



***Cal* OES**

**GOVERNOR'S OFFICE
OF EMERGENCY SERVICES**



CALIFORNIA STATE HAZARD MITIGATION PLAN

Volume 1

Gavin Newsom
Governor

Nancy Ward
Director
California Governor's
Office of Emergency Services

Executive Summary

Updated November 10, 2023

2023

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 (as of June 1, 2023) across three types of declarations (major disaster (5), emergency (13), and fire management assistance (54)). The number of declarations includes some duplication due to fire management assistance and [Emergency Declarations](#) escalating to [Major Disaster Declaration](#) status. Many State and local disasters have also occurred within this time frame. The pace and scale of disasters will continue to increase due to the effects of [climate change](#). The State continues to actively work 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 states to have a hazard mitigation plan approved by the Federal Emergency Management Agency (FEMA) to be eligible for federal disaster assistance and hazard mitigation funding. A hazard mitigation plan is a state's plan to reduce damage to life, property, and the environment from future disasters. California maintains an Enhanced Plan, demonstrating 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 illustrates the State's approach to holistic and integrated mitigation efforts and 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 the [hazards](#) that California faces will increase in the coming decades. This has already been seen with more severe and expansive

wildfires and frequent days of [extreme heat](#). To mitigate these risks and inform future decision-making, California is updating its State Hazard Mitigation Plan (SHMP or Plan) to reflect an integrated, multi-level, multi-sector, collaborative approach to risk reduction that builds community resilience and promotes [equitable outcomes](#). The 2023 SHMP identifies hazards informed by science-based projections and the history of disasters in California and lists the State's [goals](#), [objectives](#), strategies, and actions for reducing future risk. Implementing 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 2023j).

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 and comprehensive statewide hazard mitigation program. The Plan was developed in conjunction with multi-disciplinary groups of federal, State, Tribal Nation, local, and non-governmental [stakeholders](#), as well as with input from the public. The Plan articulates a science-based risk reduction strategy to support decision-making across State and local government to equitably promote community resiliency. An additional benefit of the SHMP is continued eligibility for federal assistance and enhanced funding to support mitigation activities and repairing or replacing public infrastructure damaged during federally declared disasters.

The updated SHMP **demonstrates the State's commitment to reduce or eliminate risk** and the impact of disasters to build a more resilient State, reduce losses during future hazard events, and promote faster recovery after disasters. To enhance its content and keep the public engaged in ongoing mitigation measures, the Plan is a living document that will continue to be updated in accordance with the plan maintenance process outlined in Chapter 48.

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

is a technical reference for California's counties, cities, special districts, Tribal Nations, and other local governments as they update their [local hazard mitigation plans](#) (LHMPs). The SHMP presents a robust, updated [risk assessment](#) correlating California's existing resources with the best available data and climate science. The SHMP will be implemented by the State from the Plan's adoption in 2023 to its next update in 2028.

The 2023 SHMP demonstrates:

- California's commitment to a comprehensive and integrated mitigation program
- Integration with federal, State, Tribal Nation, and local agencies with mitigation capabilities and shared objectives to reduce risks from natural hazards
- Successful implementation of 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. The SHMP consists of the following parts:

- Background Information
- Profiles and Risk Assessment for Natural Hazards of Interest
- Profiles for Other Hazards of Interest
- Hazard Mitigation for Local Jurisdictions
- Mitigation Strategy
- Enhanced State Plan Requirements
- Appendices that support Volume 1

CALIFORNIA'S HAZARD HISTORY

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

- 365 State Emergency Declarations
- 337 federal disaster declarations (this includes some duplication due to fire management assistance and Emergency Declarations escalating to Major Disaster Declaration status.)
- Over 900 deaths
- \$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 at least 185 deaths and \$22.8 billion in State-administered costs. As the climate continues to change, science indicates that the scale, pace, and [intensity](#) of disasters will continue to increase, resulting 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 State's wildfire activity. The seven largest wildfires in California history 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. To address these risks, implementing hazard [mitigation actions](#) is critical to building community resiliency and protecting California's communities in the coming decades.

HAZARDS INCLUDED IN THE SHMP

The 2023 SHMP includes 34 hazards. Of this total number, 15 natural hazards are fully assessed by 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](#). Due to the impacts of climate change, [drought](#) and extreme heat have become significant hazards in the 2023 SHMP update. There are 19 other hazards of interest, including non-natural hazards, which are also profiled.

Natural and other hazards 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: Probability x Impact = Risk.

Many of the hazards are amplified or accelerated by climate change impacts. Climate change will continue exacerbating 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 also discussed in all hazard chapters.

Natural Hazards of Concern	Other Hazards of Interest
<ul style="list-style-type: none"> ▪ Earthquake ▪ Riverine, Stream, and Alluvial Flood ▪ Extreme Heat ▪ Extreme Cold or Freeze ▪ Wildfire ▪ Severe Wind, Weather, and Storms ▪ Sea-Level Rise, Coastal Flooding, and Erosion ▪ 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 Potential Causes of Long-term Electrical Outages ▪ Public Safety Power Shutoff (PSPS) ▪ Terrorism ▪ Air Pollution ▪ Energy Shortage ▪ Cyber Threats ▪ Tree Mortality ▪ 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 (EMP) Attack ▪ Radiological Accidents ▪ Geomagnetic Storm (Space Weather)

HAZARD ASSESSMENT BY COUNTY

California has 58 counties, 482 cities, and over 1,500 special districts that are eligible to develop LHMPs. Numerous multi-jurisdictional LHMPs 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 county LHMPs:

- 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 has identified a mitigation strategy to reduce or eliminate long-term vulnerabilities from hazards of concern. The strategy, developed through a multi-stakeholder process, sets the State's mitigation priorities and assists local governments in updating LHMPs. 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 all hazards, protect life and property, and create more resilient communities. The 2023 SHMP was prepared as an Enhanced SHMP, demonstrating the highest commitment to risk reduction. Under this designation, the State is a proactive leader in implementing comprehensive, multi-disciplinary statewide mitigation. With this Enhanced SHMP, California leverages partnerships and resources across the whole community to the maximum extent to increase resilience and reduce the risk from

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

ADOPTING AND IMPLEMENTING THE PLAN

Upon conditional approval of the finalized 2023 SHMP by FEMA, the Cal OES Director, acting as the Governor's designated official, formally adopts the SHMP. The Director's letter of adoption is forwarded to FEMA to finalize the approval process. The adoption letter and final approval letter are included following this Executive Summary.



August 23, 2023

STATEMENT OF PLAN ADOPTION

As Director of the California Governor's Office of Emergency Services (Cal OES) and the Governor's Authorized Representative, I am pleased to formally adopt the 2023 California State Hazard Mitigation Plan (SHMP) for the State of California.

In the five years since the 2018 SHMP was approved and adopted, California has experienced some of the largest and most destructive disasters in the State's recorded history. Disasters are becoming more frequent and resulting in greater impacts, and this trend is expected to increase even further than it has in recent years. With the State's continued population growth combined with prevailing climate projections, California must continue to enhance and invest in mitigation activities and take actions to reduce risks and support resilient communities.

The 2023 SHMP update continues California's commitment to reduce or eliminate the impacts of disasters caused by natural and human-caused hazards. This update also reflects the most comprehensive inclusion to date of the State's climate mitigation and adaptation strategies, and reflects the State of California's equity priorities.

The State is required to review and revise its SHMP for Federal Emergency Management Agency (FEMA) approval to ensure the award eligibility associated with the following funding opportunities:

- Building Resilient Infrastructure and Communities (BRIC) Grants
- Fire Management Assistance Grants (FMAG)
- Flood Mitigation Assistance (FMA) Program
- Hazard Mitigation Grant Program (HMGP)
- HMGP Post Fire
- Pre-Disaster Mitigation Congressionally Directed Spending (LPDM)
- Public Assistance (PA) Permanent Work Categories (Categories C-G)
- Rehabilitation of High Hazard Potential Dam (HHPD) Grant Program
- Safeguarding Tomorrow Revolving Loan Fund Program

Additionally, the State remains eligible for the increased federal cost share for grants awarded under the FMA program.



FEMA has once again designated California as an Enhanced State in recognition of the State's efforts surpassing the Standard requirements. California continues to demonstrate an unwavering commitment to long-term risk reduction and remains a proactive leader in implementing comprehensive, multi-disciplinary statewide mitigation. As an Enhanced State, California receives an additional five percent in HMGP funds after a disaster.

In adopting the 2023 SHMP, the State agrees to comply with all applicable state and federal statutes and regulations as stipulated in the assurances enclosed in the 2023 SHMP and will update the SHMP at least once every five years. Through implementation, monitoring, and meaningful integration across government and private sectors, the SHMP continues to ensure a safer and more resilient California.

Sincerely,


NANCY WARD
Director





FEMA

August 30, 2023

Ms. Nancy Ward
Director
California Governor's Office of Emergency Services
3650 Schriever Avenue
Mather, CA 95655

Reference: Approval of the California Hazard Mitigation Plan

Dear Ms. Ward:

The Federal Emergency Management Agency (FEMA) Region 9 approves the updated California State Hazard Mitigation Plan effective August 30, 2023, through August 29, 2028. This plan is approved in accordance with applicable mitigation planning regulations and policy requirements.¹

In addition, this plan meets the requirements to address wildfire risks and mitigation measures and the requirements to address all dam risks.

An approved state hazard mitigation plan is a condition of receiving certain FEMA non-emergency assistance and mitigation grants from the following programs:

- Public Assistance Categories C-G (PA C-G)
- Fire Management Assistance Grants (FMAG)
- Hazard Mitigation Grant Program (HMGP)
- Hazard Mitigation Grant Program Post-Fire (HMGP-PF)
- Building Resilient Infrastructure and Communities (BRIC)
- Flood Mitigation Assistance (FMA)
- Rehabilitation of High Hazard Potential Dams Program (HHPD)
- Safeguarding Tomorrow Revolving Loan Fund (STORM RLF)
- Pre-Disaster Mitigation (PDM)

Approval of a state hazard mitigation plan does not guarantee funding under any FEMA program. Please refer to the individual FEMA non-emergency assistance and mitigation grant program policy and/or annual Notice of Funding Opportunities for specific application and eligibility requirements for the FEMA programs listed above.

¹ Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended; the National Flood Insurance Act of 1968, as amended; Title 44 Code of Federal Regulations (CFR) Part 201; and the "Water Infrastructure Improvements for the Nation Act," or the "WIIN Act," on December 16, 2016, which amends the National Dam Safety Program Act (Pub. L. 92-367).

State hazard mitigation plans must be updated and resubmitted to FEMA Region 9 for approval every five years. If the plan is not updated and approved by August 29, 2028, the plan is considered lapsed, and FEMA will not obligate funds until the mitigation plan is approved.

If at any time over the plan approval period FEMA determines that the state is not complying with all applicable federal statutes and regulations in effect during the periods for which it receives funding or is unable to fulfill mitigation commitments, FEMA may take action to correct the noncompliance (44 CFR §201.3[b][5] and §201.4[c][7]).

FEMA recognizes the State of California for the additional effort and commitment to mitigation. Under Section 322 (42 U.S.C. 5165(e)), additional HMGP funds of up to 20% of the total estimated eligible disaster assistance may be provided to states with enhanced hazard mitigation plans. The “enhanced” designation is recognition for states that are leaders in implementing a comprehensive statewide hazard mitigation program that results in safer, more sustainable communities.

FEMA will provide a reminder at least 12 months before the plan expiration date of the consequences of not having an approved state hazard mitigation plan, which is required to apply for and receive funding for FEMA non-emergency assistance and mitigation grant programs. To continue to apply for and receive funding from the programs listed on page 1, the state must submit a draft of the next plan update before the end of the approval period and allow sufficient time for the review and approval process. This includes any revisions, if needed, and formal adoption by the state following the determination by FEMA that the plan has achieved a status of “approvable pending adoption.”

We look forward to working with you to discuss the status of the state hazard mitigation program each year over the approval period of this plan. If you have any questions please contact Kathryn Lipiecki, Mitigation Division Director, by phone at (510) 627-7100, or by email at kathryn.lipiecki@fema.dhs.gov.

Sincerely,

ROBERT J FENTON JR Digitally signed by ROBERT J FENTON JR
Date: 2023.09.05 20:06:45 -10'00'

Robert Fenton
Regional Administrator
FEMA Region 9

Enclosure (1)

State of California Plan Review Tool, dated August 30, 2023

cc: Christina Curry, Chief Deputy Director, CalOES
Ryan Buras, Deputy Director, CalOES
Ron Miller, Mitigation Quality Assurance Division Chief, CalOES
Robyn Fennig, Planning Division Chief, CalOES
Kathryn Lipiecki, Mitigation Division Director, FEMA Region 9
Alison Kearns, Planning and Implementation Branch Chief, FEMA Region 9