CHAPTER 5 – CALIFORNIA LOCAL HAZARD MITIGATION PLANNING

CHAPTER CONTENT

About Chapter 5

As part of the 2018 State Hazard Mitigation Plan (SHMP) reorganization process, this chapter was created to bring back together various discussions of local hazard mitigation planning that were spread across different chapters of the 2010 and 2013 SHMPs.

The intent of this reorganized chapter is to explain California's role in implementing the Federal Emergency Management Agency (FEMA)'s Local Hazard Mitigation Plan (LHMP) program and provide an analysis of LHMPs in the state approved by FEMA since 2013. Further, the chapter reorganization seeks to provide a more convenient and comprehensive collection of guidance, resources, and tools supporting local hazard mitigation planning for use by local jurisdictions. Any updates made to this Chapter and/or the contents of this Chapter after 2018 will be placed on the Cal OES Hazard Mitigation Planning website.

5.1 CALIFORNIA'S ROLE IN IMPLEMENTING FEMA'S LHMP PROGRAM

44 Code of Federal Regulations (CFR) Part 201, Section 201.6 establishes the mitigation planning requirements for states, local governments, special districts, and tribal organizations. For LHMPs, Section 201.6 essentially states that local jurisdictions must demonstrate that proposed mitigation actions are based on a sound planning process that accounts for the inherent risk and capabilities of the individual communities.

FEMA's Hazard Mitigation Planning webpage provides a comprehensive overview of FEMA's hazard mitigation program, including federal resources for local planning. For access to the resources website, visit: https://www.fema.gov/hazard-mitigation-planning-resources.

Through the California Governor's Office of Emergency Services (Cal OES), and in partnership with FEMA, the state has implemented a program to promote and support local hazard mitigation planning and local participation in state hazard mitigation planning. Principal among its own local hazard mitigation responsibilities is Cal OES's coordination of the planning requirements of the Hazard Mitigation Grant Program (HMGP), and the Flood Mitigation Assistance (FMA), and Pre-Disaster Mitigation (PDM) grant programs to promote multi-hazard mitigation planning by local governments. State resources supporting local hazard mitigation planning are provided at the end of this chapter.

5.1.1 CAL OES LHMP TECHNICAL ASSISTANCE AND TRAINING PROGRAM

The goal of the LHMP Technical Assistance and Training Program is for all local jurisdictions (including special districts and tribal governments) in California to have FEMA-approved and local jurisdiction-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 to:

- 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 Staff Resources

Beginning in 2018, Cal OES Hazard Mitigation Planning staff assigned to LHMP reviews, technical assistance, and training, in addition to other duties, include three permanent staff. Additionally, Hazard Mitigation Planning has two limited-term staff who are assigned to review LHMPs.

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., kick-off meetings)
- LHMP 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 grants staff to provide some high-level grant information to local jurisdictions. Detailed grant subapplication training is offered directly from Cal OES grants staff.

Best Practices Highlight 5.A: Hazard Mitigation Strategy for the 2017 Severe Winter Storms (DR-4301)

Aligning local mitigation actions with California's hazard mitigation strategies is an ongoing process requiring continued diligence and attention. In the case of the severe storms that occurred in the winter of 2017 (FEMA-4301-DR-CA), state and federal agencies combined efforts to develop a Joint Hazard Mitigation Branch office. This joint branch team worked together to develop a strategy to enhance and expand hazard mitigation technical assistance to local jurisdictions.

The strategy organized the team into four principal groups and defined actions to be taken by each group to support local capabilities, as follows:

- *Hazard Mitigation Grants and Planning:* This group partners with Public Assistance (PA) and determine immediate needs projects that would be first priority for Hazard Mitigation Grant Program (HMGP) funding received under this disaster. The group will work together to solicit immediate needs projects during applicant briefings and will conduct outreach in declared counties to determine if any additional prior local hazard mitigation project requests could be funded. The group will provide prioritized technical assistance and training outreach efforts to counties that declared under DR-4301, focusing on the counties without approved Local Hazard Mitigation Plans (LHMPs) or LHMPs that expired in 2017.
- *Hazards Performance and Analysis:* This group executes an "advanced losses avoided" analysis to conduct a comprehensive study of the mitigation effectiveness of projects within declared counties, as well as an analysis of the compounding effects of economic and climatologic changes over time. This effort is intended to support the declared counties with conducting mitigation project performance assessments.
- *Flood Management and Insurance:* This group serves as a point of coordination and resource on local floodplain management regulations and enforcement and all hazards insurance, promotes community participation in the National Flood Insurance Program (NFIP), and ensures compliance with NFIP regulations in disaster recovery.
- *Community Education and Outreach:* Efforts by this group will be coordinated between the Federal Emergency Management Agency (FEMA) and California Governor's Office of Emergency Services (Cal OES) External Affairs, as needed.

Tribal Outreach

On September 19, 2011, Governor Edmund G. Brown Jr. issued Executive Order B-10-11, which directs, among other activities, state agencies and departments to implement effective government-to-government consultation with California Federally Recognized Tribes. When state agencies and departments are developing policies, laws, or regulations that could affect the tribes, they are encouraged to communicate and collaborate with the tribes in this process. In July 2012, the California Governor's Office of Emergency Services (Cal OES) established the Office of Tribal Coordination (Tribal Office). The Tribal Office is responsible for the coordination of Cal OES activities necessary to fulfill the intent of this Executive Order.

Cal OES Hazard Mitigation Planning works with the Cal OES Tribal Office, FEMA's tribal coordinator, and the FEMA tribal mitigation plan liaison to provide guidance on tribal government's mitigation planning questions and feedback on plan preparation and review efforts.

As a result of the Joint Field Office established after the 2017 Severe Winter Storms, three tribal consultation summit-workshops were held to strengthen communication and facilitate information sharing about mitigation programs. Governor Brown's tribal advisor, the Cal OES Tribal Office, Cal OES Hazard Mitigation Planning staff, Cal OES Hazard Mitigation Assistance (HMA) grants staff, FEMA Hazard Mitigation Planning staff, FEMA HMA staff, FEMA's tribal coordinator, and the FEMA tribal mitigation plan liaison participated in these summit-workshops and discussed hazard mitigation grants, updated FEMA LHMP guidance, and Cal OES's updated tribal policy consultation policy.

For tribal mitigation plans submitted to Cal OES from tribal governments, or LHMPs that include a tribal component, Cal OES will forward the tribal mitigation plan, or the tribal component, to FEMA Region IX staff for review. Any remaining non-tribal components of the submitted LHMP will be reviewed by Cal OES.

For additional information, please see the 2017 FEMA Tribal Mitigation Plan Review Guide at: https://www.fema.gov/media-library-data/1512757722502-00b8f917b23ece763161c14b04d7eae8/Tribal_Mitigation_Plan_Review_Guide_Dec5_2017_508.pdf.

Local Mitigation Planning Assistance from Other State Agencies

While Cal OES is the primary agency providing technical assistance and training to local jurisdictions for LHMP development, many other state agencies offer mitigation planning assistance. For more information, see the resources section at the end of this chapter.

State agencies also work with local governments to enhance local hazard mitigation efforts. The following are examples of assistance offered by other state agencies:

- Governor's Office of Planning and Research (OPR) is providing technical assistance supporting local hazard mitigation planning through the 2017 General Plan Guidelines update, including:
  - Integration of local hazard mitigation planning and linkage to the 2018 SHMP. (See further discussion in *Sections 2.4.4, 4.3.6.4, and 4.4.5*.)
  - Review of Senate Bill 379 (2015) requirements for inclusion of climate adaptation and resiliency strategies in local planning and required integration of climate adaptation and resilience into general plan safety elements. (See further discussion in *Section 4.3.6.2*.)
  - Review of Senate Bill 1000 (2015) requirements for inclusion of environmental justice components in local planning strategies and into the general plan. (See further discussion in *Section 4.3.6.2*.)
- The California Department of Forestry and Fire Protection (CAL FIRE) Land Use Planning Division works closely with local governments to develop of fire hazard planning and mitigation policies that affect State Responsibility Areas (SRAs) and cities with lands designated as Very High Fire Hazard Severity Zones (VHFHSZs) in Local Responsibility Areas (LRAs) for fire protection, and to meet the fire hazard planning requirements of Senate Bills 1241 (2012) and 379 (2015).
- The California Department of Water Resources (DWR) works with FEMA and local governments in administration of the NFIP. The California Silver Jackets program (co-led by DWR) offers Watershed University presentations and flood risk outreach to local emergency managers and decision-makers.

Recent Program Successes

Recent successes include the following:

- In 2017, Cal OES Hazard Mitigation LHMP reviewers, with guidance from FEMA, developed and began using a planning report document that tracks the status of LHMP reviews and LHMP technical assistance calls, emails, and other contacts.
- Since September 2017, Cal OES has co-facilitated six G318 Local Mitigation Planning courses statewide.
- Starting February 1, 2018, Cal OES and FEMA implemented a shared goal of a 45-day review timeline for completing first review of incoming LHMPs.
- Between May 2017 and March 2018, LHMP coverage increased to 71.9 percent.

5.1.2 THE LHMP SUBMITTAL AND REVIEW PROCESS

Overview

Cal OES Hazard Mitigation Planning staff administers the LHMP program for the state. Cal OES supports and assists local jurisdictions in the development of new and updated 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 Region IX Local Mitigation Plan Review Tool. Additionally, Cal OES staff strive to 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

Listed below are the submittal review and approval steps that are followed by jurisdictions, Cal OES LHMP reviewers, and FEMA Region IX. All jurisdictions must submit their plans to Cal OES for both initial review and subsequent forwarding to FEMA for final review and approval. For discussion on tribal mitigation plans, see *Section 5.1.1*.

Jurisdiction LHMP Submittal Steps

1. The jurisdiction finalizes its LHMP and uses the final LHMP to complete the Region IX Local Mitigation Plan Review Tool. (Note: the FEMA Region IX Review Tool is a detailed version of the 2011 FEMA Local Mitigation Plan Review Guide tool but does not add any additional requirements.)

   It is imperative that the first page of the review tool is filled out completely by the jurisdiction, *this includes 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.

   The Region IX Local Mitigation Plan Review Tool and related resources can be downloaded from the Cal OES website at: http://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/local-hazard-mitigation-program.

2. The jurisdiction is requested to submit:
   - One (1) hard copy of the latest final draft of the LHMP document ready for Cal OES review

- An electronic version of the LHMP document *on a CD or USB drive*
- 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, *on a CD or USB drive*

Submittals should be sent to the following address:

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

State LHMP Receipt Steps:

1. Upon receipt of the hard copy 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.
2. 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.

   If the initial submittal is incomplete, the 45-day review period will begin upon receipt of all required documentation from the jurisdiction and determination of application completeness by the LHMP reviewer.

3. If the submittal package is determined to be complete upon initial submittal, 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.

State LHMP Review and Guidance Steps:

1. 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.

2. 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

3. If any elements are not met, the jurisdiction is then responsible for making the required revisions and re-submitting 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.*

4. 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 on CD or USB drive) 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.

FEMA Review and Approval Steps Following State Review:

1. The FEMA LHMP reviewer issues an acknowledgment of receipt letter to the jurisdiction, and copies the Cal OES Mitigation Planning Team, providing confirmation that the LHMP has been received and will be reviewed within 45 days, where possible.
2. FEMA conducts review and completes the Region IX Local Mitigation Plan Review Tool.
3. 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 the Cal OES Mitigation Planning Team, with instructions to complete revisions as soon as possible.
4. 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 the Cal OES Mitigation Planning Team, that the LHMP is "approved pending adoption" (APA).
5. For APA designations, the jurisdiction is then 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.)
6. 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.

How to Find Out 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 at: mitigationplanning@caloes.ca.gov.

For status of plan reviews by FEMA, contact the assigned FEMA plan reviewer.

5.1.3 LHMP MAINTENANCE: IMPLEMENTATION AND EVALUATION

Following formal approval of their LHMPs by FEMA (and adoption by the jurisdiction), jurisdictions have five years to implement the components of their LHMP.

As described in Task 7 of FEMA's Local Mitigation Planning Handbook, the LHMP "is a living plan document that guides action over time". 44 CFR 201.6(c)(4)(i) requires LHMPs to describe how the local jurisdiction will monitor and evaluate the progress of the LHMP's implementation. The plan maintenance process of monitoring and evaluating implementation will also inform future LHMP updates. The plan maintenance description should specify the title of the individual or name of the department/agency responsible for leading each mitigation action identified in the LHMP.

Key aspects of the LHMP maintenance process by the jurisdiction should include:

- Reviewing the LHMP routinely to determine if any changes have occurred since plan approval
- Updating the LHMP risk assessment as needed, following a disaster event
- Reassessing LHMP goals for continued alignment with the jurisdiction's priorities following changes to disaster history
- Assessing the effectiveness of the LHMP at achieving its stated purpose and goal
- Reviewing and updating the status of mitigation actions in the LHMP

For example, if a disaster occurs, if new hazard information becomes available, or if new legislation is passed, jurisdictions should review their LHMP hazard risk assessments to ensure that hazards are accurately profiled and related vulnerability assessments are current.

The LHMP should discuss how the community will continue public participation in the plan maintenance process. Because an LHMP is the best potential tool for educating the public about local hazards, ongoing outreach is a key to ensuring successful implementation.

Funding Local Hazard Mitigation Plans and Projects

The regulation checklist in the 2011 FEMA Local Mitigation Plan Review Guide (Element C5) requires that potential funding sources for identified mitigation actions be included by local jurisdictions in their LHMPs.

A primary source of funding for local hazard mitigation planning activities and hazard mitigation projects is FEMA's Hazard Mitigation Assistance (HMA) program. Within the HMA program, both pre-disaster and post-disaster funding is made available. Pre-disaster funding through the Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) programs are made available through annual congressional appropriation. Post-disaster, Hazard Mitigation Grant Program (HMGP) funding is made available statewide.

Both the PDM/FMA and HMGP programs have specific criteria for funding of hazard mitigation planning activities and projects. For PDM/FMA and HMGP grants, a portion of overall funding is specifically available for hazard mitigation planning activities. Development of an LHMP or Geographic Information Systems (GIS) hazard mapping are examples of eligible hazard mitigation planning activities. From 2013 through early 2017, 65 PDM and HMGP planning grant subapplications were approved as eligible to fund LHMP preparation. More information about PDM and HGMP grant funding from 2013-2016 is included in *Section 10.3*.

For an overview of HMA grants and a detailed description of the Cal OES Hazard Mitigation Assistance Grant Programs, including the grant Notice of Interest (NOI) and subapplication submittal process, see *Sections 10.4 and 10.5*.

Tracking Progress

At the local level, tracking progress is an essential aspect of the LHMP evaluation and implementation process. Jurisdictions should develop a mitigation action monitoring system that fits the needs of their communities in tracking progress over time toward completing planned actions. The LHMP must identify how, when, and by whom the plan will be monitored.

An existing system available to jurisdictions, the state, and FEMA for tracking the status of the identified hazard mitigation actions is the FEMA Mitigation Action Tracker. FEMA developed the Mitigation Action Tracker to support in the collection and tracking of local hazard mitigation actions. The Mitigation Action Tracker serves as a valuable tool to capture and organize mitigation actions at any stage from proposed actions to funded projects. Registered users have the ability to add new actions, remove old actions, or update the status of an action as it changes over time. In addition, funding and collaboration opportunities to implement mitigation actions may be identified through the tracking process.

California encourages jurisdictions to use the FEMA Mitigation Action Tracker tool, over the life of their approved LHMPs, to help support comprehensive tracking of jurisdictional mitigation progress and support statewide implementation efforts.

To link directly to the Mitigation Action Tracker visit: https://mat.msc.fema.gov/About.aspx.

5.1.4 WAY FORWARD FOR THE CAL OES LHMP PROGRAM

Areas for LHMP Program Improvement

Annually Cal OES staff evaluates the Cal OES LHMP program, with input FEMA staff and local stakeholders, and identifies program strengths, as well as areas where improvement may be needed.

In 2017, Cal OES staff identified program areas to be improved. These program areas—which are overlapping and cross-cutting, and thus all equally important—are as follows:

- *Review team staffing*: Responses to the large disasters in 2015, 2016, and 2017 have affected staff availability and ability to conduct LHMP reviews. To address this, Cal OES hired limited-term LHMP review staff to help bring workloads current. Additionally, Cal OES is assessing cross-training opportunities between grants and planning staff to allow continued efficient reviews to occur when large influxes of LHMPs are submitted.
- *Tracking informal technical training and assistance*: Cal OES has realized that informal technical training and assistance efforts have not been consistently and fully documented. This lack of complete documentation inhibits effective reporting of progress of communication between Cal OES LHMP reviewers and local jurisdictions. To address this, Cal OES staff have worked with FEMA to develop a new weekly plan status report and tracking spreadsheet to better track informal efforts (phone calls, emails, and other personal communications).
- *Increasing transparency and communication with local jurisdictions and FEMA*: Prior to 2017, Cal OES was inconsistent in maintaining communication with local jurisdictions during the review process. To better facilitate timely and consistent communications, Cal OES has developed template notification emails that will be used to notify jurisdictions of review timelines and Cal OES LHMP reviewer contact information. Additionally, Cal OES will be updating the weekly planning report to communicate current review status of LHMPs to FEMA.
- *Strengthening integration of hazard mitigation planning staff with HMA grant programs staff*: An ongoing challenge for Cal OES has been maintaining clear and detailed communication about jurisdiction LHMP status and proposed and ongoing grant funded local mitigation projects. This challenge has been further exacerbated by the separation of the grant programs division and hazard mitigation planning division between Cal OES' two directorates. To address this challenge, hazard mitigation staff is fostering information sharing opportunities and strengthening intra- and inter-program communication.
- *Addressing gaps in consistency of LHMP reviews:* During 2017, discussions between FEMA and Cal OES identified gaps in consistency of review between the two agencies. To address this, monthly progress meetings between Cal OES and FEMA were established, beginning in December 2017, to cross-train FEMA and state reviewers to strengthen consistency of reviews. In addition, periodic joint LHMP reviews between FEMA and Cal OES plan reviewers will be scheduled to ensure consistency of reviews and allow for ongoing training of all plan reviewers.
- *Strengthening linkages between SHMP and LHMPs*: Prior to 2017, plan reviews found weak linkages between LHMPs and the SHMP. Beginning in 2017, Cal OES has increased SHMP socialization efforts with jurisdictions through training and outreach efforts to improve linkages and alignment of goals and strategies. Cal OES Hazard Mitigation Planning staff are working to develop a tool that links the required elements of an LHMP to resources within SHMP sections.
- *Strengthening linkages between LHMPs and local planning*: In an effort to meet the general plan safety element requirements for cities and counties outlined in Assembly Bill 2140, Senate Bill 1241, Senate Bill 379, and Senate Bill 1000, as of May 2018, Cal OES is developing sample resolution language that incorporates not only the formal adoption of the LHMP by a jurisdiction's governing board, but also the adoption of the LHMP into the safety element according to the requirements outlined in the above-noted legislation. This sample resolution language will be posted on the Cal OES Mitigation Planning website. To bridge the gap between LHMPs and other planning resources, Cal OES continues to work with other agencies to identify resources that can help streamline local planning processes with mitigation planning.

While FEMA does not require local jurisdictions to prepare an LHMP, Cal OES does encourage all jurisdictions within the state to maintain an adopted and FEMA-approved LHMP, in order to be eligible for both pre- and post-disaster Hazard Mitigation Assistance (HMA) funding. All of the items listed as areas for program improvement above support Cal OES's collective strategy to increase LHMP population coverage and grant eligibility of jurisdictions throughout the state.

The goal of these improvement efforts is to create new procedures and transparency that will provide more effective support for local jurisdiction capability, so that their planning efforts are successful and align more closely with SHMP goals and strategies.

5.2 ANALYSIS OF CALIFORNIA LHMPS

Cal OES works with Cal Polytechnic University San Luis Obispo to undertake a review of approved and adopted LHMPs for each update of the SHMP. LHMPs are required as a precondition for federal hazard mitigation grant eligibility. Federal law and guidelines require description of the relationship between LHMPs and the SHMP. The purpose of LHMP reviews by Cal OES is to foster partnerships, promote more resilient communities, and reduce the costs associated with disaster response and recovery by promoting hazard mitigation activities consistent with SHMP goals and objectives.

Map 5.A shows the LHMP approval or review status for each California county, as of June 1, 2018. Due to the 2017 disasters, an extensive number of mitigation planning subapplications were submitted and obtained post-disaster funding to develop new or updated approvable LHMPs. These post-disaster LHMPs were submitted in addition to other LHMPs already due to expire and be updated.

Cal OES, FEMA Region IX, and local and tribal jurisdictions coordinated efforts to address the influx of LHMPs submitted and needing approval between the fall of 2017 and the spring of 2018. As a result of these efforts, the number of successful approved and/or approved pending adoption LHMPs helped to significantly increase the state's planning coverage from 42.7 percent in July 2017 to 73.8 percent as of June 1, 2018.

Following Map 5.A, *Section 5.2.1* summarizes changes in LHMP coverage across the state from May 2013 to May 2017 to February 2018. The analysis of LHMPs starting in *Section 5.2.2* discusses the trends in development of FEMA-approved LHMPs between May 2013 and May 2017. The 2017 LHMP analysis for the 2018 SHMP is based on a review of the contents of all approved and adopted LHMPs in California as of May 2017. The May 2017 data should be interpreted as lower estimates, since not all California communities have LHMPs and some LHMPs did not contain sufficient data in order to be added to the analysis. The findings do present a good snapshot of the activities of California cities and counties in identifying and mitigating local hazards. Additional analysis efforts of approved LHMPs are ongoing.

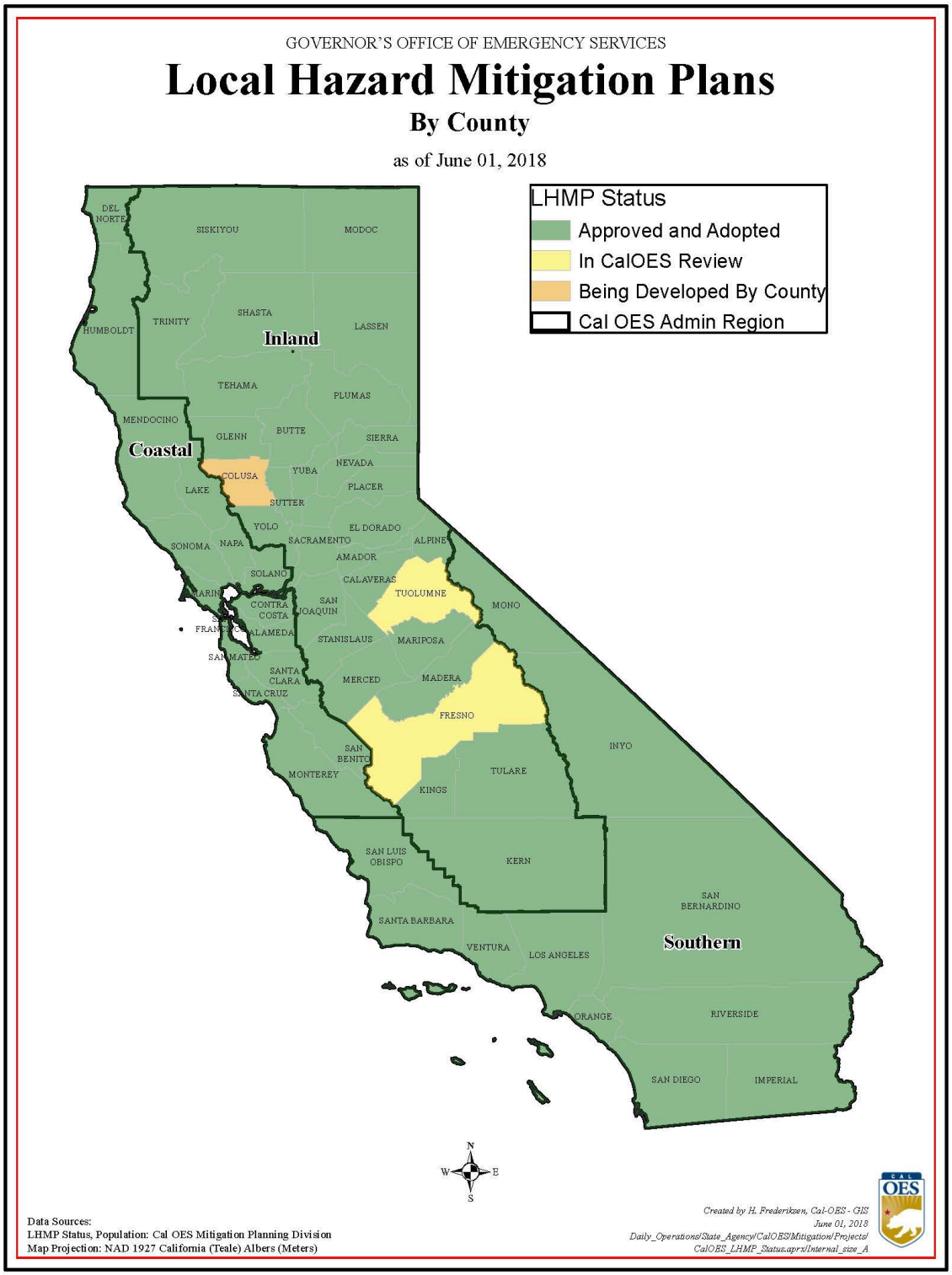
5.2.1 LHMP PREPARATION TRENDS

Communities that prepare LHMPs depend on a variety of methods, data, and digital tools. Nearly all LHMPs cited FEMA guidance documents (97 percent) and most cited Cal OES guidance documents (61 percent). Digital tools such as GIS (89 percent) and Hazards United States (HAZUS) (64 percent) were also an important for conducting hazards analysis. Notably, California's innovative Cal-Adapt tool for assessing the impacts of climate change was cited in over 13 percent of LHMPs.

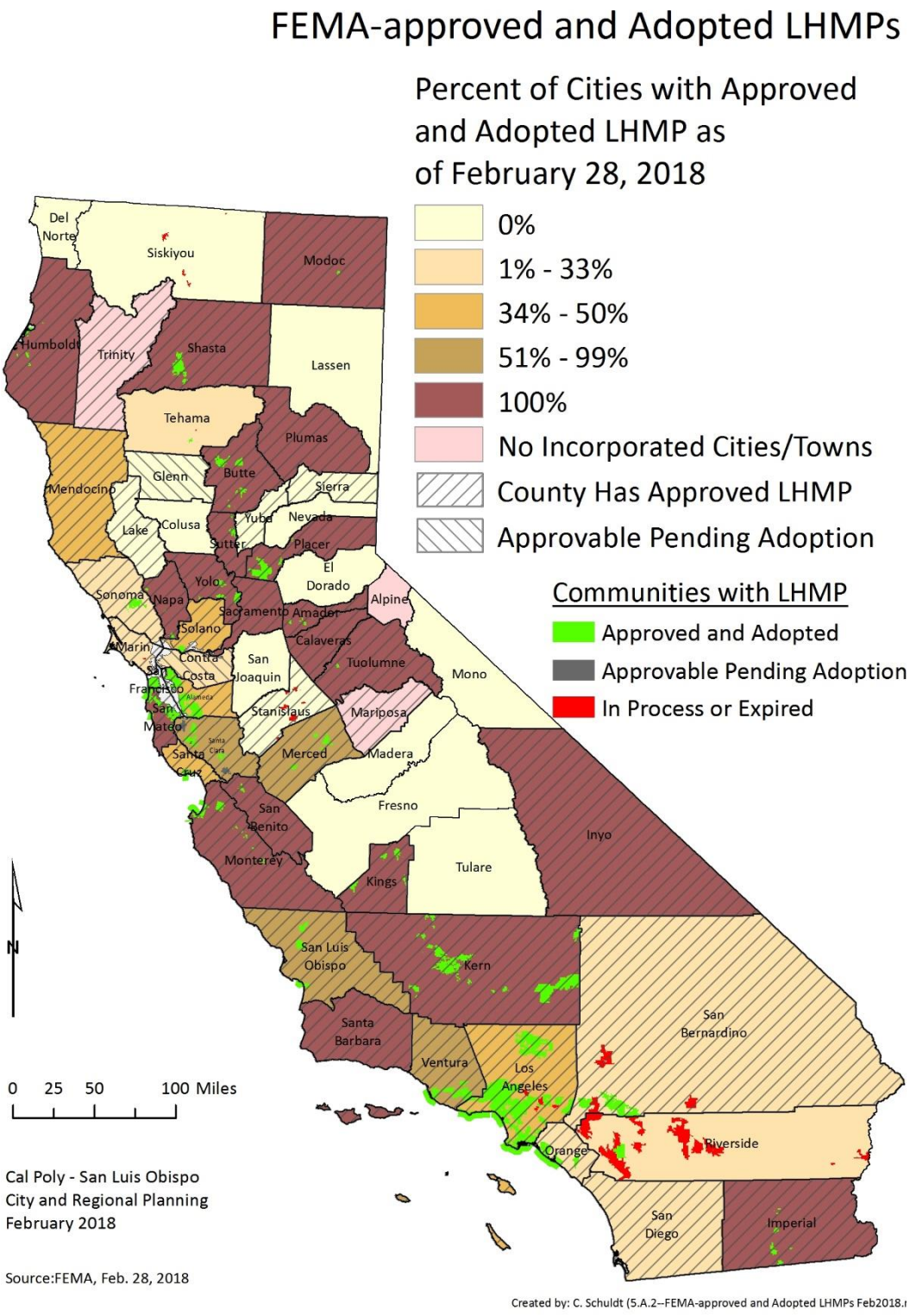
About one-fifth of LHMPs demonstrated direct links and references to the SHMP, especially use of the risk assessment chapters. Over 50 percent of communities included a social vulnerability assessment in their LHMPs, representing a notable increase from past practices. Additionally, the most cited changing social characteristic over the next 5 to 10 years, by a large margin is the "increasing percentage of 65+ population" (90 percent).

Table 5.A summarizes the status of LHMPs as of February 28, 2018. For comparison, the LHMP status summary from the 2013 SHMP is included in Table 5.B.

Map 5.A: Status of County LHMPs as of June 1, 2018



Map 5.B: FEMA-Approved City and County LHMPs as of February 28, 2018



Map 5.B shows the pattern of cities and counties with FEMA-approved, locally adopted LHMPs.

Progress Summary 5.A: Jurisdictions with Approved and Adopted LHMPs as of May 2017

Progress as of 2018: As of May 2017, 197 cities, 39 counties, and 215 special districts had Federal Emergency Management Agency (FEMA)-approved, locally adopted and FEMA-approved Local Hazard Mitigation Plans (LHMPs) (either single- or multi-jurisdiction plans), for a total of 451 jurisdictions with adopted and approved LHMPs. This is an increase from the number of jurisdictions with approved LHMPs as shown in the 2013 SHMP (see Table 5.B).

Since May 2017, an additional 6 multi-jurisdiction and 18 single-jurisdiction LHMPs have been approved. According to FEMA, another 20 LHMPs covering a total of 99 jurisdictions are approved pending adoption, as of February 28, 2018. (See Table 5.A)

Table 5.A: LHMP Status as of February 28, 2018

Jurisdiction Type	Number of California Jurisdictions	Number and Percent of Total Jurisdictions with Approved LHMPs	Population Covered (Percent of State Total)
City	482[93]	216 (44%)	16,963,779
County (Unincorporated)	58	42 (72%)	4,951,106
Special District/Other	4,711[94]	244 (5%)	(not available)
TOTAL		**502**	**21,814,885 (67%)†**

† Based on Federal Emergency Management Agency (FEMA) Mitigation Planning Portal population values

Table 5.B: LHMP Status as of May 2013

Jurisdiction Type	Number of California Jurisdictions	Number and Percent of Total Jurisdictions with Approved LHMPs	Population Covered (Percent of State Total)†
City	482	194 (40%)	17,106,211
County (Unincorporated)	58	32 (55%)	4,699,884
Special District/Other	4,400	148 (3%)	(not available)
TOTAL		**374**	**21,806,095 (57%)**

† Based on 2013 Department of Finance population estimates (state population total = 37,966,000)

The analysis of approved and adopted LHMPs as of May 2017 showed that close to 35 percent were prepared by emergency services departments within the jurisdiction. The next largest category of LHMP preparers was consultants working on behalf of the jurisdiction.

5.2.2 LHMP IDENTIFIED HAZARDS AND RISKS

Identified Hazards

Table 5.C shows the percentage of communities that identified specific hazards (using a standardized list) in their LHMPs and their ranking of those hazards based on approved LHMPs as of May 2017. These data confirm the state perspective that the "big three" hazards for California are earthquakes, floods, and wildfires.

Drought and severe weather and storms are also identified as significant hazards. In addition to these hazards, most communities identified landslide and other earth movements and dam failure as community hazards.

[93] California League of Cities, http://www.cacities.org/Resources/Learn-About-Cities
[94] State Controllers' Office, https://www.sco.ca.gov/ard_locarep_districts.html

Although only 9 percent of communities identified climate change as a hazard in their LHMPs, 40 percent identified climate change as a factor that exacerbated other hazards, especially drought, extreme heat, and wildfire. In addition, 27 percent of communities cited a local climate action plan in their LHMPs.

Table 5.C: Hazards Identified in LHMPs as of May 2017

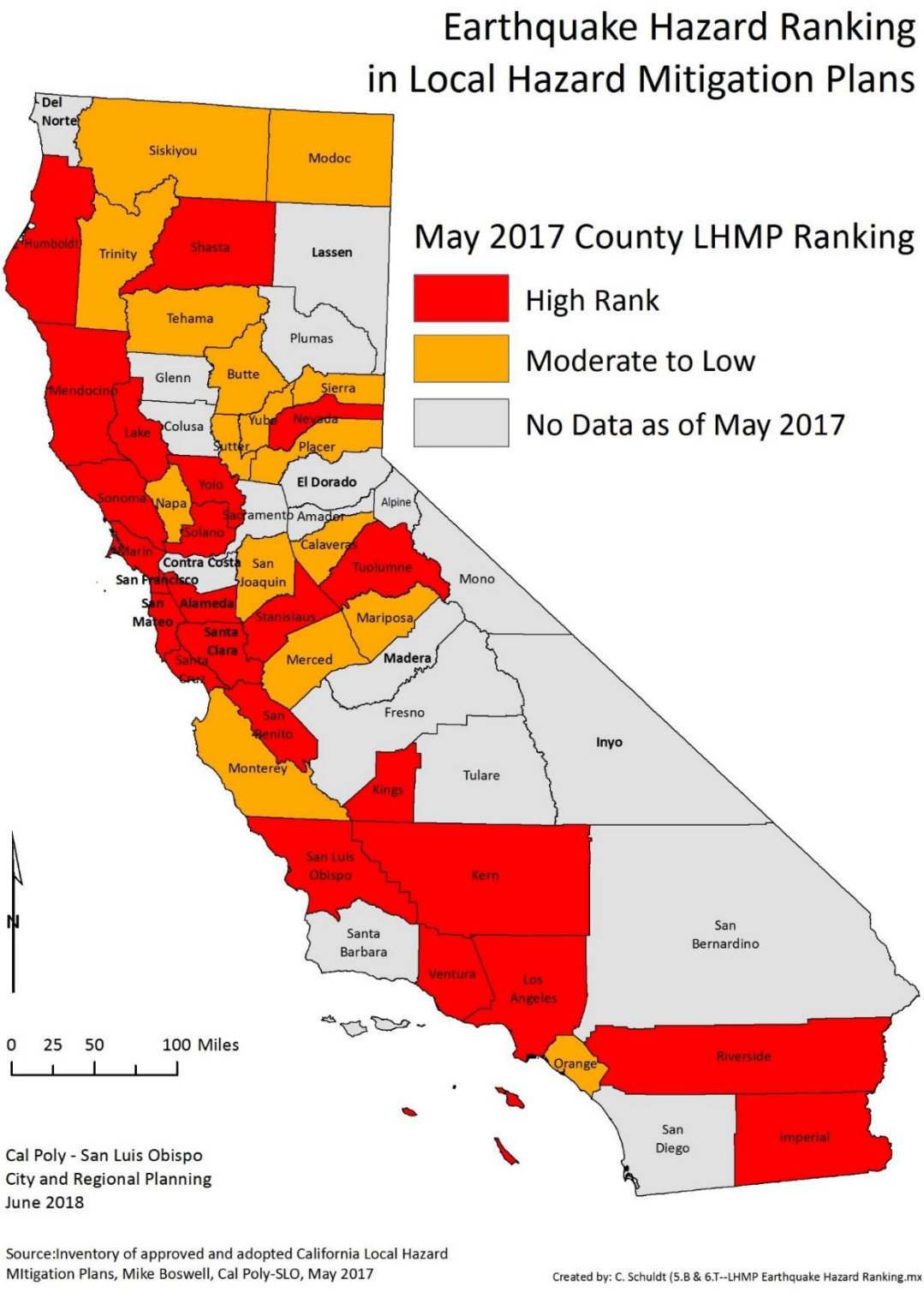
Hazard	Percent of LHMPs Identifying as a Community Hazard	Percent of LHMPs Identifying as "High Ranking, Significant, or Important"
Air Pollution	3%	1%
Agricultural/Silvicultural Pests & Disease	27%	11%
Avalanche	7%	0%
Climate change	9%	5%
Coastal Erosion	9%	2%
Coastal Storm & Flooding	18%	5%
Dam Failure	71%	16%
Drought	68%	30%
Earthquake	97%	73%
Energy Shortage	19%	7%
Epidemic/Pandemic	18%	8%
Extreme Heat	32%	11%
Flood	95%	59%
Freeze	20%	5%
Hazardous Material Release	44%	15%
Hurricane	4%	0%
Landslide & Other Earth Movements	63%	16%
Levee Failure	14%	5%
Radiological Accident	5%	2%
Severe Weather & Storms	65%	35%
Terrorist Attack	21%	9%
Tsunami	29%	6%
Volcano	15%	1%
Wildfire	85%	53%
Other Human-Caused Hazard	21%	7%
Other Natural Hazard	26%	11%

Maps 5.C, 5.D, and 5.E show the relative rank of the three main hazards as derived from review of California approved LHMPs as of May 2017. Aggregation to the county level occurred by the same method used to determine the "top hazard" (explained above). The hazard ranking followed the following method:

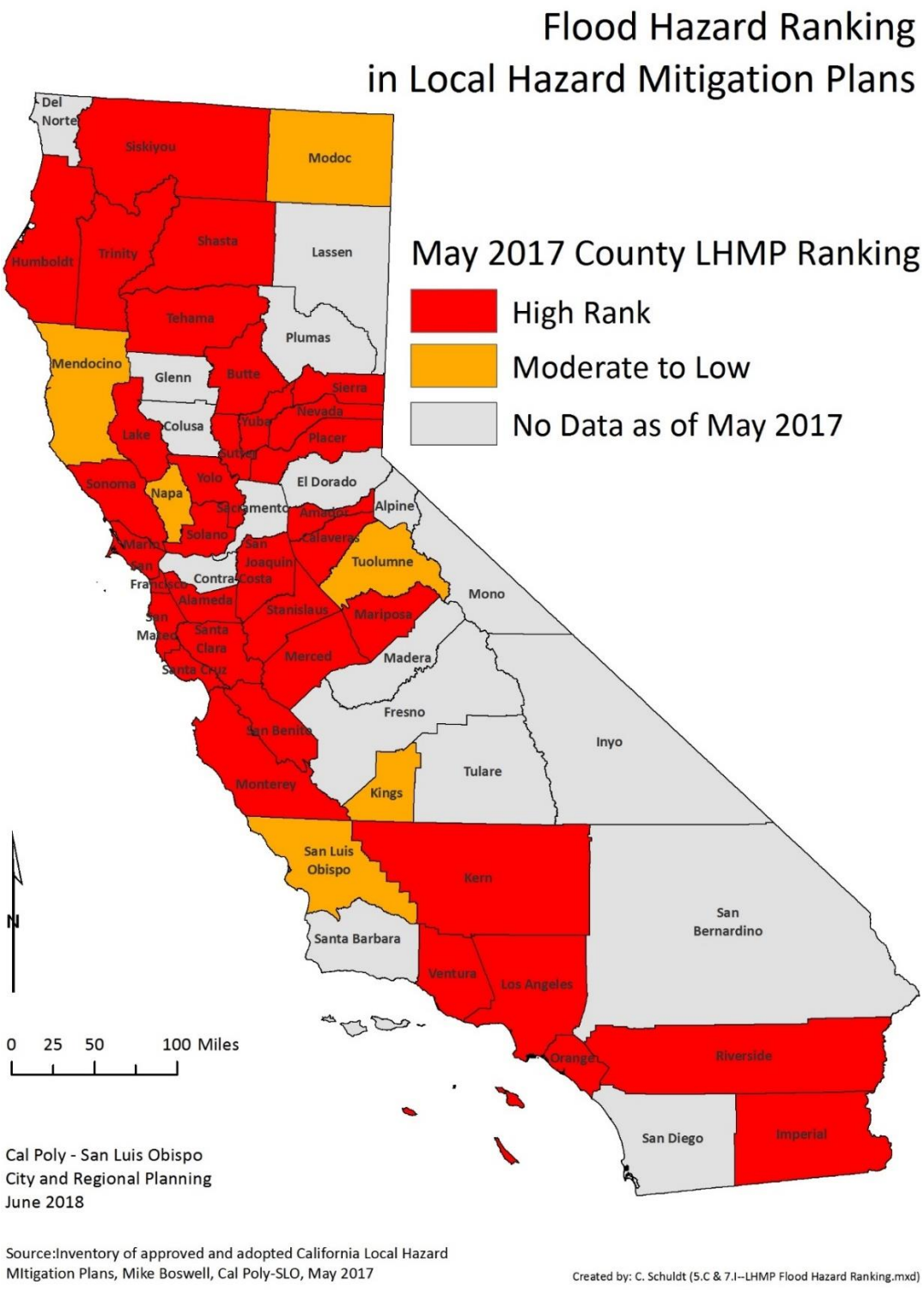
- High: Majority hazard based on designation as high/significant ranking or ranked in the Top 3
- Moderate to Low: Majority hazard based on designation as moderately/less significant ranking or ranking below the "Top 3" or the majority hazard based on designation as low/insignificant ranking or no ranking

The "Other Natural Hazard" category in Table 5.C is intended to capture any other natural hazards that local jurisdictions may have included in their LHMP, that are not included as a separate category in the table.

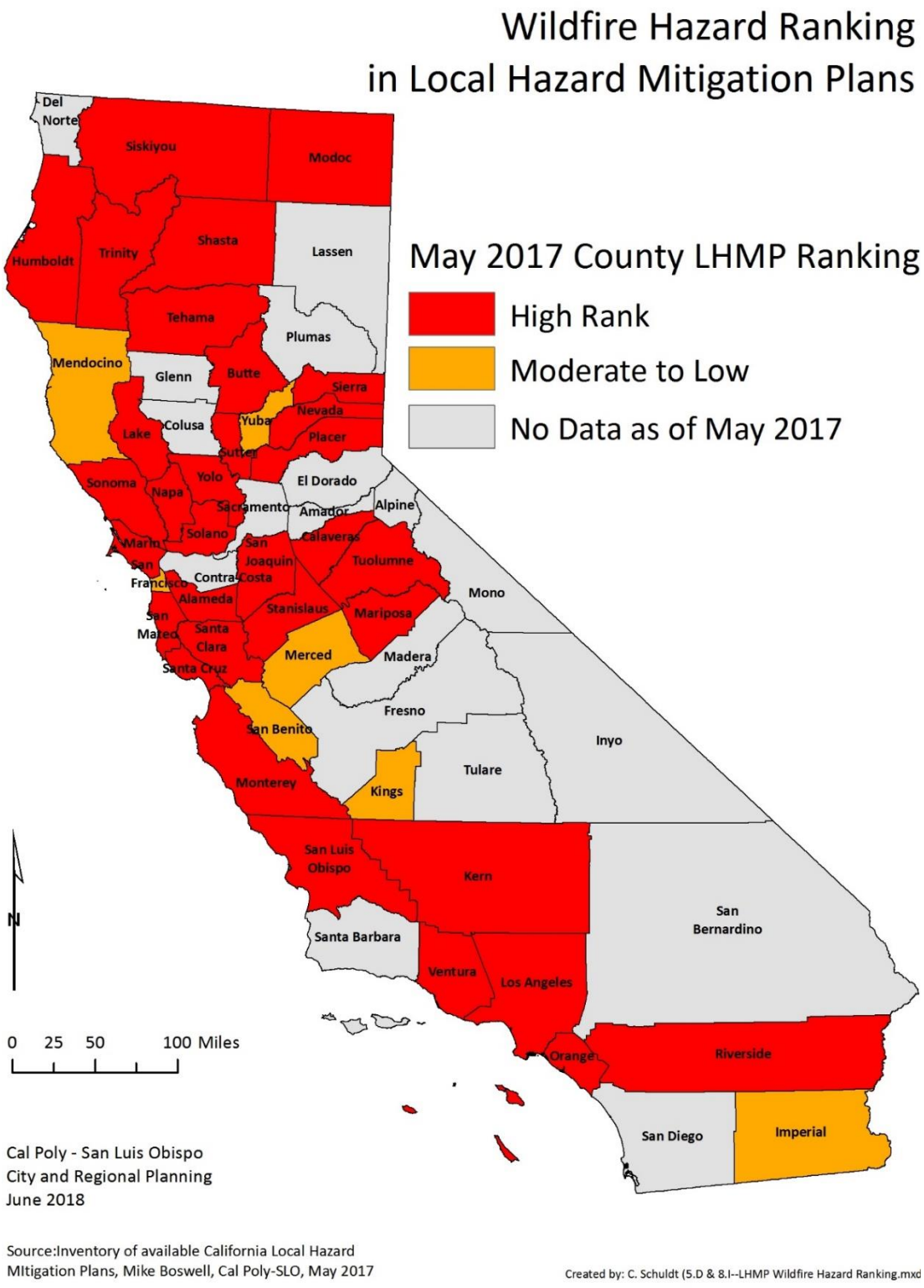
Map 5.C: Earthquake Hazard Ranking as of May 2017



Map 5.D: Flood Hazard Ranking as of May 2017



Map 5.E: Wildfire Hazard Ranking as of May 2017



Identified Risks

Many LHMPs identify the risks presented for structures, people, and critical facilities, and quantify the potential value of structures and property at risk. Tables 5.D through 5.G show these data for earthquake, flood, wildfire, and other hazards based on approved LHMPs as of May 2017. Not surprisingly, earthquakes generally put the most people and property at risk in California.

Table 5.D: Earthquake Risks Identified in LHMPs as of May 2017

Structures subject to earthquake risk	7,270,459
People subject to earthquake risk	3,401,541
Critical facilities subject to earthquake risk	9,238
Potential value of structures/property subject to earthquake risk	$230 billion

Table 5.E: Flood Risks Identified in LHMPs as of May 2017

Structures subject to 1% (100-year) flood risk	379,953
People subject to 1% (100-year) flood risk	871,070
Critical facilities subject to 1% (100-year) flood risk	6,434
Potential value of structures/property subject to 1% (100-year)flood risk	$44.4 billion

Table 5.F: Fire Risks Identified in LHMPs as of May 2017

Structures subject to wildfire risk	737,491
People subject to wildfire risk	2,072,358
Critical facilities subject to wildfire risk	11,650
Potential value of structures/property subject to wildfire risk	$192 billion

Table 5.G: All Other Hazards Risks Identified in LHMPs as of May 2017

Structures subject to risk from all other hazards	1,942,642
People subject to risk from all other hazards	4,182,930
Critical facilities subject to risk from all other hazards	14,160
Potential value of structures/property subject to risk from all other hazards	$135 billion

5.2.3 LHMP PLANNING AND MITIGATION TRENDS AND EFFECTIVENESS

Overview

Communities identified numerous mitigation measures in their LHMPs (based on approved LHMPs as of May 2017) as shown in Table 5.H. Standard mitigations such as public information and code revisions were the most included. Given that earthquakes, floods, and wildfires are the most cited hazards for communities, the LHMPs show consistency in that most identify flood control, structural retrofit, and vegetation management as important mitigation measures.

The analysis of approved and adopted LHMPs (as of May 2017) found that the top three identified sources of funding to implement mitigation measures are grants, general fund revenues, and special hazard related taxes or fees.

Table 5.H: Types of Mitigation Measures in California LHMPs as of May 2017

Mitigation Measure	Percent of LHMPs Identifying as Proposed Mitigation
Education/Information: public information programs on hazards	89%
Codes & Standards/Ordinance: adoption of codes, standards, or ordinances for hazard mitigation	75%
Flood Control: lessening the frequency or severity of flooding and decreasing predicted flood damage	74%
Structural Retrofit: earthquake/seismic retrofit programs that are structural	74%
Planning/Mapping: development of hazard mitigation plans and hazard mapping	61%
Vegetation Management: reduction or management of wildfire fuel loads	59%
Warning System: providing the public advance warning of an emergency	42%
Non-structural Retrofit: earthquake/seismic retrofit programs that are non-structural	36%
Elevation: elevation of flood-prone structures	35%
Equipment: equipment to support emergency management	35%
Technology Development: technological tools and solutions for hazard mitigation	35%
Relocation: voluntary physical relocation of an existing structure to an area outside of a hazard-prone area	33%
Hazardous Material: lessening the potential for or decreasing damage from hazardous material releases	26%
Acquisition: voluntary acquisition of existing flood-prone structures	24%
Erosion Control: reduction of risk to structures or infrastructure from erosion and landslides	23%
Fish Habitat Restoration-Flood Control: combined flood control and habitat restoration	3%

Review of approved LHMPs as of May 2017 found that over 70 percent of jurisdictions with approved LHMPs had used their general plan safety elements as a basic reference in preparation of the LHMP. This finding supports the importance of ensuring safety element's comprehensive assessment of hazards. The state has further strengthened the safety element by requiring its update on a five-year basis and mandating the inclusion of discussion on specific hazards including flood, fire, seismic, and climate change-influenced hazards.

In the sample of approved and adopted LHMPs as of May 2017, the single most noted challenge to the implementation of mitigation programs by jurisdictions was insufficient funding, followed by lack of technical expertise among staff.

LHMP Effectiveness – Best Practice Insights from Four LHMP Case Studies

Certain key components in LHMPs result in stronger and more effective plans. The following case studies highlight how some local jurisdictions used various key components to produce effective LHMPs for their communities. Table 5.I summaries key components used by the jurisdictions. *Please note that the components listed in Table 5.I are not the only components that can result in a successful LHMP*.

Contra Costa County LHMP

Contra Costa County's 2018 multi-jurisdiction LHMP includes the county, 14 municipalities, and 20 special districts. This LHMP, funded by a federal pre-disaster mitigation grant (PDM15-PL474), is being highlighted as a best practice example because it is strong in several areas.

The planning process included strong outreach for public participation. Allowing the public to participate in the planning process is essential because it educates people and motivates them to take personal accountability to protect themselves from hazards. It also helps to identify concerns, assets, hazard history, and other information essential to mitigation strategy development. The planning team used multiple media to reach out to as many citizens as possible, and used public input to develop the LHMP. The planning team created a special LHMP website to keep the public aware of plan development. On this website, the team posted a survey that helped influence the LHMP's goals, objectives, and mitigation strategies. The plan drafts were also available on the website with a point of contact so that the public could comment on the plan before it was submitted to Cal OES for review. Additionally, the public was invited to three public meetings where they could provide input and feedback. All public participation outreach was advertised through press releases and the county's LHMP website.

The county's LHMP provides a strong risk assessment, which is the cornerstone to developing a strong mitigation strategy. It includes a comprehensive assessment of hazards that affect the county, its municipalities, and its special districts. Along with the many hazards common throughout the state that specifically affect the county, the assessment discusses hazards that are becoming more prevalent and severe due to climate change such as drought, extreme heat, and sea-level rise. The LHMP also discusses secondary hazards that result from each of the primary hazards profiled, such as wildfire resulting from drought-induced tree mortality, earthquake-induced landslides, and higher flood risk due to runoff from wildfire-baked soils. It details worst-case scenarios for each hazard type and hazard-specific issues that helped guide the mitigation strategy. It also provides a comprehensive assessment of critical facilities and infrastructure for each hazard type including estimated costs of damage.

The LHMP has strong mitigation strategies for flood, fire, and earthquake hazards. The county and its participating municipalities and districts have a comprehensive list of actions for protecting the jurisdictions from the three most significant hazards as emphasized by the SHMP. Examples of mitigation actions include retrofits, relocations, and acquisitions of structures within hazard areas; creek restoration; infrastructure strengthening and improvements; linking the LHMP to other plans, ordinances, and programs that dictate land-use decisions; and public outreach activities. Most of these actions can also be performed to mitigate severe weather, sea-level rise, tsunami, landslide, and other hazards including some man-made hazards.

Santa Clara County LHMP

Santa Clara County's 2018 multi-jurisdiction LHMP includes the county, 14 municipalities, and the county fire district. This LHMP, funded by a federal pre-disaster mitigation grant (PDM15-PL517), is being highlighted as a best practice because it is strong in several areas.

The planning process included strong outreach for public participation. The planning team used multiple media to reach out to as many citizens as possible and used public input to develop the plan. The planning team created a survey and made it available on the county's website which helped influence the plan's goals, objectives, and mitigation strategies. Information booths were present at two farmer's markets where planning team members spoke with the public about the LHMP and invited them to take the survey, and provided them with information on individual exposure to hazards. Press releases invited the public to participate in numerous working group meetings.

Additionally, the public was provided an opportunity to comment on the LHMP plan before it was submitted to Cal OES for review. This comment period was advertised through a press release and the LHMP was posted on the county's website along with a point of contact.

The county's LHMP includes a strong risk assessment. It includes a comprehensive assessment of hazards that affect the county, its municipalities, and its special districts. Along with the many hazards common throughout the state that specifically affect the county, the assessment discusses hazards that are becoming more prevalent and severe due to climate change such as drought, extreme heat, and sea-level rise.

The LHMP also discusses secondary hazards that result from each of the primary hazards profiled. It details worst-case scenarios for each hazard type and hazard-specific issues which helped guide the mitigation strategy. It contains many high-quality maps and data from reputable sources such as the National Oceanic and Atmospheric Administration (NOAA), Environmental Systems Research Institute (ESRI), U.S. Geological Survey (USGS), California Department of Transportation (Caltrans), United States Department of Agriculture (USDA), and HAZUS to show critical facilities and infrastructure, population densities and exposure, and the location and extent of hazards. It provides a comprehensive assessment of critical facilities and infrastructure for each hazard type including estimated costs of damage, probability of damages to each facility or infrastructure, and recovery time. It discusses future trends of development including how development will be affected by each hazard type and how the county and stakeholders can handle future growth within the hazard areas.

The LHMP has a strong implementation strategy; it will be monitored and evaluated during a 12-month period and an annual progress report will be prepared. The planning team developed a progress report template, which is provided in the appendices. This annual report will be posted on the county web page, provided to local news media, and presented to the county and local governing bodies. Information from the LHMP will be integrated into a wide array of other planning mechanisms, including local general plans, capital improvement plans, emergency response plans, recovery plans, municipal codes, resiliency plans, and many others.

City of Laguna Beach LHMP

The City of Laguna Beach's 2018 LHMP, funded by a federal pre-disaster mitigation grant (PDM16-PL16), is being highlighted as a best practice example because it is strong in several areas.

The plan provides a thorough representation of how the LHMP and the City's general plan safety element are linked. The LHMP addresses California Government Code Section 65302 (g)(4), also known as Senate Bill (SB) 379. SB 379 requires that the safety element of a community's general plan address the hazards created or exacerbated by climate change. The City of Laguna Beach's LHMP includes an example of how climate change exacerbates each hazard identified by the Laguna Beach Planning Committee and the community.

In addition to the LHMP and general plan safety element link, the plan states that "the Laguna Beach LHMP is both a reference document and an action plan. It has information and resources to educate readers and decision makers about hazard events and related issues, and a comprehensive strategy that the City and community members can follow to improve resiliency in Laguna Beach."

The Laguna Beach Planning Committee conducted extensive public outreach by adopting a community engagement strategy that included: newsletter distribution, social media posts, press releases, website posts, public meetings, open house events, and radio engagements.

The LHMP also identifies resources that will help future city staff, the community, and local officials update the LHMP. The City of Laguna Beach's LHMP planning committee and stakeholders ultimately provided a well-organized road map for future hazard mitigation projects in their community.

Yolo County Multi-Jurisdictional LHMP

The 2018 Yolo County multi-jurisdictional LHMP is exemplary in the efforts made to engage and communicate with stakeholders during the planning process, including cities, reclamation districts, tribal governments, public, community leaders, and businesses. By engaging these groups from the beginning of the LHMP update, the County was able to forge local partnerships that assisted in the development of the plan, including a comprehensive look at the County's overall risk assessment.

With the 2017 release of the newly developed Flood Insurance Rate Maps for Yolo County and surrounding areas, this partnership between planners and emergency managers became even more important in the development of the LHMP as a vehicle to address countywide risk reduction, while integrating land use and hazard planning in all areas. The implementation phase of the LHMP includes the alignment of disaster risk reduction strategies with community objectives, and a plan to leverage available mitigation funding through the Hazard Mitigation Grant Program (HMGP), as well as Pre-Disaster Mitigation (PDM) funding and Flood Mitigation Assistance (FMA) funding. A tool kit was developed for use by all participants.

Table 5.I: Summary of Case Study Findings of Key LHMP Components

Key Local Hazard Mitigation Plan (LHMP) Component	Contra Costa County	Santa Clara County	City of Laguna Beach	Yolo County
Public participation/engagement	X	X	X	X
Use of multi-media approach	X	X		
Public participation to design plan		X		X
Strong risk assessment	X	X		X
In-depth assessment of critical infrastructure		X		
Use of worst-case scenarios		X		
Well-developed strategies for major hazard types	X	X	X	X
Clear implementation strategies		X	X	
Linked to general plan			X	X
Addresses climate change impacts and adaptation	X	X	X	

5.3 HAZARD MITIGATION PLANNING RESOURCE GUIDE FOR LOCAL JURISDICTIONS

The goal of this section is to provide information on resources that may assist California's local jurisdictions in developing and implementing their LHMP. Summaries of federal, state, and some regional resources that support both planning and hazards analyses are included as part of this guide. Topics also addressed include integration of local and state plans, an overview of local capabilities that contribute to local hazard mitigation planning efforts, and LHMP integration with other local planning processes.

5.3.1 INTEGRATION OF LOCAL AND STATE MITIGATION EFFORTS

Overview

Cal OES's LHMP program continues to evolve based on the current overall needs of LHMPs statewide, while also tracking ongoing updates to federal requirements. Cal OES continues to adjust the LHMP program to address the question of "How can Cal OES best support local jurisdictions' hazard mitigation planning efforts and integrate such efforts with state hazard mitigation actions?" The ongoing evolution of Cal OES's LHMP program includes utilization of new and emerging technologies for addressing and tracking hazards and gathering related data to successfully support local hazard mitigation planning.

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. (See *Section 5.3.2.3* for Hazard Information and Assessment Resources, below)

Using a consistent set of goals and objectives also reinforces the plan integration process. The 2018 SHMP contains an updated set of goals, objectives, and strategies 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 local concerns are reflected in the 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. This topic is discussed in greater detail in the following section.

Using the California SHMP and SHMT as Resources

A key topic of Cal OES's formal LHMP training efforts is walking jurisdictions through an overview of the SHMP and how it can be used as a resource for local hazard mitigation planning. Cal OES strongly encourages local jurisdictions beginning development of an LHMP to review the current approved SHMP and to participate in the State Hazard Mitigation Team (SHMT).

The SHMT is a group of key state agencies and other public and private sector stakeholders that promotes active participation in the SHMP update and implementation process to help integrate hazard mitigation with preparedness, response, and recovery efforts. The SHMT offers a unique resource to local jurisdiction hazard mitigation planning efforts through periodic meetings that facilitate hazard mitigation planning support and networking, information request opportunities, and presentations about current, as well as upcoming, state mitigation actions.

Benefits to participating in the SHMT include attending meetings and receiving messages where stakeholders can:

- Participate in discussion and review of state mitigation goals, objectives, and strategies

- Learn more about hazard risks around the state
- Hear about state actions supporting hazard mitigation and local hazard mitigation planning
- Learn more about updates to the SHMP
- Network with other jurisdictions and state agencies involved in hazard mitigation

Another benefit of local jurisdiction participation in the SHMT is the opportunity to provide input as part of the state hazard mitigation planning process. SHMT members also receive email updates on upcoming hazard mitigation grant opportunities, other hazard mitigation planning information, and climate adaptation information. Participation also allows members opportunities to contribute to strategic working groups addressing specific hazard mitigation topics.

5.3.2 LOCAL MITIGATION PLANNING RESOURCES

5.3.2.1 LHMP PREPARATION GUIDANCE

Previously Approved and Adopted LHMPs and the SHMP

Prior to beginning work on a new or updated LHMP, a jurisdiction should start by reviewing all of its previously approved and adopted LHMPs, along with any suggested revisions for future updates. As noted in *Section 5.3.1*, a local jurisdiction's initial local hazard mitigation planning efforts should also begin with an overview of California's current approved and adopted SHMP. The SHMP provides detailed discussion on the state's planning process and defines the state's hazard mitigation goals, objectives, strategies, and priorities. Local and regional jurisdictions should consider how their hazard mitigation goals, objectives, strategies, and priorities may align with the state's.

Following a complete review of all previously approved and adopted LHMPs and the current SHMP, jurisdictions can develop a preferred approach to their LHMP update. While all LHMP preparation efforts should refer to FEMA's mitigation planning guidance, there are many other recommended FEMA, state, and regional resources that jurisdictions are encouraged to use during their mitigation planning process.

FEMA Guidance

FEMA has developed many tools to support hazard mitigation planning by local and regional jurisdictions. While jurisdictions may follow any approach they choose, FEMA guidance provides a basic structure from which the hazard mitigation planning process may proceed. At a minimum, local and regional jurisdictions should refer to and follow the requirements of FEMA's Local Mitigation Planning Handbook the Local Mitigation Plan Review Guide during preparation.

The following FEMA resources provide an expected baseline for LHMP content. Regardless of how an LHMP is developed, it must meet the requirements of the elements defined in 44 CFR, Section 201.6, FEMA's Local Mitigation Plan Review Guide, and FEMA's Local Mitigation Handbook. However, jurisdictions are encouraged to customize their hazard mitigation planning process to their unique circumstances and go beyond the baseline requirements as necessary for their community's needs.

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 intent of the handbook is to assist local jurisdictions in meeting the requirements of 44 CFR 201.6 by offering tools, worksheets, and examples.

Local Mitigation Plan Review Guide

The Local Mitigation Plan Review Guide contains the FEMA Review Tool and instructions for meeting the requirements of each element. It acts as FEMA's official policy on and interpretation of local hazard mitigation planning requirements under 44 CFR 201.6. This guide is used by Cal OES and FEMA during formal review of each LHMP to ensure compliance. It is important to note that although FEMA Region IX has its own Review Tool, the elements and instructions for completing each section are the same as what is provided in both the Local Mitigation Plan Review Guide and in the Local Mitigation Planning Handbook. The FEMA Region IX Review Tool can be found on the Cal OES website at: http://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/local-hazard-mitigation-program.

Mitigation Ideas Guide

FEMA's Mitigation Ideas Guide 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 suggested mitigation actions are organized both by disaster type and by Local Planning and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, and Education and Awareness Programs topics. This publication can be used to assist in identifying mitigation actions to include in a jurisdiction's LHMP and to determine potential mitigation projects for funding under the HMA program.

Other FEMA Resources

FEMA's website offers access to many other valuable resources that support LHMP preparation and hazard risk and vulnerability assessment. Some additional recommended FEMA resources that support local hazard mitigation planning can be found in Table 5.J.

For a comprehensive listing of all FEMA resources, visit the FEMA website.

Summary of Local Mitigation Planning Guidance

While the state does not have final approving authority over LHMPs, it does play an integral role in providing available resources to jurisdictions to support local mitigation planning efforts to meet federal requirements. The state also helps local jurisdictions make important linkages to other California planning requirements, including general plan updates and climate change requirements.

A strong trend with LHMPs is the inclusion of climate change as both a separate hazard or as a condition that exacerbates hazards. Under Senate Bill (SB) 379, local jurisdictions are now required to address climate change in the safety elements of their general plan. Jurisdictions can meet the requirements of SB 379 by including climate change in their LHMPs and adopting their LHMP into the safety element of their general plans, which can also gain the post-disaster financial benefits of AB 2140. This effort encourages cross-linkages of various local planning efforts with hazard mitigation and provides an avenue to review existing plans; assess community vulnerability; create a comprehensive set of goals, policies, and objectives; define an implementation strategy; and implement identified mitigation measures.

The Governor's Office of Planning and Research (OPR) has compiled resources to assist local jurisdictions in determining climate-related assets, resources and populations that are sensitive to various climate change impacts. This information includes local, regional, and state data on the current status of climate change preparedness and past natural events and hazards; vulnerability maps showing areas that have repetitive loss and existing and planned development in at-risk areas; and information on the protection of public health, safety, and the environment. This information can be found on the OPR website under "General Plan Tools and Resources" at: http://opr.ca.gov/.

Table 5.J provides a listing of federal, state, and some regional resources that may be useful to jurisdictions for preparing LHMPs or other planning documents that address mitigation and climate adaptation and resiliency actions, such as general plan safety elements or local coastal plans. It should be noted that many exceptional resources now exist which aim to support local hazard mitigation and adaptation planning. While Table 5.J attempts to list many

of the key available resources (as of 2018), it is not an exhaustive list. Additionally, other resources may become available in the future that are not listed in Table 5.J, so it is recommended that the FEMA, Cal OES, OPR, and other agency websites are reviewed by local planning teams for additional resources during the hazard mitigation planning process.

Jurisdictions are encouraged to use these resources as applicable to their specific planning efforts. Resources listed in Table 5.J are grouped to correspond to the elements listed in FEMA's Local Mitigation Plan Review Guide (those resources which cross multiple elements from the review guide are listed in an initial "general" section at the beginning of the table).

Table 5.J: Resources Supporting Local Hazard Mitigation Planning

Agency	Guidance/Tool	Resource Website
GENERAL		
Previous Local Hazard Mitigation Plan (LHMP) Prepared by the Jurisdiction	Jurisdictions should review their current or previous LHMP at the beginning of the LHMP update process for background on previous goals and priorities, and to assess implementation of previous planned mitigation actions	***If a jurisdiction has a previously approved and adopted LHMP, it should be reviewed prior to starting the LHMP preparation or update process***
Federal Emergency Management Agency (FEMA)	Local Mitigation Planning Handbook	https://www.fema.gov/media-library/assets/documents/31598
FEMA	Local Mitigation Plan Review Guide	https://www.fema.gov/media-library/assets/documents/23194
FEMA	Tribal Mitigation Plan Review Guide	https://www.fema.gov/media-library/assets/documents/18355
FEMA	Mitigation Ideas	http://www.fema.gov/library/viewRecord.do?id=6938
FEMA	Independent Study 318: Mitigation Planning for Local and Tribal Communities	https://training.fema.gov/is/courseoverview.aspx?code=IS-318
FEMA	Integrating Disaster Data into Hazard Mitigation Planning: A State and Local Mitigation Planning How-to-Guide	https://www.fema.gov/media-library/assets/documents/103486
FEMA	FEMA Training Modules	G-318 Preparing and Reviewing Local Plans G-393 Mitigation for Emergency Managers https://www.fema.gov/hazard-mitigation-planning-training
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/cgi-bin/text-idx?rgn=div5&node=44:1.0.1.4.53
California Native American Heritage Commission (NAHC)	NAHC website	http://nahc.ca.gov/codes/
California Governor's Office of Emergency Services (Cal OES)	California State Hazard Mitigation Plan	http://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/state-hazard-mitigation-plan

Agency	Guidance/Tool	Resource Website
Cal OES	Local Hazard Mitigation Planning Program	http://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/local-hazard-mitigation-program
Cal OES	Region IX LHMP Review Tool	http://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/documents-publications-videos
Cal OES	State of California Emergency Plan and Emergency Support Functions	http://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/state-of-california-emergency-plan-emergency-support-functions
OPR	Integrated Climate Adaptation and Resiliency Program (ICARP)	https://resilientca.org/
OPR	General Plan Guidelines (including Safety Element Completeness Checklist)	http://opr.ca.gov/planning/general-plan/guidelines.html
Beyond the Basics	A website designed to help guide the process of 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/media-library/assets/documents/108893
FEMA	Integrating Disaster Data into Hazard Mitigation Planning	https://www.fema.gov/media-library/assets/documents/103486
FEMA	Workshop: Planning for a Resilient Community	https://www.fema.gov/media-library/assets/documents/158758
FEMA	Training Module	IS-318 Mitigation Planning for Local and Tribal Communities https://training.fema.gov/is/courseoverview.aspx?code=is-318
FEMA	Training Module	IS-393 Introduction to Hazard Mitigation https://training.fema.gov/is/courseoverview.aspx?code=is-393.a
FEMA	Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning	https://www.fema.gov/ar/media-library/assets/documents/4317
NOAA	Local Plan Alignment Compass	https://resilientca.org/topics/plan-alignment/
Cal OES	Cal OES Hazard Mitigation Planning Website	http://www.caloes.ca.gov/for-individuals-families/hazard-mitigation-planning
National Institute of Standards and Technology (NIST), U.S. Department of Commerce	NIST Community Resilience Planning Guide	https://www.nist.gov/topics/community-resilience/community-resilience-planning-guide
OPR	Community Engagement Best Practices	http://temp-opr.ca.gov/planning/icarp/resilient-ca.html
Local Government Commission/ARCCA	Adaptation Capability Advancement Toolkit (Adapt-CA)	http://arccacalifornia.org/adapt-ca/

Agency	Guidance/Tool	Resource Website
FEMA/Environmental Protection Agency (EPA)/OPR/ Association of Bay Area Governments (ABAG)	Vulnerability Assessment Toolkit: A Toolkit for Project Teams	http://www.centralcoastclimate.org/resources/
FEMA/EPA/OPR/ABAG	Framework for Building Regional Resilience in California: Workbook for Local and Regional Governments (Draft April 2018)	http://www.centralcoastclimate.org/resources/
California Natural Resources Agency (CNRA) Climate-Safe Infrastructure Working Group	Paying it Forward: A Path Toward Climate-Safe Infrastructure in California	http://resources.ca.gov/climate/climate-safe-infrastructure-working-group/
State of California Department of Finance	Population/ Demography Information	http://www.dof.ca.gov/Forecasting/Demographics/
California Animal Response Emergency system	Website for local animal emergency planners	www.cal-cares.com
APA	Hazard Mitigation: Integration Best Practices into Planning	https://www.planning.org/research/hazards/
APA	Policy Guide on Hazard Mitigation	https://www.planning.org/policy/guides/adopted/hazardmitigation.htm
APA	Planning for Post-Disaster Recovery: Next Generation (includes post-disaster model ordinance)	https://www.planning.org/research/postdisaster/
ELEMENT B – HAZARD IDENTIFICATION AND RISK ASSESSMENT		
See Hazard Specific Resources Table 5.K in Section 5.3.2.3		
ELEMENT D - PLAN REVIEW, EVALUATION, AND IMPLEMENTATION		
FEMA	2015 Hazard Mitigation Assistance Guidance *(note: check the FEMA website for updates to this document after 2018)*	https://www.fema.gov/media-library/assets/documents/103279
FEMA	Grants Visualization Tool	https://www.fema.gov/data-visualization
FEMA	Mitigating Flood and Drought Conditions Under Hazard Mitigation Assistance – various resources	https://www.fema.gov/media-library/assets/documents/110202
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

Agency	Guidance/Tool	Resource Website
FEMA	Training Module	E-213 HMA: Application Review and Evaluation https://training.fema.gov/emi.aspx
FEMA	Training Module	E-214 HMA: Project Implementation and Programmatic Closeout 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 web page	http://www.caloes.ca.gov/cal-oes-divisions/recovery/disaster-mitigation-technical-support/404-hazard-mitigation-grant-program
OPR	ICARP—Investing in Adaptation Topic	https://resilientca.org/topics/investing-in-adaptation/
ELEMENT F – 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=climate-change-health-and-equity-a-guide-for-local-health-departments
OPR	SB 1000: General Plan Guidelines: Chapter 4 (Environmental Justice Section) and Chapter 5	http://opr.ca.gov/planning/general-plan/guidelines.html
OPR	Defining Vulnerable Communities in the Context of Climate Adaptation	http://www.opr.ca.gov/planning/icarp/vulnerable-communities.html http://opr.ca.gov/planning/icarp/tac/
OPR	Resiliency Guidebook Equity Checklist	http://opr.ca.gov/planning/icarp/resilient-ca.html
OPR	Resiliency Guidebook Vulnerable Populations	http://opr.ca.gov/planning/icarp/resilient-ca.html
OPR	SB 379: General Plan Guidelines: Chapter 4	http://opr.ca.gov/planning/general-plan/guidelines.html
California Department of Forestry and Fire Protection (CAL FIRE)	SB 1241: Fire Prevention Program	http://calfire.ca.gov/fire_prevention/fire_prevention

5.3.2.2 KEY TO SUCCESS: LOCAL PLAN ALIGNMENT

For over a decade the State of California has moved to facilitate 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".

Within OPR's Integrated Climate Adaptation and Resiliency Program (ICARP) State Adaptation Clearinghouse, a topic area is included specifically addressing plan alignment. The Clearinghouse plan alignment topic page introduction notes that communities have many plans that help them manage their community's assets and resources. With deliberate coordination, many of these plans can be leveraged to supplement and enhance each other and help the community achieve its 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' everyday planning.

The Coastal Plan Alignment Compass, released in 2018, was developed to assist local governments to coordinate local plans to ensure a cohesive planning approach that strengthens hazard mitigation and climate adaptation outcomes. 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. For more information and details on how to receive the compass tool, visit: https://resilientca.org/topics/plan-alignment/.

5.3.2.3 HAZARD INFORMATION AND ASSESSMENT RESOURCES

A local jurisdiction's initial hazard assessment efforts can begin with a review of California's SHMP risk assessment chapters. The SHMP offers detailed information on actions being taken by state agencies to address hazards, including many planning and GIS resources that state agencies have created to assist local jurisdictions in strengthening their hazard mitigation efforts.

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.

State Hazard Resources

California continues to develop many powerful tools to support risk and vulnerability assessment and hazard mitigation planning. These tools include guidance for climate adaptation, toolkits to guide local vulnerability assessments, and hazard mapping tools to identify many different hazards such as fault lines, air pollution, and tree mortality. These public resources allow users to quickly and easily begin to understand hazards in their community. The resources 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 they believe may assist their LHMP preparation efforts.

Summary of Hazard Information and Assessment Resources

Table 5.K provides a listing of some federal, state, and regional resources which may be useful to jurisdictions in their risk and vulnerability assessment efforts and hazard mitigation planning. Not all resources provided in this table will be applicable to all jurisdictions. While Table 5.K is fairly comprehensive, new resources continue to be developed and may not be included in this resource table which was finalized in August 2018. It is recommended that local planning teams review the FEMA, Cal OES, OPR, and other agency websites for additional resources during the hazard mitigation planning process.

While some resources are hazard specific, others address multiple hazards. This table groups resources in the following categories:

- Multiple hazard resources
- Earthquake and geologic hazard resources
- Flood hazard resources
- Fire hazard resources
- Climate change-related hazard resources (including subsections with a listing of some hazard-specific resources for sea-level rise, drought, and extreme heat)
- Sociotechnical/technological hazards resources

Table 5.K: Hazard Information, Assessment, and Mitigation Resources

Agency	Guidance/Tool	Resource Website
MULTIPLE HAZARDS		
Federal Emergency Management Agency (FEMA)	Hazus	https://www.fema.gov/hazus
FEMA	Risk Mapping, Assessment, and Planning Program (RiskMAP) Region IX	https://www.fema.gov/risk-map-region-ix
FEMA	Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards	http://www.fema.gov/library/viewRecord.do?id=6938
FEMA	How-To-Guide	FEMA 433 - Using Hazus-MH for Risk Assessment https://www.fema.gov/fema-433-using-hazus-mh-risk-assessment
FEMA	Training Modules	IS-922 Application of GIS for Emergency Management http://www.training.fema.gov/is/courseoverview.aspx?code=IS-922 *For modules below, see the FEMA Emergency Management Institute Website:* E-190 ArcGIS for Emergency Managers E-296 Application of Hazus-MH for Risk Assessment E-313 Basic Hazus-MH https://training.fema.gov/emicourses/emicatalog.aspx?cid=E313&ctype=R
California Governor's Office of Emergency Services (Cal OE)S	MyPlan	http://myplan.calema.ca.gov/
Cal OES	MyHazards	http://myhazards.caloes.ca.gov/
EARTHQUAKE AND GEOLOGIC HAZARDS		
Southern California Earthquake Center (SCEC)	Third Uniform California Earthquake Rupture Forecast (UCERF3)	https://www.scec.org/ucerf
California Geological Society (CGS)	Alquist-Priolo Earthquake Fault Zoning Maps	http://www.conservation.ca.gov/CGS/rghm/ap/
CGS	Seismic Zonation Maps	http://www.conservation.ca.gov/cgs/shp
CGS	California Earthquake Hazard Zone Application (EQZapp)	http://www.conservation.ca.gov/cgs/Pages/SH_EQZ_App.aspx
CGS	CGS Information Warehouse (PDF maps and reports and GIS data)	https://maps.conservation.ca.gov/cgs/EQZApp/app/

Agency	Guidance/Tool	Resource Website
CGS	Geologic Hazards Data Viewer	https://maps.conservation.ca.gov/geologichazards/#dataviewer
CGS	Geologic Hazards Data List	https://maps.conservation.ca.gov/geologichazards/#datalist
Cal OES/ U.S. Geological Society (USGS)	Shake Alert	https://www.shakealert.org/
Cal OES/California Earthquake Authority (CEA)/FEMA/ USGS/SCEC	ShakeOut	https://www.shakeout.org/california/
California Seismic Safety Commission (CSSC)	Earthquake Loss Reduction Plan	http://ssc.ca.gov/legislation/mitigation.html
USGS/ Science Application for Risk Reduction (SAFRR)	HayWired Scenario	https://www.usgs.gov/natural-hazards/science-application-risk-reduction/science/haywired-scenario?qt-science_center_objects=0#qt-science_center_objects
CAL FIRE	Watershed Emergency Response Team (WERT) Report *(see discussion in Section 6.2.4)*	Search CAL FIRE's website to see if any WERT assessments have been conducted for fires within the jurisdiction
FLOOD HAZARDS		
FEMA	National Flood Insurance Program (NFIP)	https://www.fema.gov/national-flood-insurance-program
FEMA	Community Rating System (CRS) User Manual	https://www.fema.gov/media-library/assets/documents/8768
FEMA	Using National Flood Hazard Layer Web Map Service (WMS)	https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload
FEMA	NFIP Technical Bulletins	https://www.fema.gov/media-library/collections/4#
FEMA	Flood Risk Products: Using Flood Risk Products in Hazard Mitigation Plans	https://www.fema.gov/media-library-data/1533059807625-e1a0d07e4326e2ec4f027ce41befe922/Using_FRPs_in_HMPs_Guide_508_07-31-18.pdf and https://www.fema.gov/risk-map-flood-risk-products
FEMA	Resources for American Society of Civil Engineers (ASCE) 24 Hazard Mitigation Assistance (HMA) Flood Retrofitting	https://www.fema.gov/media-library/assets/documents/93594
FEMA P-312	Homeowners Guide to Retrofitting (2014)	https://www.fema.gov/homeowners-guide-retrofitting
FEMA P-259	Engineering Principles and Practices of Retrofitting Floodprone Residential Structures, 3rd Edition (2012)	https://www.fema.gov/media-library/assets/documents/3001
FEMA P-936	Floodproofing Non-Residential Buildings (2013)	https://www.fema.gov/media-library/assets/documents/34270
FEMA P-55	Coastal Construction Manual, 4th Edition (2011)	https://www.fema.gov/media-library/assets/documents/3293

Agency	Guidance/Tool	Resource Website
FEMA	Training Modules	E-273 Managing Floodplain Development through the NFIP https://www.fema.gov/media-library/assets/documents/6029 E-278 National Flood Insurance Program/ Community Rating System https://www.fema.gov/national-flood-insurance-program-community-rating-system
Association of State Flood Plain Managers (ASFPM)	ASFPM website (training and funding opportunities)	www.floods.org
California Department of Water Resources (DWR)	Model Floodplain Management Ordinances	https://www.water.ca.gov/Programs/Flood-Management/Community-Resources/National-Flood-Insurance-Program
Cal OES	Flood Journal (Cal OES Geographic Information Systems [GIS] product)	Contact Cal OES GIS for more information
CGS	Tsunami Inundation Mapping	http://www.conservation.ca.gov/cgs/geohazards/tsunami/maps
FIRE HAZARDS		
FEMA	Wildfire Mitigation Resources	https://www.fema.gov/wildfire-mitigation-faqs-and-resources
National Fire Protection Association	Codes and Standards	https://www.nfpa.org/Codes-and-Standards
California Department of Forestry and Fire Protection (CAL FIRE	Fire and Resource Assessment Program (FRAP)	http://frap.fire.ca.gov/
CAL FIRE	FRAP Very High Fire Hazard Severity Zones	http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps.php
CAL FIRE	Strategic Fire Plan for California	http://osfm.fire.ca.gov/fireplan/fireplanning
CAL FIRE	Fire Prevention Program	http://calfire.ca.gov/fire_prevention/fire_prevention
CAL FIRE	California's Forests and Rangelands: 2017 Assessment	http://frap.fire.ca.gov/assessment/2017/assessment2017 http://frap.fire.ca.gov/assessment/2015/assessment2015
Office of the State Fire Marshal	California Communities at Risk List	http://osfm.fire.ca.gov/fireplan/fireplanning_communities_at_risk.php
Board of Forestry	A Handbook for Fire Planning in the General Plan	http://www.bof.fire.ca.gov/resources/fire_planning_and_the_general_plan_handbook_final_may2014_newtitlepage.pdf
OPR	Fire Hazard Planning: General Plan Technical Advice Series	http://opr.ca.gov/docs/Final_6.26.15.pdf
Cal OES	Fire Situation Awareness Journal – statewide overview of fires	Contact Cal OES GIS for more information
California Fire Safe Council	Grants Clearinghouse	http://www.cafiresafecouncil.org/grants-clearinghouse/
California Fire Science Consortium	Statewide Coordination through University of California (UC), Berkeley	http://www.cafiresci.org/
Joint Fire Science Program	Fire Science Program Website	https://www.firescience.gov/index.cfm

Agency	Guidance/Tool	Resource Website
CLIMATE-RELATED HAZARDS		
General Resources		
U.S. Federal Government	U.S. Climate Resilient Toolkit	https://toolkit.climate.gov/
U.S. Global Change Research	2014 National Climate Assessment	http://nca2014.globalchange.gov/
Intergovernmental Panel on Climate Change	Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: Summary for Policy Makers	https://wg1.ipcc.ch/srex/
FEMA	Climate Resilient Mitigation Activities for Hazard Mitigation Assistance	https://www.fema.gov/media-library/assets/documents/110202
FEMA	Green Infrastructure Methods Fact Sheet	https://www.fema.gov/media-library-data/1487161212568-3b313a4502545a8cf6846f36d53e1367/GI_Fact_Sheet_Feb2017_COMPLIANT.pdf
Scripps Institution of Oceanography	California-Nevada Climate Applications Program	https://scripps.ucsd.edu/programs/cnap/climate-tools/
NOAA	Coastal Plan Alignment Compass	https://resilientca.org/topics/plan-alignment/
OPR	California's Integrated Climate Adaptation and Resiliency Program (ICARP) Adaptation Clearinghouse	http://www.opr.ca.gov/clearinghouse/adaptation/
OPR	General Plan Guidelines—Chapters 7 and 8	http://opr.ca.gov/planning/general-plan/guidelines.html
California Natural Resources Agency (CNRA)/OPR/ California Energy Commission (CEC)	California's Fourth Climate Change Assessment	http://www.climateassessment.ca.gov/
CNRA	Safeguarding California Plan	http://resources.ca.gov/climate/safeguarding/
CNRA/Cal OES	California Adaptation Planning Guides	http://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/california-climate-adaptation
Various	Cal-Adapt Climate Resources	http://cal-adapt.org/
California Department of Public Health (CDPH) Office of Health Equity (OHE)	California Building Resilience Against Climate Effects (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 (CCHVIs)	https://discovery.cdph.ca.gov/ohe/CCHVIz/
Office of Environmental Health Hazard Assessment (OEHHA)	CalEnviroScreen	https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30
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

Agency	Guidance/Tool	Resource Website
State Coastal Conservancy	Climate Ready Program	http://scc.ca.gov/climate-change/
California Air Resources Board (CARB)	Cool California	https://coolcalifornia.arb.ca.gov/
Natural Resources Agency	California Heat Adaptation Tool (CHAT) (developed by Four Twenty Seven)	www.cal-heat.org
Alliance of Regional Collaboratives for Climate Adaptation (ARCCA)	ARCCA website	http://arccacalifornia.org/
Local Government Commission/ARCCA	Adaptation Capability Advancement Toolkit (Adapt-CA)	http://arccacalifornia.org/adapt-ca/
ARCCA	Regional Adaptation Collaborative Toolkit	http://arccacalifornia.org/toolkit/
Georgetown Climate Center	Georgetown Adaptation Clearinghouse	http://www.adaptationclearinghouse.org/
American Planning Association	Climate Change Resources	https://www.planning.org/resources/climatechange/
Extreme Heat-Specific Resources		
CalEPA	Urban Heat Island Index for California	https://calepa.ca.gov/climate/urban-heat-island-index-for-california/urban-heat-island-interactive-maps/
National Weather Service	HeatRisk Forecast	https://www.wrh.noaa.gov/wrh/heatrisk/
CDPH OHE	California Building Resilience Against Climate Effects (CalBRACE) Program	https://www.cdph.ca.gov/Programs/OHE/Pages/CalBRACE.aspx
CNRA	California Heat Assessment Tool	Available in late 2018 at: www.cal-heat.org
Climate Action Team Public Health Workgroup	Preparing California for Extreme Heat: Guidance and Recommendations	http://www.climatechange.ca.gov/climate_action_team/reports/Preparing_California_for_Extreme_Heat.pdf
Cal OES	Contingency Plan for Excessive Heat Emergencies	http://www.caloes.ca.gov/PlanningPreparednessSite/Documents/ExcessiveHeatContingencyPlan2014.pdf
Sea-level Rise-Specific Resources		
Ocean Protection Council	Sea-level Rise Guidance Document	http://www.opc.ca.gov/updating-californias-sea-level-rise-guidance/
Ocean Protection Council	Rising Seas in California: An Update on Sea-Level Rise Science 2017	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/
National Oceanic and Atmospheric Administration (NOAA)	Digital Coast	https://coast.noaa.gov/digitalcoast/
NOAA	Coastal Services Center web viewer	https://coast.noaa.gov/digitalcoast/

Agency	Guidance/Tool	Resource Website
NOAA	Sea the Future: Sea Level Rise and Coastal Flood Web Tools Comparison Matrix	http://sealevel.climatecentral.org/matrix/
U.S. Geological Survey (USGS)	Coastal Storm Modeling System: CoSMoS	https://walrus.wr.usgs.gov/coastal_processes/cosmos/index.html
U.S. Geological Survey (USGS)	Hazard Exposure Reporting and Analytics: HERA (for use in conjunction with CoSMoS)	https://www.usgs.gov/apps/hera/
Our Coast Our Future	Tools for Planning for Sea-level Rise and Storm Hazards along the California Coast	http://data.pointblue.org/apps/ocof/cms/
OPR	ICARP Adaptation Clearinghouse: Ocean and Coast Topic Area	https://resilientca.org/topics/ocean-and-coast/
State Coastal Conservancy (SCC)	Sea-level Rise Adaptation Resources	http://scc.ca.gov/climate-change/climate-change-projects/#slr-adaptation
State Lands Commission (SLC)	Sea-Level Rise Resources	http://www.slc.ca.gov/Programs/Sea_Level_Rise.html
DWR	Quick Guide Coastal Appendix: Planning for Sea-level Rise	https://www.water.ca.gov/LegacyFiles/floodmgmt/lrafmo/fmb/docs/QGCoastalAppendix_FINALDRAFT_2016dec02.pdf
The Nature Conservancy (TNC)	Coastal Resilience California	http://coastalresilience.org/
TNC	Coastal Resilience California Mapping Tool	http://maps.coastalresilience.org/california/#
Climate Central	Surging Seas Risk Finder	http://sealevel.climatecentral.org/ http://sealevel.climatecentral.org/ssrf/help-page
San Francisco Bay Conservation and Development Commission (BCDC)	Adapting to Rising Tides	http://www.adaptingtorisingtides.org/
CNRA	Case Studies in Natural Shoreline Infrastructure in Coastal California	http://www.slc.ca.gov/Programs/Sea_Level_Rise/NaturalShorelineCaseStudy.pdf
Drought-Specific Resources		
Centers for Disease Control	Preparing for the Health Effects of Drought	https://www.cdc.gov/nceh/hsb/cwh/docs/CDC_Drought_Resource_Guide-508.pdf
Department of Food and Agriculture	State Water Efficiency and Enhancement Program	https://www.cdfa.ca.gov/oefi/sweep/
DWR/SWRCB	California Drought Portal	http://www.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 HAZARDS/THREATS		
FEMA	Integrating Manmade Hazards into Mitigation Planning (FEMA 386-7)	https://www.fema.gov/media-library/assets/documents/4528
Cal OES	2017 State Threat and Hazard Identification and Risk Assessment (THIRA)	http://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/threat-and-hazard-identification-risk-assessment

Agency	Guidance/Tool	Resource Website
Cal OES	State Threat Assessment Center	http://www.caloes.ca.gov/cal-oes-divisions/state-threat-assessment-center
Cal OES	California Cyber Security Taskforce	http://www.caloes.ca.gov/for-individuals-families/cybersecurity-task-force

5.3.3 LOCAL COORDINATION AND MITIGATION CAPABILITIES

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 section addresses state mandated and locally adopted capabilities that can contribute to mitigation activities at the local level and provide the basis for implementing mitigation strategies and actions. Capabilities assessments generally include but are not limited to the following categories: Planning and Regulatory (federal/state/local statutes; land use, building codes, etc.); Administrative and Technical (organization, roles and responsibilities, technical resources); Education and Outreach (training); and Financial (internal and external funding sources).

The California Government Code (Sections 65000 et seq.) contains many of the laws regulating land use planning including general plans, specific plans, subdivisions, and zoning. The state is seldom directly involved in local land use decisions. These have been delegated to the city councils and county boards of supervisors. Local decision-makers adopt their own land use policies based on the state laws and approve individual development projects based on these policies.

5.3.3.1 LEGAL FOUNDATIONS OF LOCAL GOVERNMENT CAPABILITY

State law is the foundation for local government in California. Local governments include cities, counties, and special districts. Their powers are determined both by the State Constitution and by state legislation. All units of local government have powers to undertake hazard mitigation planning and projects.

In California, there are more than 7,000 local government institutions. Most of these are special districts. The remaining entities include 58 counties, 478 cities, and approximately 1,000 school districts. Each of these institutions is involved in local planning, but cities and counties have the most prominent role.

Cities and Counties

Cities and counties are distinct and independent political entities with separately 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." Thus, cities and counties are given the power to develop and enforce land use regulations. State law also requires that each county and city have a legislative body and a planning agency, and to adopt "a comprehensive, long-term general plan for [its] physical development."

Through general plans, local jurisdictions document official decisions and future strategies regarding the location of housing, business, industry, roads, parks, and other land uses; protection of the public from environmental hazards; and conservation of natural resources. Each city and county formally adopts its own general plan and develops implementing regulations, including zoning ordinances, subdivision ordinances, and building codes.

Cities and counties are obligated by law to confer with adjoining jurisdictions when considering adoption or amendment of a general plan and regulatory ordinances. However, there is no requirement that adjoining cities or counties have identical, or even similar, plans and ordinances.

Special Districts

Special districts are local government units with separate taxing authority and their own elected governing boards, formed to address specific issues such as fire protection, geologic hazard abatement, and flood control.

According to the California Special Districts Association (http://www.csda.net/home), "Special districts are a form of local government created by a local community to meet a specific need. Inadequate tax bases and competing demands for existing taxes make it hard for cities and counties to provide all the services their citizens' desire. When residents or landowners want new services or higher levels of existing services, they can form a district to pay for and administer them."

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

5.3.3.2 STATE LEGISLATION AFFECTING LHMPS

General Legislative Mandates

Assembly Bill 2140 (AB 2140), adopted by the California legislature in the fall of 2006, provides post-disaster financial incentives for local jurisdictions adopting their LHMPs as part of their general plan safety elements.

Hazard Specific Legislative Mandates

California is at risk to a host of natural hazards, most notably earthquakes, fires, and floods. Over the past century, a number of these have become major disasters resulting in significant losses of life and property. In order to increase public safety and community resilience, California has responded by passing numerous laws and modifying state codes to address these hazards. These hazards are primarily addressed in general plan safety elements (and all elements of a general plan, whether mandatory or optional, must be consistent with one another. The following sections discuss the legal mandates for addressing the three most prominent natural hazards and their influence on community planning. These legal mandates affect the development of general plans, including safety elements, as well as some of the implementation tools discussed later in this section.

Earthquake Hazards

Earthquake Fault Zoning Act

The Earthquake Fault Zoning Act was enacted in 1972. Its purpose is to protect homes and other buildings designed for continuous human occupancy from earthquakes by preventing them from being built across identified fault zone surface ruptures. Under this act, the State Geologist under the Department of Conservation's California Geological Survey is required to identify and map all fault zones in California classified as "active"—Holocene era or later, where movement has occurred within the last 11,000 years. These maps are published and available for local governments to use for policy- and decision-making. The act requires that development be prohibited over surface traces of active fault zones. Before a development is approved, a geologic investigation must be conducted to determine whether structures proposed for human occupancy are set back at least 50 feet from an identified fault surface rupture, as prescribed by state regulations implementing the act. If so, development may proceed. If not, the proposed development must be denied.

The State Geologist periodically updates the fault zone maps. When the maps are updated and disseminated, local governments are required to provide this information to people who may be living in mapped fault zones. Disclosure can be made in general plans, specific plans, property maps, or other plans or maps accessible to the public. Disclosure is also required to all buyers of real estate within these mapped fault zones before transactions are completed.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was passed by the state legislature in 1990. Under this act, the State Geologist under the Department of Conservation's California Geological Survey is required to identify and map all areas at risk for ground shaking, landslides, and liquefaction. These maps must be published and made available to the public so

that local governments can use them in local planning decision-making. Developers in areas of seismic hazard risk must produce a geotechnical report for that location and identify the mitigation actions that will be incorporated into the proposed development. In addition, anyone wishing to sell real estate in seismic hazard areas must disclose to the buyer that the property is located within a seismic hazard area.

While a principal purpose of this act was to provide state mapping leading to more detailed geological mapping and site investigation for use with structural mitigation, another important function is to flag potential hazardous areas where development should not occur, or where land uses allowed by the general plan or zoning should be restricted to minimize exposure to hazards and risk. Designation of these areas can be coupled with land acquisition by a public agency in areas where no development is allowable.

Flood Hazards

Hurricane Katrina in 2005 was a wake-up call to the nation that the United States is not immune to catastrophic disasters. States and local communities began reevaluating hazards and increasing their hazard management efforts, and California was no exception.

One area that was of significant concern to state leaders was the Sacramento-San Joaquin Delta region and the over 1,100 miles of levees that protect it. Levee failure—a critical issue in New Orleans during Hurricane Katrina—became a key issue for the state. Among the efforts that California implemented was new legislation for flood and levee protection in the Delta region and throughout the state. The following is a summary of legislation passed in recent years that affect community planning and flood hazards.

Assembly Bill 162

AB 162 (2007) requires that land use, conservation, safety, and housing elements of local general plans include provisions and flood hazard inundation mapping that will reduce the risk from floods and flood-related issues. Each of the requirements for the elements specified in this bill must be fulfilled before the next revision of the housing element of the local jurisdiction's general plan.

Land use elements are required to include flood maps that are produced by the Federal Emergency Management Agency (FEMA) or the California Department of Water Resources (DWR). These must be updated each year. In addition, the determination of land available for urban development may exclude land that is not adequately protected by flood management infrastructure. The Department of Water Resources has prepared user guidelines for implementation, in coordination with OPR, Cal OES, and other agencies.

Conservation elements must contain detailed information about the floodplain, such as the rivers, creeks, and streams that contribute to it. In addition, information on flood corridors, riparian corridors, and land capable of sustaining floodwater must be identified. This information should be used to inform conservation element policies addressing groundwater recharge and storm water management.

AB 162 also adds requirements for addressing floods in the safety element. Source information includes historical data and flood hazard zone mapping. The safety element (and all elements of a general plan, whether mandatory or optional, must be consistent with one another) must include policies and goals that state how flooding risks for existing and planned development will be reduced, including strategies for deciding how new development can be placed in flood hazard zones, if at all. New development in these areas may be subject to design requirements that reduce the risk from flooding. In addition, the safety element must include policies for protecting public facilities from the risks of flooding and ensuring their continuity during flood events.

The schedules for requirements under AB 162 (2007) and companion bill SB 5 (2007), specifically related to the Central Valley, were extended by the legislature through approval of SB 1278 in 2012. This extension was intended to allow city and county local general plans as well as zoning in the Central Valley to be made consistent with the Central Valley Flood Protection Plan adopted in 2012.

Assembly Bill 70

AB 70 (2007) addresses increased risk to floods as a result of new development in a community. If a city or county approves new development that increases the flood risk to the state, then the city or county must be responsible for a reasonable amount of the liability it has increased. This requirement applies to land that was previously undeveloped and protected by a state flood control project.

Senate Bill 5

Under SB 5 (2007), cities and counties within the Sacramento-San Joaquin Valley are required to include information from the Central Valley Flood Protection Plan (CVFPP) to be adopted by the Central Valley Flood Protection Board. Within 24 months of flood protection plan adoption, each local jurisdiction must include these amendments in its general plan. Each jurisdiction is also required to develop goals and policies in its general plan for protecting people and property from floods and flood-related issues.

Senate Bill 27

SB 27, also known as the Sacramento-San Joaquin Delta Emergency Preparedness Act, was passed in 2008. The act provided direction for the creation of a report outlining specific recommendations to be made to the Legislature and Governor to support the following items: a Delta interagency unified command system, an emergency preparedness and response strategy, and a supporting exercise/training plan. The act directed Cal OES to establish a Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force consisting of representatives from the Delta Protection Commission, California Department of Water Resources, FEMA, and a representative from each of the Delta counties. The Task Force met and developed the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force Report, which it provided to the Legislature and Governor in early 2012. One of the Task Force recommendations was to develop a Delta catastrophic flood incident plan. The 2018 Northern California Catastrophic Flood Response Plan (NCCFRP) supports the emergency preparedness and response strategy outlined in the Task Force Report. The NCCFRP provides a framework outlining how local, state, and federal governments will respond and coordinate in anticipation of and immediately following a catastrophic flood affecting Northern California, with emphasis on impacts to the Delta.

Related Flood Mitigation Laws

The CVFPP was adopted in July 2012. In related actions, the Legislature passed SB 1278 (2012) and AB 1965 (2012) extending the time originally provided by SB 5 (2007) for localities to make their general plans consistent with the CVFPP. Among other things, these bills established a July 2013 deadline for DWR to complete 200-year floodplain mapping within this area, allowed cities and counties in this area to take up to two years after July 2013 to amend their general plans to be consistent with the CVFPP, added a year beyond that to amend their zoning, required amended city and county general plans to include data and analysis contained in the CVFPP and other flood hazard zones mapping, and required cities and counties after July 2016 to make findings related to urban flood protections levels using criteria developed by DWR.

Wildfire Hazards

Government Code Section 65302.5

Under Government Code Section 65302.5, any county that has State Responsibility Areas (SRAs) within its boundaries must adhere to Public Resources Code Section 4128.5, which requires that counties with SRAs submit a copy of the proposed safety element of a general plan to any agency with responsibility for fire protection in the county prior to adoption or amendment. The fire protection agencies may then provide comments on or recommendations for the proposed safety element. The board of supervisors reviewing the general plan must consider these comments and recommendations. If any or all of the recommendations are not accepted, the board must provide written communication to the agency stating why it is not including the recommendations. The board must also state how its own actions regarding land and policies within state responsibility areas will reduce the risk of fire for people, property, and natural resources.

Public Resources Code Section 4290

California Public Resources Code Section 4290 provides authority to State Board of Forestry and Fire Protection to develop and implement fire safety standards for defensible safety on SRA lands. All residential, commercial, and industrial construction on SRA lands approved after January 1, 1991, must follow the regulations established by this board. At a minimum, the regulations will include road standards for fire equipment access; standards for street, road, and building identification signage; minimum levels for private water supply reserves that could be used for emergency fire use; and fuel breaks and greenbelts.

Public Resources Code Section 4291

Public Resources Code Section 4291 provides regulations for protecting properties from wildfires. The code applies to all lands that have flammable vegetation. Any person with ownership or control of buildings on these lands must abide by these regulations. The regulations include several different requirements for how the vegetation surrounding buildings and structures should be managed to create defensible space. Within 100 feet of any building or structure, a firebreak must be created by removing brush, flammable vegetation, or combustible growth. If the distance is required to be greater than 100 feet by any other law or regulation, then that law or regulation supersedes this code section. In areas where soil stabilization is critical, vegetation can be maintained up to 18 inches in height but still must not be within 30 feet of any building or structure. Trees must be maintained to ensure that no part of the tree is within 10 feet of a chimney or stovepipe. Dead or dying parts of trees near buildings must also be removed. Roofs should be maintained so that accumulation of leaves, needles, or other dead vegetation is removed.

Public Resources Code Section 4291 also establishes requirements for building permits. Before construction on any building or rebuilding, a certification must be obtained from the local building official that the structure design adheres to the current code. In addition, after the building construction has been completed, a final inspection must be performed by the building official to verify that the building was built to state and local codes.

Fire Hazard Severity Zones

Public Resources Code Sections 4201 to 4204 and Government Code Sections 51175 to 51189 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These mapped zones were adopted in 2008 in all SRAs and are referred to as Fire Hazard Severity Zones (FHSZs). As part of the mapping, various mitigation strategies were identified to reduce risk associated with wildland fires, especially in Very High Fire Hazard Severity Zones (VHFHSZs).

Senate Bill 1241 (2012)

SB 1241, a significant law mandating wildfire planning responsibilities of local governments that have jurisdiction in State Responsibility Areas (SRAs) and Very High Fire Hazard Severity Zones (VHFHSZs) (detailed in *Section 8.1*), requires inclusion of additional wildfire safety considerations as part of local general plans, together with special findings of fact supporting local approval of new subdivisions in such areas. Provisions of the law passed in 2012 stipulate that wildfire safety be included in several local planning processes including land use, development, and environmental review, and also require the Governor's Office of Planning and Research (OPR) to prepare user guidelines for implementation, in coordination with Cal OES, and other agencies. The OPR guidance provides recommendations and considerations for addressing fire hazards in general plans. This includes integration of fire hazard mitigation strategies developed in LHMPs and coordinating these with community planning strategies established in the general plan.

SB 1241 requires local general plan safety elements be updated in accordance with the fire safety planning guidance issued by OPR. The provisions of SB 1241 are triggered by the scheduled update of the local general plan safety element, or an update to the jurisdiction's required update of the General Plan Housing Element after January 1, 2014. Draft safety element updates must be submitted to CAL FIRE's Board of Forestry and Fire Protection, as well as other local and regional agencies involved with the provision of fire safety, for review and comment 90 days prior to local adoption. Additional details regarding SB 1241 are outlined in *Section 8.1.5.1*.

OPR and CAL FIRE are providing outreach to local jurisdictions on wildfire mitigation planning through the Firewise Communities workshops and the California Fire Safe Communities programs. The Fire Hazard Planning document is part of OPR's General Plan Technical Advice Series.

Climate Change Related Legislation

Senate Bill 375 (2008)

SB 375, the Sustainable Communities and Climate Protection Act of 2008, requires California's urban regions to achieve mandated greenhouse gas (GHG) reductions through coordinated transportation and land use. After its passage, the California Air Resources Board moderated a lively, contentious negotiation process with the state's 18 metropolitan planning organizations (MPOs) to define potential GHG reductions and assign the mandated targets. Each MPO adopts its own "sustainable communities strategy" (SCS), and these reflect regional differences in auto use, air quality, and mobility in the state. SB 375 builds on existing planning processes, particularly for transportation and associated air quality requirements. If the combination of measures in the SCS would not meet the regional targets, the MPO prepares a separate "alternative planning strategy" (APS) to meet the targets. Consult the regional MPO for targets and strategies in place.

Senate Bill 743 (2013)

Senate Bill 743 changes the transportation impact analysis required as part of California Environmental Quality Act (CEQA) compliance. These changes will include elimination of auto delay, level of service, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts for land use projects and plans in California. Further, parking impacts will not be considered significant impacts on the environment for select development projects within infill areas with nearby frequent transit service. According to the legislative intent contained in SB 743, these changes to current practice were necessary to more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions. The OPR has proposed changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts.

Senate Bill 379 (2015)

SB 379 requires all cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans upon the next revision beginning January 1, 2017. These are additional requirements beyond those related to seismic, and geologic factors. The climate adaptation update is to include a set of goals, policies, and objectives for cities and counties based on the vulnerability assessment, as well as implementation measures, including the conservation and utilization of natural infrastructure that may be used in adaptation projects.

Other Mitigation-Related Legislation

Senate Bill 244 (2011)

SB 244 requires cities and counties to review and update the land use elements of their general plans on or before the next adoption of a housing element. An updated general plan must: 1) identify, describe and map "island," "fringe" and "legacy unincorporated communities" with the city's sphere of influence or, as to the county, within the county; 2) analyze water, wastewater, drainage, and structural fire protection needs or deficiencies in these communities; and 3) analyze benefit assessment districts or other financing alternatives that could make extension of services to identified communities financially feasible. "Island" communities have the usual definition of that term. "Fringe" communities are simply those within a city's sphere of influence. "Legacy" communities are those that have been inhabited for 50 or more years. Studies of such communities usually require input from public works, fire, fiscal, and community development/planning departments.

SB 244 also requires Local Agency Formation Commissions to 1) deny any application by a city to annex a territory that is contiguous to a "disadvantaged unincorporated community" unless a second application is submitted to

annex the disadvantaged community as well, and 2) evaluate disadvantaged unincorporated communities in a municipal services review upon the next update of a sphere of influence after June 30, 2012.

Assembly Bill 52 (2014)

Under AB 52, California tribes have the ability to establish, through a formal notice letter, a standing request to consult with a lead agency regarding any proposed project subject to CEQA in the geographic area with which the tribe is traditionally and culturally affiliated. California law defines consultation as the "meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement." Respectful, effective consultation consists of in-person meetings between appropriate representatives of the parties, which the tribe may wish to host at its reservation or rancheria. Agencies should be respectful of each tribe's unique history, practices, and culture. Prior to initiating consultation with a tribe, the agency should develop an understanding of that tribe's leadership and governance structures.

Senate Bill 1000 (2016)

Environmental justice is part of the general plan process. Senate Bill 1000, the Planning for Healthy Communities Act of 2016, requires cities and counties to adopt an environmental justice element or integrate environmental justice-related policies, objectives, and goals throughout other elements of their general plans. The legislation includes a process for communities to become meaningfully involved in the decision-making processes that govern land use planning in their neighborhoods. This legislation includes mitigation actions to reduce various vulnerability factors.

A jurisdiction's environmental justice process for the general plan must:

1. Identify objectives and policies to reduce the unique or compounded health risks in disadvantaged communities by means that include, but are not limited to, the reduction of pollution exposure, including the improvement of air quality, and the promotion of public facilities, food access, safe and sanitary homes, and physical activity
2. Identify objectives and policies to promote civil engagement in the public decision-making process
3. Identify objectives and policies that prioritize improvements and programs that address the needs of disadvantaged communities

5.3.3.3 RELATIONSHIPS OF LOCAL PLANNING PROCESSES TO LHMPS

An important interest of FEMA in promoting compliance with the LHMP process (as part of planning for hazard mitigation grants) is integration of mitigation planning with comprehensive planning (i.e., local general plans, Regional Blueprint Plans, and Regional Transportation Plans).

Within this regional and local planning framework, key considerations identified by FEMA in evaluating mitigation planning strategies include considerations such as:

- 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 the proposed project among the hazards addressed
- Completeness of the solution

Some benefits of integrating mitigation planning with comprehensive planning include reduction of vulnerability to disasters, stimulation of pre- and post-disaster decision-making, formation of partnerships between planners and emergency managers, expansion of external funding opportunities, and facilitation of post-disaster return of the community to normalcy, as well as resolution of locally sensitive issues with community-based solutions.

A California legislative action reinforcing these principles is Assembly Bill 2140 (2006). This bill encourages cities and counties to adopt LHMPs in accordance with the requirements of the Disaster Mitigation Act of 2000 (DMA 2000) as part of their mandated general plan safety elements. As an incentive, it also authorizes the legislature to consider providing to such cities or counties a portion of the state share of local costs exceeding 75 percent of total state-eligible post-disaster costs under the California Disaster Assistance Act.

Cal OES works with the Governor's Office of Planning and Research (OPR) to incorporate information on hazard mitigation planning into the General Plan Guidelines, which provide guidance to California 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.

5.3.3.4 GENERAL PLAN REQUIREMENTS

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 offers many opportunities for local agencies to identify, plan for, and mitigate local hazardous conditions such as flood, fire, and geologic events. The legislative body of each city (city council) and county (board of supervisors) adopts zoning, subdivision, and other ordinances to regulate land use and implement general plan policies.

The general plan must cover a local jurisdiction's entire planning area and address the broad range of issues associated with the city's or county's development. The law also requires that general plans include seven elements: land use, circulation, housing, open space, conservation, noise, and safety. The safety element identifies hazard mitigation policies to guide local decisions related to zoning, subdivisions, and entitlement permits. All elements of a general plan, whether mandatory or optional, must be consistent with one another. Each element's data, analyses, goals, policies, and implementation programs must be consistent with and complement one another. Since general plan law requires all elements to be consistent with each other, requirements of the safety element must align with guidance provided in each of the other elements. One example of this alignment is the required consistency between hazards shown in safety element maps and allowed land uses shown in land use element maps. Allowed land uses defined in land use element maps must take into account hazards defined in safety element maps.

The state legislature has declared that decisions involving the future growth of the state, most of which are made and will continue to be made at the local level, should be guided by an effective planning process, including the 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 found in the general plan underlies most local land use decisions.

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 general law cities are also required to have zoning and specific plans that are consistent (not in conflict) with the general plan. Moreover, the Subdivision Map Act also requires land subdivision to be consistent with the general plan.

Many jurisdictions have written hazard mitigation provisions into local zoning, subdivision, and environmental assessment ordinances and codes for reference in routine project review. Examples of commonly applied zoning and subdivision regulatory approaches to new developments in naturally hazardous areas include:

- 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

California legislation reinforces these practices through the 2017 General Plan Guidelines prepared by the Governor's Office of Planning and Research (OPR). The General Plan Guidelines encourage best practices and also emphasize consideration of each local general plan within its regional context. For example, OPR encourages local governments to coordinate planning issues that transcend artificial 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. To download the 2017 General Plan Guidelines, visit: http://opr.ca.gov/planning/general-plan/.

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 following is a brief summary of the provisions of California law regarding general plans, implementation tools, and hazard mitigation.

Statutory Mandates

Government Code Section 65300 requires that each municipality develop a general plan as a guide to the long-term development of the community. A general plan must also 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.

The purpose of the general plan is to provide goals, objectives, and policy statements that outline the vision of what a municipality plans to be in the future. The general plan will then be the guide for future development and growth for each respective municipality. Community growth can involve a number of different issues, such as housing, transportation, natural resources, and hazards.

Since each city and county is required to have a general plan that guides growth and development, the plan provides an important tool to local governments for hazards management. Local governments can place policies within their general plans that require new development to be at minimal 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.

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 (and all elements of a general plan, whether mandatory or optional, must be consistent with one another). In addition, there are summaries of laws and government codes that apply to community planning.

Mandated General Plan Elements

In accordance with Government Code Section 65302, a general plan must contain seven elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety. The Government Code specifies requirements for what each of these elements must contain. Each of the requirements is just the minimum that is needed. Local governments are welcome to go beyond the minimum requirements and to include other elements or sections. In addition, the elements can be organized in whichever method best fits the policies of that municipality, as long as all the required components are addressed. The following is a brief description of the elements that are most relevant to hazard mitigation.

Safety Element

The safety element is the most important element for hazards management since 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 safety element includes components from other elements, but it is important to unify these into a single element to more effectively guide policy- and decision-making. General plan law requires all elements to be consistent with each other; thus, requirements of the safety element must align with guidance provided in each of the other elements. One example of this alignment is the required consistency between hazards shown in safety element maps and allowed zoning shown in land use element maps. Zoning defined in land use element maps must take into account hazards defined in safety element maps.

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.

Other Mandated Elements

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 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. This must be reviewed each year.

In addition to providing the required flood mapping, the land use element offers other opportunities for hazard mitigation. In their land use elements, 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 crews) to pass other vehicles so that there are no traffic jams during an event. The element could also require that new developments have multiple access points to expedite response and evacuation. This is important if particular access points or roads are blocked or 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 updating every five years. Since the element must be updated every five years, 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 also addresses the responsible development and utilization of these natural 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 also 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. The motivations behind these 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. The noise element is included for the purpose of minimizing 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.

General Plan Consistency

The required general plan elements are an important component of community planning, but their value can easily be negated if they are in 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.

Consistency Among General Plan Elements

According to Government Code Section 65300.5, each element of the general plan must be consistent and compatible with the others. 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

As will be seen in greater detail in later sections, actions implementing general plans, such as rezonings, site plan reviews, subdivision map approvals, and capital improvement programs, must be consistent with the general plan. This 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.

For more information regarding related laws, see *Annex 1: Guide to California Hazard Mitigation Planning Laws, Policies, and Institutions.*

5.3.3.5 ADOPTION OF LOCAL HAZARD MITIGATION PLANS WITH SAFETY ELEMENTS

Under the federal Disaster Mitigation Act of 2000 (DMA2000), each municipality must develop a Local Hazard Mitigation Plan (LHMP) 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 local governments to adopt their LHMPs into the safety elements of their general plans. Such adoption is not mandated by this law. Instead it is encouraged through a post-disaster financial incentive that authorizes the state to use available California Disaster Assistance Act funds to cover local shares of the 25 percent non-federal portion of grant-funded post-disaster projects.

AB 2140 is one of the most important links between general plans and hazard mitigation in California. As mentioned earlier, California has enormous opportunity to implement hazard mitigation strategies within the safety elements of general plans. Integration of the LHMP into the safety element provides an excellent vehicle for implementation of the LHMP. This integration 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), would be required to comply with an LHMP that it is adopted with the safety element.

As stated in CFR Section 201.6(c)(5), in order for FEMA to consider the LHMP final, formal adoption of the LHMP by the governing boards of each participating jurisdiction must be made following the FEMA designation of the LHMP as "Approved Pending Adoption." In an effort to help California cities and counties to comply with the current state legislative requirements under AB 2140, SB 379, and SB 1241, whereby compliance can be met by adopting the LHMP into the safety element of the general plan, Cal OES is developing sample resolution language inclusive of all three pieces of legislation. The sample language, when completed, will be available on the Cal OES website under the "Hazard Mitigation Local Hazard Mitigation Planning Resources" web page at http://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/local-hazard-mitigation-program.

5.3.3.6 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 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 Commission for review and approval.

An LCP includes a land use plan (LUP) 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 LUP. Coastal Act policies are the standards by which the Commission evaluates the adequacy of LCPs. Amendments to certified LUPs and LCPs only become effective after approval by the 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 Commission is required to review each certified LCP at least once every five years.

5.3.3.7 ROLE OF CALIFORNIA BUILDING CODES

As discussed above, and at greater length in *Annex 1: Guide to California Hazard Mitigation Laws, Policies, and Institutions*, general plans and local building, fire, and other codes must be adopted by all California cities and counties. Special districts do not adopt such plans or codes but are generally obligated to follow those of the city or unincorporated area in which they are located.

The California Code of Regulations, Title 24, Parts 2 through 11 contain the California Building Code (CBC), California Residential Code (CRC), California Electrical Code CEC), California Mechanical Code (CMC), California Plumbing Code (CPC), California Energy Code, California Historical Building Code (CHBC), California Fire Code (CFC), California Existing Building Code (CEBC) and the California Green Buildings Standards (CALGreen) Code.

The California Building Code (CBC) contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. It also provides references to energy conservation and green building standards. The CBC is a comprehensive code, providing minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures and certain equipment.

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 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 8 of the California Historical Building Code (CHBC) 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. The California Building Standards Commission (CBSC) adopts residential and non-residential standards and certain provisions of Title 24, Part 10, the California Existing Building Code, Appendix Chapter A1, Seismic Strengthening Provisions for Unreinforced Masonry Bearing Wall Buildings and Appendix Chapter A3 Prescriptive Provisions for Seismic Strengthening of Cripple Walls and Sill Plate Anchorage of Light, Wood-Frame Residential Buildings. Title 24, Part 9 addresses fire provisions for life safety. Title 24 Part 11—the CALGreen Code addresses—green building standards. Title 24 Part 6—the California Energy Code—contains energy conservation standards applicable to residential and non-residential buildings throughout California, including schools. Lake, Kern, Marin, and Ventura counties have also adopted the International Urban-Wildland Interface Code.

Building and fire codes adopted under the state's laws have created a solid foundation for mitigating impacts of floods, fire, earthquakes, and other natural hazards in new development.

Temporary Modifications to Building Codes to Aid Post-Disaster Emergency Housing

Several recent natural disasters, including fires, floods, and mudflows, as well as a homeless population stemming from social, economic, or other circumstances have exacerbated the lack of affordable housing in California by either destroying house or rendering it unoccupiable. Additionally, the process of designing and constructing a building in full compliance with the requirements of the 2016 California Building Standards Code for the purpose of housing victims of a declared emergency is time-consuming and costly.

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, 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 on a temporary basis. According the California Department of Housing and Community Development (HCD), there are options for housing that are available, but not recognized in the building code.

Under certain post-disaster conditions, building codes may be temporarily modified to allow for more rapid construction of emergency housing. An example of this is the April 2018 adoption of emergency regulations for emergency housing following the wildfires, floods, and mudflows disasters in 2017 and early 2018. These emergency regulations will be effective for a six-month period but may be considered for renewal.

Chapter 786, Statutes of 2017 (AB 932) directs the California Department of Housing and Community Development (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 January 1, 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 (CBSC) at its April 18, 2016 meeting.

The emergency regulations will be effective for a six-month period ending October 15, 2018 and must be readopted to remain in effect after the expiration date. HCD anticipates at least one 90-day re-adoption.

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, residential fire, electrical, mechanical, plumbing, and green building standards and codes. Local code enforcement agencies arbitrate disputes concerning portions of facilities involved in repairs or upgrades and are tasked with making final decisions on such matters. According to California Health and Safety Code Section 16006, the "enforcement agency" is defined as the agency of a city, city and county, or county responsible for building safety within its jurisdiction. The Division of the State Architect (DSA), within the Department of General Services (DGS), is the review agency for the design and construction of public kindergarten through 12th grade (K-12) school facilities in California 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 jointly prepare periodic updates of the 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 and/or regulatory authority include the Office of Statewide Health Planning and Development 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.

Applicable State Building Codes

For new and existing buildings, state and local governments enforce the California Code of Regulations, Title 24, California Building Standards Code which includes earthquake safety provisions. Local government building departments use the 2016 California Building Code which will be superseded by the 2019 California Building Code that will take effect in January 2020.

Previously, the California Building Standards Commission adopted the Prescriptive Provisions for Seismic Strengthening of Cripple Walls and Sill Plate Anchorage of Light Wood-Frame Residential Buildings into the California Existing Building Code. This action has helped guide seismic retrofitting of existing homes in a systematic manner.

School seismic safety is addressed by California building codes. In 1933, California passed the Field Act to ensure seismic safety in new public schools. The Field Act establishes regulations for the design and construction of K-12 and community college buildings. The Division of the State Architect (DSA) within the Department of General Services (DGS) enforces the Field Act. The Field Act requires all new school building construction to be designed based on high level building standards adopted by the state; along with plans and specifications prepared by state-registered designers. Assembly Bill 300, enacted 1999, required DGS to survey all public school K-12 buildings in the state for seismic safety issues.

Applicable State Fire Codes

Updated fire codes developed to increase fire resistance in buildings and homes across California took effect in January 2011. The codes, which are enforced by CAL FIRE's Office of the State Fire Marshal (OSFM) and fire and building departments throughout the state, bring California in line with the 2012 International Building, Fire, and Residential Code. The new codes were adopted by the California Building Standards Commission and will increase fire safety and awareness in communities throughout California. A portion of the newly adopted codes focuses on regulations for homes built in the wildland-urban interface in order to make them more ember resistant, increasing structure survivability. Additional amendments relate to tire storage, dry cleaning, and automatic extinguishing systems.

A key component in the 2013 fire code adoption is the addition of requirements for residential fire sprinklers in all new one- and two-family and townhome construction projects. For many years, installation of fire sprinkler systems has only been required in office buildings and multi-family dwellings, like apartments. These sprinkler systems are proven to save lives and extinguish fires. More than 100 jurisdictions in California already have a local residential fire sprinkler ordinance.

For more information about fire and building codes, visit the CAL FIRE – OSFM website: http://osfm.fire.ca.gov.

Local fire safety requirements are governed by state laws established through the legislature and administered through the State Fire Marshal and CAL FIRE, depending upon location. Fire safety enforcement is an important part of local hazard mitigation.

5.3.4 GUIDE TO COMMUNITY PLANNING AND HAZARD MITIGATION

The purpose of this section is to provide general information about community planning to the emergency management community. It highlights the numerous components of community planning that help protect communities from hazards and mitigate their impacts.

In California, community planning is required and offers opportunities for managing hazards at the local level. Community planning tools include general plans, building codes, and development project reviews as well as infrastructure development. In addition, the planning process offers opportunities for input from the public and members of the emergency management community such as fire departments. This section identifies those opportunities so that members of the emergency management community can more actively engage in community planning to further promote hazard mitigation and resilience within their communities.

This section contains summaries of state laws and codes that apply to both community planning and emergency management functions. The section focuses on pre-disaster and post-disaster hazard mitigation as the main emergency management function in which community planning plays a significant role. The section also examines the connection between federal and state laws regarding hazards management. For more detailed information on many of the laws described here, see *Annex 1, Guide to California Hazard Mitigation Laws, Policies, and Institutions*.

5.3.4.1 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. As described further below, in California, general plans are the vehicle used to outline the policies and regulations for land use decisions at the local level.

Five major dimensions provide the foundation for the community planning process: design, laws and regulations, environmental analysis, socioeconomic analysis, and political approval. These five dimensions are connected and interdependent, forming a comprehensive and symbiotic relationship.

Community and land use planning is a complex system of processes and regulations that assist local governments in meeting challenges in their communities. These processes and regulations also 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. Knowledge of these tools can help emergency managers and planners understand how community planning can be used to create safer and more resilient communities.

Design

Design focuses on the physical layout of the community or a specific development project. Design includes site planning and urban design of buildings. At the community level, many design guidelines and policies are implemented through general plans. When specific development projects are proposed, the design is assessed based on the policies established in the general plan.

Laws and Regulations

Laws and regulations provide the regulatory framework that shapes the planning process. These are primarily state and local, but in some cases federal laws and regulations apply to community planning as well.

Environmental Analysis

A major dimension of the planning process in California is environmental analysis, due in part to state and federal laws and regulations intended to ensure environmental protection. In community planning, environmental analyses are performed to determine the impact that a plan or development project will have on the environment. These analyses include assessments of the potential for exposure of people or property to environmental conditions such as natural hazards.

Socioeconomic Analysis

Socioeconomic analyses fulfill a vital need for community planning. The analyses examine the social structure of the community and the impact that a proposed plan or development will have on it. Another feature of these analyses is assessment of the community's fiscal health and the effects of proposed plans or developments on fiscal conditions. In addition, such analyses often include a comprehensive assessment of the regional economy. Plans and projects are likely to affect not only the specific community, but also surrounding communities with potential changes in transportation systems, housing, and jobs.

Political Approval

Community planning is a process embedded in the political system and guided largely by state laws as well as the U.S. Constitution. As proposed plans and development projects go through the planning process, there are numerous opportunities for public input. The final step is approval or denial of the plan or project by the elected board for the community (e.g., city council, board of supervisors). Therefore, political support (or lack of objection) from the public and elected officials is critical for proposed plans and projects to be approved.

5.3.4.2 ROLE OF COMMUNITY PLANNING IN EMERGENCY MANAGEMENT

Community planning is important for several reasons. The political, social, economic, and physical environment surrounding communities is continually changing. One of the largest aspects of this change is population growth. Other shifts include changes in demographics, transportation systems, regional economy, political climate, and landscapes. Each of these changes creates burdens and challenges for land use, and community planning is the system in place for managing these challenges.

As the population of California continues to grow, the demand for new housing and public services will increase. This places pressures on communities to provide space to accommodate this growth. One of the most pressing challenges today is that land availability for outward expansion has dramatically decreased over time.

There are two primary ways that communities can provide space for the new growth. Over the past five decades, the most common answer was to expand outward, creating urban sprawl. This approach can force people much farther away from job centers, require more extensive transportation systems, and push development into hazardous areas such as floodplains and areas of high fire hazard. The other alternative is for communities to renovate built areas to increase density. Often this means tearing down older neighborhoods and placing taller or more expansive buildings in their place, a form of redevelopment that commonly called infill development.

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 developments in these areas can increase the dangers to people and property while also placing more burdens on public safety officials to protect them. 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. These are the kinds of decisions community leaders will 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.

5.3.4.3 KEY PARTICIPANTS

In community planning, multiple participants are involved at different stages in the process. Some participants are involved through most of the process, while others may only have specific roles at specific stages. The following is a summary of the key participants in community planning.

Local Governments

Elected Officials

Local elected officials primarily include city councils and county boards of supervisors. These boards and councils act as the state-mandated legislative bodies. City councils and county boards of supervisors have two discretionary roles, legislative and quasi-judicial. Legislative acts include creating local laws and making policy decisions. In community planning, these acts include zoning ordinance changes and general plan revisions. Quasi-judicial acts include actions on appeals of decisions made by the planning commission, which include the approval or denial of conditional use permits or zoning variances.

Another important role of city councils and boards of supervisors is to appoint the members of the local planning commission. Proposed projects and plans are brought before the planning commission for approval or denial. Traditionally, the planning staff will provide a presentation of the proposed project to the commission along with a

recommendation for approval or denial. After the recommendation is heard, a representative of the project is invited to speak on behalf of the development. Since the planning commission meetings are an open forum, time is also allotted for the public to present comments. Thus, the planning commission is presented with different views and can make a decision on the project after consideration of these opinions. For projects that could potentially lead to increased risks to people and property, members of the emergency management community are encouraged to participate in the approval process and present comments at public meetings.

Planning Agencies

Local planning agencies include the planning director who oversees the planning agency and the staff who work within the planning agency. Local planning staffs are tasked with a variety of planning responsibilities that include reviewing proposed developments, processing building permits, and enforcing codes. In each of these tasks, the staff work with developers and members of the public involved. For example, if corrections are needed in a building permit, the staff will work with the applicant to make the corrections before submitting the permit application for approval. Staff similarly may work with developers on proposed projects to ensure consistency with the general plan and state and local regulations.

How involved the staff is in working with the public or with emergency management agencies can vary greatly. For example, if the developer feels that the staff is against the proposal, they may seek approval before the planning commission with minimal consultation with staff or changes to the proposed project. In either case, it is up to planning staff to recommend to the planning commission that a project be approved or denied and explain why the staff selected this recommendation.

Special Interests

Special interest groups serve a variety of functions in the planning process. One of the most common is the watchdog function. These groups are involved because they have a vested interest in the planning process or the effects of the planning. Examples include neighborhood or citizen groups who wish to preserve the interests of their community. Environmental groups often are heavily involved since development will one way or another affect the environment. Other interest groups involved in local public planning include the local business community, the private real estate industry, and the agriculture industry. Reasons for their involvement vary as much as the nature of each organization. Sometimes a group is involved merely to protect its interests; other times, it may seek to stop a development from going forward.

Private Real Estate and Development Industry

Private real estate interests are the movers and shakers in the public planning process. They own the land, develop the projects, and provide the financial capital for construction and completion. There are six key players in the real estate industry: landowners, developers, builders, lenders, investors, and homebuyers.

Landowners

Landowners are the people who own the property that is influenced by the planning process. Often, these individuals are passive participants in the process. This means that they are not directly involved in the development of zoning ordinances, development projects, or site plans. Planners may hold charrettes or other public meetings to incorporate input and ideas from landowners and the public, but this is not always the case. When plans, ordinances, and development projects come before a public body such as the planning commission or city council, the public has a right to present their views and opinions of the proposals. It is in this role that landowners may be most involved in the planning process.

Developers

Developers often do not own the property that they are trying to develop. Instead, they enter into partnerships with landowners or other investors to develop the land. They are the participants who create the development plans, such as parcel maps and site plans, and present them for approval. Developers work with planning staffs to

ensure that the plans are consistent with the general plan and applicable laws and regulations. The size of development companies can vary greatly, from one person to large organizations.

Builders

When approval for a project is granted, developers will often sell the site or pieces of it to builders who are responsible for construction. In some cases, building companies that are large enough may also act as the developer. In this case, they can ensure that the project will be built to their wishes. In larger subdivision and neighborhood projects, it is common for a single builder to construct the development in phases.

Investors and Lenders

Without financial capital, many of the projects that are proposed could never be built. Even before construction begins, there are several steps to the development process that can involve costs. Fees for applications, permits, and environmental impact reviews can be costly, especially for larger projects.

Investors and lenders look at development as business investments. They are willing to take on risk if they believe the investment will yield a profitable return in the future.

For risky projects, it may be difficult to find investors and lenders willing to provide the needed financial capital. In order to help protect their investment, lenders and investors may place demands or requirements on the development in return for their capital. Examples could include requiring a minimum number and size of homes in the subdivision, or requiring that commercial space be included. These requirements can sometimes significantly change the outcome of the development, highlighting the important role investors and lenders have in the planning process.

Home Buyers

Following completion of a residential project, new homes in residential developments are marketed to potential home buyers.

State Government

The state government of California has been actively involved in community planning since the late 1800s, when the state legislature passed some of the earliest planning laws in the nation. As the state experienced increased growth in the decades since, the role of state government in community planning has also increased. The following subsections provide a brief summary of the role of state legislature and state agencies in community planning.

Legislature

The state legislature in California has a very powerful role in shaping planning and hazard mitigation at the local level. As early as 1893 when it passed the predecessor to the Subdivision Map Act, the California legislature has been involved in developing the framework for local planning decisions and regulations. In addition to the Subdivision Map Act, other examples include the Community Redevelopment Law and the California Environmental Quality Act (CEQA). California does not have a single law that provides all of the guidelines for local planning. Rather, the state operates according to a complex system of multiple laws and policies adopted over the past several decades. Many of these have been amended and changed over time.

Courts

In California, the courts are involved in planning primarily through litigation. Cases are divided into two types, constitutional and statutory. In constitutional cases, a landowner may sue if he or she believes that his or her constitutional rights had been violated. Examples could include instances in which a landowner believes that an ordinance has created undue hardships or that he or she has not been equally protected under the law. Statutory cases involve a plaintiff arguing that a state or federal law has been violated. This is common in California, with interest groups or homeowners suing if there are believed to be inconsistencies between zoning ordinances and general plans, or if an environmental review was not performed for a project under the California Environmental

Quality Act (CEQA) when the plaintiff believes it should have been. In either case, the courts can have an influential role by interpreting and determining the legality of laws and ordinances. Often, the courts may rule only on small sections or a technicality.

Agencies

Numerous state agencies are involved in or influence planning in cities and counties, as shown in Table 5.L. These agencies fall into three broad categories: development and infrastructure agencies, conservation agencies, and regional agencies.

Development and infrastructure agencies are involved in the construction of buildings and infrastructure in California. These agencies have a wide variety of functions, ranging from managing state-owned infrastructure to enforcing development regulations, laws, and codes. These agencies include the California Department of Transportation (Caltrans), the Department of Water Resources (DWR), the Department of Housing and Community Development (HCD), and the Department of General Services (DGS).

Agencies involved in conservation that affects community planning include the Department of Fish and Wildlife, the Department of Forestry and Fire Protection (CAL FIRE), the Department of Conservation, and the Department of Parks and Recreation. They are tasked with protecting and conserving natural resources by enforcing laws and regulations or are involved in land use decisions that affect state-owned land. Most of these agencies are within the California Natural Resources Agency.

There are four regional state agencies in California: the Coastal Commission, the San Francisco Bay Conservation and Development Commission (BCDC), the Tahoe Regional Planning Agency (TRPA), and the Delta Protection Commission. Each is involved with land use and development issues in their regions. Nevada is also a partner in TRPA since Lake Tahoe is partially within the state of Nevada.

Table 5.L: State Agencies Involved in Community Planning

State Agency	Role in Community Planning	Related Laws
California Department of Transportation (Caltrans)	Constructs and maintains the state highway system	
Department of Water Resources	Oversees the State Water Project	
Department of Housing and Community Development	Provides funding for affordable housing; approves housing elements	
Department of General Services	Manages the state's real estate and facility planning	
Department of Fish and Wildlife	Enforces the California Endangered Species Act; manages land reserved for wildlife	California Endangered Species Act
California Department of Forestry and Fire Protection (CAL FIRE)	Influences subdivision planning in forested communities	
Department of Conservation	Preserves agriculture land through the Williamson Act; oversees mining operations	Williamson Act; Surface Mining and Reclamation Act
Department of Parks and Recreation	Participates in land use activities that affect state parks	
Coastal Commission	Review for consistency with the California Coastal Act the planning, permitting, and conservation activities of local governments along the California coast.	California Coastal Act; Coastal Zone Management Act

State Agency	Role in Community Planning	Related Laws
San Francisco Bay Conservation and Development Commission	Regulates bay fill and waterfront development along San Francisco Bay	
Tahoe Regional Planning Agency	Influences land use planning and development in the Lake Tahoe area	
Delta Protection Commission	Influences land use and development in the Delta region	Delta Protection Act

Federal Government

The federal government is involved in community planning and hazards management through multiple means. These include federal laws passed by the United States Congress and functions within several federal agencies. The following subsections provide a summary of the federal role in community planning.

U.S. Congress

Article X of the U.S. Constitution declares that powers not delegated to the federal government in the Constitution are reserved for the states. One of those powers is the ability to control land use decisions. As a result, Congress has not directly been involved in governing land use at the state and local levels. However, Congress has been involved in related issues such as transportation and environmental protection. The reason for this is that these issues transcend political boundaries and affect larger regions or the nation as a whole. Examples include the federal National Environmental Policy Act, Clean Water Act, Clean Air Act, Coastal Zone Management Act, and Federal-Aid Highway Act. For a summary of federal legislation that influences planning and hazard mitigation, see *Annex 1: Guide to California Hazard Mitigation Laws, Policies, and Institutions*.

Agencies

The role of federal agencies in community planning focuses on enforcing federal laws, managing federally owned property, and providing financing for community development projects. See Table 5.M for roles of federal agencies in community planning. Federal development agencies include the Bureau of Reclamation, U.S. Department of Transportation (US DOT), Department of Housing and Urban Development (HUD), General Services Administration, and Department of Defense (DOD). Federal conservation agencies include the Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers (USACE), Bureau of Land Management, and U.S. Forest Service.

Table 5.M: Federal Agencies Involved in Community Planning

Federal Agency	Role in Community Planning	Related Laws
Bureau of Reclamation	Building and maintaining water systems; dams; Central Valley Project	
U.S. Department of Transportation (US DOT)	Funding highway and transportation projects	
Department of Housing and Urban Development (HUD)	Subsidizing public housing; administering Community Development Block Grants (CDBGs)	Stafford Act
General Services Administration	Leasing and real estate activities of federal government	
Department of Defense (DOD)	Operating defense installations; redeveloping closed bases	
Environmental Protection Agency (EPA)	Regulating federal environmental protection laws	Clean Air Act, National Environmental Policy Act
U.S. Fish and Wildlife Service	Regulating sensitive habitats for endangered species	Endangered Species Act

Federal Agency	Role in Community Planning	Related Laws
U.S. Army Corps of Engineers (USACE)	Owning/operating dams and regulating wetlands	Clean Water Act
Bureau of Land Management	Managing large areas of desert and mountain areas in California	
U.S. Forest Service	Conserving land conservation and managing resources in national forests	

5.3.4.4 THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) was passed in 1970 and since that time has evolved into one of the most prominent components of community planning in California. CEQA applies to discretionary actions, such as a development proposal or general plan amendment.

CEQA has four mandated functions: informing decision-makers about environmental impacts, identifying activities that can mitigate the impact, preventing damage to the environment, and disclosing reasons for approving the discretionary action if it will cause environmental degradation. Through the CEQA process, decision-makers are informed of the natural hazards at proposed development locations and the impacts these hazards may have on people and property.

Overview of Process

State CEQA guidelines mandate a three-step process for local governments to follow. The first step is to determine if the discretionary action qualifies as a project under CEQA. If the project does not fall under the allowed exemptions and is not discretionary, then the project does not have to continue in the CEQA process. If the project does not fall under either of these qualifications, then an initial study must be performed. The initial study will assess the project to determine if it may have a significant impact on the environment. If so, then an environmental impact report (EIR) must be prepared.

One exemption from the CEQA process is for the reconstruction or restoration of damaged or deteriorated buildings or structures to meet current public safety standards. This exemption has been applied, for example, to the strengthening and improvement of levees along the Sacramento and San Joaquin Rivers and in the Delta region. Because of this exemption, these projects were not subject to further steps in the CEQA process.

Environmental Impact Reports

The environmental impact report (EIR) is a comprehensive and detailed report explaining the potential environmental impacts of a project. The planning agency is responsible for overseeing the preparation of the EIR. Given their complexity and amount of time required to complete EIRs, a consultant is often brought in to assist. The consultant can be hired by the developer directly or be selected and overseen by the planning agency. Either way, the costs for preparing the EIR are passed on to the developer. Once an EIR is prepared, it is up to the planning agency to adopt the findings. Depending on the size and complexity of the discretionary action, an EIR can take up to 12 months to prepare and cost several hundred thousand dollars.

5.3.4.5 GENERAL PLAN IMPLEMENTATION

General plan development is just the first significant phase in community planning. The next phase is to implement the general plan. The following sections discuss the tools and processes that are involved in achieving the goals and objectives set by the general plan.

Zoning

Zoning is one of the methods communities use to achieve the goals and objectives of the general plan.

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 land use 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 built structure must be from the property lines), and minimum parcel sizes.

In addition to regulating land use, zoning has other functions that relate to hazard management, as summarized below.

Hazard Overlay Zones

Overlay zones establish additional regulations beyond those established by the base zoning of a property. Generally, they are used to help resolve issues that typical zoning classifications do not address.

Hazard overlay zones address risks created by a defined hazard. Common sources of overlay zone mapping include Special Flood Hazard Areas (SFHAs), Fire Hazard Severity Zones (FHSZs), and seismic/geologic hazard zones. The purpose of these zones is to 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 mitigation strategies of their Local Hazard Mitigation Plans (LHMPs).

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. This means that the zoning change request is brought before a public meeting where anyone can comment on the proposed change. Significant opposition to a zoning change from the public could sway the council or board to deny the change. Any changes in zoning must be consistent with the general plan and other requirements placed on that property. Otherwise, the change may be challenged in court as illegal.

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 on which 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 only granted if it is proven that compliance with the standard zoning requirements 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, if the zoning of a parcel is changed so that the allowed number of housing units per acre or other building density is decreased, then the parcel has been down-zoned. This is a relatively common practice 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.

Challenges of down-zoning include the consequences it has for the landowner. Decreasing the potential density of a parcel can decrease the economic value to the landowner. Landowners are quite sensitive to losing property value and have challenged down-zonings in court as "regulatory takings." Supreme Court rulings of the past several decades have established guidance for local governments in determining the extent to which properties can be reasonably down-zoned.

Specific Plans

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

Subdivision Map Act

The Subdivision Map Act (Map Act) is the overarching law for development of subdivisions in California. The first version of 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 during its history, and at present provides authority to local governments 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. Thus, if a general plan contains requirements to protect communities from hazards, any subdivision must follow these requirements. 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.

These provisions are further strengthened by the stipulation that 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 language provides a basis for linking natural hazards to environmental damage and public health, thereby giving city and county planners the ability to deny or modify maps not meeting these criteria.

Unreinforced Masonry Building Act

In 1986, the California legislature enacted the Unreinforced Masonry Building Act. 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.

Capital Improvement Programs

Communities are far more than just land and buildings. Capital improvements, also called infrastructure or public works, play a critical role in the health of communities and include transportation, water, power, and sewage systems. These systems form the lifelines of communities; without functioning and efficient infrastructure, the communities would rapidly decline. Capital improvements must be maintained and modernized to continue to meet the needs and demands of the community.

Local jurisdictions typically maintain ongoing capital improvement programs. All capital improvement programs are required to be consistent with the general plan of the community. New development often requires construction of capital improvements. Examples include transportation improvements, such as parking and new roads, and expansion of water and sewer services. Local governments can require developers to build these improvements or levy fees on the development project that will 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 within the community. This can involve reconstruction of many, if not all, of the same systems that are included within capital improvement programs. Thus, one of the keys to community resilience is to ensure that the infrastructure is built to promote public safety after a disaster. One example is requiring that new development have wider roads and multiple access points to facilitate evacuation and response operations.

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.

Land Conservancies

Supplementing local governments are other quasi-public organizations undertaking hazard mitigation and environmental protection functions. 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 1958, although many of its projects are now managed by other organizations.[95]

[95] http://nature.org/wherewework/northamerica/states/california/preserves/