

Firewise Communities / USA  
Community Assessment for the  
Grizzly Ranch Community



Photo 1-Grizzly Ranch Forest Land

Plumas County, California  
Spring 2015



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## Forward

Residents of the Grizzly Ranch community are concerned about the threat of wildfire to their community. They are working with local resources to become more fire safe so that when a wildfire occurs in their neighborhood they will be more prepared. Grizzly Ranch is a planned community located near the community of Beckwourth in southeastern Plumas County.

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. In the areas where the ground was disturbed during the development of the community, there are now dense stands of conifer seedlings, there are numerous undeveloped lots and undeveloped forestland that surrounds the community making Grizzly Ranch a textbook example of the Wildland Urban Interface (WUI).

The potential for catastrophic wildland fire along the Grizzly Road is very high; dense stands of conifers and brush are wide-spread, there are numerous homes 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.

## 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 residents of the Grizzly Ranch community in order to create 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:

### **Beckwourth Fire District**

- Greg McCaffrey, Fire Chief
- Ed Dillard, Captain

### **Plumas County Office of Emergency Services**

- Sue McCourt, Fire Prevention Specialist

### **Grizzly Ranch Residents**

- Donna Lindquist
- Jim Miller
- Sam Dudkiewicz
- John Reynolds
- Melissa Pennington
- Terry Limpert
- Sande Thayer
- John Saefke

### **Plumas County Fire Safe Council**

- Nils Lunder

### **CAL FIRE**

- Shane Vargas, Fire Prevention Captain

### **UNITED STATES FOREST SERVICE**

- Don Fregulia, ADFMO Fuels, Beckwourth Ranger District

## 2. Definition of the Home Ignition Zone

Grizzly Ranch 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. Relatively simple actions by the landowner will have a positive impact; inattention, procrastination or denial will have the opposite effect.

This assessment addresses the wildfire-related characteristics of the overall Grizzly Ranch 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. Grizzly Ranch 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 that is 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 Grizzly Ranch 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.

Because of the high density of lots in the community, developing a collective awareness regarding fuel reduction is as important as the need for individual property owners to protect their homes. It is critical to recognize that in the event of a major fire emergency, there simply will not be enough fire suppression resources to protect all, or even a majority 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 before a fire starts.

### 3. Wildland fire characteristics that could threaten the Grizzly Ranch 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).

Grizzly Ranch is located within the Beckwourth Fire District. If a structure fire occurs within Grizzly Ranch, Beckwourth Fire District would involve other local providers including, Portola and Sierra Valley Fire Districts for response. In regards to wildland fires, Grizzly Ranch lies within what is referred to as a State Responsibility Areas (SRA). In SRA areas, wildland fire response is the primary responsibility of CAL FIRE. The U.S. Forest Service is responsible for wildland fires on the SRA land in this part of Plumas County under the CFMA Land Swap Agreement. Beckwourth Fire District has agreements with the U.S. Forest Service to assist in the protection of these SRA lands. The U.S. Forest Service would be the lead agency for wildland fires in Grizzly Ranch.

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

- Fine fuels ignite more easily and spread faster with higher intensities than coarser fuels. For any fuel type, the more fuel there is and the more continuous it is, the faster the fire spreads and the higher the fire intensity. 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 moisture produces 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. The steeper the slope, the quicker the fire spread upslope and intensify.



Figure 2-Aerial View of Grizzly Ranch

Grizzly Ranch is situated within a canyon that was carved by Big Grizzly Creek. Moderate to steep slopes are found throughout the community. The lowest gradient areas within the community are where the golf course has been built. The golf course creates an irrigated, internal fuel break for the community. There are densely forested lands around the development, some of the smaller properties are owned by individuals, the larger properties are owned by Grizzly Ranch Investors (GRI), the Sierra Health Foundation; there are large pieces of Federal lands that are managed by the Bureau of Land Management and the United States Forest Service (Please see Map 2 on Page 18).

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 to the north or northeast. Historically, Plumas County has had a high incidence of lightning fires. Ignitions from a lightning 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 3-Flying embers cause fires

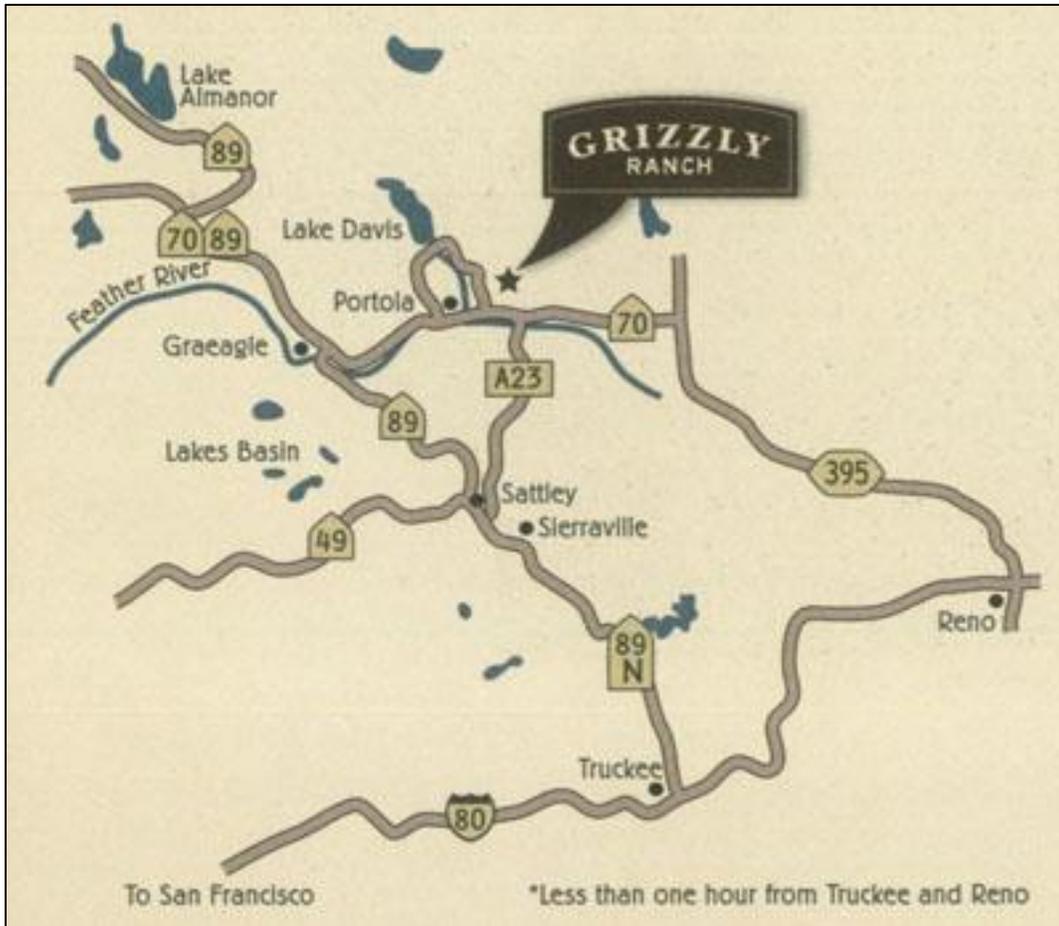
If the conditions are right, thousands of embers can be produced in a relatively short time by even a modest wildland blaze. These tend to fly like incendiary snowflakes, eventually settling to the surface and even “drifting” to form small clumps. If they land on a combustible material, they can cause 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 south and west of the Grizzly Ranch 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 Grizzly Ranch as it relates to fire issues.



Map 1-Regional map of the Grizzly Ranch area

Grizzly Ranch is a subdivision that was recorded by the County of Plumas, California in 1999. The development consists of approximately 1,040 acres containing parcels for 380 housing units, of which 293 have been developed. 240 lots have been sold to date and approximately 47 structures have been built on those lots. The development is in southeastern Plumas County near the communities of Beckwourth and Portola. Reno is approximately 45 minutes to the southeast and Truckee is approximately 55 minutes to the south. Grizzly Road passes through the community and State Route 70 is approximately 3 miles south of the community.

### 4.1 Demographics

There are 47 housing units and 15 full-time residents in the community of Grizzly Ranch. There are also structures that are owned and maintained by the Grizzly Ranch Home Owners Association (HOA) including the Outpost and Gatehouse; the Grizzly Ranch

Golf Club owns and maintains the Pro Shop, the Lake House, maintenance facility and the cart barn.

## 4.2 Topography and Vegetation

Grizzly Ranch is built along the edge of a canyon that has been carved by Big Grizzly Creek; a portion of the community is very near the creek, while a majority of the development has been built across a series of draws and slopes. The golf course was built on low gradient meadows while a majority of the home sites were built on forested slopes. The lowest point in the community is approximately 5,000 feet and the highest point is approximately 5,500 feet. The site experiences intense wind activity due to the topographic relief of the site; as a result, wind driven fires should be anticipated in the future.

The vegetation on properties surrounding Grizzly Ranch is typical of conifer dominated forests of the Sierra Nevada/Cascade region of northeastern California. These forests are dominated by Jeffery, Ponderosa and Sugar Pine, Incense Cedar, Douglas Fir, White Fir and Western Juniper. Many of the forest lands surrounding the community could use some level of fuels reduction work.

Many 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 those remaining trees are in need of thinning from below 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.

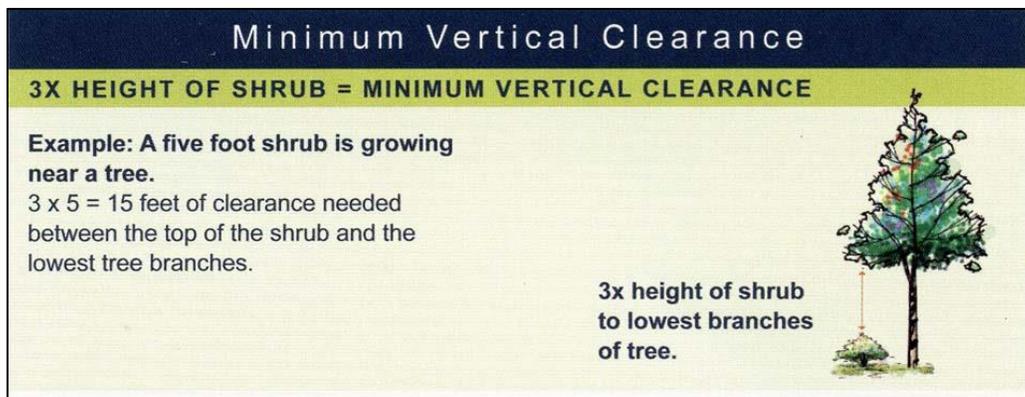


Figure 4-Vertical Clearance information



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 in order to increase the horizontal separation between neighboring trees.

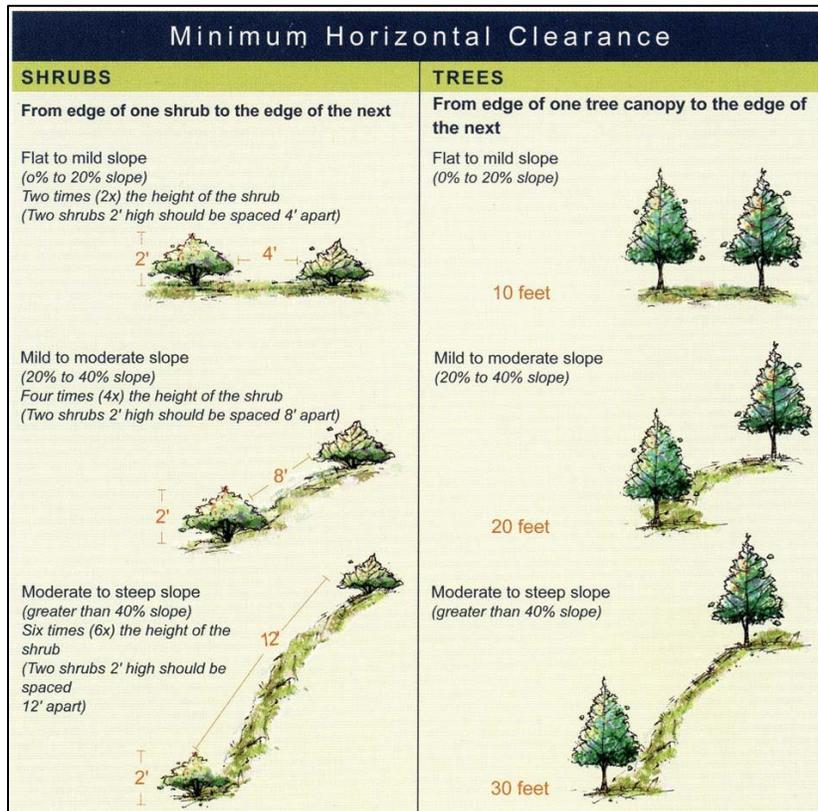
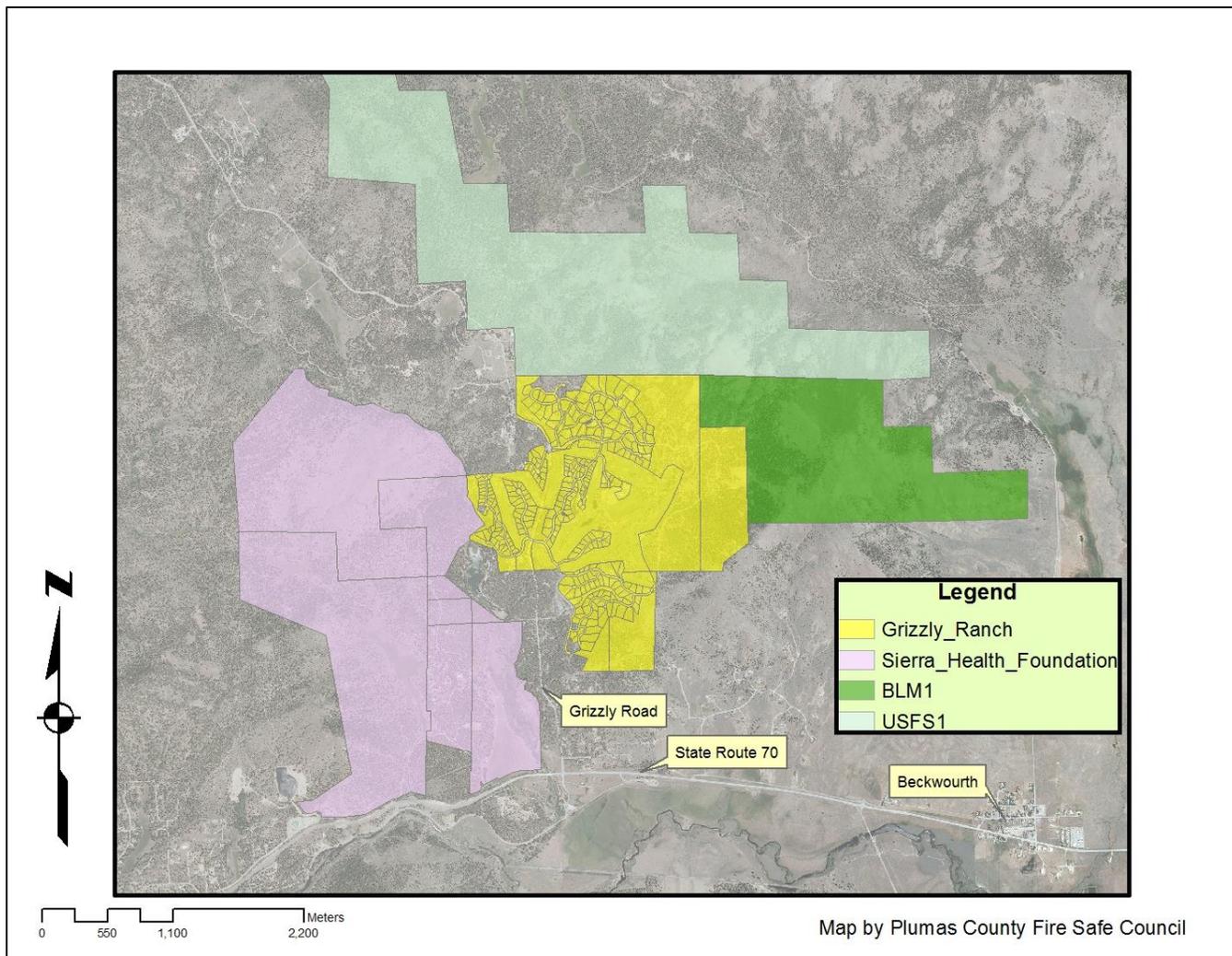


Figure 5—Horizontal Separation information



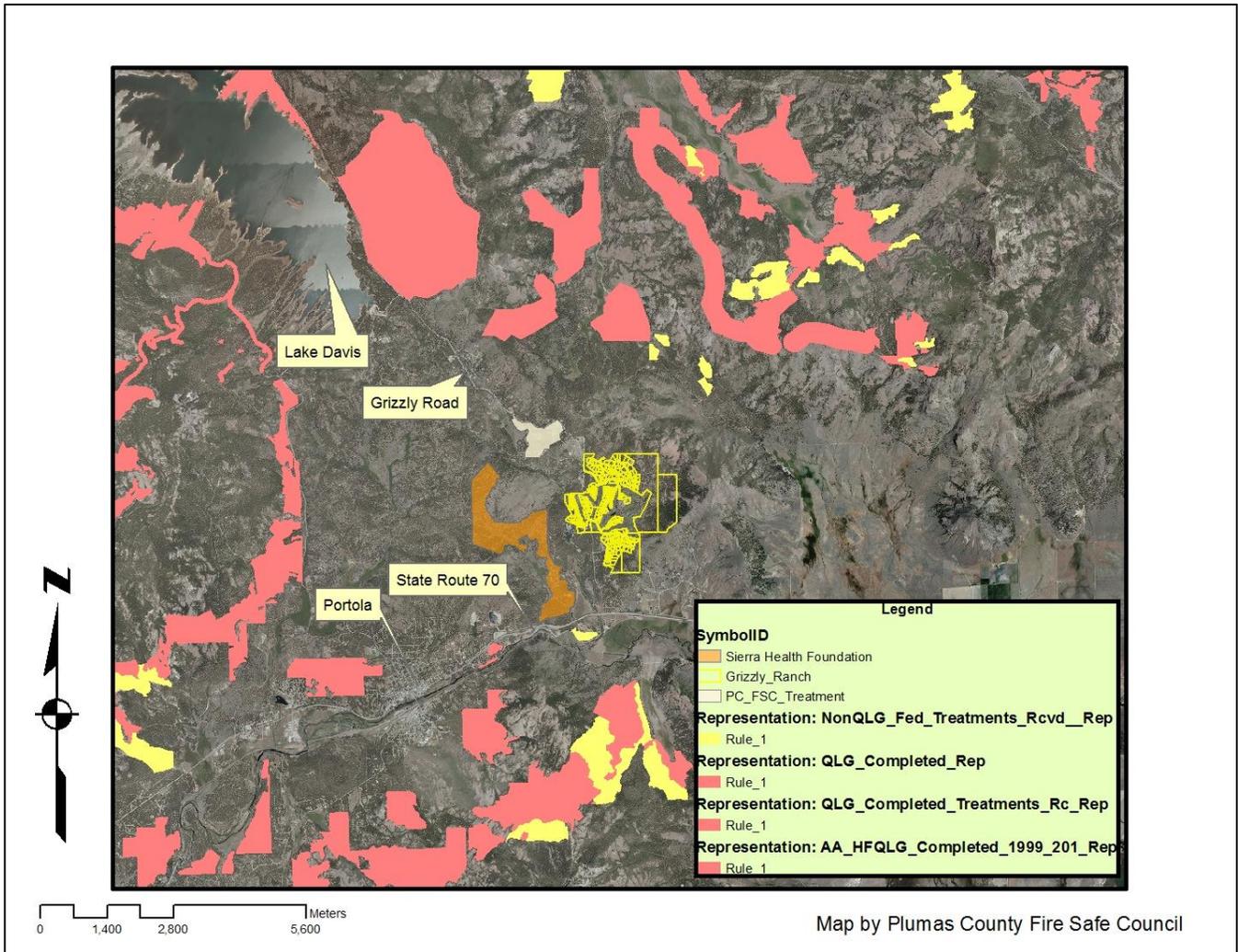
Photo 3-Trees in need of thinning in order to increase horizontal separation to reduce fuel continuity

The community is surrounded by both private and public forest lands, many of which consist of dense, over-crowded vegetation. Many of these forests are over stocked with conifer trees and have been adversely affected by the absence of wildfire over the past 100 years. If wildfire were to occur on many of these forested lands at this time they would be prone to rapid spread. Torching and crown fires would likely occur 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 2-Properties adjacent to the Grizzly Ranch community

Fuel treatments on adjacent and public lands have and will continue to occur. These treatments have helped to reduce crowding and to remove some of the fuel base on those properties. These treatments are shown on Map 3 below. Plumas County Fire Safe Council has worked to provide fuels reduction along Grizzly Road north and west of the Grizzly Ranch community. The Sierra Health Foundation owns hundreds of acres of forest lands to the west and south of Grizzly Ranch. They have been active in forest management and are working to greatly reduce the volume of fuels on their lands. Numerous projects have occurred on Federal lands within the region.



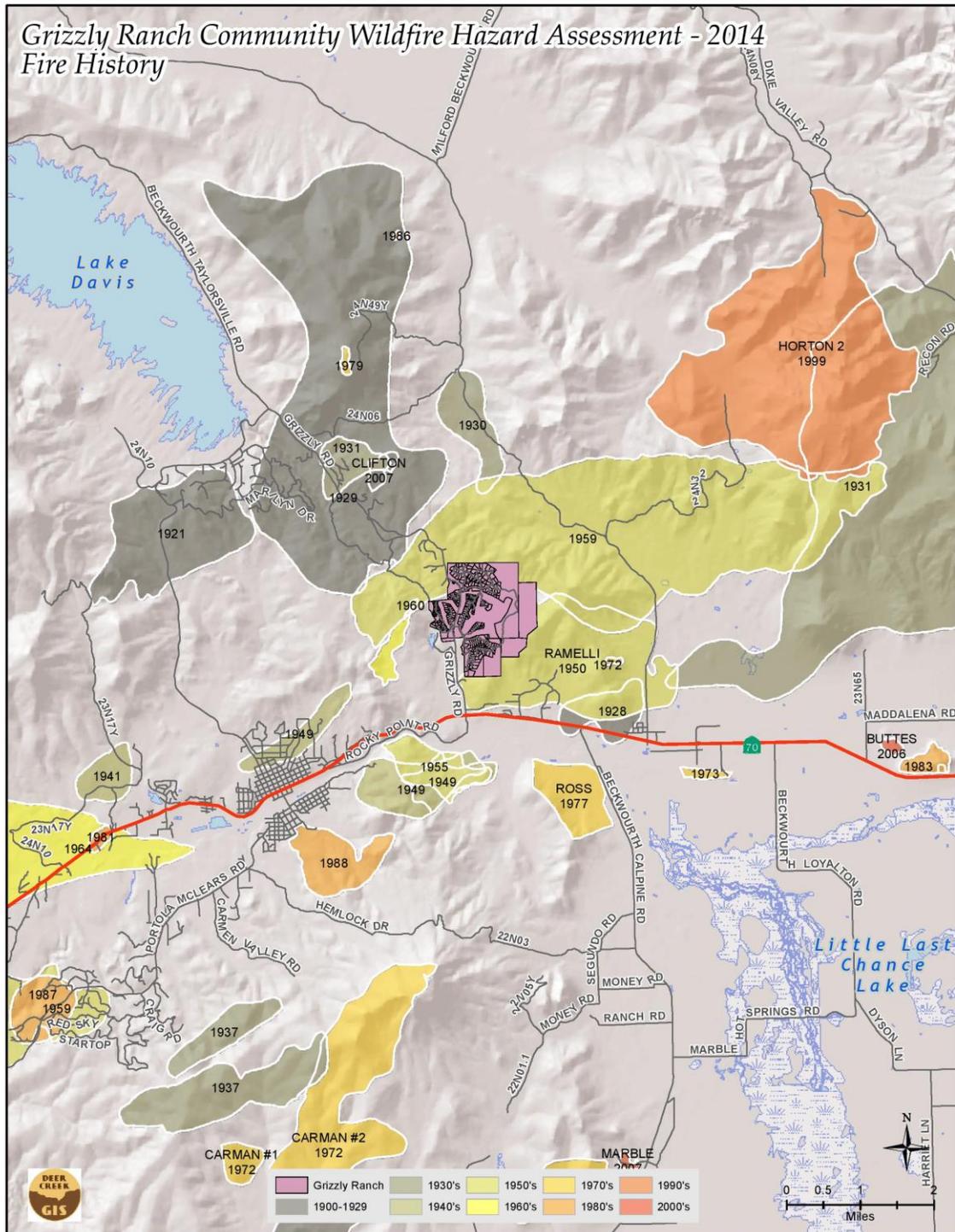
Map 3-Fuels treatments near Grizzly Ranch

It is recommended that members of the Grizzly Ranch Firewise committee reach out to all neighboring landowners to develop a long term management plans for of the Grizzly Creek corridor 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.

Regionally, wildland fires occur between May and October although during dry years it is not uncommon for fires to occur as early as March and as late as November. Wildland fires are not a new threat to the Grizzly Ranch community.



Map 4-Fire History in the Grizzly Creek basin

#### **4.4 Water sources**

The Grizzly Ranch community is served by both ground water wells and from a surface water diversion from Grizzly Creek. The water system is owned and operated by the Grizzly Ranch Community Services District; Bob Perreault (Plumas County Department of Public Works) serves as the CSD manager, and the Plumas County Board of Supervisors serve as the governing board of the CSD.

There are two primary groundwater wells and one emergency groundwater well that serve the community and one groundwater wells that supplies irrigation water for the 18-hole golf course at Grizzly Ranch. The golf course also receives some surface water that is diverted from Grizzly Creek. The groundwater wells supply one 660,000 gallon storage tank, from which water is distributed by a main line network that consists of 8 inch and 6 inch diameter pipe. This network serves both residences and the fire hydrant system.

All hydrants are supplied by either 6 inch or 8 inch diameter water lines. There are approximately 86 hydrants within the Grizzly Ranch community. Not all of the hydrants in the community have the same flow ratio but they all meet the minimum flow standards; this has been observed and recorded by the Beckwourth Fire District. The Beckwourth Fire District routinely inspects the hydrant system.

All new residential structures are required to be equipped with internal fire suppression systems (sprinklers) in accordance with state law which will reduce the minimum water pressure requirements for hydrants.

#### **4.5 Fire Response**

Grizzly Ranch is within the Beckwourth Fire District, they have mutual aid agreements with other local fire agencies. The Beckwourth Fire Station 2, located within the community is also staffed by one of the USFS Beckwourth Ranger District engines. The main Beckwourth Fire Station is located 4 miles from Grizzly Ranch. The City of Portola Volunteer Fire Department is 4 miles from the community. The U.S. Forest Service has a 20 person hand crew stationed at Nervino Airport in Beckwourth which is approximately 5 miles from the community.

#### **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 Grizzly Ranch area as “Very 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 Beckwourth Fire District with in the Grizzly Ranch community is 4.

## 5. Assessment Process

A team approach was taken in preparing this assessment of fire hazards and risks at Grizzly Ranch. 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 met on September 5, 2014. Team members involved with the assessment were Nils Lunder, Coordinator of the Plumas County Fire Safe Council; Sue McCourt, Fire Prevention Specialist, Plumas County Office of Emergency Services; Grizzly Ranch residents Sam Dudkiewicz, and Terry Limpert. Ed Dillard, Captain, Beckwourth Fire District; and Donna Lindquist representing Grizzly Ranch Investors and the Grizzly Ranch Conservancy.

This group met at Grizzly Ranch and discussed the Firewise Communities USA program and how Firewise could benefit the Grizzly Ranch community. After a discussion of the processes involved with becoming recognized as a Firewise Community, we set out into the community to conduct a visual review from a roadside perspective.



Photo 4-Captain Ed Dillard of the Beckwourth District during the Firewise Assessment

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 was a collaborative process where draft materials were circulated, reviewed, and revised based on inputs from the group.

## 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.

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 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 mutual aid agreements in place with numerous local fire protection districts that will respond if a wild fire threatens the community.
- The Grizzly Ranch HOA has hired an independent contractor to conduct a lot by lot assessment of existing fuels conditions within the community. This information will help the HOA to prioritize which properties need fuels treatments.

### 7.2 Grizzly Ranch Roads System:

All roads in the Grizzly Ranch subdivision are paved and have been designed with proper widths to accommodate fire prevention vehicles. A majority of the roads are marked with street signs, however, the street signs are not made with reflective material. All driveways and building locations are marked with reflective signs. Signage clearly reflects street continuity, however, several streets that change names at an intersection or continue on both sides of an intersection do not present clear signage of that fact. The placement and height of signage is inconsistent throughout the community.

The Grizzly Ranch community is currently developing an up-to-date map with correct house numbers which will be provided to fire, police and medical responders to locate the correct home in a reasonable amount of time. There is also confusion in this community due to the existence of two different Grizzly Roads, there are discussions within the community about how to best modify the road names.



Photo 5-Example of roads within the Grizzly Ranch community

#### Recommendations:

- The community should replace existing street signs with reflective sign materials.
- The community should complete a map with correct house addresses for emergency response agencies.
- The community should work to address street naming in order to reduce confusion. Examples of this are Grizzly Road within the southern portion of the community, since the main road to Grizzly Ranch is also called Grizzly Road, the Grizzly Ranch community should develop a different name such as South Grizzly Ranch Road. At those locations where road names change at intersections, such as Blacktail Ridge–Arrowleaf Road, the community should work to ensure that the signage reflects those changes.
- The community should ensure that all residences maintain their reflective signage in such a way that ensures that first responders will be able to navigate within the community at night and identify homes.
- The community should consider staggering street signs on the posts for better visibility. The current orientation of street signs (photo 6 below) can make reading the signs difficult.
- The community may consider adopting known sign standards. The California Manual of Traffic Control Devices (MUTCD) states that the minimum sign height is 5 feet to the bottom of the first sign panel. In the case of street name

signs, the MUTCD recommends seven feet to accommodate a stop sign if needed. All new sign installations should be on a 2" square fireproof metal signpost. Road signs that are obstructed by tree and/or shrubbery should be cleared of these or other obstructions.



Photo 6-Example of existing stop signs within the community



Photo 7-Example of existing street signs in the Grizzly Ranch community

### **7.3 Gates**

There are several automatic gates located within the community that are opened with either a keypad or a gate opening device. The community has taken steps to ensure that fire and EMS responders have devices that can open gates; these first responders also have access codes. There are two other vehicle access gates, one designated for emergency vehicles that are not electronically opened.

All automatic gates in the community are equipped with battery backup systems to ensure that both residents and emergency personnel have the ability to enter and exit the gates during a power outage.

#### **Recommendations:**

- The community should develop a protocol/infrastructure that allows all gates to be opened in the event of an emergency; this will eliminate a delay in response due to a locked gate.

### **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 or removed.
- Maintain vegetation clearances and maintain landscape vegetation in order to ensure access routes to structures.

### **7.5 Driveways**

All driveways within the community have reflective signs at the street.

#### **Recommendations:**

- Efforts should be made to ensure driveways are kept free of obstacles that could block the way for emergency response vehicles.
- Efforts should also be made to ensure that signs and drive ways are maintained.
- 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 Grizzly Ranch complies with State Public Resources Code 4290.
  - 10 foot minimum width
  - 15 foot minimum vertical clearance
  - Maximum slope of 16%
  - Minimum radius of turns to allow fire engine access

## Items that increase risks to community safety

Areas identified as a concern or for improvement

### 7.6 Structures & Defensible Space

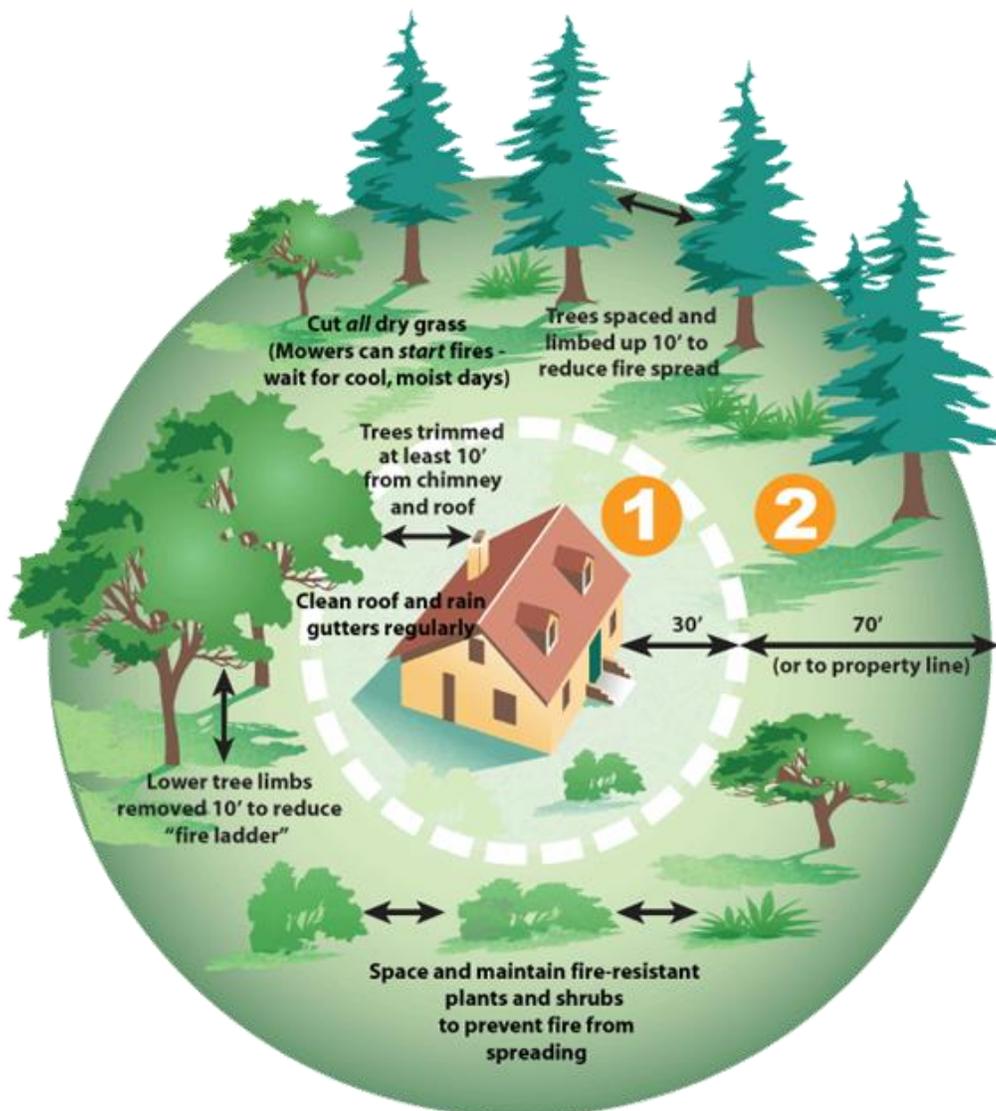


Figure 6-Defensible space diagram

- 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 pruning or thinning.
- Many homes lacked adequate treatment in what is referred to as the “Reduced Fuel Zone” (30-100 feet). Treatment 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.



Photo 8-Example of a home that is in need of fuel reduction work

- Some homes had roofs and gutters that had accumulated needles and other forest debris.
- Some homes 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.

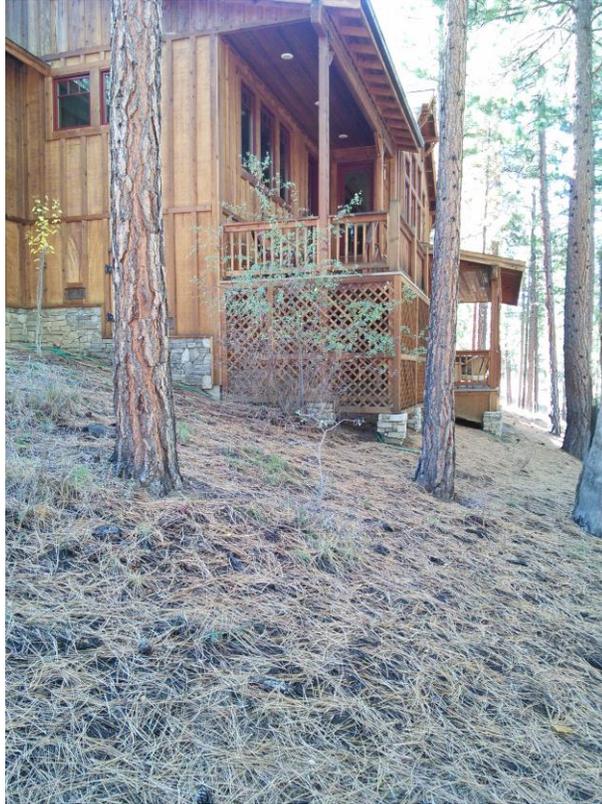


Photo 9—Vegetation and debris near a home in Grizzly Ranch

**Recommendations:** A number of informational pamphlets on defensible space are available to address the issues identified above. By understanding fire behavior, residents will 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.

- Homeowners should work to create a fuel free zone approximately 5 feet around their home free of grass and forest litter accumulations.
- Prune and thin trees near your home.
- Work to maintain a reduced fuel zone 100 feet around all structures.
- Remove accumulated forest materials from roofs, gutters and around the home.
- Do not plant ornamental vegetation that is flammable with 15 feet of your home; refrain from planting conifers next to your homes and structures.
- Lattice screening should have clearance from ignitable materials. Also, never store materials beneath a deck.
- Chimney and vent screens- it is recommended that these openings have 1/8” screens installed for protection from flying embers.

## 7.7 Propane tanks and generators

- All propane tanks in Grizzly Ranch are located underground. Regulators for

these systems are usually attached to the house with and in most cases, there are shut off valves at those locations. On many homes, these regulators are not immediately visible; especially during the winter.

- Many homes in Grizzly Ranch have backup power systems.

**Recommendations:**

- *Propane tanks:* All underground propane tanks should be marked for easy identification by fire/emergency personnel.
  - There should be identification at the structure near the regulator: the standard practice is to install a green reflective triangle at the regulator location.
  - The triangle should have a number in the center which indicates the distance between the tank and the regulator. This information would help emergency responders locate such tanks during all four seasons. Consult with the Beckwourth Fire Chief for more information.
  - Homeowners should periodically inspect their tank covers for the presence of accumulated propane gas.
- *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.
  - These generators should have an emergency shut off located outside of the building that can be easily accessible by fire personnel. In case of a structure fire, one of the first actions that happen is to shut off power to the building. This action, in turn, usually activates the backup generator. Fire responders need to have the ability to ensure that all power is off to a structure.

## 7.8 Water Systems

The Grizzly Ranch community is served by both ground water wells and from a surface water diversion from Grizzly Creek. The water system is owned and operated by the Grizzly Ranch Community Services District; Bob Perreault (Plumas County Department of Public Works) serves as the CSD manager, and the Plumas County Board of Supervisors serve as the governing board of the CSD.

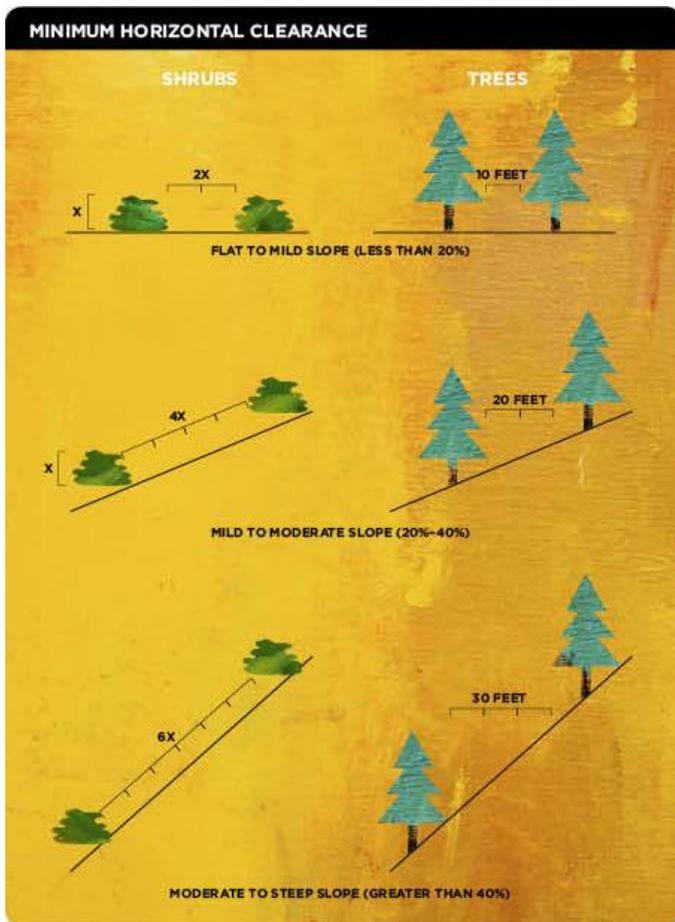
Water is distributed by a main line network that consists of 6” and 8” diameter pipe. All hydrants are supplied by 6” or 8” diameter lines. There are approximately 86 hydrants within the Grizzly Ranch community. One 660,000 storage tank holds water for the community.

**Recommendations:**

- Ensure that the water delivery system is inspected on a routine basis and that the water supply provides adequate volumes and pressure of water for fire suppression activities.
- Establish a minimum storage volume in the community water tank. Establish guidelines and procedures to ensure that a minimum amount of water is held in the tank at all times.
- Ensure that the Community Service District monitors the tank to ensure that the volume is maintained at all times.
- Residential shut off valves should be clearly marked so that they can be located during the winter season.

### **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 Grizzly Ranch community. Undeveloped lots are susceptible to ember ignitions with the threat of multiple spot fires occurring within the community in the event of a wildfire. The main concern in Grizzly Ranch is the dense growth of young conifers. 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 and biodiversity.



With 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 Grizzly Creek, the first step should be to ensure that there is separation between the individual shrubs.

With conifers, there is a similar

Figure 7-Vegetation spacing diagram

**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.
- The community should coordinate with the County to perform hazardous fuels reduction work along Grizzly Road in the areas where that road passes through the Grizzly Ranch community.
- The community should coordinate with the Bureau of Land Management (BLM), the United States Forest Service (USFS), the Sierra Health Foundation, and the

owners of the golf course to develop coordinated hazardous fuels reduction projects that improve the overall fire safety of the Grizzly Road corridor.



Photo 10-Example of accumulated fuels on untreated lots in Grizzly Ranch

## Additional Considerations:

### Power and Communication Infrastructure

Grizzly Ranch 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 road that passes through the community (Grizzly Road) is a potential source of wildfire ignition. This road receives considerable traffic including many vehicles that are towing trailers to Lake Davis.

**Recommendation:** Grizzly Ranch residents are encouraged to work with the Plumas County Department of Public Works to inspect and maintain vegetation along Grizzly Road in such a way that minimizes the 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. If possible,

residents of Grizzly Ranch should engage with the County to identify collaborative opportunities to reduce fuels along Grizzly Road.

#### **Suggested Wildfire Evacuation Route Map**

Grizzly Ranch does not have a wildfire evacuation route map for residents and fire responses agencies.

**Recommendation:** Work with Plumas County OES to develop a map using existing models for other communities in Plumas County. See Appendix A.

## **8. Successful 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 Grizzly Ranch and are examples of good Firewise practices.



Photo 11-A home in Grizzly Ranch, 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 Grizzly Ranch Firewise Committee, that committee should 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 Grizzly Ranch community seeks to achieve national Firewise Communities/USA recognition status, it will integrate the following standards into its plan of action:

- Assemble a local Firewise board, task force, committee, commission or department that maintains the Firewise Community program and status. Ensure that this group has sufficient participation and capacity to function.
- Complete and submit this assessment and create a plan that identifies agreed-upon, achievable local solutions.

- Invest a minimum of \$2.00 annually per capita in the Grizzly Ranch 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.)
- Plan and promote a Grizzly Ranch Firewise Communities/USA Day during the year that is dedicated to a local Firewise project. Use this project activity day as a way to engage landowners and to illustrate what the Grizzly Ranch Firewise effort is all about.
- Submit an annual report to Firewise Communities/USA. This report documents continuing participation in the program. The report will include photos and descriptions of Firewise activities; it will document the accomplishments of the Firewise efforts and will also document the total number of volunteer hours that have been spent to accomplish these tasks. A very important element of the Firewise effort is the careful recording of these hours.

## 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 work to maintain their homes in preparation for and eventual ember blizzard. It is important that landowners work to ensure that there are no opportunities for fire to contact the structures that exist on the property, 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 near structures; these efforts will reduce fire intensity within the home ignition zone.

Grizzly Ranch homeowners are reminded that the presence or absence of street signs, clearly defined home addresses, and community infrastructure do not keep a house from igniting. Proper attention and active maintenance of home ignition zones does. Homeowners are encouraged to 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 Grizzly Ranch. Information is available at the Beckwourth Fire Stations, via the Internet and by contacting the Plumas County Fire Safe 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>).

Information on community fuel reduction projects, community chipping programs and programs that assist senior and disabled residents is available from the Plumas County Fire Safe Council. The USFS Beckwourth Ranger District has information available regarding defensible space.

### **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 required from May 1 until the beginning of the State burn ban. During dry years, burning may be limited or banned entirely within State burn ban. Check with the Beckwourth Fire Station or with the Beckwourth Ranger District in Blairsden for burn permits. Those organizations are also a resource for burn safety information on debris burning. 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-

### 2015 Grizzly Ranch Wildland Fire Suggested Emergency Evacuation Route Map

This map is being prepared and will be inserted here once completed and approved by the Plumas County Sherrif's Office.

## 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/CDFB0FDB/pdfs/Copyof4291finalguidelines9\\_29\\_06.pdf](http://www.fire.ca.gov/CDFB0FDB/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.







