

SONOMA COUNTY HAZARD MITIGATION PLAN

Table of Contents

Executive Summary	v
Introduction	1
1.1 Purpose of the Plan.....	1
1.2 Community Profile.....	2
Hazard and Risk Assessment	3
2.1 Hazard Identification.....	6
2.2 Earthquake.....	7
2.2.1 The Hazard	
2.2.2 Event History	
2.2.3 Future Potential	
2.2.4 Exposure and Vulnerability	
2.2.5 Impact and Loss Estimates	
2.3 Landslide.....	33
2.3.1 The Hazard	
2.3.2 Event History	
2.3.1 Future Potential	
2.3.2 Exposure and Vulnerability	
2.3.3 Impact and Loss Estimates	
2.4 Flood.....	39
2.4.1 The Hazard	
2.4.2 Event History	
2.4.3 Future Potential	
2.4.4 Exposure and Vulnerability	
2.4.5 Impact and Loss Estimates	
2.5 Wildfire.....	56
2.5.1 The Hazard	
2.5.2 Event History	
2.5.3 Future Potential	
2.5.4 Exposure and Vulnerability	
2.5.5 Impact and Loss Estimates	
2.6 Development Trends.....	69

Capability Assessment.....	74
3.1 Agencies and People.....	74
3.1.1 Local Agencies	
3.1.2 Regional Agencies	
3.1.3 State Agencies	
3.1.4 Federal Agencies	
3.1.5 Non-Governmental Organizations	
3.2 Plans.....	84
3.2.1 The General Plan	
3.2.2 Local Coastal Plan	
3.2.3 Russian River Redevelopment Plan	
3.2.4 Flood Mitigation Plan	
3.2.5 Capital Project Plan	
3.2.6 Sonoma County/Operational Area Emergency Operations Plan	
3.2.7 Other Local Plans	
3.2.8 State Plans	
3.3 Codes and Regulations.....	91
3.3.1 Subdivision Regulations	
3.3.2 Zoning Regulations	
3.3.3 Coastal Zoning	
3.3.4 Drainage and Stormwater Management	
3.3.5 Building Regulations	
3.3.6 Flood Damage Prevention Ordinance	
3.3.7 Fire Safety Regulations	
3.3.8 Environmental Quality Act	
3.3.9 Civil Defense and Disaster Regulations	
3.3.10 Hazardous Materials Regulations	
3.3.11 Surface Mining Regulations	
3.3.12 State and Federal Requirements	
3.4 Programs and Mitigation Activities.....	99
3.4.1 County Activities	
3.4.2 Activities by Other Parties	
3.5 Financial Resources.....	106
3.5.1 Hazard Mitigation Grant Program	
3.5.2 Pre-Disaster Mitigation Program	
3.5.3 Flood Mitigation Assistance Program	
3.5.4 Repetitive Flood Claims Program	
3.5.5 Increased Cost of Compliance	
3.5.6 Community Development Block Grants	
3.5.7 Emergency Watershed Program Assistance	
3.5.8 Assistance to Firefighter Grant Program	
3.5.9 Other Federal Programs	
3.5.10 State Programs	
3.5.11 Seismic Safety New Construction Exclusions	
3.5.12 Local Tax Revenues	
3.5.13 Potential Local Funding Sources	

Mitigation Strategy.....113

4.1 Introduction.....113
4.2 Assumptions, Challenges and Opportunities.....113
4.3 Mitigation Priorities.....115
4.4 Goals, Objectives and Actions.....116
 Goal 1: Earthquake
 Goal 2: Landslide
 Goal 3: Flood
 Goal 4: Wildland Fire
4.5 Implementation Plan.....127

Plan Maintenance Process.....136

5.1 Monitoring, Evaluating and Updating the Plan.....136
5.2 Implementation Through Existing Programs.....136
5.3 Continued Public Involvement.....137

Appendices

- A. Sonoma County Hazard Mitigation Planning Process
- B. Sonoma County Hazard Identification Matrix
- C. Methods and Sources Used for Hazard Assessment
- D. Exposure of County Buildings to Hazards
- E. Targeted Repetitive Loss Properties
- F. References

List of Figures

- 2-1 Major Earthquake Faults and Areas of Liquefaction
- 2-2 Earthquake Shaking Probability
- 2-3 Dam Inundation Areas
- 2-4 Landslide Hazard Areas
- 2-5 Sonoma County Watersheds
- 2-6 Russian River Watershed
- 2-7 100 Year Floodplain
- 2-8 Repetitive Loss Properties
- 2-9 Historic Fires
- 2-10 Wildland Fire Threat Area
- 2-11 Fire Protection Districts and State Responsibility Areas

List of Tables

- 2-1 Summary of County Exposure to Hazards
 - 2-2 Sonoma County Hazard Events 1991-2004
 - 2-3 Comparison of MMI to PGA
 - 2-4 Building Exposure in Hazard Zones
 - 2-5 Dates of Key Changes to Seismic Resistant Design in UBC
 - 2-6 Use of Unreinforced Masonry Buildings in the County
 - 2-7 Historically Significant Structures Located in the Alquist-Priolo Zone
 - 2-8 Summary of Exposure of Key County Buildings to Earthquake Hazards
 - 2-9 County Buildings That May Pose Seismic Risk Due to Age/Construction Type
 - 2-10 Seismic Safety of Hospitals in the County as of 2001
 - 2-11 Exposure of Veteran's Buildings to Earthquake Hazards
 - 2-12 Status of Selected Caltrans Bridges Along Highway 101
 - 2-13 Summary of Estimated Losses in Sonoma County for Scenario Earthquakes
 - 2-14 County Buildings in Areas with Potential Landslide Risk
 - 2-15 Sonoma County Watersheds
 - 2-16 Russian River Flood Level Elevations in Feet and Gage Heights
 - 2-17 Annual Peak Streamflow and Gage Height for the Russian River near Guerneville
 - 2-18 Estimated Losses for Sonoma County Flood Events
 - 2-19 Historic Buildings Located in Floodplain
 - 2-20 County Owned and Used Buildings in the Floodplain
 - 2-21 Exposure of Assets in County to Flood Risk
 - 2-22 Notable Sonoma County Fires in Past Forty Years
 - 2-23 County Buildings Located in High Wildfire Risk Areas
 - 2-24 Selected SCWA and Sanitation District Facilities Located in High Wildfire Risk Areas
 - 2-25 Recent Wildland Fire Damage and Loss Figures in CDF Jurisdictions
-
- 3-1 County Departments and Staff Involved in Disaster Management
 - 3-2 Fire Districts and Departments
 - 3-3 Key Public Safety Element Mitigation Policies and Implementation
 - 3-4 Sonoma County Implementation of State Requirements
 - 3-5 Sonoma County Implementation of Federal Requirements
 - 3-6 Status of Bridges Assessed by CalTrans Local Bridge Seismic Retrofit Program