

Fire Hazard Planning

General Plan Technical Advice Series



Fire Hazard Planning



State of California

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Introduction to Fire Hazard Planning

This planning guide is one in a series of technical advisories provided by the Governor's Office of Planning and Research (OPR) as a service to professional planners, land use officials, and [California Environmental Quality Act \(CEQA\)](#) practitioners. OPR issues technical guidance on issues that broadly affect the practice of CEQA and land use planning. The goal of this planning guide is to help provide a robust fire hazard mitigation program to California communities. Development and incorporation of effective policies in the General Plan as well as the integration of the General Plan with other relevant hazard reduction policies, plans, and mitigation activities are essential actions to achieve this goal. This advisory is designed to assist city and county planners in discussions with fire mitigation, preparedness, and response professionals for the purpose of developing effective fire hazard policies for the General Plan.

Because communities throughout California are varied and have different needs, the voluntary recommendations in this technical advisory are designed for a wide spectrum of uses and applications. The policy examples throughout the document are intended to highlight the suite of potential actions that local governments can take. Not all actions need to all be implemented for successful fire hazard mitigation. We encourage locals to review the document and select the recommendations most applicable for their community.

This advisory is organized in the following manner:

- 1) A summary of federal and state requirements that directly address fire hazard planning and mitigation, including Senate Bill 1241.
- 2) An overview of how policies related to fire safety may be developed to meet local needs and conditions.
- 3) An extensive list of specific issues related to fire hazard planning that local governments should consider when developing fire hazard policies to include in the General Plan.
- 4) Appendices including potential funding mechanisms, an inventory of informational resources related to fire hazard planning, and a list of fire hazard planning examples from communities throughout California.

Summary of Fire Hazard Planning Requirements for Local Governments

- In order to be eligible for FEMA mitigation project funding, local governments must adopt a Local Hazard Mitigation Plan, and then review and revise that plan every five years.
- In order to influence where and how federal agencies implement fuel reduction projects on federal land, as well as how additional federal funds may be distributed for projects on non-federal lands, local governments may develop Community Wildfire Protection Plans together with local, state and federal fire officials.
- Safety Elements of local general plans must be revised, upon the next update to the Housing Element, to address state responsibility areas and very high fire hazard severity zones. The revision must include information about wildfire hazards, as well as goals, policies, and objectives and feasible implementation measures for the protection of the community from the unreasonable risk of wildfire. (SB 1241; Government Code Sections 65302; and 65302.5.)
- Before approving a tentative subdivision map or parcel map within a state responsibility area or a very high fire hazard severity zone, a city or county must make certain findings. Those findings include that the subdivision is consistent with CalFIRE regulations and that fire protection and suppression services are available for the subdivision.

Background on Federal and State Requirements

Several federal and state requirements and resources that address fire hazard planning and mitigation are described in this section.

Disaster Mitigation Act of 2000

The Federal Disaster Mitigation Act of 2000 (DMA 2000) enacted a number of changes under Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) related to pre-disaster mitigation, streamlining the administration of disaster relief, and controlling the costs of federal disaster assistance. These changes have collectively brought greater focus on pre-disaster planning and activities as a means for reducing response and post-disaster costs.

On February 26, 2002, an Interim Final Rule (IFR) (44 CFR Parts 201 & 206), to implement the DMA 2000, was published in the Federal Register. This IFR addressed state mitigation planning, identified new local mitigation planning requirements, authorized Hazard Mitigation Grant Program (HMGP) funds for planning activities, and the possibility of an increase in the percentage of HMGP funds available to states that develop a comprehensive, enhanced, State Hazard Mitigation Plan.

In accordance with the February 26th IFR and a further October 1st IFR, local governments must have a Local Hazard Mitigation Plan that is reviewed by the State Mitigation Officer and then approved by the Federal Emergency Management Agency (FEMA), prior to November 1, 2004, as this is a required condition of receiving FEMA mitigation project assistance. These Local Hazard Mitigation Plans must be revised, reviewed, and approved every five years.

According to the February 26, 2002 IFR, Section 201.6, local and tribal governments must include the following in their Local Hazard Mitigation Plans:

- A planning process
- A risk assessment
- A mitigation strategy
- A plan maintenance and updating process

Fire Safe Councils: A Planning Partner

Fire Safe Councils can play an important role in the development of Local Hazard Mitigation Plans.

The typical Council consists of state and federal fire agencies, local fire districts, businesses, local government, and local concerned citizens formed to enhance the effectiveness of fire protection. Some Councils have also combined with neighboring fire safe councils to develop countywide wildfire hazard mitigation plans.

Fire Safe Councils can provide an excellent resource to planners and elected officials in the development of the fire protection and prevention policies and implementation measures in the General Plan. OPR encourages the use of these Councils for both their expertise and as a means for expanding public participation in the General Plan preparation process.

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In addition, according to the February 26th IFR, a stated goal for FEMA is for state and local governments to develop comprehensive and integrated plans that are coordinated through appropriate state, local, and regional agencies, as well as non-governmental interest groups. Moreover, state and local governments are encouraged to consolidate the planning requirements for different mitigation plans and programs to the extent feasible and practicable.

Although the Local Hazard Mitigation Plan and the General Plan are not intended to be identical documents, much of the data and analysis requirements are similar, and it is essential that policies in one document are consistent with the policies in the other. OPR recommends that local governments work with and support the efforts of the local fire authorities, the CAL FIRE Unit Fire Plan and the Fire Safe Councils as a means to ensure effective and integrated wildfire mitigation programs. A description of Fire Safe Councils is presented in an informational box on the previous page.

[National Cohesive Wildland Fire Management Strategy](#)

In response to requirements of the Federal Land Assistance, Management, and Enhancement (FLAME) Act of 2009, the Wildland Fire Leadership Council (WFLC) directed the development of the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy). The Cohesive Strategy is a collaborative process with active involvement of all levels of government and non-governmental organizations, as well as the public, to seek national, all-lands solutions to wildland fire management issues. The strategy is regionally-oriented, as well as science-based.

Three primary factors are identified as presenting the greatest challenges and the greatest opportunities for making a positive difference in addressing the wildland fire problems to achieve this vision.

1. *Restoring and maintaining resilient landscapes.* The strategy must recognize the current ecosystem health and variability of resilient landscapes from geographic area to geographic area, including climate change. Because landscape conditions and needs vary depending on local climate and fuel conditions, among other elements, the strategy will address landscapes on a regional and sub-regional scale.
2. *Creating fire-adapted communities.* The strategy will offer options and opportunities to engage communities and work with them to become more resistant to wildfire threats, and respond in the event of a wildfire emergency.
3. *Responding to wildfires.* This element considers the full spectrum of fire management activities and recognizes the differences in missions among local, state, tribal and federal agencies. The strategy offers collaboratively developed methodologies to move forward.

[2010 California Strategic Fire Plan](#)

The California Fire Plan is the state's road map for reducing the risk of wildfire. The Fire Plan is a cooperative effort between the [State Board of Forestry and Fire Protection](#) and the California Department of Forestry and Fire Protection. By placing the emphasis on what needs to be done long before a fire starts, the Fire Plan looks to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to overall ecosystem health. The central goals that

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are critical to reducing and preventing the impacts of fire revolve around both suppression efforts and fire prevention efforts. Major components are:

- Improved availability and use of information on hazard and risk assessment
- Land use planning: Development of wildland and Wildland Urban Interface (WUI) protection policies, incorporating minimum key elements of a fire safe community, and promote the consolidation of project-level land use planning and wildland fire occurrence data
- Shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans (CWPP)
- Establishing fire resistance in assets at risk, such as homes and neighborhoods
- Shared vision among multiple fire protection jurisdictions and agencies
- Levels of fire suppression and related services
- Post fire recovery

Community Wildfire Protection Plan (CWPP)

CWPPs are generally developed by local governments with assistance from state and federal agencies and other interested partners. This provides communities with a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal land, as well as how additional federal funds may be distributed for projects on non-federal lands.

The minimum requirements for a CWPP are:

- Collaboration. A CWPP must be collaboratively developed. Local and state officials must meaningfully involve federal agencies and other interested parties, particularly non-governmental stakeholders that manage land in the vicinity of the community.
- Prioritized Fuel Reduction. A CWPP must identify and prioritize areas for hazardous fuel reduction treatments on both Federal and non-Federal land and recommend the types and methods of treatment that, if completed, would reduce the risk to the community.
- Treatment of Structural Ignitability. A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

Three signatures are required to approve a CWPP:

- A representative of the applicable local government;
- The chief of the local fire department/district; and
- The state forester/fire warden.

Similar to Local Hazard Mitigation Plans, a CWPP will not be identical to the General Plan; however, some of the data and analysis included in both documents are similar. OPR recommends that local governments on the wildland-urban interface ensure that policies in all of its planning documents related to fire mitigation are consistent each in the other. Moreover, OPR recommends that wildfire hazard reduction policies be regularly reviewed and updated to

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ensure every community is operating under the most effective policies for the community based on development patterns, geography, and other local conditions.

Western Wildfire Risk Assessment

As part of the regional-based strategy, the Council of Western State Foresters and the Western Forestry Leadership Coalition (WFLC) has embarked on a wildfire risk assessment of all lands for the 17 western states and selected Pacific islands. This assessment is known as the “West Wide Wildfire Risk Assessment, or “WWA”. The WWA supports the science-based data to quantify the magnitude of the current wildland fire problem in the west and provide a baseline for quantifying mitigation activities and monitoring change over time. It will be used to facilitate national, regional, and state level strategic planning and policy discussions.

Senate Bill 1241 (Statutes of 2012, Kehoe)

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. Unfortunately, wildfire hazard is too often underplayed in the General Plan. California’s increasing population and expansion of development into previously undeveloped areas is creating more “wildland-urban interface” (WUI) issues with a corresponding increased risk of loss to human life, natural resources and economic assets associated with wildland fires. The changing climate, specifically the rising temperatures and increasing temporal variability of water availability, is substantially increasing wildfire risk in many areas.

To address the increasing “wildland-urban interface,” Senate Bill 1241 (Kehoe, Statutes of 2012) revised the safety element requirements for state responsibility areas and very high fire hazard severity zones (Government Code Sections 65302 and 65302.5). Specifically, during 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 in state responsibility areas and very high fire hazard severity zones. SB 1241 requires that the review include the advice of this document, and the following (bill text below):

- 1) Information regarding fire hazards, including but not limited to, all of the following:
 - a. Fire hazard severity zone maps available from the Department of Forestry and Fire Protection.
 - b. Any historical data on wildfires available from local agencies or a reference to where the data can be found.

State Responsibility Areas

Public Resources Code (PRC) Section 4102 defines “state responsibility areas” (SRAs) to mean areas of the state in which the financial responsibility of preventing and suppressing fires has been determined by the State Board of Forestry and Fire Protection to be primarily the responsibility of the state.

Under existing PRC provisions, the Department of Forestry and Fire Protection (known as CAL FIRE) has the primary responsibility for preventing and suppressing fires in areas that the State Board of Forestry and Fire Protection has determined are SRAs.

These areas can be viewed at:
<http://myplan.calema.ca.gov/>

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- c. Information about wildfire hazard areas that may be available from the United States Geological Survey.
 - d. 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 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.
 - e. Local, state, and federal agencies with responsibility for fire protection, including special districts and local offices of emergency services.
- 2) A set of goals, policies, and objectives based on the information identified in subparagraph (1) regarding fire hazards for the protection of the community from the unreasonable risk of wildfire.
 - 3) A set of feasible implementation measures designed to carry out the goals, policies, and objectives based on the information identified in subparagraph (2) including, but not limited to, all of the following:
 - a. Avoiding or minimizing the wildfire hazards associated with new uses of land.
 - b. Locating, whenever 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 communication 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.
 - c. 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.

Very High Fire Hazard Severity Zones

Government Code (GC) Section 51177 defines "Very High Fire Hazard Severity Zones" to mean areas designated by the Director of Forestry and Fire Protection based on consistent statewide criteria and based on the severity of fire hazard that is expected to prevail in those areas. Very High Fire Hazard Severity Zones shall be based on fuel loading, slope, fire weather, and other relevant factors including areas where Santa Ana, Mono, and Diablo winds have been identified by the Department of Forestry and Fire Protection as a major cause of wildfire spread. <http://myplan.calema.ca.gov/>

Maps and FHSZ maps for each county are maintained by CAL FIRE. In addition, CAL FIRE has a list of cities for which it has made recommendations on Very High Fire Hazard Severity Zones. Please note that the recommendations are not the same as actual zones. Such zoning designations do not go into effect unless, and until, they are adopted by ordinance by local agencies. Local agencies are not required to report such zoning actions.

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- d. Working cooperatively with public agencies with responsibility for fire protection.
- 4) 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.

Review and Adoption Process of Safety Element or Amendment to Safety Element

SB 1241 requires that the draft element of or draft amendment to the safety element of a county or a city’s general plan be submitted to the State Board of Forestry and Fire Protection (“State Board”) and to every local agency that provides fire protection to territory in the city or county at least 90 days prior to either: 1) the adoption or amendment to the safety element of its general plan for each county that contains state responsibility areas; or 2) the adoption or amendment to the safety element of its general plan for each city or county that contains a very high fire hazard severity zone as defined pursuant to subsection I of Section 51177. Local governments within the regional jurisdictions of the following councils of governments that contain state responsibility areas and/or very high fire hazard severity zones shall submit for review the safety element of its general plan to the State Board and every local agency that provides fire protection in accordance with the following dates, as specified, unless the local government submitted the element within five years prior to that date:

Council of Government	Housing Element Submittal Date
San Diego Association of Governments	April 30, 2013
Southern California Association of Governments	October 15, 2013
Association of Bay Area Governments	January 31, 2015
Fresno Council of Governments	December 31, 2015
Kern Council of Governments	December 31, 2015
Sacramento Area Council of Governments	October 31, 2013
Association of Monterey Bay Area Governments	December 15, 2015
All other local governments	June 30, 2014

According to SB 1241, the State Board shall, and a local fire service provider agency may, review the draft or an existing safety element and recommend changes to the planning agency within 60 days of its receipt regarding: 1) the land use and policy in state responsibility areas and very high fire hazard severity zones that will protect life, property, and natural resources from unreasonable risks associated with wildland fires; and 2) methods and strategies for wildland fire risk reduction and prevention within state responsibility areas and very high fire hazard

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severity zones. The board of supervisors of the county or the city council of a city shall consider the recommendations, if any, made by the State Board and any local agency that provides fire protection to territory in the city or county prior to the adoption of its draft element or draft amendment. If the board of supervisors or city council determines not to accept all or some of the recommendations made by the State Board or local agency, the board of supervisors or city council shall communicate its reasons for not accepting the recommendations to the State Board or the local agency in writing.

If the State Board's or local agency's recommendations are not available within the time limits required by this section, the board of supervisors or city council may act without those recommendations; however, the board of supervisors or city council shall take the recommendations into consideration the next time it considers amendments to the safety element.

Tentative Map Requirements for Local Governments that Contain State Responsibility Areas and Very High Fire Hazard Severity Zones

Government Code (GC) Section 66474.02, as added by SB 1241, requires that a legislative body of a county make three findings before approving a tentative map, or a parcel map for which a tentative map was not required, for an area located in a state responsibility area or a very high fire hazard severity zone. These findings are as follows:

- 1) A finding supported by substantial evidence in the record that the design and location of each lot in the subdivision, and the subdivision as a whole, are consistent with any applicable regulations adopted by the State Board of Forestry and Fire Protection pursuant to Sections 4290 and 4291 of the Public Resources Code.
- 2) A finding supported by substantial evidence in the record that structural fire protection and suppression services will be available for the subdivision through any of the following entities:
 - a. A county, city, special district, political subdivision of the state, or another entity organized solely to provide fire protection services that is monitored and funded by a county or other public entity.

Public Resource Code

Section 4290

Gives State Board power to regulate fire safety standards, including but not limited to:

- Road standards for fire equipment access.
- Standards for signs identifying streets, roads, and buildings.
- Minimum private water supply reserves for emergency fire use.
- Fuel breaks and greenbelts.

These regulations do not supersede local regulations which equal or exceed minimum regulations adopted by the state.

Section 4191

Defines and describes fire protection measures and responsibilities, including but not limited to:

- 100' Clearance around homes
- May require extension of clearance past property lines
- May require extension of clearance as needed for insurance
- Removal of dead/dying vegetation
- Vegetation removal around chimneys/stovepipes
- Exemptions and exceptions from code
- Updating public access to code requirements

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- b. The Department of Forestry and Fire Protection by contract entered into pursuant to Section 4133, 4142, or 4144 of the Public Resources Code.
- 3) A finding that to the extent practicable, ingress and egress for the subdivision meets the regulations regarding road standards for fire equipment access pursuant to Section 4290 of the Public Resources Code and any applicable local ordinance.

This section shall not supersede regulations established by the State Board or local ordinance that provide equivalent or more stringent minimum requirements than those contained in this section.

Note that the findings described above must be made in order to approve a tentative or parcel map. Even if the lead agency adopts a statement of overriding considerations pursuant to CEQA, the substantive requirements in the Government Code regarding fire protection must be satisfied.

Tribal Government Consultation

Additionally local governments must adhere to Government Code Section 65352.3 and the provisions of Senate Bill 18 (2004), requiring local governments to consult with Tribal Governments prior to amending the General Plan and to provide notice to tribes at certain key points in the planning process. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.). Many activities related to fire hazard mitigation can impact tribal cultural sites and close coordination with Tribal Governments is imperative to protect such sites from permanent damage. In addition, Tribal Governments may have insight into fire mitigation practices that can be shared with local governments and fire professionals.

Development and Incorporation of Fire Hazard Policies in the General Plan

The discussion above described the various federal and state requirements related to fire hazard planning. This section describes how a local government can reflect those requirements in its own general plan.

In general, local governments have wide discretion in addressing locally important issues in the General Plan. The types of safety issues that concern each city or county may be very different; however, many rural and suburban communities recognize wildland fire hazard as a growing concern, exacerbated by climate change, population growth, and increasing demands on natural resources.

OPR's current *General Plan Guidelines* recommend that for every locally relevant issue, the local government should articulate one or more broad objectives, establish more specific policies

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that would help achieve those objectives, and finally, devise implementation measures (specific action items or funding programs) to implement the policies. Before starting this process, adequate and accurate data and information must be collected and analyzed to provide the basis for sound policy decisions. Below is a brief discussion on how policies related to fire safety may be developed to meet local needs and conditions.

Data and Analysis

Collection of appropriate data is necessary to describe the conditions, constraints, opportunities, and character of the issue. The data may include narrative descriptions, numerical data, maps, charts, and any other means of providing information about the issue of concern.

Fire and resource protection can be enhanced if the data and analysis portion of the plan describe the fire environment, projected future fire risk, and relevant communities' demographic data in detail:

- Fire history, slopes, fuel loadings, average/worst fire danger, rates of spread, potential for structural threat, access, ignition causes. Post-fire flood damage potentials could also be described.
- Temperature, seasonal water availability and precipitation, population growth, dominant vegetation changes and die-off, including the effects of climate change.
- Infrastructure fireproofing and vulnerability, fire rated roofing and construction material prevalence
- Dominant language spoken and social isolation, physical ability and health, access to transportation, undocumented community status, likelihood to have insurance (health and home), income.

Objectives, Goals and Policy Development

Objectives, goals, and policies are developed based on the information identified through data collection and analysis. Policies should be developed to be action-oriented (“shall” rather than “should”) and linked to city or county ordinances or other feasible implementation mechanisms. Goals and policies will vary between jurisdictions. The goals and policies included in this publication can be used for general plans but may be more suitable for inclusion in implementation plans, hazard mitigation plans, consolidated fire codes, or other local plans, ordinances and codes that implement the overall goals and policies of the general plan.

Every aspect of an issue identified through data collection and analysis should be addressed by a policy, goal or objective. For example, if fuel loading was identified in the data and analysis section as an issue of concern, a statement(s) to the effect that development will be designed or controlled to reduce the volume should be incorporated into the safety element. If access was identified as a problem, a policy to improve road design, public transportation, or emergency assistance should be included.

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State planning law requires consultation with California Native American Tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Places. Tribes may have unique knowledge that allows for the protection of cultural places while also allowing for fire mitigation and suppression.

For purposes of consultation with tribes, as required by Government Code Sections 65352.3 and 65562.5, the Native American Heritage Commission (NAHC) maintains a list of California Native American Tribes with whom local governments must consult. The NAHC's "California Tribal Consultation List" provides the name, address, and contact name for each of these tribes; and telephone, fax and email information if available. The tribal contact list is developed and maintained by the NAHC, under authority granted in Government Code Sections 65092, 65352 and 65352.3. Prior to initiating consultation with a Tribe, the city/county must contact the NAHC for a list of Tribes to consult with. For questions about the list, please contact the NAHC at www.nahc.ca.gov. OPR developed [Tribal Consultation Guidelines](#) to provide information on how and when to conduct consultation with California Native American Tribes.

Implementation Measures

Implementation measures are the steps or actions that local governments will take to carry out their defined policies. Each policy described should have at least one implementation measure, and, often times, a policy may have several implementation measures.

Fire mitigation policies can be implemented in a variety of ways. For example, Government Code (GC) Section 65564 requires that every local open-space plan contain an "action program consisting of specific programs which the legislative body intends to pursue in implementing its open-space plan." Fire mitigation policies could be implemented through this action program with regards to fuel break/fuel reduction programs within designated open-space areas. Additionally, GC section 65910 requires each city and county to "prepare and adopt an open-space zoning ordinance consistent with the local open-space plan." Again specific fire hazard mitigation policies may be implemented through a variety of local ordinances, codes, plans and actions that are

Climate Impacts on Forests

Climate influences the structure and function of forest ecosystems and plays an essential role in forest health. Climate change is projected to alter the frequency and intensity of forest disturbances, including wildfires, storms, insect outbreaks, and the occurrence of invasive species. In addition, the productivity of forests could be affected by changes in temperature, precipitation and the amount of carbon dioxide in the air.

In conjunction with the projected impacts of climate change, forests face impacts from land development, suppression of natural periodic forest fires, and air pollution. The combined impact of these different factors is already leading to changes in our forests. Some of the valuable goods and services provided by forests may be compromised as these changes are likely to continue in the years to come.

Land managers are taking steps to minimize the impacts of existing ecosystem stressors, such as habitat fragmentation, pollution, invasive species, insect infestations, and wildfire, to increase the resilience of forests to climate change. Moreover, the U.S. Forest Service has developed a [National Roadmap for Responding to Climate Change](#) ("Roadmap") that outlines how to apply adaptive management principles to forest and grassland management. OPR recommends that cities and counties that are required to update their safety elements per SB 1241 review the Roadmap and include principals that are tailored to impacts occurring or anticipated to occur within their area.

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suitable for their general plan and local conditions and resources. .

Considerations When Developing Fire Hazard Policies for the General Plan

This section addresses the specific issues related to developing fire hazard policies for the General Plan. For each type of condition addressed, the subsection identifies the elements of the General Plan that may be impacted, relevant data and analysis followed by examples of policies which may address issues and conditions identified.

The policy examples included vary in range of scope and level of detail. Additional guidance is provided in the *Related Planning and Regulatory Tools for General Plan* section of the Appendix on how these policies can be further addressed in specific plans, zoning, and development agreements. The following subsections are not organized in any particular order and each plays an integral part in fire hazard mitigation planning. Local governments should develop and implement fire hazard policies in their General Plan that are relative to the local conditions.

FIRE HAZARD - ALL AREAS

Fires are regular occurrences in California and mitigation opportunities exist at all stages including before, during, and after a fire event. This subsection includes general considerations for prevention, protection and fire loss mitigation. Subsequent subsections address special considerations for wildland-urban interface and urban areas.

Values and Assets at Risk from Wildfire

Possible affected GP Elements:

- Safety
- Housing
- Land Use
- Conservation
- Open Space
- Circulation (critical infrastructure)
- Air Quality^{1*}

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of the values and assets at risk, which may be affected by wildfire. Values and assets refer to accepted principals or standards and any constructed or landscape attribute that has value and contributes to community or individual wellbeing and quality of life. Examples include property,

¹Air quality is a generally an optional element for local governments. AB 170 (Reyes, 2003) requires each city and county within the jurisdictional boundaries of the San Joaquin Valley Air Pollution Control District to either adopt an air quality element or amend appropriate elements of their general plan to include data and analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality.

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structures, physical improvements, natural and cultural resources, community infrastructure, commercial standing timber, ecosystem health, and production of water.

Check with the local [California Department of Forestry and Fire Protection \(CAL FIRE\) Unit](#) for California Fire Plan information with regards to values and assets at risk.

- Identify values and assets at risk such as:
 - Recreational areas
 - Scenic areas
 - Ecologically significant areas
 - Critical watersheds
 - Public and private timberland
 - Wildlife habitat
 - Rangelands
 - Sensitive soils
 - Landslide prone areas
 - Cropland
 - Water supplies
 - Watersheds prone to contribute to flooding
 - Air quality
 - Historic sites
 - Cultural sites
 - Tourism sites
 - Emergency shelters
 - Structures, such as homes and business
 - Utilities and accompanying infrastructure
 - Population and economic centers
- Classify values and assets based on their vulnerability to wildfire:
 - Evaluate the identified values and assets based on economic and social value to the community and replacement value.
 - Prioritize the values and assets for assisting in the selection of mitigation efforts and development of fire response plans. Prioritization can be accomplished in a variety of ways: most difficult or expensive to replace, most necessary for communities (especially vulnerable members of the community), easiest to protect, broadest benefit to community, closest to urbanized areas and any other priority system that may be relevant to the community.
 - Additional data and analysis may be appropriate based on local conditions and geographic circumstances.

Policy Examples: Based on the data, analysis and prioritization of the local values and assets, policies should be developed appropriate for local conditions to mitigate potential losses due to wildfire. In developing appropriate local policies to protect values and assets, which may be at risk in the event of a wildfire, several key areas need to be considered including but not limited to, cost of protection/mitigation, ability to protect resources or mitigate the threat, and the consequences of losing the resource to the community.

The following are examples of policies that a local government might adopt to mitigate damage to values and assets related to a wildfire:

- Avoid, where feasible, approving new development in areas subject to wildfire risk. If avoidance is not feasible, condition such new development on implementation of measures to reduce risks associated with that development.

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- Establish site-specific safety measures to protect local resources from wildfire (all prevention and mitigation measures should be tailored to dominant local ecosystem, geography, community, and firefighting resources and capabilities).
- Public and private landowners shall implement site specific safety measures that mitigate to a low risk condition fire hazards around local resources.
- Local agencies shall work cooperatively with other agencies and private interests to educate private landowners on fire-safe measures to achieve a low risk condition.
- Public and private funding, where available shall be used to the greatest extent practical to assist private landowners in implementing safety measures to achieve a low risk condition.
- Using best available science, plan for future fire risk as a result of climate change or other factors and alert public and private landowners in future risk areas

Water Supply

Possible affected GP Elements:

- Safety
- Conservation
- Circulation

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of water supplies related to wildfire suppression.

- Review [National Fire Protection Association \(NFPA\)](#) Standard 1141.
- Identify existing peak load water supply including private water supplies which might be used to fight wildfires.
- Determine current minimum peak load water supply necessary to serve the area.
- Project future peak load water supply and demand
- Evaluate the adequacy of the water delivery system.
- Identify and price potential improvements to the water supply to meet the current and projected identified need.
- Identify peak load water supply requirements necessary to avoid unacceptable risks.
- Evaluate cost benefit analysis of additional water storage with regards to wildfire suppression.
- Coordinate with water agencies regarding existing and future water supply.
- Coordinate with fire agencies regarding existing and planned service areas and capacity.

Policy Examples: Based on the data and analysis of the hazards, risks and vulnerabilities, associated with water supply, policies should be developed appropriate for local conditions to ensure access and availability of water supply in case of a wildfire. Issues which policy makers may wish to consider include, but are not limited to, protecting existing water supplies, developing additional water supplies and maintaining and/or enhancing the integrity of the delivery systems.

Fire Hazard Planning

The following are examples of policies that a local government might adopt with regards to water supply and fire hazards:

- Maintain adequate water supplies to provide reasonable protection of assets from wildfire without disruption to community water supplies.
- Implement Office of Emergency Services URAMP software program.
- Adopt a specific water supply standard such as NFPA 1142, “Rural Water Supplies” and require developers and property owners to certify compliance with that standard and continue maintenance and availability of that water supply.
- Each property outside of a developed water system shall maintain sufficient usable water storage to provide wildfire and structure protection on the property.
- Plan for changes in future water supply, quality, and availability.

Emergency Services

Possible affected GP Elements:

- Safety
- Circulation
- Land Use
- Open Space
- Conservation
- Housing
- Air Quality*

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of emergency services and response related to wildfire.

- Identify the LAFCo approved service areas of emergency services including, but not limited to fire, police, and emergency response vehicles.
- Review the LAFCo Municipal Service Review (MSR), if completed, for the emergency services in the area. If no MSR is available, undertake your own review of the services including cost, municipal service level, response time, condition of existing facilities and vehicles, local delivery system and other relevant information.
- Identify and map existing and proposed emergency service facilities.
- Identify areas where emergency services are not readily available.
- Determine the projected need for emergency services in the area.
- Identify areas of special emergency service needs.
- Determine areas of low resilience and adaptability
- Make emergency service information available in dominant language of community
- Based upon the LAFCo MSR and any other related information, evaluate the adequacy of existing emergency services and demand for additional services for current and projected need in the area.

Fire Hazard Planning

Policy Examples: Based on the data and analysis of local emergency services, policies should be developed appropriate for local conditions to mitigate potential losses due to wildfire. Issues which policy makers may wish to consider include, but are not limited to, mutual aid and other protection/response partnerships, needed/desired emergency service levels, available resources to sustain the desired level of emergency services, the cost of maintaining protection measures, reasonable supplemental funding mechanisms, public awareness of emergency service levels, protection capability relative to growth and development, and centralized versus decentralized training opportunities.

The following are examples of policies that a local government might adopt with regards to emergency services:

- No development shall be approved unless the local government can make a finding that development can be reasonably accessed and served in the case of a wildfire.
- New development and subdivisions shall include appropriate emergency facilities to assist and support wildfire suppression.
- Fire safe measures shall be commensurate with the response time for emergency services (e.g. longer distance to a fire department calls for more stringent mitigation measures).
- Communities and open space areas shall provide a one quarter mile fuel modification zone for areas suitable for emergency protective services.
- Fire Districts/Departments are advised to engage in wildland fire training with a recognized state or federal wildland fire agency at least once a year.
- All new fire district/department staff responsible for fire suppression activities could receive an adequate number of training hours in local terrain during their first year.
- Local government shall identify and/or construct a low risk fire safety area (location) where community members can evacuate to and wait until emergency service providers can reach them. The local government shall annually review the adequacy and accessibility of the fire protection infrastructure relative to growth and development.
- The local government shall consider the long-term maintenance needs of emergency service equipment and facilities when developing its annual budget.
- Public and private property owners will receive information and instruction on fire rated roofing and construction materials and vegetation management.
- Assistance will be made available for fire rated roofing and construction materials and vegetation management.

Emergency Evacuations

Fire Hazard Planning

Possible affected GP Elements:

- Safety
- Circulation
- Land Use
- Open Space
- Housing

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of local need and potential response strategies for emergency evacuations related to wildfire:

- Identify previously designated emergency evacuation routes.
- Identify the number of people who currently use these routes.
- Develop a projected increase of people who would need to use these routes over the next ten years.
- Develop a projected increase of people who will need to use new routes.
- Identify potential circulation improvements necessary to avoid unacceptable community risks.
- Evaluate the availability, intelligibility, and accessibility of signed routes for use by evacuees and response vehicles during a fire emergency.
- Identify potential availability of alternate routes.
- Identify the adequacy of the access and evacuation routes relative to the degree of development or use (e.g., road width, road type, length of dead-end roads, turnouts, etc.) (Public Resources Code (PRC) 4290.)
- Identify the accessibility of evacuation routes to differently abled, chronically ill, elderly, pregnant, socially isolated, and non-English-speaking persons.
- Evaluate the potential for disruption to evacuation routes from fire, landslide movement, fault ruptures, earthquake-triggered failures, volcanic eruption and other hazards.
- Identify the location and capacity of existing emergency shelters.
- Estimate the need for expanded capacity at existing shelters or the need for additional emergency shelters. Shelter needs include residents, workers, undocumented residents, campers, tourists, differently abled, elderly, pregnant, young, non-English-speaking and other people reasonably expected in the area.

Policy Examples: Based on the data and analysis of various scenarios for emergency evacuations at the local level, policies should be developed appropriate for local conditions. Issues which policy makers may wish to consider include, but are not limited to, the cost for retrofitting evacuation routes relative to sheltering in place, public awareness of evacuation routes, maintain the availability of evacuation routes and unique conditions relative to specific land uses or special needs populations.

The following are examples of policies that a local government might adopt with regards to emergency evacuations:

Fire Hazard Planning

- Designate and maintain safe emergency evacuation routes on publically maintained roads for all communities and assets at risk.
- Establish a unified and accessible road signing and street addressing system.
- Identify low risk fire safety areas (location) and/or emergency shelters.
- Establish a public information program educating the public on evacuation routes and fire safety.
- Provide for broad public access to information regarding evacuation routes.
- Establish minimum road widths and flammable vegetation clearances for evacuation routes. (PRC Sections 4290 and 4291)

Firefighter Safety

Possible affected GP Elements:

- Safety
- Land Use

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of firefighter safety related to wildfire.

- Identify existing defense zones.
- Identify low risk fire safety areas (location).
- Identify existing and alternate evacuation routes.
- Evaluate adequacy of existing defense zones.
- Evaluate need for additional defense zones to protect assets or communities at risk.
- Evaluate area to determine where it would be unsafe for ground firefighting.
- Designate and map updated defense zones.

Policy Examples: Based on the data and analysis of the hazards, risks and vulnerabilities, regarding firefighter safety, policies should be developed appropriate for local conditions. Issues which policy makers may wish to consider include, but are not limited to, ability to maintain safety areas and defense zone, the appropriateness of centralized or decentralized training and unique geographic considerations for fire fighters.

The following are examples of policies that a local government might adopt with regards to firefighter safety:

- Identify low risk fire safety areas (locations).
- Identify fire defense zones where firefighters can control wildfire without undue risk to their lives.
- Designate and publicize areas where firefighter safety prohibits ground attack firefighting.
- Maintain fire defense improvements on both public and private property.

Fire Effects (Minimizing Fire Loss)

Fire Hazard Planning

Possible affected GP Elements:

- Conservation
- Open Space
- Land Use
- Housing
- Circulation

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of fire effects related to wildfire:

- Establish desired initial attack success rate.
- Identify maximum acceptable fire size.
- Determine which geographic areas would benefit from mitigation programs to reduce fire effects in the event of fire.
- Estimate cost of treatment methods and compare to cost of suppression.
- Estimate cost to community of fires, including community income, insurance, adaptability, and resilience.
- Determine which mitigation measures should be used in each geographic area to accomplish fuel modification and reduce fire risk. The following are possible choices:
 - Education
 - Increase initial attack capability
 - Prescribed Burns
 - Wildfire protection zones
 - Forest thinning
 - Grazing

Policy Examples: Based on the data and analysis of the hazards, risks and vulnerabilities with regards to fire effects, policies should be developed appropriately for local conditions. Issues which policy makers may wish to consider include, but are not limited to, treatment costs verses suppression costs; cost, benefits and opportunities for mitigation at the parcel level verses the landscape level; cost to replace a community asset; impact of an irreplaceable community asset; the potential impact of mitigation measures on areas of special concern (cultural, environmental); and, fixed fire defense opportunities versus land management opportunities.

The following are examples of policies that a local government might adopt to mitigate fire effects:

- Forest thinning, grazing, and hand or mechanical clearing shall be conducted in lieu of prescribed fire unless prescribed fire can be clearly shown to provide the greatest overall benefit.
- Establish and maintain a plan that identifies hazards and risks, targeted priority areas, and preferred vegetation/fuel treatment methods and timing.
- Fire rated roofing and construction materials shall be allowed pursuant to Section 703.1 of the California Fire Code.

FIRE HAZARD - WILDLAND AREAS

In addition to the areas of concern listed in the “Fire Hazards-All Areas” section, the following should be considered when developing policies specifically related to wildland areas.

Fuel Modification

Possible affected GP Elements:

- Safety
- Land Use
- Open Space
- Conservation

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of fuel modification in wildland areas related to wildfire. In order to identify the local areas at risk with regards to fuel modification, collect and analyze the following:

- Identify and classify very high fire hazard severity zones based on:
 - Degree of development
 - Fuel loading
 - Weather
 - Slope
 - Aspect
 - Accessibility to fire protection assistance (i.e., response time, availability of helispots, proximity of air tanker attack bases, availability of woods workers, etc.)
 - Proximity to communities or assets at risk
 - Historic fire data
 - Projected future fire vulnerability with changing growth patterns and considering the impacts of climate change
 - Shifting plant community composition
 - Other pertinent information and maps (see GC Sections 51178-51189.5, PRC Sections 4201-4205 and http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones.php)
- Analyze the potential for fire to critically impact or eliminate habitats or open-space areas.
- Identify the policy implications for fire safe or fuels reduction policies of both public and private conservation of open-space areas.
- Prioritize applicable areas needing vegetation/fuel treatment by:
 - Identifying maximum acceptable fire size.
 - Estimating costs of treatment methods.
 - Developing timeline for implementation and maintenance of fuels treatments.
 - Evaluating how treatment methods impact habitat, wildlife, natural, cultural, and open space resources and floodplains.

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Policy Examples: Based on the data and analysis of the hazards, risks and vulnerabilities with regards to fuel modification, policies should be developed appropriate for local conditions to mitigate potential losses due to wildfire. In addition to the issues discussed in “Fire Hazards - All Areas,” policy makers may wish to consider other issues unique to wildland fires including, but are not limited to, acceptable level of fire risk, the degree of consistency and coordination between federal and private landowner fuel modification activities, the variety of fuel modification techniques and public awareness and ability to comply with residential clearance policies.

The following are examples of policies that a local government might adopt with regards to fuel modification to mitigate fire hazards in wildland areas.

- Prior to the construction of any structure, whether residential, recreational, or commercial, a site specific fuel mitigation plan shall be prepared. The location and development of any road, or any other man-made structure that may act as a fuel barrier, shall be done in consideration of its maximum benefit as a fuel barrier/fire break. The plan shall cover the entire parcel and include measures for modifying fuel loading prior to development and a plan to maintain that protection over time.
- All residences shall comply with the fuel modification requirements of PRC Section 4291, whether located in state responsibility or local responsibility areas.
- Plant community shall be monitored for changing fire risk.
- Forest thinning and grazing and hand or mechanical clearing shall be conducted in lieu of prescribed fire unless prescribed fire is clearly shown to provide the greatest overall benefit.
- County resources will work with landowners to assist in choosing the best method of fuel reduction.
- Fire districts shall establish desired initial attack success rate.
- Evaluate how methods impact habitat and open space resources and floodplains.
- Identify preferred methods for areas needing treatment:
 - Education
 - Increase initial attack capability
 - Prescribed fire
 - Planting low-risk vegetation
 - Wildfire protection zones
 - Forest thinning
 - Grazing
 - Mechanical clearing
 - Hand clearing (piling, burning/chipping)

FIRE HAZARD - URBAN INTERFACE AREAS

In addition to the areas of concern listed in the “Fire Hazards-All Areas” section, the following should be considered when dealing with urban interface areas.

Urban Interface Hazards

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Possible affected GP Elements:

- Land Use
- Housing

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of fire hazards in the Urban Interface. The purpose of the collection and analysis of the following data is to determine areas containing hazards, risks, and vulnerabilities in the Urban Interface.

- Check the list of “Communities at Risk” per the National Fire Plan (see [Communities At Risk List](#)).
- Check “high fire hazard severity zones” maps. (GC Section 51178, see maps at [CAL FIRE - Fire Hazard Severity Zones Maps](#) and check with local governments for updates).
- Update “high fire hazard severity zones” maps as necessary.
- Inventory and prioritize your assets at risk (public and private).
- Undertake cost/benefit analysis of various hazard mitigation measures as opposed to fire suppression.
- Establish low risk category standards (tree spacing, predicted surface fuels flame length to crown height ratios, etc.).

Policy Examples: Based on the data and analysis of the hazards, risks and vulnerabilities, policies should be developed appropriate for local conditions to mitigate potential losses due to wildfire.

In addition to the issues discussed in Fire Hazards – All Areas, urban interface areas may require consideration of other conditions including construction and zoning requirements, impact of permanent residents vs. seasonal and undocumented residents, and maintenance of mitigated areas.

The following are examples of policies that a local government might adopt to mitigate fire hazards in the urban interface:

- Public and private landowners shall minimize the risk of wildfire moving from one property to adjacent property through fire rated roofing and construction materials and vegetation management.
- Public landowners shall provide a minimum of a one quarter mile defensible fuel profile (buffer zone) at property lines and near points of special interest.
- Public landowners shall implement safety measures that result in a low risk category designation for wildfires threatening the urban interface.
- County agencies shall work cooperatively with other agencies and private interests to educate private landowners on fire-safe measures to implement in order to achieve a low risk category designation.
- Public and private funding for fire risk hazard reduction shall be prioritized to assist private landowners in implementing safety measures for a low risk designation.
- All residential, commercial and industrial construction and development will comply with the Board of Forestry’s State Responsibility Area Fire Safe Regulations (see California Code of Regulations, Title 14, Sections 1270 et seq.) relating to roads, water, signing and fuel modification.

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- Public and private property owners shall maintain property in a low risk category (PRC Section 4291 and GC Section 51182).
- Landowners shall maintain minimum defensible space from all structures or improvements on their property and work with neighbors and local government to address defensible space within 100' of structures that lies on adjacent property.
- The county shall work to facilitate agreements to provide fuel reduction efforts between public and private ownership's where recommended clearances extend onto public lands. This will require collaboration with USFS.

FIRE HAZARD - URBAN AREAS

In addition to the areas of concern listed in the "Fire Hazards-All Areas" section, the following should be considered when dealing with urban areas.

Fuel/Structure Modification

Possible affected GP Elements:

- Safety
- Land Use
- Open Space
- Conservation
- Housing

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of fuel and structure modifications in urban areas related to wildfire.

- Identify and classify fire hazard severity areas.
- Evaluate age, condition, and size of structures (code related issues).
- Evaluate use and occupancy of structures.
- Evaluate construction materials and roofing assemblies.
- Evaluate structure density.
- Evaluate access and evacuation routes.
- Evaluate vegetation management capabilities.
- Evaluate historical fire data.
- Evaluate projected future fire risk.
- Evaluate other pertinent information (maps).
- Evaluate landscaping as potential fire hazard.
- Evaluate neighborhood defensible space (island of safety).
- Identify fire protection jurisdictions.
- Evaluate use of open space and other facilities as part of overall fire protection/mitigation plan.
- Inventory urban forests and evaluate affect with regard to fire hazard.

Policy Examples: Based on the data and analysis of the hazards, risks and vulnerabilities with regards to fuel/structure modifications, policies should be developed appropriate for local

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conditions to mitigate potential losses due to fire. In addition to the issues discussed in “Fire Hazards – All Areas”, urban areas may require the consideration of other conditions including construction and zoning requirements, impact of permanent residents versus seasonal and undocumented residents, maintenance of mitigated areas, access routes, and acreage of open space and/or areas having wildland fuel characteristics versus wildfire response capability. The following are examples of policies that a local government might adopt to mitigate fire hazards in urban areas.

- Urban developments shall be planned and constructed to resist the encroachment of uncontrolled fire.
- Create a self-assessment district to maintain a fuel modification program.
- Establish public education services through the appropriate fire protection agencies.
- Plan, design, and place open space facilities to provide for fire protection/mitigation.
- Require structures with fire protection sprinkler systems to provide for outside alarm notification.
- In high fire hazard areas fire rated roofing and construction materials shall be used in reconstruction and new development pursuant to Section 703.1 of the California Fire Code.
- Maintain open spaces so that ground fuels do not promote the spread of wildfire and aerial fuels do not allow the spread of a fire through the tree canopy.
- Public Open Spaces shall be used as demonstration areas and examples to neighborhood residents.
- Create an urban forestry plan to be consistent with the local fire plan.

POST EVENT RECOVERY AND MAINTENANCE

The Recovery and Maintenance phase is an opportunity for the community and landowners to reevaluate land uses and practices. A current General Plan or Local Hazard Mitigation Plan will usually have the baseline data which to make the analysis.

Short-Term Recovery: Directly Related to Impacts of Fire

Possible affected GP Elements:

- Land Use
- Open Space
- Conservation
- Housing

Data and Analysis: Below is a list of data that may be useful in establishing a current picture of short-term recovery possibilities related to impacts of a wildfire.

- Evaluate post-fire fuel hazard ratings.
- Evaluate post-fire air, water, and soil quality.
- Evaluate fire impacts on community health and wellbeing.
- Evaluate fire impacts on air quality and greenhouse gas emissions.
- Evaluate fire impacts on infrastructure.
- Evaluate fire impacts on ecological community.

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- Monitor water table and precipitation to analyze risk of drought complicating recovery efforts.
- Evaluate vegetation/fuel conditions relative to future flood and fire control.
- Evaluate vegetation conditions relative to future fire conditions and wildlife habitat.
- Evaluate degree of success of fire risk reduction efforts.

Policy Examples: Based on the data and analysis, policies should be developed for short-term recovery methods that are appropriate for local conditions to mitigate potential future losses due to wildfire. Issues that public policy makers may choose to consider include but are not limited to, benefit of recommended measure commensurate with the protection needed, opportunities for re-introduction of native species, short-term recovery needs versus long-term environmental health, debris removal versus habitat health, and consider short-term flood risks and mitigation opportunities.

The following are examples of policies that a local government might adopt to mitigate wildfire impacts shortly after an event.

- Reduce post fire recovery time by replanting native species.
- Ensure fire protection measures enhance sustainability of restoration projects.
- Ensure reduced future fire risk by removing sufficient dead woody vegetation while retaining reasonable wildlife habitat (cross-link with water quality).
- Retain sufficient downed logs for erosion control as well as habitat maintenance.

Long-Term Opportunities and Maintenance

Possible affected GP Elements:

- Safety
- Land Use
- Open Space
- Conservation
- Housing

Data and Analysis: Below is a list of data that may be useful in establishing a current picture of long-term maintenance opportunities related to wildfire:

- Evaluate patterns and trends of local climate and how they relate to climate change in California.
- Evaluate patterns and trends of local ecological communities and vegetation.
- Identify endangered species, cultural and historic resources, and hazardous material conditions.
- Evaluate patterns and trends of development.
- Evaluate patterns and trends of population growth and demographic change.
- Evaluate long-term ability of community to manage vegetation, use fire-rated infrastructure, and evacuate in emergency situations.

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- Evaluate impacts, and potential impacts, of an event on availability and condition of infrastructure.
- Evaluate impact, and potential impacts of an event on environment and ecosystem, including primary, secondary, and tertiary impacts.
- Evaluate “Fire Plan” and Safety Element for adequacy.

Policy Examples: Based on the data and analysis of the long-term maintenance opportunities policies should be developed appropriate for local conditions to mitigate potential losses due to wildfire. Issues that public policy makers may choose to consider include but are not limited to, the extent to which existing land use designations are appropriate, the potential for the re-evaluation of community assets, the success of past mitigation measures, sustainability of recommended fire mitigation measures and assurance that mitigation measures are continued to be implemented.

The following are examples of long-term policies that a local governments could adopt to mitigate fire impacts.

- Design subdivisions and developments to exist in concert with the natural ecosystem and to promote forest health and stewardship.
- Periodically review trends and projections of future fire risk and fire risk reduction capabilities to ensure that mitigation measures are adequate.
- Natural surface water and moisture levels shall be maintained.
- Incorporate forecasted impacts from climate change into trends and projections of future fire risk and consideration of policies to address identified risk.
- Protect investment through reduction of fire risk.
- Extend defensible fuel profile zone agreements to subsequent landowners.
- Promote the opportunity to return to native plant species.
- Emergency response capabilities shall be maintained and improved to protect all members of the community.
- In high-risk wildland fire areas rebuild structures with a minimum 100’ setback (when feasible) from property lines.
- Residential dwellings will be rebuilt using best practice construction methods, materials, codes, and standards to reduce their susceptibility to wildfire.
- Periodically review fire history and lessons learned to ensure that mitigation measures are being managed to optimize effectiveness.

FLOOD HAZARD RELATED TO WILDFIRE (PRE- AND POST-FIRE)

Possible affected GP elements:

- Land Use
- Open Space
- Conservation
- Housing

Fire Hazard Planning

Data and Analysis: Below is a list of data that may be useful in establishing a current picture of flood hazards related to wildfire. In order to identify the local areas at risk from floods due to wildfire collect and analyze the following:

- Collect historical data on flooding, such as frequency and intensity.
- Collect data on projected effects of climate and land use change on flooding frequency and intensity.
- Collect data on soil moisture, erosion and permeable surface loss.
- Identify (map) areas within floodplains or subject to inundation by a 100-year flood and the 500-year flood (see <http://myhazards.calema.ca.gov/default.aspx>).
- Identify historic and future precipitation intensity using best available models and information.
- Determine and map areas that are potentially prone to flooding, and debris flow, following a catastrophic wildfire.
- Determine specific vulnerabilities within the identified flooding areas.

Policy Examples: Based on the data and analysis of the hazards, flooding risks, and vulnerabilities, appropriate local policies should be developed to mitigate potential losses due to wildfire. Issues that public policy makers may choose to consider include but are not limited to, the need to re-asses an area after a wildfire to determine increased risk to flooding, and the cost and benefit associated with new mitigation measures regarding flooding due to wildfire. The following are examples of policies that a local government might adopt to mitigate flood hazards related to a wildfire:

- All wildfire burned areas shall be treated to control storm water runoff prior to winter rains.
- Wildfire areas shall be restored by planting native vegetation cover or encouraging the re-growth of native species using best practices as soon as possible to aid in control of storm water runoff.
- Potential for future flood hazard shall be reduced by sufficient removal of dead, woody vegetation along watercourses following a catastrophic fire to reduce the risk of future catastrophic fires.
- Fire hazard reduction measures should balance forest health with fuel reduction activities while considering the potential effect on flood management. Reduction in fire risk will simultaneously reduce flood risk.

LANDSLIDE HAZARD

Possible affected GP Elements:

- Conservation
- Open Space
- Safety

Data and Analysis: Below is a list of data that may be useful in establishing a current picture of landslide effects as a result of a wildfire. In order to identify the local areas at risk from landslides due to a wildfire collect and analyze the following:

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- Identify landslide prone areas from the [Division of Mines and Geology](#) and the [U.S. Geological Survey](#) landslide inventory and landslide and debris-flow susceptibility maps where maps exist.
- Identify areas which would be prone to landslides following a catastrophic wildfire.

Policy Examples: Based on the data and analysis of the hazards, risks and vulnerabilities with regards to landslides, appropriate local policies should be developed to mitigate potential losses due to wildfires and subsequent landslides. Issues that public policy makers should consider include but are not limited to, the extent to which the area is at risk to landslides due to wildfire, the need to adopt new mitigation measures, and the potential impact of mitigation measures on areas of special concern (cultural, environmental), and cost of mitigation vs. benefits.

The following are examples of policies that a local government might adopt to mitigate landslide hazards.

- All wildfire areas prone to landslides shall be treated to avert storm water runoff prior to winter rains.
- Native vegetation cover shall be planted and/or temporary slope stabilization measures will be installed as soon as possible to aid in landslide control.
- Potential for landslides shall be reduced by sufficient removal of dead, woody vegetation following a catastrophic fire.

PUBLIC HEALTH

Wildfires can impact the public health of a community. Specifically, the increased severity and frequency of wildfires and length of the fire season may result in additional injuries and deaths from burns and smoke inhalation, eye and respiratory illnesses and exacerbation of asthma, allergies, chronic obstructive pulmonary disease (COPD), illness from release of other toxins originating in inorganic burning material, and other cardiovascular diseases from air pollution (Lipsett et al., 2008; Pacific Institute, 2010).

Children, the elderly, and the chronically ill are at increased health risk from wildfire smoke. Increased incidence of wildfires can lead to evacuation, temporary displacement, and property damage. Risk of erosion and land slippage subsequent to fires can lead to temporary or permanent displacement and property damage or loss (CDPH, 2008; Pacific Institute, 2010). While an entire community can be at risk of these impacts, there are groups who are most sensitive to these impacts because of both intrinsic factors (e.g., age, health status, status as a smoker, race/ethnicity, and gender) and extrinsic factors (e.g., financial resources, knowledge, language, and occupation).

Possible affected GP elements:

- Safety
- Land Use

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- Housing

Data & Analysis: Below is a list of data that may be useful in establishing a current picture of wildfire impacts to a community's public health.

- Check the list of "Communities at Risk" per the National Fire Plan (see [Communities At Risk List](#)).
- Check "high fire hazard severity zones" maps. (GC Section 51178, see maps at [CAL FIRE - Fire Hazard Severity Zones Maps](#) and check with local governments for updates).
- Inventory and prioritize your assets at risk (public and private).
- Evaluate community access to fire safety information.
- Evaluate home insurance status in community.
- Evaluate physical and linguistic barriers to fire safety for communities.
- Evaluate use and occupancy of structures.
- Evaluate construction materials and roofing assemblies.
- Evaluate structure density.
- Evaluate access and evacuation routes.
- Evaluate projected future fire risk.
- Evaluate historical fire data.
- Evaluate other pertinent information (maps).
- Evaluate landscaping as potential fire hazard.
- Evaluate neighborhood defensible space (island of safety).
- Identify fire protection jurisdictions.

Policy Examples: The following are examples of policies that a local government might adopt to mitigate impacts to public health related to wildfires:

- Update existing emergency preparedness plans and conduct exercises to augment preparedness to better address local health impacts resulting from wildfires. Preparation should ensure completeness and availability of identified emergency supplies and resources, including but not limited to items such as medical supplies and services, water main repair parts, generators, pumps, sandbags, road clearing, and communication facilities. The effort should include identifying and cataloging the current supply and procuring additional items and services to ensure preparedness in the event of a wildfire emergency.
- Partner with existing public health community outreach and engagement efforts. An outreach program focused on vulnerable populations must identify the populations present in a given community, develop a plan to disseminate the information, and develop materials most appropriate for that population. Perhaps the most important step for a community is to identify dissemination networks (e.g., community-based organizations, local government, philanthropic organizations) that can reach residents susceptible to wildfires, people who live alone, the elderly, outdoor workers (including undocumented and migrant workers) and their employers, asthmatics, the differently abled, chronically ill individuals, and immigrants with literacy/language needs.

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ACRONYMS/ABBREVIATIONS

CAL FIRE – California Department of Forestry and Fire Protection

CEQA – California Environmental Quality Act

CWPP – Community Wildfire Protection Plan

DMA – Disaster Mitigation Act

FEMA – Federal Emergency Management Agency

FHSZ – Fire Hazard Severity Zone

FSC – Fire Safe Council

GP – General Plan

HFRA – Healthy Forest Restoration Act of 2003

HMGP – Hazard Mitigation Grant Program

IFR – Interim Final Rule

LAFCo – Local Area Formation Commission

MSR – Municipal Services Review

NFPA – National Fire Protection Association

OPR – Governor’s Office of Planning and Research

SRA – State Responsibility Area

URAMP – Utilities Regional Assessment of Mitigation Priorities

USDA – United State Department of Agriculture

WUI – Wildland-Urban Interface

POTENTIAL FUNDING MECHANISMS

Cal EMA / FEMA - Hazard Mitigation Grant Program (HMGP)

The HMGP program provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

http://hazardmitigation.calema.ca.gov/grant_programs/hazard_mitigation_grant_program_hm_gp

California Air Resource Board CoolCalifornia Funding Wizard

The Funding Wizard is a tool supported through the Air Resources Board Cool California portal using funding provided by the Strategic Growth Council. The tool aggregates current federal, state, regional, foundation and other funding opportunities and allows entry of keyword search terms to identify possible funding for identified projects.

<http://www.coolcalifornia.org/funding-wizard-home>

California Department of Forestry and Fire Protection, Urban and Community Forestry Program

The Urban and Community Forestry Program provides grants to help expand and improve the management of trees and related vegetation in communities throughout California

http://www.fire.ca.gov/resource_mgt/resource_mgt_urbanforestry.php

Fire Safe California Grants Clearinghouse

The Fire Safe California Grants Clearinghouse is a one-stop shop that simplifies the process of finding and applying for grants to improve California's community wildfire preparedness. The Grants Clearinghouse is a program of the California Fire Safe Council (CFSC). It is an online grants application process that makes it easier to find and apply for wildfire prevention grants to support community projects.

<http://www.grants.firesafecouncil.org/>

Western Forestry Leadership Coalition

Formally established in 2000, The Western Forestry Leadership Coalition is comprised of 34 members from across the Federal and state agencies of the west who work together to assist family forest owners, rural and state fire organizations, and community forestry groups; improve forest health, encourage land conservation, and stimulate community economic recovery. The Coalition provides funding opportunities to address these issues.

<http://wflcenter.org/>

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[http://hazardmitigation.calema.ca.gov/docs/plan_review_guide_final_9_30_11\[1\]%20FINAL.pdf](http://hazardmitigation.calema.ca.gov/docs/plan_review_guide_final_9_30_11[1]%20FINAL.pdf)

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FIRE PREVENTION/PREPAREDNESS ORGANIZATIONS

- **State of California**
 - [California Department of Forestry and Fire Protection](#): The men and women of CAL FIRE are dedicated to the fire protection and stewardship of over 31 million acres of California's privately-owned wildlands. In addition, the Department provides varied emergency services in 36 of the State's 58 counties via contracts with local governments. The prevention of large, damaging fires remains a priority for CAL FIRE.
 - [California Governor's Office of Emergency Services](#): Cal OES exists to enhance safety and preparedness in California through strong leadership, collaboration, and meaningful partnerships. Our mission is founded in public service. Our goal is to protect lives and property by effectively preparing for, preventing, responding to, and recovering from all threats, crimes, hazards, and emergencies.
- **Federal**
 - [Federal Emergency Management Agency](#): FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.
 - [US Forest Service](#): The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.
- **Nonprofit Organizations**
 - [California FireSafe Council](#): The Council's intent is to bring together governmental agencies and corporations to provide education to the residents of California on the dangers of wildfires and how they can be prevented.
 - [California Fire Science Consortium, Northern California Module](#): The CFSC is a network of fire science researchers, managers, and outreach specialists tasked with improving the availability and understanding of fire science and management knowledge. This includes increasing communication between fire researchers, managers, policymakers, tribes, landowners, and other stakeholders.
 - [Firewise Communities](#): The Firewise Communities/USA Recognition Program provides a number of resources and action steps homeowners can utilize now to reduce their community's risk of potential wildfire damage.
 - [Northern California Prescribed Fire Council](#): The Northern California Prescribed Fire Council is a venue for practitioners, state and federal agencies, academic institutions, tribes, coalitions, and interested individuals to work collaboratively to promote, protect, conserve, and expand the responsible use of prescribed fire in Northern California's fire-adapted landscapes.
 - [Northern California Society of American Foresters](#): The Society is a national organization representing all segments of the forestry profession in the United States. It includes public and private practitioners, researchers, administrators, educators, and forestry students.

REVIEW AND UPDATE OF SAFETY ELEMENT CHECKLIST

REVIEW AND UPDATE OF SAFETY ELEMENT FOR STATE RESPONSIBILITY AREAS AND VERY HIGH FIRE HAZARD SEVERITY ZONES Information Requirements		
Information Regarding Fire Hazards (Section 65302 (g)(3)(A))		
	Page(s)	Comment(s)
Update to include information regarding fire hazards, including, but not limited to, all of the following:		
<ul style="list-style-type: none"> • Fire hazard severity zone maps from the Department of Forestry and Fire Protection 		
<ul style="list-style-type: none"> • Any historical data on wildfires available from local agencies or a reference to where the data can be found 		
<ul style="list-style-type: none"> • Information about wildfire areas that may be available from the United State Geological Survey 		
<ul style="list-style-type: none"> • 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* 		
<ul style="list-style-type: none"> • Local, state, and federal agencies with responsibility for fire protection, including special districts and local offices of emergency services 		
*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.		
Goals, Policies, and Objectives for the Protection of the Community from the Unreasonable Risk of Wildfire (Section 65302 (g)(3)(B))		
	Page(s)	Comment(s)
A set of goals, policies, and objectives based on the information pursuant to subparagraph (A) for the protection of the community from the unreasonable risk of wildfire		
Feasible Implementation measures designed to carry out the goals, policies, and objectives based on the information identified pursuant to subparagraph (B) (Section 65302 (g)(3)(C))		
	Page(s)	Comment(s)
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:		

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<ul style="list-style-type: none"> • Avoiding or minimizing the wildfire hazards associated with new uses of land 		
<ul style="list-style-type: none"> • 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. 		
<ul style="list-style-type: none"> • 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 		
<ul style="list-style-type: none"> • Working cooperatively with public agencies with responsibility for fire protection 		
Attachment or Reference to Adopted Safety Plan or Document Separate from the General Plan (Section 65302 (g)(3)(D))		
	Page(s)	Comment(s)
<p>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 Section 65302 (g)(3)</p>		
Consideration of Advice included in the Office of Planning and Research's most recent publication of "Fire Hazard Planning, General Technical Advice Series" (Section 65302 (g)(3))		
	Page(s)	Comment(s)
<p>The review shall consider the advice including in the Office of Planning and Research's most recent publication of "Fire Hazard Planning, General Technical Advice Series".</p>		

STATUTORY AND OTHER REQUIREMENTS OF THE PLAN(S)

ELEMENT	AUTHORITY	DESCRIPTION
California Fire Plan	PRC 4130	<p>A plan for adequate statewide fire protection of state responsibility areas shall be prepared by the board in which all land of each type shall be assigned the same intensity of protection.</p> <p>The CA Fire Plan is a statewide planning framework to assess wildland fire related conditions and apply appropriate pre-fire actions to reduce the costs and losses from wildfire. Currently adopted by OES as the State Hazard Mitigation Plan. Required by the CA BOF&FP to be updated by CDF every 5 years. The plan is built at the local level with significant input from federal and local government and stakeholders</p>
State Responsibility Area Review	PRC 4128.5	Requires the Board of Forestry and Fire Protection to review and adopt updates to State Responsibility Area (that area of the State where CDF has wildland fire protection responsibility), every 5 years
Board of Forestry & Fire Protection's Fire Safe Regulations	PRC 4290	Regulations require that specific fire safe standards be met in the planning and development of a subdivision as well as the issuance of a building permit.
Building Standards	GC 51189	Authorizes the State Fire Marshal to adopt building standards for fire safety in Very High Fire Hazard Severity Zones, and to publish a model ordinance for structure defensibility.
California All Incident Reporting System	HSC 13110.5	Requires reporting to State Fire Marshal of all fire, emergency medical services, hazardous materials and

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ELEMENT	AUTHORITY	DESCRIPTION
		other fire department responses.
Fire Hazard Severity Zones	GC 51175-51179	Requires local jurisdictions to assess hazards and adopt fire prevention standards for defensible space within Very High Fire Hazard Severity Zones.
Firebreaks	PRC 4291	Requires firebreaks around structures in mountainous and forested areas.
Firebreaks	GC 51182	Requires firebreaks around structures in any mountainous area, forest-covered land, brush-covered land, grass-covered land, or any land that is covered with flammable material, which area or land is within a very high fire hazard severity zone.
FEMA Interim Final Rule: Disaster assistance: Hazard mitigation planning and Hazard Mitigation Grant Program	Disaster Mitigation Act of 2000	http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2002_register&docid=02-4321-filed.pdf

THE MANDATORY ELEMENTS OF THE GENERAL PLAN

This section is excerpted from the Guide to Fire Planning and the General Plan, developed by the Board of Forestry and Fire Protection and available in its entirety on their website: www.bofdata.fire.ca.gov.

[Section 65000](#) et. seq. of the Government Code is referred to as the Planning and Zoning Law. As described in the *General Plan Guidelines*, each general plan must contain the seven elements mandated by state law ([Section 65302](#)). A jurisdiction may adopt additional “optional” elements on topics which it deems necessary. All elements of the general plan have equal weight; no one element is superior to another. The general plan consists of objectives, policies, and diagrams that establish the county’s vision of its future pattern of land uses. The various parts of the general plan must be internally consistent (GC [Section 65860](#)), so that no portion of the general plan contradicts or undercuts another. Objectives, policies and diagrams, for example, must be consistent across the elements. Often, this is best served by avoiding redundant objectives and policies among the elements. The general plan is a policy document. It is not regulatory, so it depends upon local regulations such as zoning and subdivision ordinances for its implementation. Recognizing the primacy of the general plan, California planning law requires all counties and cities to approve zoning(*), specific plans, subdivisions, development agreements, and capital improvement projects only when consistent with the adopted general plan.

(*) except for certain charter cities

Six of the mandated elements (excluding the noise element) are briefly described below, along with comment on their importance to fire and resource protection, and sample evaluation criteria (see Figure 1).

Figure 1 – OPPORTUNITIES FOR FIRE AND RESOURCE PROTECTION IN GENERAL PLAN ELEMENTS	
<u>ELEMENTS</u>	<u>OPPORTUNITIES</u>
Land Use	Greenbelts, Fuel Breaks, Fuel Reduction, Buffer Zones, Water Supply Requirements
Housing	Definition of Hazard Areas and appropriate mitigation for “Affordable Housing”.
Circulation	Strategic Access, Road Design, Helibases, Helispot, Evacuation Routes (ground and air), ingress/egress.
Conservation	Fuelbreaks, Fuel Reduction Zones, Additional Design Requirements for Development near Commercial Timber Zones (TPZ’s), Air Tanker Base Locations, Helibases and Helispots.
Open Space	Fuelbreaks, Fuel Reduction Zones, Strategic Access and Water Supplies, Off-Site Linking of Strategic Improvements.
Safety	Evacuation Routes, Water Supplies, Road Standards, Fuel Reduction Buffer Zones, Air Access, Definition of Hazard Areas and Mitigation Requirements,

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house and road signage.

i. Land Use

The Land Use element identifies lands for particular purposes. It designates the general development objectives and locations of various land uses such as commercial, industrial, residential, open space and agriculture. The major objective of the land use element is to establish a pattern of compatible uses.

Importance to Fire Hazard Planning:

Land use decision can create wildfire hazard problem areas. Wildfire hazard is not necessarily a fire problem as much as it is a land use issue. Wildfire hazard is a set of conditions, not necessarily a location. Even highly urbanized areas can have wildfire hazard, an example is the Oakland/Berkeley hills.

The Land Use element can help to reduce wildland and urban fire hazards by establishing objectives and policies that avoid or carefully plan development in fire hazard areas. These objectives and policies should be carried into the zoning and subdivision ordinances in the form of development standards. For example the Land Use element may establish policies related to buffer zones, adequate emergency access and egress, and other fire safe planning policies in areas within or adjacent to hazardous fire areas. The element may also identify high priority fire hazard areas that will be subject to these policies. Examination of the Land Use element in comparison with State Responsibility Area (SRA) and Local Responsibility Area (LRA) lands may show current or future conflicts with fire and resource protection. Since zoning districts are derived from land use designations, it is important to assure that those designations, policies, and ordinances are compatible with wildland protection. For example, Residential, Open Space, Agriculture, and Timber Preserve land uses could be designated to include fuel break and fuel reduction zones.

Sample Evaluation Criteria:

Does the Land Use element include wildland fire risks and hazards in the data and analysis section? Do policies include requirements to reduce hazard levels by various means? Are recreation areas (parks, golf courses) and agricultural uses (pastures, irrigated tree farms) located to provide “buffers” between development and wildlands?

ii. Housing

This element is required to designate how the government will meet its housing needs. It includes provisions for low income and special population needs.

Importance to Fire Hazard Planning:

Sample Evaluation Criteria:

Does the data and analysis section for this element describe vulnerable, unsafe areas for housing? Do the policies recognize these areas so that this type of development is prohibited there? (These issues may be better addressed in the Land Use element to avoid redundancy.)

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Are required construction standards in conflict with defined fire protection needs (access, roofing material and construction, fire flow)? If so, what compensating mitigation measures are required to provide safety?

iii. Circulation

This element consists of the general location of existing and planned transportation routes and public utilities. Designations, policies, and implementation measures in this element (and all others) must be correlated (consistent) with the Land Use element. The information is usually shown on maps or diagrams to show how the transportation system serves the various land use designations.

Importance to Fire Hazard Planning:

This is the primary designator of access routes and road design requirements (not engineering standards). GC [Section 14000](#) requires that the Circulation element provide transportation facilities that reduce hazards to human life and minimize damage to natural resources. This provides the opportunity to make strong recommendations about transportation routes and design requirements such as turn-outs, helispots, and safety zones.

Sample Evaluation Criteria:

Does the element plan for satisfactory access to/from high hazard areas? Are standards high enough to provide safe evacuation from residential (and other) land use designations? Are policies defined to limit the number and length of one-way roads? Are heliports and helispots designated in areas that will facilitate suppression and other emergency needs?

iv. Conservation

This element describes how the jurisdiction intends to protect and conserve its natural resources. The element should cover water, soils, forests, wildlife, and fisheries. Potential fire and flood impacts on all resources should be included to the extent that it is pertinent to the city or county.

Importance to Fire Hazard Planning:

Fire can severely damage or destroy forest and wildlife resources and adversely impact other resources as a result of erosion and other effects that follow the loss of forest cover. The Conservation element may establish objectives and policies for the conservation of these resources through reduction or avoidance of fire hazards. However, these objectives and policies may be more effective if located in the Land Use, Circulation, Open Space, or Safety elements and linked to regulatory requirements. This element ties to the CDF mission of protecting SRA lands as well as local fire agency protection of LRA lands and such lands should be taken into consideration when developing policies in this element.

Sample Evaluation Criteria:

Is the element consistent and logically applied, or does it just gather up unusable areas and “lump” them into a conservation category? Does the element discuss resource values? Are potential resource losses from fire (soil loss, sedimentation, local flooding, timber production,

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wildlife habitat, etc.) included in the data and analysis section? Do policies include management options of prescribed fire and fuelbreaks to enhance protection?

v. Open Space

This element designates areas for preservation and managed production of natural resources, outdoor recreation, and public health and safety (GC Section 65560(b)(4)). [Section 65560-4](#) of the Government Code dictates that the element should include designation of “areas that require special management because of fire risks.” The Code authorizes the connecting or linking of these areas into complete networks in the interest of public safety. Additionally GC section 65564 requires an action program to implement the requirements of the open-space element.

Importance to Fire Hazard Planning:

The Open Space element should identify areas of high fire hazard and establish objectives and policies to protect the public from those hazards. This may include policies relating to fuel breaks, fuel reduction zones, access, water availability, and fire safe standards. These policies should be carried over into the zoning and subdivision ordinances for implementation.

Sample Evaluation Criteria:

Does the element relate to fire safety and suppression effectiveness? Is it correlated with the Land Use, Safety, and Conservation elements to provide integrated and systematic resource and public protection improvement? Does the element contain policies requiring dedication, construction, and/or maintenance of these improvements on all projects?

vi. Safety

The Safety element defines community protection measures in relation to fires, floods, seismic and geological, and other hazards. It must include provisions for evacuation routes, water supply (for fire suppression), minimum road widths, and clearances around structures. It should include mapping of fire hazard severity zones, and could include analyses of minimum suppression resources required.

Importance to Fire Hazard Planning:

The Safety element can include policies establishing general project design standards to reduce hazard levels and provide a policy basis for fire protection requirements in zoning, subdivision, and strategic fire defense ordinances.

Sample Evaluation Criteria:

Does the element correlate with others to provide for the best and safest suppression actions? Does it recognize evacuation needs? Does it address the traditional suppression problems and include policies and implementation measures to eliminate those problems?

LEGAL ADEQUACY OF THE GENERAL PLAN

If any General Plan element (or elements) is judged legally inadequate, development approvals in the jurisdiction could be suspended until the deficiencies have been corrected. This is a powerful incentive to any jurisdiction to review its Plan for completeness and adequacy.

Formal review is a job for attorneys and the courts, but the following questions can be used as an informal or initial test to determine whether or not a General Plan is weak or strong in terms of legal adequacy.

- Is it complete? Are the seven mandatory elements included?
- Does each of the elements contain supporting data, analysis, policies and implementation measures?
- Is it internally consistent? Do elements, data, policies, and implementation measures fit together? Are there omissions, conflicts?
- Is it long-term in perspective? Does it plan for the population growth, development potential, and resource issues that the community will face in the foreseeable future (usually 20 years)?
- Does it address all locally-relevant issues? What does it say about fire? Does it include a strategy to deal with wildland protection and fire hazards?
- Does it meet statutory criteria? Do the Conservation, Open Space, and Safety elements provide for public safety and resource protection? Does the Land Use element define hazard areas and offer mitigation?
- Are maps and diagrams adequate? Can you tell where specific uses are authorized? Where restrictions apply? Are map and diagram descriptions in agreement with the General Plan text?

General Plans should be reviewed periodically to ensure that they continue to reflect current values and policies of the community, and that they contain accurate information about existing resources and hazards. If necessary, the General Plan should be revised or amended to remain current.

RELATED PLANNING AND REGULATORY TOOLS FOR GENERAL PLANS

California courts have placed General Plans “atop the hierarchy of local government law regulating land use.” It is clearly established that all other planning and development approvals are subordinate to the General Plan and must be consistent with the General Plan. All subdivisions, zoning decisions, specific plans, and public works projects must be consistent with the General Plan. On this basis, there are numerous planning tools that are used to implement the General Plan. Several commonly used tools are briefly described below to illustrate how fire

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safety can be incorporated into site specific, or project specific developments, as well as local ordinances.

1. Specific Plan

A Specific Plan is a tool for the systematic implementation of the General Plan within all or a portion of the county's planning area. It may encompass unlimited land area within the jurisdiction, may deal with only one or all policies in the General Plan, and may even delve into subjects that were not addressed in the General Plan if they are relevant to the community. At a minimum, the Specific Plan must include a text and diagram which specifies all of the following: (1) the proposed distribution, location and extent of all land uses including open space, (2) the proposed distribution, location, and extent of major components of the transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities that are needed to support the proposed land uses, (3) standards and criteria by which development will proceed and standards for the conservation and use of natural resources, and (4) a program of implementation measures including regulations, programs, public works projects, and financing measures to carry out the Specific Plan.

All principles, goals, objectives, policies, standards, and implementation measures of the Specific Plan must be consistent with the General Plan. Adoption of a Specific Plan is a legislative act similar to the adoption of the General Plan or zoning ordinance. It can be adopted by resolution or by ordinance and may be amended as often as necessary. All future public works projects, subdivisions, zoning actions and development activities within the planning area must be consistent with the Specific Plan.

A Specific Plan is particularly useful for planning large projects whose development may be phased over time. It can be used to assemble a set of land use specifications and implementation programs tailored to the unique characteristics of a particular site. Specific Plans can stipulate development timing or set a schedule for infrastructure improvements to solve problems like exposure to wildland fire hazard.

2. Subdivision Ordinance

Land cannot be subdivided for sale, lease or financing in California without local government approval. The Subdivision Map Act (GC [Section 66410](#), et seq.) establishes the basic subdivision procedures, while giving local government the authority to regulate the design and improvement of subdivisions, require dedications of public improvements, require payment of impact fees, and require compliance with the objectives and policies of the General Plan.

These regulatory powers can promote the usual array of land use, circulation, open space and safety element objectives, policies, and implementation measures. Regulation of subdivision design can encourage numerous General Plan objectives including wildland fire safety, through the requirement to address fire prevention measures such as emergency access, adequate infrastructure and facilities, and separation (buffers) between buildable lots and wildland areas, fuels reductions and fire protection measures such as residential sprinkler systems in homes abutting open space or where there is inadequate water for structure fire suppression. Local

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governments can also require dedication of public improvements and land (through fee title or easements) to serve the subdivision.

A tentative subdivision map or parcel map cannot be approved unless the city or county finds that the subdivision, together with design and improvement conditions, is consistent with all aspects of the General Plan or any applicable Specific Plan. Two (2) of the findings that can cause a subdivision to be denied are (1) that the site is physically ill suited for the proposed type or density of the development or (2) that the subdivision's design or improvements are likely to cause substantial environmental damage or cause public health or safety problems (GC [Section 66474](#)). These are important considerations for counties who are reviewing subdivision proposals in areas that are subject to wildland fire hazard.

3. Development Agreement

Development Agreements are contractual agreements voluntarily entered into by a city or county and a developer to vest development rights for a specific development project. They provide the developer with the advantage of “locking-in” zoning and development regulations for a specified time period, giving the developer a degree of assurance that some future local policy or regulation will not nullify a development proposal. In exchange, the Development Agreement allows the local jurisdiction to obtain additional concessions from the developer, such as higher design standards or dedication of additional public facilities, or otherwise obligate the developer to provide improvements in excess of the usual legal limits on exactions.

Through the Development Agreement, the city or county may require the reservation or dedication of land for public purposes and may include conditions and restrictions for subsequent discretionary actions. For example, the city or county may require dedication of emergency access easements, dedication of land for firefighting facilities, on-going maintenance of those facilities, and subsequent review of fire safety plans before later phases of development can begin. (GC [Section 65865.2](#).)

It is important that local governments be aware of their authority to negotiate and enforce the terms of a Development Agreement to prevent and mitigate wildland fire hazards. Since many Agreements include phased development anticipated to occur over many years, they often describe the first phase of development in detail, but leave later phases less well defined. To ensure that fire prevention, protection and mitigation are adequately considered in all phases of a project, it is important for local jurisdictions to anticipate fire protection needs for all phases of the project, condition the Agreement accordingly, and monitor and enforce the terms of the Agreement.

GC [Section 65865.1](#) requires annual review of the Development Agreement at which time the developer must demonstrate good faith compliance with the terms of the Agreement. If the city or county finds that this has not occurred and makes the necessary findings, it may terminate or modify the Agreement. Where measures to prevent and mitigate fire hazard have been incorporated into a Development Agreement and have not been implemented according to the Agreement, the city or county should be aware that it has this power to enforce compliance.

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4. Zoning Ordinances

Cities and counties are required to adopt zoning ordinances as a means of implementing the General Plan (GC Section 65860). The zoning ordinance can include requirements for setbacks, landscaping, and site access, to name a few, that can assist in reducing fire hazard. Further, a county could enact a fire hazard overlay zone that would apply to identify areas of fire hazard that would set out development standards that apply in addition to the requirements in the base zone. Keep in mind that zoning sets out physical standards for development and is not very well suited to enforcing maintenance and other activities. Most city/county ordinances provide for these activities outside the zoning ordinance, an example is yard maintenance ordinances established by some communities to enforce yard maintenance requirements. In addition, GC Section 65910 requires each city and county to have an “open-space zoning ordinance” that is consistent with its open-space element. This requirement is an important implementation tool in linking fire safety provisions in the open-space element such as fuel break/fuel reduction with zoning for site-specific development permits.

WILDFIRE PLANNING TOOLS

[Unit Fire Plans](#)

Drawn from the 2010 California Strategic Fire Plan, the CAL FIRE Units and Contract Counties are plans that include stakeholder contributions and priorities, and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem.

[Fire and Resource Assessment Program \(FRAP\)](#)

FRAP provides a variety of products including a detailed report on California's forests and rangelands. FRAP provides extensive technical and public information for statewide fire threat, fire hazard, watersheds, socio-economic conditions, environmental indicators, and forest-related climate change.

[My Plan](#)

My Plan is a map service designed to be a simple interface to California natural hazard data products produced by the California Natural Resources Agency departments and other government agencies. This website is provided by the Governor's Office of Emergency Services to allow users to easily make hazard maps for mitigation planning, report generation, and other tasks. These maps show SRA fire hazard severity zones in the very high fire hazard severity zones.

Board of Forestry Safety Element Review Evaluation:

The State Board of Forestry and Fire Protection (BOF/Board) is required to review and make recommendations to the fire safety element of general plan updates in accordance with Government Code (GC) §65302.5. The review and recommendations apply to those general plans with State Responsibility Area (SRA) (Public Resources Code 4125) or Very High Fire

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Hazard Severity Zones (VHFHSZ) (GC 51175). The statutory requirements for the Board review and recommendations pursuant to GC 65302.5 (a)(1) and (2), and (b) are as follows:

- “The draft elements...to the fire safety element of a county’s or a city’s general plan...shall be submitted to the Board at least 90 days prior to... the adoption or amendment to the safety element of its general plan [for each county or city with SRA or VHFHSZ].”
- “The Board shall... review the draft or an existing safety element and report its written recommendations to the planning agency within 60 days of its receipt of the draft or existing safety element....”
- “Prior to adoption of the draft element..., the Board of Supervisors... shall consider the recommendations made by the Board... If the Board of Supervisors...determines not to accept all or some of the recommendations...,” the Board of Supervisors... shall communicate in writing to the Board its reasons for not accepting the recommendations.”

In order to streamline the review process, the Board has developed a standard form that evaluates General Plan Safety Elements for its required components. When finalized, it will be available on their website (<http://bofdata.fire.ca.gov/>) for local jurisdictions to preview prior to sending the Safety Element for BOF review.

EXAMPLES OF FIRE HAZARD PLANNING

- The Long-Canyon-Pismo Vegetation Management Program (VMP) prescribed burn is planned for approximately 1,500 acres just outside the City of Pismo Beach’s northern border. <http://www.pismo-beach.org/index.aspx?NID=575>
- In 2000, the Federal Bureau of Land Management (BLM) and CAL FIRE began working on a community fuel break to protect the communities of Poppet Flat and Rancho Encino and the Silent Valley RV Club. The strategic placement of this fuels treatment project slowed the progress of the October 26, 2005, Esperanza Fire, helping to protect these communities.
http://cdfdata.fire.ca.gov/fire_er/fpp_planning_success_detail?story_id=26
- CAL FIRE is creating the Bridge Street Fuel Break Project, a shaded fuel break to protect the community of Cambria from fire spreading from surrounding forests. The project is thinning vegetation in a 100-foot-wide zone along the community’s northeastern perimeter. The shaded fuel break is expected to materially slow the spread of fire, helping firefighters and residents protect the community.
http://www.fire.ca.gov/resource_mgt/downloads/EP_PublicNotice/BridgeStreet_FuelBreakProject/BridgeStreet_FuelBreak_CEQADocument.pdf

Fire Hazard Planning

- San Diego County. 2010. San Diego County Multi-Jurisdictional Hazard Mitigation Plan San Diego County, California.
<http://www.sandiegocounty.gov/content/dam/sdc/oes/docs/2010-HazMit-Final-August-2010.pdf>
- Following the Montecito Tea Fire of 2008 and Jesusita Fire of 2009, Santa Barbara County updated and adopted its local hazard mitigation plan as part of the county general plan safety element.
<http://longrange.sbcountyplanning.org/programs/genplanreformat/PDFdocs/Seismic.pdf>
- Humboldt County. 2007. General Plan – Safety Element.
<http://co.humboldt.ca.us/gpu/docs/prelimhearingdraft/group3/safetyelement3-21-07posted.pdf>
- The community of Rancho Santa Fe in San Diego County has vigorously implemented Fire Safe design by vigorously encouraging fire-retardant construction and fire-resistant landscaping practices that enable effective fire suppression and greater homeowner safety.
<http://www.rsfire.org/ordinances/ordinances.html#WUI>

GLOSSARY

California Environmental Quality Act (CEQA) – The California Environmental Quality Act (CEQA) generally requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects, and to reduce those environmental impacts to the extent feasible. (http://www.opr.ca.gov/m_ceqa.php)

Climate Change – Any long-term significant change in the “average weather” that a given region experiences. Average weather may include average temperature, precipitation and wind patterns. (<http://frap.cdf.ca.gov/assessment2010/definitions.html>)

Communities at Risk – Defined by the Healthy Forest Restoration Act of 2003 as - “Wildland-Urban Interface Communities within the vicinity of federal lands that are at high risk from wildfire.” CAL FIRE expanded on this definition for California including all communities (regardless of distance from federal lands) for which a significant threat to human life or property exists as a result of a wildland fire event. California uses the following three factors to determine at risk communities: 1) high fuel hazard, 2) probability of a fire, and 3) proximity of intermingled wildland fuels and urban environments that are near fire threats.

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Community Wildfire Protection Plan (CWPP) – A community based collaborative plan developed by local stakeholders that identifies and prioritizes areas for hazardous fuel reduction treatments to protect communities and infrastructure from wildfire. Stakeholders, applicable local government, local fire departments, state forestry, and federal land management agencies agree to the plans.

Cooperative Fire Protection Agreements – Agreements established between federal, state, tribal and local government entities to provide long-term fire and emergency service protection.

Defensible Space – The area within the perimeter of a parcel, development, neighborhood or community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from an approaching wildfire or defense against encroaching wildfires or escaping structure fires.

(http://cdfdata.fire.ca.gov/fire_er/fpp_engineering_view?guide_id=8)

Fire Hazard – A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.

(<http://www.nwcg.gov/pms/pubs/glossary/f.htm>)

Fire Prevention – Activities such as public education, community outreach, building code enforcement, engineering (construction standards), and reduction of fuel hazards that is intended to reduce the incidence of unwanted human-caused wildfires and the risks they pose to life, property or resources. (<http://www.nwcg.gov/pms/pubs/glossary/f.htm>)

Fire Resistant – The condition of an asset that resists ignition and damage from wildfire. Structures are built using ignition resistant materials such as stucco, tile roofs, and boxed eaves with the likelihood that they will withstand most wildland fires or at least reduce damage caused by them.

Fire Risk – The chance of fire starting, as determined by the presence and activity of causative agents; a causative agent or a number related to the potential number of firebrands (embers) to which a given area will be exposed during the day.

(<http://www.nwcg.gov/pms/pubs/glossary/f.htm>)

Fire Safe Building Standards – Various laws and codes that apply accepted fire safety practices (as determined by scientific research panels and associations, with replicated results) into construction of assets. Examples of laws and codes include; California Fire Code Chapter 49, California Building Code Chapter 7A, Public Resource Code, §4290 and Fire Safe Regulations, §1270.

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Fire Safe Councils (FSC) – A group of concerned citizens organized to educate groups on fire safe programs, projects and planning. The Councils work closely with the local fire agencies to develop and implement priorities. (<http://www.firesafecouncil.org>)

Fireshed – A contiguous area displaying similar fire history and problem fire characteristics (i.e., intensity, resistance to control) and requiring similar suppression response strategies.

Fire Suppression Resources – State, federal, tribal, local and private, equipment and resources, gathered to extinguish and mitigate wildland fires.

FIREWISE – A national program designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. The Firewise program is community driven.

Fire Hazard Severity Zones – Areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, then define the application of various mitigation strategies to reduce risk associated with wildland fires.

Forest and Rangeland Health – An expression of the prevalent ecological conditions on a landscape as compared to benchmark conditions yielding maximum benefit to multiple resource values - ecological, economic, and social/political.

Fuels Treatment – The manipulation or removal of fuels to reduce the likelihood of igniting and to reduce fire intensity (e.g., lopping, chipping, crushing, piling and burning).

Safety Element – One of the seven mandatory elements of a local general plan, the safety element must identify hazards and hazard abatement provisions to guide local decisions related to zoning, subdivisions, and entitlement permits. The element should contain general hazard and risk reduction strategies and policies supporting hazard mitigation measures. (http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf)

Stafford Act - The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) is a United States federal law designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens. Congress' intention was to encourage states and localities to develop comprehensive disaster preparedness plans, prepare for better intergovernmental coordination in the face of a disaster, encourage the use of insurance coverage, and provide federal assistance programs for losses due to a disaster.

State Responsibility Areas - Areas of the state in which the financial responsibility for preventing and suppressing fires has been determined by the State Board of Forestry (pursuant to Public Resources Code 4125) to be primarily the responsibility of the State. (http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf)

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Values and Assets at Risk – Accepted principals or standards, and any constructed or landscape attribute that has value and contributes to community or individual well- being and quality of life. Examples include property, structures, physical improvements, natural and cultural resources, community infrastructure, commercial standing timber, ecosystem health and production of water.

Very High Fire Hazard Severity Zones - Areas designated by the Director of Forestry and Fire Protection based on consistent statewide criteria and based on the severity of fire hazard that is expected to prevail in those areas.

Wildland –Those unincorporated areas covered wholly or in part by trees, brush, grass, or other flammable vegetation.

Wildfire – An unplanned ignition; unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Wildland Fire – Fire that occurs in the wildland as the result of an unplanned ignition.

Wildland-Urban Interface (WUI) –The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.