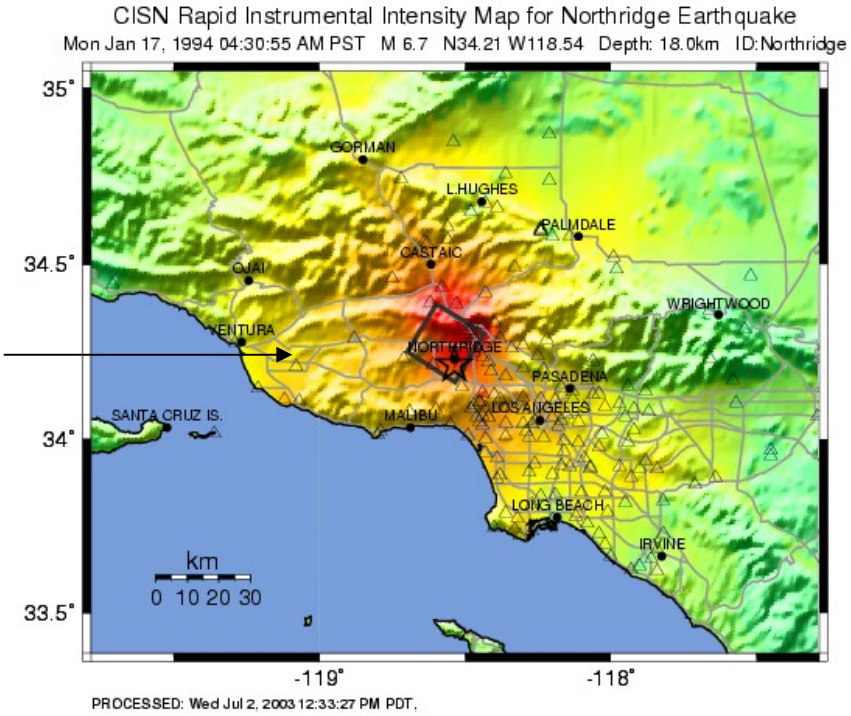
Earthquake "ShakeMaps" (continued)

CGS and USGS also use ground motion data in modeling ground shaking patterns to be expected in future earthquakes. The potential for earthquake shaking at any place can be related to the potential for earthquakes on the surrounding faults and the ground motion from potential earthquakes. Integrating all of the potential for ground motion produces a map showing the long-term seismic hazard.

Map 4.1A
Shake Map

ShakeMaps, such as this one for the 1994 Northridge earthquake, show the distribution of strong ground shaking and can be used to focus emergency response efforts.

LVUSD



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
PEAK VEL.(cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Amplification of Seismic Shaking

Although seismic waves radiate from their source like ripples on a pond, the radiation is not uniform due to the complex nature of an earthquake rupture, the different paths the waves follow through the earth, and the different rock and soil layers near the earth's surface. Large earthquakes begin to rupture at their hypocenter deep in the earth and the fault ruptures outward from that point. Because the speed of an earthquake rupture on a fault is similar to the speed of seismic waves, waves closer to the epicenter can be compounded by waves from farther along the rupture, creating a pulse of very strong seismic waves that move~~s~~ along the fault in the direction of the fault rupture. Seismic waves may also be modified as they travel through the earth's crust. Shaking from the 1989 Loma Prieta earthquake was concentrated to the north, toward San Francisco and Oakland, possibly due to the reflection of seismic waves off the base of the earth's crust.

As seismic waves approach the ground surface, they commonly enter areas of loose soils where the waves travel more slowly. As the waves slow down, their amplitude increases, resulting in larger waves with frequencies that are more likely to damage structures. Waves can also be trapped within soft sediments between the ground surface and deep, hard basement rocks, their destructive energy multiplying as they bounce back and forth, producing much greater shaking at the ground surface. CGS and USGS recorded large ground waves at many locations during both the Loma Prieta earthquake and the 1994 Northridge earthquake.

Unexpectedly large ground waves and their resulting damage may be produced from a relatively distant earthquake. Shaking from the 1999 Hector Mine earthquake in the Mojave Desert produced waves with amplitudes of up to 15 cm in the Los Angeles basin, more than 200 kilometers from the epicenter. While there was little damage from the Hector Mine earthquake, other large earthquakes have caused damage in distant places. For example, Nevada's 1954 Dixie Valley earthquake damaged critical facilities in Sacramento due to water sloshing.

Mitigation of Seismic Shaking Hazards

Seismic shaking, which caused over 98 percent of the losses in the Loma Prieta Earthquake, has long been recognized as the main threat to structures during earthquakes. To mitigate this hazard, building codes have been steadily improved over the past 80 years as understanding of seismic shaking has improved based on strong motion data gathered by CGS and USGS. Current California building codes include provisions for considering the potential shaking from earthquakes, including stronger shaking near faults and amplification by soft soils. The building code has been the main mitigation tool for seismic shaking in most buildings, although hospitals, schools, and other critical facilities are subject to additional mitigation measures, as will be discussed below.

Earthquake Hazards: Ground Failure

Fissuring, settlement, and permanent horizontal and vertical shifting of the ground often accompany large earthquakes. Although not as pervasive or as costly as the shaking itself, these ground failures can significantly increase damage and under certain circumstances can be the dominant cause of damage. The majority of damage from the 1964 Alaskan Earthquake was attributed to the extensive ground failures that accompanied the event. Studies after the 1994 Northridge Earthquake showed that when ground failure was involved, damage to residential dwellings was three to four times greater than average shake damage. Because of their geographic extent, network infrastructures such as water, power, communication, and transportation lines are particularly vulnerable to ground failures.

Fault Rupture

The sudden sliding of one part of the earth's crust past another releases the vast store of elastic energy in the rocks as an earthquake. The resulting fracture is known as a fault, while the sliding movement of earth on either side of a fault is called fault rupture. Fault rupture begins below the ground surface at the earthquake hypocenter, typically between three and ten miles below the ground surface in California. If an earthquake is large enough, the fault rupture will actually travel all the way to the ground surface, wreaking havoc on structures built across its path. Recent large earthquakes in Turkey and Taiwan have shown that few structures built across the surface traces of faults can withstand the large displacement that occurs during an earthquake.

Liquefaction

In addition to the primary fault rupture that occurs right along a fault during an earthquake, the ground many miles away can also fail during the intense shaking. One common type of failure occurs when soft, water-saturated soil settles, causing the water to eject sediment particles as it works its way to the ground surface. This phenomenon, known as liquefaction, turns the soil into a fluid, causing it to lose the ability to support buildings and other structures. Areas susceptible to liquefaction include places where sandy sediments have been deposited by rivers along their course or by wave action along beaches. Alameda Naval Air Station runways and Port of Oakland equipment suffered damage from liquefaction during the 1989 Loma Prieta Earthquake.

Landslides

Landslides are the result of the down-slope movement of unstable hillside materials under the influence of weathering and gravity over time. Strength of rock and soil, steepness of slope, and weight of the hillside material all play an important role in the stability of hillside areas. Weathering and absorption of water can weaken slopes, while the added weight of saturated materials or overlying construction can increase the chances of slope failure. Sudden failure can be triggered by heavy rainfall, excavation of weak slopes, and earthquake shaking, among other factors. Because landslides occur often without earthquakes, landslide hazards are discussed in a separate section of this Plan and are only briefly mentioned here as a secondary hazard associated with earthquakes.

Photo 4.1C Landslide

Ground shaking from the 1994 Northridge earthquake triggered damaging landslides, including this one in the Pacific Palisades area of Los Angeles.

Mitigation of Ground Failure

Because the safety and stability of buildings, bridges, and other engineered structures depends on strong, stable foundations, catastrophic ground failures of the type discussed here must be avoided by choosing safe construction sites or by reducing risk through prudent civil engineering practice. The latter includes constructing appropriate foundation systems and modifying unstable ground to increase stability through grading, compacting, or reinforcing soils. Experience has repeatedly shown that use of these methods in design and construction can greatly reduce damage and loss during earthquakes.

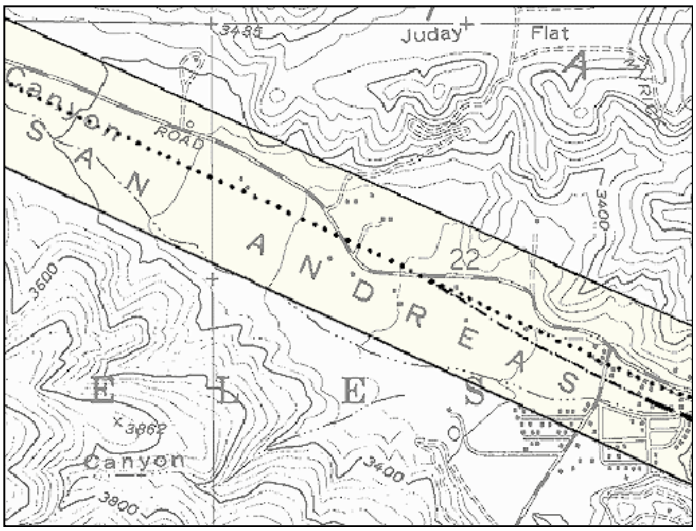
The 1971 San Fernando Earthquake was caused by rupture along the San Fernando fault that resulted in total loss to many structures built across its path. That event clearly demonstrated that active faults must be avoided when constructing new buildings and led to passage of the Alquist-Priolo Earthquake Fault Zoning Act of 1972. The Act prohibits the construction of buildings for human occupancy across active faults in California. Similarly, the extensive damage caused by secondary ground failures during the 1989 Loma Prieta Earthquake focused attention on landslides and liquefaction and led to the Seismic Hazards Mapping Act, which increases construction standards at sites where ground failures during earthquakes are likely.

Ground Failure Hazard Zones

Where and when to mitigate ground failure hazards is facilitated by seismic hazard zone maps and earthquake fault zone maps. These maps identify where such hazards are more likely to occur based on analyses of faults, soils, topography, groundwater, and the potential for earthquake shaking sufficiently strong to trigger landslide and liquefaction. Both types of maps are based on the concept of “special study zones” and are used to identify locations where specially adapted construction standards are necessary for public safety and welfare. Local planning and building departments must use such maps as a screening tool to identify when to undertake detailed geotechnical or fault investigations in order to validate the level of hazard suspected at proposed development sites. A city or county can only issue a construction permit in hazard areas when the developer agrees on an appropriate level of mitigation against landslides or liquefaction, or when selected building sites are offset from active fault traces (usually at least 50 feet).

California disclosure laws require that sellers inform buyers if a property for sale is located within an earthquake fault zone or a seismic hazard zone. The Alquist-Priolo Earthquake Fault Zoning Act has been in effect for 30 years and over 5000 miles of active fault are now zoned throughout the state. The

Ground Failure Hazard Zones
(continued)



Earthquake Fault Zone along a portion of the San Andreas Fault

Seismic Hazards Mapping Act has been in effect for over 10 years and more than 4000 square miles of land have been zoned in Los Angeles, Ventura, and Orange counties and in portions of the San Francisco Bay Area.

4.2 Profiling Earthquake Hazard Events

Introduction

This section summarizes major earthquakes in California and their related damages and losses.

Recent Earthquake Events

Earthquakes large enough to cause moderate damage to structures—those of M5.5 or larger—occur three to four times a year. The 1987 Whittier Narrows earthquakes (M6), caused by a buried thrust fault, caused hundreds of millions of dollars in property damage. Most recently, the San Simeon Earthquake (M6.5) hit an area six miles northeast of San Simeon on December 22, 2003. As of March 17, 2004, FEMA had approved over $20.1 million in aid for recovery from this event. An average of once every two to three years, a strong earthquake (M6 to M6.9) strikes somewhere in the state. An earthquake of this size, such as the 1994 Northridge Earthquake (M6.7) or the 1983 Coalinga Earthquake (M6.5), is capable of causing major damage if the epicenter is near a densely populated area. Major earthquakes (M7 to 7.9) occur in California about once every ten years.

Although a great earthquake (M8 or greater) has never been officially recorded in California, evidence suggests that one occurred in the early eighteenth century. Native American oral histories, tree-ring studies, geological studies that show the uplift or subsidence of large areas of coastal land, and records of a tsunami that struck Japan and cannot be correlated with an earthquake anywhere else around the Pacific indicate that an M9 earthquake occurred in January 1700 on the Cascadia Subduction Zone, extending north from Cape Mendocino in Northern California to British Columbia. An earthquake of this size is similar to the one that struck Alaska in 1964 and is capable of extensive damage over a very broad region including the School District.

4.2 Profiling Earthquake Hazard Events

Recent Earthquake Losses

As shown in Table 4.2A below, earthquakes have caused significant losses in areas adjacent to the School District over the past thirty years. The average annual loss (AAL) between 1970 and 1999 was about $1.9 billion in direct property damage (in 2000 dollars). However, 70 to 80 percent of that loss was from the Northridge Earthquake alone. Thus, past earthquakes may not provide a realistic estimate of future earthquakes' effects. Large earthquakes in lightly populated regions, such as Landers and Hector Mine, show the potential earthquake shaking from major earthquakes, while moderate earthquakes in populated areas, particularly Northridge, give a sense of California’s vulnerability to earthquake shaking. A major earthquake near one of California’s urban centers could cause unprecedented losses. Indirect losses, such as from unemployment and business interruption, could be more than double direct losses.

4.2 Profiling Earthquake Hazard Events

Table 4.2A Earthquake Losses

The table below shows reported direct losses from major and strong earthquakes in California adjacent to the School District since 1971.

Earthquake	Date	Magnitude	Direct Losses (1)	Deaths (4)	Injuries (4)
San Fernando	Feb. 9, 1971	6.6	$2,200 (2)	58	2000
Whittier Narrows	Oct. 1, 1987	6.0	$522 (3)	9	200+
Northridge	Jan. 17, 1994	6.7	$46,000 (2)	57	11,846

(1) Estimate in millions of 2000 dollars
(2) Estimate from FEMA (1997)
(3) Estimate from National Research Council (1994)
(4) Estimate from OES

Potential Earthquakes

Research coordinated by the Southern California Earthquake Center (SCEC) in 1995 concluded that there is an 80 to 90 percent probability that an earthquake of M7.0 or greater will hit Southern California and Las Virgenes Unified School District before 2024. The probability that a major quake will hit in some part of California in the next thirty years is over 95 percent.

4.2 Profiling Earthquake Hazard Events

Estimating Losses from Future Earthquakes

With HAZUS, a standardized methodology and GIS modeling software developed by FEMA, it has become possible in recent years to estimate losses from future earthquakes in California. By combining ShakeMaps with a statewide computerized inventory of population and buildings using HAZUS, CGS has estimated casualty and damage losses from various potential earthquakes for the two largest metropolitan regions of the state. Results are summarized in Table 4.2B below. CGS used the 1990 census as the basis for estimating the building inventory. growth in California since 1990 means that the loss estimates are likely low. Potential losses to other to other types of property, including transportation systems, lifelines, and utilities, which CGS did not estimate, could be several times greater than losses to buildings.

The accuracy of Shake Maps and the resulting HAZUS estimates are strongly dependent on recorded ground motion. Therefore, places with too few instruments have the potential for significant discrepancies between estimated and actual ground motions. The California Integrated Seismic Network and the federal Advanced National Seismic System have been working together to fund and install additional seismic instruments. Both programs are funded well below their authorized levels, so instrumentation is still very sparse in some areas of the state, including the epicentral regions of the 2000 Napa and 2003 San Simeon earthquakes.

4.2 Profiling Earthquake Hazard Events

Table 4.2B - Earthquake Scenario Losses

The table below describes potential earthquakes and their associated losses for Southern California.

Table 4.2B - Earthquake Scenario Losses

Potential Earthquake Scenarios	M	Projected Building Damage in Millions
Southern California		
Puente Hills	7.1	$69,000
Newport-Inglewood	6.9	$49,000
Palos Verdes	7.1	$30,000
Whittier Fault	6.8	$29,000
Verdugo Fault	6.7	$24,000
San Andreas Fault: Southern Rupture	7.4	$18,000
San Andreas Fault: Repeat of the 1857 Earthquake	7.8	$17,000

Santa Monica	6.6	$17,000
Raymond Fault	6.5	$17,000
San Joaquin Hills	6.6	$15,000
Rose Canyon	6.9	$14,000
San Jacinto	6.7	$7,000
Elsinore Fault	6.8	$4,000

Las Virgenes Unified School District		
Northridge Fault	6.6	$2
Northridge Fault	8.0	$98

4.3 Assessing Vulnerability Inventories and Mitigation Progress by Jurisdiction and Type of Construction

Introduction

This section summarizes the size and vulnerability of major types of existing development, how the vulnerabilities can be mitigated, and what information the state currently has about mitigation progress.

Determining Vulnerability

Earthquake vulnerability is primarily based upon population and the built environment. Urban areas in high hazard zones tend to be the most vulnerable, while uninhabited areas generally are less vulnerable. CGS and USGS have done considerable work using GIS technology to identify populations in seismic hazard zones. This topic discusses the number of individuals that reside in the high seismic hazard zone in each California county and includes a sample of GIS mapping. In future editions of this Plan this section will be supplemented with information from local hazard mitigation plans.

Earthquake Loss Potential

Our maximum loss would be the destruction of buildings on our school sites as listed below:

Schools were built under codes in the following years listed below:

1.	Agoura High School	1964
2.	Alice C. Stelle Middle School	2003
3.	Bay Laurel Elementary School	1991
4.	Calabasas High School	1974
5.	Chaparral Elementary School	1966
6.	Indian Hills Continuation High School	1974
7.	Lindero Canyon Middle School	1970
8.	Lupin Hill Elementary School	1972
9.	Round Meadow Elementary School	1964
10.	Sumac Elementary School	1978
11.	White Oak Elementary School	1968
12.	Willow Elementary School	1978
13.	Wright (Arthur E.) Middle School	1964
14.	Yerba Buena Elementary School	1968

4.3 Assessing Vulnerability Inventories and Mitigation Progress by Jurisdiction and Type of Construction

4.3 Section 1 – Existing Buildings

Existing Buildings – General Overview

Compared to other earthquake vulnerabilities, buildings pose the largest risk to life, injury, property and economic welfare. California has approximately 12 million buildings, with an average of 2.7 occupants per building. Approximately 100 percent of the District's buildings are low rise (one to three stories). Observations after earthquakes indicate that building safety is most often compromised by poor quality in design and construction, inadequate maintenance, a lack of code enforcement at the time of original construction, and improper alterations to the original building. *(Turning Loss to Gain, CSSC 95-01)*

A less common cause of damage is the poor performance of older buildings built to earlier seismic codes. One school was built in 1953 before the Structural Engineers Association of California's first statewide consensus on recommended earthquake provisions were published in 1960. Nine schools were built before the mid- to late-1970s, when significant improvements to lateral force requirements began to be enforced throughout the state. Thus, most of our existing buildings in the District were built to the later standards that in many cases can result in medium earthquake performance.

Damage due to ground shaking produces over 98 percent of all building losses in typical earthquakes In addition, buildings are also vulnerable to ground displacements associated with primary fault rupture, liquefaction, differential settlement, and landslides. Inundations from tsunamis seiches, could also be a major source of loss to buildings.

4.3 Section 1 – Existing Buildings

Mitigation of Building Earthquake Losses

The most effective single element in mitigating earthquake losses to buildings is the consistent application of a modern set of design and construction standards, such as those incorporated in modern building codes. The codes evolve regularly to include the most effective design and construction measures that have been observed in recent earthquakes to reduce building damage and losses. The District K12 Schools were built to relatively modern stringent California Building Code.

For new buildings, state enforces the California Building Standards Code (CBSC) that includes earthquake safety provisions from the 1997 Edition of the Uniform Building Code with enhancements for public schools, and essential services buildings. Since this code is becoming outdated, the state enacted twenty emergency earthquake safety amendments that are applicable to state-owned buildings in 2003. The CBSC encourages local governments and other agencies to adopt these amendments. California has adopted retrofit standards for un-reinforced masonry (URM) public school buildings.

Mitigation of Building Earthquake Losses

Mitigation measures for ground displacement include strengthening foundations, locating new facilities to avoid sites with the potential for large displacements during earthquakes, and modifying soils below foundations.

Mitigation of Earthquake Losses in Nonstructural Systems and Building Contents

California did not begin to regulate the earthquake safety of nonstructural systems and heavy contents in buildings, such as water heaters, ceilings, light fixtures, and heating equipment, until the 1970s. Buildings built before the 1970s and newer buildings that were not regulated and that have unbraced systems can be made safer with retrofit projects. FEMA offers guidelines for the evaluation and retrofit of building contents and nonstructural building systems (FEMA 74). These retrofits can significantly reduce the risks of injuries and business interruption from earthquakes and are often feasible at very low costs. OES offers guidelines are for evaluating and retrofitting nonstructural falling hazards common to schools at www.oes.ca.gov.

District Pre-Mitigation of Non-structural Systems.	In 1996, the District "retrofitted" T-Bar Ceilings to bring them up to code under HMGP Project/FEMA-DR-1008-1083-CA-(Category 1). The schools were Agoura High, Calabasas High, Bay Laurel Elementary School, Chaparral Elementary School, A.E. Wright Middle School, Lupin Hills Elementary School, Indian Hills High School, Lindero Canyon Middle School, Yerba Buena Elementary School, Round Meadows Elementary School, and White Oak Elementary School. The District's cost was $645,413.30, and FEMA reimbursed $484,060.00.

4.3 Section 1 – Existing Buildings

Fire Following an Earthquake

One of the greatest potential hazards after an earthquake is fire. Fires following the 1906 San Francisco Earthquake, the 1923 Tokyo Earthquake, and the 1995 Kobe Earthquake caused extensive damage and killed thousands. Fires that follow earthquakes fall into two basic categories:

- **Category One**: Fires that follow immediately after an earthquake. Fires can occur when power lines are fused, broken and the resulting arcing comes into contact with combustible fuel. Water heaters, stoves and lighting fixtures/lamps are dislodged and come into contact with combustible fuel. Natural gas mains, lines and service are severed and the released gas finds a source of ignition. Combustible liquids can leak and find a source of ignition.

- **Category Two**: Fires that are delayed following an earthquake and that are generally human caused or preventable incidents. An example is fire caused by the restoration of electricity to an area not properly checked and secured. Lamps that were on when an earthquake hit may have been dislodged by the earthquake onto combustible material. When power is restored, heating can occur, followed by ignition. Arcing of downed power lines can also ignite combustibles. Additionally, inexperienced people can start fires by trying to relight gas pilots.

Mitigation for the prevention of natural gas system leakage has, in some areas, included the localized upgrading of natural gas pipelines and automatic seismic shut-off switches, which cut off natural gas to customers. It is critical that restoration of gas service following an earthquake be coordinated through the local gas utility and the fire department to ensure that service is not restored until minimum safety requirements are met on the distribution side of the gas meter. Restoration of gas and electrical services for areas known or suspected to have sustained damage may not be restored until the utilities and the fire department are prepared to have service restored.

An additional fire mitigation technique is the use of seismic pressure wave-triggered automatic garage door openers and alarms on fire stations. These devices help ensure that firefighters and fire equipment are not trapped in damaged fire stations following earthquakes.

Sub-Inventories of Existing Buildings

K-12 Public Schools are discussed in the text that follows:

The Schools are as follows:

- Agoura High School
- Alice C. Stelle Middle School
- Bay Laurel Elementary School
- Calabasas High School
- Chaparral Elementary School
- Indian Hills Continuation High School
- Lindero Canyon Middle School
- Lupin Hill Elementary School
- Round Meadow Elementary School
- Sumac Elementary School
- White Oak Elementary School
- Willow Elementary School
- Wright (Arthur E.) Middle School
- Yerba Buena Elementary School

4.3 Section 1 – Existing Buildings

K-12 Public Schools

Since 1933, public schools have been constructed in accordance with the Field Act, which requires thorough reviews of construction plans, strict inspections, and quality control. By 1977, nearly all public schools that were built before the Field Act had either been retrofitted or were no longer being used for instructional purposes. The Field Act did not begin to regulate nonstructural systems and building contents in schools until the 1970s. Many schools, particularly older public schools contain falling hazards that can injure occupants.

In 2002, the Division of the State Architect released a survey of early Field Act buildings that were constructed to regulations that, for certain types of construction, are no longer considered to provide reliable life safety. Survey results include:

- About 16,000 of the state's current Field Act buildings were constructed prior to 1978, when major changes were made to Field Act regulations
- 9,659 buildings (92 million square feet of space) with non-wood construction
- 2,122 Category 1 Buildings (expected to perform well and achieve life safety)
- 7,537 Category 2 buildings (not expected to perform as well as Category 1 Buildings and require more seismic evaluations)
- DSA anticipates needing $4.7 billion to evaluate and retrofit Category 2 buildings to meet a damage control and life safety performance objective

Source: Seismic Safety Inventory of California Public Schools, Division of the State Architect, Department of General Services, November 15, 2002

4.3 Section 1 – Existing Buildings

Mitigation of Public School Buildings

California has adopted the Field Act and its regulations for new construction in the California Building Standards Code. For existing K-12 public schools and community colleges, DSA recently adopted emergency seismic evaluation and retrofit regulations (Division VI-R, Title 24, Part 2) that are applicable to public school buildings and conversions of non-Field Act buildings to public school use. Several older school districts throughout the state have or are currently retrofitting early Field Act schools.

The HMGP identified non-structural mitigation as a priority for schools and essential facilities following the 1994 Northridge Earthquake. OES offers guidelines for the retrofit of building contents and nonstructural building systems such as ceilings, light fixtures, and mechanical equipment (Guide and Checklist for Nonstructural Earthquake Hazards in California Schools, available at www.oes.ca.gov).

Tilt-Ups

Tilt-up buildings are typically one- or two-story buildings constructed of concrete walls that are tilted into place and connected to wood or steel roofs. If the connections between the walls and roofs are weak, the walls can pull away from roofs and collapse during ground shaking. There is no statewide inventory of tilt-up buildings. These buildings pose significant risks of casualties and losses from earthquake damage.

Current retrofit provisions are available in Appendix Chapter 2 of the International Existing Building Code or FEMA 356. Additionally, state law encourages the disclosure earthquake weaknesses in commercial properties at the time of sale. See Chapter 11 for more information.

The District has three Tilt-up buildings. They are A.E. Wright Gym, District Warehouse A, and District Warehouse B.

Table 4.3.1D Mitigation of Tilt-Ups and Similar Buildings

The following jurisdictions have adopted retrofit programs for tilt-up buildings:

Jurisdiction	# of Buildings	Program Type
Los Angeles	2,618	Mandatory Retrofit
Los Angeles County & Contract Cities	N/A	Mandatory Retrofit

Regulated Non-Ductile Concrete Buildings

The District's two high schools and two middle schools were constructed with re-enforced masonry buildings.

The most current retrofit provisions are available in FEMA 356, ATC 40 as revised, and Appendix Chapter 5 of the International Existing Building Code.

Mitigation of Steel Frame Buildings

The most current recommended evaluation and retrofit provisions are in FEMA 350 to FEMA 353 and in the American Institute of Steel Construction Seismic Provisions. See www.atc.org and www.aisc.org for more information.

4.3 Section 2 - Utilities and Transportation

Note

- The District does not own Utility and Transportation systems. We look to our Cities and County to provide them.

4.4 Mitigation Measures for Earthquake Hazards

Introduction

From 1990 through June of 2003, Californians spent in excess of $19 billion on seismic hazard mitigation activities (CSSC, 2003). This is an indicator of the level of effort to mitigate seismic hazards and reduce life and property loss after earthquakes. Additional loss mitigation is provided by approximately $10 billion in earthquake insurance currently in place. One of the more significant mitigation activities that cannot be assigned a specific cost is mitigation by hazard avoidance. A good example is the requirement that buildings and facilities in California no longer be built over ground rupture traces of active faults.

Las Virgenes School District spent $671,559.36 for the Northridge Earthquake repairs.

4.4 Section 1 - Historical Developments in Earthquake Mitigation

Field Act

In 1933, one month after the Long Beach Earthquake destroyed 70 schools, seriously damaged 120 others, and caused minor damaged to 300 more, California passed the Field Act to ensure seismic safety in new public schools. The Act establishes regulations for the design and construction of K-12 and community college buildings. The Division of the State Architect within DGS enforces the Field Act.

Riley Act

Following the 1933 Long Beach Earthquake, the state also passed the Riley Act, which requires local governments to have building departments that issue permits for new construction and alterations to existing structures and

conduct inspections. Permit fees paid by building owners generally fund the work of local building departments. The Act also set minimum seismic safety requirements that have since been incorporated into all building codes.

4.4 Section 1 - Historical Developments in Earthquake Mitigation

Strong Motion Instrument Act

The state passed the Strong Motion Instrumentation Act in 1972 in response to the extensive damage to buildings and bridges caused by the 1971 San Fernando Earthquake. The earthquake highlighted the need for more data on strong ground shaking during earthquakes and on the response of structures to the shaking. The Act established a statewide network of strong motion instruments to gather vital earthquake data for the engineering and scientific communities. Data obtained from the strong motion instruments is used to recommend changes to building codes, assist local governments in the development of their general plans, and help emergency response personnel in the event of a disaster.

Alquist-Priolo Earthquake Fault Zoning Act

The state passed the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazard of surface faulting to structures built for human occupancy. The law was another response to the 1971 San Fernando Earthquake, which produced extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. Before issuing building permits, cities and counties must require a geologic investigation to ensure that proposed buildings will not be constructed across active faults. Proposed building sites must be evaluated by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault.

Seismic Safety Commission Act

The 1971 San Fernando Earthquake highlighted weaknesses in California's earthquake risk management policies. To address these weaknesses, in 1975 the state legislature created the independent California Seismic Safety Commission (CSSC) to provide a consistent earthquake policy framework for the state. The mission of CSSC is "to provide decision makers and the general public with cost-effective recommendations to reduce earthquake losses and expedite recovery from damaging earthquakes." The commission is also responsible for implementing the California Earthquake Hazards Reduction Act, which requires CSSC to "prepare and administer a program setting forth priorities, funding sources, amounts, schedules, and other resources needed to reduce statewide earthquake hazards."

California Earthquake Hazards Reduction Act	After the 1985 Mexico City Earthquake, in 1986 California passed the Earthquake Hazards Reduction Act, which called for a coordinated state program to implement new and expanded activities to significantly reduce earthquake threat. The program is coordinated by CSSC, which is required to specify priorities, funding sources and amounts, schedules, and other resources. Although historically funded by the state general fund, since the 2003-2004 fiscal year the program was funded by fees imposed on Property Insurance Companies.
Un-reinforced Masonry Building Law	In response to the 1983 Coalinga Earthquake, in 1986 the state legislature enacted the Un-reinforced Masonry Building Law, which requires local governments in high seismic regions of California to inventory un-reinforced masonry buildings, establish mitigation programs, and report progress to the CSSC. As of 2003, 251 local governments have established programs and 16,761 buildings have either been retrofitted or demolished. Cities and counties rely on a variety of funding sources, including building permit fees, to pay for these programs. Some local programs offer financial, planning, and zoning incentives to building owners for retrofit. The CSSC periodically reports on the progress made by local programs in a publication entitled *Status of the Un-reinforced Masonry Building Law*, most recently in 2003.
Essential Services Building Seismic Safety Act	Also in response to the 1985 Mexico City earthquake, in 1986 the state passed the Essential Services Building Seismic Safety Act to require enhanced regulatory oversight by local governments during the design and construction of new essential service facilities, such as fire and police stations and emergency communications and operations facilities. The Division of the State Architect within DGS enforces this Act.
Earthquake Safety and Public Buildings Rehabilitation Bond Act of 1990 (Prop 122)	Proposition 122 was passed by voters in June 1990 after the 1989 Loma Prieta earthquake revealed vulnerabilities to state-owned and essential services buildings. The bond measure authorized the state to issue $300 million in general obligation bonds for the seismic retrofit of state and local government buildings ($250 million for state-owned buildings and $50 million for partial financing of local government essential services facilities). The Seismic and Special Programs Section of DGS' Real Estate Services Division administers Proposition 122 grant programs.
Seismic Hazards Mapping Act	The Seismic Hazards Mapping Act, passed in 1990, directs the Department of Conservation to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of the Act is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. The Act requires geotechnical investigations to identify hazards and formulate mitigation measures before permitting most developments within mapped

Zones of Required Investigation.

4.4 Section 2 - California Earthquake Loss Reduction Plan

Introduction

California's mitigation plan for seismic hazards, the California Earthquake Loss Reduction Plan, was last updated and signed by the governor in 2002. The plan articulates the state's priorities for earthquake hazard mitigation. It contains three overarching goals, eleven elements, and 148 initiatives, half of which are designed to continue indefinitely.

4.4 Section 2 - California Earthquake Loss Reduction Plan

Cost Estimates for Seismic Hazard Mitigation

The total amount of seismic hazard mitigation and risk management by insurance is not known. However, a recent survey by CSSC revealed that from 1990 to 2002, Californians spent over $575 billion on construction and alterations. Roughly $19 billion of that, or just over three percent, was for seismic hazard mitigation, an average of just over $1.5 billion per year. Seismic hazard mitigation costs for individual projects ranged from zero (no seismic hazard mitigation required or done) to 100 percent (the project was done only to mitigate a seismic hazard-related risk) of a project's total cost. In the same time period, Californians spent $10 billion on earthquake insurance for residences.

4.4 Section 2 - California Earthquake Loss Reduction Plan

Estimated Expenditures on Earthquake Mitigation

As a result of the Northridge Earthquake, the Las Virgenes Unified School District spent $671,559.36 in repairs. The principal funding source was FEMA Post-Northridge Earthquake Funds.

4.5 Local Capability Assessment

Local Capability Assessment

The District is in the high seismic area of California (Zone 4). Our capability is to build new buildings to California Title 24.

Chapter 5—Wildfire Risk Assessment

5.1 Identifying Fire Hazards

Introduction

In California, the state's diverse ecosystems significantly influence the threat of fire and its associated risks. Fire has played an integral in shaping the state's landscape and natural resources over the millennia. Understanding this past helps predict future fire behavior and assess threats to natural resources and urban improvements.

History of Fire in California

In terms of assessing the ecological role of fire, experts typically view the pre-settlement period (prior to 1700) as the time when the "natural" fire regime standard developed. During this period, both lightening and people were responsible for causing fires. As was common for indigenous peoples throughout the world, California's Native Americans historically set fires to alter plant and animal populations, facilitate the collection of desirable species, and protect their villages from uncontrolled fire. While broad climate changes are partially responsible for significant variations in fire over time, Native Americans have been present in the state long enough to exert their own evolutionary force on fire patterns, supplementing and altering the long-term influences of lightning fires.

Beginning first with Spanish missionaries, then with trappers and miners, and finally with westward expansion due to the railroads, the settlement period (after 1700) saw significant changes in land use. Livestock grazing, water and timber utilization, farming, mining, and other human activities altered vegetation and brought new fire sources. Changes in fire regimes greatly accelerated after the 1850s, as large influxes of settlers dramatically altered the landscape (Leiberg, 1902*).* Early photographs depicting settlement activities show the extent and nature of these changes (Gruell, 2001).

Starting in the early 1900s and accelerating after the formation of the USFS and the State Division of Forestry (now CDF), organized fire suppression came to define the modern era of fire management in California. Today, land use changes, population growth, development, fire suppression methods, and variations in climate continue to influence the nature and size of fires and how they interact with the natural environment.

5.1 Identifying Fire Hazards

The Challenge of Wildfire

Fire is an integral component of many of California's ecosystems. However, uncontrolled wildfires are costly, putting lives and property at risk and compromising watersheds, open space, timber, range, recreational opportunities, wildlife habitats, endangered species, historic and cultural assets, wild and scenic rivers, other scenic assets, and local economies. The challenge is how to manage fires across California's diverse ecosystems to reduce both costs and losses.

On average, 10,000 wildfires burn half a million acres on an annual basis in California. While the actual number of acres burned fluctuates considerably from year to year, one trend that has remained constant for over a decade is the rise in wildfire-related financial losses. From 1947 to 1990, the dollar damages (in 2001 dollars) to structures and other resources in State Responsibility Areas (SRAs) exceeded $100 million only once. Between 1990 and 2001, losses exceeded $100 million five times.

In 1956, the Las Virgenes Unified School District was threatened by the Malibu Wildfire, and the Federal Disaster Declaration was made on 12/29/56. But, there was no District property damage. In 1993, A.E. Wright Middle School was evacuated because of the Los Angeles Firestorm, and the Federal Disaster Declaration was made on 10/28/93. There was no School property damage. The District looks to the State of California for the legislative response to the Fire Threats in this area, and to Los Angeles County for fire suppression.

5.2 Profiling Fire Hazard Events

Introduction

This section analyzes how wildfire affects California's biological, physical, economic, and social assets. Specifically, the section focuses on fire risks to:

- People and property
- Watersheds
- Ecosystem function and health
- Range forage
- Timberlands
- Soils

The term "risk" refers to the potential damage or loss to a specific asset. Risk from the same fire for one resource may be fundamentally different than for another resource. Analyzing fire risk involves two components: the probability of a fire event occurring and the potential of such an event to cause change (Bachman and Allgower, 1999). The chance of a wildfire occurring is measured using an index of "expected fire frequency." The potential of a fire event to cause change is based on the measure of "potential fire behavior." Together, these two measures comprise the "fire threat." All of these measures are part of the *California Fire Plan* and are described in greater detail in *The Changing California: Forest and Range 2003 Assessment*, available at www.frap.cdf.ca.gov/assessment2003

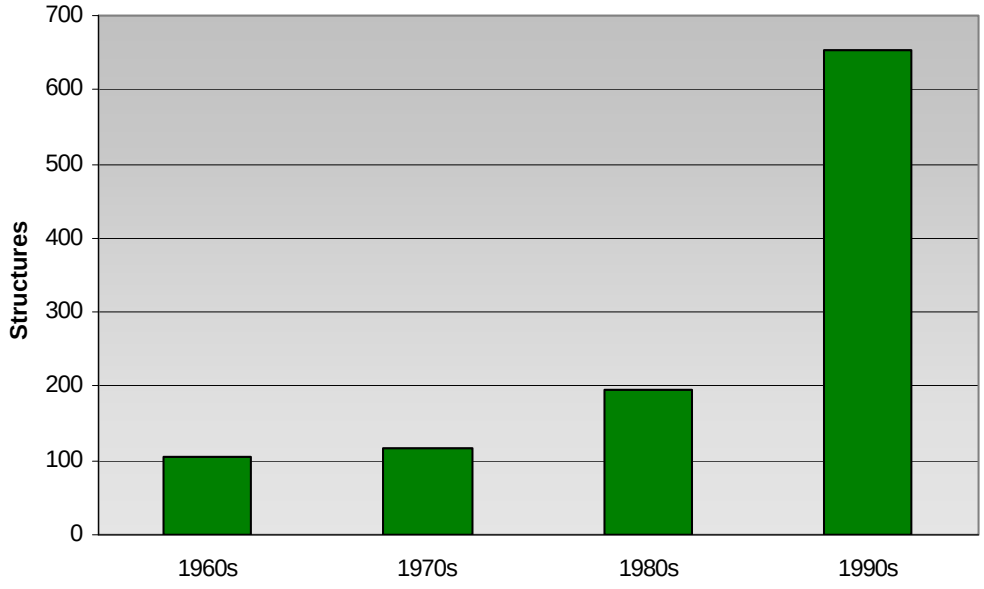
Fire Risks to People and Property

Fire poses significant risk to the people of California and their homes, as evidenced by an increasing trend in structure loss from wildland fires (Martin and Sapsis, 1994, Figure 1). The risk is predominantly associated with Wildland-Urban Interface (WUI) areas. WUI is a general term that applies to development interspersed or adjacent to landscapes that support wildland fire. WUI areas have been a major focus of CDF's fire management strategy since at least 1972. The diversity of WUI settings and disagreement about alternative mitigation strategies led to confusion and different methods of defining and mapping WUI areas. The work presented here is an attempt to provide an integrated analysis of WUI issues for statewide and regional assessment regarding local land use planning and pre-fire project development.

5.2 Profiling Fire Hazard Events

Chart 5.2A Structure Loss from Wildfires

The following chart summarizes the California mean annual structure loss from wildfire by decade from 1960 to 1999.



5.2 Profiling Fire Hazard Events

The 2003 Southern California Wildfires

The most recent fire disaster in California (as of August 2004) was the Southern California Wildfires event. This event consisted of 13 fires that burned a total of 750,043 acres and claimed 22 lives between October 21, 2004 and November 4, 2004. Affected counties were Los Angeles, Riverside, San Bernardino, San Diego, and Ventura. As of February 3, 2004, federal and state officials have approved more than $218 million to help residents, business owners, local government agencies, and non-profit organizations recover from these wildfires and prepare for future disasters.

Source: California Fire Siege 2003—The Story, USFS and CDF

Because of the wildfires in the District and adjacent Cities, there is great risk to our campuses.

5.3 Assessing Fire Vulnerability and Losses by Jurisdiction

Assessing

It is estimated that in the next 30 years with one wildfire the District would not loose more than one Middle School with an estimated value of $18,000,000.00 for building reconstruction and two Elementary Schools with an estimated value of $24,000,000.00.

5.4 Mitigation Measures for Fire Hazards

5.4 Section 1 – Wildfire and Human Development

Introduction

Wildfire and human development have always been in conflict. Wildfire is a natural part of our environment and human development in wild lands is an accepted practice. This inherent conflict requires careful management in order to reduce or eliminate losses to life, property, and resources from wildfires. Some past management practices have failed to address the comprehensive nature of the human/wildfire conflict and have exacerbated conditions that can lead to more damaging fires. One example is wildfire suppression without aggressive management of hazardous fuels. Another is wildfire suppression without performance-based fire-resistant construction standards or fire-safe development requirements. Daily actions and decisions often fail to consider wildfire risks and the potential for resulting losses.

Managing the Human/Wildfire Conflict

Managing the human/wildfire conflict requires a commitment of resources and a focused mitigation plan over the long term. The approach must be system-wide and include the following:

- An informed, educated public that takes responsibility for its own decisions relating to wildfire protection
- An effective wildfire suppression program
- An aggressive hazardous fuels management program
- Land use policies and standards that protect life, property, and resource protection
- Construction and property standards that provide defensible space

5.4 Section 2 – The Fire Plan

The California Fire Plan

The School District defers to the California Fire Plan. To view the plan, go to www.fire.ca.gov/FireEmergencyResponse/FirePlan/pdf/fireplan.pdf.

5.4 Section 3 – Governmental Partnership

California Fire Alliance

Leading the coordination of wildfire risk mitigation is the California Fire Alliance (Alliance). Started in 1997, the Alliance was formed as a way to coordinate the pre-fire management efforts of its member agencies—CDF, USFS, the California Fire Safe Council, BIA, BLM, OES, the Los Angeles County Fire Department, NPS, and USFWS. The Alliance coordinates its monthly meetings with those of the Fire Safe Council meetings, and the directors of the member agencies meet several times each year to discuss and reach consensus on California wildfire prevention and fire loss mitigation strategies.

The Alliance is a forum for sharing information so that its member agencies can make decisions and operate pre-fire management programs in a coordinated, integrated fashion. Pre-fire management programs include such things as efforts aimed at creating defensible space, fire safe landscaping, fuel breaks, and forest management involving both prescribed fire and mechanical thinning. The Alliance and the State's Fire Safe Councils provide an efficient organizational structure for mobilizing wildfire risk mitigation activities. The Alliance provides a single point of contact between the local Fire Safe Councils and its member agencies, while in turn the local councils provide the Alliance with a single point of contact for coordination with individual communities.

5.4 Section 3 – Governmental Partnership

Alliance Accomplish-ments

The Alliance has accomplished the following:

- Provided support for community land use planning and fire protection planning needs
- Sponsored regional firewise community workshops statewide to promote community fire planning
- Sponsored community and county level fire planning teams
- Implemented an interagency wildfire prevention media campaign and educational events
- Implemented a "clearinghouse" for wildfire mitigation grant applicants
- Publicly shared pre-fire project data to develop additional collaborative hazardous fuels projects
- Created a nationally recognized model for collaboration that is used by the National Wildland Fire Leadership Council

5.4 Section 3 – Governmental Partnership

Pre-Fire Grant Projects

Through various programs, CDF continues to participate in hazardous fuels reduction projects. Through the Conservation Camp program, inmate, ward, and Conservation Corps fire crews construct and maintain strategic fuel breaks, reduce roadside fuels, and contribute significantly to CDF's pre-fire mission in numerous ways. Funding for this work traditionally comes from the state general fund in the form of daily operating funds. Those that benefit from this work are limited in what they can offer CDF in terms of reimbursement for work related expenses. With the deployment of the National Fire Plan, Congress set aside pre-fire grant funds for ten years to assist the states in reducing the huge backlog of flammable vegetation that exists throughout the nation. Beginning in 2001, federal funds were directed to state projects with awards being determined through a competitive process.

The Bureau of Land Management dedicates a portion of its hazardous fuels funds to projects sponsored by community-based organization.

5.4 Section 4 – Building Codes, Zoning, and Residential Flammable Vegetation Regulations

Regulations

The District defers to the State of California, Los Angeles County, and local Cities for these Regulations.

Chapter 6 - Flood Risk Assessment

6.1 Identifying Flood Hazards

California's Flood History

California has a chronic and destructive flood history. Of seventy-two federally declared disasters in the state between 1950 and 2000, half were flood related.

While the "Great Flood" of 1861-62 may be unmatched in scope, the devastating effects of recent floods far exceed the damage of a century ago. Despite the construction of massive and relatively effective flood control projects, California remains vulnerable to flooding. A steady rise in population and accompanying development contribute to increased flood risks throughout the state and the School District.

Repetitive Flood Damage

The repetitive nature of flood damage causes the greatest concern. Areas flooded in the past continue to be inundated again and again. The desert community of Hesperia, in San Bernardino County, provides a classic example. Hesperia suffers repetitive flash flooding during both intense thunderstorms and winter storms. Such flooding occurred four times between 1991 and 1995. The frequent and devastating floods that occur on the Russian River in Sonoma County serve as another example. The county recorded thirteen flood events between 1995 and 2001, the most repetitive losses of any area in California. FEMA lists 801 repetitive loss properties in Sonoma County with $47.6 million in NFIP insurance claims between 1992 and 2002.

Federal Flood Disasters in California

Between 1992 and 2002, every county in California was declared a federal disaster area at least once for a flooding event. The counties of Los Angeles, Orange, and San Bernardino were declared federal flood disaster areas five times, and sixteen other counties were declared disaster areas four times.

The 1995 CA Winter Storms caused damage to Campuses in the District in the amount of $76,994.00. The Federal Emergency Declaration was made on 1/10/95.

6.2 Profiling Flood Hazard Events

Introduction

In the Las Virgenes Unified School District, planning for flood mitigation poses many challenges. Mitigation strategies need to account for multiple climatological patterns, geographical diversity, a variety of flood types, and a large population.

Climatology

Disparate climatological patterns present challenges to flood mitigation planning in California, including:

- El Nino conditions
- La Nina conditions
- Santa Ana conditions
- Drought
- Tropical storms

6.2 Profiling Flood Hazard Events

About the South Coast Region

The South Coast hydrologic region extends up from the U.S.-Mexico border to the Tehachapi, San Bernardino, San Gabriel, and San Jacinto mountains. Nearly one-third of the area is coastal plain.

Major stream system of the District within the South Coast region is the Malibu and Santa Monica Mountain stream system. Most of these streams are dry river beds that are only active in the rainy season. These streams do not go into a large collector river, but go directly from the mountains to the Pacific Ocean. The three major year around stream systems are the Las Virgenes Creek, the Kanan Road Creek, and Lindero Canyon Creek. These streams can rise 4 feet with every inch of rain.

6.3 Assessing Flood Vulnerability by School District

LVUSD

The District is vulnerable to hillside failure, swale failure, roof and ceiling damage in large storms.

-

District Efforts

- The District has sought to reduce future damage through building modernization and sports field up-grades with Measure R funds.

PART 3—MITIGATION STRATEGY & FUNDING

MITIGATION STRATEGY: *§201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

Chapter 7—State and District Mitigation Strategy

Overview

This hazard mitigation strategy for California describes actions that are guided by a vision of a safe and resilient California. The communities and businesses of the state have developed and grown in the dynamic environment of flood, fire, earthquake, and other natural events. The state's history or natural disasters has led to numerous laws, regulations, programs, and policies aimed at protecting infrastructure, housing, businesses, government, and the public. Because of a continually increasing demand for limited hazard mitigation resources, the state must continually improve its approach to hazard mitigation. This Plan describes a statewide strategic approach to mitigation that integrates current laws, policies, and programs.

As detailed in Chapter 1 of this Plan, this mitigation strategy, including the vision, mission, goals, and objectives, was developed with extensive input from and coordination with stakeholders from state and local agencies, businesses, non-profit organizations, and the public. As objectives and goals are attained, these same participants will be included in the development of new goals and objectives through a review and approval process with the State Hazard Mitigation Team (SHMT).

This strategy identifies goals; provide a summary of current state and federal laws, policies, and programs that address achieving the goals; and lists the goals, objectives, and initiatives from other plans that have been integrated into this Plan. The strategy also explains the state's current priorities and how those priorities relate to the goals.

Vision

A safe and resilient School District through hazard mitigation.

Mission

To integrate current laws and programs into a mitigation system that will guide the state in the reduction and prevention of injury and damage from natural hazards.

7.1 Hazard Mitigation Goals

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy **shall** include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Goals

1. Save lives and reduce injuries
2. Avoid damages to property
3. Protect the environment
4. Promote hazard mitigation as an integrated policy

Goal 1: Save Lives and Reduce Injuries

Consistent with one of the main responsibilities of Las Virgenes Unified School District, state government, the mission of OES, and the OES Disaster Assistance Division's Strategic Plan, the primary goal of this Multi-Hazard Mitigation Plan is the protection of the students of this School District.

7.1 Hazard Mitigation Goals

Goal 1 Objectives

- Continually improve the understanding of the location and potential impacts of natural hazards, the vulnerability of building types, and community development patterns and the measures needed to protect life safety
- Continually provide state and local agencies with updated information about hazards, vulnerabilities, and mitigation measures
- Enforce all state codes and standards that ensure the protection of life
- Ensure that all structures in the District meet minimum standards for life safety
- Identify and mitigate imminent threats to life safety

Goal 2: Avoid Damages to Property

The District defers to the State of California and Los Angeles County for all code updates. The District agrees that the strengthening of building, mechanical, and fire codes is critical to the protection of property and life and the reduction of seismic risk, fire and flood hazards. These codes help communities design and construct buildings that resist the forces of nature and ensure safety. The protection of property also includes the preservation of valuable operational data, historical information, and other non-structural assets.

7.1 Hazard Mitigation Goals

Goal 2 Objectives

- Encourage property protection measures for all School Campuses.
- Reduce or eliminate all repetitive property losses due to flood, fire and earthquake.
- Enforce codes and standards to protect properties beyond the minimum of protecting life safety.
- Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.

Goal 3: Protect the Environment

Californians in the School District place a strong emphasis on the quality of the physical environment. It is a primary reason why people live in the District and why all levels of government and many organizations strive to conserve it.

Natural disasters not only destroy the man-made environment, but they can also adversely affect the physical environment. Wildfires threaten or damage our schools. Flooding can adversely affect our campuses. Geologic hazards can result in landslides and building failures.

Goal 3 Objectives

- Ensure that all mitigation projects are reviewed for compliance with all applicable environmental laws
- Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes
- Ensure that District hazard mitigation planning reflect the goal of protecting the environment
- Develop and implement wildfire mitigation and watershed protection strategies that reduce losses to wildlife and habitat and protect water while also reducing damage to development

Continued on next page

7.1 Hazard Mitigation Goals

Goal 4: Promote Hazard Mitigation as an Integrated Policy

Currently the state and its communities have implemented hazard mitigation polices and measures in an ad hoc fashion. New mitigation policies, programs, and projects are often developed in response to the latest disaster. As the population of the state continues to grow in areas most susceptible to natural and man-caused hazards, comprehensive hazard mitigation is becoming more imperative. Planning and education are the best steps toward increased awareness and integration.

State and local hazard mitigation planning efforts are significant steps in broadening the understanding of the importance of mitigation. The law requiring local general plans that guide land use has proven to be useful in reducing the number and the severity of disasters. It will take time to see if the new hazard mitigation planning processes are as accepted and successful.

The state has already had success with education and awareness through programs addressing the three major natural hazards—fire, flood, and earthquakes. At three separate times of the year, OES, CSSC, the Department of Conservation, CDF, DWR, and the Department of Education join forces to hold special programs in schools and in communities to raise hazard awareness. In addition, OES annually sponsors the Disaster Resistant California (DRC) conference as a source of specialized mitigation training. The DRC provides a forum for businesses, academia, and government to share ideas, processes, success stories, and other information.

Goal 4 Objectives

- Update the District Multi-Hazard Mitigation Plan tri-annually to integrate hazard mitigation plans and the results of disaster-and hazard-specific planning efforts.
- Increase understanding of the importance of hazard mitigation among the general public and the business sector, stressing the benefits of reduced losses to life and property, the reduced cost of disaster recovery, and the increased benefit of the continuity of District operations.
- Strengthen the message of hazard mitigation in disaster preparedness with evacuation programs.

7.2 District Priorities

Funding Priorities

At the heart of the District's mitigation planning mandate is the requirement that the state identify priorities for federal hazard mitigation funding. District's priorities include:

- Protect lives and property at risk from imminent hazards created or exacerbated by disasters
- Reduce repetitive losses
- Improve understanding of natural hazards and the performance of hazard mitigation practices

Protect Lives and Property at Risk from Imminent Hazards

After disasters, affected Schools can be threatened by imminent hazards related to the initial disaster event. The experience from the October 2003 fires in Southern California is a clear example. The fires destroyed vegetation and changed the absorption characteristics of the soils on the slopes above many communities. Subsequent winter storms caused floods, mudflows, and landslides that added to the destruction from the fire. Aftershocks, landslides, and fires can follow from earthquakes, while the aftermath of a major flood might include landslides and increased vulnerability to future flooding.

Recovery efforts after a disaster have several sources of funding. Some of those sources can help in abating or mitigating hazards. The process for making HMGP funds available usually takes 90 to 180 days. That time is used to identify sources of funding and the projects for which the funding can be used. This assures that funding will be used in a complementary fashion without duplicating use.

Funding projects that will mitigate imminent hazards is highly cost effective and assists in critical efforts to help communities recover from disasters. It is anticipated that not all such projects will be identified in local hazard mitigation plans. Establishing this priority provides guidance for locals to build in the flexibility to identify critical mitigation needs that may arise from a disaster when there is no time to update a local plan.

7.2 District Priorities

Protect Critical Facilities and Infrastructure In High Hazard Areas	The next most important priority for federal funding is to help with protecting critical facilities and infrastructure. Though the District and our Cities have ongoing capital improvement programs, there is still an almost overwhelming need to retrofit, replace, protect, or relocate facilities and infrastructure important to our schools that are at risk from hazards. It is anticipated that the local hazard mitigation plans will provide a list of projects falling in this category. Those projects located in the high hazard zones will generally be more cost effective than those that are not. Examples of needed mitigation include facilities located in floodplains, within 2400 meters of an extreme threat of fire, on active faults, in liquefaction zones, and on or near landslides and unstable soil areas.
Reduce Repetitive Losses	Areas of repetitive loss are high priorities for hazard mitigation funding. Repetitive losses are a drain on District, state, and national disaster management resources and are very cost effective to mitigate. The District has few areas of repetitive flood loss. Additionally, the School District Schools have been threatened repeatedly with losses from wildfire, but we have been spared to-date.

7.3 District Capability Assessment

Mitigation Programs	Deferred Maintenance.
Hazard Mitigation Funding	See Table 9.5.

7.4 Local Capability Assessment

Land Use Planning Codes and Standards	District defers to our Cities, Los Angeles County, and State of California for planning codes, building codes and standards. Land use under control of the School District does not include residential, commercial, or industrial. Residential growth is what fuels our school population growth and building programs.

7.4 Local Capability Assessment

Community Participation	Just as community participation is essential in the development of a general plan, so it is also essential to the local hazard mitigation planning process. Site due diligence and CEQA approval are involved in hazard identification and analysis and in developing plans for new campus projects.
Building and Land Use Codes and Standards in California	In California, codes and standards are defined as a systematic group or body of laws that define and regulate how structures and facilities will be built. Two ways to comply with building and land use codes and standards are “grandfathering” and “enforcement.”
About Grandfathering	In California, buildings and facilities built to earlier standards are often out of compliance with current codes. However, these structures do not have to become code compliant every time codes are updated. Such structures are "grand fathered," meaning that they do not have to be brought up to code until most or all of the structure undergoes repair or upgrade.
About Enforcement	Enforcement is performed by a combination of pre-permit plan review and post-permit site inspection. Inspectors sign off on elements of building construction as those elements pass inspection. Buildings are considered legally completed when the enforcement agency issues a Certificate of Occupancy or other legal release document.
Codes and Standards Enforcement	Codes and standards are usually enforced in the District by DSA building inspectors, or in extreme cases by law enforcement. Code enforcement agencies arbitrate disputes concerning portions of facilities involved in repairs or upgrades and are tasked with making final decisions on such matters.
Definition of Enforcement Agency	According to California Health and Safety Code §16006, the “enforcement agency means all agencies responsible for building safety within its jurisdiction.” The Division of the State Architect (DSA), within DGS, is the review agency for the design and construction of school facilities in our School District.

Post-Disaster Building Inspections

After a disaster, inspections are often necessary to determine if buildings are still safe to occupy. In California, the responsible enforcement agency sends out inspectors to review damaged buildings. These buildings are tagged with a colored placard posted on the building exterior and visible from the street. The color coding is as follows:

- Green—safe to occupy
- Yellow—safe only for limited use by occupants
- Red—the building is unsafe and entry is not permitted

Common Codes and Standards for California

California codes and standards include:

- Model codes promulgated by:
  - The International Code Conference
  - The International Association of Plumbing and Mechanical Officials
  - The National Fire Protection Association
  - The Western Fire Chiefs Association
- State Historical Building Code
- Caltrans Standards for Road Construction
- Seismic Safety Standards
- State of California Title 24 Standards and Permit Processes
- Federal Standards and Permit Processes
- Requirements of Local Codes and Standards

Role of the California Building Code

The California Building Code (CBC) is codified as law in California when adopted by the California Building Standards Commission. The CBC then becomes several parts of Title 24 in the California Code of Regulations. City and county local governments then formally adopt the CBC with locality specific amendments to govern as law in their jurisdictions.

There are several specific codes accompanying the CBC within Title 24:

- California Electrical Code
- California Mechanical Code
- California Plumbing Code
- California Energy Code
- California Fire Code

Continued on next page

7.4 Local Capability Assessment

Role of the NFPA

The National Fire Protection Association (NFPA) regulates:

- Fire protection systems (fire sprinklers)
- Standpipes (to which fire hoses are attached inside buildings), and
- Other fire protection and life safety issues

The Electric Codes

The National Electric Code and the California Electrical Code regulates electrical installations.

The State's Standards and Permit Processes

This process includes:

- DSA, reviews plans and monitors construction of school facilities
- Water Quality Discharge Permit (regional or state water quality control boards), needed for discharging or affecting water clarity in natural waters
- CEQA, state environmental law, provides for the identification of the impacts, on the environment, of proposed land use and development programs including those for mitigation purposes
- State Lands Commission Clearance, must be obtained for work on lands under lakes, bays, estuaries, and streams
- DFG issues Streambed Alteration Permits that are needed for doing work below the high water mark in a stream.

Federal Standards and Permit Process

In California, this process includes:

- Clean Water Act –Administered by the USACE issues Section 404 permits for discharging fill into the commercially viable waters of the United States.
- Rivers and Harbors Act Section 10 Permits
- Clean Air Act
- Americans with Disabilities Act
- Endangered Species Act
- NEPA
- National Historic Properties Act, Section 106
- Secretary of the Interior Standards for Rehabilitation of Historic Structures

7.4 Local Capability Assessment

Federal Requirements of Local Codes and Standards

When dealing with federal agencies with regard to grants and claims, California local governments must be aware of the requirements in the federal definition of codes and standards, which are found in 44 CFR 206.226(c). According to this definition, codes and standards must:

- Apply to the type of repair or restoration required
- Be appropriate to the pre-disaster use of the facility
- Be found to be reasonable
- Be in writing
- Be formally adopted and implemented by the jurisdiction before or on the disaster declaration date, or be a legal federal requirement applicable to this type of restoration
- Apply uniformly to all similar types of facilities within the jurisdiction
- Be enforced during the time it was in effect

7.4 Local Capability Assessment

Table 9.4A References

The table below lists references for local government land use and mitigation planning.

Reference	Comments
FEMA *How To* Guides	Available at www.fema.gov
Land Use Planning and Information Network (LUPIN)	Located at http://ceres.ca.gov/planning, this website contains links to resource information, California county general plans, and other useful tools.
Curtin's California Land Use and Planning Law	Examines California planning law in the context of applicable court cases.
The Planner's Book of Lists	Published annually by OPR and available at www.calpin.ca.gov, includes information on local general plans and how different jurisdictions have approached various planning issues.
Longtin's California Land Use Regulations	A detailed look at California's development codes and related litigation.
California Zoning Practice	Published by the California Continuing Education of the Bar, this looks at California's zoning codes and related litigation.

Authorities for the LHMP

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5165, was enacted in October 2002 under §104 of the Disaster Mitigation Act of 2000. On February 26, 2002, FEMA published, in the Federal Register, an Interim Final Rule (IFR), Hazard Mitigation Planning and the Hazard Mitigation Grant Program (44 CFR Parts 201 and 206), for implementing the changes to Section 322 of the Stafford Act.

7.5 Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): ***[The mitigation strategy*** *shall* ***include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.***

Identification

Nine Mitigation Actions have been identified for each of three hazards. That is Earthquakes, Wild Fires and Floods. Following in Table 9.5, "Prioritized Mitigation Actions", the STAPLE+E Criteria was used to establish Multi-Hazard Action Priorities. The lowest Priority Scores are for the highest hazard risks.

Strategy Plan

After Table 9.5, the Implementation Strategy is shown in Table 9.6, "Multi-hazard Mitigation Implementation Strategy".

MULTI-HAZARD PRIORITIZED MITIGATION ACTIONS – TABLE 9.5
LAS VIRGENES UNIFIED SCHOOL DISTRICT

STAPLEE+E	CRITERIA	S		T			A			P			L			E				E					PT
		Social		Technical			Admin.			Political			Legal			Economic				Environmental					
Considerations for Priorities 1-5 → Alternative Actions ↓	Estimated Cost of Action. ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws	Priority Total
EARTHQUAKE PRE-DISASTER																									
#1 Identify Risk	$ 50,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
#2 Prioritize	$ 5,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
#3 Funding	$ 55,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
#4 Construction	$ 16,000,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
EARTHQUAKE - 7 RICHTER EVENT																									
#5 Safety Admin.	$ 150,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
#6 Exit Admin.	$ 150,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
EARTHQUAKE - POST DISASTER																									
#7IdentifyDamage	$ 50,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
#8 Funding	$ 55,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
#9 Repair	$ 4,000,000	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	33
WILDFIRE PRE-DIASTER - 6 Schools																									
#1 Identify Risk	$ 5,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
#2 Prioritize	$ 2,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
#3 Funding	$ 55,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
#4 Construction	$ 500,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
WILDFIRE EVENT - 3 Schools																									
#5 Safety Admin.	$ 50,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
#6 Exit Admin.	$ 75,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
WILDFIRE - POST DISASTER																									
#7IdentifyDamage	$ 25,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
#8 Funding	$ 55,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37
#9 Repair	$ 3,000,000	1	3	2	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	5	5	1	1	37

TABLE 9.5 Continued.

STAPLEE+E	CRITERIA	S		T			A			P			L			E				E					PT
		Social		Technical			Admin.			Political			Legal			Economic				Environmental					
Considerations for Priorities 1-5 → Alternative Actions ↓	Estimated Cost of Action. ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws	Priority Total
FLOOD PRE-DIASTER-100YR																									
#1 Identify Risk	$ 25,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
#2 Prioritize	$ 2,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
#3 Funding	$ 55,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
#4 Construction	$ 500,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
FLOOD 100 YEAR EVENT																									
#5 Safety Admin.	$ 30,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
#6 Exit Admin.	$ 60,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
FLOOD - POST DISASTER																									
#7IdentifyDamage	$ 25,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
#8 Funding	$ 55,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
#9 Repair	$ 2,500,000	1	3	2	1	3	1	1	4	1	1	1	1	1	2	1	1	1	1	1	5	5	1	1	40
Total =	$27,534,000																								

MULTI-HAZARD MITIGATION IMPLEMENTATION STRATEGY – TABLE 9.6

LAS VIRGENES UNIFIED SCHOOL DISTRICT

Item	Events	Actions	Lead Agency	Funding Source(s)	Complete Date	Critical Interim Activities
1	**EARTHQUAKE** PRE-DISASTER - 28 Buildings	#1 Identify Risk	Las Virgenes Unified School District (LVUSD)	Fiscal Year 2006-2007 LVUSD General Fund	Aug-06	1. Contract with Architectural/ Engineering Team for review of 28 Suspect Buildings as identified by the California Department of General Services to determine what Seismic Mitigation Projects are needed and their estimated cost. 2. Report is to be reviewed by Staff and Citizens Review Committee.
2		#2 Prioritize	LVUSD	Fiscal Year 2006-2007 LVUSD General Fund	Oct-06	1. Architectural/ Engineering Team is to develop Seismic Mitigation Projects according to risk to building failure. 2. Staff is to refine Priority List based upon Educational Program needs and then submit to the Citizen Review Committee for their review and recommendations to the School Board. 3. Board is to adopt a Budget.
3		#3 Funding	Federial Emergency Management Agency (FEMA)	Fiscal Year 2006-2007	Jan-07	LVUSD Staff to apply for 2007 Mitigation Funding from the School Board and FEMA.
4		#4 Construct-ion	LVUSD	Fiscal Year 2006-2007	Dec-07	District Construction Management Department is to receive funds and contract for work, and administer Mitigation Construction Projects through completion.
5	**EARTHQUAKE** - 7 RICHTER EVENT	#5 Safety Admin.	LVUSD	LVUSD General Fund for each year.	On going.	1. Educate School Occupants on safety during an earthquake. 2. Have Earthquake Drills for the school exit plan.
6		#6 Exit Admin.	LVUSD	Future	Future	1. After first shaking is over, exit to school busses. 2. Take children home or to designated parent pick up areas.

TABLE 9.6 Continued.

	Events	Actions	Lead Agency	Funding Source(s)	Complete Date	Critical Interim Activities
7	**EARTHQUAKE** - POST DISASTER	#7 Identify Damage	LVUSD	Future	Future	Future
8		#8 Funding	LVUSD/FEMA	Future	Jun-06	1. District Construction Management Department is to seek Construction Bond with Matching Funds for Disaster Relief. 2. District is to seek FEMA Funding.
9		#9 Repair	LVUSD	Future	Future	District to contract for needed Construction Services.
10	**WILDFIRE** PRE-DIASTER - 6 Schools	#1 Identify Risk	LVUSD	Fiscal Year 2006-2007	Aug-06	1. Contract with Architectural/ Engineering Team for review of Suspect Buildings to determine what Wildfire Mitigation Projects are needed and their estimated cost. 2. Report is to be reviewed by Staff and Citizens Review Committee.
11		#2 Prioritize	LVUSD	Fiscal Year 2006-2007	Nov-06	1. Architectural/ Engineering Team is to develop Wildfire Mitigation Projects according to the building's closeness to a mountainside. 2. Staff is to refine Priority List based upon Educational Program needs and then submit to the Citizen Review Committee for their review and recommendations to the School Board. 3. Board is to adopt a Budget.
12		#3 Funding	FEMA	Fiscal Year 2006-2007	Jan-07	LVUSD Staff to apply for 2007 Mitigation Funding from the School Board and FEMA.
13	#1 Identify Risk	#2 Prioritize	LVUSD	Fiscal Year 2005-2006	Nov-06	Architectural/ Engineering Team is to develop Flood Mitigation Projects according to risk to building failure. 2. Staff is to refine Priority List based upon Educational Program needs and then submit to the Citizen Review Committee for their review and recommendations to the School Board. 3. Board is to adopt a Budget.
14	#2 Prioritize	#3 Funding	FEMA	Fiscal Year 2006-2007	Jan-07	LVUSD Staff to apply for 2007 Mitigation Funding from the School Board and FEMA.

TABLE 9.6 Continued.

	Events	Actions	Lead Agency	Funding Source(s)	Complete Date	Critical Interim Activities
15	#3 Funding	#4 Construct-ion	LVUSD	Fiscal Year 2006-2007	Dec-07	District Construction Management Department is to receive funds and contract for work, and administer Mitigation Construction Projects through completion.
16	**FLOOD** 100 YEAR EVENT	#5 Safety Admin.	LVUSD	LVUSD General Fund for each year.	On going.	1. Educate School Occupants on safety during a Severe Flooding Event. 2. Have Drills for the school exit plan.
17		#6 Exit Admin.	LVUSD	Future	Future	1. After flooding starts to threaten school buildings or access, exit to school busses. 2. Take children home or to designated parent pick up areas.
18	**FLOOD** - POST DISASTER	#7 Identify Damage	LVUSD	LVUSD-General Fund	Jul-05	1. Submitted FEMA PW #1335, #1405, #2707. FEMA approved Grants for FEMA PW #1335 at $15,796, FEMA PW 1405 at $910, and FEMA PW 2707 at $35,332.
19		#8 Funding	FEMA	FEMA-1577-DR-CA	Feb-06	1. FEMA has approved January 2005 Flooding National Disaster Projects, and California OES has not released funds. 2. LVUSD Board approved Applicant's Agent Resolution on 12/13/05 for submittal to OES for funding release.
20		#9 Repair	LVUSD	FEMA-1577-DR-CA	Jun-06	District to contract for needed Construction Services to build Mitigation Projects.

Mitigation Project Analysis and Data Limitations

REVIEW:

- Our first two priorities are to keep children and staff of the schools safe, and to keep the schools open. So, the priority of Repair Projects will depend upon amount of damage and how critical to School Operations are the Repair Projects. All Mitigation Actions noted above are needed, but final funding will determine which Projects are constructed first.

LIMITATIONS:

- A Facilities Software Program to track all structures, fire alarm systems, and drainage systems is not in place.

Actions for New Mitigation Projects

ACTIONS FOR NEW BUILDINGS:

- All new buildings and infrastructure is required by the District to meet or exceed California Title 24 Building Code, because it is the standard for reducing effects of hazards on new buildings.
- For earthquakes see "Mitigation of Seismic Shaking Hazards", Page 29. For Wildfire hazard mitigation, see Fire Plan, Page 52. (Wildfire suppression is not governed by the School District.) For Flood Hazards, District Efforts on Page 56.
- **All classrooms are critical facilities**, and our children are trained how to exit when critical hazards happen.

Actions for Existing Mitigation Projects

ACTIONS FOR EXISTING BUILDINGS:

- All existing buildings or infrastructure upgrades are required by the District to meet or exceed California Title 24 Building Code, because it is the standard for reducing effects of hazards on new buildings.
- California School Building Codes do work and they do address the effects of hazards. School Title 24 Building Code is stricter than California Residential, Commercial, and Industrial Building Codes. Title 24 is updated on a two year cycle.

Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): *[The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

8.1a Priority Plan, Implementation, and Cost-benefit.

Priority Plan for Mitigation Projects

Alternative Mitigation Projects Actions considered by hazard:

- Earthquake Mitigation Projects: The State of California has identified 28 School Buildings within the Las Virgenes Unified School District that were built before the 1976 Uniform Building Code
- Wildfire Mitigation Projects: 13 out of 15 School Campuses are adjacent to mountainsides and thus subject to Wildfires. If a Wildfire with 30 to 50 foot wall of flames hit a School Campus, our one-hour rated buildings would burst into flames due to the tremendous heat alone.
- Flood Mitigation Projects: All 15 Campuses would be subject to flooding in a 100 year rain, even though our Campuses are designed to channel mountain flash floods.

Senior Staff of Project Management Division, Maintenance Department, Superintendent, and Citizen Committee discussed these Projects.

Mitigation Project Administration

Administration:

- The Las Virgenes Unified School District owns all school buildings and school sites. Therefore the District is responsible for each campus. The Construction and Facilities Department is responsible for new construction, and the Maintenance Department is responsible for building maintenance repairs.

Cost-benefit Review

Qualitative Assessment Review:

- Cost benefit Review is done by comparing various mitigation and repair construction costs to the various current, educational program, housing needs.

8.1b Federal Funding Sources

Introduction

The District's federal hazard mitigation funding has come from FEMA-administered programs authorized under the Stafford Act as a result of federal declared disasters. Mitigation projects have been carried out through the HMGP.

Current Federal Funding Sources

There are numerous federal sources of funding for hazard mitigation projects, including:

- FEMA
- HUD
- USACE
- SBA
- USDA
- NRCS
- NOAA
- Federal Homeland Security Grants
- BLM

FEMA Grant Programs

FEMA has three programs for funding hazard mitigation projects:

- HMGP
- FMA
- PDM

About the Hazard Mitigation Grant Program (HMGP)

HMGP is authorized under Section 404 of the Stafford Act. The program provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. These funds are only available in states following a presidential disaster declaration. Eligible applicants include state and local governments, Native American tribes or other tribal organizations, and certain private non-profit organizations. Eligible projects must be cost-effective. Funding in California is administered through OES. Approximately $932 million in grant funds have been made available since the 1989 Loma Prieta Earthquake.

About the Flood Mitigation Assistance Program (FMA)

FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. Grants are available for planning, projects, and technical assistance. States are encouraged to prioritize grant applications that include repetitive loss properties identified in their RL Strategy. Funding in California is administered through OES. NFIP RL communities can apply for planning funds and RL communities with a FEMA-approved FMP are eligible to apply for project funding.

Projects may include elevation, relocation, or demolition of insured structures; acquisition of insured structures and property; dry flood-proofing of insured structures; minor localized structural projects that are not fundable by state and other federal programs, such as erosion control and drainage improvements; and beach nourishment activities, such as the planting of dune grass.

About the Pre-Disaster Mitigation Program (PDM)

PDM, administered in California by OES, was created when the Disaster Mitigation Act of 2000 amended the Stafford Act to provide a funding mechanism that is not dependent on a presidential disaster declaration. Of the $25 million appropriated in fiscal year 2002 nationwide. The District received non of these funds.

8.1b Federal Funding Sources

The Natural Resources Conservation Service (NRCS)

The NRCS has four programs that can provide funding for hazard mitigation projects:

- Conservation Reserve Program (CRP)
- Environmental Quality Incentives Program
- Small Watershed Program and Flood Prevention Program
- Emergency Watershed Protection Program

About the Small Watershed Program and Flood Prevention Program

The purpose of the Small Watershed Program is to assist federal, state, and local agencies, local government sponsors, tribal governments, and program participants to protect watersheds from damage caused by erosion, floodwater, and sediment, to conserve and develop water and land resources, and solve natural resource and related economic problems on a watershed basis. The program empowers local people or decision makers, builds partnerships, and requires local and state funding contribution. Both technical and financial assistance are available.

Types of surveys and plans include watershed plans, river basin surveys and studies, flood hazard analyses, and floodplain management assistance. The focus of these plans is to identify solutions that use land treatment and nonstructural measures to solve resource problems.
Watershed plans involving an estimated federal contribution in excess of $5,000,000 for construction, or construction of any single structure having a capacity in excess of 2,500 acre feet, require Congressional committee approval. Other plans are approved administratively. After approval, technical and financial assistance can be provided for installation of works of improvement specified in the plans.

Project sponsors are provided assistance in installing planned land treatment measures. Surveys and investigations are made and detailed designs, specifications, and engineering cost estimates are prepared for construction of structural measures. Areas where sponsors need to obtain land rights, easements, and rights-of-way are delineated. Technical assistance is also furnished to landowners and operators to accelerate planning and application of needed conservation measures on their individual land units.

8.1b Federal Funding Sources

About the Emergency Watershed Protection (EWP) Program

The purpose of the EWP is to undertake emergency measures, including the purchase of floodplain easements, for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood, or any other natural occurrence is causing or has caused a sudden impairment of the watershed.
It is not necessary for a national emergency to be declared for an area to be eligible for assistance. The program objective is to assist sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a natural disaster. Activities include providing financial and technical assistance to remove debris from streams, protect destabilized stream banks, establish cover on critically eroding lands, repairing conservation practices, and the purchase of floodplain. The program is designed for installation of recovery measures.

Source: NRCS website, http://www.nrcs.usda.gov/programs/
and Catalog of Federal Funding Sources for Watershed Protection,
http://www.epa.gov/owow/watershed/wacademy/fund.html

Federal Homeland Security Grants

Beginning in fiscal year 2002, several grant programs have become available to fight terrorism. FEMA, the Department of Justice, Department of Heath Human Services, and the Department of Transportation will be administering these funds. Many of these programs relate to preparedness and response activities and not mitigation. However, they have been included in this document because they are new and have significant relevance to the current situation. In addition, these programs could evolve as time goes on.

A Federal Homeland Security Funding table describing these funding programs follows.

Table 10.1A - Federal Homeland Security Funding Programs

The following table summarizes funding programs for homeland security. Reference Table 10.1A in the State of California Multi-Hazard Mitigation Plan.

8.1b Federal Funding Sources

Federal Programs in the California Fire Alliance Resource Guide

The California Fire Alliance has identified several funding sources local governments can use to support fire hazard mitigation efforts, including:

- Volunteer Fire Assistance
- State Fire Assistance (SFA)
- State Fire Assistance (SFA) – Wildland Urban Interface (WUI)
- Economic Action Program
- Community Protection/Community Assistance to CDF and Contract Counties
- Community Protection/Community Assistance to Non-Profit Groups
- Rural Fire Department Assistance
- Community Protection/ Community Assistance Initiative
- Rural Fire Assistance
- Payments to States and Counties
- Assistance to Firefighters Grant program
- HMGP

Bureau of Land Management (BLM) Programs

The BLM funds Firewise Community Workshops through CDF with National Fire Plan funds. For information on Firewise workshops, visit www.firewise.org/communities.

8.2 State Funding Sources

Current State Funding Sources

There are several sources of state funding for hazard mitigation projects, including:

- Caltrans
- Commerce and Economic Development Program
- Proposition 13
- Proposition 50
- WRCB
- DWR
- CDI
- CDF
- OMS

8.2 State Funding Sources

Proposition 13

Proposition 13, passed by state voters in March 2000, was a $1.97 billion bond measure to finance a variety of projects and programs for safe drinking water, clean water, water conservation, and flood protection. The flood protection component of Proposition 13 provided funding for a number of hazard mitigation projects and programs, including:

- Floodplain mapping
- Flood protection corridors
- Flood control subventions
- Urban stream restoration
- Capital Area flood protection
- San Lorenzo River flood control
- Yuba Feather flood protection
- Arroyo Pasajero watershed projects
- Watershed protection
- Water and watershed education
- River protection
- Southern California integrated watershed project
- Lake Elsinore and San Jacinto watershed projects
- Coastal watershed salmon habitat projects.

Although some of the programs and projects above have an insurance, water quality, or environmental focus, they all have hazard mitigation components. Subsequent bonds have continued to fund the Urban Streams Renewal Program and other mitigation projects.

Additionally, the City of Santee received a $5 million grant from Proposition 13 to protect streets and highways from flooding. DWR acted as the pass-through agency.

California Water Resources Control Board

The Water Resources Control Board has four programs for funding hazard mitigation projects:

- Clean Water State Revolving Fund (SRF) Program
- Watershed Protection Program
- Southern California Integrated Watershed Program
- Lake Elsinore and San Jacinto Watershed Program

About the Urban Streams Restoration Program

This is a competitive grant program to promote effective low-cost flood control projects, including stream clearance and flood mitigation and clean-up activities. Funds are available to public agencies, nonprofit organizations, and local community groups. All public agencies must have a partnership with a non-profit citizens group to receive funding. Individual projects are limited to a maximum of $1 million.

8.2 State Funding Sources

About the Infrastructure Rehabilitation Program

DWR provides competitive grants for feasibility studies and cost-effective construction projects for the replacement of water distribution and storage infrastructure. Construction grants of up to $5 million are available to economically disadvantaged public agencies and mutual water companies. Feasibility study grants of up to $100,000 are also available. Applicants must demonstrate water losses or that the system is in imminent danger of failure. Funds from this program have been used to replace elevated water tanks that do not meet seismic standards.

About the State Community Development Block Grant (CDBG) Program

This program, administered by HCD, funds housing, economic development, public works, community facilities, and public service activities serving lower-income people in small, typically rural, communities. State and federal regulations restrict distribution of state CDBG funds to non-entitlement jurisdictions, including cities with populations under 50,000 and counties with populations under 200,000 in the unincorporated area. These are jurisdictions that do not participate in the HUD Entitlement CDBG program. State regulations dictate the method of fund distribution to eligible jurisdictions, including ratings and rankings for most of the funds.

CDBG grants are provided to jurisdictions to a combined maximum amount of $800,000 per year and must principally benefit lower-income persons and households, except under an amendment as described in the following paragraph. In addition to the $800,000 limit, jurisdictions may be able to access one or both of the following special state CDBG funds: The Native American Set-Aside Fund to assist non-federally recognized Native American communities and the Colonias Set-Aside Fund to assist communities near the U.S.-Mexican border.

State regulations allow the amendment of an existing grant to fund an otherwise CDBG-eligible replacement project or activity in an area proclaimed by the Governor as either a “state of emergency” or a “local emergency” as defined in Government Code §8558.

8.3 Alternative Funding Sources

Private Funding Sources

Many dollars are donated through parent and corporate programs every year for disaster relief efforts nationwide and overseas. Unfortunately, corporate programs to fund disaster mitigation are not as prevalent as disaster relief efforts. More often, the private sector is involved in public/private partnerships and non-profit/private partnerships.

PART 4—MITIGATION AWARENESS AND LOCAL PLANNING

Chapter 9 - Mitigation Education and Awareness.

The District defers to State of California Program.

Chapter 10—Local Mitigation Planning Coordination

Introduction

This chapter describes the state's local hazard mitigation planning support efforts as required by 44 CFR 201. It also describes the state's process for incorporating local planning efforts into the State Multi-Hazard Mitigation Plan to local jurisdictions.

10.1 Local Planning and Technical Assistance

Introduction

44 CFR 201 requires a description of the State's process to support, through funding and technical assistance, the development of local hazard mitigation plans.

District Local Hazard Mitigation Planning (LHMP) Program

The District has used OES Services, because the Local Hazard Mitigation (LHMP) Program, administered by OES' Hazard Mitigation Section (HMS), offers technical assistance to local government mitigation planning programs and tracks their progress and effectiveness. Its purpose is to support and assist local governments in the development of local hazard mitigation plans (LHMPs). The program provides local governments with information on integrating hazard identification, risk assessment, risk management, and loss prevention into a comprehensive approach to hazard mitigation and helps them identify cost-effective mitigation measures and projects.

Grants to District

The Las Virgenes Unified School District has received FEMA funds for the 1994 Northridge Earthquake and the 1995 CA Winter Storms.

Chapter 11 - Monitoring, Evaluating, and Updating the Plan

Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): *[The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.*

11.1 Updating the Plan

Introduction

Because the Plan is a living document that reflects the School District's ongoing hazard mitigation activities, the process of monitoring, evaluating, and updating it will be critical to the effectiveness of hazard mitigation in the District. The Plan will be updated every three years.

Monitoring the Plan

Monitoring:

- The Deputy Superintendent of Business is responsible for monitoring the Plan and its update every three years based upon the criteria stated below.

Evaluating the Plan

Evaluation:

- The Facilities Manager will prepare a Plan Status Report as directed by the Deputy Superintendent of Business for Plan revisions every third year in November and starting with 2007.

Criteria For Plan Revision

Recommendation for Plan revisions will be based on the following criteria:

- New technologies
- New information
- Significant changes in the landscape due to implementation of hazard mitigation projects
- Changes in federal or state laws, regulations, or policies

Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): ***[The plan*** *shall* ***include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.***

Incorporating Mitigation Requirements.

Local planning mechanisms include capital improvement plans, building codes, site development regulations, and permits. Future mitigation plan projects will be built when funded.

- The School District is planning to float a Capital Improvement Bond in 2006 for $92,000,000.00 to build ADA and Hazard Mitigation compliance in existing buildings, function remodels/additions and a new Elementary School on the east side of the District. Site development approvals will be obtained through the California Department of Education. Department of Toxic Waste and the Department of State Architect approvals will also be obtained to mitigate all hazards.
- Parent Teacher Clubs donate for small projects in the range of $5,000.00 to $50,000.00 based upon needs at their school.
- City of Calabasas, City of Agoura Hills, and City of West Lake Village lease school facilities and maintain sports programs as negotiated with the District. These Cities have given "one time" grants to the District in the past.

Incorporating other Mitigation Plan Requirements.

The surrounding Cities touch the School District by the services that they provide such as roads, power, sewer, and water. The District follows their lead on new City Mitigation policy requirements for their services. When making curb cuts or utility tie ins, the District obtains Encroachment Permits from the Cities.

-

Continued Public Involvement

Requirement §201.6(c)(4)(iii): *[The plan maintenance process* ***shall*** *include a] discussion on how the community will continue public participation in the plan maintenance process.*

The Las Virgenes Unified School District Multi-Hazard Mitigation Plan will be up-dated by the District's Core Committee and the LVUSD Citizen's Committee. The Multi-Hazard Mitigation Plan will be up-dated and presented at a public information hearing for further public input and the final Plan will be sent to the LVUSD School Board for approval. Upon approval, a copies will be sent to OES and FEMA.

Chapter 12 - Estimating Potential Losses of District Facilities

12.1 Losses of District Facilities

Introduction

Using the District inventory list the estimated potential dollar losses of District owned and operated facilities from hazard events using campus type estimates of campus replacement costs.

Potential Loss from Earthquake Hazards

The 40 percent peak ground acceleration (PGA) zone is considered the high seismic hazard zone. The District is in the 40 percent PSI or greater zone. School replacement costs were based upon current State and District school construction costs. Total replacement costs are estimated to be $12,000,000 per Elementary School, $14,000,000 per Middle School, and $18,000,000 per High School.

The Schools are as follows:

- Agoura High School
- Alice C. Stelle Middle School
- Bay Laurel Elementary School
- Calabasas High School
- Chaparral Elementary School
- Indian Hills Continuation High School
- Lindero Canyon Middle School
- Lupin Hill Elementary School
- Round Meadow Elementary School
- Sumac Elementary School
- White Oak Elementary School
- Willow Elementary School
- Wright (Arthur E.) Middle School
- Yerba Buena Elementary School

Potential Loss from Fire Hazards

With total replacement costs for three high schools, two Middle Schools, and 8 Elementary Schools, there is a potential for $178 million in losses from fire.

Potential Loss from Flood Hazards

It is estimated that the maximum replacement costs from a 100 year Winter rain and windstorm would 5% or $8.9 million.

Costs

School replacement costs were based upon 2004 State and District school construction costs.

PART 5—APPENDICES

In This Part

This part contains the following appendices.

Topic	Page
Glossary of Terms	
Acronyms	
Bibliography	
Related Websites	
Local Hazard Mitigation Plan Review Crosswalk For Ca Local Governments In Fema Region [Ix]	

Glossary of Terms

Glossary of Terms

The following table defines many of the terms used in this document.

Term	Definition
Active Fault	A fault that is likely to have another earthquake sometime in the future. Faults are commonly considered to be active if they have moved one or more times in the last 10,000 years.
Annexation	The addition of territory to an existing city.
Critical Facilities	Facilities that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals. *Source: FEMA 386-2*
Critical Habitat	The critical habitat for listed species consists of: 1. The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Act, on which are found those physical or biological features (constituent elements) a. Essential to the conservation of the species, and b. Which may require special management considerations or protection 2. Specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination by the Secretary that such areas are essential for the conservation of the species. *Source: ESA §3 (5)(A). Designated critical habitats are described in 50 CFR §17 and §226.*
Endangered Species	Any species that is in danger of extinction throughout all or a significant portion of its range. *Source: ESA §3(6)*

Essential Services Building	Any building, including buildings designed and constructed, for public agencies used, or designed to be used, or any building a portion of which is used or designed to be used, as a fire station, police station, emergency operations center, California Highway Patrol office, sheriff's office, or emergency communication dispatch center. *Source: California Health and Safety Code §16007*
Fire Regime	The pattern and variability of fire occurrence and its effect on vegetation. It is usually expressed or classified based on both fire frequency and the general severity of the effects on the dominant life forms present. *Source: Kilgore 1973*
General Law Cities	Cities that follow the general laws of the state. This is in comparison to charter cities, which follow their own constitutions as well as some of the general laws of the state.
Incorporation	The creation of a new city.

Glossary of Terms

Term	Definition
Listed Species	Any species of fish, wildlife or plant that has been determined to be endangered or threatened under section 4 of the Act. *Source: 50 CFR §402.02*
Mitigation Education and Marketing (MEAM)	A program within the OES Hazard Mitigation Section that was developed to promote the mitigation message of prevention, help state and local jurisdictions and the public recognize hazards, and emphasize effective planning.
Section 4	The section of the Endangered Species Act of 1973, as amended, outlining procedures and criteria for: • Identifying and listing threatened and endangered species • Identifying, designating, and revising critical habitat • Developing and revising recovery plans • Monitoring species removed from the list of threatened or endangered species
Section 7	• The section of the Endangered Species Act of 1973, as amended, outlining procedures for interagency cooperation to conserve federally listed species and designated critical habitats. • Section 7(a)(1) requires federal agencies to use their authorities to further the conservation of listed species. Section 7(a)(2) requires Federal agencies to consult with the Services to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. • Other paragraphs of this section establish the requirement to conduct conferences on proposed species; allow applicants to initiate early consultation; and require FWS and NMFS to prepare biological opinions and issue incidental take statements. Section 7 also establishes procedures for seeking exemptions from the requirements of section 7(a)(2) from the Endangered Species Committee.

Section 9	The section of the Endangered Species Act of 1973, as amended, that prohibits the taking of endangered species of fish and wildlife. Additional prohibitions include: • Import or export of endangered species or products made from endangered species • Interstate or foreign commerce in listed species or their products • Possession of unlawfully taken endangered species

Glossary of Terms

Term	Definition
Section 10	The section of the Endangered Species Act of 1973, as amended, that provides exceptions to Section 9 prohibitions. The exceptions most relevant to Section 7 consultations are takings allowed by two kinds of permits issued by the National Fish and Wildlife Service and the National Marine Fisheries Service: scientific take permits and incidental take permits. The Services can issue permits to take listed species for scientific purposes, or to enhance the propagation or survival of listed species. The Services can also issue permits to take listed species incidental to otherwise legal activity.
State Responsibility Area (SRA)	State Responsibility Areas include those lands that are: • Covered wholly or in part by forests or by trees producing or capable of producing forest products • Covered wholly or in part by timber, brush, undergrowth, or grass, whether of commercial value or not, which protect the soil from excessive erosion, retard runoff of water or accelerate water percolation, if such lands are sources of water which is available for irrigation or for domestic or industrial use • In areas principally used or useful for range or forage purposes and are contiguous to the lands described above State Responsibility Areas do not include those lands that are: • Owned or controlled by the federal government or any agency of the federal government • Within the exterior boundaries of any city, except a city and county with a population of less than 25,000 if, at the time the city and county government is established, the county contains no municipal corporations • Located within the state but do not come within any of the classes specifically described as being included

Acronyms

Acronyms The following table lists all acronyms used in this document.

Acronym	Meaning
ABAG	Association of Bay Area Governments
ARB	Air Resources Board
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CGS	California Geological Survey
Cal EPA	California Environmental Protection Agency
CalTrans	California Department of Transportation
CBSC	California Building Standards Commission
CDBG	Community Development Block Grant
CDF	California Department of Forestry and Fire Protection
CDHS	California Department of Health Services
CDI	California Department of Insurance
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHP	California Highway Patrol
CISN	California Integrated Seismic Network
CNG	California National Guard
CRS	Community Rating System
CSSC	California Seismic Safety Commission
DFG	State Department of Fish and Game
DGS	State Department of General Services
DWR	Department of Water Resources
FEAT	Flood Emergency Action Team
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
FMP	Floodplain Management Plan
FRAP	Fire and Resource Assessment Program
GIS	Geographic Information System
HCD	California Department of Housing and Community Development
HMGP	Hazard Mitigation Grant Program
HUD	Housing and Urban Development
IA	Individual Assistance
LHMP	Local Hazard Mitigation Plan
Acronym	**Meaning**
MEAM	Mitigation Education And Marketing
NFIP	National Flood Insurance Program
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRCS	National Resources Conservation Service
OES	Governor’s Office of Emergency Services
OPR	Governor’s Office of Planning and Research
OSHPD	Office of Statewide Health Planning and Development
PA	Public Assistance
PDM	Pre-Disaster Mitigation Program

PUC	Public Utilities Commission
SBA	Small Business Administration
SEMS	Standardized Emergency Management System
SFHA	Special Flood Hazard Area
SHMO	State Hazard Mitigation Officer
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
US EPA	U.S. Environmental Protection Agency
FDA	U.S. Food and Drug Administration
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOAD	National Voluntary Organizations Active in Disasters
WGA	Western Governors' Association
WRCB	State Water Resources Control Board

Bibliography

The California State Multi-Hazard Mitigation Plan Bibliography by reference.

Related Websites

Websites Directory

The following websites were reveiwed in the development of this document. These are listed in alphabetical order.

Agency	Website Address
Air Resources Board	www.arb.ca.gov
Bureau of Indian Affairs	www.doi.gov/bureau-indian-affairs
Department of Forestry and Fire Protection	http://www.fire.ca.gov/php/index.php
Department of Conservation	www.consrv.ca.gov
Department of Food and Agriculture	http://www.cdfa.ca.gov/
Department of Housing and Community Development	www.hcd.ca.gov
Department of Insurance	http://www.insurance.ca.gov/docs/index.html
Department of Water Resources	www.water.ca.gov
Energy Commission	www.energy.ca.gov
Environmental Protection Agency	www.epa.gov
Federal Emergency Management Agency	www.fema.gov
Fire and Resource Assessment Program	http://frap.cdf.ca.gov
Firewise Communities	www.firewise.org/communities
Governor's Office of Emergency Services	www.oes.ca.gov
Governor's Office of Planning & Research	www.opr.ca.gov
National Oceanic & Atmospheric Administration	www.noaa.gov
Natural Hazards Center	www.colorado.edu/hazards
Natural Resource Project Inventory	http://endeavor.des.ucdavis.edu/nrpi
Pacific Marine Environmental Laboratory	www.pmel.noaa.gov
Seismic Safety Commission	www.seismic.ca.gov
Statewide Integrated Pest Management Program	www.ipm.ucdavis.edu

Continued on next page

Related Websites

Agency	Website Address
U.S. Army Corps of Engineers	www.usace.army.mil
U.S. Department of Justice	www.usdoj.gov
U.S. Geological Survey	www.usgs.gov
University of California, Davis	www.ucdavis.edu
USA Today Weather	http://asp.usatoday.com/weather/weatherfront.aspx?POE=HFTABWEA
The Weather Channel	www.weather.com

Local Hazard Mitigation Plan Review Crosswalk For Ca Local Governments In Fema Region [IX].

(SEE NEXT PAGE.)

Instructions for Using the Plan Review Crosswalk for Review of Local Mitigation Plans

Attached is a Plan Review Crosswalk based on the ***Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000***, published by FEMA, dated March 2004. This Plan Review Crosswalk is consistent with the *Disaster Mitigation Act of 2000* (P.L. 106-390), enacted October 30, 2000 and *44 CFR Part 201 – Mitigation Planning, Interim Final Rule* (the Rule), published February 26, 2002.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a summary score of "Satisfactory." A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, reviewers may want to put an N/A in the prerequisite box for single jurisdiction plans.

States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.

Example

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		✓
B. Does the plan address the **impact** of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. **Required Revisions:** • Include a description of the impact of floods and earthquakes on the assets. **Recommended Revisions:** • This information can be presented in terms of dollar value or percentages of damage.		✓
		SUMMARY SCORE		✓

Local Mitigation Plan Review and Approval Status

Jurisdiction: Las Virgenes Unified School District.	**Title of Plan: Las Virgenes Unified School District (LVUSD) Multi-Hazard Mitigation Plan.**	**Date of Plan: October 19, 2004**
Local Point of Contact: Rodney Hippenhammer	**Address: 4111 No. Las Virgenes Road, Calabasas, CA 91302**	
Title: Project Manager		
Agency: Las Virgenes Unified School District.		
Phone Number: 818/878-5280	**E-Mail: Hippenhammer@lvusd.org**	

State Reviewer: Dennis Babson	**Title: Reviewer**	**Date: January 26, 2005**

FEMA Reviewer: Diana Ponce	**Title: Plan Reviewer**	**Date: March 24, 2005:** **Reviewed Revision #1: 7/28/05.**
Date Received in FEMA Region [Insert #]	**2/3/05** **Revision: 06/17/05**	
Plan Not Approved	**8/01/05**	
Plan Approved		
Date Approved		

Jurisdiction:	**NFIP Status***			
	Y	**N**	**N/A**	**CRS Class**
1. Las Virgenes Unified School District.	Y			10
2.				
3.				

4.				
5. [ATTACH PAGE(S) WITH ADDITIONAL JURISDICTIONS]				

*** Notes:** **Y = Participating** **N = Not Participating** **N/A = Not Mapped**

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted.

Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a **"Needs Improvement"** score.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**
Adoption by the Local Governing Body: §201.6(c)(5)		✓
OR		
Multi-Jurisdictional Plan Adoption: §201.6(c)(5)	NA	
AND		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)	NA	

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)		✓
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1)		

Risk Assessment	**N**	**S**
Identifying Hazards: §201.6(c)(2)(i)		✓
Profiling Hazards: §201.6(c)(2)(i)		✓
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		✓
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		✓
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		✓
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		✓
Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)	NA	

Mitigation Strategy	**N**	**S**
Local Hazard Mitigation Goals: §201.6(c)(3)(i)		✓
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	✓	
Implementation of Mitigation Actions: §201.6(c)(3)(iii)	✓	
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)	NA	

Plan Maintenance Process	**N**	**S**
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)		✓
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		✓
Continued Public Involvement: §201.6(c)(4)(iii)		✓

Additional State Requirements*	**N**	**S**
See **Planning Process**, Local Capabilities Assessment		
Insert State Requirement		
Insert State Requirement		

LOCAL MITIGATION PLAN APPROVAL STATUS

Jurisdiction:

PLAN NOT APPROVED	✓
PLAN APPROVED	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

Reviewer's Comments: 08/01/05 – The Plan has improved but needs further work in the Section addressing the Mitigation Strategy. Action items need to be prioritized and analyzed. Give the funding sources and timelines for each action item.

Refer to specific comments in the crosswalk.

PREREQUISITE(S)

Adoption by the Local Governing Body

***Requirement §201.6(c)(5)*:** *[The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Has the local governing body adopted the plan?	Yes, Page 14.			X
B. Is supporting documentation, such as a resolution, included?	Yes, Page 14.			X
		SUMMARY SCORE		X

Multi-Jurisdictional Plan Adoption

***Requirement §201.6(c)(5)*:** *For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the plan indicate the specific jurisdictions represented in the plan?	N.A.			
B. For each jurisdiction, has the local governing body adopted the plan?	N.A.			
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?	N.A.			
		SUMMARY SCORE		

Multi-Jurisdictional Planning Participation

***Requirement §201.6(a)(3)*:** *Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process … Statewide plans will not be accepted as multi-jurisdictional plans.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the plan describe **how** each jurisdiction participated in the plan's development?	N.A.		NA	

SUMMARY SCORE	NA	

PLANNING PROCESS: *§201.6(b): An open public involvement process is essential to the development of an effective plan.*

Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process* ***shall*** *include:*
(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): *[The plan* ***shall*** *document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan provide a narrative description of the process followed to prepare the plan?	Page 11 – 13.			X
B. Does the plan indicate who was involved in the planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	Page 3 – 4.			X
C. Does the plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	Page 13.			X
D. Was there an opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	Page 13.	**8/1/05 – Requirement Met.** **Required Revisions:** Discuss how local, State and Federal agencies, neighboring jurisdictions, local businesses, community leaders, educators, and other relevant private and nonprofit interest groups participated in the plan development. • Sent the Las Virgenes – Malibu Council of Governments (COG) Administrator and the five City Representatives the draft District Multi-Hazard Plan for their review and comment. The District serves four of the COG's Cities and we are concerned with the same hazards. On October 19,		X

		2004 and November 22, 2004, the COG held Planning Meetings with representatives from the Las Virgenes Municipal Water District, Staff from the various Cities, and Los Angeles County Representatives. **Suggested Revisions:** • While the public hearings provide a minimal opportunity for other parties to be involved, jurisdictions that initiate an outreach program should describe their efforts. • Our discussions with the Las Virgenes – Malibu COG centered around the protection of services coming to our various land parcels within their City Boundaries.		
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	Page 13	**8/1/05 – Requirement Met.** **Required Revisions:** Describe how the jurisdiction reviewed and integrated information from existing plans, studies, reports, and technical documents into the plan. • The District reviewed the State of California Multi-Hazard Mitigation Plan and compared it to the FEMA Crosswalk. The hazards were well documented by the State, so those plans, studies, reports, and technical documents were compared to District histories and geology reports for local hazard events. State Title 24 Code governs our building standards in regards to the District building's ability to resist hazards. The number of City Yearly Building Permits governs our planning for future classroom expansion, and the California Department of Education Policy and State Title 5 determines campus site approval. This means that all environmental hazards had to be reviewed and mitigation measures agreed upon by our School Board before approval will be given. City Master Plans and Zoning Code determine the available areas for school locations. Our safety evacuation plans due to earthquakes,		X

		fire, or flooding are done in coordination with County and City Fire and Police Codes and Policies.		
		SUMMARY SCORE		X

Local Capabilities Assessment (State OES Requirement)

Requirement §201.4(c)(3)(ii): *– Of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.*
. . . .

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Pages 3-4	***Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.***		
B. Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Pages 67-69	***Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.***		
C. Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Pages 59-64, 70-79	***Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.***		
D. Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Page 69	***Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.***		

RISK ASSESSMENT: *§201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

Identifying Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the type … of all natural hazards that can affect the jurisdiction.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include **a description** of the types of **all natural hazards** that affect the jurisdiction? If the hazard identification omits (without explanation) any hazards commonly recognized as threats to the jurisdiction, this part of the plan cannot receive a Satisfactory score. Consult with the State Hazard Mitigation Officer to identify applicable hazards that may occur in the planning area.	Pages 17-53. We have no history of Hazard Damages other than earthquakes, fire, and flood.			X
		SUMMARY SCORE		

Profiling Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the risk assessment identify the **location** (i.e., geographic area affected) of each natural hazard addressed in the plan?	Earthquakes, Pages 19-29. Fire, Pages 45-46. Flood, Pages 52-53.			X
B. Does the risk assessment identify the **extent** (i.e., magnitude or severity) of each hazard addressed in the plan?	Earthquakes, Pages 30-40. Fire, Pages 46-48. Flood, Page 53.			X
C. Does the plan provide information on **previous occurrences** of each hazard addressed in the plan?	Earthquakes, Pages 30-34. Fire, Page 48. Flood, Pages 52-53.			X

D. Does the plan include the **probability of future events** (i.e., chance of occurrence) for each hazard addressed in the plan?	Earthquakes, Page 19. (San Andreas Fault is active.) Fire, Page 48. (Next 30 years.) Flood, Page 52 (Chronic Floods).			X
		SUMMARY SCORE		X

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?	Earthquakes, Pages 33-34, 39-40, 77. Fire, Pages 48 & 77. Flood, Pages 53 & 77.			X
B. Does the plan address the **impact** of each hazard on the jurisdiction?	Earthquakes, Pages 41-43. Fire, Pages 47-48. Flood, Pages 52-53.			X
		SUMMARY SCORE		X

Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): *The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area … .*

			N	S
A. Does the plan describe vulnerability in terms of the **types and numbers** of **existing** buildings, infrastructure, and critical facilities located in the identified hazard areas?	Earthquakes, Pages 35-40. Fire, Pages 37-40 & 48. Flood, Page 53 (All our Schools are in the mountains or foothills, Therefore 6.3 on Page 53 is	***Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.***		X

	true.)			
B. Does the plan describe vulnerability in terms of the **types and numbers** of **future** buildings, infrastructure, and critical facilities located in the identified hazard areas?	Earthquakes, Pages 39-40. Fire, Page 48. (All future Schools face the same Wildfire/Fire Storm threat.) Flood, Page 53 (All future Schools face the same factors.)	***Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.***		X
		SUMMARY SCORE		X

Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): *[The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate … .*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan estimate **potential dollar losses** to vulnerable structures?	Earthquakes, Page 82. Fire, Page 82. Flood, Page 82.	***Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.***		X
B. Does the plan describe the **methodology** used to prepare the estimate?	Maximum likely Hazard event: Earthquakes, Page 82. Fire, Page 82. Flood, Page 82.	**Note: A** "Needs Improvement" score on this requirement will not preclude the plan from passing. • School replacement costs were based upon 2004 State and District school construction costs.		X
		SUMMARY SCORE		X

Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): *[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan describe land uses and development trends?	Page 59, Item 7.4. (District has no control over where the Cities allow growth and type of	***Note: A** "Needs Improvement" score on this requirement will not preclude the plan from passing.* • Land use under control of the School District does not include residential, commercial, or industrial. Residential		X

	growth.)	growth is what fuels our school population growth and building programs.		
		SUMMARY SCORE		X

Multi-Jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): *For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	N.A.		NA	
		SUMMARY SCORE		

MITIGATION STRATEGY: *§201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy **shall** include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the plan include a description of mitigation **goals** to reduce or avoid long-term vulnerabilities to the identified hazards? (**GOALS** are long-term; represent what the community wants to achieve, such as "eliminate flood damage"; and are based on the risk assessment findings.)	Pages 54-57			X
		SUMMARY SCORE		X

Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): *[The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings*

and infrastructure.

Element	Location in the Plan	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan identify and analyze a **comprehensive range** of specific mitigation actions and projects for each hazard?	Pages 64 – 66, 69.	**Required Revisions:** • **List all the mitigation actions and projects considered by hazard.** **08/01/05 – Required Revisions** • **The action items inserted into the Plan Section 7.4 Local Capability Assessment (s/b changed to 7.5 Mitigation Action Items) do not fulfill requirements for this Rule. Mitigation Actions are steps used to address the plan's goals. Give more details of the listed items and evaluate how each item achieves the District's goals and objectives to reduce or avoid the effects of their identified hazards. The plan MUST describe analysis used for evaluating the range of actions. Refer to the Multi-Hazard Mitigation Planning Guidance, pgs 3-32 thru 3-40; and the How to Series, Developing the Mitigation Plan (FEMA 386-3), Step 2 and its Worksheets.** Nine Mitigation Actions have been identified for each of three hazards. That is Earthquakes, Wild Fires and Floods. Following in Table 9.5, "Prioritized Mitigation Actions", the STAPLE+E Criteria was used to establish Multi-Hazard Action Priorities. The lowest Priority Scores are for the highest hazard risks. **Suggested Revisions:** • Explain the analysis followed for selecting mitigation actions and projects. List actions to address data limitations. • A Facilities Software Program to track all structures, fire alarm systems, and drainage systems is not in place. • Start by identifying and evaluating potential loss- reduction actions for each objective. Then narrow list to only those that have been deemed the most feasible after considering costs,	X	

		benefits, expected degree of local support, capabilities and potential environmental impacts. Explain process • See Table 9.5. .		
B Do the identified actions and projects address reducing the effects of hazards on **new** buildings and infrastructure?	Pages 70. (Code compliance is the method of reducing the effects of hazards on new school buildings.)	**08/01/05 – Requirements Met** **Required Revisions:** • Include actions that address new buildings and infrastructure. • *Following the latest edition of the California Building Code Title 24 is the method of reducing the effects of hazards on new buildings. For earthquakes see "Mitigation of Seismic Shaking Hazards", Page 29. For Wildfire hazard mitigation, see Fire Plan, Page 52. (Wildfire suppression is not governed by the School District.) For Flood Hazards, District Efforts on Page 56.* **Suggested Revisions:** • While the rule does not specify critical facilities, the plan should also address new critical facilities. • ***All classrooms are critical facilities**, and our children are trained how to exit when critical hazards happen.* • Develop a matrix to show what actions address specific hazards in new buildings and infrastructure. For more information see Developing the Mitigation Plan (FEMA 386-3) step 2		X
C. Do the identified actions and projects address reducing the effects of hazards on **existing** buildings and infrastructure?	Page 70.	**08/01/05 – Requirements met.** **Required Revisions:** • Include actions that address existing buildings and infrastructure. • *All existing buildings or infrastructure upgrades are required by the District to meet or exceed California Title 24 Building Code, because it is the standard for reducing effects of hazards on new buildings.* • *California School Building Codes do work and they do address the effects of hazards. School Title 24 Building Code is stricter than Residential, Commercial, and Industrial Building Codes. Title 24 is up-dated on a two year cycle.*		X

		Suggested Revisions: • While the rule does not specify critical facilities, the plan should also address existing critical facilities. • Develop a matrix to show what actions address specific hazards and existing buildings and infrastructure.		
		SUMMARY SCORE	X	

Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): *[The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

Element	Location in the Plan	Reviewer's Comments	SCORE N	SCORE S
A. Does the mitigation strategy include how the actions are **prioritized**? (For example, is there a discussion of the process and criteria used?)	Page 64 - 66. Page 70.	**Required Revisions: 08/01/05** • This is not addressed in the plan re-submitted. After outlining the mitigation actions included in the mitigation strategy, the District shall describe the method used for prioritizing the order in which actions will be implemented. Considerations that may be used to prioritize actions include: social impact, technical feasibility, administrative capabilities, and political and legal effects, as well as environmental issues. Refer to See Table 9.5 . **Suggested Revisions:** • Explain the analysis followed for selecting mitigation actions and projects. List actions to address data limitations. • Identify and evaluate potential loss- reduction actions for each objective after consideration of costs, benefits, expected degree of public support, local capabilities, and potential environmental impacts. Clearly describe the evaluation process, explaining why certain action items were screened out. • See Table 9.5. • Discuss who participated in the process. • These Projects were discussed by Senior Staff of Project Management Division, Maintenance Department,	X	

		Superintendent, and Citizen Committee.		
B. Does the mitigation strategy address how the actions will be **implemented and administered**? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)	Pages 67 – 69, Table 9.6.	**Required Revisions:** • Describe how the actions will be implemented and administered. Include in the description the responsible parties/agencies, the funding sources, and the target completion dates for each action. • See Table 9.6. • The Las Virgenes Unified School District owns all school buildings and school sites. Therefore the District is responsible for each campus. The Construction and Facilities Department is responsible for new construction, and the Maintenance Department is responsible for building maintenance repairs. • All Funding is covered in Pages 67 – 77. • The Construction and Facilities Department has submitted three project groups to FEMA for the FEMA-1577-DR, 2005 Storms, Public Assistance. **Suggested Revisions:** • Include a cost estimate and/or resources required for each action, when possible. • FEMA approved FEMA PW #1335 for $15,796, FEMA PW 1405 for $910, and FEMA PW 2707 for $35,332.	X	
C. Does the prioritization process include an emphasis on the use of a **cost-benefit review** (see page 3-36 of *Multi-Hazard Mitigation Planning Guidance*) to maximize benefits?	Page 71.	**08/01/05 – Requirement Met.** **Required Revisions:** • Describe the cost benefit review performed during the prioritization process to identify actions/ projects with the greatest benefits. (If the cost benefit data are missing, a qualitative assessment of the comparative benefits will suffice.) • Cost benefit by qualitative assessment is done by comparing the least cost to provide safe classrooms and facilities to current program needs. For more information see Developing the Mitigation Plan (FEMA 386-3) step3, and Mitigation Benefit Cost Analysis (BCA) Toolkit Compact Disc (CD)		X
		SUMMARY SCORE	X	

Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c)(3)(iv): *For multi-jurisdictional plans, there* ***must*** *be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the plan include at least one identifiable **action item** for each jurisdiction requesting FEMA approval of the plan?	N.A.			
		SUMMARY SCORE		

PLAN MAINTENANCE PROCESS

Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): *[The plan maintenance process* ***shall*** *include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.*

Element	Location in the Plan	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan describe the method and schedule for **monitoring** the plan? (For example, does it identify the party responsible for monitoring and include a schedule for reports, site visits, phone calls, and meetings?)	Pages 80.	**Required Revisions:** • Include a description of the method and schedule to monitor the plan. Include in the description the parties/ agencies responsible for ensuring that the monitoring process is accomplished, and how and when the plan will be monitored. • The Deputy Superintendent of Business is responsible for monitoring the Plan and its update every three years based upon the criteria stated on Page 80.		X
B. Does the plan describe the method and schedule for **evaluating** the plan? (For example, does it identify the party responsible for evaluating the plan and include the criteria used to evaluate the plan?)	Pages 80.	**Required Revisions:** • Describe the method and schedule to evaluate the plan. Include in the description the parties/agencies responsible for evaluating the plan, and how and when the plan will be		X

		monitored. • The Facilities Manager will prepare a Plan Status Report as directed by the Deputy Superintendent of Business every third year in November and starting with 2007. **Suggested Revisions:** • The evaluation should assess whether goals and objectives address current and expected conditions; nature or magnitude of risks has changed; current resources are appropriate in implementing the plan; outcomes have occurred as expected; and agencies and other partners participated as originally proposed. For more information see Bringing the Plan to Life (FEMA 386-4) step 4.		
C. Does the plan describe the method and schedule for **updating** the plan within the five-year cycle?	Every 3 years per Page 80.			X
		SUMMARY SCORE		X

Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): *[The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.*

			N	S
A. Does the plan identify other local planning mechanisms available for incorporating the requirements of the mitigation plan?	Page 81	**Required Revisions:** • Describe applicable local planning mechanisms (local planning mechanisms may include: comprehensive plans, capital improvement plans, zoning, building codes, site development regulations, permits, and job descriptions.) and how the mitigation plan will be incorporated into them. • The School District is planning to float a Capital Improvement Bond in 2006 for $92,000,000.00 to build ADA and Hazard Mitigation compliance in existing buildings, function remodels/additions and a new Elementary School on the east side of the District. Site development approvals will be obtained through the California Department of Education. Department of Toxic Waste and the Department of State Architect approvals will also be obtained to mitigate all hazards. The land is funded but not purchased. • Parent Teacher Clubs donate for small projects in the range of $5,000.00 to $50,000.00 based upon needs at their school. • City of Calabasas, City of Agoura Hills, and City of West Lake Village lease school facilities and maintain sports programs as negotiated with the District. These Cities have given "one time" grants to the District in the past. Suggested Revisions: • Prepare a matrix showing the range of other planning mechanisms and identify which apply to each action.		X
B. Does the plan include a process by which the local government will incorporate the requirements in other plans, when appropriate?	Page 81.	**Required Revisions:** • Describe the process to incorporate the mitigation plan requirements into local planning mechanism. • The surrounding Cities touch the School District by the services that they provide such as roads, power, sewer, and water. The District follows their lead on new City Mitigation policy requirements for their services. When making curb cuts or utility tie-ins, the District obtains Encroachment Permits from the Cities.		X
		SUMMARY SCORE		X

Continued Public Involvement

Requirement §201.6(c)(4)(iii): *[The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.*

			N	S
A. Does the plan explain how **continued public participation** will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	Page 80 - 81.			X
		SUMMARY SCORE		X