

# Safety Element

## Introduction

The goal of the safety element is to reduce the potential short and long term risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, droughts, earthquakes, landslides, climate change, and other hazards. Other locally relevant safety issues, such as airport land use, emergency response, hazardous materials spills, and crime reduction, may also be included. Some local jurisdictions have chosen to incorporate their hazardous waste management plans into their safety elements.

### Government Code 65302(g):

(g) (1) A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

The safety element overlaps with topics also mandated in the (1) land use, (2) conservation, (3) environmental justice and (4) open-space elements, as development plans must adequately account for public safety considerations and open space for public health and ecological benefits often incorporate areas of increased hazard risk. When preparing a new general plan or undertaking a comprehensive revision of an existing general plan, care should be taken to efficiently organize these concepts so they make sense to the public and policymaker alike. The key concern should be to effectively integrate these common issues into the decision-making process. The safety element must identify hazards and hazard abatement provisions to guide local decisions related to zoning, subdivisions, and entitlement permits. With the recent introduction of climate risk to the discussion of the Safety Element, added focus on longer term preparation of a community for a changing climate should be added into the Safety Element where appropriate, but also in other elements to provide cross-linkages. The element should contain general hazard and risk reduction strategies complementary with those of the [Local Hazard Mitigation Plan \(LHMP\)](#). Ideally, the LHMP would be incorporated into the safety element as outlined below in accordance with provision of [Assembly Bill 2140, General Plans: Safety Element \(Hancock\)](#). Policies should identify hazards and emergency response priorities, as well as mitigation through avoidance of hazards by new projects and reduction of risk in developed areas. As California confronts mounting [climate change](#) impacts, local governments are now required, in accordance with [Senate Bill 379, Land Use: General Plan: Safety Element \(Jackson\)](#) to include a climate change vulnerability assessment, measures to address vulnerabilities, and comprehensive hazard mitigation and emergency response strategy as explained further in this section. Communities may use the safety element as a vehicle for defining “acceptable risk” and the basis for determining the level of necessary mitigation. Policies may include methods of minimizing risks, as well as ways to minimize economic disruption and expedite recovery following disasters.

Climate change will affect and potentially exacerbate the impact of other hazards rather than being solely a distinct hazard with unique impacts. For example, extreme heat and heat waves are existing hazards that will be exacerbated by climate change. The impacts of climate change on the frequency,

#### Climate Change

An increasingly important factor affecting disaster management functions is climate change. Climate Change reflects new uncertainties and factors shaping and conditioning hazard mitigation planning. Chapter 4.5 in the 2013 [California State Hazard Mitigation Plan](#) (SHMP) addresses a specific approach for local communities to evaluate their risk as a result of climate change. The Safety Element of the general plan plays an important role in ensuring consistency with the [Local Hazard Mitigation Plan](#) (LHMP) and the SHMP. The general plan and LHMP both provide a local vehicle for implementation of the SHMP, including the provisions dealing with climate change. The SHMP outlines tools, resources and a process for addressing climate change at the local level. The resources the SHMP and LHMP guidance materials reference are the same materials referenced in Chapter 8 of the General Plan Guidelines, Climate Change. This provides for consistency across multiple documents such as an adaptation plan, climate action plan, general plan, implementation plan, local hazard mitigation plan, etc. For more information refer to the website for the [State Hazard Mitigation Plan](#).

timing, and magnitude of flooding vary by geography throughout the state. Areas that experience early run off from snow melt coupled with intensified rain or coastal areas experiencing sea level rise may be more greatly impacted by flooding. Hazards that have the potential to be affected by climate change are further outlined in this element and linked resources described below.

#### [Assembly Bill 2140](#)

Under the federal [Disaster Mitigation Act of 2000 \(DMA2K\)](#), 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](#) authorizes local governments to adopt their LHMPs with the safety elements of their general plans.

Integration or incorporation by reference is encouraged through a post-disaster financial

incentive which authorizes the state to use available California Disaster Assistance Act funds to cover local shares of the 25% 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. Adopting the LHMP with 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.

#### [Completeness Checklist](#)

Local agency staff can use the following checklist to help ensure that the safety element addresses all required issues. Please note that use of this checklist is purely advisory, and only contains issues that are legally required by [Government Code section 65302](#). Safety elements may address additional issues at the

discretion of the local government. Because general plan formats may vary, this checklist suggests identifying where the particular government code provision is satisfied.

Statutory Citation	Brief Description of Requirement	Explanatory Notes
Code Section 65302	Identification of unreasonable risks and policies for the protection of the community from such risks.	
	<p><i>Slope Instability</i></p> <p>Slope instability leading to mudslides and landslides;</p>	
	<p><i>Seismic risks, including:</i></p> <p>Seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body</p> <ul style="list-style-type: none"> <li>• Mapping of known seismic and other geologic hazards,</li> <li>• Address                             <ul style="list-style-type: none"> <li>○ evacuation routes</li> <li>○ military installations</li> <li>○ peakload water supply requirements, and</li> <li>○ minimum road widths and clearances around structures</li> </ul> </li> </ul>	
	<p><i>Flooding</i></p> <p><u>Identify</u></p> <ul style="list-style-type: none"> <li>• Flood Hazard Zones</li> <li>• FEMA Flood Insurance Maps</li> <li>• Army Corps of Engineer Flood information</li> <li>• Flood maps from the Central Valley Flood Protection Board</li> <li>• Dam Failure Maps (Office of Emergency Services)</li> <li>• DWR Floodplain Maps</li> <li>• Maps of Levee Protection Zones</li> <li>• Areas subject to inundation in the event of the failure of levees and floodwalls</li> <li>• Historic flood information</li> <li>• Existing and planned development in flood hazard areas</li> <li>• Agencies with responsibility for flood protection</li> </ul> <p><u>Mandatory Goals, Policies and Objectives</u></p> <ul style="list-style-type: none"> <li>• Avoid and minimize flood risks for new development.</li> <li>• Should new development be located in flood hazard zones? If so, what are appropriate mitigation measures?</li> <li>• Maintain the integrity of essential public facilities.</li> <li>• Locate, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and</li> </ul>	

	<p>emergency communications facilities, or identifying mitigation measures.</p> <ul style="list-style-type: none"> <li>• Establishing cooperative working relationships among public agencies with responsibility for flood protection.</li> </ul> <p><u>Feasible Mitigation Measures</u>, to implement the policies above.</p>	
	<p><i>Wildland and Urban Fires</i></p> <p>Identification of, and policies for, the protection of the community from, any unreasonable risks associated with wildland and urban fires.</p> <p><u>State Responsibility Areas and Very High Fire Hazard Severity Zones</u></p> <p><u>Consider advice</u> in OPR’s Fire Hazard Technical Advisory</p> <p><u>Identify</u></p> <ul style="list-style-type: none"> <li>• CALFire Fire Hazard Severity Zone Maps</li> <li>• Historical data on wildfires</li> <li>• USGS wildfire hazard areas</li> <li>• Existing and planned development within these areas</li> <li>• Agencies with responsibility for fire protection in these areas</li> </ul> <p><u>Mandatory Goals, Policies and Objectives</u></p> <ul style="list-style-type: none"> <li>• Protect the community from unreasonable risks</li> <li>• See mitigation measures below.</li> </ul> <p><u>Feasible Mitigation</u></p> <ul style="list-style-type: none"> <li>• Avoid and minimize fire risks for new development.</li> <li>• Should new development be located in fire hazard zones? If so, what are appropriate mitigation measures?</li> <li>• Maintain the integrity of essential public facilities.</li> <li>• Locate, when feasible, new essential public facilities outside of fire hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities,</li> <li>• If essential facilities are located in high fire zones, identify mitigation measures, such as safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.</li> <li>• Establishing cooperative working relationships among public agencies with responsibility for fire protection.</li> </ul>	
	<p><i>Climate Change Adaptation and Resilience</i></p> <p>Identification of, and policies for the protection of the community from, any unreasonable risks associated with climate change.</p> <p><u>Identify</u></p> <ul style="list-style-type: none"> <li>• Hazards identified by using the process in the Adaptation Planning Guide and reflected in referenced tools such as Cal-Adapt.</li> </ul>	

	<p><u>Mandatory Goals, Policies and Objectives</u></p> <ul style="list-style-type: none"> <li>• Protect the community from unreasonable risks</li> <li>• See mitigation measures in the Adaptation Planning Guide.</li> </ul> <p><u>Feasible Mitigation</u></p> <ul style="list-style-type: none"> <li>• Follow the decision making process in the Adaptation Planning Guide to identify and incorporate feasible adaptation measures.</li> </ul>	
	Review the Safety Element for fire and flood impacts upon each Housing Element update, and for the purposes of climate change, at each update to the Local Hazard Mitigation Plan, Jurisdiction may choose to do a comprehensive review of the Safety Element upon each Housing Element update to streamline review.	
	Consult with specified agencies in updating the safety element	

Correlation Among Elements

The safety element is one of several element that has cross-element relationships throughout the general plan guidelines. Likewise, when developing a new or updated safety element, ensuring internal consistency across elements is an important consideration.

	Land Use	Circulation	Housing	Conservation	Open Space	EJ	Air Quality	Noise
Safety	•	•	•	•	•	•	•	

**Required Contents**

The safety element must, consistent with [Government Code Section 65302\(g\)](#), provide the protection of the community from any unreasonable risks associated with the effects of:

- Seismically induced surface rupture, ground shaking, ground failure
- tsunami, seiche, and dam failure
- slope instability leading to mudslides and landslides
- subsidence
- liquefaction
- other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body
- flooding
- wildland and urban fires
- climate change

The safety element must include mapping of known seismic and other geologic hazards. It must also address evacuation routes, military installations, peakload water supply requirements, and minimum

road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

The safety element must also identify information regarding flood hazards, establish a set of comprehensive goals, policies, and objectives for the protection of the community from the unreasonable risks of flooding, and establish a set of feasible implementation measures designed to carry out the goals, policies, and objectives for flood protection. It is recommended that the safety element do the same for drought impacts.

The safety element must also be reviewed and updated as necessary to address the risk of fire for land classified as state responsibility areas and land classified as very high fire hazard severity zones. Because climate change will likely increase California's frequency and intensity of fire weather conditions, even historically less vulnerable regions should reevaluate wildfire risk and prevention strategies in their general plan's safety element. *See the sidebar for more information on fire hazard requirements.*

### Consultation Requirements

Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the [California Geological Survey of the Department of Conservation](#), the [Central Valley Flood Protection Board](#), if the city or county is located within the boundaries of the [Sacramento and San Joaquin Drainage District](#), as set forth in [Section 8501 of the Water Code](#), and the [Office of Emergency Services](#) for the purpose of including information known by and available to the department, the agency, and the board required by this subdivision. In particular, the Office of Emergency Services can assist local governments with developing their safety element and aligning general plan strategies with those of the local hazard mitigation plan to ensure consistency. The Governor's Office of Planning and Research's Integrated Climate Adaptation and Resiliency Program (ICARP), established by [SB246, Wieckowski](#), will also serve to support local government's compliance with [SB379, Jackson](#) starting in January 2017.

### Statutory Requirements

This section offers a general guide to the contents of the safety element. Note that while the focus is on the minimum requirements for an adequate safety element, an effective general plan will focus more extensively on those issues of greatest relevance to the community. The effects of climate change in particular will influence emergency management issues through varying impacts across local communities statewide. Increases in average temperature, a greater incidence of extreme weather conditions, and sea level rise all will not only exacerbate existing hazards mentioned in this section, but may also create new hazards where none previously existed.

Useful Definitions

<p>Alquist-Priolo Earthquake Fault Zone: A regulatory zone, delineated by the State Geologist, within which site-specific geologic studies are required to identify and avoid fault rupture hazards prior to subdivision of land and/or construction of most structures for human occupancy.</p>	<p>sheeting on roofs or floors incapable of withstanding lateral loads</p> <p>large openings in walls that may cause damage from torsional forces</p> <p>lack of an effective system to resist lateral forces</p>
<p>Climate Adaptation: Adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities.</p>	<p>non-ductile concrete frame construction</p> <p>Hazardous Material: An injurious substance, including pesticides, herbicides, toxic metals and chemicals, liquefied natural gas, explosives, volatile chemicals, and nuclear fuels.</p>
<p>Climate Mitigation: A human intervention to reduce the human impact on the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.</p>	<p>Hazard Mitigation: Sustained action taken to reduce or eliminate long-term risk to people and their property from hazards and their effects.</p>
<p>Critical Facility: Facilities that either (1) provide emergency services or (2) house or serve many people who would be injured or killed in case of disaster damage to the facility. Examples include hospitals, fire stations, police and emergency services facilities, utility facilities, and communications facilities.</p>	<p>Landslide: A general term for a falling, sliding, or flowing mass of soil, rocks, water, and debris. Includes mudslides, debris flows, and debris torrents.</p> <p>Liquefaction: A process by which water-saturated granular soils transform from a solid to a liquid state during strong ground shaking.</p>
<p>Extreme Weather Event: In most cases, extreme weather events are defined as lying in the outermost (“most unusual”) ten percent of a place’s history. Analyses are available at the national and regional levels.</p>	<p>Maladaptation: Any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli; an adaptation that does not succeed in reducing vulnerability but increases it instead.</p>
<p>Fault: A fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side. A fault zone is a zone of related faults which commonly are braided, but which may be branching. A fault trace is the line formed by the intersection of a fault and the earth’s surface.</p>	<p>Peakload Water Supply: The supply of water available to meet both domestic water and fire fighting needs during the particular season and time of day when domestic water demand on a water system is at its peak.</p>
<p>Active Fault: A fault which has exhibited surface displacement within Holocene time (approximately the past 11,000 years).</p>	<p>Resilience: The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.</p>
<p>Potentially Active Fault: A fault which shows evidence of surface displacement during Quaternary time (the last 2 million years).</p>	<p>Seiche: An earthquake-induced wave in a lake, reservoir, or harbor.</p>
<p>Flooding: A rise in the level of a water body or the rapid accumulation of runoff, including related mudslides and land subsidence, that results in the temporary inundation of land that is usually dry. Riverine flooding, coastal flooding, mud flows, lake flooding, alluvial fan flooding, flash flooding, levee failures, tsunamis, and fluvial stream flooding are among the many forms that flooding takes.</p>	<p>Seismic Hazard Zone: A regulatory zone, delineated by the State Geologist, within which site-specific geologic, soils, and foundation engineering studies are required to identify and avoid earthquake-caused ground-failure hazards, or selected other earthquake hazards, prior to subdivision of land and for construction of most structures for human occupancy.</p> <p>Storm surge: An abnormal rise of water generated by a storm, over and above the predicted astronomical tides.</p>
<p>Ground Failure: Mudslide, landslide, liquefaction or soil compaction.</p>	<p>Subsidence: The gradual, local settling or sinking of the earth’s surface with little or no horizontal motion (subsidence is usually the</p>

<p>Hazardous Building: A building that may be hazardous to life in the event of an earthquake because of partial or complete collapse. Hazardous buildings may include:</p> <ol style="list-style-type: none"><li>1. Those constructed prior to the adoption and enforcement of local codes requiring earthquake resistant building design.</li><li>2. Those constructed of unreinforced masonry.</li><li>3. Those which exhibit any of the following characteristics:  exterior parapets or ornamentation which may fall on passersby  exterior walls that are not anchored to the floors, roof or foundation</li></ol>	<p>result of gas, oil, or water extraction, hydrocompaction, or peat oxidation, and not the result of a landslide or slope failure).</p> <p>Seismically Induced Surface Rupture: A break in the ground's surface and associated deformation resulting from the movement of a fault.</p> <p>Tsunami: A wave, commonly called a tidal wave, caused by an underwater seismic disturbance, such as sudden faulting, landslide, or volcanic activity.</p> <p>Wildland Fire: A fire occurring in a suburban or rural area which contains uncultivated lands, timber, range, watershed, brush or grasslands. This includes areas where there is a mingling of developed and undeveloped lands.</p>
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## Climate Change Adaptation and Resilience

### Requirement Description:

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In accordance with the requirements of [SB379, Jackson](#), climate change adaptation and resilience is required to be addressed in the Safety Element of all general plans in California. Specifically, “upon the next revision of a local hazard mitigation plan, adopted in accordance with the federal Disaster Mitigation Act of 2000 (Public Law 106-390), on or after **January 1, 2017**, or, if a local jurisdiction has not adopted a local hazard mitigation plan, beginning on or before **January 1, 2022**, the safety element shall be reviewed and updated as necessary to address climate adaptation and resiliency strategies applicable to the city or county.” “This review shall consider advice provided in the Office of Planning and Research’s General Plan Guidelines...” This section provides advice to support a jurisdiction’s compliance with the requirements of SB379. The statutory requirements for this section are included below.

#### **Government Code 65302(g):**

(4) Upon the next revision of a local hazard mitigation plan, adopted in accordance with the federal Disaster Mitigation Act of 2000 (Public Law 106-390), on or after January 1, 2017, or, if a local jurisdiction has not adopted a local hazard mitigation plan, beginning on or before January 1, 2022, the safety element shall be reviewed and updated as necessary to address climate adaptation and resiliency strategies applicable to the city or county. This review shall consider advice provided in the Office of Planning and Research's General Plan Guidelines and shall include all of the following:

(A) (i) A vulnerability assessment that identifies the risks that climate change poses to the local jurisdiction and the geographic areas at risk from climate change impacts, including, but not limited to, an assessment of how climate change may affect the risks addressed pursuant to paragraphs (2) and (3).

(ii) Information that may be available from federal, state, regional, and local agencies that will assist in developing the vulnerability assessment and the adaptation policies and strategies required pursuant to subparagraph (B), including, but not limited to, all of the following:

(I) Information from the Internet based Cal-Adapt tool.

(II) Information from the most recent version of the California Adaptation Planning Guide.

(III) Information from local agencies on the types of assets, resources, and populations that will be sensitive to various climate change exposures.

(IV) Information from local agencies on their current ability to deal with the impacts of climate change.

(V) Historical data on natural events and hazards, including locally prepared maps of areas subject to previous risk, areas that are vulnerable, and sites that have been repeatedly damaged.

(VI) Existing and planned development in identified at-risk areas, including structures, roads, utilities, and essential public facilities.

(VII) Federal, state, regional, and local agencies with responsibility for the protection of public health and safety and the environment, including special districts and local offices of emergency services.

(B) A set of adaptation and resilience goals, policies, and objectives based on the information specified in subparagraph (A) for the protection of the community.

(C) A set of feasible implementation measures designed to carry out the goals, policies, and objectives identified pursuant to subparagraph (B) including, but not limited to, all of the following:

(i) Feasible methods to avoid or minimize climate change impacts associated with new uses of land.

(ii) The location, when feasible, of new essential public facilities outside of at-risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, or identifying construction methods or other methods to minimize damage if these facilities are located in at-risk areas.

(iii) The designation of adequate and feasible infrastructure located in an at-risk area.

(iv) Guidelines for working cooperatively with relevant local, regional, state, and federal agencies.

(v) The identification of natural infrastructure that may be used in adaptation projects, where feasible. Where feasible, the plan shall use existing natural features and ecosystem processes, or the restoration of natural features and ecosystem processes, when developing alternatives for consideration. For the purposes of this clause, "natural infrastructure" means the preservation or restoration of ecological systems, or utilization of engineered systems that use ecological processes, to increase resiliency to climate change, manage other environmental hazards, or both. This may include, but is not limited to, floodplain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days.

(D) (i) If a city or county has adopted the local hazard mitigation plan, or other climate adaptation plan or document that fulfills commensurate goals and objectives and contains the information required pursuant to this paragraph, separate from the general plan, an attachment of, or reference to, the local hazard mitigation plan or other climate adaptation plan or document.

(ii) Cities or counties that have an adopted hazard mitigation plan, or other climate adaptation plan or document that substantially complies with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions, climate adaptation plan or document, specifically showing how each requirement of this subdivision has been met.

(5) After the initial revision of the safety element pursuant to paragraphs (2), (3), and (4) upon each revision of the housing element, the planning agency shall review and, if necessary, revise the safety element to identify new information that was not available during the previous revision of the safety element.

(6) Cities and counties that have flood plain management ordinances that have been approved by FEMA that substantially comply with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions or the flood plain ordinance, specifically showing how each requirement of this subdivision has been met.

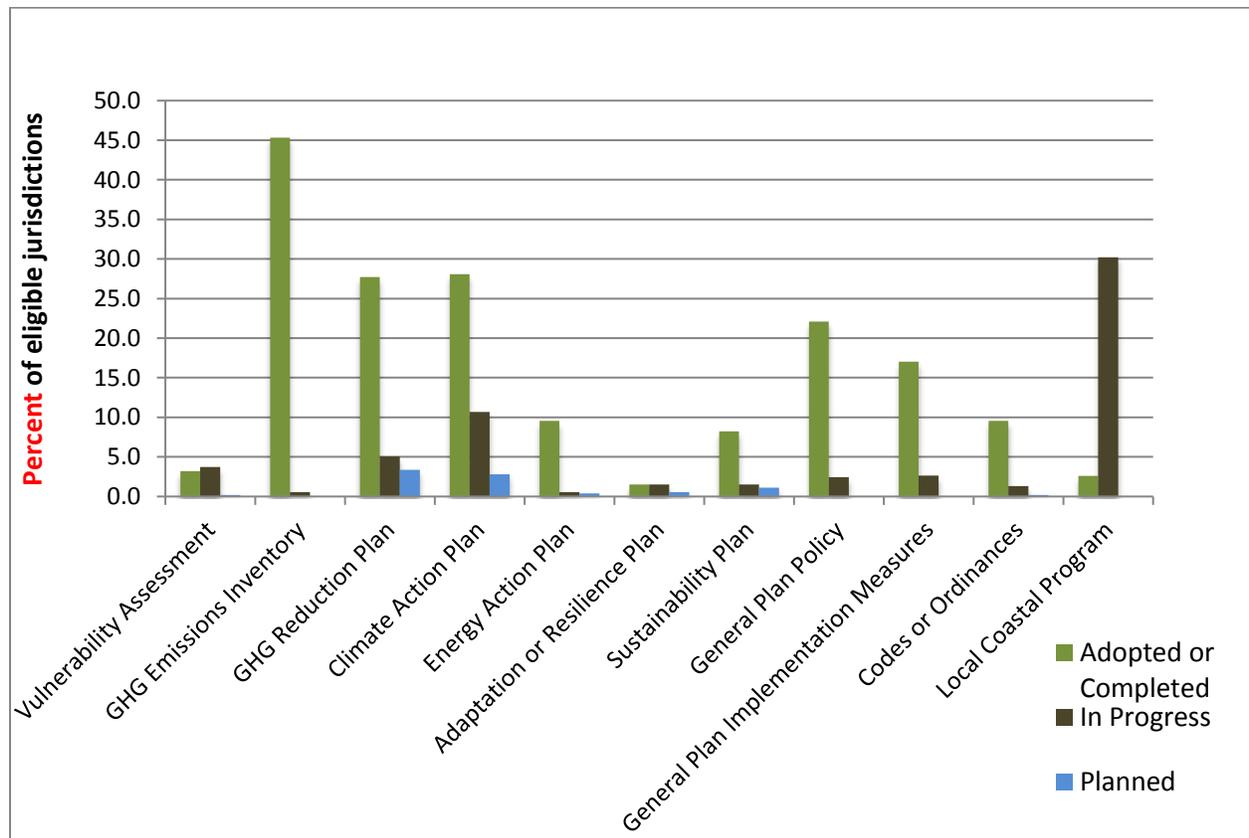
(7) Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the California Geological Survey of the Department of Conservation, the Central Valley Flood Protection Board, if the city or county is located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the Water Code, and the Office of Emergency Services for the purpose of including information known by and available to the department, the agency, and the board required by this subdivision.

(8) To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision

The Safety Element discussion is not the only section of the General Plan Guidelines that should address climate change adaptation and resilience. Nearly every other chapter of the general plan guidelines outlines how climate change applies to each respective section. The Safety Element is the statutory "home" for the discussion; however, it should not preclude discussion of climate adaptation and resilience in other appropriate sections of a jurisdiction's general

plan. Specifically, addressing a changing climate may also result in the need to consider the end year of the general plan and the environmental changes that may occur through the life of a general plan’s applicability. As the climate changes, future environmental conditions at the horizon year of the general plan may be just as important for consideration of long range policy as the base environment setting. As climactic systems shift away from an historically predictable paradigm, planning policy needs to adapt to better incorporate the associated impacts of these anticipated environmental shifts. Further, all major policy documents in a jurisdiction should discuss climate adaptation and resilience, as both an input to and implementation of the jurisdiction’s general plan. This will lead to consistency within a jurisdiction’s policy framework and ensure implementation of policies are occurring in an efficient and appropriate manner.

In some cases, jurisdictions have chosen to address climate change in their community through a [climate action plan or adaptation plan](#). Additional guidance on how a jurisdiction might treat these two types of documents in relationship to the general plan is included in Chapter 8, Climate Change. Further, many jurisdictions have chosen to address greenhouse gas (GHG) emissions reductions and climate change adaptation together in the same document. The guidance here does not require bifurcating the GHG emissions and adaptation discussions, rather the intent of the policy maker should be to look at the whole of the policy framework to both meet statutory requirements while also maximizing co-benefits of policy initiatives. An outline of a climate action plan that could address both GHG emissions and adaptation is provided in Chapter 7, Climate Change.



The [graph above](#) shows the status of local government plans to address climate change, as of March 2016. “Eligible” jurisdictions are those jurisdictions that have the ability to have the type of plan mentioned. For example, only jurisdictions located in the coastal zone can have a “Local Coastal Plan.” This information is updated annually to respond to the results obtained from the Office of Planning and Research (OPR) Annual Planning Survey. Source data and hyperlinks to jurisdiction’s climate change plans are also updated annually and can be found [here](#), and, starting in January 2017, via the OPR Integrated Climate Adaptation and Resiliency Program (ICARP) established by [Senate Bill 246, Climate Change Adaptation, Wieckowski](#).

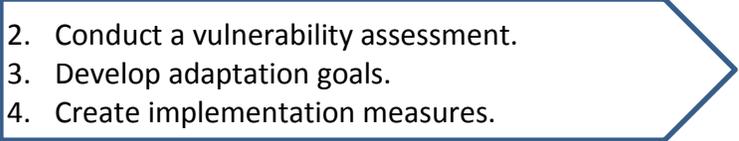
### Timing of Updates

For those jurisdictions that have an adopted [local hazard mitigation plan \(LHMP\)](#), the next update of their LHMP triggers an update to the Safety Element of the General Plan to address climate adaptation and resilience. If a jurisdiction does not have an LHMP, the Safety Element of the General Plan must be reviewed and updated on or before **January 1, 2022** to address climate adaptation and resilience. The Safety Element shall continue to be reviewed at every update subsequent to the LHMP update in those jurisdictions that have an LHMP, which typically occurs in a five year update cycle. LHMPs are not required documents and as such may not be in place in some jurisdictions. Check [here](#) to see if your jurisdiction has an up-to-date LHMP. Although climate change updates are not required for jurisdictions that do not have an LHMP, to maintain a general plan that includes current science and policy, the jurisdiction may choose to review and update the Safety Element each time the Housing Element is updated, as is required for flood and fire hazards. Since these updates occur every five to eight years, for those jurisdictions that do not have an LHMP, this five to eight year update cycle may be adequate to regularly review and updates the Safety Element climate change discussions. Jurisdictions that do have an LHMP may also choose to review and update their Safety Element climate change discussions concurrent with their Housing Element to create efficiency in the review and update cycle.

### Process for Analysis

The requirements of SB379 have five distinct steps (outlined below). The first and last steps focus on the relationship of the analysis and policy efforts of the larger general plan. Steps 2, 3 and 4 focus on how to conduct the recommended analysis, goal setting, and policy development. The five steps require that the jurisdiction:

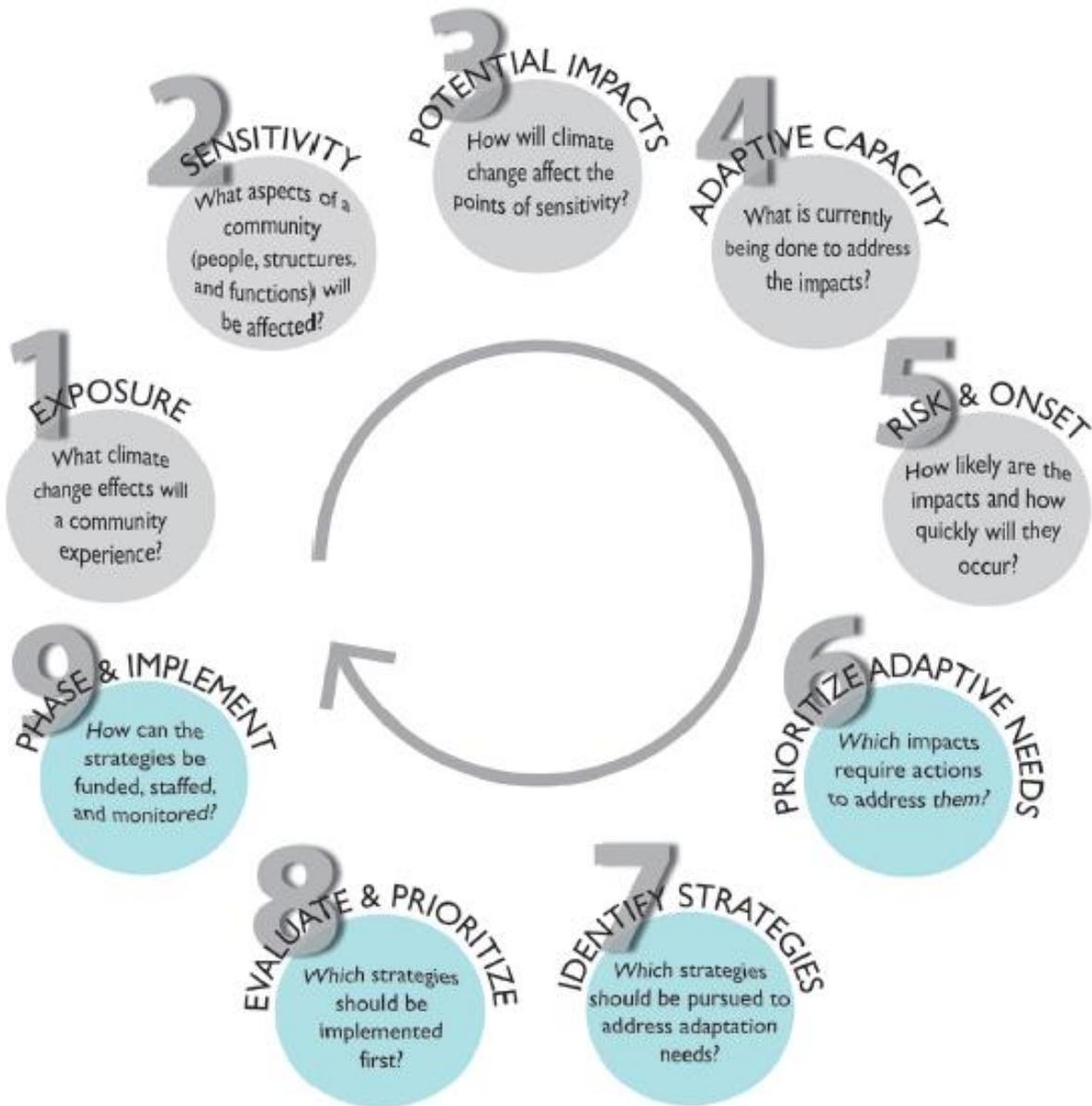
1. Review the existing LHMP and/or climate action plan (CAP)/adaptation plan to ensure it meets the requirements of SB379 as outlined in this chapter. If the LHMP, or plan to address climate adaptation, does not meet the requirements of this chapter, proceed to Step 2. (– see below for additional details.) Proceed to step 5 if existing LHMP or CAP/Adaptation Plan already addresses steps 2-4.

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2. Conduct a vulnerability assessment.
  3. Develop adaptation goals.
  4. Create implementation measures.

Complete APG  
Process to satisfy  
these steps

5. Update the Safety Element with adaptation and resilience considerations consistent with this chapter. This update can be done through incorporation by reference of a climate action or adaptation plan that meets the requirements of this chapter or through incorporation in entirety of language that meets the requirements. When updating the Safety Element to address climate change, it is critical to review other elements of the General Plan to ensure consistency.

Steps 2, 3 and 4 respond to the nine step process outlined in the [Adaptation Planning Guide \(APG\)](#), the guide for local adaptation planning in the State of California.



Source: [Adaptation Planning Guide, 2012](#)

The APG is periodically updated in conjunction with updates of the Safeguarding California Plan, with the next update in 2017 and then every three years thereafter. The next APG update will include updates to address the requirements of SB379 and the OPR Integrated Climate Adaptation and Resiliency Program (ICARP). You can review further detail for each step in the Adaptation Planning Guide [here](#). These are the nine steps:

1. Exposure: What climate change effects will a community experience?
2. Sensitivity: What aspects of a community (people, structures and functions) will be affected?
3. Potential Impacts: How will climate change affect the points of sensitivity?
4. Adaptive Capacity: What is currently being done to address the impacts?
5. Risks and Onset: How likely are the impacts and how quickly will they occur?
6. Prioritize Adaptive Needs: Which impacts require actions to address them?
7. Identify Strategies: Identify strategies should be pursued to address adaptation needs?
8. Evaluate and Prioritize: Which strategies should be implemented first?
9. Phase and Implement: How can the strategies be funded, staffed and monitored?

**Complete a vulnerability assessment (steps 1-5 of the Adaptation Planning Guide)**

As outlined in SB379 and the Adaptation Planning Guide, the vulnerability analysis should incorporate information from multiple sources. Numerous tools are available to support this analysis, including those referenced in this section, and linked in the table below.

Process Guidance and Vulnerability/Impact Tools	Comprehensive free resource for reducing GHG emissions at the local level	<a href="#">California SEEC</a>
	Screening tool for disadvantaged communities	<a href="#">CalEnviroscreen Version 2.0</a>
	Guidelines for CEQA compliance	<a href="#">CEQA Guidelines</a>
	Comprehensive framework for addressing adaptation at the local level	<a href="#">Adaptation Planning Guide</a>
	Visualization tool for the impacts of climate change and links to resources	<a href="#">Cal-Adapt</a>
	Federal resource for visualizing impacts, case studies, decision support	<a href="#">Climate Resilience Toolkit</a>
Greenhouse Gas Emissions Tools	Links to various tools and case studies	<a href="#">Cool California</a>
	Outlines the steps to reduce GHG emissions and includes templates	<a href="#">California SEEC</a>
	Outlines examples of policies and programs to reduce GHG emissions	<a href="#">CAPCOA</a>
	Provides state priorities, targets and the narrative regarding the importance of local planning on climate change	<a href="#">AB32 Scoping Plan</a>
Climate Adaptation and Resilience	The definitive guide to developing adaptation policy at the local level in California	<a href="#">Adaptation Planning Guide</a>
	Georgetown University Climate Center Adaptation Clearinghouse	<a href="#">GU Adaptation Clearinghouse</a>
	The State’s approach to addressing climate impacts	<a href="#">Safeguarding California Plan</a>
	The State’s framework (and local guidance) for climate hazards	<a href="#">State Hazard Mitigation Plan</a>

Curated case studies will be available at the OPR Best Practices Pilot web page and via the Integrated Climate Adaptation Resilience Program (ICARP) starting in January 2017. The results of the [Annual Planning Survey](#) and the awareness of efforts occurring in surrounding communities can also be helpful. External resources such as the federal [Climate Resilience Toolkit](#), [Climate Adaptation Knowledge Exchange \(CAKEx\)](#) and the [Georgetown University Adaptation Clearinghouse](#) can also be helpful. For information on climate change related plans completed in jurisdictions around the state, please see the “Status of Local [Climate Change Planning in California](#)” – a subset of the [Annual Planning Survey](#) results.

Other sources of information include incorporated, but are not limited to, the following:

1. The Cal-Adapt tool. Include description of data and information available in Cal-Adapt.
2. The [California Adaptation Planning Guide \(APG\)](#). If followed, the APG process satisfies the requirements of this section.
3. Local agency data on the types of assets, resources, and populations that will be sensitive to various climate change exposures. This can be obtained through overlaying [Cal-Adapt](#) outputs with the General Plan Mapping Tool (GPMT) and augmenting with locally relevant data.. Santa Clara County has provided an example of this approach as a part of the [Silicon Valley 2.0 project](#). The project used a hybrid of Cal-Adapt, the Adaptation Planning Guide and consultant generated tools to develop a focused understanding of climate sensitivity of various assets, resources and populations.
4. Local agency data on current status of climate change preparedness, including institutional capacity, redundancy limitations, critical assets inventory, exposure risk and vulnerability of disadvantaged communities. Sources include municipal service reviews developed by LAFCOs, Metropolitan Planning Organization (MPO) data, other regionally available data, local hazard mitigation planning documents and data in the General Plan Data Tool, and by extension, Cal-Adapt and MyPlan.
5. Starting in 2017, pursuant to SB246, the Office of Planning and Research (OPR) will launch the Integrated Climate Adaptation and Resiliency Program (ICARP). A component of this program includes developing and maintaining a centralized online resource for climate adaptation information. This centralized adaptation site will include resources consistent with those needed to address the requirements of SB379, including information on the most up-to-date climate scenario data, funding resources, and best practice case studies. The site will be updated regularly and will include updates to the resources in the table above as they become available.
6. Historical data on natural events and hazards, including locally prepared risk and vulnerability maps, and sites that have been repeatedly damaged. This information can be obtained by visiting the General Plan Mapping Tool, [MyPlan](#), [Cal-Adapt](#) and the

[Climate Resilience Toolkit](#) in addition to locally available data that may provide more specificity, detail and context.

7. Existing and planned development in identified at-risk areas, including structures, roads, utilities, and essential public facilities. These can be mapped by reference to the General Plan Data Tool, MyPlan and Cal-Adapt..

8. Coordination with federal, state, regional, and local data and information related to protection of public health and safety and the environment, including data from special districts and local offices of emergency services. Through the OPR Adaptation Clearinghouse, which will be operational January 2017, jurisdictions can access contact information for local, regional, State and federal offices that can assist with this work.

### **Developing goals and measures for climate change adaptation and resilience (steps 6-9 of the APG)**

Jurisdictions must also identify a set of adaptation and resilience goals, policies, and objectives, based on the information above, for the protection of the community. The “Identifying Adaptation Strategies” chapter of the Adaptation Planning Guide provides a start to this process, and links to other resources. CalAdapt, the SB246 Clearinghouse and also other relevant local, regional, state and federal resources are appropriate to use. In particular regional collaboratives can play a useful role in both identifying policies and coordinating on implementation of those policies. See [www.arccacalifornia.org](http://www.arccacalifornia.org) for more information on regional collaboratives and potential partners that may be working in your area.

As outlined in the APG, feasible implementation measures must also be developed to ensure the goals, policies, and objectives in the plan are supported through implementing actions through the general plan implementation matrix or other mechanism that allows monitoring of progress over time. The structure of the implementation matrix or program may shift depending on whether the climate change discussion is captured in a climate action plan, adaptation plan, or incorporation in to the general plan. Discussion on the different types of climate change related documents and appropriate incorporation of those documents is addressed in Chapter 7, Climate Change. Numerous policy guides are available to support achieving the following, however a jurisdiction should start with the Adaptation Planning Guide, then review local or regionally relevant resources, and then review other statewide or national guides as outlined in the table above.

Whenever possible jurisdictions should work with neighboring jurisdictions to develop joint policies and coordinate on joint implementation of policy. Not only does this type of coordination increase policy consistency in a region, but it also may reduce staff and financial cost of implementation. Specific contents required in the climate adaptation discussion include:

1. Feasible methods to avoid or minimize climate change impacts associated with new uses of land. These include, but are not limited to, flooding, fire, extreme heat, sea level rise, runoff, risk, etc). This should not just capture new risks, but also risks exacerbated by climate change.

2. The location, when feasible, of new essential public facilities outside of at-risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, or identifying construction methods or other methods to minimize damage if these facilities are located in at-risk areas.
3. The designation of adequate and feasible infrastructure located in an at-risk area.
4. Guidelines for working cooperatively with relevant local, regional, state, and federal agencies. The APG includes examples of outreach and coordination measures that can be taken to develop the guidelines.
5. The identification of natural infrastructure that may be used in adaptation projects, where feasible. Where feasible, the plan shall use existing natural features and ecosystem processes, or the restoration of natural features and ecosystem processes, when developing alternatives for consideration. For the purposes of this clause, “natural infrastructure” means the preservation or restoration of ecological systems, or utilization of engineered systems that use ecological processes, to increase resiliency to climate change, manage other environmental hazards, or both. This may include, but is not limited to, floodplain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days.

### **Other Considerations**

If a city or county has adopted a local hazard mitigation plan, or other climate adaptation plan or document that fulfills commensurate goals and objectives, as well as contain the information required by this section, separate from the general plan, an attachment of, or reference to, the local hazard mitigation plan or other climate adaptation plan or document may satisfy the requirements of this chapter. Additional information on incorporating climate change related plans are outlined in the climate change chapter (Chapter 7, Climate Change –).

Cities or counties that have an adopted hazard mitigation plan, or other climate adaptation plan or document that substantially complies with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions, climate adaptation plan or document, specifically showing how each requirement of this subdivision has been met.

To the extent that a county’s safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county’s safety element that pertains to the city’s planning area in satisfaction of the requirement imposed by this subdivision.

## Seismic Hazards

### Requirement Description:

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The safety element must establish policies to minimize the loss of property and life as a result of earthquake. The general geology and seismic history of the region and the planning area can be addressed with a map known seismic and geologic hazards. The element should determine the location of active fault zones designated by the State Geologist under the [Alquist-Priolo Earthquake Fault Zoning Act](#). Next, a geologic evaluation can evaluate the potential for displacement along active and potentially active faults in the planning area. Active and potentially active faults in the region should be identified with historical data on seismic ground shaking within the planning area. A geotechnical evaluation based on the [state probabilistic earthquake hazard map](#) can determine the potential for localized ground shaking, landslides, and tsunamis. Hazardous or substandard structures that may be subject to collapse in the event of an earthquake, including, but not limited to, unreinforced masonry buildings could be identified.

The geotechnical evaluation can also identify the potential for earthquake-triggered landslide, mudslide, liquefaction, and soil compaction. It should also determine the location of zones of required investigation for liquefaction and earthquake-induced hazards on a seismic hazard zone map prepared by the State Geologist. Areas that would be inundated in the event of a dam failure should also be identified. [Dam inundation maps](#) are available from the [Office of Emergency Services](#). The development, facilities, and people potentially at risk in areas subject to potential inundation should be identified as well.

The safety element should include historical data on landslides and mudslides and identify areas that are landslide-prone by using, among other sources, [landslide features maps](#), [seismic hazard zone maps](#), and [geology](#) for planning maps produced by Department of Conservation. The local potential for landslides and mudslides should also be identified in a geotechnical evaluation.

Historical data on land subsidence resulting from extraction of groundwater, natural gas, oil, and geothermal resources and from hydrocompaction can be used to identify areas of known risk from liquefaction, subsidence, or ground shaking. The potential risks associated with other known geologic hazards, such as volcanic activity, avalanche, or cliff erosion may also be analyzed.

Most of the information needed to complete the analysis for the Safety Element, can be obtained by a combination of five sources: the [State Hazard Mitigation Plan](#), [MyPlan](#) tool, the [General Plan Guidelines Mapping Tool](#), [Cal-Adapt](#) and the [Adaptation Planning Guide](#). Some information may need to be generated at the local or regional, particular those facilities considered critical to the community.

**Flood Protection**

**Requirement Description:**

Flooding is a natural function of every river, alluvial fan, and coastal area. In riverine systems, floodwaters enrich bottomlands and provide spawning habitats for native fish. There are ecological benefits to maintaining connections between the river and its floodplain.

Land use decisions directly influence the function of floodplains and may either reduce or increase potential flood hazards. The functions of floodplains include, but are not limited to, water supply, water quality, flood and erosion control, and fish and wildlife habitat. Development within floodplains may not only expose people and property to floods, but also increase the potential for flooding elsewhere and negatively impact floodplain ecosystems. [Land use](#) regulations, such as zoning and subdivision ordinances, are the primary means of implementing general plan policies established to minimize flood hazards. In addition to including floodplain management policies in the general plan, making related changes to zoning and subdivision ordinances is crucial to the success of a floodplain management program.

**Key Terms**

Flood management is defined as the overarching term that encompasses both floodwater management and floodplain management.

*Floodwater Management*

Floodwater management includes actions to modify the natural flow of floodwaters to reduce losses to human resources and/or to protect benefits to natural resources associated with flooding. Examples of floodwater management actions include containing flows in reservoirs, dams, and natural basins; conveying flows via levees, channels, and natural corridors; managing flows through reservoir reoperation; and managing watersheds by decreasing rainfall runoff and providing headwater stream protection.

*Floodplain Management*

Floodplain management includes actions to the floodplain to reduce losses to human resources within the floodplain and/or to protect benefits to natural resources associated with flooding. Examples of floodplain management actions include minimizing impacts of flows (e.g., flood-proofing, insurance); maintaining or restoring natural floodplain processes (e.g., riparian restoration, meander corridors, etc.); removing obstacles within the floodplain voluntarily or with just

In the process of preparing a flood management element, the city or county will have to collect a substantial amount of information concerning its floodplains and its watershed. There are a variety of sources for this information. Federal Emergency Management Agency ([FEMA](#)) maps are available for most communities. The [U.S. Army Corps of Engineers](#) will do floodplain delineation on a cost-sharing basis and has information on floodplains and project levees. [The Department of Water Resources \(DWR\)](#) also has floodplain information and a [floodplain management program](#), as does the [Central Valley Flood Protection Board](#). The [California Office of Emergency Services \(OES\)](#) and DWR have information on past flooding and flood levels based on awareness mapping. Local levee districts and resource conservation districts may also have information to share.

See the box below for a list of legislation passed since 2003, updating safety element requirements specific to flood hazard mitigation plans. Of special note, the Central Valley Flood Protection Plan (described under [SB 5](#)) aims to revamp insufficient levee, bypass, and other flood defense mechanisms

to create a more integrated and hazard-averse flood management system. Carrying implications for Central Valley land use, conservation, and safety planning in floodplain zones, the 2012 [Central Valley Flood Protection Plan](#) (CVFPP) documents the condition of all of the region’s state and federal flood management facilities and guides improvements to flood hazard prevention along the Sacramento River and San Joaquin Rivers. OPR will provide links to basin-wide state feasibility studies, locally-initiated regional flood management project plans, and a Central Valley conservation strategy as they become available. However, updates to the safety element should remain consistent with land use development policies and conservation areas and practices described in other general plan elements.

For legislation related to the Safety Element please refer to the [State Hazard Mitigation Plan](#)

## Fire Hazards

### Requirement Description:

There are many opportunities to address fire protection, fire prevention and hazard mitigation in the General Plan, most obviously in the safety element which deals with all manner of natural and man-made hazards to life and property. California’s increasing population and expansion of development into

#### **Government Code 65302(g):**

***(3) Upon the next revision of the housing element on or after January 1, 2014, the safety element shall be reviewed and updated as necessary to address the risk of fire for land classified as state responsibility areas, as defined in Section 4102 of the Public Resources Code, and land classified as very high fire hazard severity zones, as defined in Section 51177. This review shall consider the advice included in the Office of Planning and Research’s most recent publication of “Fire Hazard Planning, General Technical Advice Series” and shall also include all of the following:***

***(A) Information regarding fire hazards, including, but not limited to, all of the following:***

***(i) Fire hazard severity zone maps available from the Department of Forestry and Fire Protection.***

***(ii) Any historical data on wildfires available from local agencies or a reference to where the data can be found.***

***(iii) Information about wildfire hazard areas that may be available from the United States Geological Survey.***

***(iv) General location and distribution of existing and planned uses of land in very high fire hazard severity zones and in state responsibility areas, including structures, roads, utilities, and essential public facilities. The location and distribution of planned uses of land shall not require defensible space compliance measures required by state law or local ordinance to occur on publicly owned lands or open space designations of homeowner associations.***

***(v) Local, state, and federal agencies with responsibility for fire protection, including special districts and local offices of emergency services.***

***(B) A set of goals, policies, and objectives based on the information identified pursuant to subparagraph (A) for the protection of the community from the unreasonable risk of wildfire.***

***(C) A set of feasible implementation measures designed to carry out the goals, policies, and objectives based on the information identified pursuant to subparagraph (B) including, but not limited to, all of the following:***

***(i) Avoiding or minimizing the wildfire hazards associated with new uses of land.***

***(ii) Locating, when feasible, new essential public facilities outside of high fire risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, or identifying construction methods or other methods to minimize damage if these facilities are located in a state responsibility area or very high fire hazard severity zone.***

***(iii) Designing adequate infrastructure if a new development is located in a state responsibility area or in a very high fire hazard severity zone, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.***

***(iv) Working cooperatively with public agencies with responsibility for fire protection.***

***(D) If a city or county has adopted a fire safety plan or document separate from the general plan, an attachment of, or reference to, a city or county’s adopted fire safety plan or document that fulfills commensurate goals and objectives and contains information required pursuant to this paragraph.***

previously undeveloped areas is creating more "[wildland-urban interface](#)" with a corresponding risk of economic loss caused by wildland fire. The changing climate, specifically the rising temperatures and increasing temporal variability of water availability, continues to increase wildfire risk in many areas. Meanwhile, drought episodes with greater frequency and severity effectively lower fuel moisture conditions to create longer fire seasons, and combined with overstocked vegetation vulnerable to insects and diseases, produce an abundance of dead woody matter prime for intense burning. For a discussion of how local governments can plan for drought conditions and consequent fire hazards, see box below.

### **Mitigating Hazards through Drought Resiliency Plans**

The gradual onset of severe droughts in California poses considerable threats to public safety and wellbeing by increasing fire hazard susceptibility and straining already scarce water resources. Drought's toll on crop yields, livestock production, and local community water sources create food and water security concerns, in addition to economic considerations, that showcase the importance of proper preparedness plans. Climate change will likely foster more consecutive disasters – for example, droughts followed by fires, or floods followed by drought – prolonging recovery of natural resources and compounding total recovery costs

In response, many local governments are choosing to strengthen water management and drought prevention efforts by adding a separate water element to their general plan, but drought preparedness strategies could also be incorporated into the safety element as part of fire or flood hazard mitigation tactics. Structural and nonstructural flood management methods that enhance water storage and groundwater recharge work to mitigate drought impacts, and promoting greater water efficiency through land use and development policies can minimize capital damage from droughts as well as fires. As opposed to solely relying on local hazard mitigation plans, existing urban and agricultural water management plans, or expecting state or federal disaster aid after severe drought impacts, local governments can use the general plan as a tool to encourage water conservation policies, drought-tolerant parks and landscaping, water audits, and dual plumbing with recycled water. For more resources on how local governments can plan for droughts, see:

[California's 2010 State Drought Contingency Plan](#)

[OPR's 2014 Local Government Drought Toolkit](#)

[California's 2009 State Water Plan for integrated water management](#)

[Local Government Commission's guidebook for regional water sustainability](#)

Aside from local fire plans and hazard mitigation plans, the general plan's safety element can provide a framework for inserting fire protection and prevention policy requirements in zoning, subdivision, and strategic fire defense ordinances. To safeguard the increasing "wildland-urban interface," communities with State Responsibility Area (SRA) or Very High Fire Hazard Severity Zone Local Responsibility Area (LRA) must update their safety element following the next revision of the housing element on or after January 1, 2014 to address the risk of wildland fire. In order to develop viable plans for fire protection,

wildfire risk reduction, evacuation needs, and consistency between general plan elements and other local plans, the safety element shall incorporate information such as fire hazard maps and assessments, implementation goals and actionable policies, as well as any appropriate references to local fire safety plans.

As a guiding resource, OPR’s [Fire Hazard Planning Technical Advisory](#) includes a detailed discussion about how to incorporate and comply with the fire hazard requirements in a general plan.

## Other Considerations

### Additional Requirements

The Safety Element must also address additional, interrelated considerations in the context of fire and geological hazards. These include evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures. The relationships between these considerations interplays throughout the required contents of the safety element, and should be analyzed in the context of safety and disasters, including climate change, drought, fire, flood, or seismic activity, as appropriate.

## OPR Recommended Policies

These policies are an example of recommended policies adopted by varying jurisdictions, to be modified and used as appropriate. A full list of recommended policies for flood risk, fire risk and climate change can be found here

Sample Policy	Example of Application	Relation to other elements
(City/county) shall Promote the strengthening of planned utilities, the retrofit and rehabilitation of existing weak structures and lifeline utilities, and the relocation or strengthening of certain critical facilities to increase public safety and minimize potential damage from seismic and geologic hazards	City of Rancho Cucamonga	
(city/county) shall allow for prudent development and redevelopment of all properties located on slopes greater than 10 percent, and continue to preserve as open space properties located on slopes greater than 30 percent.	City of Rancho Cucamonga	
Site critical public facilities—including hospital and healthcare facilities, emergency shelters, police and fire stations, and emergency communications facilities—outside of the tsunami evacuation zone and 100-year flood plains	Pacifica	

<p>Identify and establish specific travel routes for the transport of hazardous materials and wastes, with key considerations being capacity to safely accommodate additional truck traffic, avoidance of residential areas, and use of interstate or State divided highways as preferred routes</p>	<p>City of Rialto</p>	
<p>Work to achieve consistency between General Plan land use and related policies and the Airport Comprehensive Land Use Plan, as is appropriate for the community. Measures may include restrictions on permitted land uses and development criteria, including height restrictions</p>	<p>Redwood City</p>	