

State of California Hazard Mitigation Plan

Volume 1. Core Plan



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EXECUTIVE SUMMARY

The State of California is committed to building resilience for future hazard events in all communities through ongoing risk reduction efforts. Home to almost 12 percent of the U.S. population, California is culturally, ethnically, economically, ecologically, and politically diverse. The State is vulnerable to a wide range of natural and non-natural hazards that have impacted and will continue to impact its people, property, environment, infrastructure, and economy. California has experienced 72 federal disaster declarations since 2018 across three types of declarations (major disaster, emergency, and fire management assistance). The pace and scale of disasters will continue to increase as the climate changes. The State is actively working to address the potential impacts from a wide range of natural and non-natural hazards and to build community resilience.

The Disaster Mitigation Act of 2000 (DMA) amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act to include Section 322, which requires California to have a hazard mitigation plan approved by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal disaster assistance and hazard mitigation funding. A hazard mitigation plan outlines the State's plan to reduce damage to life, property, and the environment from future disasters. California maintains an Enhanced Plan, which documents the State's commitment to long-term risk reduction and confers additional mitigation funding from FEMA after presidential major disaster declarations. California's Enhanced Plan documents the State's whole-of-government approach to holistic and integrated mitigation efforts, as well as the State's capacity, resources, and capabilities to manage effective mitigation grant programs.

As communities and populations continue to grow and develop amid the ongoing effects of climate change, risks from all hazards that California faces have the potential to increase in the coming decades. California is already experiencing some of these increased risks, including more severe and expansive wildfires and more frequent periods of extreme heat. To mitigate these risks and inform future decision

making, the State of California is updating its State Hazard Mitigation Plan (SHMP or Plan) to emphasize an integrated, multi-level, multi-sector, collaborative approach to risk reduction that builds community resilience and promotes equitable outcomes. The 2023 SHMP identifies hazards based on the history of disasters in California and lists goals, objectives, strategies, and actions for reducing future risk. Implementation of planned, feasible, and cost-effective mitigation measures reduces loss of lives, property and the environment, and streamlines the disaster recovery process.

The FEMA Hazard Mitigation Assistance Guidance defines hazard mitigation as the sustained effort to reduce loss of life and property by lessening or eliminating the impacts of natural disasters, climate hazards, and human-caused threats. It creates safer communities and helps maintain quality of life. Effective hazard mitigation requires an understanding of all risks and a sustained investment in long-term community well-being through the implementation of short- and long-term strategies before the next disaster.

(FEMA 2022) (FEMA 2015)

The SHMP provides an overview of California's disaster history and landscape, outlines the efforts of the California Governor's Office of Emergency Services (Cal OES) Hazard Mitigation Section to reduce disaster losses, and describes the strategies used to administer an effective comprehensive statewide hazard mitigation program. The Plan was developed in conjunction with multi-disciplinary groups of federal (including FEMA), State, tribal, local, and non-governmental stakeholders, as well as with input from the public. The primary purpose of the Plan is to develop a science-based risk reduction strategy to support decision-making across State and local government to equitably promote community resiliency. An important additional benefit is continued eligibility for federal assistance and funding to support mitigation activities and the repair or replacement of infrastructure damaged during federally declared disasters.

The updated SHMP shows the State's commitment to a comprehensive strategy to reduce or eliminate risk and the impact of disasters in order to build a more resilient state, reduce losses during future hazard events, and promote faster recovery after disasters. The Plan will continue to be updated, in accordance with the plan maintenance process outlined in the SHMP, to enhance its content and keep the public engaged in ongoing mitigation measures.

The 2023 Plan is the fifth update to California's SHMP. The Plan has been streamlined to enhance readability for the public while maintaining appropriate detailed analysis and implementable strategies to support future state risk reduction activities. The SHMP serves as a technical reference for California's counties, cities, special districts, tribes, and other local governments as they update their local hazard mitigation plans

(LHMPs). The Plan presents a robust risk assessment that expands upon the number and type of state assets assessed compared to the previous version of the SHMP and integrates best available data and climate science. The SHMP will be implemented by the State from the Plan's adoption in 2023 to its update in 2028.

The 2023 SHMP demonstrates:

- California's commitment to the delivery of a comprehensive and integrated mitigation program
- Integration with federal, state, tribal, and local agencies with mitigation capabilities and shared objectives to reduce risks from natural hazards
- Successful implementation of existing mitigation programs to achieve mitigation goals
- The State's ability to meet FEMA's required grant management performance metrics to maintain an Enhanced state plan

The 2023 Plan is organized to align with FEMA's State Mitigation Planning Policy Guide. It consists of the following parts:

1. Background Information
2. Profiles and Risk Assessment for Natural Hazards of Interest
3. Profiles for Other Hazards of Interest
4. Hazard Mitigation for Local Jurisdictions
5. Mitigation Strategy
6. Enhanced State Plan Requirements

CALIFORNIA'S HAZARD HISTORY

The impact of natural disasters on California since 1950 has been significant:

- 365 state emergency declarations
- 337 federal disaster declarations
- Over 900 deaths
- More than 25,000 injuries
- \$20.7 billion in State-administered costs.

Since the 2018 update to the SHMP, the State has experienced 37 state emergency declarations and 72 federally declared disasters, resulting in **X** deaths and **\$X** in State-

administered costs. As the climate continues to change, the best available science indicates that the scale, pace, and intensity of disasters will continue to increase, which will result in increased human suffering, loss of infrastructure, damage to the environment, longer disaster recoveries, and escalating disaster costs. Disaster escalation is especially apparent in the statewide wildfire activity. The seven largest wildfires in California history, by acreage, have occurred since the 2018 SHMP update. Half of the most destructive wildfires, by number of structures destroyed, have also occurred since the 2018 update. Hazard mitigation actions to address these risks is critical to building community resiliency and protecting California's communities in the coming decades.

HAZARDS INCLUDED IN THE SHMP

The 2023 SHMP fully assesses 15 natural hazards, describing hazard location, previous occurrences, impact analysis, probability of future events, vulnerability of state assets, how the state is currently mitigating the hazard, and new mitigation opportunities. Historically, California has been most impacted by floods, wildfires, and earthquakes, with emergency managers often referring to them as the “big three” hazards of concern. Due to the impacts of climate change, drought and extreme heat have become significant hazards in the 2023 SHMP update. Nineteen other hazards of interest, including non-natural hazards, are profiled. Both categories are organized according to the impact rating of each hazard. The impact rating performed for the SHMP is based on the fundamental definition of risk: $\text{Probability} \times \text{Impact} = \text{Risk}$.

Natural Hazards of Concern	Other Hazards of Interest
<ul style="list-style-type: none"> • Earthquake • Riverine, Stream and Alluvial Flood • Coastal Flood/Sea Level Rise • Extreme Heat • Extreme Cold or Freeze • Wildfire • Severe Wind, Weather and Storms • Landslide, Debris Flow, and Other Mass Movements • Drought • Tsunami • Dam Failure • Levee Failure • Snow Avalanche • Subsidence • Volcano 	<ul style="list-style-type: none"> • Urban Structural Fire • Other Electrical Outages • Public Safety Power Shutoff • Terrorism • Air Pollution • Tree Mortality • Energy Shortage • Cyber Threats • Invasive and Nuisance Species • Epidemic, Pandemic, Vector-Borne Disease • Civil Disorder • Natural Gas Pipeline Hazards • Hazardous Materials Release • Transportation Accidents Resulting in Explosion • Well Stimulation and Hydraulic Fracturing • Oil Spills • Electromagnetic Pulse Attack • Radiological Accidents • Geomagnetic Storm (Space Weather)

Many of the hazards are amplified or accelerated by climate change impacts. Climate change will continue to exacerbate the frequency, scale, and intensity of hazards across the state. Each natural hazard assessment describes the changing climate of California, how climate change will impact natural hazards, and how the State is acting to address the challenges. Hazard impacts on equity-priority communities are discussed in all hazard chapters.

HAZARD ASSESSMENT BY COUNTY

California has 58 counties, 482 cities, and over 1,500 special districts that are eligible to develop local hazard mitigation plans. Numerous multi-jurisdictional local hazard mitigation plans have been developed, led by counties or groups of cities. Many single-jurisdiction plans have also been prepared by cities and special districts. The following hazards are most commonly ranked as high concern in the multi-jurisdictional county hazard mitigation plans:

- Wildfire was identified as a hazard by 57 counties; of those, 45 counties identified it as a hazard of high concern
- Earthquake was identified as a hazard by 57 counties; of those, 46 counties identified it as a hazard of high concern

- Flood was identified as a hazard by 57 counties; of those, 38 counties identified it as a hazard of high concern

MITIGATION ACTIONS AND GOALS

The State of California has identified a mitigation strategy to reduce or eliminate long-term vulnerabilities from hazards of concern. The strategy, which was developed through a multi-stakeholder process, sets the State's mitigation program priorities and assists local governments as they update their local hazard mitigation plans. The mitigation strategy, which includes 92 mitigation actions, is based on the following goals that reflect State's current priorities:

- **Goal 1**—Significantly reduce risk to life, community lifelines, the environment, property, and infrastructure by planning and implementing whole-community risk reduction and resilience strategies.
- **Goal 2**—Build capacity and capabilities to increase disaster resilience among historically underserved populations, individuals with access and functional needs, and communities disproportionately impacted by disasters and climate change.
- **Goal 3**—Incorporate equity metrics, tools, and strategies into all mitigation planning, policy, funding, outreach, and implementation efforts.
- **Goal 4**—Apply the best available science and authoritative data to design, implement, and prioritize projects that enhance resilience to natural hazards and climate change impacts.
- **Goal 5**—Integrate mitigation principles into laws, regulations, policies, and guidance to support equitable outcomes to benefit the whole community.
- **Goal 6**—Significantly reduce barriers to timely, efficient, and effective hazard mitigation planning and action.

ENHANCED PLAN

California is committed to ongoing and coordinated efforts to reduce risk from many types of hazards, protect life and property, and create more resilient communities throughout the state. To demonstrate this commitment, the 2023 SHMP was prepared to meet FEMA requirements for an Enhanced SHMP. The Enhanced designation recognizes the State of California as a proactive leader in implementing a

comprehensive, multi-disciplinary statewide mitigation program. With this Enhanced mitigation plan, California uses partners and resources across the whole community to increase resilience, and the State demonstrates the skills and resources to reduce risk and vulnerability to future disaster losses.

Through the implementation of robust planning and coordinated mitigation action, the State of California is dedicated to building resilient communities for all.