Firewise Communities / USA Community Assessment for the Bailey Creek Community

Photo 1-Bailey Creek Firewise Assessment team

Plumas County, California

January 2015

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Forward

Residents of the Bailey Creek community are concerned about the threat of wildfire to their community. They are working with local resources to become more Firesafe so that when a wildfire occurs in their neighborhood they will be more prepared. Bailey Creek is a planned community on the north shore of Lake Almanor in northeastern California.

When the community was developed in a forested area, the developers cleared large areas of the forest to create the golf course, building pads and the road system. Those undeveloped areas, where the ground was disturbed during the construction of the community, are now dense stands of manzanita. The numerous undeveloped lots and undeveloped forestland that surround the community make Bailey Creek a textbook example of the Wildland Urban Interface (WUI).

The potential for catastrophic wildland fire along the north shore of Lake Almanor is very high; dense stands of conifers and brush are wide-spread, and there are numerous high density communities that are built in the WUI. Many efforts have been made over the years to reduce hazards on both the residential scale as well as the landscape scale.

Since all of the homes in Bailey Creek are less than 12 years old, all were built with contemporary State building codes. In the past 10 years there have been numerous lightning and human caused fires within and close to this community.

1. Introduction

The Firewise Communities/USA program is designed to provide an effective management approach for preserving wildland living aesthetics. The program can be tailored for adoption by any community and/or neighborhood association that is committed to ensuring its citizens maximum protection from wildland fire. The following community assessment is intended as a resource to be used by Bailey Creek residents for creating a wildfire safety action plan. The plan developed from the information in this assessment should be implemented in a collaborative manner, and updated and modified annually or as needed.

Principal participants who assisted in the preparation of this assessment are:

Lake Almanor Peninsula Fire Protection District

Gary Pini, Fire Chief

Plumas County Office of Emergency Services

- Sue McCourt, Fire Prevention Specialist

Bailey Creek Residents

- Henry Gronroos
- Arnold Selk
- Cheryl Vieira
- Dave Ashe

Plumas County Fire Safe Council

- Nils Lunder
- Mike McCourt

CAL FIRE

- **Shane Vargas**
- **Sean Delacour**

2. Definition of the Home Ignition Zone

Bailey Creek is located in a wildfire environment. Wildfires will happen-fire exclusion is not an option. Lightning accounts for many of the ignitions in the region as do human caused ignitions. The existing variables regarding wildfire are (a) where the wildfire will occur, (b) when it will occur, and (c) what the relevant conditions will be at that time. It is this last variable that homeowners can influence, and influence very strongly, by their actions before fire appears.

A house burns because of its relationship with its immediate surroundings, an area called the "home ignition zone" (HIZ). To avoid a home ignition, nearby fuels must be reduced or interrupted and combustible materials found on or around the home must be protected or eliminated. Homeowners do have the ability to significantly impact their home ignition zone in either a positive or negative manner. Attention to some relatively simple actions will have a positive impact. Inattention, procrastination or denial will have the opposite effect.

This assessment addresses the wildfire-related characteristics of the overall Bailey Creek Community. The assessment primarily examines the community's exposure to wildfire as it relates to ignition potential. The assessment does not focus on specific homes, but rather on the community as a whole. In doing so, it deals with widely applicable techniques of fuel interruption that alter or eliminate the natural path that a fire might take. Changing a fuel pathway is a relatively easy-to-accomplish task that homeowners can do, and one that can prevent a tragic structure loss. This is basically a strategy of separating combustible materials from the structure and reducing the volume of vegetation to reduce fire intensity.

The assessment is based on community observations made during the fall of 2014. It addresses the relative ease or difficulty with which home ignitions could occur under severe wildfire conditions, and how those ignitions might be avoided with prudent preventative action. Bailey Creek residents can reduce their risk of home destruction during a wildfire by taking a few important steps within the home ignition zone, which includes the structure itself and an area extending outward about 100 to 200 feet, see figure 1 below.

Figure 1-Home Ignition Zone Diagram

By addressing community vulnerabilities in advance, residents will be able to substantially reduce their exposure to loss. Relatively small investments of time and effort will reap large rewards in wildfire safety.

While each home ignition zone is an independent entity, managed by the owner of the individual property, the combined home ignition zones in a development can form either an invitation or a barrier to wildfire. This is further complicated by overlapping home ignition zones found on some Bailey Creek lots that may result in relatively close proximity to neighboring structures. Embers produced by burning vegetation or structures on one lot can easily drift onto adjacent lots, and these can lead to new ignitions and spot fires.

This is why a community approach is just as important as the need for individual property owners to protect their individual homes. It is critical to recognize that in the event of a major fire emergency, there simply won't be enough fire engines and crews to protect all, or even a large fraction of the homes in the area. Home survivability often comes down to the extent of fuel reduction work that was accomplished within the home ignition zone by either homeowners or their contractors.

3. Wildland fire characteristics that could threaten the Bailey Creek area

Firefighters generally categorize fires into several basic types. Among those are wildland fires and structure fires; both of these are relevant to this assessment. A wildland fire is any non-structure fire that occurs in vegetation or natural fuels, while a structure fire primarily burns structural materials and building contents. These two fire types converge in the wildland-urban interface (WUI).

In the Lake Almanor Basin, wildland fires are addressed by the U.S. Forest Service (USFS) on National Forest lands, wildland fires on private lands are addressed by the California Department of Forestry and Fire Protection (CAL FIRE). The Bailey Creek area is within the Peninsula Fire Protection District

(PFPD). ; Response to a WUI fire in Bailey Creek would involve the Peninsula FPD, the Hamilton Branch FPD, CAL FIRE, Chester Fire the USFS and other mutual-aid resources under a unified command.

Fire intensity and spread rate depend on the fuel type and condition (live/dead), the weather conditions prior and during ignition, and the topography. Generally the following relationships hold between the fire behavior and the fuel, weather and topography.

- Fine fuels (such as pine needles, manzanita leaves and branches, white thorn and other shrubs) ignite more easily and spread faster with higher intensities than coarser fuels. For a given fuel, the more there is and the more continuous it is, the faster the fire spreads and the higher the intensities. Fine fuels take a shorter time to burn out than coarser fuels. Fine fuels have the most important impact on fire intensity as measured by flame lengths. Fine fuels are considered the primary carrier of fire in fire modeling.
- Weather conditions affect the moisture content of the dead and live vegetative fuels. Dead fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower the fuel moisture content. Lower fuel moistures produce higher rates of spread and increased fire intensities.
- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the rate of spread and intensity.
- Topography greatly influences fire behavior. The aspect; or the given direction of exposure of the terrain has a strong relationship to fuel moisture. In addition to aspect, the configuration of the terrain such as narrow draws, saddles and other topographic features can influence fire spread and intensity. In general, south and southwest aspects tend to be warmer and drier; and the steeper the slope, the higher the uphill fire spread and intensity.

Bailey Creek is situated in a relatively open area that is bounded on the south and west by forested area with steep terrain and dry southerly to southwesterly slopes. This setting, coupled with prevailing summertime breezes and strong fall pre-frontal winds from the northwest to west, suggests that the most likely spread of a wildland fire would be from the south or west. Historically, Plumas County has had a high incidence of lightning fires. Ignitions from a lighting fire can spread in any direction under the influence of downdrafts during thunderstorms.

Embers or firebrands are produced from burning needles, leaves, bark, twigs and cones, when natural vegetation burns. Embers tend to be carried aloft by the superheated air of the fire and can then be carried long distances in advance of the actual flame front by even light winds. It is not uncommon to find glowing embers a mile ahead of the main fire.

Figure 2-Embers cause fires

If the conditions are right, thousands of embers can be produced in a relatively short time by even a modest wildland blaze. These tend to fly like incendiary snowflakes, eventually settling to the surface and even "drifting" to form small clumps. If they land on a combustible material, they can cause a new ignition even though the main fire is still a long distance away. This is the way that "spot fires" are ignited. This is also the primary threat to residences.

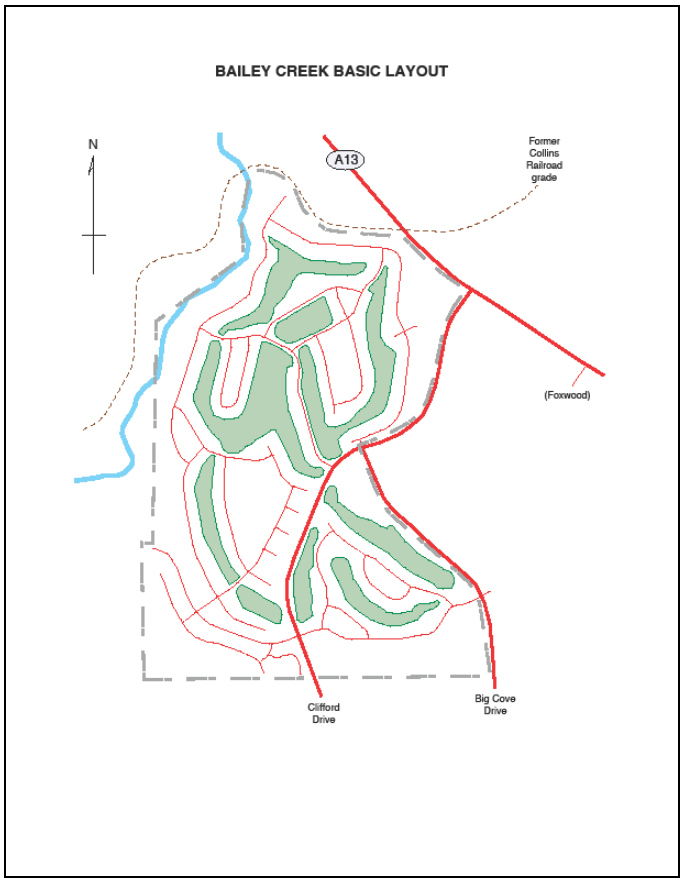
Fire modeling accomplished as part of the 2004 *Plumas County Hazardous Fuel Assessment and Strategy* indicated that fire behavior in the community and adjacent timber would be conducive to passive and active crown fire with some surface fire. Torching trees both increase fire intensity and become excellent generators of embers for spotting. Preventative actions taken on any treated properties in the area will reduce the potential intensity and ember production of an approaching fire. The community can still anticipate a severe "ember attack" during a wildland fire event in untreated stands both adjacent and within the community.

For purposes of this assessment, there are two viable scenarios for a severe wildland fire event, a) would be a major blaze in untreated forestlands adjacent to the Bailey Creek community bringing fire up the drainages, producing large quantities of windblown embers, and b) a lightning strike without precipitation and the rapid onset of downdrafts. Subsequent spot fires, torching trees or burning structures in the interiors of the development could produce additional quantities of embers, contributing to further ignition potential and suppression difficulty.

4. Site Description

This portion of the report describes certain elements of the community of Bailey Creek as it relates to fire issues.

Bailey Creek is a subdivision that was recorded by the County of Plumas, California in 1992. The development consists of approximately 580 acres containing parcels for 700 housing units. The development is in northwestern Plumas County near the communities of Chester, Foxwood, Hamilton Branch and the Lake Almanor Country Club. County Road A-13 forms the northern border of the community and Clifford Drive bisects the community. Clifford Drive is the main access road for the Lake Almanor Country Club. State Route 36 lies to the northwest of Bailey Creek and is approximately ½-1 mile from the community. Currently, there are 115 structures valued at $10,000 or more on record.



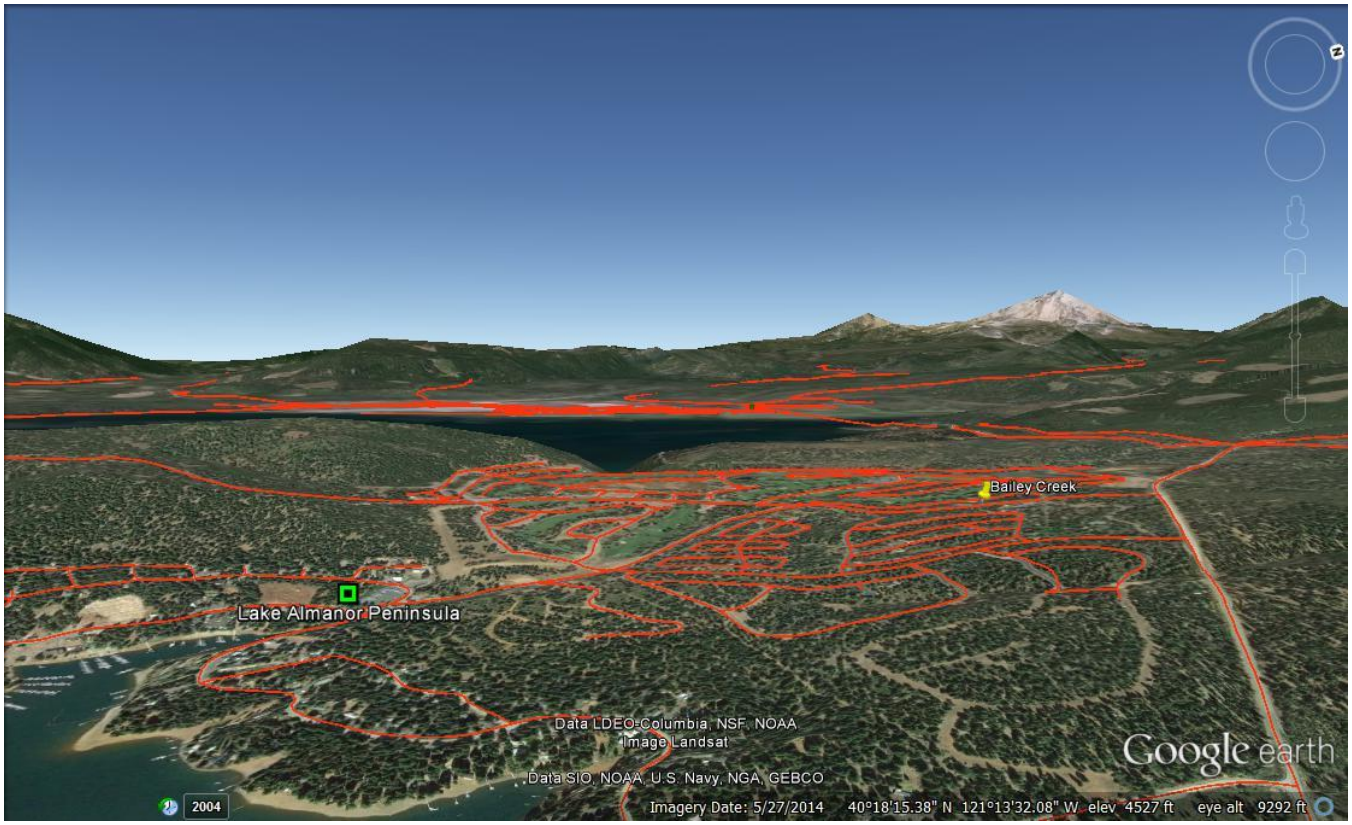
Map 1-Overview of the Bailey Creek Community

4.1 Demographics

Current figures as of 1/1/15 show 43 full-time and 74 part-time residential units currently in Bailey Creek. There are a total of 117 housing units.

4.2 Topography and Vegetation

Bailey Creek sits on a saddle between two higher elevation points, the lowest point in the community is 4,600 feet and the highest point is 4,835 feet. The site experiences substantial wind activity due to the topographic relief of the site; as a result, wind driven fires should be planned for in the future. Of particular concern is the southwestern facing slope that drops down to Bailey Creek. This feature is on the western side of the development. The combination of the dense fuels and both sun and afternoon prevailing winds pushing upslope poses a substantial threat to the Bailey Creek community. The nightmare scenario would be a dry lightning strike in that area on a hot August or September afternoon.



Map 2-Overview of Bailey Creek and surrounding communities

The developer cleared dense forest land in order to construct the 18-hole golf course and the subdivision infrastructure. These actions have promoted the proliferation of manzanita (*Arctostaphylos sp.)* as well as mountain whitethorn (*Ceanothus cordulatus)* in those disturbed areas that are not managed by the golf course or by the Bailey Creek roads network. This vegetative response has created a dense fuel source that is now a threat to many of the homes in the community.

Some of the trees that were left by the developer are well spaced, those specimens have a reduced risk a fire traveling from crown to crown. However, many of the remaining trees are in need of removing fuels underneath- what is referred to as “ladder fuels” in order to improve the vertical separation from surface fuels. Without this work, a ground fire has the potential to enter the canopy of the trees and cause the fire to increase its rate of spread and ember generation.

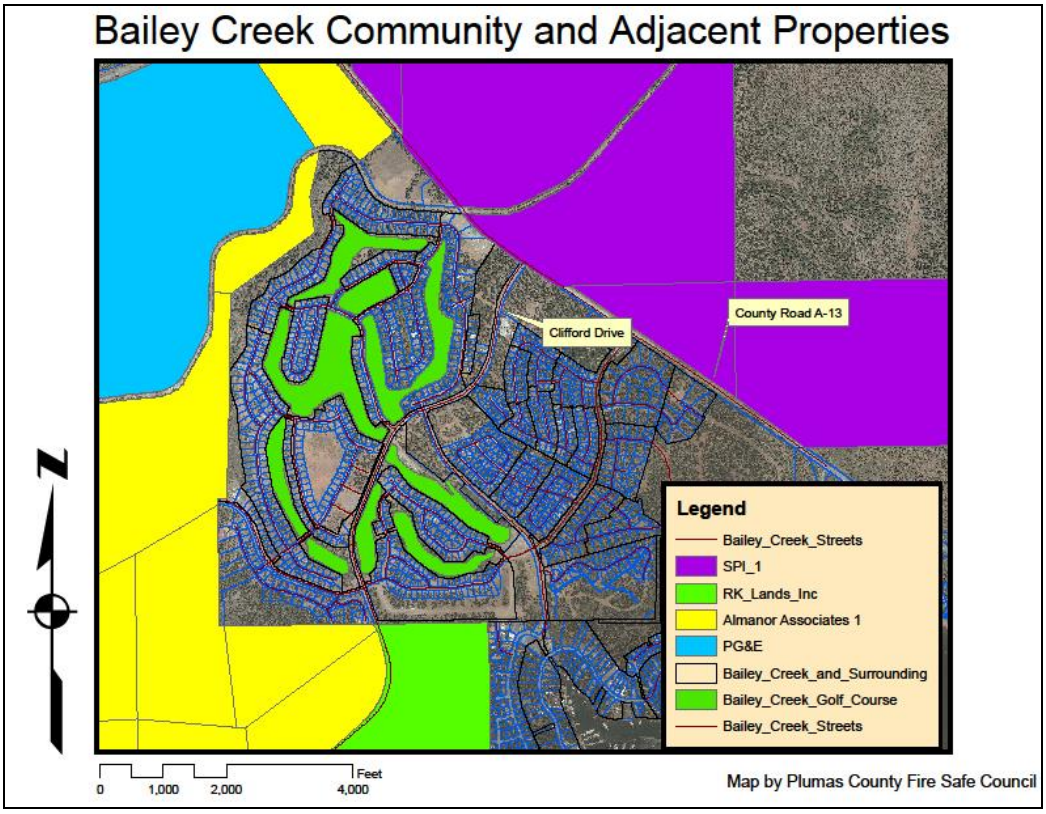
Photo 2-Example of trees requiring thinning of ground fuels

There are also areas within the community that are in need of forest thinning, these areas are mostly where small trees have grown closely together. These areas require hand thinning or mechanical mastication in order to increase the horizontal separation between neighboring trees.

Photo 3-Trees in need of thinning in order to increase horizontal separation to reduce fuel continuity

The vegetation on properties surrounding Bailey Creek is typical of conifer dominated forests of the Sierra Nevada/Cascade region of northeastern California. These forests are dominated by Ponderosa and Sugar Pine, Incense Cedar, Douglas Fir and White Fir. A majority of the forest lands surround the community are in need of fuels reduction work.

The community has hundreds of acres of private forest lands nearby, many of which consist of dense over-crowded vegetation. In areas that have not received treatment, these forests have been adversely affected by the absence of wildfire over the past 100 years. If wildfire were to occur in these forests at this time they would be prone to rapid spread, torching and crown fires due to the fuel that has been allowed to accumulate over time. Such an event would provide considerable potential for home ignition due to flying embers and debris.



Map 3-Properties adjacent to the Bailey Creek community

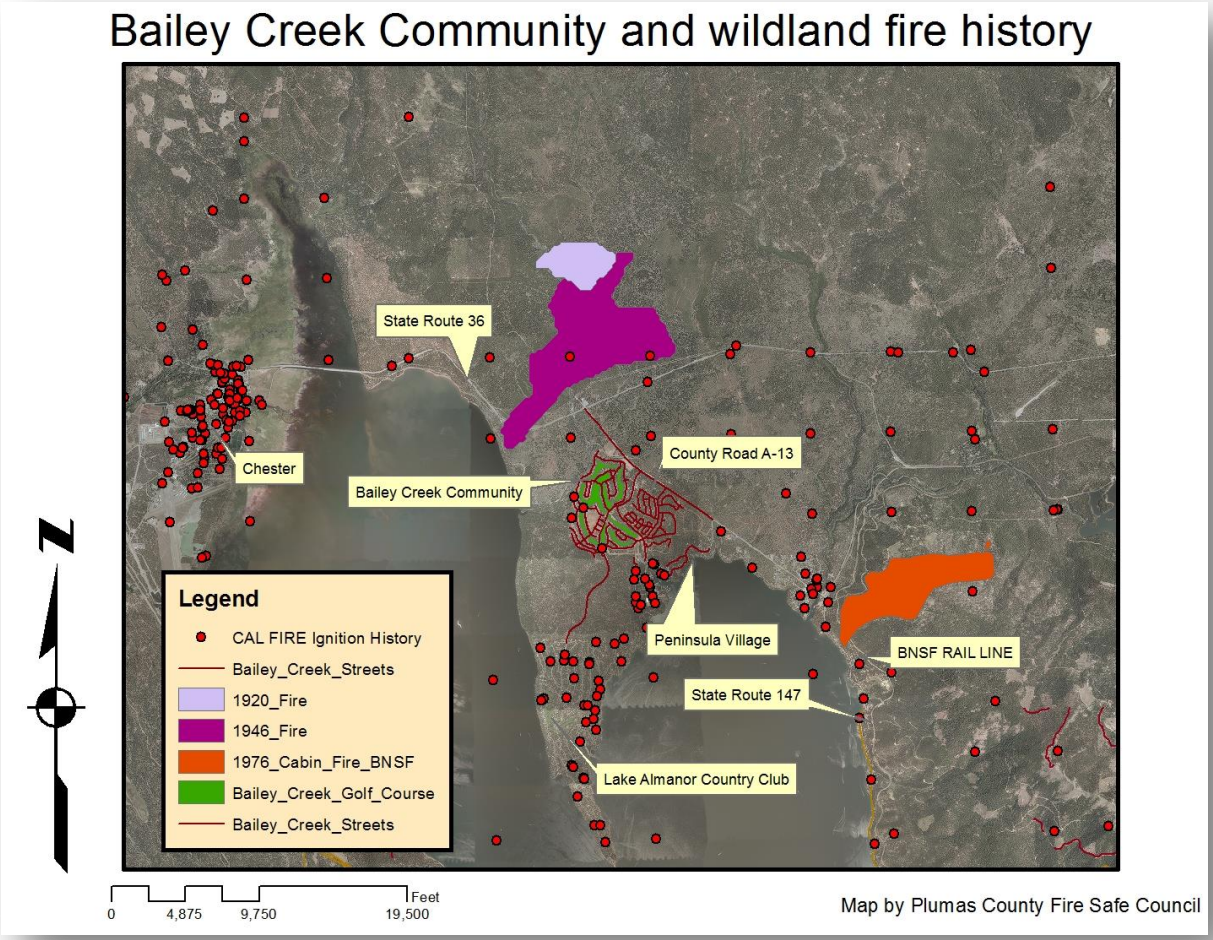
Fuel treatments on adjacent private industrial timber properties owned by Sierra Pacific Industries have occurred and will continue to occur. These properties lie to the north and east of the community. The efforts to thin their forests by Sierra Pacific Industries have helped reduce, but not completely eliminate the probability of high intensity crown fires around the community. It is recommended that members of the Bailey Creek community reach out to these neighboring landowners to discuss the long term management of the forest in order to increase the resilience of those lands to wildfire.

4.3 Wildfire History

Fires in the area were more frequent prior to European settlement resulting in more open stands of mature trees. Historically, fires burned through the area every 11-15 years, clearing low growing brush

and vegetation, consuming forest litter, dead trees and thinning out seedlings. Today, past forest practices and fire suppression on wildland fires have resulted in more over grown forests.

Wildland fires in the area usually occur between May and October, during dry years it is not uncommon for fires to occur as early as April and as late as November. Wildland fires are not a new problem to the Bailey Creek community. Between 2004 and 2014, there have been numerous wildland fires that received initial attack from one of the local fire protection services. See Map 4 below for additional details.



Map 4-Wildland fire history of the Bailey Creek area

4.4 Water sources

The Bailey Creek community is served by one well that produces 1,100 gallons per minute. The well fills two storage tanks that are each 40 feet tall with a combined capacity of 1,000,000 gallons. From those tanks water is distributed by a main line network that consists of 12”, 10” and 8” diameter pipe. All hydrants are supplied by 6” diameter lines. There are approximately 75 hydrants within the Bailey Creek community.

4.5 Fire Response

The Bailey Creek community is protected by the Peninsula Fire Protection District; they have two stations located approximately 1.75 and 3.75 miles from the community. The Hamilton Branch Fire Protection District station is also approximately 3 miles from the community. The Chester Public Utilities District provides fire protection for the community of Chester; their station is approximately 7.3 miles from the community.

CAL FIRE provides structural and wildland fire protection to the region and the nearest CAL FIRE station is located in Westwood, which is approximately 9.4 miles from the community. The United States Forest Service provides wild land fire protection on National Forest Lands in the region, their station is also approximately 7.5 miles from the Bailey Creek, and they also operate a fixed wing as well as a helitack base in Chester.

4.6 Cal Fire Fire Hazard Severity Zone Rating

Periodically, CAL FIRE reviews and updates its statewide assessment of general fire hazards within and near the State Responsibility Areas (SRAs). This assessment generates fire hazard severity zone ratings (FHSZ). The 2008 CAL FIRE Fire Hazard Severity Zone (FHSZ) map for the region rates all of the Bailey Creek area as a High fire hazard area.

4.7 ISO Fire Rating

The Insurance Services Office, Inc. (ISO) is the principal supplier of statistical, actuarial and underwriting information for the property insurance industry. ISO fire insurance ratings serve as an industry standard, a foundation upon which most insurers build their coverage programs. Their ratings are based on several factors including:

- The quality of the fire department
- The water supply and hydrant system
- Communication and dispatching systems
- Building codes
- Property inspection programs

ISO ratings range from 1 to 10, with 1 being perfect. Since the ISO insurance companies set insurance premium rates, the lower the ISO fire rating, the lower the premium use ratings. The ISO for the Peninsula Fire Protection District is **3**.

5. Assessment Process

A team approach was taken in preparing this assessment of fire hazards and risks at Bailey Creek. Relevant background data was initially collected and distributed for review by the several team members identified in the introduction to this document. That group then conducted a visual review of the community from a roadside perspective. Numerous properties were visited during this process. Observations were made at those properties including both positive and negative attributes; those observations can be found in subsequent sections. The compiled information was used as the group developed recommendations for mitigation actions. This is a collaborative process where draft materials were circulated, reviewed, and revised based on inputs from the group.

- A key event in the process was the community assessment, which took place November 11, 2014. Team members conducting that inspection were Plumas Firesafe Council members Nils Lunder and Mike McCourt; Sue McCourt, Fire Prevention Specialist, Plumas County Office of Emergency Services; Bailey Creek residents Henry Gronroos, Cheryl Vieira, Arnold Selk, Dave Ashe. Shane Vargas and Sean Delacor participated on behalf of CAL FIRE, and Gary Pini attended on behalf of the Peninsula Fire Protection District. Dale Knutsen attended as a consulting Firewise community neighbor.

6. Important Considerations

The Firewise Communities/USA program seeks to create a sustainable balance that will allow communities to live safely while maintaining environmental harmony in a WUI setting. Homeowners already balance their decisions about fire protection measures against their desire for certain flammable components on their properties. It is important for them to understand the implications of the choices they are making. These choices directly relate to the ignitability of their home ignition zones during a wildfire.

The three most important considerations to provide a safer community are:

1. All residents have proper defensible space on their property.

2. All properties should be treated to provide a full 100 feet of defensible space around all structures or to the property line, if property lines do not allow for 100 feet of defensible space, landowners should work with their neighbors to insure that defensible space is achieved through a cooperative effort.

3. The community should seek treatment and maintenance of all vacant parcels to achieve a fire resilient condition that would prevent continued tree torching and ember production within the community during a wildfire.

7. Observations and Recommendations

7.1 Positive Community Attributes:

- Due to the relative youth of this community, much of the infrastructure is up to current state codes (water, power, roads, signs and utilities) as are all of the residential units.
- There are a number of excellent examples within the community of Firewise homes and properties.
- There are numerous fire stations near the community that will respond if a wild fire threatens the community.
- The community has a fire hydrant system.
- Although Bailey Creek currently does not have a home owners' association, it does have a strong sense of community among those who live there. They represent a small fraction of the total property owners but they have the potential to be effective in conveying their perceptions of community needs to others. The "Bailey Creek Babble" e-newsletter currently reaches many of the property owners, and volunteers plan to bolster that with a dedicated Bailey Creek Firewise website to provide expanded coverage of issues, solutions and events.

7.2 Bailey Creek Roads System:

All roads in the Bailey Creek subdivision are paved and have been designed with proper widths to accommodate emergency response vehicles. All roads are marked with reflective signs that are free of vegetation. Driveways are marked with reflective signs.

Recommendations:

- The community should maintain and improve road width by brushing and thinning trees if they begin to encroach onto the right of way.
- The community should ensure that all residences maintain their home address signs to current standards; this assists the first responders in quickly locating the address to which they are dispatched regardless of the time of day.

7.3 Bridges

There are no bridges in Bailey Creek.

7.4 Access to structures

It is important that emergency services personnel have access to residences. Fire engines need to be able to get into the driveway and access all sides of the home in order to provide structure protection. Some homes in the community have items blocking access to the structure.

Recommendations:

- Items preventing access to the structure should be relocated / removed.
- Maintain vegetation clearances and the limbing of trees along access routes to structures.

7.5 Driveways

- All driveways should have reflective signs at the street and should be kept free of items that could block the way for emergency response vehicles.
  Recommendations:
  - Consistent house numbering along roads at driveways is extremely beneficial to responding emergency service providers (visible & reflectorized).
  - Driveways should have slopes less than 16% and be cleared of vegetation. Long driveways should comply with state requirements, so as not to put citizens and emergency personnel at risk.
  - With respect to driveways, the community should make sure that future construction within Bailey Creek complies with California Public Resources Code 4290 (these are minimum fire safety standards related to defensible space which are applicable to state responsibility area lands under the authority of the Department of Forestry and Fire Protection. These regulations apply to the perimeters and access to all residential, commercial, and industrial building construction within state responsibility areas approved after January 1, 1991).

Items that increase risks to community safety

Areas identified as a concern or for improvement

7.6 Structures & Defensible Space

- While Defensible Space in the "Lean Clean, Green Zone" (0-30 feet) was present on many residences, there still exists a need for fine-tuning. There were some homes with grass and forest litter accumulations right up to the structures.
- During the community assessment we observed numerous large conifer trees that were in need of limbing/thinning.

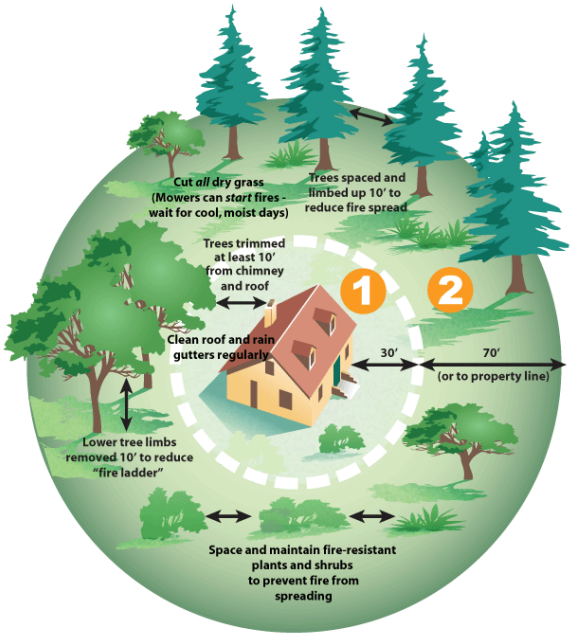


Photo 4-A large cedar tree with low hanging branches

- Many homes lacked adequate treatment in what is referred to as the “Reduced Fuel Zone” (30-100 feet). The creation of Defensible Space, in accordance with CAL FIRE guidelines, of 100 feet around all structures would reduce the acres of untreated fuels, provide additional protection to all homes and improve the survivability of structures within the community. Many homes have overlapping home ignition zones within their 100 feet due to property line boundaries. It is important that neighbors clear out 100 feet OR to their property line, efforts should also be made to engage with neighbors to ensure that properties are maintained in a fire safe condition. For more information on PRC 4291 please refer to Appendix 4.

Photo 5-A home surrounded by heavy forest fuels

- Some homes had firewood stored immediately adjacent to the structure, on porches or under decks, or in close proximity to structures (*refer to Appendix B)*.

Photo 6-Firewood being stored against a structure

- Some homes had roofs and gutters that had accumulated needles and other forest debris.
- Some homes where were observed with highly flammable ornamental vegetation immediately adjacent to structures, decks or along driveways. This can increase risk of structure ignitions and also create additional hazards for emergency responders.
- Some of the decks were skirted by decorative lattice with accumulations of vegetation or pine needles, these fuels increase the ignition potential of a structure.
- Some homes have wooden fences surrounding the home and attached directly to the residence creating a wick for fire spread from the wildland, to the fence, to the structure.

Photo 7-Wooden fence connected to a structure.

- Chimney and vent screens- it is recommended that these openings have 1/8” screens installed for fire protection.

Recommendations: A number of informational pamphlets on defensible space are available to address the issues identified above. By understanding fire behavior, residents would have a better understanding of why defensible space is essential and why California has laws (Public Resources Code 4291 see appendix B) requiring treatment to 100 feet from the home.

7.7 Propane tanks and generators

- A number of homes lacked 10’ of clearance to mineral soil around propane tanks.

Photo 8-A propane tank dwarfed by a cedar tree

Recommendations:

- *Propane tank regulators:* A number of pressure regulators were located next to propane tanks directly beneath trees; these have the potential to be damaged from falling snow, ice, or limbs. This can cause propane leaks that have the potential to cause explosions or structure fires in the winter.
- *Backup generators:* We recommend that backup generators are referenced at the main power box in case of an emergency; this will ensure that emergency responders are aware of the system.

7.8 Water Systems

The Bailey Creek community is served by one well that produces 1,100 gallons per minute. The well fills two storage tanks that are each 40 feet tall with a combined capacity of 1,000,000 gallons. From those tanks water is distributed by a main line network that consists of 12”, 10” and 8” diameter pipe. All hydrants are supplied by 6” diameter lines. There are approximately 75 hydrants within the Bailey Creek community.

Photo 9-One of many hydrants in the Bailey Creek community

Recommendations: The Walker Ranch Community Services District and its officers, in conjunction with the Peninsula Fire District will continue to complete annual water system inspections in order to ensure that the water delivery system provides adequate volumes and pressures for fire suppression activities.

7.9 Vegetation beyond the home ignition zone-Reduction of fuel volume and ladder fuels

Vegetation that exists on undeveloped lots within the community is not covered by State Public Resource Code-4291 but that vegetation is a significant concern for the Bailey Creek community. These lots are susceptible to ember ignitions with the threat of multiple spot fires occurring within the community in the event of a wildfire. Landowners can be held liable for escaped wildfires if it is determined that the escape was due to negligence on behalf of that landowner. The main concern in Bailey Creek is the dense growth of Manzanita. Please see the diagram below to get a sense of how home owners can remove some vegetation and still receive the benefits that are derived from ground covering vegetation: cover for the soil, erosion prevention, protection for animals, aesthetics, biodiversity.

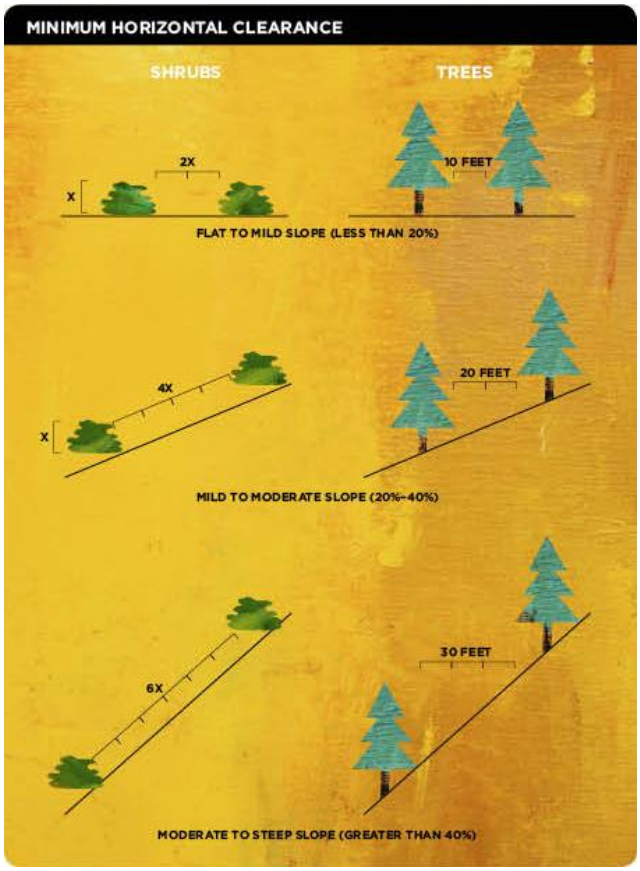


Figure 3-Vegetation spacing diagram

With the shrubs that exist on relatively mild slopes in the community, we recommend that the distance between individual specimens is approximately two times the height of those shrubs.

On slopes between 20-40%, that separation should be four times the height of the shrubs. And on slopes greater than 40%, we recommend that the distance between shrubs is six times the height of the shrubs.

This is a guideline to shoot for. In many areas at Bailey Creek, the first step should be to ensure that there is separation between the individual shrubs.

With conifers, there is a similar spacing recommendation that is proportional to the slope.

We highly recommend that efforts are made to remove vegetation from the base of conifers.

Recommendations: Efforts should be made to educate homeowners and vacant lot owners about the benefits of defensible space**.**

- Elimination of “ladder fuels” - fuels bridging the gap between the surface and lower tree limbs.
- Removal of additional lower branches as needed.
- General tree thinning to reduce fuel volume and maintain forest health.
- Thinning or removal of new brush growth.
- Thinning or removal of new seedlings or saplings.
- Removal of accumulating surface litter or debris.
- Removal of debris piles.

Additional Considerations:

Power and Communication Infrastructure

Bailey Creek has underground utilities.

Recommendation: Periodically, vegetation should be cleared around all underground utility infrastructure including power vaults and other above ground infrastructure. This will allow better access to these structures for future maintenance and operation of the system.

Roadside Thinning and Vegetation maintenance
The major roads near the community (County Road A-13, Clifford Drive) are potential sources of wildfire ignition.
Recommendation: Bailey Creek residents are encouraged to establish contacts with the Plumas County Road Dept. They inspect and maintain vegetation along these roads. The Firewise Committee could discuss planned activities to minimize potential for wildfire ignition. This includes the removal of both excess living and dead vegetation and ladder fuels. This area could be a good target for a community chipping effort.

8. Sucessful Firewise Modifications

When adequately prepared, a house can likely withstand a wildfire without the intervention of the fire service. Further, a house and its surrounding community can be both Firewise and compatible with the area's ecosystem. The Firewise Communities/USA program is designed to enable communities to achieve a high level of protection against WUI fire loss even as a sustainable ecosystem balance is maintained.

A homeowner/community must focus attention on the home ignition zone and eliminate the fire's potential relationship with the house. This can be accomplished by disconnecting the house from high and/or low-intensity fire that could occur around it. The following photographs were taken in Bailey Creek and are examples of good Firewise practices.

Photo 10-A home in Bailey Creek, note the well maintained yard

9. Next Steps

This Assessment is a first step in a longer process leading to improved wildfire safety in the community.

Following a review and approval of the contents of the assessment and its recommendations by the Bailey Creek Firewise Committee, contact the current California Fire Safe Council Firewise representative to submit an application to be a nationally recognize Firewise Community. http://www.cafiresafecouncil.org/contact-us/cfsc-staff/

Assuming the assessment area seeks to achieve national Firewise Communities/USA recognition status, it will integrate the following standards into its plan of action:

- Sponsor a local Firewise board, task force, committee, commission or department that maintains the Firewise Community program and status.
- Complete and approve a Firewise Community Assessment.
- Invest a minimum of $2.00 annually per capita in its Firewise Communities/USA program. (Work done by municipal employees or volunteers, using municipal or other equipment, can be included, as can state/federal grants dedicated to that purpose.)
- Observe a Firewise Communities/USA Day each spring that is dedicated to a local Firewise project.
- Submit an annual report to Firewise Communities/USA. This report documents continuing participation in the program.

10. Additional Key Points

Threat of embers during a wildfire

Residents need to be conscious of keeping high-intensity fire more than 100 feet from their homes and prepare homes for the eventual ember blizzard. It is important to avoid fire contact with their structures. This includes firebrands. The assessment team recommends the establishment of a 'fire free zone', allowing no fire to burn within ten feet of a house by removing fuels located there. All efforts should be made to eliminate the potential for a fire to burn near a structure. Remember, while wildfire cannot be eliminated from a property, work can be done to remove fuels and this will reduce fire intensity.

Bailey Creek homeowners are reminded that street signs, addresses, and road widths do not keep a house from igniting. Proper attention to their home ignition zones does. They should identify the things that will ignite their homes and address those.

Fire Prevention Information Availability

A variety of information sheets, pamphlets, brochures and video materials are available to property owners at the Bailey Creek via the Internet and by contacting the Plumas County Firesafe Council or CAL FIRE. Fire prevention and parcel cleanup information is available on the Firewise

Communities/USA website (http://www.firewise.org), the Plumas County Fire Safe Council website (http://www.plumasfiresafe.org), and the California Department of Forestry and Fire Protection (CAL FIRE) website (http://www.fire.ca.gov).

Peninsula Fire Protection District maintains a Facebook page with current fire prevention and fire information for area residents. Fire Prevention educational materials are available at both their fire stations.
Information on community fuel reduction projects and programs that assist senior and disabled residents is available from the Plumas County Fire Safe Council.

Backyard Debris Burning and Forest Fire Restrictions

Escaped debris burns are the number one cause of human caused wildfires in Plumas County. Burn Permits are usually required from May through October based on fire conditions, seasonal regulations from the CAL FIRE Lassen-Modoc-Plumas Unit and the determination of "burn ban" effective dates.

During dry years, burning may be limited or banned. Burn Permits and up to date information on burning requirements are available at the Peninsula and Hamilton Branch FPD Fire Stations and at the CAL FIRE station located in Westwood. Many escaped debris burns occur during the time burn permits are not required.

The adjacent National Forest Lands are subject to certain restrictions, aimed in large part at reducing ignition hazards there during fire season. When fire restrictions are enacted, campfires are prohibited except in designated campgrounds. Motor vehicle travel is restricted to designated roads only; off road travel is not allowed. During the driest portion of the annual fire season, woodcutting and smoking are severely limited.

11. Existing Fire Plans and Assessments

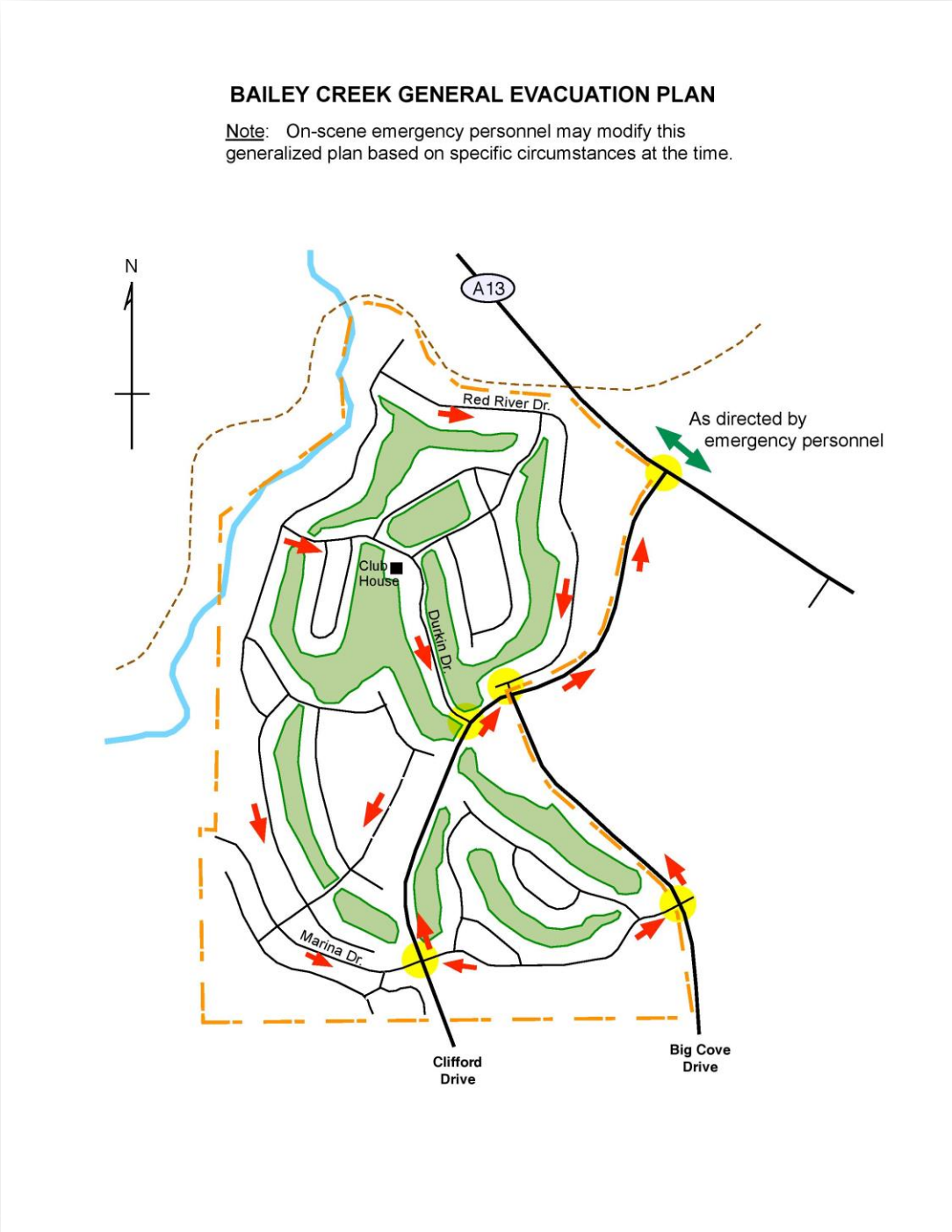
Formal documentation for the region has been addressed by the Plumas County Fire Safe Council, which published the more comprehensive:

- 2004 *"Plumas County Hazardous Fuel Assessment and Strategy"*
- 2013 *"Plumas County Community Wildfire Protection Plan"* (CWPP).

These two documents are available online at the Plumas County Fire Safe Council website (http://www.plumasfiresafe.org).

Appendices

Appendix A 2014 Bailey Creek Suggested Wildfire Evacuation Route Map



Appendix B California State Law

California state law regarding the establishment and maintenance of "defensible space" is found in Public Resources Code (PRC) Section 4291. The actual text of that section, which was updated in 2005, is found below. The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for enforcement of PRC 4291. CAL FIRE has also prepared practical guidelines for implementation of "defensible space" in various kinds of settings; these are summarized in a brochure that is found online at:

http://www.fire.ca.gov/CDFBOFDB/pdfs/Copyof4291finalguidelines9_29_06.pdf

CALIFORNIA PUBLIC RESOURCES CODE SECTION 4291

4291. (a) A person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall at all times do all of the following:

(1) Maintain defensible space no greater than 100 feet from each side of the structure, but not beyond the property line unless allowed by state law, local ordinance, or regulation and as provided in paragraph (2). The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. This paragraph does not apply to single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion.

(2) A greater distance than that required under paragraph (1) may be required by state law, local ordinance, rule, or regulation. Clearance beyond the property line may only be required if the state law, local ordinance, rule, or regulation includes findings that such a clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. Clearance on adjacent property shall only be conducted following written consent by the adjacent landowner.

(3) An insurance company that insures an occupied dwelling or occupied structure may require a greater distance than that required under paragraph (1) if a fire expert, designated by the director, provides findings that such a clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. The greater distance may not be beyond the property line unless allowed by state law, local ordinance, rule, or regulation.

(4) Remove that portion of any tree that extends within 10 feet of the outlet of a chimney or stovepipe. (5) Maintain any tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood. (6) Maintain the roof of a structure free of leaves, needles, or other vegetative materials.

(7) (a) Prior to constructing a new building or structure or rebuilding a building or structure damaged by a fire in an area subject to this section, the construction or rebuilding of which requires a building permit, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the certification, upon request, to the insurer providing course of construction insurance coverage for the building or structure. Upon completion of the construction or rebuilding, the owner shall obtain from the local building official, a copy of the final inspection report that demonstrates that the dwelling or structure was constructed in compliance with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the report, upon request, to the property insurance carrier that insures the dwelling or structure.

(b) A person is not required under this section to manage fuels on land if that person does not have the legal right to manage fuels, nor is a person required to enter upon or to alter property that is owned by any other person without the consent of the owner of the property.

(c) (1) Except as provided in Section 18930 of the Health and Safety Code, the director may adopt regulations exempting a structure with an exterior constructed entirely of nonflammable materials, or, conditioned upon the contents and composition of the structure, the director may vary the requirements respecting the removing or clearing away of flammable vegetation or other combustible growth with respect to the area surrounding those structures.

(2) An exemption or variance under paragraph (1) shall not apply unless and until the occupant of the structure, or if there is not an occupant, the owner of the structure, files with the department, in a form as the director shall prescribe, a written consent to the inspection of the interior and contents of the structure to ascertain whether this section and the regulations adopted under this section are complied with at all times.

(d) The director may authorize the removal of vegetation that is not consistent with the standards of this section. The director may prescribe a procedure for the removal of that vegetation and make the expense a lien upon the building, structure, or grounds, in the same manner that is applicable to a legislative body under Section 51186 of the Government Code.

(e) The Department of Forestry and Fire Protection shall develop, periodically update, and post on its Internet Web site a guidance document on fuels management pursuant to this chapter. Guidance shall include, but not be limited to, regionally appropriate vegetation management suggestions that preserve and restore native species, minimize erosion, minimize water consumption, and permit trees near homes for shade, aesthetics, and habitat; and suggestions to minimize or eliminate the risk of flammability of non-vegetative sources of combustion such as woodpiles, propane tanks, wood decks, and outdoor lawn furniture.

(f) As used in this section, "person" means a private individual, organization, partnership, limited liability company, or corporation.

4291.1. (a) Notwithstanding Section 4021, a violation of Section 4291 is an infraction punishable by a fine of not less than one hundred dollars ($100), nor more than five hundred dollars ($500). If a person is convicted of a second violation of Section 4291 within five years, that person shall be punished by a fine of not less than two hundred fifty dollars ($250), nor more than five hundred dollars ($500). If a person is convicted of a third violation of Section 4291 within five years, that person is guilty of a misdemeanor and shall be punished by a fine of not less than five hundred dollars ($500). If a person is convicted of a third violation of Section 4291 within five years, the department may perform or contract for the performance of work necessary to comply with Section 4291 and may bill the person convicted for the costs incurred, in which case the person convicted, upon payment of those costs, shall not be required to pay the fine. If a person convicted of a violation of Section 4291 is granted probation, the court shall impose as a term or condition of probation, in addition to any other term or condition of probation, that the person pay at least the minimum fine prescribed in this section.

(b) If a person convicted of a violation of Section 4291 produces in court verification prior to imposition of a fine by the court, that the condition resulting in the citation no longer exists, the court may reduce the fine imposed for the violation of Section 4291 to fifty dollars ($50).

4291.3. Subject to any other applicable provision of law, a state or local fire official, at his or her discretion, may authorize an owner of property, or his or her agent, to construct a firebreak, or implement appropriate vegetation management techniques, to ensure that defensible space is adequate for the protection of a hospital, adult residential care facility, school, aboveground storage tank, hazardous materials facility, or similar facility on the property. The firebreak may be for a radius of up to 300 feet from the facility, or to the property line, whichever distance is shorter.