Part 4—Hazard Mitigation for Local Jurisdictions

Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

42. Local Capability Assessment

S13- [44 CFR 201.4(c)(3)(ii)]: Does the plan generally describe and analyze the effectiveness of local government mitigation policies, programs, and capabilities? The following chapters 42 and 43 are dedicated to meeting this requirement.

HHPD6: Did Element S13 (local coordination) generally describe and analyze the effectiveness of local mitigation policies, programs, and capabilities that address high hazard potential dams? Chapter 42 covers this requirement.

Hazard mitigation begins at the local level, and the State supports local governments with their mitigation planning activities. This ensures that local communities are aware of the best available hazard data, planning resources, and state priorities for mitigation. A mutual understanding between states and local governments better aligns mitigation strategies and directs available resources toward effective mitigation planning.

While California cities and counties are autonomous, state law, policies, and programs have a substantial influence on local land use and hazard mitigation activities. This chapter addresses state-mandated and locally adopted capabilities that can provide a basis for implementing hazard mitigation actions.

Demonstrations of Successful Local Hazard Mitigation

California's local communities have demonstrated the value of well-done hazard mitigation, with the completion of projects that have been found to fulfill their purpose in the face of subsequent hazard events. Examples are presented in the risk assessment portion of this SHMP, including the following:

- Earthquake Mitigation—Seismic Retrofit for the Borreo Building and Goodman Library in Napa County (see Chapter 5)
- Riverine Flood Mitigation— Sonoma County Flood Elevation Program, Russian River (see Chapter 6)
- Wildfire Mitigation—Wildfire Reduction at the Lick Observatory in Santa Clara County (see Chapter 10)

42.1. LEGAL FOUNDATIONS OF LOCAL GOVERNMENT CAPABILITY

Local governments in California include cities, towns, counties, and special districts. Their powers are determined by the State constitution and by State legislation. All units of local government have powers or authorities to undertake hazard mitigation planning and projects. Special districts typically lack the authority to dictate land use, as that responsibility lies with municipal local governments.

In California, there are more than 7,000 local government institutions. Most are special districts, including over 1,000 school districts. The remaining entities include 58 counties, 459 incorporated cities, and 22 incorporated towns. Each of these institutions is involved in local planning, but cities and counties have the most prominent role.

42.1.1. Cities, Towns, and Counties

Cities, towns, and counties are independent political entities with elected governing boards. The authority for cities and counties comes from Article XI, Section 7 of the California Constitution, which states that "A county or city may make and enforce within its limits all local, police, sanitary and other ordinances and regulations not in conflict with general laws."

State law requires that each county and city have a legislative body and a planning agency and adopt a comprehensive, long-term general plan for physical development. Through general plans, local jurisdictions document official decisions and future strategies regarding the following:

- The location of housing, business, industry, roads, parks, and other land uses
- Protection of the public from environmental hazards
- Conservation of natural resources

Each city, town, and county formally adopts its own general plan and develops implementing regulations, including zoning ordinances, subdivision ordinances, and building codes. Cities, towns, and counties are obligated by law to confer with adjoining jurisdictions when developing a general plan and regulatory ordinances. However, there is no requirement that adjoining cities or counties have identical, or even similar, plans and ordinances.

42.1.2. Special Districts

Special districts are local government units with separate taxing authority and elected governing boards, formed to address specific issues such as fire protection, geologic hazard abatement, or flood control. According to the California Special Districts Association, "Special districts are local governments created by the people of a community to deliver specialized services essential to their health, safety, economy, and well-being. A community forms a special district, which are political subdivisions authorized through a state's statutes, to provide specialized services the local city or county does not provide" (California Special Districts Association 2022).

Cities, towns, and counties can jointly form special districts and joint powers authorities to address specific issues. Examples include the Sacramento Area Flood Control Agency, a regional flood control district with taxing authority; and the Association of Bay Area Governments (ABAG), a joint powers authority functioning as a regional planning advisory body.

A distinction exists between independent special districts and dependent special districts:

- **Independent special districts** obtain their authority directly from the community they serve and have a governing body that is independent from other government agencies. Members of the governing body have a high degree of autonomy to fulfill the mission of the district and are directly accountable to the community they serve. Most independent special districts are governed by a constituent-elected board of directors. In some cases, the board may be appointed by one or more other local elected officials, so long as the board members serve fixed-terms and none of the board members serve in an ex-officio capacity.
- **Dependent special districts** are closely tied to another unit of local government. Typically, city council members, a county's elected executive board members, or their appointees, serve as the board of directors for a dependent special district and control the budget, management, and operation. Members of the board of a dependent special district may serve in an ex-officio capacity and

serve at the pleasure of an appointing body. In this respect, dependent special district governance is subject to the interests, influence, and authority of other governmental bodies.

Both independent and dependent special districts can be eligible to fully participate in and adopt an approved local hazard mitigation plan. As of December 2022, more than 370 special districts had approved hazard mitigation plans.

42.2. PLANNING PROCESS INTEGRATION WITH HAZARD MITIGATION PLANS

FEMA stresses the importance of integrating hazard mitigation planning with comprehensive planning (e.g., local general plans, regional blueprint plans, regional transportation plans, emergency operations plans, response plans, and evacuation plans). Doing so reduces vulnerability to disasters, stimulates decision-making, forms partnerships between planners and emergency managers, expands funding opportunities, facilitates post-disaster return of the community to normalcy, and resolves locally sensitive issues with community-based solutions.

42.2.1. Integration With General Plans

Cal OES works with the Governor's Office of Planning and Research (OPR) to incorporate information on hazard mitigation planning into State General Plan Guidelines, which provide guidance to cities and counties in the preparation of their general plans. The 2017 General Plan Guidelines update includes new guidance to local jurisdictions to support response to recent hazard mitigation legislation. The OPR plan alignment tool provides local jurisdictions with an interactive web-based application to get tips, best practices, and guidance specific to climate hazards and plans most relevant to a community. See Section 43.2.4 for additional details.

California Assembly Bill 2140 encourages cities and counties to adopt a FEMA-approved local hazard mitigation plan (LHMP) into the safety element of their general plan. This adoption makes the county or city eligible to be considered for part of all of its local-share costs on eligible Public Assistance funding to be provided by the State through the California Disaster Assistance Act (CDAA).

42.2.2. Integration With Climate Planning

Senate Bill 379 requires general plans and LHMPs to include climate adaptation and resiliency strategies in the safety element of their general plans. The climate adaptation portions of these plans need to include goals, policies, and objectives for cities and counties based on a vulnerability assessment, as well as implementation measures, including the conservation and utilization of natural infrastructure that may be used in adaptation projects.

42.3. GENERAL PLAN REQUIREMENTS

In California, general plans are the vehicle used to outline the policies and regulatory framework for land use decisions at the local level. Tools used to implement local general plans include zoning, development review, subdivision review, capital improvement programs, land acquisitions, and redevelopment.

The state legislature has declared that decisions involving the future growth of the state, most of which are made at the local level, should be guided by an effective planning process, including a local general plan. It has also declared that the state's land is an exhaustible resource, not just a commodity, and is essential to the economy, environment, and general well-being of the people of California.

A local government's general plan acts as a "constitution" for future development, bridging the gap between a community's values, vision, and goals, and physical development actions, such as the subdivision of land and public works projects. Information in the general plan underlies most local land use decisions.

Community growth can involve issues such as housing, transportation, natural resources, and hazards. The general plan provides goals, objectives, and policy statements that outline the vision of what a municipality plans to be in the future. Each city and county adopts zoning, subdivision, and other ordinances to regulate land use and implement general plan policies.

A general plan offers many opportunities for local agencies to identify, plan for, and mitigate local hazardous conditions such as floods, fires, and earthquakes. Local governments can place policies within their general plans that require new development to have little or no susceptibility to hazards. Growth can then be controlled and concentrated in areas where hazards are far less likely to affect

buildings and people. Many jurisdictions have written hazard mitigation provisions into local zoning, subdivision, and environmental assessment ordinances for reference in routine project review.

Example Regulatory Approaches Addressing Natural Hazards

The following are examples of common zoning and subdivision regulatory approaches to new developments in natural hazard areas:

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

42.3.1. Statutory Mandates

California law contains many provisions regulating land use planning, including general plans, specific plans, subdivisions, and zoning (see Government Code Section 65000-66499.58). Every city and county in the state must adopt a general plan for the physical development of the county or city and any land outside its boundaries that bears relation to its planning. The general plan must cover a local jurisdiction's entire planning area and address the broad range of issues associated with local development. It must be adopted by the local legislative body so that it is implemented with the weight of law. General plans may also be known as comprehensive plans or master plans.

In accordance with Government Code Section 65302, a general plan must contain eight elements: land use, circulation, housing, conservation, open space, noise, safety, and environmental justice. The safety element identifies hazard mitigation policies to guide local decisions related to zoning, subdivisions, and entitlement permits. Each element's data, analyses, goals, policies, and implementation programs must be consistent with and complement one another. For example, allowed land uses defined in land use element maps must take into account hazards defined in safety element maps.

The California Planning and Zoning Law and the Subdivision Map Act require all cities and counties to adopt specific plans and other regulations to implement the general

plan. Counties and cities must have zoning and specific plans that are consistent with the general plan. The Subdivision Map Act requires that land subdivision also be consistent with the general plan.

42.3.2. State Guidance

The State is seldom directly involved in local land use decisions. These have been delegated to city councils and county boards of supervisors. Local decision-makers adopt their own land use policies based on State laws and approve individual development projects based on these policies.

OPR is the principal state agency that oversees community planning issues for the State. One of its tasks is to develop guidelines for counties and cities to follow for developing general plans. The most recent version of the General Plan Guidelines was published in 2017 and includes detailed information on what needs to be included in each mandated element. Of most relevant importance to hazards management is the guideline for developing a safety element. In addition, there are summaries of laws and government codes that apply to community planning.

OPR's 2017 General Plan Guidelines encourage best practices and emphasize consideration of each local general plan within its regional context. For example, OPR encourages local governments to coordinate planning issues that transcend city or county boundaries. Wildfire, flooding, and air pollution are examples of hazards that can cross jurisdictional boundaries.

The role of OPR is not to regulate local government planning, but to provide cities and counties with planning assistance and resources. OPR prepares numerous publications on a variety of planning topics and provides advice and assistance to local planners by phone and email (OPR 2017).

42.3.3. Mandated General Plan Elements

The Government Code specifies requirements for the minimum content in each element of a general plan (Government Code section 65302). Local governments are welcome to go beyond the minimum requirements and to include other elements or sections. The elements can be organized in whatever method best fits the policies of the municipality, as long as all the required components are addressed. The following is a brief description of the requirements that are most relevant to hazard mitigation for each element.

Safety Element

The safety element is the most important element for hazard management. It contains the most significant requirements to protect people and property from hazards. At a minimum, the safety element must address seismic, geologic, fire, and flood hazards. Local governments often include other components such as crime, hazardous materials, airports, and emergency operations. The first priority for the local government is to identify the hazards that are within its boundaries. Hazard identification will include mapping of the hazardous areas. Then, the local government must determine the strategies and policies that will reduce the risks from these hazards. The safety element unifies components from other elements into a single element that guides hazard-related policy- and decision-making.

Land Use Element

The land use element outlines land use categories and their locations within the community. The categories can include residential, commercial, agriculture, and public facilities. Included in the requirements for this element is a statement of the standards of population density and building intensity for each of the identified land use categories. A recently added requirement (AB 162) is that areas within the community that are subject to flooding must be identified and mapped by floodplain mapping prepared by FEMA or DWR. This must be reviewed each year.

In addition to providing the required flood mapping, the land use element offers other opportunities for hazard mitigation. Local governments can include policies that land uses of higher value, such as commercial or residential, be located outside likely hazardous areas, which might encompass areas subject to hazards such as landslides, wildfires, and floods or potential human-made hazards. Keeping high-value land uses such as industrial plants and rail yards out of potentially hazardous locations can greatly reduce the loss of life and property.

Circulation Element

The circulation element involves the transportation routes within a city and county. This element can include policies on what the transportation routes will be in the future and where they are located. Transportation can be both vehicular and pedestrian. Vehicular circulation includes local roads, highways, bicycles, and rail. Road widths, street parking, and intersections are a few of the components to planning for vehicular circulation. Pedestrian circulation may include sidewalks, walking trails, and crosswalks. Public utilities to support circulation, such as street signs and traffic lights, are also

addressed within this element. Also included are transit facilities, such as bus terminals and railway lines and stations.

The circulation element has substantial potential to promote hazard mitigation within the community. Many transportation routes will be used by emergency services to respond to incidents. They will also be used as evacuation routes for people leaving areas that have been or are about to be affected by a disaster. In their circulation elements, local governments can include requirements that critical roads be wide enough to allow larger vehicles (such as emergency vehicles) to pass other vehicles so that there are no traffic jams during a disaster event. The element could also require that new developments have multiple access points to expedite response and evacuation in the event that any access points or roads become inaccessible.

Housing Element

The housing element includes projected housing needs for the community and strategies for the community to increase housing supply. The housing projections and strategies analyze a variety of factors, including population projections and market conditions. Once a strategy is adopted, the city or county may implement the strategy through zoning ordinance modifications or through housing development project approvals.

Under California law, the housing element is the only general plan element requiring periodic review by the State of California and updates every five years. Given the update requirement, the housing development strategy is a five-year plan of actions to implement the goals and objectives of the element. Under AB 162, local governments must add the latest flood hazard information to their housing elements before forwarding the elements to the State Department of Housing and Community Development for review.

Conservation Element

The conservation element covers natural resources within the city or county. In addition to conservation of natural resources, this element addresses the responsible development and use of these resources. Because growth and development can lead to increased demand for natural resources such as open land, the strategies within this element are developed in accordance with the strategies of other elements such as housing, open space, and transportation.

Natural resources are an important component in safety elements in that they include the natural conditions that could lead to hazards for the community. Examples include forested areas within high fire severity zones, rivers, and streams within floodplains, coastal regions susceptible to tsunamis, and hills with landslide risks. Under AB 162, conservation elements must include information on waterways that contribute to or support floodplains.

Open Space Element

The open space element contributes to hazard mitigation primarily through policies for setting aside land for non-development. Motivations behind such policies could include preventing development in hazardous areas. Instead of accommodating development, high-hazard areas could be preserved as open space. Examples include land along earthquake fault zones or within floodplains. Setting aside land can reduce current risk through protection and preservation of natural resources in floodplains. Natural resources such as wetlands and marshes can provide a buffer and absorb the impact of floods. If development is permitted in hazardous areas, open space could serve as a buffer between the development and the hazard. For protection from wildfires, this buffer would provide a built-in firebreak surrounding the development.

Noise Element

The noise element addresses excessive noise levels in areas of the community. It is included in the general plan in order to minimize unhealthful impacts from sources of excessive commercial, industrial, and transportation noise. Although the noise element does not directly address natural hazards, it has a bearing on placement of noise-sensitive land uses such as schools, hospitals, and retirement centers that may also be vulnerable to hazards and risks. Areas near the ends of airport runways are characterized not only by extreme noise but also by higher risk of airplane crashes and therefore are not suitable for such land uses.

Environmental Justice Element

California Government Code Section 65040.12 defines environmental justice as "the fair treatment and meaningful participation of people of all races, culture and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Environmental justice seeks to minimize and equalize effects of environmental hazards among the entire community regardless of income, ethnicity or race.

A general plan must contain an environmental justice element, or integrate environmental justice goals, policies and objectives into the other plan elements, if the city or county has a "disadvantaged community" (a community so designated by the California Environmental Protection Agency) or a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation.

42.3.4. General Plan Consistency

The required general plan elements are an important component of community planning, but their value can easily be negated if they conflict with one another. For this reason, state general plan law requires both internal and external consistency. A general plan is internally consistent if the content of each individual element is consistent with other parts of the same element and with other general plan elements. For example, maps and diagrams must be consistent with the text within the element. External consistency refers to the consistency of the general plan with zoning and other general plan implementation programs and actions. For more information regarding related laws, see Appendix L.

Consistency Among General Plan Elements

According to Government Code Section 65300.5, the general plan and elements make up an integrated, internally consistent and compatible statement of policies for the adopting agency. Therefore, the policies outlined in the general plan must be unified and support one another. Components governing land use must not conflict with circulation, housing, or safety policies. For example, a land use element map designating a high-density residential area in the middle of a landslide area identified on a safety element map would conflict with safety element policies calling for protection of housing from landslide hazards.

Consistency of Implementing Actions

Actions implementing general plans, such as re-zonings, site plan reviews, subdivision map approvals, and capital improvement programs, must be consistent with the general plan. This is an important underpinning of hazard mitigation because it requires that policies related to minimizing impacts of natural hazards identified in the general plan be followed in the day-to-day actions of city and county governments.

42.4. ADOPTION OF LHMPS WITHIN SAFETY ELEMENTS

Under the federal DMA, each municipality must develop a local hazard mitigation plan or participate in a multi-jurisdictional LHMP in order to be eligible for pre-disaster mitigation grants or post-disaster recovery assistance from the federal government.

At the state level, AB 2140 (2006) authorizes and encourages local governments to adopt their LHMPs into the safety elements of their general plans. Such adoption is not mandated by this law. However, communities that do so may be considered, upon request of the state, to receive available funds from the California Disaster Assistance Act to cover a portion of the community's share of federal-grant-funded post-disaster projects. Adoption of an LHMP in the safety element under AB 2140 is one of the requirements to be eligible for such funding.

AB 2140 is one of the most important links between general plans and hazard mitigation in California. Integration of an LHMP into a safety element allows hazard mitigation strategies to be implemented and local hazard awareness to be upgraded and enhanced. In addition, all other elements of the general plan, as well as implementation programs (such as zoning, subdivision maps, specific plans, and capital improvement programs), are required to comply with an LHMP that it is adopted with the safety element.

To help California cities and counties comply with state LHMP requirements under AB 2140, SB 379 (2015), and SB 1241 (2012), Cal OES is developing sample adoption resolution language indicating that compliance with all three pieces of legislation is met by adopting the LHMP into the safety element of the general plan. The sample language, when completed, will be available on the Cal OES website.

42.5. GENERAL PLAN IMPLEMENTATION

The following sections discuss the tools and processes that are involved in achieving the goals and objectives set by a general plan.

42.5.1. Zoning

Government Code Section 65850 establishes the legal authority for cities and counties in California to enact zoning ordinances. A community's zoning ordinance places land

into a variety of use categories, known as zones. Examples of zones include residential, commercial, public facility, industrial, open space, and agriculture. It is common to find different types of zones for each category; for example, residential zones may include single-family, multi-family, and rural. For each zone, the zoning ordinance establishes building requirements, including restrictions on the range of uses allowed, limits on building size and type, requirements for building setbacks (how far a structure must be from the property lines), and minimum parcel sizes. Zoning has functions that relate to hazard management as summarized below.

Hazard Overlay Zones

Overlay zones establish regulations beyond those set by the base zoning of a property. Generally, they address issues that typical zoning classifications do not.

Hazard overlay zones address risks created by a defined hazard. Common sources of overlay zone mapping include special flood hazard areas, fire hazard severity zones, and seismic/geologic hazard zones. These zones identify the location of the hazards and their potential risks to the community. Restrictions on development and land use are developed locally for each hazard overlay zone. Local governments can use hazard overlay zones to implement hazard mitigation strategies.

Zoning Changes

Landowners who wish to develop or build on their property may be restricted because of its current zoning. For example, land zoned for agriculture may have minimum lot size requirements and restrictions on how many houses can be built. In these cases, the landowner could request a zoning change. Local legislative bodies such as city councils and boards of supervisors have the authority to change zoning on parcels. The zoning change request is brought before a public meeting for comment. Significant opposition from the public can sway the council or board to deny the change. Any changes in zoning must be consistent with the general plan and other requirements on the property. Otherwise, the change can be challenged in court.

Variances

A variance allows variation from a standard zoning requirement. California law does not allow variances from the permitted land uses specified by zoning, but it does allow variances from other zoning requirements if certain conditions are met. An example would be a variance from standard building setback requirements on a lot where a geologic obstruction, such as a fault zone or landslide, would prohibit construction of a home that complies with the standard requirements.

Usually, variances are granted only if it is proven that compliance with the standard zoning would create a hardship for the landowner. In the case of the geologic obstruction, being forced to build a much smaller house or no house at all could reasonably be considered a hardship for the landowner.

Site Plan Review

A local planning agency reviews proposed site plans to confirm that they comply with zoning requirements. Site plan review offers the planning staff the opportunity to apply lessons learned from previous disasters to proposed new development. This could include assessing drainage, vegetation landscaping, building design and locations, soil integrity, and adequate access.

Down-Zoning

Down-zoning refers to a zoning change in which the range or density of allowable uses has been decreased. For example, the zoning of a parcel may change so that the allowed number of housing units per acre or other building density is decreased. This is relatively common and is sometimes necessary to make zoning consistent with the general plan, as required by state law. In the 1980s, for example, the City of Los Angeles down-zoned approximately one-third of the city in order to achieve consistency with the general plan.

A challenge of down-zoning includes the consequences it has for the landowner. Decreasing the potential density of a parcel can decrease the economic value to the landowner. Landowners have challenged down-zonings in court as "regulatory takings." U.S. Supreme Court rulings of the past several decades have established guidance for local governments in determining the extent to which properties can be reasonably downzoned.

42.5.2. Specific Plans

California Government Code Section 65450 establishes the legal authority for specific plans, which may be used to implement the general plan in a certain area. Specific plans are created when unique development standards are needed for a location. While general plans must meet mandated requirements, specific plans are subject to more general legal guidance. This allows specific plans to establish zoning and other development standards appropriate for a development project.

Specific plans are required by law to be consistent with general plans. According to Government Code Section 65455, all zoning ordinances, tentative subdivision maps, parcel maps, and public works projects in an area subject to a specific plan must be consistent with the specific plan.

42.5.3. Subdivision Map Act

The Subdivision Map Act (Map Act) (Government Code Section 66410, et seq.) is the overarching law for the development of subdivisions in California. The first version of the Map Act was written in 1907, making it one of the oldest planning laws in California and in the United States. It was written in response to rapid growth in California at the time and provides a process for local governments to follow in order to grow responsibly.

The Map Act has been amended several times. At present, it gives local governments authority to regulate proposed subdivisions within their jurisdiction. Local procedures under the Map Act are uniform and applied statewide. Subdivisions are defined as having more than four lots and are required to include a map that shows approximately what the subdivision would look like if completed.

A key requirement of the Map Act is that a city or county must deny any tentative subdivision map if the map, design, or improvements are inconsistent with the general plan or any applicable specific plan. For example, a general plan may include policies requiring that subdivisions have adequate water supply for fire suppression, multiple access points, and building design that protects people from earthquakes, fires, and floods.

A city or county must deny any tentative subdivision map if the design or improvements are likely to cause environmental damage, substantially and avoidably injure fish or wildlife or their habitat, or cause public health problems. This provides a basis for linking natural hazards to environmental damage and public health, letting city and county planners deny or modify maps not meeting these criteria.

42.5.4. Unreinforced Masonry Building Act

In 1986, the California legislature enacted the Unreinforced Masonry Building Act (Government Code Section 8875, et seq.). This law requires that local governments identify every building that has unreinforced masonry (URM) located within a Seismic Zone 4. Once the buildings are identified, local governments must develop and submit

to the state a plan for reducing URM loss during a seismic event. This plan should provide for retrofitting or removing URM buildings. California has forbidden the construction of URM buildings since 1933; however, there are still over 22,000 of these buildings in the state.

As of 2006, approximately 70 percent of all URM buildings in California had been retrofitted. In Los Angeles and Orange Counties, the percentage is 87 percent and 89 percent, respectively. San Francisco has retrofitted 86 percent of all URM buildings. As of 2015, some cities, such as Berkeley have achieved URM retrofit progress in over 90 percent of their URM buildings.

42.5.5. Capital Improvement Programs

Transportation, water, power, and sewage systems play a critical role in the health of communities, and they must be maintained and modernized to continue to meet the community's needs. Local jurisdictions typically maintain ongoing capital improvement programs. These programs are required to be consistent with the general plan of the community.

New development often requires construction of capital improvements such as parking, roads, and water and sewer services. Local governments can require developers to build these improvements or levy fees on the development project to help fund the improvements.

After a disaster, one of the critical functions for short-term recovery is to rebuild and restore critical infrastructure and key resources. This can involve reconstruction of many of the systems that are included in capital improvement programs. Thus, one of the keys to community resilience is to ensure that infrastructure is built to promote public safety after a disaster. One example is requiring that new developments have wider roads and multiple access points to facilitate evacuation and response operations.

42.5.6. Land Acquisition

Local government can buy all or part of a property from a landowner to benefit the community. Examples include land acquired to allow road widening, construction of new roads and freeways, or sale to developers for redevelopment.

Land acquisitions have increasingly been used as tool for hazard mitigation, primarily because they are extremely effective at reducing risk within communities. In California,

land acquisitions have been used for property susceptible to landslides and other geologic and seismic hazards.

Most buyouts occur after a disaster or after repeated events on the property. This is largely because land acquisition is the most expensive form of hazard mitigation, and sufficient funds are usually not available until after a disaster has been declared.

42.5.7. Land Conservancies

Quasi-public organizations often undertake hazard mitigation and environmental protection functions to supplement local governments. Land conservancies can become land holders with the goal of preserving the natural environment, which may also have hazard mitigation benefits. Land with flood or geologic hazard issues may be kept out of development through the purchase of the land for open space or purchase of the land's development rights. For example, federally sponsored resource conservation districts perform such functions. The Nature Conservancy is a land conservancy that has worked on more than 100 projects and preserves in California since its founding in 1951, although many of its projects are now managed by other organizations.

42.6. COASTAL LAND USE REGULATION

The California Coastal Commission was established in 1972 to protect California's coastal environment. California's coastal management program is carried out through a partnership between state and local governments. The California Coastal Act of 1976 (Public Resources Code Section 30000, et seq.) extended the Coastal Commission's authority indefinitely. Section 30253 of the California Coastal Act requires that new development minimize risks to life and property in areas of high geologic, flood, and wildfire hazard.

Implementation of Coastal Act policies is accomplished primarily through the preparation of Local Coastal Programs (LCPs) that are required to be completed by each of the 15 counties and 61 cities located in whole or in part in the coastal zone. Completed LCPs must be submitted to the Coastal Commission for approval.

An LCP includes a land use plan, which may be the relevant portion of the local general plan, including any maps necessary to administer it, and the zoning ordinances, zoning district maps, and other legal instruments necessary to implement

the land use plan. Coastal Act policies are the standards by which the Coastal Commission evaluates the adequacy of LCPs.

Amendments to certified land use plans and LCPs only become effective after approval by the Coastal Commission. To ensure that coastal resources are effectively protected in light of changing circumstances, such as new information and changing development pressures and impacts, the Coastal Commission is required to review each certified LCP at least once every five years.

42.7. CALIFORNIA BUILDING CODES

The California Building Standards Code—contained in California Code of Regulations, Title 24, Parts 2 through 11—is a compilation of three types of building standards from three sources:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes
- Building standards that have been adopted and adapted from national model codes to address California's ever-changing conditions
- Building standards authorized by the California legislature that constitute amendments not covered by national model codes; these are created and adopted to address particular California concerns.

All occupancies in California are subject to national model codes adopted into Title 24, to amendments adopted by state agencies, and to ordinances implemented by local jurisdictions' governing bodies. Building and fire codes adopted under the state's laws have created a solid foundation for mitigating impacts of floods, fires, earthquakes, and other natural hazards in new development. Key elements of the building codes are as follows:

- California adopts the most recently published International Building Residential and Fire Codes, Uniform Plumbing and Mechanical Codes, and National Electric Code, with proposed California amendments to ensure they are in compliance with new or changing laws and regulations for adoption in California.
- The California Green Buildings Standards (CALGreen) Code and the California Energy Code are among the leading U.S. codes related to green building standards and energy conservation.

- Title 24, Part 6—the California Energy Code—contains energy conservation standards applicable to residential and non-residential buildings throughout California, including schools.
- Title 24, Part 8—the California Historical Building Code—contains regulations of the State Historical Building Safety Board and contains alternative solutions for the preservation of qualified historical buildings or properties, to provide access for persons with disabilities, to provide a cost-effective approach to preservation, and to provide for the reasonable safety of the occupants or users.
- Title 24, Part 9—the California Fire Code—addresses fire provisions for life safety.
- The California Building Standards Commission adopts residential and non-residential standards and certain provisions of Title 24, Part 10.
- Title 24, Part 11—the CALGreen Code—addresses green building standards.
- Lake, Kern, Marin, and Ventura counties have also adopted the International Urban-Wildland Interface Code.

42.7.1. Temporary Modification to the Building Code to Aid Post-Disaster Emergency Housing

It is time-consuming and costly to design and construct buildings in full compliance with the requirements of the 2022 California Building Standards Code for the purpose of housing victims of a declared emergency. Local jurisdictions often must establish and approve emergency housing in a very short timeframe. However, they also need to ensure that the housing provided is durable and safe.

Relying on the code is the routine process for permitting and approving residential housing. However, according to the California Department of Housing and Community Development (HCD), there are options for housing that are available but not recognized in the code. These housing options may provide a quick, cost-effective, and safe shelter permanently or temporarily.

Under certain post-disaster conditions, building codes may be temporarily modified to allow for more rapid construction of emergency housing. Chapter 786, Statutes of 2017 (AB 932) directs HCD to review and approve draft ordinances from seven local jurisdictions to ensure that they address minimum health and safety standards. This legislation became effective in 2018, and there were no building standards available to specifically address emergency housing. In order to provide a consistent minimum standard by which local agencies may develop emergency housing or shelter ordinances, HCD prepared emergency regulations for review and adoption by the California Building Standards Commission.

42.7.2. Applicable Regulatory Agencies

Building and fire codes are locally enforced by city and county staff, including building inspectors, fire department personnel, and sometimes law enforcement officers. Cities and counties review detailed plans for new construction for conformance with California building codes. Local code enforcement agencies arbitrate disputes concerning portions of facilities involved in repairs or upgrades and make final decisions on such matters.

According to California Health and Safety Code Section 16006, the "enforcement agency" is the agency of a city, city and county, or county responsible for building safety within its jurisdiction. The Division of the State Architect, within the Department of General Services, is the review agency for the design and construction of public kindergarten through 12th grade school facilities and state-owned and state-leased essential services facilities.

Under the National Earthquake Hazards Reduction Program, the California Geological Survey and the U.S. Geological Survey prepare periodic updates of seismic zone maps for inclusion in the earthquake provisions for model building codes. These agencies operate strong-motion programs that record and analyze the response of engineered structures during earthquakes that form a basis for improved building codes.

Other state agencies with code development or regulatory authority include the Department of Health Care Access and Information for hospitals, the Department of Housing and Community Development for mobile homes, the Department of Water Resources for construction in areas protected by the facilities of the Central Valley Flood Protection Plan, the State Lands Commission for engineering standards for marine oil terminals, and the Building Standards Commission.

42.7.3. Applicable State Fire Codes

Local fire safety requirements are governed by state laws established through the legislature and administered through the State Fire Marshal and CAL FIRE. Fire safety enforcement is an important part of local hazard mitigation. The California Fire Code contains regulations consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of:

- Fire and explosion.
- Dangerous conditions arising from the storage, handling, and use of hazardous materials and devices.

- Hazardous conditions in the use or occupancy of buildings or premises.

The California Fire Code also contains provisions to assist emergency response personnel. These fire-safety-related building standards are referenced in other parts of Title 24. It is a fully integrated code based on the 2021 International Fire Code.

The Office of the State Fire Marshal's Code Development and Analysis Division reviews all of California's regulations relating to fire and life safety for relevancy, necessity, conflict, duplication, or overlap. The division also prepares the California State Fire Marshal's fire and life safety regulations and building standards for review and adoption by the California Building Standards Commission.

42.7.4. The Building Code Effectiveness Grading Schedule

Administered by Verisk, the Building Code Effectiveness Grading Schedule (BCEGS) assesses community building codes and their enforcement, with emphasis on mitigation of losses from natural hazards. The BCEGS program assesses a community's building code enforcement in three areas:

- Code administration
- Plan review
- Field inspection

Verisk collects 1,243 data points to calculate two scores: One for one- and two-family residential construction and another for commercial or industrial construction. Scoring ranges from 0 to 100. For insurance rating guidance, the scores are translated to a scaled class rating of 1 (exemplary commitment to building code enforcement) to 10. The classifications apply to communities under the jurisdiction of each building code department and used by the insurance community to help establish insurance rates.

With strong building code mandates, California communities tend to fare very well under the BCEGS evaluation process as shown in Figure 42-1. With an average classification of 3 for both commercial and residential construction, California ranks first in the nation for state average score. Of the 15 communities that have achieved an "exemplary" (BCEGS Class 1) rating, eight are in California. The City of Palo Alto is the only city in the nation to have received a Class 1 rating for both commercial and residential development.

Source: (ISO 2019)

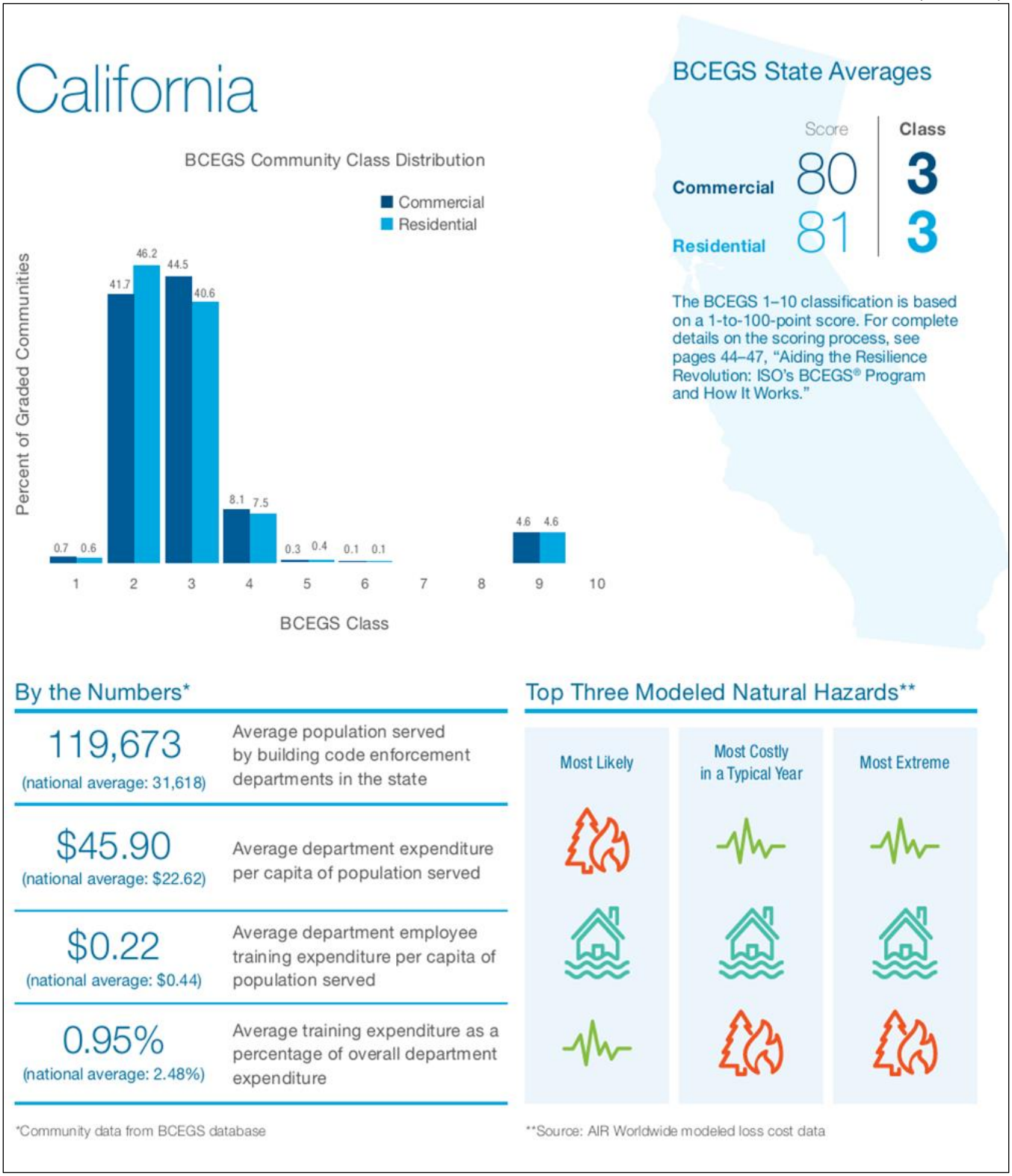

Figure 42-1. California State BCEGS Profile

The FEMA Building Science Branch uses BCEGS data to track the rate of code adoption. A performance goal is to increase the percent of communities in hazard-prone areas (flood, wind, and earthquake) that adopt disaster-resistant building codes. Building Science produces national-level reports that include hazard maps listing each reporting BCEGS jurisdiction by county and state, grouped by FEMA region. The hazard maps and reports show the degree of resistance to building code adoption by jurisdictions at high risk. BCEGS scores are also used under the Building Resilient Infrastructure and Communities (BRIC) grant program and are an evaluation factor for scoring grant applications under a nationally competitive process.

42.8. HIGH HAZARD POTENTIAL DAM PROGRAM

FEMA's Rehabilitation of High Hazard Potential Dams (HHPD) grant program provides technical, planning, design, and construction assistance for rehabilitation activities that reduce dam risk and increase community preparedness. To be eligible, recipients must have a FEMA-approved hazard mitigation plan that includes all dam risks.

The HHPD planning requirements for local plans are as follows:

- Incorporate of existing plans, studies, reports, and technical information for eligible high hazard potential dams.
- Address eligible high hazard potential dams in the risk assessment.
- Include mitigation goals to reduce long-term vulnerabilities from eligible high hazard potential dams.
- Prioritize mitigation actions to reduce vulnerabilities from eligible high hazard potential dams.

The HPPD program is new since the completion of California's 2018 SHMP, and it has not had much time to influence local hazard mitigation planning in California. The State has always included the dam failure risk in its state hazard mitigation plans and required the assessment of this risk as a hazard of concern for communities downstream of listed "high" or "significant" hazard dams. A recent enhancement of the Department of Safety of Dams (DSOD) website that makes dam failure inundation mapping for state-owned and regulated dams readily accessible has been a significant help for local planning efforts in assessing their risk to dam failure (California Department of Water Resources Division of Safety of Dams 2022).

As of this 2023 SHMP update, less than 1 percent of the approved local hazard mitigation plans within the state have requested a review for the HHPD requirements. This can be attributed to the newness of the HHPD program. It is likely that enhancements will need to be made to most plans in the state to meet the HHPD requirements, especially the goal setting and action planning requirements.

To draw attention to the HHPD planning requirements, FEMA and the State have added the HHPD planning requirements as an "optional" field to the Local Hazard Mitigation Plan Review Tool. This enhancement, plus increased outreach efforts that are being made by both FEMA and Cal OES, should result in more local plans meeting the HHPD requirements during the 5-year performance period of this SHMP.

42.8.1. Policies, Programs, and Capabilities That Address High Hazard Potential Dams

All of the local capabilities identified in this chapter could have application to reducing risk from the impacts of dam failures, especially those associated with management of identified floodplains. While mapped dam failure inundation areas often exceed the area of mapped and regulated floodplains, the portion of these inundation areas that would be subject to these floodplain management capabilities is extensive. Programs like FEMA's Community Rating System promote regulating areas outside of FEMA's regulatory floodplain to include other areas of known flood risk such as dam failure inundation areas. In fact, the CRS program has classification prerequisites that mandate oversight of dam failure inundation areas for communities seeking CRS Class 4 or better classifications.

The biggest challenge to implementing policies, programs, and capabilities to mitigate impacts from high hazard potential dams is risk communication and awareness. The state program that has most addressed this challenge is the DSOD Dam Breach Inundation Mapping Program, directed by California Water Code section 6161. The availability and accessibility of this level of risk data on dam failure inundation has been a significant benefit for local capacity to address risk from high hazard potential dams. Prior to the establishment of this program and the DSOD, information on extent and location of dam failure risk was not readily available to support local planning and programs. Now that this tool is available, and with sufficient detail to assess risk, local governments will have a better understanding of that risk. This should lead to enhanced programs for managing risk. It represents a significant opportunity to identify and implement mitigation actions that address the risk posed

by high hazard potential dams. DSOD is fully committed to maintaining and updating this mapping program as new data becomes available.

42.9. LOCAL CAPABILITY EFFECTIVENESS

All counties and a majority of the eligible local governments within the state have identified, leveraged, and developed capabilities that are effective in mitigating risk from natural hazards and support the development of LHMPs. These capabilities are discussed in their LHMPs and serve the basis for the implementation of many successful actions. Capabilities assessments typically evaluate the community abilities described in Table 42-1.

Table 42-1. Community Abilities Typically Reviewed in Capability Assessments

Capability Category	General Description	Specific Examples
Planning and Regulatory Capabilities	• Federal/state/local statutes • Land use • Building codes	• Floodplain requirements • General plans • Capital improvement plans • Stormwater management plans • Emergency operations plans • State regulations • Building codes
Education and Outreach Capabilities	• Training • Public involvement	• Firewise communities • Listos
Administrative and Technical Capabilities	• Organization • Roles and responsibilities	• Floodplain administration • GIS specialist • Mutual aid agreements • Mitigation planning committee • Emergency manager
Financial Capabilities	• Internal funding sources • External funding sources	• General fund • Authority to tax • Community development block grants • State and federal grants

For communities that participate in the National Flood Insurance Program (NFIP), capability assessments also include an evaluation of the jurisdiction's capacity to implement that program's requirements.

Cal OES reviews approved and adopted LHMPs for each update of the SHMP. These reviews foster partnerships, promote more resilient communities, and promote hazard mitigation activities consistent with SHMP goals and objectives.

The reviews aim to accomplish the following:

- Determine how the local governments are evaluating the effectiveness of their plans.
- Determine challenges, barriers and unmet needs the counties identified in reaching their mitigation goals.
- Identify opportunities to address challenges and leverage existing capabilities.

42.9.1. Effectiveness

The review of county LHMPs found limited discussion of the effectiveness of mitigation actions and overall plan effectiveness. When plans are updated, each participating local government is required to reconcile its past recommended actions. This is where plan effectiveness should be measured and any course correction needed to increase the effectiveness of the plan should be identified. However, the effectiveness of prior actions typically is not evaluated because it is not specifically required in the FEMA planning guidance.

Local governments should be encouraged to include mitigation success stories in their plans and to identify obstacles or barriers to effectiveness that presented themselves during the performance period of the plan being updated.

42.9.2. Challenges and Barriers

Challenges and barriers to implementing LHMP recommended actions can vary based on the size or type of hazard mitigation planning (Single jurisdiction vs. multi-jurisdiction, large scale vs. small scale, etc.). Cal OES has made it a priority of this SHMP to provide tools and resources that local governments can use in preparing and updating their hazard mitigation plans.

Appendix M of this SHMP includes a guide to local hazard mitigation planning resources and best management. The guide answers common questions that local governments have and provides recommended best-management practices for steps in the mitigation planning process. This guide will be updated as new resources and best-management practices are identified over the performance period for this SHMP. Table 42-2 summarizes typical challenges this resource attempts to address.

Table 42-2. Local Capability Challenges

Capability Category	Challenges
Planning and Regulatory Capabilities	• The definition of a local government (who is eligible to participate in an LHMP) • The elimination of silos in hazard mitigation planning
Education and Outreach Capabilities	• Defining the "public" for engagement in a planning effort • Integrating representatives of equity priority communities to actively engage in planning efforts
Administrative and Technical Capabilities	• Selecting best available data and science for local hazard mitigation planning • Natural vs. non-natural hazards • Understanding capabilities and capacities • Defining an equity lens for planning • Understanding state mandates such as AB 2140, SB 379, and AB 747 • The impact of key personnel turnover
Financial Capabilities	• The ramifications of plan expiration • When to apply for funding for plan updates • The reliance on grant funding for local hazard mitigation planning

42.9.3. Opportunities

The following are some of the opportunities identified in local hazard mitigation plans to address challenges and leverage capabilities.

- Including progress reporting as part of a plan maintenance strategy helps to keep the plan dynamic and track changes that could impact the implementation of the plan. This also provides an opportunity to expand continuing public involvement as a part of plan maintenance.
- Forming partnerships with community and non-profit organizations to maximize limited financial resources.
- Linking mitigation planning with funding. With the increased funding that California has received and is poised to continue to receive, many local governments with approved LHMPs are well positioned for funding of actions identified in those plans.
- Emphasizing equity and climate change. This will create an opportunity to revise plans that have followed the same path for more than 20 years.
- Expanding the scope of an LHMP by including local government planning partners that own and operate community lifelines (special districts) in multijurisdictional planning efforts.
- Integrating LHMPs with land use plans to remove some of the silos for mitigation planning that have been created over the past 20 years.
- Engaging the public to touch more audiences, which provides more diverse input on risk and vulnerability.

- Employing technology and innovation, such as the use of ESRI Story Maps, to expand the reach of LHMPs during implementation. This expanded reach has made it more efficient to communicate risk that these plans identify.

43. Local Government Planning Coordination

S14- [44 CFR 201.3(c)(5) and 201.4(c)(4)(i)]: Does the plan describe the process to support the development of approvable local government mitigation plans? The following chapter (43) has been dedicated describe the process for which the state supports the development of local hazard mitigations within the state.

In their LHMPs, local jurisdictions address hazards and risk that could affect their area, aligning their planning efforts to be in concert with the SHMP. Jurisdictions are encouraged to address the hazards unique to their community and ensure that any State planning requirements associated with the LHMP are included. Cal OES provides support, training and technical assistance to local jurisdictions throughout the planning and adoption process. Because of the history of disasters throughout California, encouraging communities to adopt LHMPs is a priority.

The DMA requires that states review LHMPs as part of their state hazard mitigation planning process. The intent is three-fold:

- To gather hazard, vulnerability, and mitigation information from the local level for use in state-level planning
- To ensure that state and local hazard mitigation planning is coordinated to the greatest extent practical
- To ensure that local jurisdictions are made aware of the hazards and vulnerabilities within their jurisdiction and to develop strategies to reduce those vulnerabilities

This process ensures that mitigation actions are based on sound planning processes that account for the risks and capabilities of California communities.

Cal OES's LHMP program continues to evolve based on the changing needs of LHMPs and ongoing updates to federal requirements. Cal OES adapts its outreach and educational approaches to align with current policies and resources. Program changes include new and emerging technologies for addressing and tracking hazards and gathering related data to successfully support local hazard mitigation planning.

43.1. RESOURCES FOR LOCAL HAZARD MITIGATION PLANNING

Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. The DMA encourages states, tribes, and local governments to take a new approach to mitigation planning. FEMA's interim final rule for this law in the Federal Register (44 CFR Part 201, Section 201.6) established mitigation planning requirements. It states that local jurisdictions must demonstrate that proposed mitigation actions are based on a sound planning process that is inclusive of the whole community and that accounts for the inherent risk and capabilities of the communities.

43.1.1. FEMA Guidance

FEMA has developed many tools to support hazard mitigation planning by local jurisdictions. FEMA guidance provides a basic structure from which the hazard mitigation planning process may proceed. The following sections describe the main FEMA resources that are the primary guidance documents for local jurisdictions to address required elements in their LHMPs. For a comprehensive listing of all FEMA planning resources, visit the FEMA website.

Local Mitigation Planning Policy Guide

FEMA's Local Mitigation Planning Policy Guide (released April 19, 2022, effective April 19, 2023) is the official interpretation of federal regulations and statutes relevant to local mitigation planning. This guide replaces previous FEMA guidance from 2011, although the CFR relating to local planning requirements has not changed. The guide focuses on using local mitigation planning to assist local jurisdictions in whole-community planning to build resilience through climate adaptation, land use, and economic development. The guiding principles informing this guidance are planning

and investing in the future, collaborating and engaging all stakeholders and community members, and community planning based on local capabilities.

Local Mitigation Planning Handbook

The primary federal guidance tool for local jurisdictions to use in developing or updating LHMPs is the FEMA Local Mitigation Planning Handbook. FEMA updates this handbook every few years to ensure that guidance to jurisdictions is as current as possible. As of the preparation of this SHMP, the most recent Local Mitigation Planning Handbook was updated in 2013.

The handbook assists local jurisdictions in meeting the requirements of 44 CFR Section 201.6 by offering tools, worksheets, and examples. Included in this publication are detailed descriptions and examples of how to meet each required planning element successfully in the LHMP.

Mitigation Ideas Guide

Key considerations for evaluating mitigation planning actions include the following:

- Compatibility with community goals
- Legal authority
- Ability to implement and enforce mitigation actions
- Technical feasibility
- Financial capability
- Benefit-cost review of a proposed solution
- Priority level of a proposed project among the hazards addressed
- Completeness of the solution

FEMA's Mitigation Ideas Guide (January 2013) is a resource that communities can use to identify and evaluate a range of potential mitigation actions for reducing risk to natural hazards and disasters. The identified mitigation actions are organized by disaster type and by action type (local planning and regulations, structure and infrastructure projects, natural systems protection, and education and awareness programs). This publication can assist in identifying mitigation actions to include in a jurisdiction's LHMP and determining potential mitigation projects for funding under FEMA's Hazard Mitigation Assistance (HMA) program.

43.1.2. Other Resources for Local Hazard Mitigation Planning

Table 43-1 lists additional resources that support local hazard mitigation planning.

Table 43-1. Resources Supporting Local Hazard Mitigation

Agency	Guidance/Tool	Resource Website
General		
Local Jurisdiction	Jurisdictions should review their previous LHMP at the beginning of the LHMP update process for background on goals and priorities and to assess implementation of previous mitigation actions	Local jurisdiction website
FEMA	Local Mitigation Planning Handbook	https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf
FEMA	Local Mitigation Plan Review Guide	https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-plan-review-guide_09_30_2011.pdf
FEMA	Tribal Mitigation Plan Review Guide	https://www.fema.gov/sites/default/files/2020-06/fema-tribal-mitigation-plan-review-guide_12-05-2017.pdf
FEMA	Mitigation Ideas	
FEMA	Independent Study 318: Mitigation Planning for Local and Tribal Communities	https://training.fema.gov/is/courseoverview.aspx?code=IS-318&lang=en
FEMA	Integrating Disaster Data into Hazard Mitigation Planning: A State and Local Mitigation Planning How-to Guide	
FEMA	FEMA Training Modules G-318 Preparing and Reviewing Local Plans G-393 Mitigation for Emergency Managers	https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning
Office of the Federal Register	Code of Federal Regulations (CFR), Title 44: Emergency Management and Assistance, Part 201 (44 CFR 201)	https://www.ecfr.gov/current/title-44/part-201
California Native American Heritage Commission	Native American Heritage Commission website	https://nahc.ca.gov/codes/
Cal OES	California State Hazard Mitigation Plan	https://www.caloes.ca.gov/wp-content/uploads/002-2018-SHMP_FINAL_ENTIRE-PLAN.pdf
Cal OES	Local Hazard Mitigation Planning Program	https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-hazard-mitigation-planning/

Agency	Guidance/Tool	Resource Website
Cal OES	Region IX LHMP Review Tool	https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-hazard-mitigation-planning/
Cal OES	State of California Emergency Plan and Emergency Support Functions	https://www.caloes.ca.gov/office-of-the-director/operations/planning-preparedness-prevention/planning-preparedness/state-of-california-emergency-plan-emergency-support-functions/
OPR	Integrated Climate Adaptation and Resilience Program (ICARP)	https://resilientca.org/
OPR	General Plan Guidelines (including Safety Element Completeness Checklist)	https://opr.ca.gov/planning/general-plan/guidelines.html
U.S. Department of Homeland Security	Beyond the Basics website guide on developing or updating an LHMP	http://mitigationguide.org/
American Planning Association (APA)/FEMA	Planning Information Exchange	https://www.planning.org/nationalcenters/hazards/planninginformationexchange/
Element A—Planning Process; Element C—Mitigation Strategy; Element E—Plan Adoption		
FEMA	Plan Integration: Linking Local Planning Efforts	https://www.fema.gov/sites/default/files/2020-06/fema-plan-integration_7-1-2015.pdf
FEMA	Workshop: Planning for a Resilient Community	https://www.fema.gov/sites/default/files/documents/fema_planning-resilient-communities_fact-sheet.pdf
FEMA	Training Module IS-393 Introduction to Hazard Mitigation	https://training.fema.gov/is/courseoverview.aspx?code=IS-393.b&lang=en
FEMA	Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning	https://www.fema.gov/pdf/fima/386-6_Book.pdf
NOAA	Local Plan Alignment Compass	https://resilientca.org/topics/plan-alignment/
Cal OES	Cal OES Hazard Mitigation Planning Website	https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-hazard-mitigation-planning/
National Institute of Standards and Technology	Community Resilience Planning Guide	https://www.nist.gov/community-resilience/planning-guide
OPR	Community Engagement Best Practices	https://opr.ca.gov/docs/20190717-Community_Engagement_Best_Practices.pdf
Alliance of Regional Collaboratives for Climate Adaptation (ARCCA)	Adaptation Capability Advancement Toolkit (Adapt CA)	https://arccacalifornia.org/adapt-ca/

Agency	Guidance/Tool	Resource Website
FEMA/EPA/OPR/ ABAG	Vulnerability Assessment Toolkit: A Toolkit for Project Teams	http://www.centralcoastclimate.org/resources/
FEMA/EPA/OPR/	Framework for Building Regional Resilience in California: Workbook for Local and Regional Governments	http://www.centralcoastclimate.org/resources/
CNRA Climate-Safe Infrastructure Working Group	Paying It Forward: A Path Toward Climate-Safe Infrastructure in California	https://resources.ca.gov/CNRALegacyFiles/docs/climate/ab2800/AB2800_ES_FINAL.pdf
State of California Department of Finance	Population/Demography Information	https://dof.ca.gov/Forecasting/Demographics/
California Animal Response Emergency System	Website for local animal emergency planners	https://www.cdfa.ca.gov/AHFSS/Animal_Health/eprs/cares/
APA	Hazard Mitigation: Integration Best Practices into Planning	https://www.planning.org/publications/report/9026884/
APA	Policy Guide on Hazard Mitigation	https://www.planning.org/publications/report/9026884/
APA	Planning for Post-Disaster Recovery: Next Generation	https://www.planning.org/research/postdisaster/
Plan Review, Evaluation, and Implementation		
FEMA	2015 Hazard Mitigation Assistance Guidance	https://www.fema.gov/sites/default/files/2020-04/HMA_Guidance_FY15.pdf
FEMA	Grants Visualization Tool	https://www.fema.gov/about/reports-and-data/data-visualizations
FEMA	Mitigating Flood and Drought Conditions Under Hazard Mitigation Assistance	https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance
FEMA	Training Module IS-277 Benefit Cost Analysis Entry Level	http://www.training.fema.gov/is/courseoverview.aspx?code=IS-277
FEMA	Training Module Hazard Mitigation Assistance (HMA) Grant Programs IS-212.b Introduction to Unified HMA	http://www.training.fema.gov/is/courseoverview.aspx?code=IS-212.b
FEMA	Training Module E-212 HMA: Developing Quality Application Elements	https://training.fema.gov/emi.aspx
FEMA	Training Module E-213 HMA: Application Review and Evaluation	https://training.fema.gov/emi.aspx
FEMA	Training Module E-276 Benefit-Cost Analysis Entry Level	https://training.fema.gov/emi.aspx
Cal OES	Hazard Mitigation Grant Program webpage	https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/hazard-mitigation-grant-program/
OPR	ICARP—Investing in Adaptation Topic	https://resilientca.org/topics/investing-in-adaptation/

Agency	Guidance/Tool	Resource Website
Additional State Requirements		
California Environmental Justice Alliance	Senate Bill (SB) 1000 Toolkit: Planning for Healthy Communities	https://caleja.org/2017/09/sb-1000-toolkit-release/
Public Health Institute	Climate Change, Health, and Equity: A Guide for Local Health Departments	https://www.phi.org/resources/?resource=climatechange-health-and-equity-a-guide-for-local-healthdepartments
OPR	SB 1000: General Plan Guidelines: Chapter 4 (Environmental Justice Section) and Chapter 5	https://opr.ca.gov/planning/general-plan/guidelines.html
OPR	Defining Vulnerable Communities in the Context of Climate Adaptation	https://www.opr.ca.gov/planning/icarp/vulnerable-communities.html https://opr.ca.gov/planning/icarp/tac/
OPR	Resilience Guidebook Equity Checklist	https://opr.ca.gov/planning/icarp/resilient-ca.html
OPR	Resilience Guidebook Equity Checklist	https://opr.ca.gov/planning/icarp/resilient-ca.html
OPR	SB 379: General Plan Guidelines: Chapter 4	https://opr.ca.gov/planning/general-plan/guidelines.html
CAL FIRE	SB 1241: Fire Prevention Program	https://www.fire.ca.gov/programs/

43.2. RESOURCES FOR HAZARD INFORMATION AND ASSESSMENT

43.2.1. Federal Hazard Resources

FEMA, USGS, NOAA, and other federal agencies have developed many powerful tools that can be used to identify and assess hazards. These resources can be used independently or in coordination with state resources to assist local jurisdictions in identifying hazards that may affect their communities and to develop the basis for assessing the vulnerability of their communities. Many of these tools use GIS to determine physical extents of hazards or estimate potential impacts.

43.2.2. State Hazard Resources

A local jurisdiction's initial hazard assessment should begin with a review of California's SHMP risk assessment chapters to determine which hazards are considered a priority for the State. The SHMP offers detailed descriptions of hazards unique to California, as well as information on actions being taken by state agencies to address the identified

hazards and additional planning and GIS resources available to assist local jurisdictions in strengthening their hazard mitigation efforts.

California continues to develop tools to support risk and vulnerability assessment and hazard mitigation planning using the most current technology and best available data. These tools include guidance for climate adaptation, toolkits to guide local vulnerability assessments, and hazard mapping tools. These resources allow users to easily begin to understand hazards in their community. They are designed to be user-friendly and do not require specialized training to use. Jurisdictions are encouraged to review the resources available and spend time exploring those that may assist their LHMP preparation efforts.

43.2.3. Summary of Hazard Information and Assessment Resources

Table 43-2 lists federal, state, and regional resources that may be useful to jurisdictions in their risk assessments. Not all resources listed are applicable to all jurisdictions. New resources continue to be developed, so local planning teams should review FEMA, Cal OES, OPR, and other agency websites for additional resources during the hazard mitigation planning process.

Table 43-2. Resources Supporting Hazard Information and Assessment

Agency	Guidance/ Tool	Resource Website
General		
FEMA	Hazus	https://www.fema.gov/flood-maps/products-tools/hazus
FEMA	Risk Mapping, Assessment, and Planning Program (RiskMAP) Region IX	https://www.fema.gov/about/organization/region-9
FEMA	How-To Guide	FEMA 433—Using Hazus-MH for Risk Assessment https://www.fema.gov/pdf/plan/prevent/hazus/fema433.pdf
FEMA	Training Modules IS-922 Application of GIS for Emergency Management E-190 ArcGIS for Emergency Managers E-296 Application of Hazus-MH for Risk Assessment E-313 Basic Hazus-MH	https://www.training.fema.gov/is/courseoverview.aspx?code=IS-922 https://training.fema.gov/emicourses/emicatalog.aspx?cid=E313&ctype=R
Cal OES	MyPlan	https://myplan.caloes.ca.gov/
Cal OES	MyHazards	https://myhazards.caloes.ca.gov/

Agency	Guidance/ Tool	Resource Website
Resources for Seismic Hazards		
SCEC	Third Uniform California Earthquake Rupture Forecast (UCERF3)	https://www.scec.org/ucerf
CGS	Alquist-Priolo Earthquake Fault Zoning Maps	https://www.conservation.ca.gov/cgs/alquist-priolo
CGS	Seismic Zonation Maps	https://www.conservation.ca.gov/cgs/shp
CGS	California Earthquake Hazard Zone Application (EQZapp)	https://www.conservation.ca.gov/cgs/geohazards/eq-zapp
CGS	CGS Information Warehouse (PDF maps and reports and GIS data)	https://maps.conservation.ca.gov/cgs/EQZApp/app/
CGS	Geologic Hazards Data Viewer	https://maps.conservation.ca.gov/geologichazards/#dataviewer
CGS	Geologic Hazards Data List	https://maps.conservation.ca.gov/geologichazards/#datalist
USGS	Shake Alert	https://www.shakealert.org/
Cal OES; CEA; FEMA; USGS; SCEC	Shake Out	https://www.shakeout.org/california/
California Seismic Safety Commission	Earthquake Loss Reduction Plan	https://ssc.ca.gov/wp-content/uploads/sites/9/2020/08/cssc_13-03_loss_reduction_plan.pdf
USGS; Science Application for Risk Reduction	HayWired Scenario	https://www.usgs.gov/programs/science-application-for-risk-reduction/science/haywired-scenario?qt-science_center_objects=0#qt-science_center_objects
CAL FIRE	Watershed Emergency Response Team (WERT) Report	Search CAL FIRE's website for any WERT assessments conducted for fires within the jurisdiction
Resources for Flood Hazards		
FEMA	National Flood Insurance Program (NFIP)	https://www.fema.gov/flood-insurance
FEMA	Community Rating System (CRS) User Manual	https://www.fema.gov/sites/default/files/documents/fema_community-rating-system_coordinators-manual_2017.pdf
FEMA	Using National Flood Hazard Layer Web Map Service	https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload
FEMA	NFIP Technical Bulletins	https://www.fema.gov/emergency-managers/risk-management/building-science/national-flood-insurance-technical-bulletins
FEMA	Flood Risk Products: Using Flood Risk Products in Hazard Mitigation Plans	https://www.fema.gov/sites/default/files/2020-07/fema_using-flood-risk-products_guide.pdf https://www.fema.gov/floodplain-management/manage-risk
FEMA	Resources for American Society of Civil Engineers 24 Hazard Mitigation Assistance (HMA) Flood Retrofitting	https://www.fema.gov/sites/default/files/2020-04/HMA_Guidance_FY15.pdf

Agency	Guidance/ Tool	Resource Website
FEMA P-312	Homeowners Guide to Retrofitting (2014)	https://www.fema.gov/sites/default/files/2020-08/FEMA_P-312.pdf
FEMA P-259	Engineering Principles and Practices of Retrofitting Floodprone Residential Structures, 3rd Edition (2012)	https://www.fema.gov/sites/default/files/2020-08/fema259_complete_rev.pdf
FEMA P-936	Floodproofing Non-Residential Buildings	https://www.fema.gov/sites/default/files/2020-07/fema_p-936_floodproofing_non-residential_buiildings_110618pdf.pdf
FEMA P-55	Coastal Construction Manual, 4th Edition (2011)	https://www.fema.gov/sites/default/files/2020-08/fema55_voli_combined.pdf
FEMA	Training Modules	https://www.fema.gov/pdf/floodplain/is_9_complete.pdf https://www.fema.gov/floodplain-management/community-rating-system
American Society of Floodplain Managers	Website	https://www.floods.org/
DWR	Model Floodplain Management Ordinances	
Cal OES	Flood Journal	Contact Cal OES GIS for information
CGS	Tsunami Inundation Mapping	https://www.conservation.ca.gov/cgs/tsunami/maps
Resources for Fire Hazards		
FEMA	Wildfire Mitigation Resources	https://www.ready.gov/wildfires
National Fire Protection Association	Codes and Standards	https://www.nfpa.org/Codes-and-Standards
CAL FIRE	Fire and Resource Assessment Program (FRAP)	https://frap.fire.ca.gov/
CAL FIRE	FRAP Very High Fire Hazard Severity Zones	https://frap.fire.ca.gov/mapping/pdf-maps/
CAL FIRE	Strategic Fire Plan for California	https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/fire-plan/
CAL FIRE	Fire Prevention Program	https://www.fire.ca.gov/programs/fire-protection/
CAL FIRE	California's Forests and Rangelands: 2017 Assessment	https://frap.fire.ca.gov/media/4babn5pw/assessment2017.pdf
Office of the State Fire Marshal	California Communities at Risk List	https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/fire-plan/communities-at-risk/
Board of Forestry	A Handbook for Fire Planning in the General Plan	Coming Soon
OPR	Fire Hazard Planning: General Plan Technical Advice Series	https://opr.ca.gov/docs/20201109-Draft_Wildfire_TA.pdf
Cal OES	Fire Situation Awareness Journal	Contact Cal OES GIS for information
California Fire Safe Council	Grants Clearinghouse	https://cafiresafecouncil.org/grants-and-funding/apply-for-a-grant/

Agency	Guidance/ Tool	Resource Website
California Fire Science Consortium	Statewide Coordination through UC Berkeley	https://www.cafiresci.org/
Joint Fire Science Program	Fire Science Program Website	https://www.firescience.gov/index.cfm
Climate-Related Hazards		
U.S. Federal Government	U.S. Climate Resilience Toolkit	https://toolkit.climate.gov/
U.S. Global Change Research	2018 National Climate Assessment	https://science2017.globalchange.gov/
Intergovernmental Panel on Climate Change	Managing the Risk of Extreme Events and Disasters to Advance Climate Change Adaptation: Summary for Policy Makers	https://www.ipcc.ch/report/managing-the-risks-of-extreme-events-and-disasters-to-advance-climate-change-adaptation/
FEMA	Climate Resilient Mitigation Activities for Hazard Mitigation Assistance	https://www.fema.gov/sites/default/files/documents/fema_resources-climate-resilience.pdf
FEMA	Green Infrastructure Methods Fact Sheet	https://www.mass.gov/doc/green-infrastructure-methods-fact-sheet/download
Scripps Institution of Oceanography	California-Nevada Climate Applications Program	https://cnap.ucsd.edu/climate-tools/
NOAA	Coastal Plan Alignment Compass	https://resilientca.org/topics/plan-alignment/
OPR	ICARP Adaptation Clearinghouse	https://opr.ca.gov/planning/icarp/ https://resilientca.org/
OPR	General Plan Guidelines—Chapters 7 and 8	https://opr.ca.gov/planning/general-plan/guidelines.html
CNRA; OPR; CEC	California's Fourth Climate Change Assessment and the upcoming Fifth Assessment	https://climateassessment.ca.gov/ https://opr.ca.gov/climate/icarp/climate-assessment/
Various	Cal-Adapt Climate Resources	https://cal-adapt.org/
CDPH Office of Health Equity	Cal BRACE	https://www.cdph.ca.gov/Programs/OHE/Pages/CalBRACE.aspx https://www.cdph.ca.gov/Programs/OHE/Pages/ClimateHealthProfileReports.aspx
CDPH	Climate Change & Health Vulnerability Indicators for California	https://skylab.cdph.ca.gov/CCHVIz/
OEHHA	CalEnviroScreen	https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40
OEHHA	2018 Office of Environmental Health and Hazard Assessment Indicators of Climate Change in California	https://oehha.ca.gov/climate-change/document/indicators-climate-change-california
State Coastal Conservancy	Climate Ready Program	https://scc.ca.gov/climate-change/
California Air Resources Board	Cool California	https://coolcalifornia.arb.ca.gov/

Agency	Guidance/ Tool	Resource Website
California Natural Resources Agency	California Heat Adaptation Tool	https://www.cal-heat.org/
ARCCA	ARCCA website	https://arccacalifornia.org/
ARCCA	Adaptation Capability Advancement Toolkit	https://arccacalifornia.org/adapt-ca/
ARCCA	Regional Adaptation Collaborative Toolkit	https://arccacalifornia.org/toolkit/
Georgetown Climate Center	Georgetown Adaptation Clearinghouse	https://www.adaptationclearinghouse.org/
APA	Climate Change Resources	https://www.planning.org/resources/climatechange/
Extreme Heat Resources		
CalEPA	Urban Heat Island Index for California	https://calepa.ca.gov/urban-heat-island-interactive-maps-2/
National Weather Service	Heat Risk Forecast	https://www.weather.gov/safety/heat-index
CDPH Office of Health Equity	Cal BRACE Program	https://www.cdph.ca.gov/Programs/OHE/Pages/calbrace.aspx
CNRA	California Heat Assessment Tool	https://www.cal-heat.org/
Climate Action Team Public Health Workgroup	Preparing California for Extreme Heat: Guidance and Recommendations	https://ww2.arb.ca.gov/sites/default/files/2020-08/sommerfeldt_1.pdf
Cal OES	Protecting Californians From Extreme Heat: A State Action Plan to Build Community Resilience	https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Climate-Resilience/2022-Final-Extreme-Heat-Action-Plan.pdf
Sea-Level Rise Resources		
Ocean Protection Council	Sea-level Rise Guidance Document	https://www.opc.ca.gov/updating-californias-sea-level-rise-guidance/
Ocean Protection Council	Rising Seas in California: An Update on Sea-Level Rise Science	http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf
California Coastal Commission (CCC)	Sea-Level Rise Policy Guidance	https://www.coastal.ca.gov/climate/slrguidance.html
CCC	Residential Adaptation Policy Guidance	https://www.coastal.ca.gov/climate/slr/vulnerability-adaptation/residential/
NOAA	Digital Coast	https://coast.noaa.gov/digitalcoast/
NOAA	Coastal Services Center website	https://coast.noaa.gov/digitalcoast/
NOAA	Sea the Future: Sea Level Rise and Coastal Flood Web Tools Comparison Matrix	https://sealevel.climatecentral.org/matrix/
USGS	Coastal Storm Modeling System: CoSMoS	https://www.usgs.gov/centers/pcmsc/science/coastal-storm-modeling-system-cosmos
USGS	Hazard Exposure Reporting and Analytics	https://www.usgs.gov/apps/hera/

Agency	Guidance/ Tool	Resource Website
Our Coast Our Future	Tools for Planning for Sea-level Rise and Storm Hazards along the California Coast	https://ourcoastourfuture.org/
OPR	ICARP Adaptation Clearinghouse: Ocean and Coast Topic Area	https://resilientca.org/topics/ocean-and-coast/
State Coastal Conservancy	Sea-Level Rise Adaptation Resources	https://scc.ca.gov/climate-change/climate-change-projects/#slr-adaptation
State Lands Commission	Sea-Level Rise Resources	https://www.slc.ca.gov/sea-level-rise/additional-resources-for-addressing-sea-level-rise/
DWR	Quick Guide Coastal Appendix: Planning for Sea-Level Rise	https://www.oceansciencetrust.org/wp-content/uploads/2016/11/QGCoastalAppendix_FINALDRAFT_2016oct14.pdf
The Nature Conservancy	Coastal Resilience California	https://coastalresilience.org/
The Nature Conservancy	Coastal Resilience California Mapping Tool	https://maps.coastalresilience.org/california/
Climate Central	Surging Seas Risk Finder	https://sealevel.climatecentral.org/
San Francisco Bay Conservation and Development Commission	Adapting to Rising Tides	https://www.adaptingtorisingtides.org/
CNRA	Case Studies in Natural Shoreline Infrastructure in Coastal California	https://coastalresilience.org/case-studies-of-natural-shoreline-infrastructure-in-coastal-california/
Drought Resources		
CDC	Preparing for the Health Effects of Drought	https://www.cdc.gov/nceh/hsb/cwh/docs/CDC_Drought_Resource_Guide-508.pdf
California FDA	State Water Efficiency and Enhancement Program	https://www.cdfa.ca.gov/oefi/sweep/
DWR State Water Resources Control Board	California Drought Portal	https://drought.ca.gov/
DWR	California Water Plan	https://water.ca.gov/Programs/California-Water-Plan
DWR	Water Use and Efficiency Resources	https://water.ca.gov/Programs/Water-Use-And-Efficiency
Sociotechnical/Technological Hazard Resources		
FEMA	Integrating Manmade Hazards into Mitigation Planning	
Cal OES	2017 State THIRA	Not available to the public
Cal OES	State Threat Assessment Center	https://www.caloes.ca.gov/office-of-the-director/operations/homeland-security/state-threat-assessment-center/
Cal OES	California Cyber Security Taskforce	https://www.caloes.ca.gov/office-of-the-director/operations/homeland-security/cybersecurity-task-force/

43.2.4. Cal OES LHMP Technical Assistance and Training Program

The goal of the LHMP Technical Assistance and Training Program is for all local jurisdictions in California (including special districts and tribal governments) to have FEMA-approved, locally adopted LHMPs that provide each community with a path toward increased resiliency. Eligible jurisdictions must have an approved plan to be considered for funding through mitigation programs authorized under the Stafford Act.

Program Objectives

The objectives of the LHMP Technical Assistance and Training Program are as follows:

- Integrate hazard mitigation activities into all pertinent local government programs.
- Maximize the use of hazard mitigation resources, grants, and funds to reduce the impact of future disasters at the local level.
- Maintain collaborative and cooperative relationships with local emergency managers, land use planners, and the scientific and technical communities involved in hazard mitigation.
- Provide technical assistance guidance and training to local governments to improve hazard risk assessments, mitigation project identification and analysis, and the development of LHMPs.
- Improve communications with stakeholders, legislators, and special interest groups involved in hazard mitigation.
- Continue to enhance Cal OES Regional and Operational Area capability and coordination.
- Develop a statewide program of support for hazard identification and analysis and a risk-based approach to project identification, prioritization, and support for local governments.
- Maintain transparent and continuous communication with FEMA Hazard Mitigation Planning program staff and stakeholders.

Program Components

The state is committed to supporting a robust hazard mitigation program. Cal OES administers FEMA's Hazard Mitigation Assistance program by providing support to local jurisdictions through training workshops, consultation and LHMP review, jurisdiction-specific technical assistance, and maintenance of an LHMP resource web page. All of the program components together are intended to result in a successful LHMP submittal by jurisdictions. Program components include the following:

- Formal LHMP training offered by Cal OES Hazard Mitigation Planning staff:
  - FEMA-approved training classes delivered in partnership with the California Specialized Training Institute (CSTI) and FEMA (G318: Local Mitigation Planning Workshop, G393: Disaster Mitigation).
  - LHMP/grant meetings and workshops for local jurisdictions: jurisdiction-specific, held upon request from jurisdictions (i.e., kickoff meetings)
  - HMP workshops for other professional associations, groups, or agencies
  - Presentations at public meetings and panel discussion participation
- LHMP review and informal technical assistance offered by Cal OES Hazard Mitigation Planning staff:
  - LHMP/grant meetings and phone calls with local jurisdiction staff, professional associations and agency staff
  - Informational emails with local jurisdiction staff, professional associations and agency staff
  - Letters and emails on plan status to jurisdictions from Cal OES
  - Other personal communications

Cal OES Hazard Mitigation Planning staff also works with Cal OES grant staff to provide high-level grant information to local jurisdictions. Detailed grant sub-application training is offered directly from Cal OES grant staff.

43.3. RESOURCES FOR LOCAL PLAN ALIGNMENT

The State of California has facilitated hazard mitigation at the local level by passing legislation that strengthens the linkage of mitigation and adaptation efforts with land use planning. This linkage is referred to as "plan alignment."

A plan alignment tool created by OPR provides local jurisdictions with an interactive web-based application to get tips, best practices, and guidance specific to climate hazards and plans most relevant to a community. Users can enter plan-specific information, including identified hazards from the LHMP, and get customized plan alignment roadmaps and guidance. The tool also provides guidance on community and stakeholder engagement and how to incorporate these sectors into the planning process. The tool is currently online at ResilantCA.org.

The State Adaptation Clearinghouse of OPR's Integrated Climate Adaptation and Resilience Program (ICARP) also addresses plan alignment. Its website notes that the many plans that help communities manage assets and resources can be leveraged to

help the community achieve climate mitigation and adaptation goals. Aligning goals and actions across local hazard mitigation plans, adaptation plans, general plans, and other planning documents allows mitigation and adaptation efforts to be built into local jurisdictions' comprehensive planning efforts.

The Coastal Plan Alignment Compass, released in 2018, assists local governments in coordinating local plans to ensure a cohesive approach that strengthens hazard mitigation and climate adaptation. Details about the Coastal Plan Alignment Compass are provided on the Clearinghouse plan alignment topic page as well as a listing of other resources supporting plan alignment and the incorporation of climate considerations into the planning process (ResilientCA.org 2022).

S16- [44 CFR 201.3(c)(6), 201.4(c)(2)(ii), 201.4(c)(3)(iii), and 201.4(c)(4)(ii)]: Does the plan describe the process and time frame to review, coordinate, and link local and tribal mitigation plans with the state mitigation plan? Section 43.4 below is dedicated to meeting this requirement.

43.4. LINKING STATE AND LOCAL MITIGATION PLANS

An LHMP is required to describe the planning process, the assessment of hazards and risk, the involvement of participating entities, action items, and a maintenance strategy. Local jurisdictions must use FEMA's Plan Review Tool to navigate the required components for submitting their LHMPs. FEMA and the State review the plans in accordance with the required elements and provide necessary technical assistance that will lead to an approved plan. For a local plan to receive approval by the State, it needs to be consistent with the State's mitigation priorities and efforts.

The required LHMP elements related to hazard identification and vulnerability offer an opportunity for integration of state and local planning. The SHMP provides information on natural and technological hazards that are known to exist within the state, and the general location and vulnerability aspects of each hazard. Local jurisdictions can easily incorporate this general information into the hazard identification and vulnerability portion of their LHMP, and supplement with local knowledge and data, including use of the "My Plan" interactive mapping tool developed by Cal OES.

As noted in Section 2.5 of this SHMP, the State has incorporated local risk assessment data into this SHMP through a comprehensive look at how each county ranked local

risk associated with hazards of concern based on the net impact of each hazard on each county. This process identified hazards that had high impacts in each county, ultimately informing the identification of actions at the local level. These impacts by county are summarized in each hazard profiled in the SHMP. Cal OES intends to continue to monitor these hazard impact evaluations over the performance period of the SHMP through the plan review and technical assistance programs. This information will then be used to inform future updates to the SHMP.

Using a consistent set of goals and objectives reinforces the plan integration process. The 2023 SHMP contains an updated set of goals, objectives, and actions that can easily be adopted or adapted by local jurisdictions to guide their LHMP development. In turn, when reviewing and evaluating LHMPs, state reviewers have the opportunity to ensure that local goals, objectives and strategies are consistent with those of the state, and that local concerns are reflected in overall state goals, objectives, and strategies.

The State of California has a broad array of hazard mitigation legislation, plans and programs that require, encourage, and/or support mitigation capabilities at the local level. These resource capabilities—including statewide codes and general plan requirements—can be integrated into the capabilities section of LHMPs.

43.5. LOCAL HAZARD MITIGATION SUBMITTAL AND REVIEW PROCESS

Cal OES supports local jurisdictions in the development of LHMPs. It provides local jurisdictions with information on integrating hazard identification, risk assessment, risk management, and mitigation actions into a comprehensive approach to hazard mitigation.

In addition to providing technical assistance, training, and outreach to local jurisdictions, Cal OES reviews all LHMPs in accordance with FEMA's Local Mitigation Plan Review Guide, FEMA's Local Mitigation Handbook, FEMA's Mitigation Ideas Book, and the FEMA Region IX Local Mitigation Plan Review Tool. In the past 5 years Cal OES has participated as panel members at events such as California Emergency Services Association conferences, the Cal OES Mitigation Summit, and CAL FIRE land use planning webinars. Cal OES teamed with FEMA to record and distribute a training outlining the mitigation planning process. The team held one-on-one virtual and in-

person meetings with local jurisdictions to support plan development from initial kickoff to FEMA review. Cal OES staff review each plan and work with jurisdictions to ensure compliance and consistency with the following SHMP components:

- Plan goals, objectives, and strategy
- Hazard risk assessments

All jurisdictions must submit their plans to Cal OES for initial review and subsequent forwarding to FEMA for review and approval. The following sections describe the review process.

The State Hazard Mitigation Plan is the leading document to share risk assessment data and mitigation priories with local governments. When it is first made publicly available, the risk assessments and mitigation priorities are the most up to date with the goals of the state. To ensure that current data is available for local governments, the State has created multiple platforms to access current risk assessment data after the plan is made public. This data is currently available via the MyPlan and MyHazards web pages at http://myplan.calema.ca.gov/ and http://myhazards.calema.ca.gov/.

Cal OES is working on a data resource—the California Hazard Mitigation Geospatial Hub website—which will provide county and municipal staff and the public with the ability to visualize, explore, and access the datasets evaluated in the 2023 SHMP. The California Hazard Mitigation Hub will include the following:

- A searchable catalog of all the data sources used in SHMP risk assessments, including a description of each dataset and links to the authoritative source data
- An interactive web application that will enable the user to explore the hazard datasets and the risk assessment results
- Downloadable summaries of the hazard risk assessments for each California county
- Documents and additional resources to help support the hazard mitigation planning process

The California Hazard Mitigation Geospatial Hub will be a central location for data and resources to support the development of local hazard mitigation plans throughout California. A draft version will be available by the end of March 2023. A full public release will correspond with the public release of the 2023 SHMP.

43.5.1. Jurisdiction LHMP Submittal Steps

Step 1—Finalize LHMP and Complete Review Tool

The jurisdiction finalizes its LHMP and uses the final LHMP to complete the Region IX Local Mitigation Plan Review Tool (downloadable, along with related resources, from the Cal OES website) (Cal OES 2018).

The first page of the review tool must be filled out completely by the jurisdiction, including adding correct jurisdiction contact information for the staff position that will be responsible for LHMP communications throughout the review process with both Cal OES and FEMA.

If a consultant has been used for preparation of the LHMP, a jurisdiction contact, rather than a consultant contact, must still be provided on page one of the review tool. A jurisdiction must provide written confirmation if it wishes for a consultant to communicate with Cal OES and FEMA on its behalf.

Step2—Submit to Cal OES

The jurisdiction submits the following:

- One hard copy of the latest final draft of the LHMP document ready for Cal OES review
- An electronic version of the LHMP document
- An electronic copy of the Region IX Local Mitigation Plan Review Tool in a Word document file (or other editable format) with the "Location In Plan" field completed for each element.

Submittals are sent to the following address:

Cal OES Mitigation Planning Division
3650 Schriever Avenue
Mather, CA 95655

43.5.2. State LHMP Receipt Steps

Step 1—Assign Reviewer

Upon receipt of the submittal by Cal OES, the submittal package is date-stamped and assigned to a Cal OES LHMP reviewer to assess whether all documentation has been received. The submittal is logged into the Cal OES mitigation planning database.

Step 2—Assess the Submittal for Completeness

The Cal OES LHMP reviewer assesses the application submittal package to confirm that all required items have been submitted and determines if it is complete. As part of the initial assessment process by Cal OES, the LHMP reviewer will confirm that page one of the Region IX Local Mitigation Plan Review Tool is complete and correct. If any items are missing, the reviewer will contact the jurisdiction via email to request missing information.

Step 3—Issue Determination of Completion

When the submittal package is determined to be complete, the Cal OES LHMP reviewer issues an acknowledgement of receipt email to the jurisdiction stating that a complete submittal package has been received and will be reviewed within 45 days, where possible.

43.5.3. State LHMP Review and Guidance Steps

A 45-day review period begins upon receipt of all required documentation from the jurisdiction and determination of application completeness by the LHMP reviewer.

Step 1—Review LHMP

Within 45 days of receipt of a complete LHMP submittal package, the assigned Cal OES LHMP reviewer conducts a review of the LHMP. If the review cannot be completed by Cal OES within 45 days, the LHMP reviewer will send an email to the jurisdiction with notification of the delay and indicating a new estimated review completion date.

The review uses the Region IX Local Mitigation Plan Review Tool to determine if each required element and sub-element is "met "or "not met." The reviewer will add a description of required revisions in the tool, as applicable, for any elements or sub-elements that are determined to be "not met," as well as the regulatory citation and the location of information in the FEMA guidance publications that will assist the jurisdiction in successfully completing the required element.

Step 2—Request Revisions

If the Cal OES reviewer finds that any elements have not been met, review comments and suggestions for improvement are provided in the Review Tool and returned to the jurisdiction. The jurisdiction is then responsible for making the required revisions and resubmitting to Cal OES for re-review within one year. If a revised LHMP is not

submitted within one year of receiving the required revision, the jurisdiction may be asked to start its LHMP planning process over again because the original information may be outdated.

Step 3—Submit to FEMA

Once the Cal OES reviewer agrees that the jurisdiction's LHMP has met all required elements, Cal OES formally submits the latest draft of the LHMP (one hard copy and one electronic copy) to FEMA Region IX for review along with a formal transmittal letter and a completed copy of the Region IX Local Mitigation Plan Review Tool.

43.5.4. FEMA Review and Approval Steps

Step 1—Acknowledge Receipt

The FEMA LHMP reviewer issues an acknowledgment of receipt letter to the jurisdiction, and copies Cal OES, providing confirmation that the LHMP has been received and will be reviewed within 45 days, where possible.

Step 2—Complete Review Tool

FEMA conducts review and completes the Region IX Local Mitigation Plan Review Tool.

Step 3—Request Revisions

If FEMA determines that revisions are required, requested revisions will be added to the Region IX Review Tool, emailed directly to the jurisdiction, and copied to Cal OES, with instructions to complete revisions as soon as possible.

Step 4—Issue Approval Pending Adoption

Once the jurisdiction completes the requested revisions and FEMA accepts the revisions, FEMA will notify the jurisdiction through a formal letter via email, and copied to Cal OES, that the LHMP is "approved pending adoption" (APA).

Step 5—Formally Adopt LHMP and Provide Adoption Documents to FEMA

The jurisdiction is responsible for formally adopting its plan within one year of the APA and notifying FEMA and Cal OES when adoption is completed. FEMA requires that the adoption documents be sent directly to the FEMA reviewer, but jurisdictions are encouraged to send adoption documentation to both Cal OES and FEMA. (A scanned copy can be sent via email.)

Step 6—Issue Formal FEMA Approval Letter

Upon final approval, FEMA will issue a formal approval letter and a final Region IX Local Mitigation Plan Review Tool. The approval letter will include an expiration date five years from the date of the final approval letter.

43.5.5. How to Check the Status of an LHMP Review

To find out the status of an LHMP, send an email either to the assigned Cal OES LHMP reviewer or to the Cal OES Hazard Mitigation Planning Division general email box. For status of plan reviews by FEMA, contact the assigned FEMA plan reviewer.

43.6. GRANT COORDINATION

Multiple funding opportunities are available to local governments to aid in building resilience and developing and updating local hazard mitigation plans. Programs administered by Cal OES include the following:

- FEMA funding programs
  - Public Assistance Hazard Mitigation (406 Mitigation)
  - HMA grant programs, which include the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC) program, and Flood Mitigation Assistance (FMA).
  - High Hazard Potential Dam Program (HHPD): provide technical, planning, design and construction assistance in the form of grants for rehabilitation of eligible high hazard potential dams.
- State-funded initiatives—some of them ongoing and others one-time opportunities:
  - Prepare California, which provides assistance to socially vulnerable and high hazard risk communities
  - California Wildfire Mitigation Program, administered in collaboration with CAL FIRE.

Cal OES issues a notice of funding opportunity to spread awareness about the availability of funding. Interested entities are required to submit a proposal application or a Notice of Interest (NOI). Cal OES reviews NOIs for eligibility and then invites applicants with eligible projects to submit full grant applications.

Cal OES reviews all applications and submits applications for FEMA-funded projects to FEMA in accordance with the State's priorities. FEMA reviews the submitted applications for programmatic and environmental and historic preservation compliance prior to awarding funds. Cal OES retains eligible applications that are not initially selected for submission to FEMA for future consideration when funding becomes available.

Mitigation action prioritization is described in Section 45.2, which includes 15 questions that determine the priority of each mitigation action. Additionally, Section 0 provides criteria for reviewing and ranking activities and projects developed by State agencies, local jurisdictions, tribes, and other eligible entities.

43.7. GUIDE TO COMMUNITY PLANNING AND HAZARD MITIGATION

There are numerous components of community planning that help protect communities from hazards and mitigate their impacts. Community planning tools include the California Adaptation Planning Guide, general plans, building codes, development project reviews, and infrastructure development. In California, community planning is required and offers opportunities for managing hazards at the local level. The planning process offers opportunities for input from the public and members of the emergency management community such as fire departments. Through active engagement in community planning, hazard mitigation planners can further promote hazard mitigation and resilience.

43.7.1. What is Community Planning?

Community planning is a process by which local governments and citizens determine the long-term development pattern of a community in terms of land use, housing, infrastructure, open space, and protection of natural and cultural resources. Decision-makers determine what will be built, where it will be located, and what function it will serve. In California, general plans are the vehicle used to outline the policies and regulations for land use decisions at the local level.

Five interdependent components provide the foundation for the community planning process:

- Design
- Laws and regulations
- Environmental analysis
- Socioeconomic analysis
- Political approval.

Community planning is a complex system of processes and regulations that assist local governments in meeting challenges in their communities. These processes and regulations include components that help protect communities from hazards. Among the most important of these components are the general plan law, the Subdivision Map Act, environmental review, and building codes. These tools can be used to create safer and more resilient communities.

43.7.2. Role of Community Planning in Hazard Mitigation

The political, social, economic, and physical environment surrounding communities is continually changing. Changes in population, demographics, transportation systems, regional economy, political climate, and landscapes all create burdens and challenges for land use. Community planning is the way to manage these challenges.

As the population of California continues to grow, communities need to provide space to accommodate this growth, even as land availability for outward expansion has dramatically decreased. The challenge of limited land availability is further complicated by natural hazards. Communities may be pressured into developing areas that are more hazardous, including areas vulnerable to wildfires, earthquakes, landslides, and floods. Placing new development in these areas can increase the dangers to people and property while placing more burdens on public safety officials to protect them. These are the concerns that community leaders need to consider when determining the future of their communities.

Community planning can have a profound impact on how cities and counties use the land within their jurisdictions. One of the most effective ways to reduce or minimize the impacts of hazards is to responsibly develop land in hazardous areas. Designing communities so that most new development is located in non-hazardous areas can significantly reduce future costs of disasters. Improving building codes and adopting these codes as the standards for new and existing construction can also increase the resilience of built structures within the community. Determining what can be built and at what intensity can increase or decrease risks.

In many communities, development has already occurred in hazardous areas. Examples include cities in the San Francisco Bay and Los Angeles metropolitan areas that are at substantial risk of earthquakes. Increasing density within these and other hazardous areas increases the population and property that are subject to hazards.