

2010 STRATEGIC FIRE PLAN FOR CALIFORNIA

A vision for a natural environment that is more resilient and man-made assets which are more resistant to the occurrence and effects of wildland fire through local, state, federal and private partnerships.



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PROTECTION***

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EXECUTIVE SUMMARY

The 2010 Strategic Fire Plan is a strikingly different fire plan than those developed in the past. This Plan recognizes that fire will occur in California and works to answer the question of “how do we utilize and live with that risk of wildfire?”

We believe the vision, goals and objectives lead us to that answer. These, in combination and through implementation, will create a state that is more resistant and resilient to the damaging effects of catastrophic wildfire while recognizing fire’s beneficial aspects.

This is the first statewide fire plan developed in concert between the State Board of Forestry and Fire Protection (Board) and the California Department of Forestry and Fire Protection (CAL FIRE). The Board consulted a group of outside experts to complete a needs assessment and subsequently formed the Fire Plan Steering Committee. This Committee worked for over a year preparing this document.

The 2010 Strategic Fire Plan builds upon the concept first developed in the 1996 California Fire Plan, which led to collaborative efforts in fire prevention. You will see an incredible amount of planning and collaboration in the goals and objectives. We believe that these efforts will lead to communities doing the best work for fuels reduction and fire safety. For a summary of the review of the 1996 California Fire Plan, see Appendix B.

This is the first time a fire plan has ever been released for public review and comment during development. Significant changes were included as a result of the excellent input from many stakeholders. The process does not stop with release of this document. The 2010 Strategic Fire Plan is a living document. The CAL FIRE priorities identified in Appendix A, for example, will evolve over time as statewide initiatives and availability of funds and staffing levels change.

The 2010 Strategic Fire Plan is written so that each goal builds upon the previous one. Over time, each supporting objective will have measurement criteria to evaluate accomplishments and related effectiveness. Measurement criteria for these can be found in Appendix A.

As you read the 2010 Strategic Fire Plan, please start with the chapter “Setting the Stage,” which lays out the current scenario in California and our diverse landscapes. This forms the basis for the vision, goals and policies that are the foundation for this Plan.

Vision

A natural environment that is more resilient and man-made assets which are more resistant to the occurrence and effects of wildland fire through local, state, federal and private partnerships.

Goals as Summarized

The central goals that 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: including general plans, new development, and existing developments
- 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

Policies Supporting the Objectives

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

- Land use planning that ensures increased fire safety for new development
- Creation of defensible space for survivability of established homes and neighborhoods
- Improving fire resistance of homes and other constructed assets
- Fuel hazard reduction that creates resilient landscapes and protects the wildland and natural resource values
- Adequate and appropriate levels of wildland fire suppression and related services
- Commitment by individuals and communities to wildfire prevention and protection through local fire planning



Collaborators viewing Fuelbreak in Fresno County.

STATE BOARD OF FORESTRY AND FIRE PROTECTION

The Board is a Governor-appointed body, whose members are appointed based on their professional and educational qualifications and their general knowledge or interest in watershed management, forest management, fish and wildlife, range improvement, forest economics or land use policy. Of the Board's nine members, five are representatives from the general public, three are from the forest products industry and one member is from the range-livestock industry.



State Board of Forestry and Fire Protection.

The mission of the Board is to lead California in developing policies and programs that serve the public interest in environmentally, economically, socially sustainable forest and rangeland management, and a fire protection system that protects and serves the people of the state. Its statutory responsibilities are to:

1. **Establish** and **administer** forest and rangeland policy for the State of California, and
2. **Protect** and **represent** the state's interest in all forestry and rangeland matters, and
3. **Provide direction** and **guidance** to CAL FIRE on fire protection and resource management, and
4. **Accomplish** a comprehensive regulatory program for forestry and fire protection, and
5. **Conduct** its duties to **inform and respond** to the people of the State of California.

In concert with the mission of the Board, the mission of CAL FIRE is to serve and safeguard the people and protect the property and resources of California.

The Board is responsible for developing the general forest policy of the state, for determining the guiding policies of the Department, and for representing the state's interest in the management of federal land in California. The Department is the entity that implements the Board's policies and regulations. The Board is a part of the Department and, together, they work to carry out the mandates of the Governor and the Legislature to protect and enhance the state's unique forest, wildland and watershed resources.

To carry out these responsibilities, the Board engages in a strategic planning process which defines and communicates the Board's guiding values and priorities, directing resources to the most important issues. It also defines both the Board's and the Department's vision, and how performance is to be measured and reported.

One element of this planning process is the development of a strategic fire plan, which forms the basis for assessing California's complex and dynamic natural and man-made environment, and identifies a variety of actions to minimize the negative effects of wildland fire.

Public Resources Code §4114 and §4130 authorize the Board to establish a fire plan which, among other things, establishes the levels of statewide fire protection services for State Responsibility Area (SRA) lands. These levels of service recognize other fire protection resources at the federal and local level that collectively provide a regional and statewide emergency response capability. In addition, California's integrated mutual aid fire protection system provides fire protection services through automatic and mutual aid agreements for fire incidents across all ownerships.

SETTING THE STAGE

Climate Change and Emerging Science

Scientists have generally agreed that the Earth's climate is changing. Although the far-reaching implications of these changes are still unknown, they may have impacted weather patterns, resulting in longer fire seasons and a greater probability of intense fires in western forests. In addition, the cumulative effects of multiple years of drought along with overstocked vegetation conditions have increased fire hazards in many forests of California that prehistorically experienced frequent, low-severity fires. The reduced moisture content of drought-stressed vegetation increases flammability over a longer period of the year, resulting in an active burning period that starts earlier and lasts longer than historical patterns. Drought-stressed vegetation is more susceptible to insects and diseases, resulting in high mortality in trees and shrubs, leaving California wildlands with high levels of tinder-dry, dead woody material ready to ignite and burn with great intensity.

There is ongoing research regarding the impact of uncharacteristically severe fires in California's forests as a result of climate change and past fire suppression efforts. Concurrently, some research indicates that many chaparral shrubland ecosystems may be impacted by a too-frequent fire interval, especially in Southern California. As a result, these areas may be at risk of conversion from native to invasive species, which can pose an increased fire threat. There is also an emerging view among scientists that fire hazard mitigation through vegetation treatments or prescribed fire may play a beneficial role in long-term forest carbon sequestration, emissions reductions and climate change mitigation. Similarly, more is being learned about the positive and negative impacts of wildfire on air and water quality, wildlife habitat, forest and range health and nutrient cycling. This highlights the continued need for integration between resource management and fire suppression activities.

As science moves forward on these issues, the management of California's fire-prone landscapes will progress accordingly. Fire ignores jurisdictional and land ownership boundaries. Therefore, the best and most current science should guide coordinated planning across the administratively complex landscapes, eventually moving toward coexistence with fire through fire-resilient ecosystems and fire-resistant communities.

Population

At the same time as biophysical conditions have increased the threat of wildland fires in many locations, the exposure of people and homes to these threats has increased due to population growth and development in wildland and wildland urban interface (WUI) areas. Where once only natural resources were threatened by wildland fire in these areas, threats now extend to life and property. Additional importance is being placed on the overall fire protection system of state and local agencies to protect lives and

property. These issues complicate fire suppression and, in turn, increase the need for fire prevention and planning efforts.

Fire Protection

State, local and federal agencies each have unique responsibilities for wildland fire protection. The delivery of wildland fire protection services in California relies on an integrated, multi-agency effort to maximize the use of firefighting resources. This integration is essential to avoid duplication of firefighting resources and to allow the closest available resource to respond to a fire, regardless of jurisdiction. This integration is authorized by statute and guided by interagency agreements under which the state provides services to local and/or federal agencies, and vice versa.

Recognizing that each agency has its primary mission and responsibility, disasters in California, including wildland fires, do not respect jurisdictional boundaries. Along with differing missions, ownership responsibilities and land management objectives, applying suppression policies can be complicated and make cooperative efforts challenging. Fire suppression in an urbanized conifer forest may be approached differently than on a wildland fire in a conifer forest on National Forest managed lands. A one-size-fits-all approach to wildland fire suppression does not fit in California; hence, the need for differing suppression, prevention and mitigation strategies must be recognized and developed to meet the goals and objectives of this 2010 Strategic Fire Plan (Plan).

Despite California's highly effective wildland fire protection system, some fires will continue to escape control efforts.

Under extreme weather conditions, such as high wind or hot dry weather, or when resource availability is limited due to significant fire activity, a small percentage of wildland fires will become large and damaging. As a result, efforts must be taken to create homes and communities that can withstand such fires; develop policies and procedures to promote public and firefighter safety; and educate the public that wildland fire is a natural part of California's landscape.



Chaparral wildfire burning near residences.

Individual landowners, homeowners and communities share wildland fire protection responsibilities with federal, state and local fire protection agencies. Homeowners have a primary responsibility to create and maintain defensible space and to utilize ignition resistant building materials and methods. Homeowners and landowners in a community

must work together to plan and implement fire protection measures, such as education programs and fuel treatments.

Preventing Wildfire Threats to Ecosystem Health

While historically wildfire has been a key component in ecosystem dynamics, a number of factors have disrupted the natural fire regime occurring in many of California's ecosystems. There are many cases where the type of fire and the pattern of its occurrence, when compared to historical conditions, are creating adverse impacts on ecosystem composition, structure and function. Factors such as fire suppression; land use, including timber management, grazing and development; exotic invasive species and climate change all place stress on the manner in which fire interacts with ecosystem health, function (such as biodiversity) and sustainability.

While these issues are reasonably well defined from both a broad conceptual framework and a detailed site research perspective, an analytical approach using these concepts to define areas of priority across the state is needed to frame a strategic response to these impending risks.

Current and Historical Trends in Wildland Fire

California is a complex, wildfire-prone and fire-adapted landscape. Natural wildfire supports, and is critical to, the maintenance of ecosystem health, structure and function in the state. As such, the ability to use wildfire, or to mimic its impact by other management techniques, is a critical policy issue.

At the same time, wildfire can be a significant threat to life, public health, infrastructure and other property and natural resources. This threat will continue to be a significant issue due to factors such as continued population growth, changing land use and drought or other shifts in climatic conditions.

Additionally, because SRA consists predominantly of lands under private ownership, there are a variety of expectations relative to mitigating the threat from wildfire. As a result, addressing wildfire as a threat is also a major policy issue.

The complexities associated with ecosystem dynamics in California make statewide or even regional generalizations

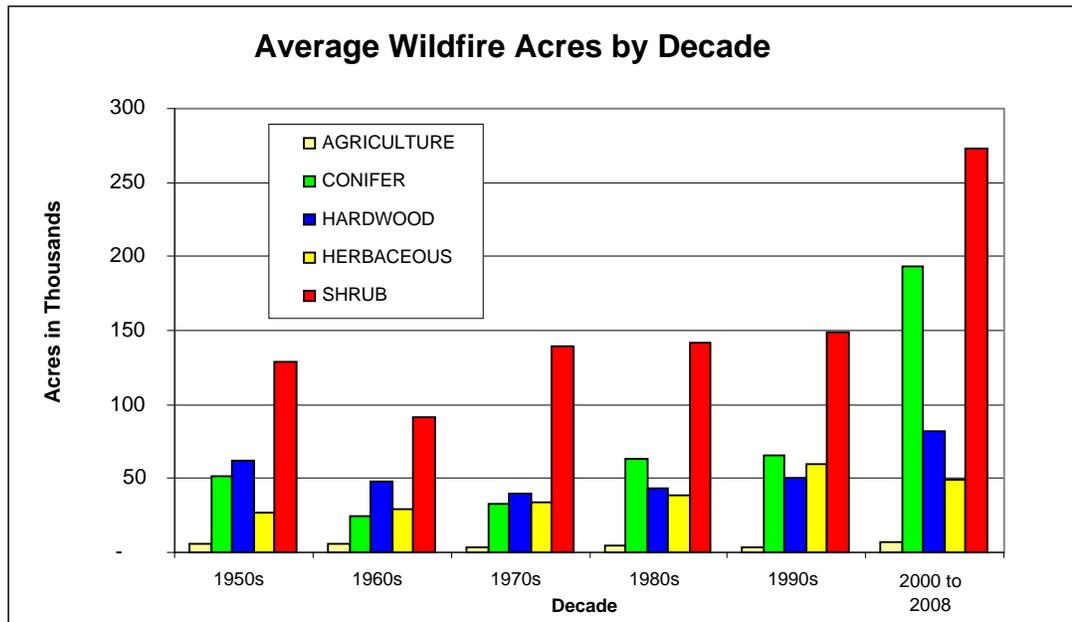


Extreme fire conditions encroaching on urban area.

difficult to capture. Specifically, within the scope of classifying fire regimes and effects, local conditions may vary considerably.

Data suggests a trend toward increasing acres burned statewide, with particular increases in conifer vegetation types. This trend is supported in part by the fact that the three largest fire years since 1950 have all occurred within the last 10 years.

Looking at the fire acreage organized by decade and by life form confirms these basic trends. Fire is most common in shrublands, across all decades, with a large spike in the last decade (Figure 1). Conifer, hardwood and herbaceous (grassland) all burned at a relatively similar amount from 1970 through 2000. In the 2000s, conifer fires significantly increased in annual acres burned, averaging 193,000 acres per year, compared to an average of 48,000 acres over the previous four decades.



Annual acres burned by decade and by type, 1950 – 2008.

A detailed discussion of wildfire impacts and concerns is found in the 2010 Forest and Range Assessment, located at <http://frap.cdf.ca.gov/assessment2010/publicreview.html>.

MOVING FORWARD

Adaptive Management

For any strategic plan to be successful, the vision must allow for changing conditions. Adaptive management is an information-based process which promotes flexible decision making. As results of management decisions or other actions are known, adaptive management allows course corrections to achieve the desired outcome. Careful monitoring of these outcomes both advances scientific understanding and allows for the adjustment of policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social and economic goals, increases scientific knowledge, and fosters understanding among stakeholders.

This Plan is designed to be flexible and allow for changing internal and external conditions. Priority objectives will be reevaluated and their relational importance may change from one evaluation period to the next.

Goals and Objectives

The foundation of this dynamic Plan is built upon seven goals and their associated objectives. Collectively, these goals and objectives provide a framework to address the protection of lives, property and natural resources from wildland fire and improve environmental resilience to wildland fire.

Priorities

Concurrent with the development of the Plan, the Board and the Department have identified the top priorities for each goal. During the first two years of this Plan, each CAL FIRE Unit will revise its individual Unit fire plan to identify its priorities for the implementation of the goals and objectives identified herein. Throughout the remaining life of this Plan, the priorities will be periodically reviewed and updated as necessary.

Measurement Criteria

A compilation of benchmarks that measure each goal will be developed by the Department in concert with the Board and used to provide feedback to Board committees and to the full Board on an annual basis, or more frequently as necessary. Measurement criteria can be found for the highest priority objectives for each goal in Appendix A, "Priority Objectives for 2010-2012."

Timelines

CAL FIRE will report to the Board annually on its accomplishments of the goals and objectives of this Plan. The next comprehensive update to the Plan will take place in 2018.

The Plan and its associated goals and objectives frame the program of work for the Department over the life of the Plan. Program priorities, funding levels and measures of success are dynamic and subject to change.

The Board and CAL FIRE will remain diligent in attempting to secure the appropriate level of resources through direct funding requests, grant opportunities or agreements with collaborative partners. The goals and objectives will be prioritized to make the most effective use of existing staff and funding. CAL FIRE, to the extent feasible, will maximize the ability to meet the stated goals and objectives with the level of resources available.

VISION

A natural environment that is more resilient and man-made assets which are more resistant to the occurrence and effects of wildland fire through local, state, federal and private partnerships.

GOALS AND OBJECTIVES**Goals**

Through government and community collaboration, the following goals will enhance the protection of lives, property and natural resources from wildland fire, as well as improve environmental resilience to wildland fire. Community protection includes promoting the safety of the public and emergency responders, as well as protection of property and other improvements. Each goal listed here is meant to build upon the previous one (e.g., Goal 3 builds upon the accomplishments in Goals 1 and 2). Although full attainment of a goal is ultimately dependent upon the success of previous goals, any of the goals can be worked on at any given time based on available funding and other opportunities.

1. Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the sharing of all analyses and data collection across all ownerships for consistency in type and kind.
2. Articulate and promote the concept of land use planning as it relates to fire risk and individual landowner objectives and responsibilities.
3. Support and participate in the collaborative development and implementation of wildland fire protection plans and other local, county and regional plans that address fire protection and landowner objectives.
4. Increase awareness, knowledge and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires, such as defensible space and other fuels reduction activities, fire prevention and fire safe building standards.
5. Develop a method to integrate fire and fuels management practices with landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility areas.
6. Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
7. Address post-fire responsibilities for natural resource recovery, including watershed protection, reforestation and ecosystem restoration.

Objectives

For each of the identified goals, this Plan lays out a number of objectives to be accomplished. The identified objectives are not meant to be all-inclusive. There may be additional objectives that the Board, CAL FIRE or other cooperative partners identify and could utilize in reaching the primary goals.

- Goal 1: Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the sharing of all analyses and data collection across all ownerships for consistency in type and kind.

Objectives:

- a) Identify and provide appropriate automated tools to facilitate the collection, analysis and consistent presentation of datasets.
- b) Update and maintain consistent, detailed vegetation and fuels maps across all ownerships in an efficient and cost-effective manner.
- c) Provide regular updates to the Department's Very High Fire Hazard Severity Zone maps.
- d) Develop and validate weather and climatology information for use in predicting fire behavior.
- e) Update fire history information and re-evaluate existing fire prediction models to obtain composite fire threat across all ownerships.
- f) Update existing data for values and assets at risk utilizing geographic information systems (GIS) data layers and other mapping solutions, including fire behavior-specific effects.



California Fire Hazard Severity Zone Map.
Source: CAL FIRE, Fire and Range Assessment Program.

- g) Use science-based approaches to evaluate, understand and protect against the negative impacts of new and emerging threats such as climate change, insect and disease outbreaks or land use changes on forest health and public safety, including the build up of hazardous fuel conditions and resulting fire behavior.
- h) Engage and participate with local stakeholder groups (i.e., fire safe councils and others) to validate and prioritize the assets at risk.

Goal 2: Articulate and promote the concept of land use planning as it relates to fire risk and individual landowner objectives and responsibilities.

Objectives:

- a) Assist the appropriate governmental bodies in the development of a comprehensive set of wildland and wildland urban interface (WUI) protection policies for inclusion in each county general plan or other appropriate local land use planning documents.
- b) Identify the minimum key elements necessary to achieve a fire safe community, and incorporate these elements into land use planning, CWPPs and regional, county and Unit fire plans.
- c) Engage in the development, review and adoption of local land use plans to ensure compliance with fire safe regulations and current building standards.
- d) Promote the consolidation and broad availability of project-level land use planning, project implementation and wildland fire occurrence data developed throughout each county for use by all cooperating agencies.

Goal 3: Support and participate in the collaborative development and implementation of wildland fire protection plans and other local, county and regional plans that address fire protection and landowner objectives.

Objectives:

- a) Establish a working group, consisting of Board members and Department staff, to develop minimum standard elements for inclusion in Unit fire plans.
- b) Emphasize coordination of Unit fire plans with community wildfire protection plans to encourage and support one consistent approach. Develop county or regional fire plans by bringing together community-based groups, such as fire safe councils and affected fire and land management agencies.
- c) Create and support venues in which individual community members can be actively involved in local fire safe councils, community emergency response teams, FIREWISE and other community-based efforts to develop readiness plans and educate landowners to mitigate the risks and effects of wildland fire.
- d) Collaborate with federal and local governments, other state agencies, fire service and other organizations, to maintain and improve emergency response plans.
- e) Ensure planning efforts are consistent with the National Fire Plan, the Healthy Forest Restoration Act, the Statewide Hazard Mitigation Plan, as well as local hazard mitigation plans and other relevant statewide strategic planning documents.
- f) Maximize available resources to strengthen planning efforts through the development of public/private partnerships.
- g) Develop fire risk mitigation treatment decision support tools to assist in project design, implementation and validation.



Interagency coordination and planning.

Goal 4: Increase awareness, knowledge and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires, such as defensible space and other fuels reduction activities, fire prevention and fire safe building standards.

Objectives:

- a) Educate landowners, residents and business owners about the risks and their incumbent responsibilities of living in the wildlands, including applicable regulations, prevention measures and preplanning activities.
- b) Educate landowners, residents, fire safe councils and business owners to understand that fire prevention is more than defensible space, including why structures ignite, the role embers play in such ignitions and the importance of fire safe building designs and retrofits.
- c) Facilitate activities with individuals and organizations, as appropriate, to assist individual property owners in complying with fire safe regulations.
- d) Improve regulatory effectiveness, compliance monitoring and reporting pursuant to Public Resources Code (PRC) §4290 and §4291.
- e) Increase the number and effectiveness of defensible space inspections and promote an increasing level of compliance with defensible space laws and regulations through the use of CAL FIRE staffing as available, public and private organizations, and alternative inspection methods.
- f) Promote the consolidation of Fire Safe Regulations contained in California Code of Regulations (CCR) Title 14, with CCR Titles 19 and 24, to achieve uniform application of building standards.



Home surrounded by wildland that survived a fire due to good defensible space.

- g) Continue to evaluate new, ignition-resistant construction technologies and materials, and promote the strengthening of California building standards.
- h) Seek out incentives to promote the retrofit of existing structures to meet ignition-resistant building codes.
- i) Actively enforce and seek updates as necessary to fire prevention codes and statutes, including those regulating utilities, railroads, small engines and other categories of equipment use that contribute to fire ignition.
- j) Actively investigate all wildland fires. For those resulting from negligent acts, pursue appropriate civil and/or criminal actions, including cost recovery.
- k) Analyze trends in fire cause and focus prevention and education efforts to modify behavior and effect change.

Goal 5: Develop a method to integrate fire and fuels management practices with landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility areas.

Objectives:

- a) Increase support of landowner-initiated hazardous fuels reduction using all available authorities, including the Vegetation Management Program.
- b) Work to remove regulatory barriers that limit hazardous fuels reduction activities.
- c) Promote and enhance programmatic documents that assist and streamline regulatory processes.
- d) Assist collaborative partners by educating, improving grant capacity and other means that provide tools to achieve fuels reduction work on the landscape.
- e) Promote forest and rangeland health and hazardous fuels reduction. Improve utilization of all forest products, including small logs, urban green waste and biomass.
- f) Increase public education and awareness in support of ecologically sensitive and economically efficient vegetation management activities, including prescribed fire, forest thinning and other fuels treatment projects.
- g) Promote the development of multi-agency/landowner fuels reduction policies and activities at the watershed and fire shed level.
- h) Support the availability and utilization of CAL FIRE hand crews and other CAL FIRE resources, as well as public and private sector resources, for fuels management activities, including ongoing maintenance.
- i) Support efforts to restore the ecological role of fire in areas and upon jurisdictions where doing so is consistent with local land management objectives and does not present an unacceptable risk to human health and safety or security of adjacent ownerships.



CAL FIRE inmate crew working on a fuel reduction chipping project.

Goal 6: Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.

Objectives:

- a) Maintain an aggressive wildland fire initial attack policy that places a priority on protecting lives, property and natural resources. At the same time consider suppression strategies that incorporate values and assets at risk, as well as cost factors wherever possible.
- b) Develop criteria for determining suppression resource allocation based on elements such as identified values and assets at risk, ignition density, vegetation type and condition, as well as local weather and topography.
- c) Initiate studies and analyses to identify appropriate staffing levels and equipment needs commensurate with the current and projected emergency response environment.
- d) Seek to increase the number of CAL FIRE hand crews for use in fighting wildland fires and other emergency response activities.
- e) Initiate and maintain cooperative fire protection agreements with local, state and federal partners that value the importance of an integrated, cooperative, regional fire protection system and deliver efficient and cost effective emergency response capabilities beneficial to all stakeholders.
- f) Improve policies and strategies to minimize injuries or loss of life to the public and emergency responders during emergency response activities throughout the state.
- g) Ensure all firefighters are provided the appropriate training, equipment and facilities necessary to successfully and safely meet the increasingly complicated and challenging fire and emergency response environment.



Backfire suppression tactics on a wildland fire.

- h) Continue to evaluate and implement new technologies to improve firefighter safety, situational awareness and emergency response effectiveness.
- i) Provide for succession planning and employee development at all levels within CAL FIRE to maintain emergency response leadership capabilities, administrative management skills and pre-fire planning expertise.
- j) Effectively engage and train employees across all disciplines to address both planning and emergency response utilizing a “total force” approach.

Goal 7: Address post-fire responsibilities for natural resource recovery, including watershed protection, reforestation and ecosystem restoration.

Objectives:

- a) Encourage rapid post-fire assessment, as appropriate, and project implementation to minimize flooding, protect water quality, limit sediment flows and reduce other risks on all land ownerships impacted by wildland fire.
- b) Work with landowners, land management agencies and other stakeholders across the state to design burned area rehabilitation actions that encourage salvage and reforestation activities, create resilient and sustainable landscapes, and restore functioning ecosystems.
- c) Effectively utilize available resources, including CAL FIRE hand crews, to accomplish restoration and protection activities.
- d) Assess the effects of pre- and post-fire treatments to refine best management practices.
- e) Assist landowners and local government in the evaluation of the need to retain and utilize features (e.g. roads, firelines, water sources) developed during a fire suppression effort, taking into consideration those identified in previous planning efforts.
- f) Aid landowners in recently burned areas in developing and implementing vegetation treatment plans to manage the re-growth of fuels to maintain reduced hazardous conditions.
- g) Promote the maintenance of a native species seed bank and seedling production capacity to provide the availability of appropriate tree species for reforestation within all of the state's diverse seed zones.
- h) Use after-action reports to evaluate and implement new technologies and practices to improve future firefighting efforts.



Cooperative fuelbreak, resulting from community planning efforts.

APPENDIX A: Priority Objectives for 2010-2012

CAL FIRE Units were asked to identify two or more priority objectives under each goal. The Units' priorities are identified in bold and a measurement criteria are provided for each of the identified objectives. CAL FIRE staff will develop a new template for Unit fire plans that reflects the vision, goals and objectives of the 2010 Strategic Fire Plan. Unit fire plans, in the new format, will be presented to the Board in June 2011. Throughout the next year, the Units will implement the identified priorities and report on the measurement criteria by June 2012.

Goal 1: Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the sharing of all analyses and data collection across all ownerships for consistency in type and kind.

Objectives:

- a) **Identify and provide appropriate automated tools to facilitate the collection, analysis and consistent presentation of datasets.**

Measurement Criteria: *CAL FIRE shall establish policy that specifies spatial databases covering all forest and rangeland to not be older than 10 years. Include minimum requirements for spatial databases. Follow the coordinated work schedule with the USDA Forest Service to maintain cost effective collection and processing of data.*

- b) Update and maintain consistent, detailed vegetation and fuels maps across all ownerships in an efficient and cost-effective manner.
- c) Provide regular updates to the Department's Very High Fire Hazard Severity Zone maps.
- d) Develop and validate weather and climatology information for use in predicting fire behavior.
- e) Update fire history information and re-evaluate existing fire prediction models to obtain composite fire threat across all ownerships.
- f) Update existing data for values and assets at risk utilizing Geographic Information Systems (GIS) data layers and other mapping solutions, including fire behavior-specific effects.

- g) Use science-based approaches to evaluate, understand and protect against the negative impacts of new and emerging threats such as climate change, insect and disease outbreaks or land use changes on forest health and public safety, including the build up of hazardous fuel conditions and resulting fire behavior.
- h) **Engage and participate with local stakeholder groups (i.e., fire safe councils and others) to validate and prioritize the assets at risk.**

Measurement Criteria: *CAL FIRE shall designate personnel as advisors/liaisons to the California Fire Safe Council (CFSC) and to each county or regional FSC. The advisors will be responsible for reporting activities to the Unit and Region. The advisor to the CFSC will report to the Board. Annual reporting of time-spent working will be displayed in hours at the Unit, Region and Headquarters level. Reporting will include activities with local FSCs, communities, watershed groups or others defining hazards and risk of wildfire and documenting these in a CWPP or Unit fire plan. Emphasize the products developed in Goal 3, Objective b. Advisors will emphasize using standard guidelines and templates for consistency throughout the state.*

Goal 2: Articulate and promote the concept of land use planning as it relates to fire risk and individual landowner objectives and responsibilities.

Objectives:

- a) **Assist the appropriate governmental bodies in the development of a comprehensive set of wildland and wildland urban interface (WUI) protection policies for inclusion in each county general plan or other appropriate local land use planning documents.**

Measurement Criteria: CAL FIRE to appoint a committee including Unit, Region, Headquarters and Contract County representatives. Develop a work plan that identifies key elements of improving WUI strategies, including planning. Reporting should be based on elements identified and priorities for addressing them.

Under the Board's Resource Protection Committee, review existing Board policies as they relate to wildland fire and the relevance (ease of use, applicability) to incorporation in local general plans. Identify areas of possible improvement and update policies.

Track and report hours at the Unit, Region and Headquarters level spent in reviewing plans and projects; number of local Board/Council, Planning Commission meetings and/or meetings with other cooperators.

- b) **Identify the minimum key elements necessary to achieve a fire safe community, and incorporate these elements into land use planning, CWPPs and regional, county and Unit fire plans.**

Measurement Criteria: CAL FIRE to create a working committee with CAL Chiefs, USDA Forest Service and other key organizations to develop, monitor and refine elements of fire safe community, including evacuation plans. The Committee shall review existing templates for FIREWISE Assessments, CWPPs, fire plans and land use plans; identify the common elements and approaches for better integration. Utilize fire protection, planning and engineering expertise to identify the key elements (from existing templates) necessary for fire safe communities. Once agreed upon, these key elements will then be used as a checklist to guide consistency in fire safe planning efforts across jurisdictions. At a minimum, annually report to the Board on results.

- c) Engage in the development, review and adoption of local land use plans to ensure compliance with fire safe regulations and current building standards.

- d) Promote the consolidation and broad availability of project-level land use planning, project implementation and wildland fire occurrence data developed throughout each county for use by all cooperating agencies.

Goal 3: Support and participate in the collaborative development and implementation of wildland fire protection plans and other local, county and regional plans that address fire protection and landowner objectives.

Objectives:

- a) **Establish a working group, consisting of Board members and Departmental staff, to develop minimum standard elements for inclusion in Unit fire plans.**
- b) **Emphasize coordination of Unit fire plans with community wildfire protection plans to encourage and support one consistent approach. Develop county or regional fire plans by bringing together community-based groups, such as fire safe councils and affected fire and land management agencies.**

Measurement Criteria: *These measurement criteria meets objectives a and b. CAL FIRE to revise the template for the Unit fire plans to incorporate the goals and objectives of the 2010 Strategic Fire Plan. During the revision, the template for a CWPP will be jointly reviewed in order to reduce duplication of fire planning efforts. The key elements identified through the process identified in Goal 2, Objective b will also be incorporated into the Unit fire plan/CWPP.*

- c) **Create and support venues in which individual community members can be actively involved in local fire safe councils, community emergency response teams, FIREWISE and other community-based efforts to develop readiness plans and educate landowners to mitigate the risks and effects of wildland fire.**

Measurement Criteria: *The California Fire Alliance to work with the California and local FSCs to develop venues (e.g., workshops) that assist landowners with readiness planning and education. CAL FIRE, California Fire Alliance Liaison to report to the Board annually on Alliance activities.*

- d) Collaborate with federal and local governments, other state agencies, fire service and other organizations, to maintain and improve emergency response plans.

- e) Ensure planning efforts are consistent with the National Fire Plan, the Healthy Forest Restoration Act the Statewide Hazard Mitigation Plan, as well as local hazard mitigation plans and other relevant statewide strategic planning documents.
- f) Maximize available resources to strengthen planning efforts through the development of public/private partnerships.
- g) Develop fire risk mitigation treatment decision support tools to assist in project design, implementation and validation.

Goal 4: Increase awareness, knowledge and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires, such as defensible space and other fuels reduction activities, fire prevention and fire safe building standards.

Objectives:

- a) **Educate landowners, residents and business owners about the risks and their incumbent responsibilities of living in the wildlands, including applicable regulations, prevention measures and preplanning activities.**

Measurement Criteria: *In coordination with the CAL FIRE Communications Program, the USDA Forest Service and local fire agencies, University of California and county cooperative extension offices, CAL FIRE to collect information on methods and effectiveness of existing outreach. Complete the information collection within year one of adoption of the 2010 Strategic Fire Plan. Develop a common set of measures to assess CAL FIRE efforts, build those into Unit fire plans and report to the Board. Report the progress of implementation at the end of year two.*

- b) Educate landowners, residents, fire safe councils and business owners to understand that fire prevention is more than defensible space, including why structures ignite, the role embers play in such ignitions and the importance of fire safe building designs and retrofits.
- c) Facilitate activities with individuals and organizations, as appropriate, to assist individual property owners in complying with fire safe regulations.
- d) Improve regulatory effectiveness, compliance monitoring and reporting pursuant to Public Resources Code (PRC) §4290 and §4291.
- e) **Increase the number and effectiveness of defensible space inspections and promote an increasing level of compliance with defensible space laws and regulations through the use of CAL FIRE staffing as available, public and private organizations, and alternative inspection methods.**

Measurement Criteria: *CAL FIRE to form an advisory committee to review PRC §4291 regulations and make recommendations to the Board that will provide for consistency, streamlining and clarification of existing regulations. The Committee shall develop criteria to increase the number and effectiveness of defensible space inspections. The Committee will develop an implementation plan for the recommendations and report on progress to the Board.*

- f) Promote the consolidation of Fire Safe Regulations contained in California Code of Regulations (CCR) Title 14, with CCR Titles 19 and 24, to achieve uniform application of building standards.
- g) Continue to evaluate new, ignition-resistant construction technologies and materials, and promote the strengthening of California building standards.
- h) Seek out incentives to promote the retrofit of existing structures to meet ignition-resistant building codes.
- i) Actively enforce and seek updates as necessary to fire prevention codes and statutes, including those regulating utilities, railroads, small engines and other categories of equipment use that contribute to fire ignition.
- j) Actively investigate all wildland fire causes. For those resulting from negligent acts, pursue appropriate civil and/or criminal actions, including cost recovery.
- k) Analyze trends in fire cause and focus prevention and education efforts to modify behavior and effect change.

Goal 5: Develop a method to integrate fire and fuels management practices with landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility areas.

Objectives:

- a) Increase support of landowner-initiated hazardous fuels reduction using all available authorities, including the Vegetation Management Program.
- b) Work to remove regulatory barriers that limit hazardous fuels reduction activities.**

Measurement Criteria: *In conjunction with the Resource Protection Committee, CAL FIRE will develop an approach to identifying and recommending ways to address regulatory and other barriers that limit hazardous fuels reduction activities. This approach should include consultation with the Board's Interagency Forestry Working Group and with other agencies, such as the USDA Forest Service, the US Fish and Wildlife Service, the California Energy Commission, the Department of Fish and Game, regional water quality control boards, local government and the public. Finish this compilation within the first year of adoption of the 2010 Strategic Fire Plan. Based on barriers identified and recommendations for change, report to the Board starting in the second year.*

- c) Promote and enhance programmatic documents that assist and streamline regulatory processes.
- d) Assist collaborative partners by educating, improving grant capacity and other means that provide tools to achieve fuels reduction work on the landscape.
- e) Promote forest and rangeland health and hazardous fuels reduction. Improve utilization of all forest products, including small logs, urban green waste and biomass.
- f) Increase public education and awareness in support of ecologically sensitive and economically efficient vegetation management activities, including prescribed fire, forest thinning and other fuels treatment projects.
- g) Promote the development of multi-agency/landowner fuels reduction policies and activities at the watershed and fireshed level.
- h) Support the availability and utilization of CAL FIRE hand crews and other CAL FIRE resources, as well as public and private sector resources, for fuels management activities, including ongoing maintenance.**

Measurement Criteria: *CAL FIRE will report to the Board on the number of crews available each year with a description of projects, including acres treated, completed by each Unit. Report the number of agreements and/or amount of funding and acres treated that involve grants or partnerships with federal agencies, resource conservation districts, local FSCs, fire districts, watershed groups or other non-profit or community groups that support the ability to carry out fuels reduction projects.*

- c) Support efforts to restore the ecological role of fire in areas and upon jurisdictions where doing so is consistent with local land management objectives and does not present an unacceptable risk to human health and safety or security of adjacent ownerships.

Goal 6: Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.

Objectives:

- a) Maintain an aggressive wildland fire initial attack policy that places a priority on protecting lives, property and natural resources. At the same time consider suppression strategies that incorporate values and assets at risk, as well as cost factors wherever possible.
- b) Develop criteria for determining suppression resource allocation based on elements such as identified values and assets at risk, ignition density, vegetation type and condition, as well as local weather and topography.
- c) Initiate studies and analyses to identify appropriate staffing levels and equipment needs commensurate with the current and projected emergency response environment.
- d) Seek to increase the number of CAL FIRE hand crews for use in fighting wildland fires and other emergency response activities.
- e) **Initiate and maintain cooperative fire protection agreements with local, state and federal partners that value the importance of an integrated, cooperative, regional fire protection system and deliver efficient and cost effective emergency response capabilities beneficial to all stakeholders.**

Measurement Criteria: *CAL FIRE to identify the number and effectiveness of agreements and partnerships. In conjunction with the Board's Resource Protection Committee, CAL FIRE will develop suggested measures of effectiveness of cooperative agreements. This should be in collaboration with its partners, completed within 18 months of adoption of the 2010 Strategic Fire Plan and reported to the Board.*

- f) Improve policies and strategies to minimize injuries or loss of life to the public and emergency responders during emergency response activities throughout the state.
- g) Ensure all firefighters are provided the appropriate training, equipment and facilities necessary to successfully and safely meet the increasingly complicated and challenging fire and emergency response environment.
- h) Continue to evaluate and implement new technologies to improve firefighter safety, situational awareness and emergency response effectiveness.

- i) **Provide for succession planning and employee development at all levels within CAL FIRE to maintain emergency response leadership capabilities, administrative management skills and pre-fire planning expertise.**

Measurement Criteria: *CAL FIRE to revise and update the information developed in the 2005 Succession Planning meetings. This work should be completed within two years of the adoption of the 2010 Strategic Fire Plan, with annual reporting to the Board based on issues raised, including identification of key training needs, funding available and expenditures on the training program, content of Academy curricula, number of students requesting and/or able to take classes at the Academy, local community college or other educational outlets.*

- j) Effectively engage and train employees across all disciplines to address both planning and emergency response utilizing a “total force” approach.

Goal 7: Address post-fire responsibilities for natural resource recovery, including watershed protection reforestation, and ecosystem restoration.

Objectives:

- a) **Encourage rapid post-fire assessment, as appropriate, and project implementation to minimize flooding, protect water quality, limit sediment flows and reduce other risks on all land ownerships impacted by wildland fire.**

Measurement Criteria: *Provide training for CAL FIRE personnel on suppression repair and damage assessment procedures. Develop standard formats and documentation templates for these assessments. Identify and use the findings to reduce the impacts of fire suppression on the landscape and improve resiliency of assets at risk from wildfire.*

- b) Work with landowners, land management agencies and other stakeholders across the state to design burned area rehabilitation actions that encourage salvage and reforestation activities, create resilient and sustainable landscapes, and restore functioning ecosystems.
- c) Effectively utilize available resources, including CAL FIRE hand crews, to accomplish restoration and protection activities.
- d) Assess the effects of pre- and post-fire treatments to refine best management practices.
- e) **Assist landowners and local government in the evaluation of the need to retain and utilize features (e.g., roads, firelines, water sources) developed during a fire suppression effort, taking into consideration those identified in previous planning efforts.**

Measurement Criteria: *CAL FIRE (utilizing Incident Command Teams) to schedule a post-fire review of the planning documents that cover the area affected by the fire. Review the goals, objectives and projects (implemented and planned) to identify successes and failures. Review the features developed during the fire and incorporate them into the existing Unit fire plan documents. This objective will only be reported when a fire occurs in an area with an existing Unit fire plan document. Incident command teams may conduct this post fire assessment under the direction of the Unit Chief.*

- f) Aid landowners in recently burned areas in developing and implementing vegetation treatment plans to manage the re-growth of fuels to maintain reduced hazardous conditions.

- g) Promote the maintenance of a native species seed bank and seedling production capacity to provide the availability of appropriate tree species for reforestation within all of the state's diverse seed zones.
- h) Use after-action reports to evaluate and implement new technologies and practices to improve future firefighting efforts.

APPENDIX B: Review of the 1996 California Fire Plan

When the California State Board of Forestry and Fire Protection (Board) and the Department of Forestry and Fire Protection (CAL FIRE) presented the 1996 California Fire Plan (1996 Plan), the overall goal was “*to reduce total costs and losses from wildland fire in California by protecting assets at risk through pre-fire management prescriptions and increasing initial attack success.*” The 1996 Plan included many findings and recommendations categorized by three topic areas:

- Level of service for wildland fire protection
- Wildland fire protection fiscal issues
- Pre-fire management program

Board Direction for Review of the 1996 Plan

In 2005, the Board commissioned the Fire Plan Assessment Advisory Committee to review the 1996 Plan and prepare an assessment report. A few key results were:

- A new plan must contain a collaborative approach and it is imperative to engage the public in an ongoing manner
- A new plan should focus on implementation of laws and regulations to encourage compliance with wildfire protection practices and include information for decision support
- The 1996 Plan represented a conscious shift from wildland fuels management to high value asset protection
- The 1996 Plan focused on land use setting, highlighting the wildland urban interface, and was the first step to addressing land use as it relates to fire protection
- The 1996 Plan focused on stakeholder involvement and planning activities
- Wildland conditions tend to drive increasing cost and losses and have a direct affect on levels of service provided. The continuing population expansion is one major factor driving up fire suppression costs
- The 1996 Plan contained complementary but often competing issues that need to be reconciled; fire suppression versus fuels management
- A new plan should include goals, objectives, performance standards and action plans

The 1996 Plan established a visionary framework, but full implementation at the Unit level was not accomplished. The 1996 Plan established visions and goals that are still valid today but lacked performance measures and program reporting requirements to determine levels of success. The Committee determined most of the findings and recommendations are still current and relevant, however the original intent was not always clear. In general, lack of data inhibited evaluation of the findings and recommendations.

Membership of the 1996 Fire Plan Assessment Advisory Committee

Tom Hoffman	CDF
Warren Alford	Sierra-Nevada Forest Protection Campaign
Chris Brown	Mendocino County Air Quality Management District
George Gentry	Board of Forestry and Fire Protection
John Hoffman	Regional Council of Rural Counties
Dick Hayes	CDF
Louis Blumberg	Nature Conservancy
Tony Clarabut	CDF
Chris Zimny	CDF
Bill Holmes	CDF
Jeff Harter	CDF
Mike Staley	Office of Emergency Services
Rose Conroy	Davis Fire Department
Liz Wright	USDA Forest Service
Warren Wilkes	California Fire Districts Association
Lisa Beutler	Center for Collaborative Policy
Jodie Monaghan	Center for Collaborative Policy

APPENDIX C: Board Workshop 2008

The Board convened a panel of experts from the University of California and conducted a 2008 workshop entitled: "California Wildfires: Policy Implications of Research Findings." The workshop's purpose was to explore strategies to reduce the occurrence of wildfires as well as reduce losses to life, property and natural resources through the implementation of effective and efficient fire prevention; fire protection planning and suppression; financial management and firefighter/public safety actions.

The key findings from that workshop included:

- The 1996 Plan was the first in the nation to address wildfire as a local, state, and federal issue across ownerships and agencies
- The wildfire issue is not being communicated effectively
- The paradox of mitigation – as hazards are mitigated, more people move into the wildland creating additional hazards, requiring additional mitigations, continuing an ongoing cycle
- Assets at risk should not only include immediate impacts on homes, resources and watersheds, but also subsequent flooding and potential heavy metal contamination of drinking water
- Fire safe councils serve an important education and implementation role.
- Shared public assets should be considered in the fire plan
- The state fire plan should facilitate the effective implementation of wildfire mitigation actions
- Different communications goals are needed for the various fire plan stakeholders, including homeowners, CAL FIRE, local fire departments, legislators, etc.
- It is appropriate to distinguish conifer forests, which have income potential, from other vegetation types that do not. Revenue from commercial products can fund mitigation efforts in those locales.

APPENDIX D: 2010 Fire Plan Steering Committee

After a lengthy review of the 1996 California Fire Plan by stakeholders, the Board moved forward to form the Fire Plan Steering Committee (Committee) to assist in establishing a framework to develop an updated plan. The updated plan is intended to provide an allocation of resources based on wildfire risk and promote the goal of reducing total costs and losses from wildfire. The Committee is an expert and stakeholder group, consisting of Board members, fire managers, fire chiefs, legislative representatives, local and federal government representatives, educational institution staff and CAL FIRE staff.

The 2010 plan should analyze all elements of fire services in the areas of:

- Fire planning and prevention
- Fire protection organization and operations
- Financial management
- Firefighter/public safety

The intent of the Board is that the plan be “strategic,” with long-term adaptable and measurable goals and:

- Identifies a strategy
- Delineates how that strategy is implemented
- Allows for the development of specific performance measures to evaluate its implementation
- Provides for the ability to adapt as necessary to meet changing social, political and environmental conditions

APPENDIX E: Glossary

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.

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>)

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>)

Fire Resilient – The ability of a vegetation type, ecosystem, or community to respond positively to or recover quickly from the effects of a wildfire burning within, across or adjacent to them.

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>)

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.

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).

Fuels Reduction Projects – The modification of vegetation in order to reduce potential fire threat. These projects often result in improved wildlife habitat capability, timber growth, and/or forage production.

GIS – Geographic Information Systems is a configuration of computer hardware and software that stores, displays, and analyzes geographic data spatially or through attribute features.

Hand Crews – A number of individuals organized, trained and supervised principally for fire suppression or fuel reduction projects.

Ignition Density – The number of fire ignitions that occur in a specific unit of area, over a specified period of time; often used as a measure of initial attack workload.

Initial Attack – A planned response to a wildfire given the wildfire's potential fire behavior. The objective of initial attack is to stop the fire and put it out in a manner consistent with firefighter and public safety and values to be protected.

(<http://www.nwccg.gov/pms/pubs/glossary>)

Land Use Planning – A comprehensive assessment leading to a set of decisions that guide use of land within an identified area.

Mutual Aid – An agreement in which two or more parties agree to furnish resources and facilities and to render services to each and every other party of the agreement to prevent and combat any type of disaster or emergency.

Native Species Seed Bank – A storage area for seed that is collected from a species which is a part of the original vegetation of the area in question.

Prescribed Fire – A planned wildland fire designed to meet specific management objectives.

Reforestation – The establishment of forests on land that had recent (less than 10 years) tree cover. (<http://frap.cdf.ca.gov/assessment2010/definitions.html>)

Salvage – The harvesting of dead, dying and damaged trees to recover their economic values that would otherwise be lost to deterioration.

Situational Awareness – The application of the human senses to current and predicted weather, fire or other emergency conditions to plan and execute actions that provide for the safety of all personnel and equipment engaged in an emergency; includes development of alternative strategies of fire suppression and the net effect of each.

Total Force – Bringing to bear the application of the totality of the CAL FIRE employee team who provide all functional service aspects of the Department that enables it to effectively mitigate emergencies and protect resources in areas protected by CAL FIRE.

Type Conversion – The replacement of native vegetation (e.g., from native chaparral to non-native grassland) with non-native vegetation or the maintenance of an ecosystem in a pioneer state which prohibits the maturing of the native vegetation.

Unit Fire Plan – Plans developed by individual CAL FIRE Units to address wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their geographical boundaries.

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.

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. (<http://www.nwccg.gov/pms/pubs/glossary>)