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GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

Part 5—Mitigation Strategy

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CALIFORNIA STATE HAZARD MITIGATION PLAN

Volume 1

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Part 5—Mitigation Strategy



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Standard 4.2.1: The Emergency Management Program has a plan to implement mitigation projects and sets priorities based on loss reduction. The plan:

- **Is based on the natural and human-caused hazards identified in Standard 4.1.1 and the risk and consequences of those hazards**
- **Is developed through formal planning processes involving Emergency Management Program stakeholders**
- **Establishes short and long-term strategies, actions, goals, and objectives**

Part 5 outlines California's efforts to prioritize and implement hazard mitigation projects to reduce losses to natural hazards. California takes risks and consequences identified in the SHMP's risk assessment and uses that to inform long-term strategies, actions, goals and objectives to enhance natural hazard resiliency across the State. All of Part 5 of the 2023 State Hazard Mitigation Plan can be applied to meeting this requirement.

44. HAZARD MITIGATION GOALS



S9 – 44 CFR 201.4(c)(3)(i): Does the mitigation strategy include goals to reduce long-term vulnerabilities from the identified hazards?

The six goals outlined in Chapter 44 reflect priorities of the State and its continued commitment to comprehensive, statewide mitigation program, not just those relating to FEMA funding. The goals are consistent with the hazards and vulnerabilities identified in the California Risk Assessment and explain what will be achieved by implementing the California Mitigation Strategy.

Developing a course of action to address vulnerabilities is a vital part of mitigation planning. Parts 2 and 3 of the 2023 State Hazard Mitigation Plan (SHMP or Plan) present hazard profiles and Risk Assessments in order of hazard impact scores. This arrangement of the hazards indicates the connection between the impact of assessed hazards and the goals and objectives developed to mitigate them. Mitigation goals and objectives permit the State to focus efforts on reducing or eliminating the vulnerabilities identified in the Risk Assessment.

For this planning effort, a goal setting process was applied in which each planning component, namely each goal and objective, stands on its own merit and is not considered a subset of any other component. Goals were identified that meet a vision for the plan. Objectives were identified that meet multiple goals. Objectives were used to prioritize actions.

Goals are broad, long-term policy and vision statements that explain what will be achieved by implementing the mitigation strategy. Objectives are defined, short-term measurable actions that lead to achieving an overall goal.

The Goals and Objectives Working Group reevaluated the goals from the 2018 SHMP to determine their current applicability, effectiveness, and relevance. Stakeholders refined the goals to reflect the priorities of the State of California for the 2023 SHMP update. The refined goals provide greater detail to identify what the State aims to achieve in the next five years.



HHPD3: Did Element S9 (mitigation goals) include mitigation goals to reduce long-term vulnerabilities from high hazard potential dams?

This requirement is addressed by SHMP Goals 1, 4, and 6.

The goals for the 2023 SHMP are:

- **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.

The goals reflect the priorities of resilience, [climate change adaptation](#) and [mitigation](#), and equity. Based on feedback and insight from stakeholders and local governments, the goals were updated to better support resilience efforts at the State and local levels and to establish recommended data sources for consistency across efforts.

The SHMP Goals and Objectives Working Group developed objectives that identify how to achieve the updated goals. The objectives were developed such that each applies to multiple goals. This provides an opportunity to broaden success measures for the SHMP and allows for increased versatility and flexibility. Table 44-1 identifies the 2023 SHMP objectives and the goals with which they align.

Table 44-1. SHMP Objectives and Associated Goals

Objective	Goals					
	1	2	3	4	5	6
1—Promote cross-sector collaboration by fostering partnerships across all sectors and levels of government and non-governmental organizations (NGOs) involved in the State’s risk reduction and resilience strategies. Encourage two-way communication to empower stakeholders while ensuring that stakeholders representing underserved and historically marginalized communities are actively integrated into decision-making processes.	X	X	X			X
2—Improve climate literacy using best available data and science to increase public awareness and understanding of the potential impacts of future and emerging hazards brought on or exacerbated by climate change.	X	X		X		
3—Improve the understanding of the locations, potential and cascading impacts, and linkages among the threats, hazards, vulnerabilities, and measures needed to protect life, community lifelines, the environment, property, and infrastructure.	X		X	X	X	
4—Promote, coordinate, and implement hazard mitigation plans and projects to be consistent with and supportive of climate action and adaptation goals, policies, and programs, and community needs at all governmental levels.	X	X	X		X	X
5—Actively promote and work collaboratively with local jurisdictions, Tribal Nations, and community organizations on coordinated hazard mitigation planning efforts to foster and reinforce resilient communities while addressing risk at a scale consistent with hazard areas.	X	X	X		X	X

Objective	Goals					
	1	2	3	4	5	6
6—Promote integration of regional, local, and Tribal Nation hazard mitigation plans, which strengthens linkages between these plans and other related planning and land use initiatives.	X			X	X	
7—Reduce complexities, remove barriers, and streamline programs to support procedural equity and increase access to resources. This may be by strengthening outreach methods, producing materials in multiple languages, utilizing plain language, or reducing the effort required to access resources.	X	X	X	X		X
8—Develop criteria and metrics to prioritize and measure progress toward increasing resources for communities and populations subjected to systematic, institutional, and procedural oppression, including Tribal Nation communities, to achieve equitable outcomes in risk reduction and resilience efforts.	X	X	X	X		X
9—Reduce mitigation-related disparities impacting underserved populations and historically marginalized communities by developing equitable and inclusive plans, investments, and engagements. Develop plans, programs, and policies that are adaptive and recognize the historic economic, social, and demographic influences of the community in a manner to expand resources to benefit the community.	X	X	X		X	X
10—Encourage and promote leveraging existing federal and non-federal (State, local, and non-governmental) resources and investments to foster a comprehensive statewide, whole-community approach to mitigation. Develop a coordinated suite of assistance that improves the current condition of the community and supports the needs and desires of the community while encouraging multi-jurisdictional, regional collaboration.	X	X			X	X
11—Actively promote climate-focused programs, policies, projects, and initiatives developed by federal, State, and academic entities, including by encouraging multi-benefit projects that reduce risk using nature-based solutions.	X	X		X	X	
12—Identify and encourage the use of statewide recommended criteria to develop and inform a shared data repository to integrate into State, local, Tribal Nation, and non-governmental plans, strategies, and actions.				X		
13—Develop and implement mitigation policies, protocols, programs, and procedures to address the State’s changing environment and climate.	X			X	X	

Objective	Goals					
	1	2	3	4	5	6
14—Encourage the incorporation of mitigation measures into changes in the built environment, focusing on areas at substantial risk, and strengthening community resilience in present and future conditions to support risk-informed development.	X	X		X	X	
15—Create financial and regulatory incentives to encourage avoiding hazardous areas, reducing risk, and using hazard-resistant building materials and methods.		X	X	X	X	X
16—Encourage multi-objective mitigation and resilience strategies and efforts with diverse stakeholders through coordination and collaboration by employing innovative approaches to risk reduction.		X	X	X	X	X

44.1. LINKAGE OF STATE GOALS AND STRATEGIES WITH LOCAL PLANS

Using a consistent set of goals and objectives reinforces the plan integration process. The 2023 SHMP contains an updated set of goals, objectives, and strategies that can easily be adopted or adapted by local jurisdictions to guide their [local hazard mitigation plan](#) (LHMP) development. In turn, when reviewing and evaluating LHMPs, State reviewers can ensure that local goals, objectives, and strategies are consistent with those of the State, and that local concerns are reflected in the overall State goals, objectives, and strategies. Consistent goals and objectives can lead to consistent mitigation strategies at both the State and local level.

45. PROGRESS ON PREVIOUS PLAN



S12 – 44 CFR 201.4(d): Was the plan updated to reflect progress in statewide mitigation efforts and changes in priorities?

Chapter 45 has been dedicated to the reconciliation of past actions and the change of priorities based on a new protocol applied for the 2023 SHMP.

45.1. STATUS OF ACTIONS FROM PREVIOUS SHMP

The 2018 SHMP update identified 114 mitigation actions for implementation. These actions were reviewed for the current update, and for each action it was determined whether the action had been completed, was in progress, or had not been started. Incomplete actions were reviewed to determine if they should be carried over to the 2023 SHMP update or removed due to changes in priorities, capabilities, or feasibility. Of the 114 actions from the 2018 SHMP, 14 have reported progress toward completion, 1 reported no action, 26 were completed, 68 indicated work is conducted as an ongoing capability, and 5 have been removed.

Appendix J summarizes the status of actions from the 2018 SHMP.

45.2. UPDATED PRIORITY OF ACTIONS FROM PREVIOUS SHMP

The 2018 SHMP broadly prioritized actions that addressed the three main hazards, flood, earthquake, and wildfire. A more focused, consistent approach is used to prioritize actions in this updated Plan. For each action in the SHMP, the State must assign a priority that, at a minimum, takes into account the [benefits](#) of the project versus the cost. The following questions represent the prioritization scheme for action

implementation. The answers to the questions are weighted and scored. Then, based on the scoring of each action, they are categorized as high, medium, or low priorities.

- Will the action result in life safety?
- Will the action result in property protection?
- Will the action be cost-effective (future benefits exceed cost)?
- Is the action technically feasible?
- Does the State have the legal authority to implement the action?
- Is funding available for the action?
- Will the action have a positive impact on the natural environment?
- Will the action mitigate impacts from climate change?
- Does the action benefit equity priority communities?
- Does the State have the administrative capability to execute the action?
- Will the action reduce risk to more than one hazard?
- Can the action be completed in less than five years?
- Is there a local champion in an agency or department for the action?
- Will the action meet other local objectives (such as capital improvements, economic development, environmental quality, or open space preservation)?
- Does the action support the policies of other plans and programs?

The answers to each of these questions are weighted as follows:

- Yes = 3 points
- Not sure, could be either yes or no, or question is difficult to quantify = 1 point
- No = 0 points

Following scoring of each action, priorities are assigned based on the following metrics:

- 31 or more = High Priority
- 15 to 30 = Medium Priority
- 0 to 14 = Low Priority

This prioritization process was applied to a revised action plan that addresses the high-impact and medium-impact hazards identified by the Risk Assessment for this SHMP. It also was applied based on new findings from the capabilities and capacities assessed by this Plan, as evidenced in the prioritization questions above. Chapter 47 indicates the implementation priority for each action in this SHMP.

46. ASSESSMENT OF STATE CAPABILITIES TO MITIGATE RISK



S8 – 44 CFR 201.4(c)(3)(ii): Does the plan discuss the evaluation of the state’s hazard management policies, programs, capabilities, and funding sources to mitigate the hazards identified in the risk assessment?

Chapter 46 describes and evaluates California's existing pre- and post-disaster capabilities to manage risk to natural hazards identified in the SHMP. We include state laws, plans, documents, building codes, and funding mechanisms and other programs used to overcome challenges, leverage existing opportunities, and implement a statewide program.

The State of California has a history of successfully implementing hazard mitigation through legislation, planning, program development, and project implementation. This history demonstrates California's capability to implement State-level hazard mitigation programs that are effective and innovative.

46.1. LAWS, REGULATIONS, POLICIES AND PROGRAMS

Table 46-1 summarizes State-mandated legislation that affects State and local hazard mitigation planning efforts in California as well as agencies and programs with responsibilities related to hazard mitigation. See Appendix L for a more detailed discussion on each piece of legislation.

Table 46-1. Summary of Relevant State Agencies, Programs and Regulations

Agency, Program, or Regulation	Hazard Mitigation Area Affected	Relevance
Assembly Bill (AB) 9: Fire safety: Wildfires: Fire Adapted Communities	Wildfire Hazard	Establishes the Regional Forest and Fire Capacity Program to support regional leadership to build local and regional capacity and develop, prioritize, and implement strategies and projects that create fire-adapted communities and landscapes by improving watershed health, forest health, community wildfire preparedness, and fire resilience.
AB 32: The California Global Warming Solutions Act of 2006	Action Plan Development	Establishes a State goal of reducing greenhouse gas (GHG) emissions.
AB 38: Fire safety: Low-Cost Retrofits: Regional Capacity Review: Wildfire Mitigation	Wildfire Hazard	Directs the California Natural Resources Agency (CNRA) to review the regional capacity of each county that contains a very high fire hazard severity zone and establishes a comprehensive wildfire mitigation and assistance program.
AB 52: Native Americans; California Environmental Quality Act (CEQA)	Stakeholder Coordination	California Tribal Nations have the ability to establish, through a formal notice letter, a standing request to consult with a lead agency regarding any proposed project subject to CEQA in the geographic area with which the Tribal Nation is traditionally and culturally affiliated.
AB 70: Flood Liability	Flood Hazard	A city or county may be required to partially compensate for property damage caused by a flood if it unreasonably approves new development in areas protected by a State flood control project.
AB 162: Flood Planning	Flood Hazard	Cities and counties must address flood-related matters in the land use, conservation, safety, and housing elements of their general plans.
AB 267: CEQA: Exemption: Prescribed Fire, Thinning, and Fuel Reduction Projects	Wildfire Hazard	Extends to January 1, 2026, the exemption from requirements of CEQA for prescribed fire, thinning, or fuel reduction projects on federal lands to reduce the risk of high-severity wildfire that had been reviewed under the National Environmental Policy Act of 1969.
AB 380: Forestry: Priority Fuel Reduction Projects	Wildfire Hazard	Requires the California Department of Forestry and Fire Protection (CAL FIRE) to identify priority fuel reduction projects annually and exempts the identified priority fuel reduction projects from certain legal requirements.

Agency, Program, or Regulation	Hazard Mitigation Area Affected	Relevance
AB 431: Forestry: Timber Harvesting Plans: Defensible Space: Exemptions	Wildfire Hazard	Extends to January 1, 2026, the exemption from a requirement to complete a timber harvest plan for maintaining defensible space between 150 feet and 300 feet from a habitable structure.
AB 497: Forestry and Fire Protection: Local Assistance Grant Program: Fire Prevention Activities: Street and Road Vegetation Management	Wildfire Hazard	Appropriates funds for local assistance grants for fire prevention activities with priority for projects that manage vegetation along streets and roads to prevent the ignition of wildfire.
AB 575: Civil Liability: Prescribed Burning Activities: Gross Negligence	Wildfire Hazard	Provides that a private entity engaging in a prescribed burning activity that is supervised by a person certified as burn boss is liable for damages to a third party only if the prescribed burning activity was carried out in a grossly negligent manner.
AB 642: Wildfires	Wildfire Hazard	Makes changes to support cultural and prescribed fire, including the creation of a Cultural Burning Liaison at CAL FIRE , and requires a proposal for creating a prescribed fire training center.
AB 747: General Plans—Safety Element	Hazard Mitigation Planning	The safety elements of cities and counties' general plans must address evacuation routes and include any new information on flood and fire hazards and climate adaptation and resilience strategies.
AB 2140: General Plans—Safety Element	Hazard Mitigation Planning	Enables enhanced State and federal disaster assistance and mitigation funding to communities with compliant hazard mitigation plans.
AB 2800: Climate Change—Infrastructure Planning	Action Plan Development	Requires State agencies to consider the impacts of climate change when developing State infrastructure.
Alquist-Priolo Earthquake Fault Zoning Act	Earthquake Hazard	Restricts construction of buildings used for human occupancy on the surface trace of active faults.
Board of Forestry and Fire Protection (BOF) State Responsibility Area Fire Safe Regulations	Wildfire Hazard	Sets the floor for fire safety standards for perimeters and access to residential, commercial, and industrial building construction.

Agency, Program, or Regulation	Hazard Mitigation Area Affected	Relevance
California Coastal Management Program	Flood, Landslide, Tsunami, and Wildfire Hazards	Requires coastal communities to prepare coastal plans and requires that new development minimize risks to life and property in areas of high geologic, flood, and fire hazard.
CAL FIRE	Wildfire Hazard	CAL FIRE has responsibility for wildfires in areas that are not under the jurisdiction of the Forest Service or a local fire organization.
California Department of Parks and Recreation (State Parks)	Wildfire Hazard	State Parks Resources Management Division has wildfire protection resources available to suppress fires on State Park lands.
California Department of Water Resources (DWR)	Flood Hazard	This department is the State coordinating agency for floodplain management.
California Division of Safety of Dams (DSOD)	Dam Failure Hazard	This division of DWR monitors the dam safety program at the State level and maintains a working list of dams in California.
CEQA	Action Plan Implementation	Establishes a protocol of analysis and public disclosure of the potential environmental impacts of development projects. Any project action identified in this plan will seek full CEQA compliance upon implementation.
California Fire Alliance	Wildfire Hazard	The alliance works with communities at risk from wildfires to facilitate the development of community fire loss mitigation plans.
California Fire Plan	Wildfire Hazard	This plan's goal is to reduce costs and losses from wildfire through pre-fire management and through successful initial response.
California Fire Safe Council (CFSC)	Wildfire Hazard	This council facilitates the distribution of National Fire Plan grants for wildfire risk reduction and education.
California Fire Service and Rescue Emergency Mutual Aid Plan	Wildfire Hazard	This plan provides guidance and procedures for agencies developing emergency operations plans, as well as training and technical support.
California General Planning Law	Hazard Mitigation Planning	Requires every county and city to adopt a comprehensive long-range plan for community development, and related laws call for integration of hazard mitigation plans with general plans.
California State Hazard Mitigation Plan	Hazard Mitigation Planning	Local hazard mitigation plans must be consistent with the State's hazard mitigation plan.

Agency, Program, or Regulation	Hazard Mitigation Area Affected	Relevance
California Residential Mitigation Program	Earthquake Hazard	This program helps homeowners implement seismic retrofits to lessen the potential for damage to their houses during an earthquake.
California State Building Code	Action Plan Implementation	Local communities must adopt and enforce building codes, which include measures to improve buildings' ability to withstand hazard events.
Senate Bill (SB) 535: Disadvantaged and Low-Income Communities Investments	Action Plan Funding	This is a potential source of funding for actions located in disadvantaged or low-income communities.
Division of the State Architect's AB 300 List of Seismically At-Risk Schools	Earthquake Hazard, Action Plan Development	The Division of the State Architect recommends that local school districts conduct detailed seismic evaluations of seismically at-risk schools identified in the inventory that was required by AB 300.
Government Code Section 65302.5	Wildfire	Any county that has State Responsibility Areas or a very high fire hazard severity zone within its boundaries must submit a copy of the proposed safety element of a general plan to any agency with responsibility for fire protection in the county prior to adoption or amendment.
Governor's Executive Order S-13-08 (Climate Impacts)	Action Plan Implementation	This order includes guidance on planning for sea-level rise in designated coastal and floodplain areas for new projects.
Office of the State Fire Marshal (OSFM)	Wildfire Hazard	This office has a wide variety of fire safety and training responsibilities.
Public Resources Code, Section 4290	Wildfire	Provides authority to BOF to develop and implement fire safety standards for defensible space on State Responsibility Area lands. All residential, commercial, and industrial construction on these lands approved after January 1, 1991, must follow the regulations established by this board.
Public Resources Code, Section 4291	Wildfire	Any person with ownership or control of buildings on lands that have flammable vegetation must abide by these regulations.
Public Resources Code, Sections 4201 to 4204	Wildfire	Directs CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors.

Agency, Program, or Regulation	Hazard Mitigation Area Affected	Relevance
Seismic Safety Commission (SSC)	Earthquake	SSC investigates earthquakes, researches earthquake-related issues and reports and recommends to the Governor and Legislature policies and programs needed to reduce earthquake risk.
SB 5: Flood Control Regulations	Flood protection and Land use	Cities and counties within the Sacramento-San Joaquin Valley are required to include information from the CVFPP to be adopted by the Central Valley Flood Protection Board (CVFPB).
SB 27: Sacramento-San Joaquin Delta Emergency Preparedness Act of 2008	Emergency Response and Preparedness	Provides direction for the creation of a report outlining specific recommendations to be made to the legislature and Governor to support the following items: a Delta interagency unified command system, an emergency preparedness and response strategy, and a supporting exercise/training plan.
SB 92: Public Resources Portion of Biennial Budget Bill	Dam Failure Hazard	Requires dams (except for low-risk dams) to have emergency action plans (EAPs) that are updated every 10 years and inundation maps updated every 10 years, or sooner if specific circumstances change.
SB 97: Guidelines for Greenhouse Gas Emissions	Action Plan Implementation	Establishes that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis.
SB 99: General Plans: Safety Element: Emergency Evacuation Routes	Action Plan Implementation	Requires safety elements to include information to identify residential developments in hazard areas that do not have at least two emergency evacuation routes.
SB 244: Land Use; General Plan, Disadvantaged Unincorporated Communities	Equity	Requires Local Agency Formation Commissions to 1) deny any application by a city to annex a territory that is contiguous to a "disadvantaged unincorporated community" unless a second application is submitted to annex the disadvantaged community as well, and 2) evaluate disadvantaged unincorporated communities in a municipal services review upon the next update of a sphere of influence after June 30, 2012.
SB 375: The Sustainable Communities and Climate Protection Act of 2008	Climate Change	Requires California's urban regions to achieve mandated GHG reductions through coordinated transportation, housing, and land use planning.
SB 379: General Plans: Safety Element—Climate Adaptation	Action Plan Implementation	Requires cities and counties to include climate adaptation and resilience strategies in the safety element of their general plans.

Agency, Program, or Regulation	Hazard Mitigation Area Affected	Relevance
SB 743: Environmental Quality: Transit-Oriented Infill Projects, Judicial Review Streamlining for Environmental Leadership Development Projects	Climate Change	Changes the transportation impact analysis required as part of CEQA compliance. Changes include elimination of auto delay, level of service, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts for land use projects and plans in California.
SB 1000: General Plan Amendments—Safety and Environmental Justice Elements	Action Plan Implementation	Requires review and revision of general plan safety elements to address only flooding and fires (not climate adaptation and resilience) and requires environmental justice to be included in general plans.
SB 1035: Fire, Flood, and Adaptation Safety Element Updates	Action Plan Implementation	Clarifies that revisions to the safety element to address fire hazards, flood hazards, and climate adaptation and resilience strategies all must occur upon each revision to a housing element or local hazard mitigation program.
SB 1241: Land use: general plan: safety element: fire hazard impacts	Wildfire	Mandates wildfire planning responsibilities of local governments that have jurisdiction in State Responsibility Areas and Very High Fire Hazard Severity Zones
SB 5 (2007), as amended by SB 1278 (2012) and AB 1965 (2012)	Flood protection and Land use	Extends the time originally provided by SB 5 (2007) for localities to make their general plans consistent with the CVFPP .
Standardized Emergency Management System (SEMS)	Action Plan Implementation	Local governments must use this system to be eligible for State funding of response-related personnel costs.
Western Governors Association Ten-Year Comprehensive Strategy	Wildfire Hazard	This strategy implementation plan prepared by federal and Western state agencies outlines measures to restore fire-adapted ecosystems and reduce hazardous fuels.

Agency, Program, or Regulation	Hazard Mitigation Area Affected	Relevance
State Threat Assessment Center	Human Caused Hazards	The State Threat Assessment Center serves as California's information-sharing clearinghouse of strategic threat analysis and situational awareness reporting to statewide leadership and the public safety community in support of efforts to prevent, prepare for, mitigate, and respond to all crimes and all hazards impacting California citizens and critical infrastructure, while preserving civil liberties, individual privacy, and constitutional rights.

46.1.1. Planning and Zoning

Development in California is subject to a variety of planning and zoning laws and regulations. These policies determine where new construction can take place, what types of development are allowable in areas that are already developed, and the processes by which communities make development decisions. Planning and zoning policies strongly influence mitigation outcomes by determining whether development will continue or expand in high-risk areas.

Mitigation practices for facilities improve safety from natural hazards associated with the location and form of new development. These practices include local development planning and development oversight responsibilities delegated to cities and counties. Principal among these practices is compliance with the Planning and Zoning Law (Government Code, Sections 65000-66499.58), Subdivision Map Act (Government Code, Sections 66410-66499.40), and the [California Environmental Quality Act](#) (CEQA) (Public Resources Code, Sections 21000-21189.70.10).

Planning and Zoning Law General Plan Safety Element

The Planning and Zoning Law requires all cities and counties to develop and adopt a comprehensive general plan including land use, circulation, housing, safety, open space, conservation, and noise elements. It also mandates consistency among all general plan elements and between the general plan and implementation measures such as zoning and subdivision review.

California is one of approximately 10 states mandating that natural hazards be addressed as a required element of local general plans. The general plan safety element establishes policies and programs to protect the community from risks associated with earthquakes, floods, wildfire, and other natural and human-caused hazards.

As outlined by the California Governor's Office of Planning and Research (OPR), general plan safety element guidelines include the following (OPR 2020):

- The aim of the safety element is to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, earthquakes, landslides, and other hazards. Other locally relevant safety issues, such as airport land use, emergency response, hazardous materials spills, and crime reduction, may also be included.
- The safety element overlaps topics also mandated in the land use, conservation, and open-space elements. When preparing a new general plan or undertaking a comprehensive revision of an existing general plan, OPR suggests addressing these common topics in a single place rather than scattering them among four separate elements. The key concern should be to integrate effectively these common issues into the decision-making process.
- The safety element must identify hazards and hazard abatement provisions to guide local decisions related to zoning, subdivisions, and entitlement permits. The element should contain general hazard and risk reduction strategies and policies supporting hazard mitigation measures. Policies should address the identification of hazards and emergency response, as well as mitigation through avoidance of hazards by new projects and reduction of risk in developed areas.

As a required element of the general plan, the safety element provides the foundational information and policy direction regarding hazards, vulnerability, and risk upon which proactive mitigation strategies and actions can be based over time. California encourages all jurisdictions to adopt their [LHMPs](#) directly into the safety element to ensure alignment of mitigation efforts and efforts to support long-term community safety. All other general plan elements must be consistent with the safety element, and vice versa. Likewise, all zoning, subdivisions, and capital improvements must be consistent with the safety element.

Subdivision Map Act Subdivision Review

Under the Subdivision Map Act, no subdivision map can be approved unless the city or county finds that the subdivision, including its design and improvements, is consistent with the general plan. This requirement for direct implementation of the general plan through subdivision review appears to be unique to California. This allows the opportunity for cities and counties to make sound land use decisions on the subdivision of lands within known hazard areas.

California Environmental Quality Act Environmental Review

[CEQA](#) is an important California law reinforcing hazard mitigation. It requires an environmental review of any “discretionary” project, such as a general plan amendment, zone change, specific plan, subdivision, or development plan review. If significant impacts are found, an environmental impact report must be prepared.

Hazard Mitigation Through Local Land Use Planning

To maximize the value of pre-disaster mitigation, many jurisdictions have written hazard mitigation provisions into local zoning, development subdivision, and environmental review codes and ordinances for reference in routine project review. Such ordinances address hazards identified in federal and State hazards mapping, such as Flood Insurance Rate Maps (FIRMs) for 100-year floodplains, as well as any identified in the general plan or in an LHMP prepared by the jurisdiction.

Ordinance language provides direction for further investigation where scientific evidence regarding hazard presence, return periods, or potential magnitude of impact is not clear. Such ordinances also identify standard hazard mitigation measures that can be attached to a project or subdivision as conditions to be met prior to subsequent stages of development.

The following are examples of commonly applied zoning and subdivision regulatory approaches to new development in naturally hazardous areas:

- Transfer of allowable density or intensity from hazardous parts of a site to safer areas during development plan review
- Restriction of allowable residential densities, thereby reducing the potential number of structures at risk
- Enforcement of suitable building setbacks from flood, landslide, and fault zones
- Adoption of slope-density formulas to limit the number of dwellings on hillsides
- Modification of proposed parcel boundaries and street locations to avoid hazardous areas
- Requirement of multiple ingress and egress points for emergency access and evacuation
- Provision of adequate street widths for two-directional movement in an emergency
- Assurance of sufficient water storage and pressure for adequate fire flows

- Assurance of sufficient water supply during drought conditions

Also common is an array of complementary techniques for avoiding private property development in hazard-prone areas, such as the following:

- Application of agricultural and conservation easements by private land trusts
- Establishment of open space easements or donation of property for tax relief purposes
- Acquisition of land or development rights using developer fees or public park bonds
- Limitations on infrastructure provision and extensions

Together, these regulations and practices represent a powerful combination of tools to strengthen natural hazard mitigation in the course of day-to-day development planning review. Among these land use processes are three critical points at which communities make important risk reduction decisions related to new development in hazard-prone areas (each is described earlier in this chapter):

- Mandatory environmental review under [CEQA](#)
- General plan and zoning decisions
- Subdivision map approvals

Decisions at these critical points all have far-reaching consequences in areas where natural hazards can create the potential for damage to development. If flooding, geological, and other hazards are not sufficiently recognized at these key decision points, a multiplier effect can be created in which the existing hazards are distributed among many new land parcels authorized under the decision. Environmental review provides an opportunity to identify and evaluate risk-reducing natural hazard mitigation measures as a prelude to the land use planning process.

Central Valley Flood Protection Plan

The [Central Valley Flood Protection Plan](#) (CVFPP) is California's strategic blueprint to improve flood risk management in the Central Valley. It was prepared by Department of Water Resources ([DWR](#)) in accordance with the Central Valley Flood Protection Act of 2008 and adopted by the [CVFPB](#) in June 2012. The CVFPP guides the State's participation in managing flood risk in areas protected by the [State Plan of Flood Control](#) (SPFC). The CVFPP is updated every 5 years in accordance with the Central Valley Flood Protection Act.

The 2022 CVFPP update evaluates progress made since passage of major State bonds in 2007 and recommends future management actions led by State, federal, and local partners to continue implementation of the CVFPP. The update focuses on three themes:

- Climate resilience
- Performance tracking
- Alignment with other State efforts

Policy Recommendations

The 2022 [CVFPP](#) includes 15 high priority policy Issue recommendations:

1. Establish basin-specific task forces of high-level decision makers and staff from State, federal, and local agencies, Tribal Nations, and other partners to further advance implementation of projects and programmatic implementation of the CVFPP by State/federal/local/Tribal Nations.
2. Work with appropriate resource agencies to create and implement regional scale and long-term permitting mechanisms, where appropriate, for implementation and operation and maintenance of flood management activities, including multi-benefit projects.
3. Continue State leadership in the wise use of floodplains and promote floodplain best management guidance, supported by the California Strategic Floodplain Management Plan.
4. Collaborate with State, federal, and local partners to develop recommendations to improve existing processes to facilitate modification of federal authorizations for [SPFC](#) facilities.
5. Complete watershed-based climate change vulnerability and adaptation assessments building to a system scale for the Sacramento River and San Joaquin River Basins, to understand the anticipated changes in the flood system and investment needs supported by State/federal/Tribal Nation agencies.
6. Obtain increased State and federal stable funding for flood management, including ongoing investments and multi-benefit capital projects in the Central Valley by State, federal, and local agencies.
7. Continue to periodically update the best available science, tools, and data to improve understanding of the condition, performance, and response of the

flood system for CVFPP updates, conservation strategy updates, and related performance tracking systems in collaboration with partners.

8. Continue to enhance emergency preparedness plans, ability to respond in flood emergencies, and decreased notification and decision-making times.
9. Increase data collection and enhancement of forecasting tools and expand use of forecast-based operations to increase reservoir management flexibility and increase forecast lead times.
10. Secure annual dedicated funding to continue and expand the successful [Regional Flood Management Plan](#) (RFMP) Program, which will support the six regional flood management planning areas throughout the Central Valley's [SPFC](#): Mid and Upper Sacramento River, Feather River, Lower Sacramento River/Delta North, Lower San Joaquin River/Delta South, Mid San Joaquin River, and Upper San Joaquin River.
11. Continue to prioritize actions that repair and rehabilitate existing flood system features.
12. Use action plans developed through collaborative planning efforts to inform planning, design, funding, and implementation of priority near-term and long-term projects to progress regional flood management strategies for the San Joaquin River Basin.
13. Progress equity and environmental justice in flood management planning decision-making, implementation, and monitoring.
14. Explore, create, and implement regional-scale and long-term multi-benefit programs for planning, implementation, and long-term management that include single purpose projects as needed consistent with, and supportive of, broader regional actions to leverage funding sources and align program priorities.
15. Continue to align the SHMP with other State plans such as the California Water Resilience Portfolio, the CVFPP, the California Water Plan Update, and the Delta Stewardship Council's Delta Plan.

Management Actions

The 2022 CVFPP describes how the State is continuing to refine and implement Management Actions. These actions include larger-scale, multi-benefit actions that generally provide cross-regional benefits in the Central Valley and enhance climate resilience. Management actions support intended outcomes under public safety,

ecosystem vitality, economic stability, and enriching experiences. These large-scale actions greatly bolster overall system resiliency in a way that complements smaller-scale urban, rural, and small community actions. Figure 46-1 defines the different types of management actions.

Figure 46-1. Ongoing Management Action Categories for the 2022 State Systemwide Investment Approach Portfolio

Management Action Category	Management Actions
Systemwide	<ul style="list-style-type: none"> • State operations, planning, and performance tracking. • Systemwide risk assessments. • Emergency management. • Reservoir operations. • Annual operation and maintenance. • Flood management policy actions.
Urban	<ul style="list-style-type: none"> • Risk awareness, floodproofing, and local land use planning. • Studies and analysis.
Rural	<ul style="list-style-type: none"> • Risk awareness, floodproofing, and local land use planning. • Studies and analysis.
Small Community	<ul style="list-style-type: none"> • Risk awareness, floodproofing, and local land use planning. • Studies and analysis.

Source: (CVFPB 2022)

Building on the 2017 CVFPP update, refinements to the State Systemwide Investment Approach for 2022 reflect updated risk and management actions, performance tracking, climate change analysis and resilience, alignment with other State efforts, and new information, tools, and data, including components from the conservation strategy.

The management actions outlined in the 2022 CVFPP include but are not limited to:

- Continued support and implementation of systemwide improvements to the SPFC.
- Continued support and implementation of urban actions leading to the achievement of 200-year urban level of protection for urban communities protected by SPFC levees. Urban actions help achieve protection from the 200-year (0.5% annual chance) flood, significantly improve flood risk

management, and support intended outcomes related to public safety and economic stability.

- Continue to assist and advocate for rural actions. Rural areas may receive flood risk reduction benefits through upstream or adjacent systemwide, urban, and small community actions. Rural areas also receive greater benefit from:
 - Flood system operation and maintenance
 - Systemwide, floodplain expansion and reconnection
 - Flood preparedness and emergency response
 - Nonstructural floodplain risk management actions that provide cost-effective means of achieving desired outcomes and enhancing climate resilience in rural areas
- Continued support and implementation of the Small Communities Flood Risk Reduction Program to help communities with fewer than 10,000 residents protected by the SPFC achieve 100-year level of protection, where feasible. Since 2017, this program has achieved the following:
 - 35 small communities (including 14 disadvantaged communities) received State funding for feasibility studies in their communities.
 - Knights Landing (Lower Sacramento River/Delta North [RFMP](#)), Grimes (Mid and Upper Sacramento River RFMP), and Franklin-Beachwood (Mid-San Joaquin River RFMP) received additional State funding to advance their projects into the design and construction phases.
- Continued support and implementation of the CVFPP Conservation Strategy. The CVFPP Conservation Strategy provided data and information to support the development of the 2022 CVFPP by guiding the integration and improvement of ecosystem functions associated with flood risk reduction actions and providing the basis for recommending conservation actions for five conservation planning areas, included in the Systemwide Planning Area for the CVFPP.

Regional Flood Management Planning

Regional flood management planning groups support 5-year updates to the CVFPP by identifying and describing region-specific challenges, priorities, and accomplishments. They provide insight into various flood management projects, needs, and objectives. The [RFMPs](#) are separated into six planning areas throughout the Central Valley: Mid and Upper Sacramento River, Feather River, Lower Sacramento River/Delta North, Lower San Joaquin River/Delta South, Mid San Joaquin River, and Upper San Joaquin River. The RFMPs align with the CVFPP and its investment strategy. They highlight

potential funding needs, identify areas for improvement, and provide a foundation for regional engagement.

Each RFPM includes a high-level overview for each planning area. The region-specific flood management challenges highlight areas for growth, future needs, and implementation obstructions. The priorities focus on future projects, goals, and objectives that are desired or essential to improving flood management capacity in the region. Finally, the accomplishments describe projects and achievements that have helped improve flood management capabilities in the region.

46.1.2. Building Codes

State regulations that affect the ability of buildings to withstand hazard events are included in the codes summarized in Table 46-2.

Table 46-2. State Codes Relevant to Buildings and Hazards

Code	Code Description	Hazard-Resistant Provisions
California Building Standards Code (California Code of Regulations [CCR] Title 24)	Establishes the regulations applied to building and construction within the State of California	Flood provisions, soil provisions
Chapter A3, California Building Code	Prescriptive provisions for seismic strengthening of cripple walls and sill plate anchorage of light, wood-frame residential buildings	Provides code for the voluntary retrofit of single-family residences that are wood-framed and have a raised foundation
California Water Code	Establishes regulations applied to water resources and water service providers within the State of California.	Division 5—flood control; Division 14—California Water Storage District Law
California Health and Safety Code	Establishes regulations applied to public health and safety resources and services within the State of California	Division 32—Seismic Safety Building Rehabilitation Loans

Source: (California Legislature n.d.)

Hazard Mitigation Through Building Codes

According to the Federal Emergency Management Agency (FEMA), one of the most cost-effective ways to safeguard communities against natural disasters is to adopt and follow hazard-resistant building codes. During a natural disaster, such codes can reduce casualties as well as building damage. Building codes also help communities

get back on their feet faster by minimizing indirect costs such as business interruptions and lost income.

With hazard-resistant codes, buildings are constructed to withstand high winds, flooding, and earthquakes. The additional cost of the building features (roof tie-downs, window protection, strengthened walls and roof coverings, etc.) is on average less than 2 percent of total construction costs. Based on forecasted growth, FEMA estimates \$132 billion in reduced property losses associated with use of modern building codes from 2000-2040.

Modern building codes address many concerns, including public health and safety, resiliency, and affordability. Some states have broken the chain of destruction by adopting modern building codes that protect property and people during natural disasters. Florida and California, pioneers in this field, have had modern hazard-resistant building codes in place since the 1990s. Other states, such as Virginia, New York, and Montana, have followed suit, putting in place statewide building codes that local jurisdictions are required to adopt.

46.1.3. NFIP Administration

Technical Assistance

DWR, on behalf of FEMA, provides individual technical assistance to California communities participating in the National Flood Insurance Program (NFIP) by conducting Community Assistance Visits and Community Assistance Contacts. The Community Status Book Report database lists participating communities, the date of their current flood map and entry into the program (FEMA 2022v). See Appendix P for the complete list of NFIP communities. Approximately 99 percent of California communities participate in the NFIP (DWR 2022i).

DWR provides statewide NFIP workshops that are designed to interpret and explain the NFIP regulations and to give an overview of the need for community-based floodplain management.

DWR and FEMA conduct workshops for floodplain management agencies, including State and local officials. The workshops allow floodplain management officials to have a greater understanding of FEMA's minimum regulation requirements and how to meet them.

Based on data provided by FEMA, the State of California had 192,404 flood insurance policies in force with \$58.4 million, 100 in total coverage as of October 31, 2022 (FEMA n.d.). The total annual premium for these policies was \$158 million—an average cost per policy of \$823.73. Also as of October 31, 2022, 50,344 flood insurance claims have been paid, totaling \$626 million—an average of \$12,446 per claim (FEMA n.d.).

Community Rating System Involvement

The Community Rating System (CRS) is an extension of the NFIP that provides insurance premium discounts based on a community's enforcement of higher regulatory standards. DWR's strategy toward CRS participation in the State has two main goals:

- Bring more communities into the CRS program
- For communities already in the program, improve their CRS classification

The strategy has four main elements and a series of projects associated with them:

- **Encourage Participation**—State staff promote the CRS and help communities join the program. DWR explains the benefits of the CRS to elected officials and other local decision makers so they will encourage their staff to devote the resources needed to join the CRS or improve their classification.
- **Facilitate Credits**—DWR and other State agencies help communities receive credit for State programs.
- **Improve Local Programs**—Training, templates, models, and examples help communities improve their floodplain management activities and receive CRS credit for them.
- **Track Progress**—DWR can see where improvements are made, adjust, and measure the worth of its efforts.

Currently, California has 89 communities participating in the CRS program. This accounts for 66 percent of the NFIP policy base statewide, representing a majority of flood problem areas in the State. The CRS benefits more than 167,000 policyholders and saves property owners and businesses over \$14.5 million each year. See Appendix P for the complete list of CRS communities.

46.1.4. Hazard Mapping

The California Governor's Office of Emergency Services (Cal OES) hosts a site called *MyHazards*, which facilitates the identification of hazards by individuals, businesses,

and local government. *MyHazards* is a tool for members of the general public to discover hazards in their area (earthquakes, floods, fires, and tsunamis) and learn steps to reduce personal risk (Cal OES 2022c).

Using the *MyHazards* tool, users may enter an address, city, and zip code, or select a location from a map. The map targets the location and allows users to zoom and scroll to their desired view. The screen then presents information on the risks identified within the search radius and recommended actions. Hazard data is approximate and data layer visibility is subject to the extent of the map. The *MyHazards* tool incorporates state and federal data on tsunami, liquefaction, earthquake, wildfire, and flood hazards (Cal OES 2022c).

46.2. FUNDING

Cal OES administers federal Hazard Mitigation Assistance (HMA) programs in California. Detailed discussions about Cal OES's program management capabilities in administering each of the FEMA HMA programs are included in Chapter 50.

When a federal disaster is declared, FEMA Hazard Mitigation Grant Program (HMGP) funds become available to support planning and project efforts to mitigate the effects of future disasters. Following Fire Management Assistance Declarations, HMGP Post Fire funds are made available for short- and long-term wildfire mitigation. In California, these funds are administered by Cal OES's Hazard Mitigation Section. Annual HMA programs such as the [Building Resilient Infrastructure and Communities](#) (BRIC) Program, and Flood Mitigation Assistance (FMA) funds are also administered by the Cal OES Hazard Mitigation Section.

Eligible applicants include State agencies, local governments, special districts, federally recognized Tribal Nations, and private non-profit organizations, consistent with 44 CFR 206.221 (e). Eligible mitigation projects and planning activities can be funded through the HMGP, BRIC, and [FMA](#) programs.

See Sections 51.4 and 53.2 and Appendix O for additional funding opportunities identified by this SHMP.

46.3. OBSTACLES, CHALLENGES, AND PROPOSED SOLUTIONS

This section meets FEMA's requirement that state hazard mitigation plans describe "obstacles, challenges and proposed solutions related to any state capabilities, including a brief discussion of potential strategies for overcoming any challenges related to implementing and enforcing hazard-resistant building codes statewide, as applicable, and changes since the previous plan approval" (FEMA 2022r).

Throughout the stakeholder engagement process for the 2023 SHMP update, stakeholders noted gaps and challenges in existing State capabilities to implement hazard mitigation actions and build resilience. Prominent among those concerns was limited statewide data to assess the presence of equity priority communities, as well as a lack of a singular State standard for climate change and sea-level rise data.

Ensuring that these data sources are readily available will equip decision makers with the knowledge they need to integrate mitigation into their practices. For example, providing elected officials and land use planners with data regarding equity priority communities and the barriers within these communities can inform future investments to address issues such as limited public transportation and housing. Cal OES convened a group of equity stakeholders to form the Equity Working Group to identify the most appropriate datasets for use in the Plan update. Cal OES also recently established an Office of Diversity, Equity, and Inclusion (ODEI) that will regularly engage with the Hazard Mitigation Section to aid in identifying the best available data on equity during the SHMP maintenance phase. [ODEI](#) will be engaged with statewide equity initiatives. The Hazard Mitigation Section will provide information from these engagements to local jurisdictions via tools and resources for use in their planning processes.

Identifying a State-supported and recommended data source for climate change and sea-level rise data will ensure consistency across planning efforts and initiatives throughout the State. It also will facilitate the prioritized allocation of resources to ensure that data stays up-to-date and readily available to State agencies and local jurisdictions. California is preparing its Fifth Climate Assessment, which will leverage diverse expertise throughout the State to contribute to the scientific foundation for understanding climate-related vulnerability in California. It will support on-the-ground implementation and decision-making at the local, regional, Tribal Nation, and State levels, focusing on the needs of communities most vulnerable to climate change

impacts. The assessment will consider California-specific research needs and questions related to climate change impacts, including down-scaled data related to risk for wildfire, heavy precipitation, flooding, extreme heat, drought, sea-level rise, and other hazards. The assessment will result in a suite of regional, topical, and statewide reports that prioritize equity in the translation of this cutting-edge research to meet the needs and context of regions across the State. Data and conclusions from this effort will inform the next update of the SHMP, as well as future LHMPs. This effort will reduce the challenge of identifying State-supported data sources for climate change.

Other challenges identified through the SHMP update process include obtaining the implementation status of mitigation actions. This issue most often arose when there had been turnover at the lead agency, resulting in the loss of institutional knowledge. Cal OES plans to enhance its existing monitoring tools and increase engagement with partner agencies on SHMP actions during the SHMP maintenance phase to improve situational awareness of implementation efforts and allow for better tracking.

This SHMP builds upon State efforts to establish a framework for ongoing maintenance and monitoring of SHMP activities. Chapter 48 includes the addition of a mitigation action status report as part of monitoring efforts. The status report will provide a dedicated opportunity to obtain the status of a mitigation action at least annually. The form will serve as an ongoing documentation tool to maintain situational awareness from year-to-year on what steps have been taken toward implementation. The addition of this tracking mechanism will eliminate the challenge of losing visibility on the status of mitigation actions as a result of staff turnover and other issues. Relatedly, Action # 2018-002 seeks to strengthen inter-agency coordination actions, including State, regional, and local linkages, and to establish and track the progress of inter-agency advisory groups, task forces, and work groups to ensure vertical and horizontal integration and coordination of mitigation planning and implementation.

47. MITIGATION ACTIONS

Mitigation actions for this SHMP were identified through the following sources:

- Actions were identified with an emphasis on addressing hazards with the highest impacts, as measured by the hazard impact scoring presented in Section 4.1.3. The action plan focuses on hazards with either high or medium impact scores. Actions to address hazards with low impact scores were considered optional.
- 2018 SHMP Mitigation Strategy—All actions that are not yet completed were updated and included as described in Section 45.1.
- SHMP Hazard and Working Groups convened to develop new action items to address hazards in the Risk Assessment and gaps in agency capabilities.
- SHMP Hazard and Working Group members submitted recommended actions in an action item follow-up form. Cal OES reviewed and approved each action for inclusion in the SHMP.

47.1. IDENTIFIED ACTIONS

Table 47-1 presents the recommended SHMP Mitigation Action Plan, providing the following information:

- | | |
|---|--|
| ▪ Mitigation action title and description | ▪ Whether new or existing assets are benefitted |
| ▪ Agencies responsible for implementation | ▪ Estimated cost to implement the action |
| ▪ Hazards mitigated and their associated impact ratings | ▪ Potential funding sources (see Appendix O for a complete list) |
| ▪ Mitigation objectives met | ▪ Anticipated timeline during which the action can be completed |
| ▪ Community lifelines addressed | |

The following are descriptions of action attributes included in the action plan:

- **Action Numbering**—The action plan assigns a numeric identifier to each action for tracking and progress reporting. Actions with a “2023” prefix are new actions identified for this SHMP update. Actions with a “2018” prefix are actions carried over from the 2018 SHMP.
- **Hazards Mitigated**—The action plan lists which hazards of concern each action will mitigate “All hazards” indicates that the action has potential to mitigate all 34 hazards of concern assessed in this SHMP.
- **Objectives Met**—The action plan lists which objectives identified in Chapter 44 each action will help to meet.
- **Community Lifelines Addressed**—The action plan lists which of the seven FEMA categories for lifelines each action will protect.
- **New or Existing Assets**—The action plan identifies whether each action will reduce risk to new assets as they are built, existing assets (i.e., retrofits), or both.
- **Estimated Costs**—The action plan provides general cost information as follows:
 - **High**—The State would require funding from an outside source (i.e., grant) to implement the action.
 - **Medium**—The action could be funded under an existing State program budget, but funds for the action have not currently been obligated.
 - **Low**—Funding for the action has already been obligated and the action is considered to be an ongoing action.
- **Potential Funding Sources**—The action plan lists options for funding the action, including any match requirements for actions targeted for grant funding.
- **Timeline**—The action plan provides general project implementation timing as follows:
 - **Short-Term**—The action can be completed within the five-year performance period for the SHMP.
 - **Long-Term**—The action is likely to take longer than five years to complete.
 - **Ongoing**—The action is already funded and being implemented by the State.

47.2. PRIORITIZATION



S10 – 44 CFR 201.4(c)(3)(i), 201.4(c)(3)(ii) and 201.4(c)(3)(iii): Does the plan prioritize mitigation actions to reduce vulnerabilities identified in the risk assessment?

Section 47.2 defines a prioritization schema that was applied for this plan update process.



Standard 4.2.2:

The Emergency Management Program documents project ranking based upon the greatest opportunity for loss reduction and documents how specific mitigation actions contribute to overall risk reduction. The process for prioritizing mitigation actions for inclusion in the 2023 SHMP is documented in Section 47.2.

As described in Section 45.2, Cal OES prioritized actions for this SHMP by answering 15 questions, weighing the responses, and assigning a priority ranking from 0 to 3. Total scores from 0 to 14 defined a low priority, 15 to 30 were medium priority, and actions with scores between 31 and 45 ranked high priority. Most of the actions were ranked with a medium priority (69), and the remainder (23) were ranked high. Table 47-2 indicates the priority for each action in the SHMP Mitigation Action Plan.

Responsible Agencies

In the mitigation action plan table that follows, responsible agencies are identified by the following acronyms or short forms:

- BOF—California Board of Forestry and Fire Protection
- CAL FIRE—California Department of Forestry and Fire Protection
- Cal OES—California Governor's Office of Emergency Services
- Cal/OSHA—California Department of Industrial Relations Division of Occupational Safety and Health
- CalGEM—California Department of Conservation Geologic Energy Management
- Caltrans—California Department of Transportation
- CARB—California Air Resources Board
- CBSC—California Building Standards Commission
- CDFA—California Department of Food and Agriculture
- CDPH —California Department of Public Health
- CDT—California Department of Technology
- CEA—California Earthquake Authority
- CEC—California Energy Commission
- CGS—California Geological Survey
- CNRA—California Natural Resources Agency
- Coastal Commission—California Coastal Commission
- CPUC—California Public Utilities Commission
- CSU—California State University
- CVFPB—Central Valley Flood Protection Board
- DOC— California Department of Conservation
- DSOD—California Division of Safety of Dams
- DWR—California Department of Water Resources
- HCD—California Department of Housing and Community Development
- NOAA—National Oceanic and Atmospheric Administration
- OEHHA—California Office of Environmental Health Hazard Assessment
- OPC— California Ocean Protection Council
- OPR—California Governor's Office of Planning and Research
- OSFM— California Office of the State Fire Marshal
- OSPR—California Department of Fish and Wildlife Office of Spill Prevention and Response
- SGC—California Strategic Growth Council
- SLC—California State Lands Commission
- SSC—California Seismic Safety Commission
- USGS—U.S. Geological Survey
- Water Boards—California State Water Resources Control Board

**HHPD4: Did Element S10 (mitigation actions) prioritize mitigation actions and activities to reduce vulnerabilities from high hazard potential dams?**

The Plan identifies and prioritizes nine mitigation actions that would reduce vulnerabilities from high hazard potential dams as shown in Table 47-1.

**S11 – 44 CFR 201.4(c)(3)(iv): Does the plan identify current and potential sources of funding to implement mitigation actions and activities?**

For every action identified below in Table 47-1, a current or potential funding source(s) has been identified.

**HHPD5: Did Element S11 (funding sources) identify current and potential sources of funding to implement mitigation actions and activities for high hazard potential dams?**

For every action relating to high hazard potential dams identified below in Table 47-1, a current or potential funding source(s) has been identified.

Table 47-1. SHMP Hazard Mitigation Action Plan

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-001 [HIGH Priority]: Encourage integration of community wildfire protection plans into LHMPs by adding the requirements that are unique to community wildfire protection plans to the LHMP review tool as an “optional” component. Then promote this concept through targeted outreach to areas of the State that this integration would benefit.					
Responsible Agencies: Cal OES					
Hazards Mitigated: Wildfire (<i>High Impact Hazard</i>)					
1, 3, 4, 5, 6, 12	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (HMGP Post Fire)	Ongoing
Action 2023-002 [MEDIUM Priority]: Conduct both structural and non-structural assessments of State-owned facilities that identify vulnerabilities and feasible alternatives to retrofit those vulnerabilities.					
Responsible Agencies: Cal OES					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
3, 4, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	Existing	High	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2023-003 [MEDIUM Priority]: Develop a Hazus repository for earthquake and flood hazards where local planning efforts that create these models can share this information with the State once the models have been developed.					
Responsible Agencies: SSC , DWR					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
1, 3, 12, 13, 16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-004 [MEDIUM Priority]: Leverage existing State programs to develop and support programs for the assessment and retrofit of structures identified with soft-story construction.					
Responsible Agencies: SSC					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 3, 5, 10, 14, 16	Food, Water, Shelter	Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2023-005 [MEDIUM Priority]: Coordinate planning efforts for aquifer storage and recharge actions within areas of known liquefaction risk so that the liquefaction risk is not increased by the storage basin mitigation action.					
Responsible Agencies: DWR					
Hazards Mitigated: Drought, Earthquake (<i>High Impact Hazard</i>)					
1, 3, 5, 16	Food, Water, Shelter	New and Existing	Low	State Budget	Ongoing
Action 2023-006 [HIGH Priority]: Promote the HCD "Prohousing Designation Program". Encourage cities and counties to apply for this designation to receive points or preference in competitive housing, community development, and infrastructure programs.					
<ul style="list-style-type: none"> Strengthen protections for people who are experiencing homelessness and are extremely vulnerable to climate risks through funding programs for permanent and interim housing. Invest Community Development Block Grant (CDBG) funds in long-term disaster recovery and resilience building that targets the unmet housing recovery needs of low and moderate-income households in a way that mitigates disaster risk and reduces future losses among vulnerable communities. Implement climate resilience and sustainable building strategies in addition to enforcing "CALGreen," California's green building code. Encourage greater diversity of housing types in all neighborhoods and encourage new housing development in existing communities to reduce vehicle miles traveled and mitigate climate change while simultaneously addressing housing need. 					
Responsible Agencies: HCD					
Hazards Mitigated: Air Pollution; Drought; Extreme Cold or Freeze; Extreme Heat; Wildfire					
1, 3, 5, 7, 8, 9, 15, 16	Food, Water, Shelter	New and Existing	Low	State Budget, CDBG	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-007 [HIGH Priority]: CEA Grants—Provide financial support to homeowners to retrofit single-family soft-story residences. The Earthquake Soft-Story Program is under development and is expected to open for registration in early 2023. The program provides up to \$13,000 per residential unit for seismic residential retrofitting.					
Responsible Agencies: CEA					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
3, 5, 10, 14, 15	Food, Water, Shelter	Existing	High	CEA Loss Mitigation Fund, State Budget, FEMA HMA (BRIC, HMGP, Public Assistance [PA] Mitigation)	Ongoing
Action 2023-008 [HIGH Priority]: CEA Grants					
<ul style="list-style-type: none"> Provide financial support to building owners to retrofit multi-family, soft-story residences. The Multi-Family, Soft-Story Retrofit Program was recently notified of Round 1 approval for a BRIC grant, with tentative development to begin upon FEMA approval. The program will provide grants for seismic residential retrofitting of multi-family housing units in areas with high seismicity and social vulnerability index (SVI) scores. Provide financial support to homeowners to retrofit single-family residences. The Earthquake Brace + Bolt Program (EBB) was initiated in 2013. As of 2023, the program has retrofitted more than 19,000 single-family residences throughout the State. The EBB provides up to \$3,000 per residential unit for seismic residential upgrading. Funding has been collectively provided through the CEA Loss Mitigation Fund, the State of California, and through FEMA HMGP grants. 					
Responsible Agencies: CEA					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
3, 5, 10, 14, 15	Food, Water, Shelter	Existing	High	CEA Loss Mitigation Fund, State Budget, FEMA HMA (BRIC, HMGP, PA Mitigation)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-009 [HIGH Priority]: Implement the 2022 Central Valley Flood Protection Plan (CVFPP). Complete urban level of flood protection projects for the City of West Sacramento, the City of Stockton, the City of Manteca, and the City of Lathrop to achieve the 200-year level of flood protection for levee-protected urban areas (greater than 10,000 residents) in the Central Valley.					
Responsible Agencies: DWR					
Hazards Mitigated: Levee Failure (<i>Medium Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
1, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	High	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Long-term
Action 2023-010 [HIGH Priority]: Implement the 2022 CVFPP. Complete Central Valley Small Community Flood Risk Reduction Program (communities between 200 and 10,000 residents) to achieve the 100-year level of flood protection for levee-protected small communities.					
Responsible Agencies: DWR					
Hazards Mitigated: Levee Failure (<i>Medium Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
1, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	High	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Long-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-011 [HIGH Priority]: Pre-Wildfire Geologic Hazard Mitigation Planning & Post-Wildfire Hazard Identification Program—Build capacity by increasing current staffing and resources to fully implement each task of the program: <ul style="list-style-type: none"> Pre-fire mud and debris flow and flooding hazard awareness and planning Post-fire watershed emergency assessment focused on life/safety hazards from debris flows, flooding, rockfall, etc. Post Watershed Emergency Response Team (WERT) mud and debris flow and flood hazard emergency planning Burn area monitoring and process refinement Outreach and education Necessary ongoing support materials 					
Responsible Agencies: CGS					
Hazards Mitigated: Landslide, Debris Flow, and other Mass Movements (<i>High Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Wildfire (<i>High Impact Hazard</i>)					
1, 2, 3, 5, 13, 16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	High	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
<p>Action 2023-012 [HIGH Priority]: Continue to support programs that promote the mitigation of FEMA-identified repetitive loss (RL) and severe repetitive loss (SRL) properties. This will include but is not limited to:</p> <ul style="list-style-type: none"> ■ Create a pathway for access to RL/SRL data in support of local hazard mitigation planning ■ Encourage the mitigation of RL/SRL properties through the State's outreach efforts for the suite of HMA grant programs ■ Encourage participation in FEMA's CRS program that targets the mitigation of RL properties ■ Prioritize the understanding of where RL/SRL properties are within the State and why they are experiencing repetitive flood loss 					
Responsible Agencies: DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
1, 3, 4, 5, 6, 10, 12, 14, 15, 16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
<p>Action 2023-013 [HIGH Priority]: Federal High Hazard Potential Dam (HHPD) Inundation Mapping—Continue to develop inundation models for federal high hazard potential dams in the State.</p>					
Responsible Agencies: Cal OES, DSOD					
Hazards Mitigated: Dam Failure (<i>Medium Impact Hazard</i>)					
2, 3, 4, 10	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget; HHPD grants	Short-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-014 [HIGH Priority]: California Wildfire Mitigation Program – Provide a framework, tools, and support that will allow communities to establish locally led programs to harden, retrofit, and establish defensible space around residences, prioritizing equity priority communities and individuals. Implement the demonstration projects and develop a scaling-up strategy.					
Responsible Agencies: Cal OES, CAL FIRE					
Hazards Mitigated: Wildfire (<i>High Impact Hazard</i>)					
1, 4, 5, 6, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2023-015 [MEDIUM Priority]: Coordinate with State-led programs that support mitigation goals to align timelines and funding sources to achieve mitigation planning, local capacity building, project scoping, and project implementation.					
Responsible Agencies: Cal OES, OPR, CAL FIRE, CNRA, SGC , DWR, CGS/DOC					
Hazards Mitigated: Avalanche (<i>Medium Impact Hazard</i>), Dam Failure (<i>Medium Impact Hazard</i>), Drought (<i>Medium Impact Hazard</i>), Earthquake (<i>High Impact Hazard</i>), Flood (<i>High Impact Hazard</i>), Landslide/debris flows/other mass movements (<i>High Impact Hazard</i>), extreme heat, extreme cold (<i>High Impact Hazard</i>), severe wind/weather/storms (<i>High Impact Hazard</i>), Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>), Tsunami (<i>Medium Impact Hazard</i>), Wildfire (<i>High Impact Hazard</i>), Volcano (<i>Low Impact Hazard</i>)					
1, 4, 5, 6, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-016 [HIGH Priority]: Provide technical assistance, tools, and support for communities to undertake a mitigation-informed recovery process, including through accessing Public Assistance (PA) (406) Mitigation Funds to harden damaged infrastructure after disasters.					
Responsible Agencies: Cal OES, CGS					
Hazards Mitigated: Avalanche (<i>Medium Impact Hazard</i>), Dam Failure (<i>Medium Impact Hazard</i>), Drought (<i>Medium Impact Hazard</i>), Earthquake (<i>High Impact Hazard</i>), Flood (<i>High Impact Hazard</i>), Landslide/debris flows/other mass movements (<i>High Impact Hazard</i>), extreme heat, extreme cold (<i>High Impact Hazard</i>), severe wind/weather/storms (<i>High Impact Hazard</i>), Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>), Tsunami (<i>Medium Impact Hazard</i>), Wildfire (<i>High Impact Hazard</i>), Volcano (<i>Low Impact Hazard</i>)					
1,5,7,10,16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA section 406 (PA)	Ongoing
Action 2023-017 [HIGH Priority]: Update and maintain Fire Hazard Severity Zone maps to help local agencies and Californians determine high wildfire hazard areas to inform preparedness efforts.					
Responsible Agencies: CAL FIRE					
Hazards Mitigated: Wildfire (<i>High Impact Hazard</i>)					
1, 4, 5, 6, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget	Ongoing
Action 2023-018 [High Priority]: Continue to develop, update, and maintain liquefaction mapping in the State utilizing best available data and science.					
Responsible Agencies: CGS					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 4, 5, 6, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, NEHRP grant Funding	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
<p>Action 2023-019 [High Priority]: Development of Statewide Extreme Heat Ranking System – provide subject matter expertise and technical assistance to create the nation's first extreme heat advanced warning and ranking system to better prepare communities for heat waves by:</p> <ul style="list-style-type: none"> Support development of outreach plans for reaching diverse and vulnerable populations and recommendations for tailored communications by local governments that include the use of culturally appropriate materials translated into different languages based on common languages spoken in the community. Support in developing recommendations to local governments regarding relevant heat prevention, preparedness, and resilience measures. 					
Responsible Agencies: CalEPA, OPR, CDPH					
Hazards Mitigated: Extreme Heat (High Impact Hazard)					
1, 2, 3, 5, 9, 11, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	General Fund	Ongoing
<p>Action 2023-020 [High Priority]: Perinatal Extreme-Heat Health Effects and Pregnant Individual Safety Guidance – CDPH will review existing research on the perinatal health effects of extreme heat and develop guidance for pregnant individuals and infant children on safe conditions and health considerations during extreme heat, including guidance on safe outdoor conditions for pregnant workers. Develop a report with recommendations on best practices for linking pregnant individuals to health and well-being information on extreme heat.</p>					
Responsible Agencies: CDPH					
Hazards Mitigated: Extreme Heat (High Impact Hazard)					
1, 2, 3, 5, 9, 11, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	Self-funded by CDPH on a limited-term basis	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2023-021 [High Priority]: Climate Syndromic Surveillance Program – Develop and implement a statewide syndromic surveillance system, which will provide near real-time notification from emergency departments of climate-related conditions, complaints, and discharge diagnoses, allowing for early warnings of heat-related illness cases.					
Responsible Agencies: CDPH					
Hazards Mitigated: Extreme Heat (High Impact Hazard)					
1, 2, 3, 5, 9, 11, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	General Fund	Ongoing
Action 2018-001 [HIGH Priority]: Mitigation legislation and implementation—Support legislative efforts that formalize California's comprehensive mitigation program including:					
<ul style="list-style-type: none"> Support ongoing funding for mitigation planning and action for all communities Support funding, training, and technical assistance for local capacity building Eliminate or significantly reduce barriers to entry for equity priorities to undertake mitigation Streamline the implementation of mitigation projects Promote innovative mitigation solutions 					
Responsible Agencies: Cal OES, Delta Stewardship Council, CAL FIRE, OSFM , CARB , CNRA, OPR					
Hazards Mitigated: All hazards					
1, 4, 5, 6, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-002 [HIGH Priority]: Strengthen inter-agency coordination actions including State, regional, and local linkages. Establish and track the progress of inter-agency advisory groups, task forces, and work groups to ensure vertical and horizontal integration and coordination of mitigation planning and implementation.					
Responsible Agencies: OPR, Cal OES, OPC , CNRA					
Hazards Mitigated: All hazards					
1, 4, 5, 6, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget; HHPD grants	Ongoing
Action 2018-003 [HIGH Priority]: Broaden public and private sector mitigation linkages through the following programs:					
<ul style="list-style-type: none"> Great California Shake Out Fire Safe Councils State Water Efficiency and Enhancement Program California Solar Initiative California Cybersecurity Task Force 					
Responsible Agencies: OPR, Cal OES, OPC, CNRA					
Hazards Mitigated: All hazards					
1, 4, 5, 6	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget	Ongoing
Action 2018-005 [HIGH Priority]: Incorporate climate change into local, regional, and statewide hazard profiles, risk assessments, and mitigation plans.					
Responsible Agencies: OPR, Local Jurisdictions, Cal OES, State Hazard Mitigation Team					
Hazards Mitigated: Climate Change (<i>High Impact Hazard</i>)					
1, 2, 4, 5, 10, 11, 13	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP), applicable local jurisdictions	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-006 [MEDIUM Priority]: Enhance collaboration on the development and sharing of data systems and geographic information system (GIS) modeling for the SHMP's Risk Assessment analysis to develop an ArcGIS Online Hub site that will facilitate the sharing of relevant information to State and local partners.					
Responsible Agencies: Cal OES, CDI , OPR, CARB, OEHHHA , CDPH, CGS, DWR, SLC, CAL FIRE					
Hazards Mitigated: Air Pollution (<i>High Impact Hazard</i>); Dam Failure (<i>Medium Impact Hazard</i>); Drought (<i>Medium Impact Hazard</i>); Earthquake (<i>High Impact Hazard</i>); Epidemic/Pandemic/Vector-Borne Disease (<i>Medium Impact Hazard</i>); Extreme Cold or Freeze (<i>High Impact Hazard</i>); Extreme Heat (<i>High Impact Hazard</i>); Geomagnetic Storm (<i>Low Impact Hazard</i>); Invasive and Nuisance Species (<i>Medium Impact Hazard</i>); Landslide, Debris Flow, and other Mass Movements (<i>High Impact Hazard</i>); Levee Failure (<i>Medium Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>Medium Impact Hazard</i>); Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>); Severe Wind, Weather and Storms (<i>High Impact Hazard</i>); Snow Avalanche (<i>Medium Impact Hazard</i>); Subsidence (<i>Medium Impact Hazard</i>); Tree Mortality; Tsunami and Seiche (<i>Medium Impact Hazard</i>); Volcano (<i>Low Impact Hazard</i>); Well Stimulation and Hydraulic Fracturing (<i>Low Impact Hazard</i>); Wildfire (<i>High Impact Hazard</i>)					
1, 2, 5, 10, 12, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire, FMA); HHPD grants	Ongoing
Action 2018-007 [MEDIUM Priority]: Support and coordinate monitoring of progress on State goals and objectives. Set systematic near- and long-term mitigation targets and priorities. Develop a robust mitigation action tracking system.					
Responsible Agencies: Cal OES, State Departments and Agencies, CARB, DWR, CEC					
Hazards Mitigated: All hazards					
4, 5, 6, 8, 9, 10, 16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget; HHPD grants	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-008 [MEDIUM Priority]: Develop a database describing the specific natural hazard event that each project in the SHMP and LHMPs is designed to mitigate. These detailed “trigger events” describe the situation that will test the completed projects and include specific metrics. This database will enhance capabilities to conduct robust loss avoidance studies.					
Responsible Agencies: Cal OES, State Departments and Agencies					
Hazards Mitigated: Dam Failure (<i>Medium Impact Hazard</i>); Drought (<i>Medium Impact Hazard</i>); Earthquake (<i>High Impact Hazard</i>); Extreme Cold or Freeze (<i>High Impact Hazard</i>); Extreme Heat (<i>High Impact Hazard</i>); Geomagnetic Storm (<i>Low Impact Hazard</i>); Invasive and Nuisance Species (<i>Medium Impact Hazard</i>); Landslide, Debris Flow, and other Mass Movements (<i>High Impact Hazard</i>); Levee Failure(<i>Medium Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>); Severe Wind, Weather and Storms (<i>High Impact Hazard</i>); Snow Avalanche (<i>Medium Impact Hazard</i>); Subsidence (<i>Medium Impact Hazard</i>); Tree Mortality (<i>Medium Impact Hazard</i>); Tsunami and Seiche (<i>Medium Impact Hazard</i>); Wildfire (<i>High Impact Hazard</i>)					
1, 2, 5, 10, 12, 13	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire, FMA; HHPD grants	Ongoing
Action 2018-009 [HIGH Priority]: California Global Warming Solutions Act (AB 32)—Reduce Greenhouse Gas (GHG) emissions to 40 percent below 1990 levels by 2030. Implement the proposed CARB Scoping Plan, building on key programs to reduce GHG emission in the energy-producing, transportation, agriculture, and forestry sectors.					
Responsible Agencies: CARB					
Hazards Mitigated: Climate Change					
2, 3, 4, 11, 13, 15	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget, U.S. Environmental Protection Agency (EPA)	Short-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
<p>Action 2018-010 [MEDIUM Priority]: Interagency Coordination—Coordinate the activities of State agencies to improve air and water quality; protect natural resources and agricultural lands; increase the availability of affordable housing; improve infrastructure systems; promote public health; and assist State and local entities in the planning of sustainable communities and meeting AB 32 goals.</p> <ul style="list-style-type: none"> Provide technical support and feedback on climate change issues to be addressed in the California Water Plan Update. Review and develop policy and operational recommendations associated with the effects of climate change on fire preparedness and response planning. Provide guidance for agencies to incorporate and integrate climate change into all planning and investment decisions. Ensure the State's ability to adapt to climate change impacts on ocean and coastal resources. Facilitate coordination among State, regional, and local agency efforts to adapt to the impacts of climate change. Provide a venue for cross-sector collaboration and information sharing on development of the Safeguarding California plan. 					
Responsible Agencies: Strategic Growth Council, DWR, Cal OES, OPR					
Hazards Mitigated: Climate Change (<i>High Impact Hazard</i>)					
1, 5, 6, 10, 12, 16	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
<p>Action 2018-011 [MEDIUM Priority]: California Adaptation Strategy—Communicate current and needed actions State government should take to build climate change resilience through the California Climate Adaptation Strategy update including:</p> <ul style="list-style-type: none"> Organizing the State's climate adaptation efforts around six outcome-based priorities for building resilience and increasing the State's ability to measure progress Breaking down siloes and unifying collective climate adaptation efforts across all sectors and regions Making it easier for Californians to understand and contribute to California's climate resilience agenda <p>Responsible Agencies: CNRA, Cal OES</p> <p>Hazards Mitigated: Climate Change (<i>High Impact Hazard</i>)</p>					
2, 3, 4, 11, 13, 15	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget	Ongoing
<p>Action 2018-012 [HIGH Priority]: California Building Resilience Against Climate Change Effects (Cal BRACE) Project—Enhance CDPH's capability to plan for and reduce health risks associated with climate change by:</p> <ul style="list-style-type: none"> Working with stakeholders to address health inequities Providing resources and technical assistance for public health departments to build climate adaptation capacity and enhance resiliency at local and regional levels Working with local, State, and national partners to assure climate change mitigation and adaptation activities do not exacerbate health inequities <p>Responsible Agencies: CDPH, Cal OES</p> <p>Hazards Mitigated: Climate Change (<i>High Impact Hazard</i>)</p>					
2, 3, 4, 11, 13, 15	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Short-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-013 [MEDIUM Priority]: Climate Change Assessment—Produce periodic scientific assessments on the potential impacts of climate change in California.					
Responsible Agencies: OPR, CNRA, CEC, Strategic Growth Council					
Hazards Mitigated: Climate Change					
2, 3, 4, 11, 13, 15	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-014 [MEDIUM Priority]: Local Planning for Climate Change—Support the incorporation of climate change adaptation and GHG emission reductions into local planning processes.					
Responsible Agencies: OPR, HCD					
Hazards Mitigated: Climate Change (<i>High Impact Hazard</i>)					
2, 3, 4, 11, 13, 15	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-015 [MEDIUM Priority]: Web Based Climate Change Tools—Provide a centralized source of climate change information and resources.					
Responsible Agencies: OPR, CARB					
Hazards Mitigated: Climate Change (<i>High Impact Hazard</i>)					
2, 3, 4, 11, 12, 13, 15	Food, Water, Shelter; Health & Medical; Energy; Transportation; Hazardous Material	New and Existing	Low	State Budget	Ongoing
Action 2018-017 [MEDIUM Priority]: Earthquake Zones of Required Investigation—Ensure efficient, accurate, and reliable completion of the statewide Seismic Hazard Mapping Program.					
Responsible Agencies: CGS					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-019 [MEDIUM Priority]: Uniform California Earthquake Rupture Forecast (UCERF)—Revise California earthquake probabilities. Prepare updated shaking hazard map of California.					
Responsible Agencies: USGS, CGS					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Short-term
Action 2018-020 [MEDIUM Priority]: Hazus Earthquake Loss Estimates—Update statewide annualized losses if the need becomes apparent during the next five years.					
Responsible Agencies: Cal OES, CGS					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 3, 9, 10, 12	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-021 [MEDIUM Priority]: California Earthquake Early Warning System (see Napa Earthquake Case Study)—Support the development and installation of robust early warning systems to rapidly detect the occurrence of an earthquake, estimate the level of ground shaking, and issue a warning before significant ground shaking begins.					
Responsible Agencies: Cal OES					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
3, 7	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-023 [MEDIUM Priority]: Light Detection and Ranging (LiDAR) Fault Mapping—Examine the utility of high-resolution LiDAR topographic data for mapping active faults.					
Responsible Agencies: CGS					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
3, 10	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Short-term
Action 2018-027 [MEDIUM Priority]: CSU Retrofits—Reduce unacceptable seismic risk of existing buildings and manage current construction programs to limit future seismic risk.					
Responsible Agencies: CSU					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 5, 14	Food, Water, Shelter	Existing	High	State Budget, FEMA HMA (BRIC, HMGP, PA Mitigation)	Ongoing
Action 2018-029 [MEDIUM Priority]: Seismic Evaluation of Single-Family Dwellings—Develop comprehensive guidelines for evaluating and seismically retrofitting single-family dwellings.					
Responsible Agencies: CEA, CBSC , HCD					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 5, 14	Food, Water, Shelter	Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-030 [HIGH Priority]: CEA Grants—Provide financial support to homeowners to retrofit single-family residences.					
Responsible Agencies: CEA					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 5, 14, 15	Food, Water, Shelter	Existing	Low	State Budget, CEA Grants, FEMA HMA (BRIC, HMGP)	Long-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-033 [MEDIUM Priority]: Mobile Homes—Adopt regulations to improve the structural and lateral stability of manufactured housing.					
Responsible Agencies: HCD, Cal OES					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
5, 14	Food, Water, Shelter	New	Low	State Budget	Ongoing
Action 2018-036 [MEDIUM Priority]: The Great California Shake Out Earthquake Drill and Public Readiness Initiative—Conduct statewide emergency preparedness, mitigation, and response activities to include multiple levels of government, the private sector, and the public.					
Responsible Agencies: Cal OES					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 5, 7	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget	Ongoing
Action 2018-037 [MEDIUM Priority]: Landslide Inventory Maps—Continue to map earthquake-induced landslides through the Seismic Hazards Mapping Program.					
Responsible Agencies: CGS					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>)					
1, 2, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-038 [MEDIUM Priority]: Post-Fire Runoff & Debris Flows—Develop regional modeling to assess potential effects of post-fire runoff. Develop an early warning system for post-fire flash floods and debris flows.					
Responsible Agencies: DOC , USGS, NOAA, Cal OES					
Hazards Mitigated: Landslide, Debris Flow, and other Mass Movements (<i>High Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Wildfire (<i>High Impact Hazard</i>)					
1, 2, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire, FMA)	Long-term
Action 2018-039 [MEDIUM Priority]: Update the Volcano Hazard Vulnerability Assessment as needed to address future changes in geospatial data on:					
<ul style="list-style-type: none"> At-risk populations Infrastructure Resources 					
Responsible Agencies: USGS, CGS, Cal OES					
Hazards Mitigated: Earthquake (<i>High Impact Hazard</i>); Volcano (<i>Low Impact Hazard</i>)					
1, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-040 [MEDIUM Priority]: Flood Control System Deficiencies in Central Valley—Produce a descriptive document to inventory the facilities and operations associated with State and federal flood control works, and a flood control system status report to assess the status of that inventory.					
Responsible Agencies: DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
1, 2, 3, 5, 6, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-041 [MEDIUM Priority]: Flood Risk Mapping—Adopt a schedule for mapping flood risk areas in the Central Valley and prepare/approve levee flood protection zone maps. Provide yearly notices to owners of property in a levee flood protection zone.					
Responsible Agencies: DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
2, 3, 5	Food, Water, Shelter	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-042 [MEDIUM Priority]: Land Use Planning and Management—Control future development in floodplains and flood-prone areas, in conformance with the CVFPP.					
Responsible Agencies: CVFPB , DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
2, 3, 5	Food, Water, Shelter	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-045 [MEDIUM Priority]: California's Flood Future—Continue to assess statewide exposure to flood risk; identify and address the barriers to improved flood management with the development of a companion report: Investing in California's Flood Future: An Outcome-Driven Approach to Flood Management.					
Responsible Agencies: DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
2, 3, 5	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Short-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-046 [MEDIUM Priority]: Flood Management System Planning and Programs—Improve flood management across the State through five integrated program areas: <ul style="list-style-type: none"> ■ Flood Management Planning ■ Floodplain Risk Management ■ Flood Reduction Projects ■ Flood System Operations and Maintenance ■ Flood Emergency Response 					
Responsible Agencies: DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
2, 3, 5	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-047 [MEDIUM Priority]: CVFPP —Update and implement recommendations and planning requirements outlined in the plan.					
Responsible Agencies: DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
2, 3, 4, 5, 6	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-048 [MEDIUM Priority]: California Water Plans—Ensure reliable water supplies and foundational actions for sustainable water use in California by: <ul style="list-style-type: none"> Identifying specific outcomes and metrics to track performance Prioritizing near-term State actions and investments Recommending financing methods having more stable revenues Informing water deliberations and decisions as they unfold 					
Responsible Agencies: DWR					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Drought (<i>Medium Impact Hazard</i>)					
2, 3, 4, 5, 6	Food, Water, Shelter; Energy	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-049 [HIGH Priority]: NFIP Compliance—Work with local floodplain managers to promote participation in and ensure compliance with the NFIP to update communities' FIRMs .					
Responsible Agencies: DWR, Local Building Departments					
Hazards Mitigated: Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>); Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
1, 2, 3, 6, 11, 13, 14, 15	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-050 [MEDIUM Priority]: Sea-Level Rise Guidance—Provide guidance on factors to consider in projecting sea-level rise, potential impacts, and adaptation strategies.					
Responsible Agencies: OPC, CNRA, OPR, CEC, Coastal Commission					
Hazards Mitigated: Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 6, 11, 13, 14, 15	Food, Water, Shelter; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-051 [MEDIUM Priority]: State Agency Adaptation Planning—Assess vulnerability of State assets to sea-level rise and develop adaptation strategies to address potential impacts by updating the 2019 vulnerability assessment.					
Responsible Agencies: Caltrans					
Hazards Mitigated: Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 6, 11, 13, 14, 15	Food, Water, Shelter; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-052 [MEDIUM Priority]: San Francisco Bay Conservation and Development Commission (BCDC) Climate Change Planning Program—Provide scientific information and planning resources to Bay Area local jurisdictions to support robust mitigation plans and actions.					
Responsible Agencies: Bay Conservation and Development District, Coastal Commission					
Hazards Mitigated: Sea-Level Rise, Coastal Flooding and Erosion (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 6, 11, 13, 14, 15	Food, Water, Shelter; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-054 [MEDIUM Priority]: Reducing Tsunami Hazards and Risks—Support and provide matching funds for development of improved technologies and methodologies to assess, mitigate, and recover from tsunami risk including the following improved models and products for tsunami mitigation:					
<ul style="list-style-type: none"> ▪ Tsunami Hazard Zone maps ▪ Tsunami Hazard Engineering Subzone maps ▪ Guidance documents for implementing the Seismic Hazards Mapping Act ▪ Guidance to mitigate and recover from hazards in harbors and communities 					
Responsible Agencies: CGS, Cal OES					
Hazards Mitigated: Tsunami and Seiche (<i>Medium Impact Hazard</i>)					
1, 3, 14, 15	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-055 [MEDIUM Priority]: Understanding and Utilizing Tsunami Probability—Improve the understanding of tsunami hazards in California through coordinated research and apply these products to land-use and construction mitigation practices.					
Responsible Agencies: CGS, Cal OES					
Hazards Mitigated: Tsunami and Seiche (<i>Medium Impact Hazard</i>)					
1, 3, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-056 [MEDIUM Priority]: Tsunami Mitigation and Preparedness Planning—Continue tsunami preparedness activities and develop loss estimation models to compute potential impacts from tsunamis with a partnership between the Cal OES Tsunami Program and the California Geological Survey Tsunami Program as modeling and technology capabilities improve.					
<ul style="list-style-type: none"> Provide site-specific harbor and pier improvements, engineering recommendations, and cost-benefit assessments. Develop planning and technical assistance resources to support tsunami evacuation planning. Continue ongoing outreach and preparedness efforts. 					
Responsible Agencies: CGS, Cal OES, State and Local Jurisdictions, SLC					
Hazards Mitigated: Tsunami and Seiche (<i>Medium Impact Hazard</i>)					
1, 3, 14, 15	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Medium	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-059 [HIGH Priority]: Delta Levees Program—Provide funding to local agencies in the Sacramento-San Joaquin region for levee maintenance and improvement and for habitat mitigation and enhancement.					
Responsible Agencies: DWR					
Hazards Mitigated: Levee Failure (<i>Medium Impact Hazard</i>)					
1, 3, 4, 5, 15	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	High	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
<p>Action 2018-062 [HIGH Priority]: Ensure dam safety by:</p> <ul style="list-style-type: none"> Reviewing and approving dam enlargements, repairs, alterations, and removals to ensure that the dam's appurtenant structures are designed to meet minimum requirements. Performing independent analyses to understand dam and appurtenant structure performance. Overseeing construction to ensure work is done in accordance with approved plans and specifications. Inspecting dams that are significant hazard or higher every year and low hazard dams every two years to ensure they are safe, performing as intended, and not developing issues. Reviewing and approving inundation maps for dams and their appurtenances that are incorporated into Emergency Action Plans (EAPs). Periodically reviewing the stability of dams and their major appurtenances considering improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California. 					
Responsible Agencies: DSOD					
Hazards Mitigated: Dam Failure (<i>Medium Impact Hazard</i>)					
1, 3, 5, 6, 10, 12, 13, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP), HHPD grants	Ongoing
<p>Action 2018-063 [MEDIUM Priority]: EAPs—Review and approve EAPs for State jurisdictional dams with a DSOD hazard classification of significant, high, or extremely high. Inundation maps and EAPs are created by dam owners and the inundation maps are reviewed and approved by DSOD.</p>					
Responsible Agencies: Cal OES					
Hazards Mitigated: Dam Failure (<i>Medium Impact Hazard</i>)					
1, 3, 5, 6, 10, 12, 13, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP), HHPD grants	Long-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-064 [HIGH Priority]: Legislation for Local Wildfire Hazard Planning—Incorporate wildfire hazards into development and land use planning as stated in California Government Code 65302(g)(3) 66474.02. and the California Environmental Quality Act (CEQA).					
Responsible Agencies: CAL FIRE, OPR, HCD					
Hazards Mitigated: Wildfire (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 5, 6, 13, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire)	Ongoing
Action 2018-065 [HIGH Priority]: Fire Hazard Severity Zones—Map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors to define the application of various mitigation strategies for reducing risk, in accordance with Public Resource Code 4203(a) and Government Code 51178.					
<ul style="list-style-type: none"> Review and adopt 2023 State Responsibility Areas Transmit recommendations to local jurisdictions for local adoption in 2023 					
Responsible Agencies: CAL FIRE					
Hazards Mitigated: Wildfire (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 5, 6, 13, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire)	Short-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-068 [HIGH Priority]: Fire Safe Councils—increased awareness, knowledge, and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires, such as defensible space, fire prevention and fire safe building standards by partnership between CAL FIRE and California Fire Safe Council to direct award funding for: <ul style="list-style-type: none"> ▪ Defensible space around individual homes ▪ County coordinators to ensure communication across stakeholders for funding opportunities and strategic work 					
Responsible Agencies: CAL FIRE, California Fire Safe Council					
Hazards Mitigated: Wildfire (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 5, 6, 7, 8, 13, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire)	Ongoing
Action 2018-069 [MEDIUM Priority]: Post-Event Assessment—Leverage existing capabilities to conduct post-event assessments to prioritize natural resource recovery, including watershed protection, reforestation, and ecosystem restoration.					
Responsible Agencies: Cal OES, State Departments and Agencies					
Hazards Mitigated: All hazards					
1, 2, 3, 4, 5, 6, 10, 13, 16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-070 [MEDIUM Priority]: Community Wildfire Protection Plans—Identify hazardous fuel reduction treatment priorities, recommend measures to reduce structural ignitability and address issues such as wildfire response, hazard mitigation, community preparedness and structure protection.					
Responsible Agencies: CAL FIRE, public fire agencies, community residents					
Hazards Mitigated: Wildfire (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 5, 6, 10, 13, 14	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, HMGP Post Fire)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-071 [MEDIUM Priority]: Initiatives and Technology—Mitigate the spread of invasive pests through education by the following outreach programs: <ul style="list-style-type: none"> ▪ “Buy It Where You Burn It—Don’t Move Firewood” ▪ Invasive Species Council of California and related California Invasive Species Advisory Committee programs ▪ “Don’t Pack a Pest” 					
Responsible Agencies: CDFA					
Hazards Mitigated: Invasive and Nuisance Species (<i>Medium Impact Hazard</i>)					
1, 3, 5, 6, 10, 13, 16	Food, Water, Shelter	New and Existing	Low	State Budget	Ongoing
Action 2018-072 [MEDIUM Priority]: Air Quality/Pollution Monitoring—Maintain “CalEnviroScreen” mapping tool.					
Responsible Agencies: OEHHA, CDPH					
Hazards Mitigated: Air Pollution (<i>High Impact Hazard</i>)					
3, 5, 10, 12	None	New and Existing	Low	State Budget, EPA	Ongoing
Action 2018-073 [MEDIUM Priority]: Air Pollution Planning—Incorporate environmental justice into general plans.					
Responsible Agencies: OPR, Cities and Counties					
Hazards Mitigated: Air Pollution (<i>High Impact Hazard</i>)					
1, 5, 6, 7, 8, 9	None	New and Existing	Low	State Budget, EPA	Ongoing
Action 2018-074 [MEDIUM Priority]: Marine Invasive Species Act—Reduce the introduction of invasive species transported through vessel ballast water by continuing to enforce: <ul style="list-style-type: none"> ▪ Required Ballast Water Management Reports ▪ Regulations to manage biofouling 					
Responsible Agencies: SLC					
Hazards Mitigated: Invasive and Nuisance Species (<i>Medium Impact Hazard</i>)					
3, 5	None	New and Existing	Low	State Budget	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-075 [MEDIUM Priority]: State Water Efficiency and Enhancement Program—Reduce agricultural water usage through installation of more efficient irrigation practices.					
Responsible Agencies: CDFA, DWR, Water Boards					
Hazards Mitigated: Drought (<i>Medium Impact Hazard</i>)					
11, 13	Food, Water, Shelter	New and Existing	Low	State Budget	Ongoing
Action 2018-077 [MEDIUM Priority]: Groundwater Management Plan—Strengthen local control and management of groundwater basins through implementation of the Sustainable Groundwater Management Act for local jurisdictions with medium and high priority basins to develop groundwater sustainability plans.					
Responsible Agencies: DWR					
Hazards Mitigated: Drought (<i>Medium Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
1, 2, 5, 6, 11, 13	Food, Water, Shelter	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-078 [MEDIUM Priority]: Local Stormwater Management—Capture stormwater and redirect it for groundwater recharge, which will offset increased groundwater use during drought years.					
Responsible Agencies: County of Los Angeles					
Hazards Mitigated: Drought (<i>Medium Impact Hazard</i>); Riverine, Stream and Alluvial Flood (<i>High Impact Hazard</i>)					
1, 2, 5, 6, 11, 13	Food, Water, Shelter	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing
Action 2018-079 [MEDIUM Priority]: California Drought Contingency Plan—Minimize drought impacts by improving agency coordination and enhancing monitoring and early warning capabilities.					
Responsible Agencies: DWR					
Hazards Mitigated: Drought (<i>Medium Impact Hazard</i>)					
1, 2, 5, 6, 11, 13	Food, Water, Shelter	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-081 [MEDIUM Priority]: Safe Drinking Water Plan for California—Assess the overall quality of the State's drinking water, identify problems, and recommend improvements.					
Responsible Agencies: Water Boards					
Hazards Mitigated: Drought (<i>Medium Impact Hazard</i>)					
1, 2, 5	Food, Water, Shelter	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing
Action 2018-082 [MEDIUM Priority]: Existing Buildings Energy Efficiency Action Plan—Double the energy efficiency savings of existing buildings by 2030 by:					
<ul style="list-style-type: none"> ▪ Harnessing emerging technologies ▪ Developing progressing program designs ▪ Promoting innovative market solutions ▪ Establishing efficiency policies, regulations, and financial opportunities 					
Responsible Agencies: CEC					
Hazards Mitigated: Energy Shortage (<i>Medium Impact Hazard</i>); Public Safety Power Shutoff (PSPS) (<i>High Impact Hazard</i>)					
1, 4, 11, 13, 14	Energy	New and Existing	Low	State Budget	Ongoing
Action 2018-083 [MEDIUM Priority]: Regional Energy-Savings Efforts—Implement effective energy saving programs on a regional basis to support climate mitigation efforts and energy resilience.					
Responsible Agencies: CPUC, Association of Bay Area Governments					
Hazards Mitigated: Energy Shortage (<i>Medium Impact Hazard</i>)					
1, 4, 11, 13, 14	Energy	New and Existing	Low	State Budget	Short-term

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
<p>Action 2018-086 [MEDIUM Priority]: Clean Energy Progress Tracking—CEC's tracking progress reports provide a comprehensive assessment of California's progress toward a global clean energy future. The reports cover a range of sectors, providing information, metrics, and resources. Tracking is an ongoing capability that includes the following indicators:</p> <ul style="list-style-type: none"> Energy efficiency Statewide energy demand Zero-emission vehicles Reliance on coal, renewable energy, and once-through cooling 					
Responsible Agencies: CEC					
Hazards Mitigated: Energy Shortage (<i>Medium Impact Hazard</i>)					
1, 2, 4, 11, 13	Energy	New and Existing	Low	State Budget	Ongoing
<p>Action 2018-088 [MEDIUM Priority]: Improve energy efficiency in K-12 schools by building on actions taken under the California Clean Energy Jobs Act as future programs and funding become available.</p>					
Responsible Agencies: CEC, CPUC					
Hazards Mitigated: Energy Shortage (<i>Medium Impact Hazard</i>)					
1, 4, 11, 13, 14	Energy	New and Existing	Low	State Budget	Ongoing
<p>Action 2018-090 [MEDIUM Priority]: Extreme Heat Vulnerability—Identify areas of the State most vulnerable to climate impacts by promoting the California Heat Assessment Tool. This tool allows planners, policymakers, public health practitioners, and community members to understand heat vulnerability driven by climate change and take action to mitigate the public health threat of extreme heat.</p>					
Responsible Agencies: CNRA					
Hazards Mitigated: Extreme Heat (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 11, 13	Health and Medical	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-091 [MEDIUM Priority]: Extreme Heat Vulnerability—Identify vulnerable populations (e.g., people experiencing homelessness, lower-income households, older adults) by continuing to engage stakeholders and provide updates in the Climate Change and Health Equity Program.					
Responsible Agencies: CDPH, HCD					
Hazards Mitigated: Extreme Heat (<i>High Impact Hazard</i>)					
1, 2, 3, 4, 7, 8, 9	Health and Medical	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP)	Short
Action 2018-097 [MEDIUM Priority]: Refinery Safety—Improve public and worker safety through enhanced oversight of refineries and strengthen emergency preparedness					
Responsible Agencies: Cal OES, Cal/OSHA					
Hazards Mitigated: Hazardous Materials Release (<i>Low Impact Hazard</i>)					
3, 14	Hazardous Material	New and Existing	Low	State Budget	Ongoing
Action 2018-098 [MEDIUM Priority]: Oil Spill Planning—Prevent and mitigate the effects of oil spills impacting both land and water environments by:					
<ul style="list-style-type: none"> Enforcing requirements for SLC to develop regulatory requirements to identify systemic risks at marine oil terminals Enforcing industry oil spill contingency planning, drills, exercises, and updated staff qualification for incident command systems positions Performing vessel risk assessments, boardings, and participation in Harbor Safety Committees Pursuing oil spill prevention activities 					
Responsible Agencies: OSPR, SLC, CalGEM, OSFM-Pipeline Safety Division					
Hazards Mitigated: Oil Spills (<i>Low Impact Hazard</i>)					
3, 14	Hazardous Material	New and Existing	Low	State Budget	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-100 [MEDIUM Priority]: Rail Safety—Examine and assess rail safety concerns related to the transport of crude oil.					
Responsible Agencies: Cal OES					
Hazards Mitigated: Transportation Accidents Resulting in Explosions or Toxic Releases					
3, 14	Hazardous Material	New and Existing	Low	State Budget	Ongoing
Action 2018-102 [MEDIUM Priority]: Homeland Security Strategy—Reduce the impact of human-made disaster events through a coordinated effort of capacity-building for State and local agencies.					
Responsible Agencies: Cal OES					
Hazards Mitigated: Terrorism (<i>High Impact Hazard</i>)					
3	Safety & Security	New and Existing	Low	State Budget, Homeland Security Grants	Ongoing
Action 2018-103 [MEDIUM Priority]: Homeland Security Grant Programs—Prioritize and allocate federal funding resources to support California's Homeland Security Strategy.					
Responsible Agencies: Cal OES					
Hazards Mitigated: Terrorism (<i>High Impact Hazard</i>)					
3	Safety & Security	New and Existing	Low	State Budget, Homeland Security Grants	Ongoing
Action 2018-105 [MEDIUM Priority]: Annual Vulnerability Assessments—Coordinate 35 vulnerability assessments each calendar year.					
Responsible Agencies: CDT					
Hazards Mitigated: Cyber Threats (<i>Medium Impact Hazard</i>)					
1, 3, 5	Safety & Security	New and Existing	Low	State Budget, Homeland Security Grants	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-106 [MEDIUM Priority]: Security Audit Program—Measure the effectiveness of security policies and guidelines. Responsible Agencies: CDT Hazards Mitigated: Cyber Threats (<i>Medium Impact Hazard</i>)					
1, 3, 5	Safety & Security	New and Existing	Low	State Budget, Homeland Security Grants	Ongoing
Action 2018-108 [MEDIUM Priority]: Cyber Security Integration Center & Task Force—Reduce the likelihood and severity of cyber incidents that could damage the economy, critical infrastructure, or public and private sector computer networks, through State agency coordination. Responsible Agencies: Cal OES Hazards Mitigated: Cyber Threats (<i>Medium Impact Hazard</i>)					
1, 3, 5	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, Homeland Security Grants	Ongoing
Action 2018-109 [MEDIUM Priority]: Protecting Critical Power Grid Infrastructure—Protect power grid integration from cyber threats through ongoing coordination with the California Cybersecurity Integration Center (Cal-CSIC) and the statewide cyber security task force. Responsible Agencies: CPUC Hazards Mitigated: Cyber Threats (<i>Medium Impact Hazard</i>)					
1, 3, 5	Safety & Security; Energy	New and Existing	Low	State Budget, Homeland Security Grants	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-110 [MEDIUM Priority]: Planning and Technical Assistance—Identify and communicate with local governments to promote local hazard evaluation and mitigation planning and to assist in developing and updating LHMPs. Increase the number of LHMPs in the State through enhanced planning and technical assistance.					
Responsible Agencies: Cal OES					
Hazards Mitigated: All hazards					
1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA); HHPD grants	Ongoing
Action 2018-111 [MEDIUM Priority]: Technical Assistance—Provide technical assistance, guidance, resources, and tools to local governments for all aspects of local hazard mitigation planning and action implementation.					
Responsible Agencies: Cal OES					
Hazards Mitigated: All hazards					
1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 16	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA); HHPD grants	Ongoing
Action 2018-113 [MEDIUM Priority]: Integration of Local and State Mitigation Efforts—Encourage local jurisdictions to take advantage of the financial benefits stated in Government Code Sections 8685.9 and 65302.6 either by creating an integrated LHMP/safety element or by adopting the LHMP as an annex to the Safety Element.					
Responsible Agencies: Cal OES, OPR					
Hazards Mitigated: All hazards					
1, 5, 6, 12, 15	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing

Objectives Met	Community Lifelines	Benefits New or Existing Assets	Estimated Cost	Potential Sources of Funding	Timeline
Action 2018-114 [HIGH Priority]: Integration of Local and State Mitigation Efforts—Prepare resource materials to assist local governments in achieving consistency with other hazard mitigation and land use plans and to comply with State legislative requirements.					
Responsible Agencies: Cal OES, OPR, DWR, CDPH, CARB, OPC, CNRA, CEC, Coastal Commission, OSFM, CAL FIRE, BOF					
Hazards Mitigated: All hazards					
1, 3, 5, 6, 12, 15	Safety & Security; Food, Water, Shelter; Health & Medical; Energy; Communications; Transportation; Hazardous Material	New and Existing	Low	State Budget, FEMA HMA (BRIC, HMGP, FMA)	Ongoing

Table 47-2. 2023 SHMP Mitigation Action Priority

Action	Criteria																Priority
	Life Safety	Property Protection	Cost-Effective	Technically Feasible	Legal Authority	Funding Available	Environmental	Climate Change	Equity Priority Community	Administrative Capacity	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	Support Policies	Total Score	
2023-001	1	1	3	3	3	3	3	3	3	3	0	0	3	3	3	35	High
2023-002	1	1	3	3	3	1	0	0	1	1	0	0	3	3	3	23	Medium
2023-003	1	1	3	3	3	1	0	0	3	1	0	0	1	1	3	21	Medium
2023-004	1	1	3	3	3	1	0	0	3	1	0	0	1	3	3	23	Medium
2023-005	1	1	1	3	3	1	3	3	3	1	3	0	1	1	1	26	Medium
2023-006	3	3	1	3	3	3	0	3	3	3	3	0	3	3	3	37	High
2023-007	3	3	3	3	3	3	0	0	3	3	0	0	3	3	3	33	High
2023-008	3	3	3	3	3	3	0	0	3	3	0	0	3	3	3	33	High
2023-009	3	3	3	3	3	1	3	3	3	3	3	0	3	3	3	40	High
2023-010	3	3	3	3	3	1	3	3	3	3	3	0	3	3	3	40	High
2023-011	1	1	3	3	3	1	3	3	3	0	3	0	3	3	3	33	High
2023-012	3	3	3	3	3	3	3	3	3	1	3	0	3	3	3	40	High
2023-013	3	3	3	3	3	1	3	0	3	1	0	1	1	3	3	31	High
2023-014	1	3	3	3	3	3	1	1	3	3	0	3	3	1	3	34	High
2023-015	1	1	3	3	3	3	1	1	1	1	3	3	3	1	1	29	Medium
2023-016	1	3	3	3	3	3	1	1	1	1	3	3	3	1	1	31	High
2023-017	3	3	3	3	3	3	1	1	1	3	0	3	3	3	3	36	High
2023-018	3	3	3	3	3	3	1	1	1	3	0	3	3	3	3	36	High
2023-019	3	1	1	3	3	1	1	3	3	3	0	3	3	3	3	34	High
2023-020	3	1	3	3	3	3	1	3	3	3	0	3	3	3	3	38	High
2023-021	3	1	1	3	3	1	1	3	3	3	0	3	3	3	3	34	High

Action	Criteria																Priority
	Life Safety	Property Protection	Cost-Effective	Technically Feasible	Legal Authority	Funding Available	Environmental	Climate Change	Equity Priority Community	Administrative Capacity	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	Support Policies	Total Score	
2018-001	1	1	3	3	3	3	3	3	3	3	3	0	3	1	3	40	High
2018-002	1	1	3	3	3	3	3	3	3	3	3	0	3	1	3	36	High
2018-003	1	1	3	3	3	3	3	3	3	3	3	0	3	3	3	38	High
2018-005	1	1	3	3	3	3	3	3	1	3	3	0	1	3	3	34	High
2018-006	0	0	1	3	3	1	1	1	1	1	3	0	3	3	3	24	Medium
2018-007	0	0	1	3	3	3	1	1	1	3	3	0	3	1	3	26	Medium
2018-008	0	0	1	3	3	1	1	1	1	1	3	0	3	3	3	24	Medium
2018-009	0	0	1	1	3	3	3	3	1	1	3	3	3	3	3	31	High
2018-010	0	0	1	1	3	1	3	3	3	1	3	0	3	3	3	28	Medium
2018-011	0	0	1	3	3	1	3	3	0	1	3	0	3	1	3	25	Medium
2018-012	3	1	1	3	3	1	0	3	3	1	3	3	3	3	3	34	High
2018-013	0	0	1	3	3	1	1	3	0	1	3	0	3	3	3	25	Medium
2018-014	0	0	1	3	3	1	1	3	0	1	3	0	3	3	3	25	Medium
2018-015	0	0	1	3	3	1	1	3	0	1	3	0	3	3	3	25	Medium
2018-017	1	1	3	3	3	1	0	0	3	1	0	0	3	3	3	25	Medium
2018-019	1	1	3	3	3	1	0	0	3	1	0	3	3	3	3	28	Medium
2018-020	1	1	3	3	3	1	0	0	3	1	0	0	3	3	3	25	Medium
2018-021	1	1	3	3	3	1	0	0	3	1	0	0	3	1	3	23	Medium
2018-023	1	1	3	3	3	1	0	0	3	1	0	3	3	3	3	28	Medium
2018-027	3	3	3	3	3	1	0	0	0	1	0	0	3	3	3	26	Medium
2018-029	3	3	3	3	3	1	0	0	3	1	0	0	3	3	3	29	Medium
2018-030	3	3	3	3	3	3	0	0	3	1	0	0	3	3	3	31	High

Action	Criteria																Priority
	Life Safety	Property Protection	Cost-Effective	Technically Feasible	Legal Authority	Funding Available	Environmental	Climate Change	Equity Priority Community	Administrative Capacity	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	Support Policies	Total Score	
2018-033	3	3	3	3	3	1	0	0	3	1	0	0	3	3	3	29	Medium
2018-036	1	0	3	3	3	1	0	0	3	1	0	0	3	1	1	20	Medium
2018-037	1	1	3	3	3	1	0	0	1	1	0	0	3	1	3	21	Medium
2018-038	3	3	3	3	3	1	0	0	3	1	0	0	3	1	3	27	Medium
2018-039	3	3	3	3	3	1	0	0	3	1	0	0	3	1	3	27	Medium
2018-040	1	1	3	3	3	1	3	3	3	1	0	0	3	1	3	29	Medium
2018-041	1	1	3	3	3	1	3	3	3	1	0	0	3	1	3	29	Medium
2018-042	1	1	3	3	3	1	3	3	3	1	0	0	3	1	3	29	Medium
2018-045	1	1	3	3	3	1	3	3	3	1	0	0	3	1	3	29	Medium
2018-046	1	1	3	3	3	1	3	3	3	1	0	0	3	1	3	29	Medium
2018-047	1	1	3	3	3	1	3	3	3	1	0	0	3	1	3	29	Medium
2018-048	0	0	1	3	3	1	3	3	3	1	3	0	3	3	3	30	Medium
2018-049	3	3	3	3	3	3	3	3	3	1	3	0	1	3	3	38	High
2018-050	0	1	1	1	3	1	3	3	3	1	3	0	1	3	3	27	Medium
2018-051	0	1	1	1	3	1	3	3	3	1	3	0	1	3	3	27	Medium
2018-052	0	0	1	3	3	1	1	3	3	1	3	0	3	3	3	28	Medium
2018-054	1	1	1	3	3	1	1	3	3	1	3	0	3	3	3	28	Medium
2018-055	1	1	1	3	3	1	1	3	3	1	3	0	3	3	3	28	Medium
2018-056	1	1	1	3	3	1	1	3	3	1	3	0	3	3	3	28	Medium
2018-059	1	1	1	3	3	3	3	3	3	1	3	0	3	3	3	32	High
2018-062	3	3	3	3	3	3	3	3	3	1	0	0	3	3	3	37	High
2018-063	1	1	3	3	3	1	1	3	3	1	0	0	3	3	3	29	Medium

Action	Criteria																Priority
	Life Safety	Property Protection	Cost-Effective	Technically Feasible	Legal Authority	Funding Available	Environmental	Climate Change	Equity Priority Community	Administrative Capacity	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	Support Policies	Total Score	
2018-064	1	3	3	3	3	1	3	3	3	1	0	0	3	3	3	33	High
2018-065	0	3	3	3	3	1	3	3	3	1	0	0	3	3	3	32	High
2018-068	0	3	3	3	3	1	3	3	3	1	0	0	3	3	3	32	High
2018-069	0	1	3	3	3	1	3	3	3	1	0	0	3	3	3	30	Medium
2018-070	0	1	3	3	3	1	3	3	3	1	0	0	3	3	3	30	Medium
2018-071	0	0	1	3	3	1	3	3	0	1	0	0	3	3	3	24	Medium
2018-072	0	0	1	3	3	1	3	1	3	1	0	0	3	3	3	25	Medium
2018-073	0	0	1	3	3	1	3	1	3	1	0	0	3	3	3	25	Medium
2018-074	0	0	1	3	3	1	3	3	0	1	0	0	3	3	3	24	Medium
2018-075	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-077	0	0	1	3	3	1	1	3	1	1	3	0	3	3	3	26	Medium
2018-078	0	0	1	3	3	1	1	3	1	1	3	0	3	3	3	26	Medium
2018-079	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-081	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-082	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-083	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-086	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-088	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-090	0	0	1	3	3	1	1	3	1	1	0	0	3	3	3	23	Medium
2018-091	0	0	1	3	3	1	1	3	3	1	0	0	3	3	3	25	Medium
2018-097	3	0	1	3	3	1	0	0	0	1	0	3	3	1	3	22	Medium
2018-098	0	0	1	3	3	1	3	0	0	1	0	3	3	1	3	22	Medium

Action	Criteria																Priority
	Life Safety	Property Protection	Cost-Effective	Technically Feasible	Legal Authority	Funding Available	Environmental	Climate Change	Equity Priority Community	Administrative Capacity	Multi-Hazard	Timeline	Local Champion	Other Local Objectives	Support Policies	Total Score	
2018-100	0	0	3	3	3	1	1	0	0	1	0	0	3	3	3	21	Medium
2018-102	1	1	3	3	3	1	0	0	1	1	0	0	3	3	3	23	Medium
2018-103	1	1	3	3	3	1	0	0	1	1	0	0	3	3	3	23	Medium
2018-105	1	3	3	3	3	1	0	0	1	1	0	0	3	3	3	25	Medium
2018-106	1	1	3	3	3	1	0	0	1	1	0	0	3	3	3	21	Medium
2018-108	1	3	3	3	3	1	0	0	1	1	0	0	3	3	3	25	Medium
2018-109	1	3	3	3	3	1	0	0	3	1	0	0	3	3	3	27	Medium
2018-110	1	1	3	3	3	3	1	1	1	1	3	0	3	3	3	30	Medium
2018-111	1	1	3	3	3	3	1	1	1	1	3	0	3	3	3	30	Medium
2018-113	1	1	3	3	3	3	1	1	1	1	3	0	3	3	3	30	Medium
2018-114	1	1	3	3	3	3	1	3	1	1	3	0	3	3	3	32	High

Weighted responses:

Yes = 3 points; Not sure, could be either yes or no, or question is difficult to quantify = 1 point; No = 0 points

Total score:

31 or more = High Priority; 15-30 = Medium Priority; 0-14 = Low Priority

48. PUTTING THE PLAN INTO ACTION

The Cal OES Hazard Mitigation Planning Division oversees maintenance and updates of the SHMP. The process is a collaborative partnership with numerous stakeholders from local, Tribal Nation, regional, State, and federal government agencies, community-based organizations, academic institutions, and other non-governmental entities. The SHMP is a living document that must remain relevant to guide the implementation of mitigation actions, reduce risk from future hazard events, and build statewide resilience. A system for monitoring, evaluating, and updating the actions and content of the SHMP is critical to ensuring that the Plan remains on course. The following sections support and document the State's ongoing efforts to monitor, evaluate, and update the SHMP during its five-year life cycle.

48.1. ADOPTION



S19 – 44 CFR 201.4(c)(6): Did the state provide documentation that the plan has been formally adopted?

Cal OES formally adopted the plan on August 23, 2023. On September 7, 2023, FEMA Region 9 notified Cal OES that the SHMP was formally approved on August 30, 2023.

Adoption of the SHMP signifies the State's commitment to implementing a mitigation strategy that will guide hazard mitigation and resilience efforts over the next five years.

The Cal OES Director, acting as the Governor's designated official, formally adopts the SHMP as required by 44 CFR 201.4(c)(6). On August 23, 2023 the Cal OES Director adopted the SHMP after receiving "Approvable Pending Adoption" status from FEMA on July 24, 2023. The adoption resolution was submitted to FEMA, and FEMA provided

full approval of the SHMP on September 7, 2023, making the SHMP effective as of August 30, 2023.

Copies of the adoption resolution and FEMA approval letter, documenting the successful completion of the update of the SHMP, are included after the executive summary at the front of this document.

48.2. IMPLEMENTING, MONITORING, AND REVIEWING MITIGATION ACTIONS



S17 – 44 CFR 201.4(c)(5)(i) and 201.4(d): Is there a description of the method and schedule for keeping the plan current?

Sections 48.2 and 48.3 outline the process Cal OES will use to monitor, evaluate, and update the plan, including the schedule for these activities.



Standard 4.1.3: The Emergency Management Program has a maintenance process for its Hazard Identification and Risk Assessment identified in Standard 4.1.1 and the Consequence Analysis identified in Standard 4.1.2, which includes a method and schedule for evaluation and revision.

The monitoring, maintenance, and update plan for the 2023 SHMP are detailed in Sections 48.2 and 48.3.



Standard 4.2.3: The Emergency Management Program has a process to monitor the overall progress of the mitigation activities and documents completed initiatives and their resulting reduction or limitation of hazard impact on the jurisdiction.

Sections 48.2.2 and 48.2.3 address opportunities for reviewing progress during the SHMP implementation process.

A mitigation action implementation plan establishes continuous tracking of recommended mitigation actions. This tracking enables the State to document the progress being made toward the SHMP's goals and objectives.

An implementation plan serves as a catalyst to implementing mitigation actions by ensuring that stakeholders and implementing agencies are engaged in the SHMP implementation process. The implementing agencies participated in the identification and development of mitigation actions to foster interagency support and accountability. Once actions were established, the planning process evaluated the

potential implementation costs, timeframe, and funding sources. Completing these steps better ensures that mitigation actions will be implemented, making the SHMP an actionable plan.

48.2.1. Outreach to Agencies and Stakeholders

Monitoring the implementation of mitigation actions may include periodic reporting and site visits, regular contact and communication with responsible agencies, and stakeholder forums to discuss the status of actions, successes, and challenges.

48.2.2. Agency and Stakeholder Quarterly Reports

Monitoring also includes collecting quarterly reports from local, State, federal, and non-governmental partners. These reports document partners' mitigation activities relating to integrated planning, federal grant program project implementation, leadership initiatives, and laws, among other areas.

Quarterly reports on the implementation of mitigation actions document partners' activities as they relate to SHMP Enhanced Elements E6: Integrated Planning and E7: Mitigation Capabilities. These elements were E2 and E3, respectively, prior to April 2023.

48.2.3. System for Reviewing Progress



S18 – 44 CFR 201.4(c)(5)(ii) and 201.4(c)(5)(iii): Does the plan describe the systems for monitoring implementation and reviewing progress?

Section 48.2.3 describes the system California will use to track implementation and progress of the mitigation strategy.

To review progress on achieving the mitigation goals, objectives, and strategies for the SHMP, Cal OES will deploy a Mitigation Action Status Report. Mitigation actions will be tracked independently by the responsible implementing agency, who will share the status of actions with Cal OES to ensure that this information is included in annual reviews of the mitigation action plan. Responsible agencies will provide a mitigation action status report to Cal OES annually. The mitigation action status report will document the annual actions taken toward implementing a mitigation action. An example of the fields for the mitigation action status report is provided in Figure 48-1.

Figure 48-1. Example Content for Mitigation Action Status Report

Action Number:	
Mitigation Action Title:	
Timeframe/Deadline:	
Objectives:	
Responsible Agency:	
Agency Position Title:	
Action to be Taken:	
Year 1	
Year 2	
Year 3	
Year 4	
Year 5	
Status	
Summary of Completed Actions	

Under the approach to goal setting employed for this SHMP (see Chapter 0), objectives are the focal point for progress reporting since they help establish priorities for actions. Each objective has been mapped to the goals it will address. The progress reporting system established by Cal OES asks each agency with responsibility for mitigation actions to review the objectives identified for each action to determine a need for a change in priority.

This reporting system will build on the external partner reports that Cal OES collects quarterly. Whereas the quarterly reports document partner agencies' mitigation activities overall, this annual reporting mechanism will connect these activities to specific mitigation actions identified in the SHMP. This will enable Cal OES to better track the progress of achieving the recommended mitigation actions throughout the life cycle of the SHMP. This will also help partner agencies to identify mitigation actions for future SHMP updates to address gaps encountered in their mitigation activities.

48.3. MONITORING, EVALUATING, AND UPDATING THE PLAN



Standard 4.2.5: The Emergency Management Program has a maintenance process for the plan identified in Standard 4.2.1, which includes a method and schedule for evaluation and revision.

The process for monitoring, maintaining, and updating the SHMP is inclusive of the process for updating the Hazard Identification and Risk Assessment and Consequence Analysis, described previously in Section 48.2. The process to monitor, evaluate, and update the SHMP can be found in 48.3.

Updates provide the opportunity to ensure that the SHMP remains on course and current. Reviewing the SHMP regularly allows for it to be continuously informed by advances in hazard knowledge, changes in State and federal legislation, and performance of mitigation projects during hazard events. Actively monitoring, evaluating, and updating the SHMP maintains the relationships and partnerships established during the Plan update process and maintains stakeholder engagement in mitigation initiatives. In addition to the quarterly reports on mitigation activities, Cal OES will monitor, evaluate, and consider updates to the SHMP as appropriate on an annual basis using a mitigation action reporting form and review meeting schedule.

The SHMP planning team uses and updates a State agency responsibility matrix that identifies all relevant State agencies, the agencies' functions, and relevant legislation that contributes to each agency's responsibilities. This matrix can be used as a tool to assess agencies' capacity to support implementation of SHMP goals and objectives.

48.3.1. Quarterly Reviews

The planning process will continue in a cycle after the completion, adoption, and approval of the SHMP. To maintain internal coordination and integration, Cal OES Hazard Mitigation staff will meet on a quarterly basis to review progress of implementation and maintenance task status. Additionally, these meetings should include an evaluation of FEMA Review Guide element requirements and discussions to address any current feedback from FEMA.

48.3.2. Annual Meetings

An annual meeting will be held at which SHMP stakeholders will provide updates on mitigation actions and discuss changes in legislation, priorities, and other capabilities that should be incorporated into the plan update. During the annual review, Cal OES will identify any obstacles and opportunities to further strengthen identified mitigation actions. The focus of each year's meeting will depend on issues identified by the Cal OES team and raised by planning and implementation partners.

Potential focus areas could include the following:

- Overview and progress on the SHMP
- Mitigation actions and goals tracking
- Updates to data and policies
- Partner progress updates
- Stakeholder roles and responsibilities
- Identification of new partners to include

Annual meeting proceedings will document the following:

- Review of mitigation action status
- Confirm additional meetings, if necessary
- Update the milestone schedule as necessary

48.3.3. Maintenance Milestone Schedule

Table 48-1 provides an example five-year maintenance milestone schedule for activities that are a priority for documenting and updating data included in the SHMP to increase the efficacy of future updates. This schedule, based on the milestone schedule from the 2018 SHMP, is a general example that can be used when developing specific milestone schedules for future SHMP updates. Updates to the milestone schedule will be added as an appendix to the SHMP.

Table 48-1. SHMP Milestone Schedule Five-Year Cycle

Period	Action
Year 1: State Hazard Mitigation Plan is approved; new five-year update cycle begins	
1st Quarter (July – September)	Implementation and Progress Tracking <ul style="list-style-type: none"> Cal OES will engage stakeholders and request mitigation action status reports for each action from the respective lead agency Cal OES will review and compile the status reports to distribute to all stakeholders to maintain visibility on the progress of implementing the SHMP
2nd Quarter (October – December)	Annual SHMP Progress Meeting <ul style="list-style-type: none"> Cal OES will convene stakeholders to complete a review the SHMP
3rd Quarter (January – March)	Cal OES will distribute summary report of annual meeting
Year 2	
1st Quarter (July – September)	Implementation and Progress Tracking <ul style="list-style-type: none"> Cal OES will engage stakeholders and request mitigation action status reports for each action from the respective lead agency Cal OES will review and compile the status reports to distribute to all stakeholders to maintain visibility on the progress of implementing the SHMP
2nd Quarter (October – December)	Annual SHMP Progress Meeting <ul style="list-style-type: none"> Cal OES will convene stakeholders to complete a review the SHMP
3rd Quarter (January – March)	Cal OES will distribute summary report of annual meeting
Year 3	
1st Quarter (July – September)	Implementation and Progress Tracking <ul style="list-style-type: none"> Cal OES will engage stakeholders and request mitigation action status reports for each action from the respective lead agency Cal OES will review and compile the status reports to distribute to all stakeholders to maintain visibility on the progress of implementing the SHMP Begin process to identify funding and resources for SHMP update
2nd Quarter (October – December)	Annual SHMP Progress Meeting <ul style="list-style-type: none"> Cal OES will convene stakeholders to complete a review the SHMP
3rd Quarter (January – March)	Cal OES will distribute summary report of annual meeting

Period	Action
4th Quarter (April – June)	SHMP Project Kickoff Meeting <ul style="list-style-type: none"> Reassess SHMP goals/objectives and strategies Confirm mission/vision Review and confirm hazards to be addressed in SHMP, determine any additional hazards to be added (short discussion) Request each State agency to review their related info Review progress reports from approved SHMP Geographic Information Systems (GIS) Technical Assistance Working Committee (GIS-TAWC) Meeting <ul style="list-style-type: none"> Review previous vulnerability assessment: consider if it should be updated or replaced Review master list of maps and determine: 1) maps to add, 2) maps to delete, 3) existing map information/GIS layers that need to be updated Review and discuss potential updates/changes to MyPlan and MyHazards Additional Strategic Working Group Meetings <ul style="list-style-type: none"> Establish and reconvene additional working groups
Year 4	
1st Quarter (July – September)	Preparation of internal review draft
2nd Quarter (October – December)	Review and revisions for administrative draft Preparation of public comment draft
3rd Quarter (January – March)	Public comment period Preparation of FEMA review draft
4th Quarter (April – June)	Cal OES delivers FEMA review draft to Region 9 to initiate 45-day formal comment period. (FEMA review may take longer than 45 days, so extra time is built into these dates.)
Year 5	
1st Quarter (July – September)	Cal OES Director approves and adopts finalized SHMP FEMA Region 9 review and approval of SHMP
Begin new five-year cycle	

48.3.4. Ad Hoc Reviews

The need for ad hoc reviews outside of the milestone schedule may arise during the Plan's five-year life cycle. These ad hoc reviews may be prompted by a disaster, the availability of updated data that would significantly impact the Risk Assessment, or completion of major risk reduction activities that substantially reduce the vulnerability of the State.

48.4. ASSURANCES



S20 – 44 CFR 201.4(c)(7): Did the State provide assurances?

Section 48. 4 includes assurances that California will manage and administer FEMA funding in accordance with applicable federal statutes and regulations, and that the SHMP will be updated whenever necessary to reflect changes in federal laws and statutes.

In accordance with 44 CFR 201.4(c)(7), the State assures that it will manage and administer FEMA funding and comply with all applicable federal statutes and regulations in effect with respect to the periods for which the State receives grant funding. These efforts will comply with the following:

- 2 CFR Part 200—Office of Management and Budget Guidance: Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
- 2 CFR Part 3002—Department of Homeland Security adoption of the Office of Management and Budget Guidance listed in 2 CFR Part 200, giving regulatory effect to the guidance and supplementing the guidance as needed for the Department of Homeland Security

The State also assures that it will amend the California SHMP as required by 44 CFR 201.4(c)(7) to reflect changes in State or federal statutes and regulations.

The SHMP assurances were reviewed and updated for the 2023 SHMP.

