

# 2016-2017 Calaveras County Community Wildfire Protection Plan



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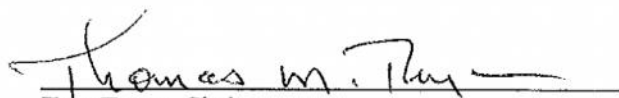
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**Community Wildfire Protection Plan  
Mutual Agreement Page**

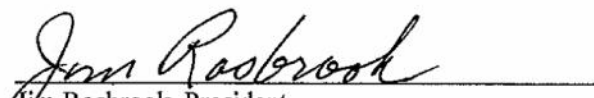
The Community Wildfire Protection Plan developed for Calaveras County:

- Was collaboratively developed. Interested parties and federal land management agencies managing land in the vicinity of Calaveras County have been consulted.
- This plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect Calaveras County.
- This plan recommends measures to reduce the ignitability of structures throughout the area addressed by the plan.

The following entities mutually agree with the contents of this Community Wildfire Protection Plan:

  
 Tom Tryon, Chair  
 Calaveras County Board of Supervisors

  
 Mike Noonan, Unit Chief  
 California Department of Forestry and Fire Protection

  
 Jim Rosbrook, President  
 Calaveras County Fire Chiefs Association

  
 Terry Woodrow, President  
 Calaveras Foothills Fire Safe Council

## **Background of a C.W.P.P.**

Community Wildfire Protection Plans, C.W.P.P.'s are authorized and defined in Title 1 of the Healthy Forests Restoration Act (HFRA) of 2003. The HFRA expedites the preparation and implementation of hazardous fuels reduction projects within the wildland urban interface (W.U.I.) and helps rural communities, states and landowners to restore healthy forests and watershed conditions on state, private and tribal lands. The wildland–urban interface (W.U.I.) is commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. This W.U.I. zone poses tremendous risks to life, property, and infrastructure in associated communities and is one of the most dangerous and complicated situations firefighters face.

Both the National Fire Plan and the Ten-Year Comprehensive Strategy for Reducing Wildland Fire Risks to Communities and the Environment place a priority on working collaboratively within communities in the W.U.I. to reduce their risk from large-scale wildfire. The HFRA builds on existing efforts to restore healthy forest conditions near communities and essential community infrastructure by authorizing expedited environmental assessment, administrative appeals, and legal review for hazardous fuels projects on federal land. The Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and it places priority on treatment areas identified by communities themselves in a C.W.P.P.

It also authorizes the acquisition of conservation easements and the establishment of monitoring and early warning systems for insects and disease outbreaks. The purpose of this plan is to identify the risks and hazards associated with wildland fires in the wildland urban interface (W.U.I.) areas of Calaveras County. The plan also identifies recommendations aimed at preventing and reducing both infrastructure and ecosystem damage associated with wildland fires. The Calaveras County Community Wildfire Protection Plan is intended to reduce the risk to people, property and the environment. Fuel reduction projects identified in an approved C.W.P.P. receive priority for federal funds.

A C.W.P.P. must be developed collaboratively, must prioritize fuel reduction areas, and must provide recommendations to reduce the ignitability of structures. This benefits a community in a variety of ways:

- It allows the community to establish their own W.U.I. boundary. Community established W.U.I. boundaries can improve and influence access to funding sources since federal agencies are required to give them high priority.
- It allows the community to conduct wildfire prevention planning over the landscape, recommending projects that benefit the community as a whole and the types and methods of treatment to be used.

The **minimum requirements** for a C.W.P.P. as described in the HFRA are:

**(1) Collaboration:** A C.W.P.P. must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties.

**(2) Prioritized Fuel Reduction:** A C.W.P.P. must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure.

**(3) Treatment of Structural Ignitability:** A C.W.P.P. must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

The HFRA requires that three entities must mutually agree to the final contents of a C.W.P.P.:

- The applicable local government (Calaveras County Board of Supervisors);
- The 10 local fire department(s); and
- The state entity responsible for forest management. (Cal Fire)

In addition, these entities are directed to consult with and involve local representatives of the USFS and BLM and other interested parties or persons in the development of the plan. The process is intended to be open and collaborative, as described in the Ten-Year Strategy, involving local and state officials, federal land managers, and the broad range of interested stakeholders. If a community already has a plan that meets these requirements, the community need not develop an additional plan for the purposes of the HFRA.

### **Maintaining a living plan in 2016 and beyond**

A plan becomes obsolete the moment a finished product is set on the shelf unless there is an established plan to review and update the plan. Soliciting future feedback to keep the Calaveras County C.W.P.P. updated and relevant will be an important part of maintaining a valuable, living document. A group of stakeholders will continually collect and monitor data useful to an update of the plan. The Calaveras Foothills Fire Safe Council will (Funding Permitted), take the lead on assuring that updates are completed on an annual basis.

### **Calaveras County C.W.P.P. Summary**

As many residents of Calaveras County have experienced firsthand, wildfire can threaten lives, property, community assets, and natural resources. There are preventive measures that can be taken to help protect communities from the devastating losses that can result from wildfire. However, individual implementation of such measures can be prohibitive in terms of both cost and time, especially when neighboring properties do not participate. In this respect, C.W.P.P.s can be very empowering tools, providing communities with the opportunity to influence where and how fuel reduction projects are implemented. Communities with C.W.P.P.s in place are given priority for funding of hazardous fuels reduction projects. The funding is made available primarily through the California Fire Safe Council's grant clearinghouse that combines federal and state funding sources into one place. Organizations such as Fire safe councils and the RCD's regularly apply for grant funding on behalf of the community. This plan is the communities opportunity to participate in partnerships like these and suggest priority projects that should be

addressed. Additionally, C.W.P.P.s can help motivate neighborhoods to work together on projects so that individual efforts aren't completed in isolation. By continually contributing unique local knowledge to a C.W.P.P., citizens can help create a strong, living and collaborative community plan.

The C.W.P.P. concept in Calaveras County involves a strategic and holistic approach to fire safe planning and project development. In the spirit of cooperation amongst all fire agencies, with other governmental agencies, public and private groups, and stakeholders, the work group will maintain a C.W.P.P. to address the fire problem within the County.

Agency staff members will work cooperatively with entities, which provide fire and natural resource protection on Local Responsibility Areas (LRA), Federal lands, and State Responsibility Areas (SRA) to maintain a comprehensive C.W.P.P. Local government (city, county and special districts), the county, State (CAL FIRE), Forest Service (USFS), and the US Bureau of Land Management (BLM) have already begun this process in Calaveras County. This may offer an additional avenue for form public\private partnerships to plan and implement projects. The recent formation of the Upper Mokelumne River Watershed Protection group is an example of a possible partner in fuels management along the Mokelumne River canyon with the agencies. Another group who embodies the spirit of community involvement and agency cooperation is the Amador Calaveras Consensus Group (ACCG). This group has been extremely active in fuels related topics as well as seeing that this plan is successful.

Coordination of the efforts of the fire agencies and citizens mentioned above will take place at the meetings of several interagency groups and the Calaveras Foothills Fire Safe Council (shall be referred to as the CFFSC in future areas of this document). Within the Fire Safe Council framework, members (agencies, groups, citizens, etc.) can work together with the Board of Supervisors to develop fire safe measures, plans and projects within the county. The C.W.P.P. will function as a center point or conduit for all of the above mentioned activities and groups for the purpose of collaborating county wildfire protection activities and for seeking local government, state, and federal support for the said projects, when applicable.

Existing programs and treatment will be used to implement the projects that are developed through the planning process. One of the most commonly used programs will be the forest agencies Vegetation Management Programs (VMP). These programs will be used to perform fuel modification projects such as prescribed burns, brush clearing, biomass reduction, and fuel break construction. CAL FIRE's LE-38 inspection program will be used to ensure that property owners have adequate clearance of flammable vegetation around their structures. Timber harvesting of over-dense forest stands will be encouraged to reduce the fuel build-up, which leads to large, catastrophic wildfires. Demonstrations of the above projects will be used to educate the public on their importance in creating a fire safe environment in and around their communities and homes.

For an area in which a Project is proposed, the first objective is to isolate the assets at risk, while the second objective is to mitigate the condition that is the agent causing the risk. This can be accomplished in a single project or a series of projects over time.

Establishment of fuel breaks and/or fire safe communities (PRC 4290 and 4291) will be the first step to isolate assets at risk. Once those are established, they will be used as an anchor point for fuel modification efforts for the adjoining areas through manual and mechanical treatments, prescribed burning and timber harvesting. Utilizing these measures, the objective is to be able to confine future wildfires to the watershed drainage of origin that is bounded by the fuel breaks. This process will be utilized for the maintenance of the established fuel breaks.

All of these measures will enable multiple agencies and private citizens to become involved in planning and implementing fire safe projects. By involving other agencies and the general public, jurisdictional boundaries will no longer stall implementation of strategic projects.

This C.W.P.P. is not a legal document and is not intended to be an all-encompassing document in regards to fire planning and management in Calaveras County. Additionally, this C.W.P.P. does not satisfy any regulatory permitting process, including CEQA analysis for any project proposed within. This plan recommends both general and specific projects, all of which are subject to the appropriate permitting and environmental review for the county in which they are proposed. Any public projects identified or proposed in this C.W.P.P. will be done only as funding allows. There is huge variation in vegetation, weather conditions, geography and access throughout Calaveras County. There are also numerous government jurisdictions, with differing interests. Because of this, the discussions and recommendations in this C.W.P.P. have remained general in nature, as to not conflict with stakeholder interests. Because this plan is a flexible planning tool, rather than a blueprint, general guidelines allow the project proponent to develop the most appropriate methods available for fuels treatment.

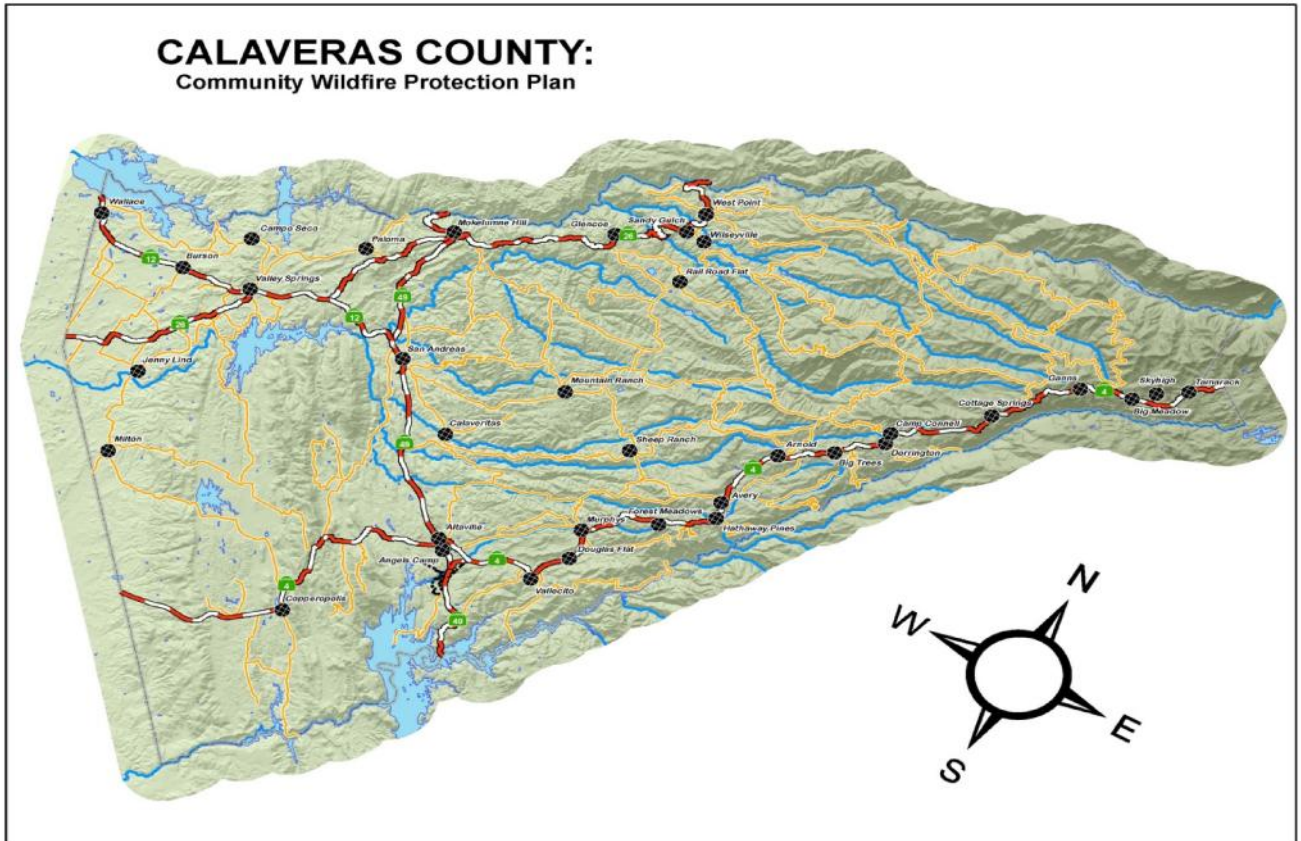
## **Calaveras County Description**

### **History**

Calaveras County has been inhabited for many thousands of years and the Miwok and Washoe are two of the more recent Native American tribes. Calaveras is named for the Spanish word meaning skulls, reportedly for the bones of fighters left behind after a war amongst Native Americans that were discovered by Captain Gabriel Moraga. European settlers migrating westward across the U.S. began arriving in the western portion of Calaveras County the first half of the 19th Century.

The discovery of gold in the region in the mid-19th century was unquestionably the most important development of the modern history of the County. Gold mining fostered a robust economy and spurred the formation of the towns, many of which are still present. Changes in land use after the end of the Gold Rush were relatively minor, until the growth of outdoor recreation beginning in the 1960's. Visitors seeking recreation and open space have created major changes in the area's economy and land use patterns. The rapid growth of subdivisions in recent decades, including both seasonal and permanent homes, has resulted from these demands.

## Geography



Calaveras County's total area encompasses 662,791 acres or 1,023 square miles. The Sierra Nevada Mountain Range runs north-south through the eastern part of the County. The Mokelumne River provides the northern boundary with the Stanislaus River providing the southern boundary. Both rivers run east-west from the Sierra Nevada Mountains. The County contains numerous small reservoirs and the following larger lakes: Lake Comanche, Pardee Reservoir, New Hogan, New Melones, Spicer, Lake Tulloch and Salt Springs Valley Reservoir. Elevation of the County starts at below 500 feet at the western limits by Wallace and Lake Comanche to over 8,000 feet 2 miles east of Tamarack on Highway 4.

When looking at the influences of land use patterns in Calaveras County, one needs to first look at the major land ownerships in the County. Basically the county can be broken up into four parts. Approximately 78,067 acres located along the Highway 4 corridor are owned and managed by the U.S. Forest Service; approximately 35,464 acres at scattered sites are owned and managed by the Bureau of Land Management; the State of California owns Calaveras Big Trees State Park covering approximately 1,000 acres in Calaveras County; and the major private property owner is Sierra Pacific Industries controlling interest on approximately 75,000 acres. The only incorporated city in the county is Angels Camp with its population of 3,250 covering approximately 4 square miles. The majority of the County's population of 40,000 resides in the unincorporated areas. Each year there is increased development into the county's wildland areas. This growing wildland-urban interface provides a series of complex challenges to all who

live and work in the foothill Counties. How do we ensure the safety of the citizens that move into these areas while at the same time protecting the wildland areas?

Calaveras County is located in Central California. Approximately 80 percent of the County is State Responsibility Area (SRA) lands within this area; land where the wildland fire protection responsibility is CAL FIRE's. Land owners of both SRA and Non-SRA lands within the County include the previously listed Federal, State and Private property owners. To reduce a duplication of costs, the Federal and State wildland fire protection agencies have entered into various agreements that define Direct Protection Areas (DPA) for each agency, regardless of land ownership within a given DPA.

The Calaveras County General Plan Baseline Report notes that less than one percent (0.71 percent) of Calaveras County is urbanized. The majority of the planning area is composed of natural habitat areas such as annual grassland (22 percent), Montane Hardwood (15 percent), and Sierran Mixed Conifer habitat areas (14 percent). Major watersheds include the Mokelumne River watershed at the county's northern border, the Stanislaus River watershed at the county's southern border, and the Calaveras River watershed in the north-central portion of the county.

There are two east-west state highways in the County, Highway 26 and Highway 4. State Highway 49 is the only north-south highway through the County. Highway 12 west of Valley Springs provides access from Lodi and points west to Valley Springs where it joins Highway 26. Most of the population centers are located along these transportation corridors. These highway corridors are used within this plan as reference areas for specific projects and locations.

There are three major watersheds in the County, the Stanislaus River to the south, the Calaveras River in the center, and the Mokelumne River to the north. Numerous water and power and communications facilities make use of the resources of these rivers and their tributaries.

In Calaveras County, the highest population density is found on the Highway 4 corridor from Angels Camp to Dorrington. The Valley Springs and Copperopolis areas are currently experiencing intensive population growth resulting in increased need for services and increased traffic congestion.

The population within the County increases significantly during the fire season for several reasons. Many vacation homes exist within the County that are used more frequently during the summer months. The area has many recreational opportunities which draw people from all over the state and country. From the summer cabins in Arnold and high country to weekly rentals along the shores of Lake Tulloch, the summer population can double during heavy vacation periods, such as the 4<sup>th</sup> of July. Seasonal workers come to this area in search of summer jobs, thus increasing the resident population. Since the majority of fires are human caused, this increase in population usually results in more wildland fire ignitions.

The major industries that support the local economy include timber, cattle, tourism, recreation viticulture and construction. A variety of other small businesses contribute significantly to the local economy. All of these industries have been affected at one time or another when wildfires have burned in the County. Hundreds or thousands of dollars have been lost both directly and indirectly due to these fires.

Calaveras County's climate is influenced by prevailing westerly weather patterns and transitional topographic aspects between San Joaquin Valley and the Sierra Nevada. Climate varies significantly due to great differences in elevation, ranging from 300 feet in the western portion to over 8,000 feet near the border with Alpine County. Temperatures in the higher country generally range from the low 20s to the middle 80s. The lower foothills range in temperature from the low 30s to the high 90s, exceeding 100 degrees at times during the summer months.

Precipitation generally increases with altitude. Average precipitation is 20 inches a year in the western region to 60 inches in the northeast. The rainy season is October 1 through May 1. Snow accounts for much of the precipitation in the higher elevations (up to 300 inches per year), while snowfall is rare in the foothills (Calaveras County 2008).

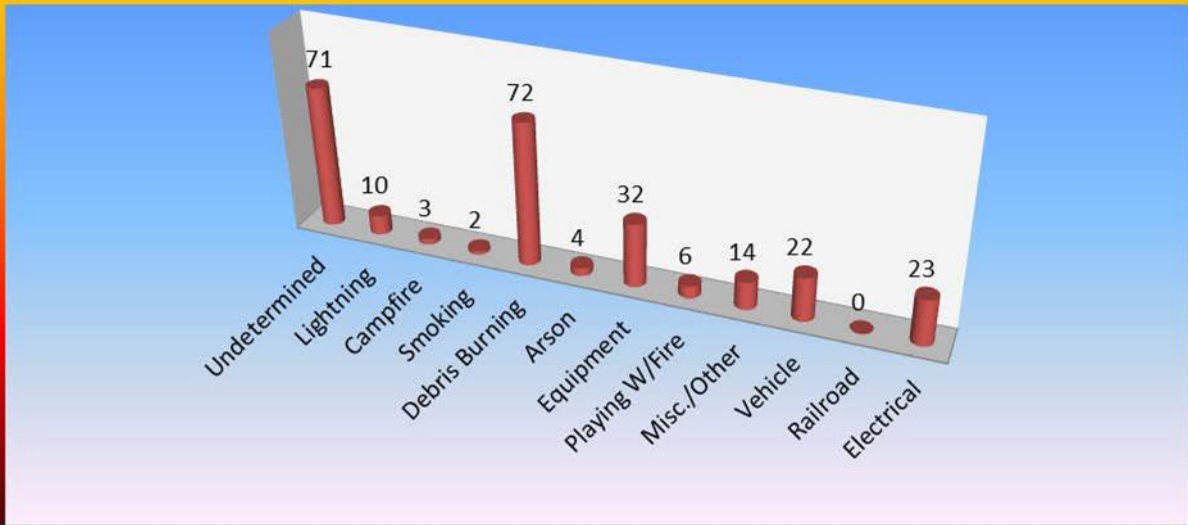
### **Fire Environment**

Fire conditions arise from a combination of hot weather, an accumulation of vegetation, and low moisture content in air and fuel. These conditions, especially when combined with high winds and years of drought, increase the potential for wildfire to occur. The wildfire risk is predominantly associated with wildland-urban interface areas, areas where development is interspersed or adjacent to landscapes that support wildfire. A fire along this wildland-urban interface can result in major losses of property and structures.

Generally, there are three major factors that sustain wildfires and predict a given area's potential to burn. These factors are fuel, topography, and weather.

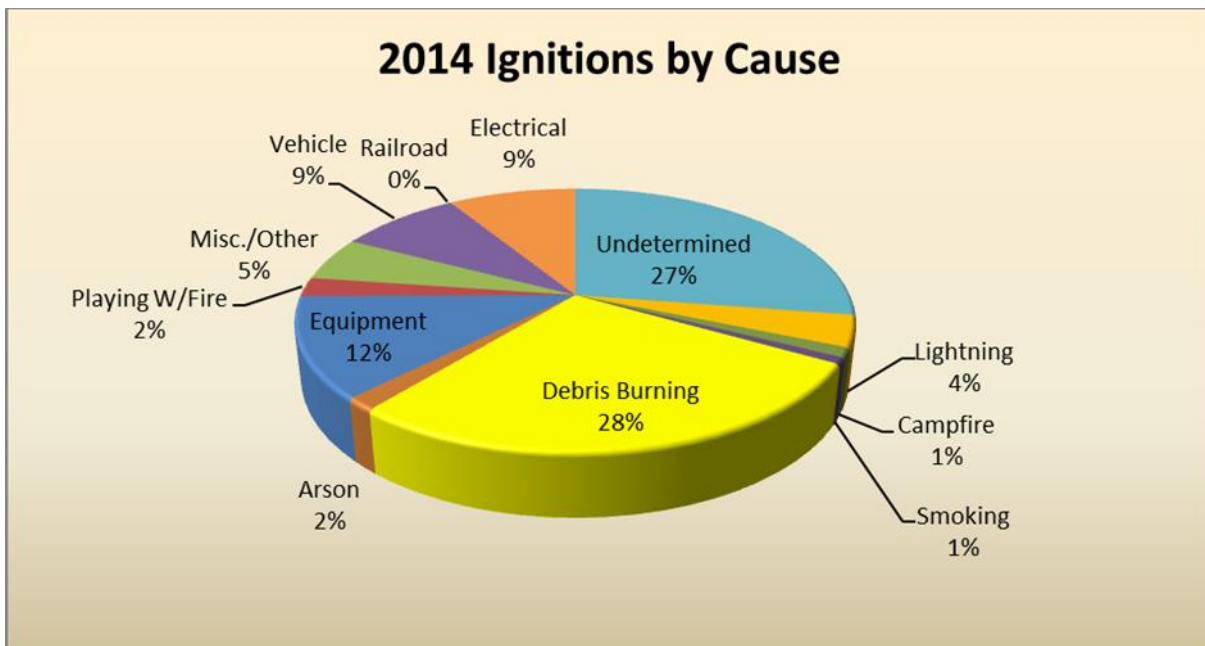
Below are the Ignitions by cause between 2011 and 2014 as reported in the 2015-2016 TCU Pre-Fire Management Plan.

## 2014 Ignitions by Cause

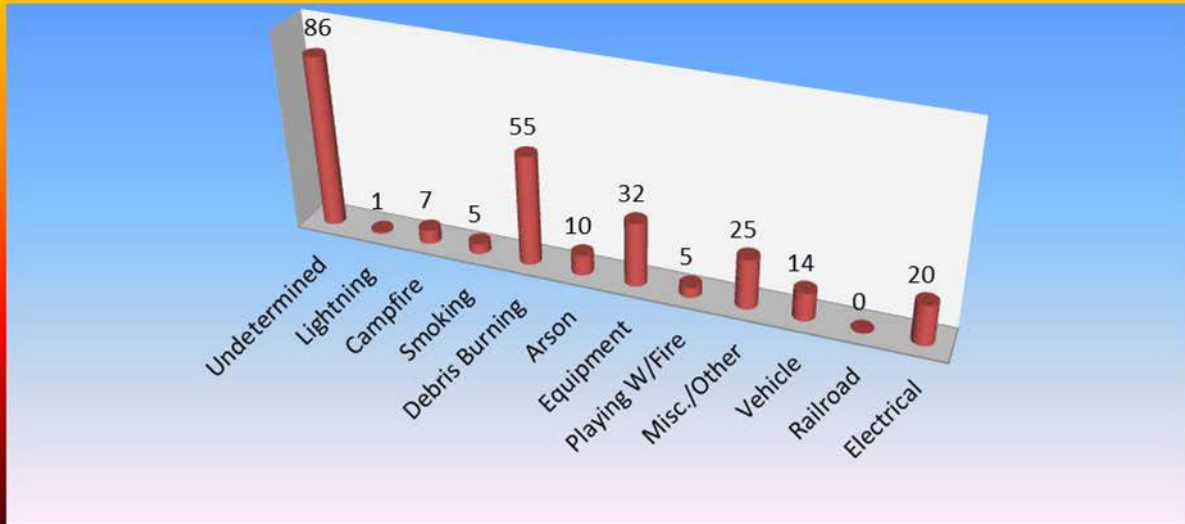


APPENDICES C: Ignitions Tables / Charts

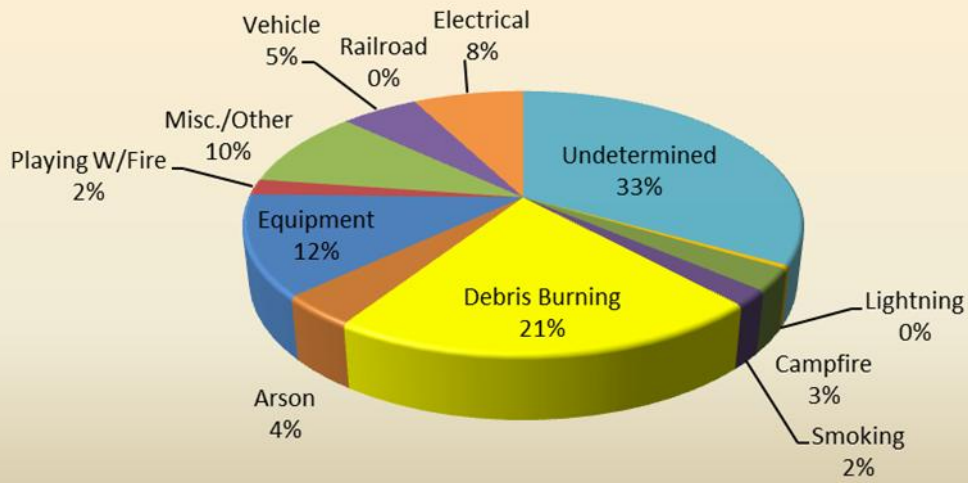
## 2014 Ignitions by Cause



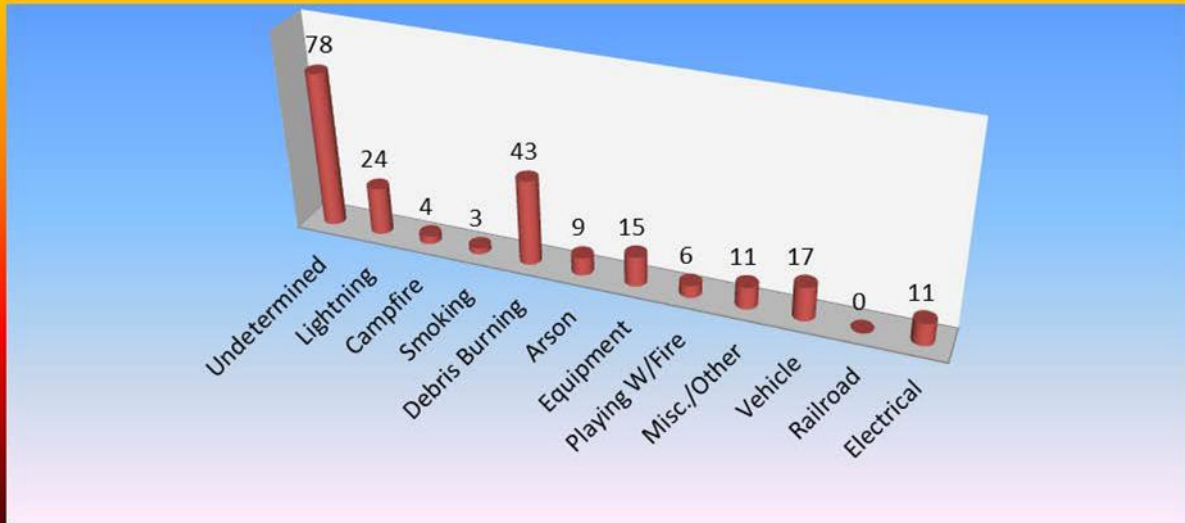
## 2013 Ignitions by Cause



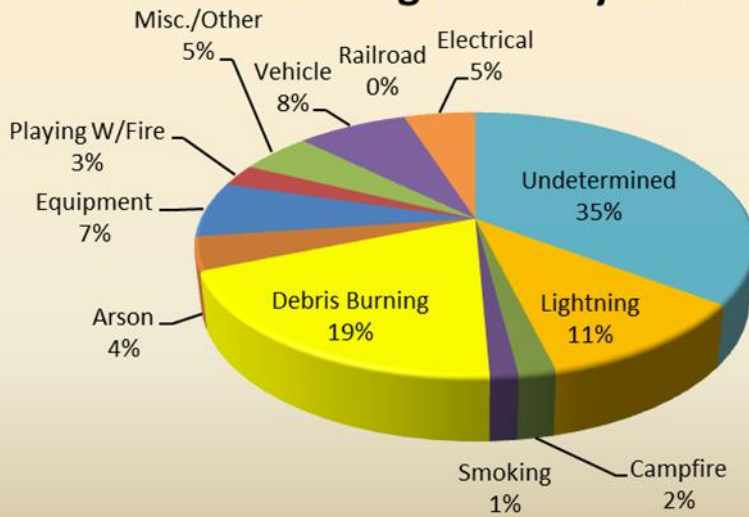
## 2013 Ignitions by Cause



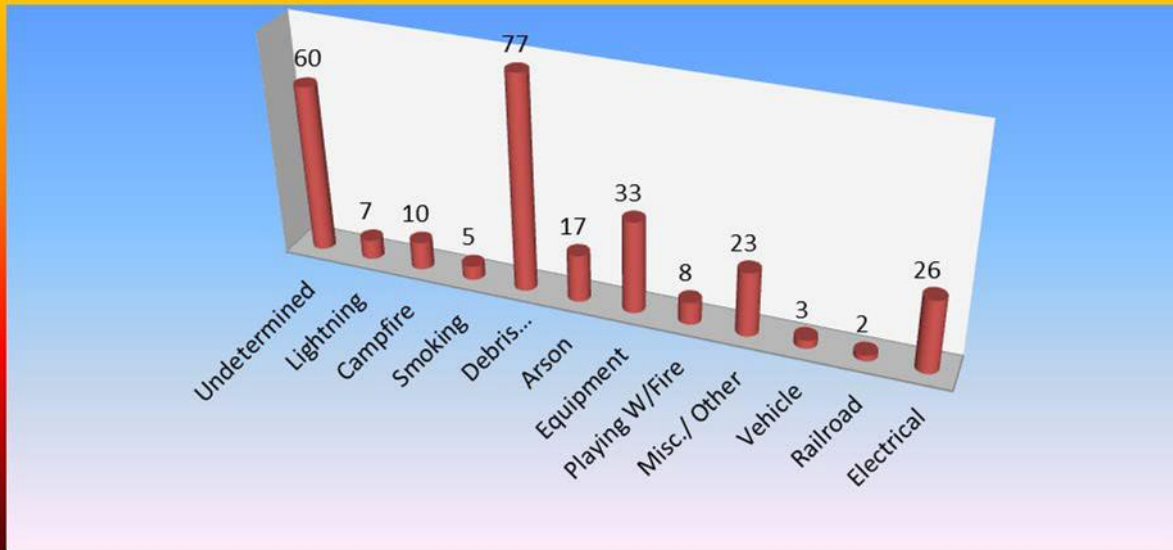
## 2012 Ignitions by Cause



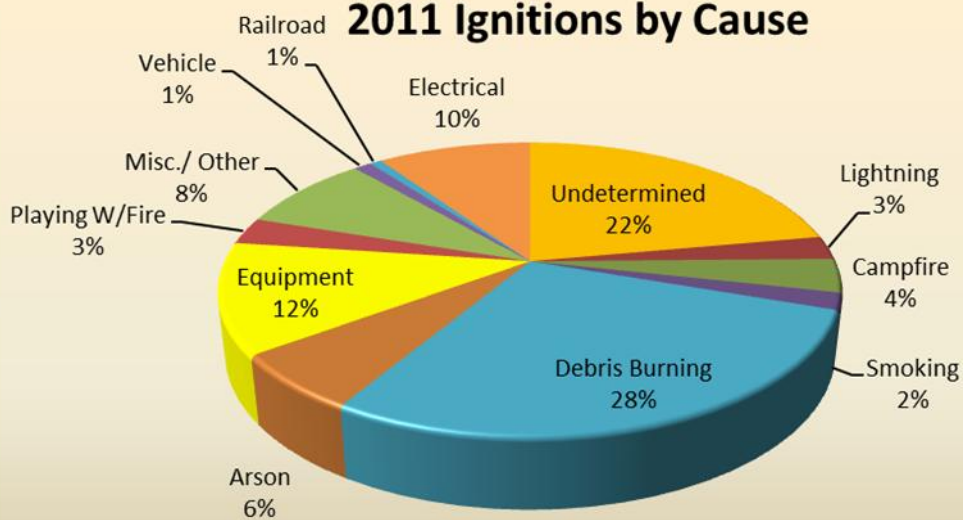
## 2012 Ignitions by Cause



## 2011 Ignitions by Cause



## 2011 Ignitions by Cause



## **Fuel**

Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and include everything from dead tree needles and leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Also to be considered as a fuel source are manmade structures, such as homes and associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Light fuels such as grasses burn quickly and serve as a catalyst for fire spread. In addition, ladder fuels can spread a ground fire up through brush and into trees, leading to a devastating crown fires that burn in the upper canopy and cannot be controlled. The volume of available fuel is described in terms of fuel loading.

## **Topography**

An area's terrain and land slopes affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.

## **Weather**

Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out the fuels that feed the wildfire creating a situation where fuel will more readily ignite and burn more intensely. Wind is the most treacherous weather factor. The greater the wind, the faster a fire will spread and the more intense it will be. In addition to wind speed, wind shifts can occur suddenly due to temperature changes or the interaction of wind with topographical features such as slopes or steep hillsides. Lightning also ignites wildfires, which are often terrain that is difficult for firefighters to reach. Drought conditions contribute to concerns about wildfire vulnerability. During periods of drought, the threat of wildfire increases.

Warning times are usually adequate to ensure public safety, provided that evacuation recommendations and orders are heeded in a timely manner. While in most cases wildfires are contained within a week or two of outbreak, in certain cases, they have been known to burn for months, or until they are completely extinguished by fall rains.

The fire environment in Calaveras County is conducive to large, damaging fires as shown by the major fire history map. Over 38% of the CAL FIRE and Federal DPA lands are covered with high hazard fuels (brush and timber). The topography contains many steep canyons, which in some cases are inaccessible. Fighting fires with bulldozers is difficult, if not impossible, in much of the County due to this rugged terrain. Severe fire weather occurs on 35% of the days during the fire season in much of the County. This, coupled with the rugged terrain and the high hazard fuels, increases the probability that large damaging fires will occur on a regular basis.

The grasslands of the rolling western plains routinely experience extreme summer heat, and significant wind events during the spring and fall months. In these areas motorized fire equipment can be fully utilized to great success. The brush fields common throughout the

central portions of the County lay over broad expanses of steep hillsides and atop narrow ridgelines between the deepening river canyons. Here too routine summer temperatures can be extreme, while the topography makes access increasingly difficult for motorized equipment. The brush transitions into the mixed oak and conifer zones as the elevation increases and the canyon depth and width increase significantly. Over 38% of the CAL FIRE protected lands are covered with these high hazard brush and timber fuels. This mid-elevation area also experiences high summer temperatures, and is most affected by the normal diurnal winds associated with the canyon-dominated topography. The higher elevation zone features dense stands of conifer timber much of which exhibits large accumulations of ground and ladder fuels. While routinely temperatures are moderated due to the elevation, wind events in the fall contribute to potentially challenging fire conditions. Historically, severe fire weather occurs throughout the Unit on 35% of days during the fire season.

With its varied elevation from valleys to foothills to mountain ranges, Calaveras County contains many different vegetative communities. These communities include grassland communities, chaparral and shrub communities, woodland communities, hardwood forest communities, conifer forest communities, riparian communities, aquatic communities, and two rare natural plant communities, the Big Tree Forest and the Lone Chaparral.

Grassland communities with native perennial bunch grasses originally covered much of the Central Valley floor, but have since been converted to agricultural or urban uses as a result of irrigation.

Chaparral and shrub communities extend from the lower elevation foothills to the crest of the Sierra Nevada mountains. Four chaparral and shrub communities, chamise, chaparral, mixed chaparral and montane chaparral are found within Calaveras County.

Woodland communities are the dominant community that covers most of the lowlands to 3,000 feet in the western portion of the County. These woodlands occur on well-drained soils and include valley oak, blue oak and blue-oak-digger pine woodlands.

Hardwood forest communities include the montane hardwood and montane hardwood-conifer forest along drainage of the major rivers and streams at middle elevations on the west slope of the Sierra Nevada, and aspen forests at high elevations.

Conifer forest communities form the dominant vegetation type for Calaveras County above the 2,500-foot elevation, which accounts for the eastern half of the County. Because of the large area covered by these forests and the range of environmental factors affecting this area, these five distinct types of conifer forest are described in Calaveras County: Ponderosa pine forest, Sierran mixed conifer forest, White fir forest, Lodge pole pine forest and Red fir forest.

Riparian communities are present along all watercourses and are one of the most important wildlife habitats in California. All perennial streams, most intermittent streams, and most lakes and reservoirs have some riparian vegetation. Valley foothill riparian forests are located in the Central Valley and Sierra Nevada foothills in western Calaveras County. Montane

riparian forests are present in the Sierra Nevada below 8,000 feet and are associated with shallow lakes and ponds, seeps and meadows, and rivers and streams.

Aquatic communities such as rivers, streams, ponds and lake, occur in every community previously described in Calaveras County. Rivers and streams include open water, the bottom substrate and riparian vegetation. Ponds and lakes are inland bodies of water, varying in Calaveras County from small natural ponds and artificial stock-ponds, to large constructed reservoirs like New Melones Lake and New Hogan Reservoir and may contain algae and vegetation such as duckweed or pondweed.

The Big Tree Forest and the lone Chaparral are the two rare natural plant communities, listed by the California Department of Fish and Game, located in Calaveras County. The big tree forests consist of large stands of giant sequoias that are present in isolated groves along the west slope of the Sierra Nevadas. There is one occurrence of big tree forest in Calaveras County—the North Calaveras Grove in the Calaveras Big Trees State Park. The lone Chaparral, on the other hand, is located in the foothills of the Sierra Nevadas. There are three occurrences of lone Chaparral in Calaveras County—near Mokelumne Hill, along the north fork of Murray Creek, and north of Valley Springs Peak.

In addition to the natural vegetative plant communities, the County contains several categories of man-made vegetation. These include, developed lands are divided into agriculture and rangeland, and urban lands. Vineyards are located in Murphys, San Andreas and Burson areas; Christmas tree farms near West Point and Murphys; mixed agricultural use northeast of Salt Springs Valley Reservoir; and generally in the western section of the County. Urban vegetation includes landscaped strip and medians along transportation corridors, shade trees, lawns, and shrub cover, and is located throughout developed areas of the County particularly at residences, parks, and schools.

### **Fire Protection Responsibilities**

CAL FIRE is mandated by statute to provide wildland fire protection on State Responsibility Area Lands (SRA). Wildland fire protection on Federal Responsibility Areas Lands (FRA) is the responsibility of the federal government (USFS, BLM etc.); and of local government entities (city, county, district) on Local Responsibility Area Lands (LRA). To reduce fire protection costs, and increase the efficiency of initial attack operations, the CAL FIRE and federal land management agencies have entered into various agreements that define Direct Protection Areas (DPA) for each agency. An agency's DPA is the geographic area for which the agency is directly responsible for providing wildland fire protection, regardless of SRA/FRA designation. As an example, a plot of private land (SRA by definition) well within the national forest boundary (FRA by ownership) may receive Direct Protection by the USFS due to the closer proximity of USFS fire resources. Thus this plot of SRA is designated part of the federal DPA. Similarly, USFS land (FRA) isolated within private land (SRA) may be provided Direct Protection by CAL FIRE due to its proximity to CAL FIRE resources. Thus this FRA land is included in the state DPA.

On a statewide basis, CAL FIRE and the federal agencies attempt to balance the acreage totals of these trade-offs so that no single agency is protecting more of the other agencies land than

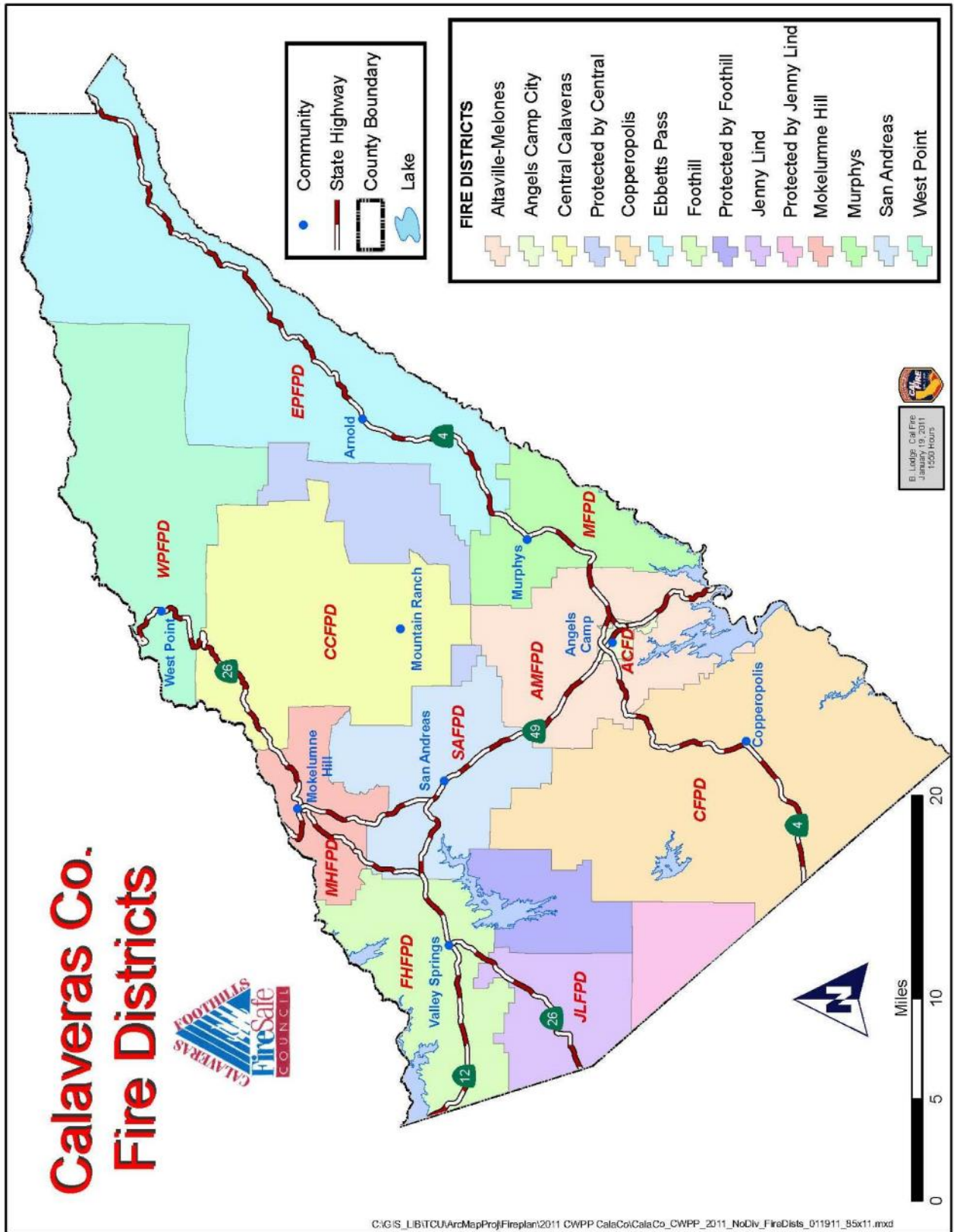
the reciprocating agency. Where agency jurisdictions abut is where the majority of DPA swaps have been agreed to. This process is guided by the “Balancing of Acres” agreements amongst agencies. Through this agreement the Tuolumne-Calaveras Unit and the Stanislaus National Forest provide direct wildland fire protection on some of each other’s Responsibility.

### **Local Government Fire Organization**

CAL FIRE cooperates closely with the local city and district fire departments. These agencies have primary responsibility for all emergency incidents within their boundaries, except wildland fires (exception: Angels Camp City retains wildland fire jurisdiction because they are a LRA). CAL FIRE and local agencies apply the concept of “closest available resource”, via long standing mutual aid agreements, in order to assure the appropriate numbers and types of emergency resources are brought to bear for every emergency. Thus CAL FIRE engines are responding to all incidents throughout the two counties during the months these engines are staffed. Similarly, CAL FIRE relies heavily on district and city resources to supplement their wildland fire response. To facilitate this level of cooperation, TCU’s Emergency Command Center (ECC) provides dispatching services for all of the local city and district fire departments in Calaveras County, and the Bear Valley Fire Department in Western Alpine County.

There are 9 fire districts and one city department in Calaveras County: West Point; Mokelumne Hill; Calaveras Consolidated; San Andreas Fire Protection District; Central Calaveras Fire and Rescue Protection District; Copperopolis Fire Protection District; Altaville-Melones Fire Protection District; Murphys Fire Protection District; Ebbetts Pass Fire Protection District; and the City of Angels Camp Fire Department. The district boundaries combine to cover the entire county except three geographic areas that chose to be excluded from the districts. These areas are as follows: Area 1 – west county area between the Jenny Lind and Copperopolis Fire Districts; Area 2 – Old Gulch Road area south of San Andreas; and Area 3 – the greater Sheep Ranch area. These areas later negotiated with adjacent districts to provide their fire protection. The district boundaries encompass large areas surrounding the communities they are named after (the Foothill Fire Dist. includes the Hwy. 12 corridor from Valley Springs to Wallace; the Central Fire Dist. covers the Mountain Ranch and Railroad Flat areas).

# Calaveras County Fire Districts Map



## 1. Defensible Space

Property owners living in State Responsibility Areas (SRA) are required by Public Resources Code (PRC) 4291 to maintain clearance of flammable vegetation around their property. A property owner's clearance responsibility is limited to 100 feet from his or her structure(s) or to the property line, whichever is closer, and is limited to their lands. However, coordination with adjacent landowners to achieve maximum defensible space is encouraged. In 2015, Defensible Space Inspectors recorded 6,132 inspections.

Compliance with Public Resources Code 4291 requirements is the single most effective means by which property owners can reduce the likelihood of structure ignition due to wildland fire. CAL FIRE Tuolumne - Calaveras Unit is committed to helping the population comply with the PRC 4291 clearance requirements: a 30' wide *Defensible Space* zone immediately adjacent to the structure, plus an additional 70' *Reduced Fuel* zone, for a total of 100' of *Clearance* around all structures.

The Fire Prevention Bureau and each Battalion in the Unit is actively engaged in PRC 4291 education and compliance efforts, including: on-sight inspections, self-inspection forms, face to face education at the fire stations, participation in community events, close cooperation with Home/Property Owner Associations, and collaborative efforts with the local Fire Safe Councils and Local Government and Federal fire control and land management agencies.

Detailed guidelines for creating defensible space can be found at this CAL FIRE web site:

[http://www.fire.ca.gov/fire\\_prevention/fhsz\\_maps\\_sanjoaquin.php](http://www.fire.ca.gov/fire_prevention/fhsz_maps_sanjoaquin.php)

Information regarding updates to PRC 4291 requirements is available at the CAL FIRE web site:

<http://www.osfm.fire.ca.gov/informationbulletin/pdf/2009/defspacebulletin.pdf>

## Fire Prevention Specialist Programs

In the 1970's, Fire Captain Specialists carried out the Unit's fire prevention education work in addition to law enforcement. Each Battalion had its own Fire Prevention Aide who did wildland property inspections under Public Resources Code 4291, as well as other fire prevention work. The Aides worked for the Battalions rather than the Prevention Bureau. The Fire Prevention Aide positions were eliminated in the late 1970's, but the position was later reestablished as Fire Prevention Assistants, eventually to be upgraded to Fire Prevention Specialists (FPS).

Since then, the FPS has been the face of public information and fire prevention education in the Unit, as well as managing a large Volunteers in Prevention program and providing guidance and oversight to a significant portion of the Unit's PRC 4291 inspection program. A detailed accounting of the Department's Volunteers in Prevention

program history is available at the CAL FIRE website, here:

[http://www.fire.ca.gov/communications/communications\\_volunteers.php](http://www.fire.ca.gov/communications/communications_volunteers.php)

An excerpt from the above web site is of particular note: “History has shown that when VIP teams provide fire prevention teaching in grades K-3rd, child-related fires in those areas have dropped by 50 percent. In addition, VIPs educate thousands of children and their parents about fire prevention by participating in fairs, displays, and parades each year. Volunteers are trained to make preliminary wildland homeowner property inspections for fire safety as required by Public Resources Code 4291, and to discuss with homeowners ways to make their homes fire safe. These one-on-one contacts are an increasingly important education tool as the population in California's wildlands continues to grow.”

Currently within TCU about 75 VIPs perform a wide variety of work under the supervision of the Unit's Fire Prevention Specialist and Battalion personnel. This work greatly expands the reach of the fire prevention message in the Unit, well beyond what the corps of company officers and firefighters could hope to achieve. Most of these volunteers are retired, but many seasonal firefighters participate during the off season, accruing valuable time and experience that help move them toward their career goals.

This dedicated group of VIP's faithfully supports fire prevention education efforts in hundreds of school programs, community events, and the Unit's 4291 inspection program, among others. In 2015, the VIP's recorded 7,764 inspections in TCU.

The VIP group also includes about 20 Amateur Radio Operators (Hams) who stand ready to supplement CAL FIRE's communications with their sophisticated equipment, or assist in other ways during a major incident.

### **Three Part Prevention and Education Program:**

This program brings consistency to the prevention message, the training of VIP and agency inspectors, and the conduct of on-site inspections. CAL FIRE personnel, Volunteers in Prevention, and other community members provided input, and viewed all three tools for clarity and user-friendliness. In 2010 this innovative program and the Unit's Fire Prevention Specialist, received the CAL FIRE “Director's Innovation Award.”

- **Part One:** A locally developed educational handout, intended to simplify and clarify the defensible space requirements. It also explains the reasons for those requirements so that people with no knowledge of fire behavior can understand why defensible space is important.
- **Part Two:** An easy-to-use defensible space inspection form. This locally developed form, using the agency LE100 as inspiration, contains detailed explanations of violations and how to correct them. Used by agency and VIP inspectors alike, its checkbox format acts as a detailed guide for inexperienced inspectors, a prompt for veteran inspectors while minimizing the amount of writing required, and speeding up and standardizing inspections.
- **Part Three:** Reaching and teaching an ever-changing crew of inspectors has always been time consuming and haphazard. To improve the consistency of the final product (effective inspections) and reduce the amount of time anyone had to spend teaching new inspectors, a “PRC 4291 Inspection Training” PowerPoint program was designed to be a stand-alone,

self-paced training program. It uses hundreds of pictures, to help explain the history of today's fire problem and what property owners need to do about it. It also outlines in step by step detail exactly how to perform a defensible space inspection, and how to counter common objections. A companion version, "Defensible Space for Homeowners" is suitable for presentation to community groups or for use by homeowners.

#### **4291 Inspection Program / Community Partnerships:**

TCU's fire prevention program has always included many partners, from the community and other agencies. For example, in the late 1980's and early 1990's, VIPs regularly inspected the Rancho Calaveras subdivision west of Valley Springs, in Battalion 1. They were so effective in educating the relatively sparse population about the necessity for and benefits of defensible space, that they literally worked themselves out of a job. Property owners did their clearance every year without prompting, and the inspection crew dissolved.

The incorporation of the VIPs into the inspection program has greatly expanded the ability of the agency to educate the population and enforce PRC 4291 regulations. No better current example of that success is found within Battalion 4, the greater Arnold area of Calaveras County. By the late 90's the efforts of VIPs recruited from within Homeowner Associations and elsewhere, under direct supervision of CAL FIRE's company officers, had succeeded in reducing the number of debris burn escapes to near zero in any given year. To this day the defensible space inspection program has continued to build strong partnerships throughout the Unit's communities.

**Resource Management:** Adam Frese – Division Chief

## **Forest Practice Overview**

CAL FIRE Area Foresters work with private landowners, foresters, and licensed timber operators to ensure timber harvesting on private property is conducted in compliance with the California Forest Practice Rules. CAL FIRE is the lead agency, and works with other agencies such as the Department of Fish and Wildlife, Regional Water Quality Control Board, and California Geological Survey to evaluate timber harvest plans when they are in the review process. Once the harvest plans are approved, CAL FIRE Foresters conduct active inspections to ensure timber operations are being conducted in accordance with the rules, and follow-up inspections to ensure the timber harvest plans have been properly implemented. Tuolumne County has two sawmills, a shavings mill, bark plant, and biomass plant. The presence of this infrastructure encourages forest management on private property, which creates a steady forest practice workload for resource management staff in TCU.

## **Hazard Fuel Reduction / Risk Mitigation**

Resource Management staff works with Battalion Chiefs, Conservation Camps, Fire Safe Councils, landowners, private contractors and other cooperators to complete fuel reduction projects throughout the Unit. CAL FIRE has used several mechanisms to fund and perform strategic fuel reduction work in the Tuolumne - Calaveras Unit.

**Community Assistance Grants (CAG):** Proposition 40 provided funds for community assistance grants to protect watersheds. CAL FIRE Foresters work with community Fire Safe Councils, Resource Conservation Districts, CAL FIRE Conservation Camps, private foresters, and contractors to complete fuel reduction projects in the Unit in order to protect watersheds from large, damaging fires. Battalion Chiefs provide project strategic validation and input during the planning phases of projects. Since 2005, the Tuolumne - Calaveras Unit has treated approximately 2,150 acres under this program. Ongoing maintenance of those treated acres is now the greatest challenge to their continuing effectiveness as fire control points and defensive barriers.

- **Tree Mortality:** Tuolumne and Calaveras Counties are experiencing a significant increase in tree mortality due to persistent drought and over stocking. Increased mortality is particularly evident in ponderosa pine between 2,500 feet and 4,500 feet in elevation. Increased tree mortality is also evident in other conifer and hardwood species. In Tuolumne County, the Board of Supervisors proclaimed a Local State of Emergency on September 15, 2015. CAL FIRE worked with the county to establish a local tree mortality task force. The task force includes a core planning team that consists of Tuolumne County OES, Tuolumne County Roads Department, CAL FIRE, Tuolumne County Fire, United States Forest Service, Highway 108 and Yosemite Foothills Fire Safe Councils, PG&E, Cal Trans, Cal OES, Tuolumne Utilities District and the Groveland Community Services District. The core planning group

meets at least monthly and is currently ready to start a pilot project in the Leisure Pines subdivision off of Highway 108. The pilot project will consist of PG&E felling trees that will impact power lines and county infrastructure such as road ways. County contractors will haul away logs and large woody debris. CAL FIRE hand crews will chip logging slash to reduce the fire danger. In Calaveras County CAL FIRE has organized a task force, and meetings have started to address significant tree mortality that appears to be spreading north into Calaveras County. CAL FIRE hand crews, engines, and heavy equipment have treated approximately 131 acres in Tuolumne County and 47 acres in Calaveras County in 2016 on projects related to tree mortality funded through the SRA fire prevention fee. Active projects include the Mt. Havalia fuel break, Cattle Drive Trail fuel break, Big Hill shaded fuel break, Rim Contingency Line, Tuolumne County Road Chipping, and Calaveras County Road Chipping.

- **The California Forest Improvement Program (CFIP):** This program encourages private and public investment, and improved management of California forest lands and resources. CFIP is a cost share program, where the state pays 75% of the cost of thinning, planting, herbicide application, mastication etc. Historically CFIP was funded from revenue generated by the State Forest program. Proposition 40 funds became a key source of funding starting in 2005. In the Tuolumne-Calaveras Unit, the CFIP program has been successful in improving forest health, restoring areas to timber production, reducing surface and ladder fuels, and creating shaded fuel breaks.
- **The Vegetation Management Program (VMP):** The Vegetation Management Program is a cost sharing program that allows landowners to contract with CAL FIRE to use prescribed fire and other means to accomplish fire protection and resource management goals. VMPs have been successful in reducing fuels, as well as providing live fire and line cutting training for CAL FIRE engines, crews and dozers.
- **Federal Fuels Grant Program (HFT):** is the working name of the Cooperative Fire Assistance Grant - Northern California Disaster Supplemental. This program was implemented in early 2010. The Tuolumne - Calaveras Unit applied for 10 projects under this program, which reimbursed CAL FIRE camp program hand crews \$200.00 per day to perform hazard fuel reduction and timber stand improvement work. The TCU Area Forester coordinated the projects and, received input from CAL FIRE archaeologists, and personnel from the California Department of Fish and Game, Regional Water Quality Control Board, and U.S Fish and Wildlife Service during the preparation of the project CEQA documentation. TCU completed 10 projects for a total of 461 acres under this program.
- **SRA Fire Prevention Fee Projects:** The SRA Fire Prevention Fee has funded several projects in the Tuolumne-Calaveras Unit. Projects include fuel reduction, seasonal defensible space inspectors, fire prevention signs, and public information flyers. The Unit received funds for projects to be completed by CAL FIRE through the SRA FPF program, and cooperators were able to compete for grants to fund fire prevention work in the Unit through the Fire Prevention Grant Program.

## **Calaveras County W.U.I.**

According to the context of the HFRA, a C.W.P.P. offers a variety of benefits to communities at risk from wildland fire. Among those benefits is the opportunity to establish a localized definition and boundary for the wildland–urban interface. C.W.P.P.'s throughout the United States have taken different paths when trying to define and establish W.U.I.'s, from simple community or Forest Agency consensus on W.U.I. boundaries to extremely scientific and labor intensive studies including fuel loading, topography, weather, fire brand ignition potential, etc., etc. As the Calaveras County C.W.P.P. was being developed it became very clear that establishing W.U.I.'s in Calaveras County would be impossible to define scientifically with the amount of time and money available.

Prior to the availability of funds, a C.W.P.P. working committee of the Amador Calaveras Consensus Group (ACCG) was formed with the following members; CFFSC, CAL FIRE, USFS, BLM, ACCG, Calaveras County Board of Supervisors (District 2), Sierra Pacific Industries, community members and Calaveras Healthy Impact Product Solutions. This committee developed recommendations for the development of W.U.I.'s within Calaveras County that will aid communities in being successful grant recipients for fuels management projects.

The committee considered many factors including the language written within the HFRA which states, "In the absence of a C.W.P.P., the HFRA limits the W.U.I. to within 1/2 mile of a community's boundary or within 1 1/2 miles when mitigating circumstances exist, such as sustained steep slopes or geographic features aiding in creating a fire break. Fuels treatments can occur along evacuation routes regardless of their distance from the community. At least 50 percent of all funds appropriated for projects under the HFRA must be used within the W.U.I. as defined by either a C.W.P.P. or by the limited definition provided in the HFRA when no C.W.P.P. exists".

With this in mind the committee realized that no strong definition of W.U.I. development existed. Knowing that the limited definitions of a W.U.I. by the HFRA would not sufficiently protect the communities within Calaveras County from wildland fire the committee recommended that W.U.I.'s would have to be set for each community based on that community's individual geographic features, aspect, local winds and historic fire threat. Using the most up to date information available (if available) the committee identified community boundaries, and then placed the W.U.I. boundaries as appropriate. Throughout each Battalion Plan, Communities at Risk (as defined by the California Fire Alliance) as well as communities that the committee felt were in danger were listed with proposed W.U.I. Boundary Maps.

The Fire and Resource Assessment Program from Cal Fire provided a very good baseline example of theoretical W.U.I. boundaries within Calaveras County. In some cases we felt their lines were much too broad in spectrum and included some threat areas that may have been unintended. The committee did however overlay their maps with the FRAP maps and were

incredibly consistent. Frap maps have been included in each Battalion Planning Area. Input from CAL FIRE, the local forest agency and required signatory for the C.W.P.P. was essential in deciding W.U.I.'s throughout the County. As monies become available to develop a scientific approach to setting W.U.I.'s within Calaveras County this C.W.P.P. will be updated accordingly.

### **Reducing Structural Ignitability**

There are many structures found throughout the wildland areas of Calaveras County with construction dating back to the 1800's and continuing today. These structures reflect a wide variety of building materials and construction type. Many homes were built prior to the development of fire resistant home construction techniques. This area has always known the threat of wildfire. However, due to current fuel conditions, weather patterns, and increased human activity in wildland areas, its occurrence has become more of a danger in recent years. In the event of a large wildfire, we know there are not enough emergency responders and equipment to protect each and every home. In some cases, because of the size, speed, intensity of the fire, or home construction materials and surrounding vegetation, homes can ignite and potentially be destroyed before emergency responders can arrive. Often, there are more homes in Calaveras County than there are firefighters to respond.

### **Building Standards and Materials for Building Code Chapter 7A, 2007 California Building Code (CBC) as well as the January 2009 supplement.**

The California Building Commission adopted the Wildland-Urban Interface (WUI) codes in late 2005. The majority of the new requirements took effect in 2008. These new codes include provisions for ignition resistant construction standards in the wildland urban interface. The updated fire hazard severity zones will be used by building officials to determine appropriate construction materials for new buildings in the wildland urban interface. The updated zones will also be used by property owners to comply with natural hazards disclosure requirements at time of property sale. It is likely that the fire hazard severity zones will be used by local government as they update the safety element of general plans.

The new building standard for the Fire Hazard Severity Zones will be enforced by the Building Official as projects go through the plan checking process.

The Wildland Urban Interface Building Codes page of the Wildland Hazards and Building Codes at:

[http://www.fire.ca.gov/fire\\_prevention/fire\\_prevention\\_wildland\\_codes.php](http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_codes.php)

For your convenience these documents are also included in the homeowner information section of this document.

The SFM listing service provides building authorities, architectural and engineering communities, contractors, and the fire service with a reliable and readily available source of information. Since the materials under Wildland Urban Interface Building Codes (except roof wood shakes and shingles) are not required by law to be listed by the SFM, the listings for

these products are strictly voluntary. Materials not listed by the SFM may still qualify for use provided they met all the requirements under Chapter 7A. If not listed on the SFM site, all documentation and testing certificates showing compliance must be submitted to the building official having jurisdiction for final approval.

### **W.U.I. Products Handbook**

In an effort to provide home owners, industries, designers, local fire and building officials a readily available list of “compliant W.U.I. products”, the State Fire Marshal (SFM) published a “W.U.I. Products Handbook”. All products published within the handbook have been reviewed and verified for their compliance in accordance with the new 2007 California Building Code (CBC) as well as the January 2009 supplement, by State Fire marshal staff. All products published in the book are “approved” by the SFM. They are not “listed” unless a SFM listing number is attached. It should be noted that products that are not in the handbook may still comply with the standards since it is not a requirement for any products to be in the handbook.

The handbook is categorized into five main sections:

1. Exterior Wall Siding and Sheathing (SFM Standard 12-7A-1)
2. Exterior Windows (SFM Standard 12-7A-2)
3. Under Eave (SFM Standard 12-7A-3)
4. Decking (SFM Standard 12-7A-4)
5. Ignition Resistant Material (ASTM E84 for 30 Minutes with Accelerated Weather Testing)

To aid homeowners and agencies interested in the WUI Products Handbook we have added it in the homeowner information section at the end of this plan.

Fire prevention efforts cannot be the responsibility of firefighting professionals alone; homeowners must consider the possibility that their home may have to stand in the face of a wildland fire without immediate firefighter protection. In order for a home to survive such an emergency, it must be able to avoid ignition. There are a variety of strategies to reduce the risk of structural ignition. Depending on the county and agency jurisdiction, these strategies may be requirements and/or recommendations:

1. Construction methods and materials
2. Education
3. Defensible Space including fire safe landscaping

### **Construction Methods**

While it is always recommended that homeowners build with fire resistant building materials, the State or Local Fire Marshal should be contacted to determine laws and regulations fire resistant construction. In an effort to provide home owners, industries, designers, local fire

and building officials a list of “Compliance W.U.I. products”, the State Fire Marshal (SFM) has published a “W.U.I. Products Handbook”.

<http://osfm.fire.ca.gov/strucfireengineer/pdf/bml/W.U.I.products.pdf>

All products published in the handbook have been reviewed and verified for their compliance in accordance with the 2007 California Building Code (CBC) by SFM staff. All products published in the book are “approved” by the SFM. They are not “listed” unless a SFM Listing number is attached. It should be noted that not all approved products are listed in the handbook; there may be other building materials that comply with the standards since it is not a requirement for a product to be in this handbook.

This handbook covers five main building product categories:

- Exterior Wall Siding and Sheathing
- Exterior Windows
- Under Eave
- Decking
- Ignition Resistant Material

## **Structural Ignitability Recommendations**

### **Windows**

In this section we will discuss the performance of windows. This would include the framing material and glass.

#### **Windows: Potential Problems**

If the glass in a window breaks during a wildfire the fire can easily enter your home. Similarly, if your window frame ignites, it is possible that the fire could burn through the frame material, and ignite other material inside your home. Both of these scenarios could easily result in the loss of your home. Therefore, windows must be able to resist the following wildfire exposures:

1. A radiant exposure severe enough to break the glass in your window or ignite the exterior siding directly below. Burning vegetation could also ignite combustible siding.
2. A flame impingement exposure that would result from embers igniting vegetation and/or exterior cladding that burns up to your window.
3. The impact from burning embers on the glass. Remember that during a wildfire, your home can be subjected to exposure from thousands of embers for hours before and after the relatively short time (minutes) it takes for the wildfire to actually pass by your home. Embers could also land on the window sill and ignite debris that has accumulated.



In this laboratory test, window failure occurred as a result of glass breakage. The exposure was flame impingement from a propane gas burner located 2 feet below the window. The burner simulated a medium-sized plant on fire.

Glass breakage in a window occurred as a result of temperature differences between the edge of the glass protected by the frame, and the glass exposed to the flame (the part of the glass you can see). These temperature differences cause the heated glass to expand at different rates. Minor flaws at the edge of the glass start to grow, and if the temperature differences are large enough, the glass will crack, grow, and potentially break out.



In this laboratory test, window failure occurred as a result of the ignition of the frame material, with subsequent burn-through into what would be the living space in the house. Note that in this case, flame penetration occurred at the horizontal separator in a hung window. The exposure was flame impingement from a propane gas burner located 2-feet below the window. The burner simulated a medium-sized plant on fire.

Results from one study showed that for vinyl window frames, the horizontal separator shown in the photos above can be vulnerable to radiant heat exposures. At fairly low radiant exposures, the frame deformed, and the glass fell out. Results from testing done at the University of California Forest Products Laboratory (UCFPL) did not show this effect. All of the double hung windows (i.e., windows where the upper and lower parts of the window can both move) were constructed with an aluminum bar in the separator. This aluminum

reinforcement is usually present because it is needed to resist wind loads. The bottom line of the UCFPL research was that by far the important factor in determining the performance of windows under wildfire exposures is the glass, and not the frame material. This finding is also supported by research conducted in Australia.



Burning embers could land on a window sill, or as is shown in this photo, the sill at an entry door. The embers could then ignite debris, or ignite the decayed trim. Decayed wood ignites at a lower temperature than that required for sound wood.



Burning embers could ignite this plant, which would then result in a flame impingement exposure of the window.

### **Windows: Possible Solutions**

Because of the importance of glass in the performance of a window in a wildfire, the most important thing you can do is install dual-pane windows. With dual pane windows, the outer pane often serves as a thermal shield and protects the inner pane. The inner pane is allowed

to heat up more slowly, and uniformly, and therefore may not fail even though the outer pane does.



Above is a cut-away view of two panes of glass in an insulating glass unit (IGU). Because of energy code requirements, most windows in new construction consist of two or more pieces of glass in an IGU.

Tempered glass is stronger than 'regular' annealed glass, and will provide additional protection during a wildfire, but we think dual pane is the most important part of the equation. Tempered glass is also more expensive, and will add approximately \$1 per square foot to the cost of your window. Building Codes already require tempered glass in some locations, so some of your newer windows may already have tempered glass. For example, in newer construction, windows that come within 18 inches of the floor must have tempered glass. Sliding glass doors, and other doors with windows, and windows immediately adjacent to doors, will also have tempered glass.

A small white etching is often present in the corner of a piece of glass in a window if it is tempered. Since it is small, it may be hard to read.

ACME	
TEMPERED SAFETY	
ANSI 297.1	1984
16 CFR 1291	CII
SGCC 1494	1/4 U

ABC GLASS	
TEMPERED SAFETY GLASS	
16 CFR 1201 CAT.II	
ANSI	1984
SGCC 1494	3/16 U

A-1 Glass	
ANSI Z97.1	1984
16 CFR 1201 II	

Low-E coatings have sometimes been discussed as a means of enhancing the wildfire performance of your windows. Low-E coatings are always on one of the inner surfaces of the IGU, either on the pane closest to the outside, or the one closest to the inside. If it's on the outer pane (i.e., the inner surface of the outside pane), it could reduce the performance of the glass because the exposed glass would heat up more quickly relative to the glass protected by the frame.

### **Insect Screens**

Research has shown that insect screens improved the performance of glass under *radiant* exposures. Bronze, fiberglass (with polyvinyl chloride coating), and aluminum screens all improved glass performance (increased the time needed for edge cracks to develop). Results from this study showed that bronze screens were most effective, and aluminum the least effective. However, research at UCFPL has shown that screens do not provide added protection in a *flame impingement* exposure.

Unfortunately, in a severe firestorm, your windows will still be vulnerable. Both panes are likely to break and fall out. Glass that would perform better (e.g., tempered glass) is more expensive than regular (annealed) glass, but the performance has shown to be much better, and the price of this glass is coming down and therefore becoming more affordable for many homeowners.

For additional protection homeowners should consider taking additional precautions to protect your windows. These precautions include fabricating covers (for example, 3/4-inch plywood covers), cut to size and marked so that it can easily be installed over a window prior to evacuation. Shutters or other roll-down devices could also be installed. In this case, you will have to make these items part of your routine inspection and maintenance program to make sure they operate properly. All of these have the disadvantage of requiring an action to implement.

### **Roofs, Chimneys and Gutters**

In this section, we discuss the flat or sloped covering over your home. This would include the living space, garage (if covered), and deck (if covered).

Your roof and edge components (such as your gutters) are arguably the most important part of your home in terms of making it safer from wildfires. While your home may only be subjected to the flaming front of the wildfire for a few minutes, your roof (and the rest of your house) could be subjected to airborne glowing or burning embers for a few hours as the wildfire approaches and burns through the area where you live.

## Roofs: Potential Problems

How well your roof performs during a wildfire will depend on a number of factors, including:

1. The roofing material used.
2. The age and condition of your roof.
3. The 'complexity' of your roof (that is, how many levels and wall/roof intersections you have, and how much debris can collect there).
4. Gutters and other 'edge of roof' factors.
5. Vents and other penetrations in your roof.

As you can tell from this list, how your roof performs will depend not only on the roof covering, but also on intersections where your roof connects to other materials. These connections are often at a horizontal to vertical intersection.

The fire rating of roof coverings is determined for all materials used in code-compliant housing, and will be classified as Class A, B, C, or 'unrated'. Class A provides the best fire resistance, so for the best protection for your home, you should have a 'Class A' fire-rated roof covering.

Every thirty years or so, you will have the opportunity to select a new roof covering. In the meantime, one of the most important jobs you have is inspecting your home and near-home vegetation, and performing needed maintenance. The standard tests to determine fire performance are conducted on new covering materials (the exception being fire retardant treated shakes that must also be evaluated after natural weathering). An older roof may not perform as well as a fire-resistance membrane. It will be up to you to make sure your roof covering is inspected and maintained, and replaced when needed.



When new, this asphalt composition roof covering has a Class A rating. The older and weathered roof may not provide the same protection from wildfire, and may also be more vulnerable to water leaks.

Another critical inspection and maintenance item for your roof will be to remove debris (needles, leaves, and other combustible material) from collection points on your roof (for example, nooks and crannies), and from your gutters. Ignition of debris in these locations can ignite other roof components besides the roof covering - components that don't perform as well as your Class A roof. These components include the underside of the roof, and exterior siding. Debris that accumulates at the inlet to roof vents can also ignite during a wildfire and enter the attic, potentially igniting other combustible materials in your attic.



If ignited, the debris on this roof would expose the underside of the overhanging roof, or the exterior siding. Both of these components are potentially more vulnerable to flame and ember exposure than a Class A asphalt composition shingle roof covering.



Vertical walls adjacent to the roof can accumulate combustible debris, typically leaves and needles. The ignited debris can expose the exterior siding, in this case wood shingles, and potentially the underside of the roof.



If ignited, debris in this gutter would expose the roof edge, with flame and embers potentially getting under the roof covering.



Pine needles on this non-fire retardant treated wood shake roof can easily be ignited, with flame and embers entering the attic through this 'through-roof' vent.



A through-roof vent can provide a "backstop" that can serve to accumulate wind-blown debris. If ignited, the burning debris can easily enter your attic.



Wind-borne debris can accumulate in the ends of this clay tile barrel roof covering. If accessible, birds can also build nests in the space between the roof sheathing and the bottom of the tiles, also providing combustible debris that is easily ignited if embers are driven into this area (under the tiles).



The ends of this clay tile barrel roof were covered by a cut-to-shape metal strip, but it has become disconnected, or was never properly installed. Embers can easily enter these openings.

Skylights should be constructed with two layers of glazing. Another likely exposure for a skylight would from an impact of an ember, or other object lofted during the wildfire. For best performance, skylights should consist of two layers, with one of them consisting of tempered glass (for improved resistance to larger embers striking and breaking the glass).



The upper (domed) light in the photograph shown is plastic, and won't be able to withstand an 'A' brand exposure. To prevent entry of burning embers during a wildfire, this operable skylight should be closed.

### **Valleys**

Many homes are constructed with roofs that contain 'valleys', the intersection where two sloping surfaces meet. These intersections can consist of metal flashing material, or in the case of asphalt composition shingles, the shingles themselves can be used. Since metal flashing can be made of aluminum, this region can be more vulnerable to wildfire exposures than the roof covering material.



Metal flashing was used on the valley of this roof. The roof covering consists of Class A asphalt composition shingles. The valley may also be 'Class A' construction, but it will depend on the underlying material.



Asphalt composition shingles are 'woven' together in this valley. The valley would have the same fire rating as the rest of the roof.

### **Roofs: Possible Solutions**

#### **Roof Covering and Accumulation of Debris**

The importance of a Class A roof covering cannot be understated. If you don't have one, you should make an upgrade to a Class A roof covering a priority item. Lack of a Class A roof covering should immediately increase your attention and focus on near home vegetation, and inspection and clearing debris from your roof and gutters. Remove debris from your roof and gutters as often as required - inspect often at first until you determine how frequently debris accumulated. You shouldn't wait for water to overflow your gutters during a heavy rain to realize that your gutters are full of debris. Care should be taken during inspection - some roofs and gutters are easier to inspect than others. Consider hiring this job out if your roof and gutters are at a high elevation, or are otherwise inaccessible.

#### **Bird stops**

If you have a clay tile roof with a barrel design, install bird stops at the end at the roof edge, and make it one of the items you look at during your inspections to make sure they are still *in place*.



This is an example of a properly installed bird stop at the end of a barrel-style clay tile roof.

## **Gutters**

Gutters play a very important role on a house in providing a means of collecting and directing rainwater from the roof into downspouts, and then away from the house. This helps reduce the amount of water in the soil that can enter the crawlspace or basement, and that may lead to problems from mold and decay fungi.

### **Gutters: Potential Problems**

Flammable debris can build up in gutters, especially from nearby or overhanging trees. Second story gutters are even more problematic, since they are seldom cleaned on an annual basis. If ignited, combustible debris in the gutter will expose the underside of the roof covering, and may be able to more easily enter the attic.



Another issue that has been seen in some houses is the use of barrel tiles to channel water from the upper gutter downspouts to the lower-story gutters, as shown below. In this case, there tends to be a buildup of debris at the transition point.





While metal gutters have been recommended over plastic ones in fire hazard areas, there doesn't appear to be any justification for this, other than the possibility that some plastics could burn. It seems advisable to avoid the unknown!

Gutter guards or covers can be installed over or in your gutters. When properly installed (and maintained), these can reduce the amount of vegetation litter and debris that accumulate in your gutter and therefore reduce the need to clean it. Some products can become dislodged over time, and they will have to be reinstalled when that happens. There are a number of commercially available products specifically intended for this purpose - just type 'gutter guard' in a web-browser search engine to get an idea of the options you have. It is possible that your home won't have gutters. Although this will eliminate any 'debris accumulation' issue, it will result with a heavy rain load around your home, and depending on drainage, may contribute to moisture related problems.



Note that some of the covers in the gutters on this roof have dislodged, and therefore no longer keep out debris. Gutter guards should be inspected, and reattached when necessary.

Since second story gutters are difficult to reach, it is advisable to have these cleaned and screens added to minimize the need for subsequent cleaning. One means of doing this more economically is to organize a community-wide effort with professional help.

## Vents

Roof and crawlspace vents are required by most building codes, which specify the vent openings. The function of the vents is to remove excess moisture from those spaces. Moisture can enter the crawlspace from the soil or through the foundation wall from the surrounding landscape. It can also enter the attic space from roof leak or through the ceiling in the living space of the house. If too much moisture accumulates, then fungi can grow leading to mold or decay.

In crawlspaces, cross-ventilation is called for (meaning that ideally, vents will be present on all sides of the crawlspace), however, if your house is built on a concrete slab, or over a basement, you won't have crawlspace vents.

Attics will usually have both inlet and outlet vents. Inlet vents, such as in soffits (eaves) are usually located on the lower portion of the roof.



Crawlspace vents are positioned at different locations along the perimeter wall.

Several types of vents are used to ventilate attic spaces, including:

1. Soffit vents (there are different kinds of soffit vents, with the common feature being their location along the eave of the house)
2. Through-roof vents (also known as 'eye-brow' or 'dormer' vents)
3. Gable-end vents
4. Ridge vents

A 'strip vent,' which is commonly found in boxed-in eaves.



A through-roof vent, usually located near the ridge (or peak) of the roof.



A gable-end vent, usually located just below the ridge of the roof.





A ridge vent (as seen from the side of the roof) that is found along the entire ridge of the roof. Baffles along the front edges of the vent keep rain from entering and provide for a negative pressure region that helps pull air out of the attic.

### **Vents: Potential Problems**

Evidence from recent wildfires in the West has shown that vents are an easy entry point for burning embers and (not surprising) flames. Embers can 'rain' on and around homes for hours before the wildfire flame-front reaches your house. Embers that enter your attic can ignite construction materials and other items you may have stored there. Flames can also enter if embers ignite near-home vegetation or debris that has accumulated on a deck or in a corner.

Entry of burning embers has been problematic for attic vents in general, and soffit vents in particular. Also, locally generated embers and flame can enter vents, as shown below.



This plant immediately under the vent (and next to a single pane window) could be a problem if it ignites.



Needles (debris) from near-by pine trees that have accumulated on the lower roof section could easily ignite from embers and subsequently expose the gable-end vent to embers or flames.



This trellis vegetation could also expose the gable-end vent to embers or flames.



Ignited debris at the inlet to this through-roof vent could enter and ignite combustible materials in the attic.

Most vents incorporate a screen at the inlet. Most building codes stipulate a minimum mesh size of 1/4-inch to minimize plugging of vent holes and reduction in air movement. Smaller mesh screen is easier to plug up, whether by air borne debris, or as shown in the photograph below, being painted over during routine painting.



This fine-mesh screen is easily plugged by debris, or as shown in this photograph, by paint

## Vents: Possible Solutions

Your options regarding vents in *existing homes* are

1. Inspect and maintain vegetation in the vicinity of soffit vents. Remove highly combustible plants.
2. Clean vents on a regular basis to minimize buildup of debris in the mesh.
3. Remove debris that accumulates on roofs, and other areas that may expose vents if ignited. This includes grounds near crawlspace vents.
4. Prepare vent covers that can be temporarily installed when a wildfire approaches your home. Vent covers can be manufactured from plywood or other solid substance that would provide short term protection from embers and flame.

Because of code restrictions, 1/4-inch mesh screen is commonly used in vents. This points to conflict for building and fire code officials. While it is clear that 1/4-inch mesh cannot prevent entry of embers and flame during wildfires, if smaller screens become plugged, vents cannot operate as intended to remove excessive moisture. Smaller mesh screens might improve fire performance, but it is hard to say how much.

In some *new construction*, soffit vents are often being eliminated. In those cases, the inlet vent function is being performed by through-roof vents located in the lower region of the roof, or by placing a strip vent on the vertically oriented fascia, as shown in the photographs below. If you select these courses of action, make sure the total vent area meets code requirements.



In this case, the soffit vent has been replaced by a through-roof vent located near the eave line of the roof.



In this case, the soffit vent has been replaced by a strip vent, located above the vertical fascia board, and immediately below the gutter.

The new California Building Code that will affect new construction in designated wildland urban interface areas specifies that vents should resist the entry of embers. With time, vents that are designed to resist the entry of embers during wildfires, while still maintaining adequate air flow under normal wind conditions, will be commercially available. Standard test procedures are currently being developed that will provide a consistent way to evaluate the performance of these types of vents.

New home that incorporate unvented attic spaces into the design are currently available, and are being built in some locations. This construction option may be more widely available in the future, but shouldn't arbitrarily be implemented in existing homes because of moisture-related durability problems that would develop.

## **Garages**

When houses are surveyed for wildfire vulnerabilities, quite often the garage is not considered even though it could be the most hazardous aspect of the house.



### **Attached Garages: Potential Problems**

Garages are typically not well sealed since they are generally not heated or cooled. Gaps at the top, bottom and edges of doors can let glowing embers enter, and we all know that garages are full of flammable materials. Garages usually have vents at various locations,

especially if they contain gas furnaces or hot water heaters. These vents are easy entry points for embers.

These photos show a full-size roll-up garage door that has not been properly adjusted, creating a gap at the right bottom where embers could easily enter.



Small embers can easily enter through the door gaps. Sliding doors (that are hung at the top edge) have a special problem in that one side is offset, leaving a large gap at the top edge. In addition, many garage doors have glass in the top sections plus personnel entry doors that have single pane glass that (although it is tempered in newer construction) can easily be broken from heat or flying debris.

This garage car door has glass panels that could break during wildfire exposure, including vertical flame spread up the combustible door. Some current door manufacturers advertise that their glass panels are tempered.



The window in this particular door is tempered glass, but is also single pane which does not offer a great amount of wildfire protection.

An even greater concern is attached carports or any type of garage that does not have doors. These types of garages would typically have an extreme number of combustibles and many nooks and crannies for embers to lodge.

### **Attached Garages: Possible Solutions**

For garages with roll-up doors, the top and bottom can be weather-stripped (quite often the bottom is sealed to prevent water entry). The roll-up mechanism should be adjusted to obtain a good seal at the top. Tilt-type doors have similar solutions, although sealing at all edges is easier.

For attached carports, as a first step, combustibles should be minimized. However, this would still present the greatest hazard to your home, and some serious thought should be given to have the garage properly enclosed.

Car-entry garage doors with glass panels can either have the panels replaced with fire-rated glass or simply filled in.

Personal entry doors with windows can also have the windows replaced with fire-rated material or the window could be replaced with paneling. Another solution is to consider a steel-clad door as shown below, which provides both fire resistance and security from break-ins.



## Decks and Balconies

Decks are highly combustible structures and are built perfectly to burn. All the components of a deck; joists,

Decking and railings are made of only 2-inch-thick (on average) wood with a high surface-to-volume ratio. When fire approaches, the wood quickly dries out and heats up. Ignition can occur very easily from either radiant energy from the fire or burning embers. Decks pose a hazard from both above and below the horizontal structural plane. If a burning ember lands on the top of a deck, which is the largest horizontal surface on a structure (outside of a flat roof), there is a good chance it will find a receptive fuel to ignite and burn. The receptive fuel could be a pile of pine needles, a stack of firewood, or plastic lawn furniture. They are the ultimate heat traps due to their shape that traps hot gasses from an approaching fire from below. Decks often face downhill towards a fire's most likely approach.

The safest deck is one that is fully enclosed. Unfortunately, very few exist within the county. Any opening under a house or porch will allow burning debris a point of entry under the structure. Openings under stairs, decks, and porches usually allow organic material such as pine needles, leaves, and small limbs to collect under the home. Once burning debris blows under the house or porch, it is likely the home will burn down. Several homes have lattice covering the lower portion of the house or deck. This will not stop firebrands from blowing through the holes in the material.

To compound the problem, lattice is usually made of 1/4-1/2-inch wood that readily ignites.

By reducing the chances for decks and balconies to ignite, you can reduce the chances of your home igniting. By boxing in the undersides of decks and balconies, especially with fire resistant materials, the chances of ignition are reduced. You can further reduce chances of ignition by removing flammable materials from balconies and decks.

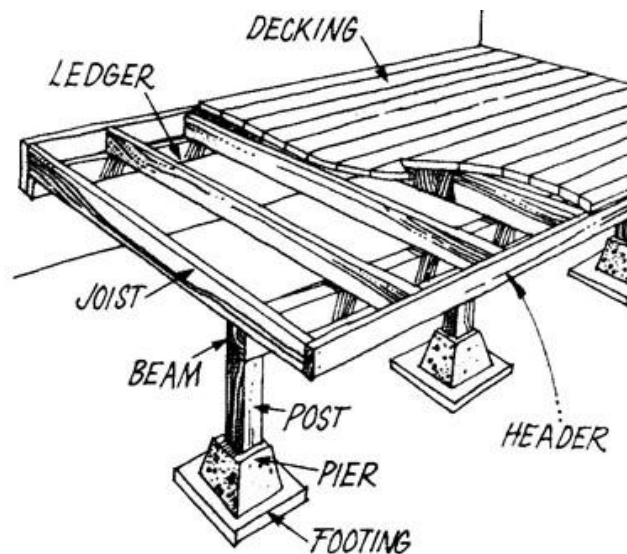
### Decks

By decks, we are including all types of horizontal walkways, including landings, porches, and patios that are directly connected or very close to a house. Decks are described by the surface that you walk on (called the deck covering). There are two basic kinds of decks – those that use deck boards as the deck covering, and those that have a solid surface deck covering. The deck boards are almost always made from combustible materials (wood or one of the wood fiber – plastic composite or 100% plastic deck board products). Solid surface deck coverings are usually made from noncombustible materials, and include light-weight concrete or stone. They are built over occupied (living) space. Occasionally an open frame deck will be installed over a water-proof membrane, again built over occupied space. As with normal decks, this open-frame deck will also be vulnerable to accumulation of debris, and ignition by burning embers.



The figure above shows wood deck, built on wood 2x6 'sleepers' on a solid surface deck (above a garage).

The most important features of decks are deck boards, ledgers, access to the underside, under-deck drainage systems (for raised decks to shelter the lower level), and adjacent doors and windows. This drawing shows some of the important deck elements:



### Decks: Potential Problems

There are two major problems that decks present. First, they are a great source of fuel and an ignited deck will also certainly endanger many portions of a structure. Second, nearly all decks are adjacent to large windows or glass sliders. The heat from the deck fire can cause the glass to fail and permit the fire to enter the house, where entry means certain destruction.

In general, the thicker the deck boards (about 1.5 inches thick), the better. Thin boards (about 1 inch or less thick) release heat much faster and are a higher hazard. You may have noticed how much easier it is for thin materials to burn in a fireplace.

One of the greatest risks to structures is a "thin-board" wooden deck (about 1 inch thick). In general, the thicker the deck boards, the better. You may have noticed how much easier it is for thin materials to burn in a fireplace. Thicker materials tend to release heat much more slowly and are a lower hazard.

Deck board gaps (which are there for drainage and ventilation) can permit embers to lodge and cause ignition. In this ground-level deck (or patio), you can see literally tens of char marks from embers. Although this deck survived, a very similar one next door did not and the townhouse was lost:



The deck above also suffered from having debris in the deck board gaps, and possibly decay at some of the joints, such as where the stairs met the deck.

Raised decks offer another problem - storage of combustibles underneath. This photo may be an extreme case, but consider what would happen if even a single ember got in the stack of wood!



Also, some raised decks have drain systems to permit rainwater to drain away from the deck area. While this can offer a nice dry area, it also encourages storage of combustibles. The drain system can accumulate debris, such as tree needles or leaves that can go through the deck board openings:



Looking at the last two photos, consider the consequences of the next deck that ignited from below, permitting fire entry through the windows (even though the siding was non-combustible).



Quite often, decks that are raised, including those not being used for storage are open to flames or embers, especially those on slopes.



The deck above illustrates another problem — the growth of vegetation under the deck, that when dry, can be a fire hazard.

Ledger boards, used to attach the deck to the house, are often recommended to be installed with a gap for drainage of rain from the siding so that it doesn't pour onto the deck. However, this is a very good trap for burning embers. The ledger board attachment detail is an example of a conflict between moisture and fire regarding 'good' design. In order to maintain adequate performance, this joint must be inspected and maintained. Debris must be cleared. Durable materials should be used to minimize the potential for fungal decay.

Fascia boards are often used as decorative edges on decks, but often cause decay to develop between the fascia and deck. This deck corner ignited in a decayed area at the deck corner.



Deck surface materials must be carefully considered. In tests conducted at the UC Forest Products Laboratory starting in the late 1990s, many wood-plastic and plastic decks were

found deficient in behavior. This information is posted on the following web page:  
<http://nature.berkeley.edu/~fbeall/WDDeckIntro.htm>

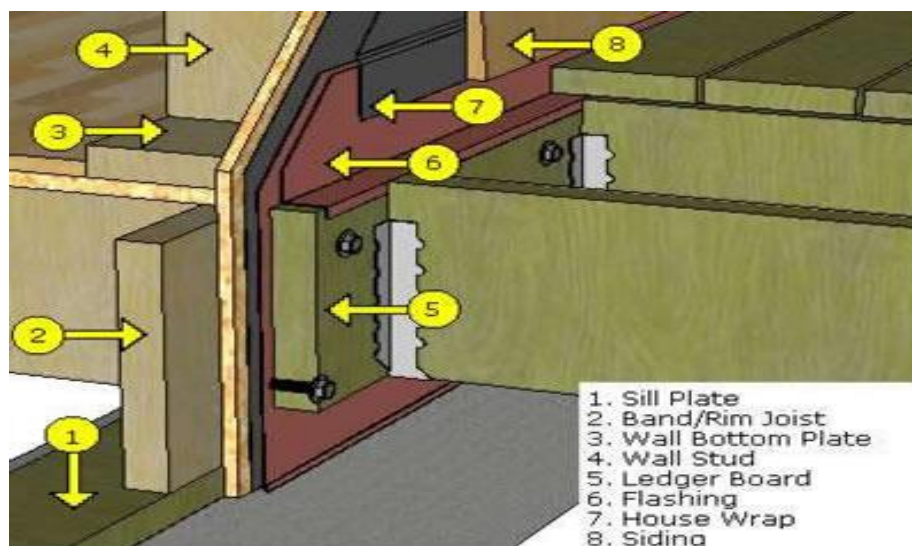
As a rule of thumb, the thicker the wooden decking material, the better the fire performance. That does not mean that such decks will survive a wildfire, but they will not contribute enough heat release to endanger the house.

Decks that are just above ground level should be screened to prevent combustible debris from entering. This also keeps out animals, such as skunks! Also, note the stones being used to minimize growth of vegetation.



The gaps between deck boards (about 3/16 in.) are there for drainage and ventilation. Keeping the gaps clean also protects the deck boards and joists from decay. The best advice is to keep these clean of debris, especially before and during the fire season.

The problem with gaps between the deck and the house (such as offset ledger board construction) are probably best handled by covering the gaps with screening having about 1/8 in. openings to prevent lodging of debris and embers. Ledger boards that are attached without gaps should be flashed (see below) --this not only provides protection against water penetration, but also acts as a fire barrier to embers.



Replacement of deck boards is obviously expensive, but could be one of the best investments you can make. For replacements, consider any material (plastic, plastic lumber, fire-retardant treated lumber for exterior use, or lumber) that passes the standard posted on the web page of the Office of the State Fire Marshal:

[http://www.fire.ca.gov/fire\\_prevention/fire\\_prevention\\_wildland\\_codes.php#testingstandards](http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_codes.php#testingstandards)

Then click on 'Testing Standards CA SFM12.7A-4 Decking'

This and other testing procedures listed on this site have been approved for use by the Office of the State Fire Marshal, and have been incorporated into the new California Building Code for new construction in designated wildland urban interface areas. You should check with your local building and fire officials to find out what products are acceptable in your area. In the tests done by the UC Forest Products Laboratory, all-heart 1 1/2-inch-thick redwood (2 x 6s), a widely used decking, and some (but not all) plastic-fiber composite decking products, performed acceptably. Note the information in bold; redwood sapwood was not tested in that study, so its performance was not determined. Also, because any sapwood will readily decay, it wouldn't be the most appropriate choice. Thinner material could be risky (for mechanical failure as well as fire).

They found that certain types of wood-plastic board profiles (hollow and channeled) did not perform well:



### **Addressing**

Prominent and visible addressing aids firefighters in locating your home. Maintain adequate and visible address numbers on structures and driveways. Typically, 3 inch, contrasting lettering on a reflective surface is preferred. Finding an address during a wildland urban interface fire in a timely manner can make the drastic difference between structure protection and structure loss.

## Fences

Fences (and walls) are both decorative and functional (for security and privacy) and come in many materials and configurations. While we have no laboratory fire test data on fences, there are a number of observations that indicate fences--like plants--are a much greater hazard close to a house. Fences and gates can also be an access problem for fire crews trying to enter your yard, so it is advisable to get an inspection from your local fire department.

### Fences: Potential Problems

The fence shown below was responsible for substantial damage to both adjacent houses that were saved only through quick intervention by firefighters.



The house on the right had a gate attached to the front corner of the garage. The gate was totally consumed as were most of two 8-foot sections of fence. The geometry and combustibility of this arrangement was an invitation to burn in this type of "zero-lot-line" construction. There are several reasons for fences to be of concern. For one, a combustible fence or gate attached to a structure is an obvious threat if it catches on fire. The fire can arise in a number of ways. One is that debris (leaves, trash, etc.) often collect at the bottom.

Another problem is that many wooden fence boards are in contact with soil at the bottom and will eventually decay at that point (see the Glossary for more information on decay).



Combined with combustible debris, fences can be an excellent fuel source. Also, fence boards usually have small vertical openings where brands can lodge and even cause the fence boards to ignite directly. In all cases, the thinner the fence boards, the greater the risk!

A number of homeowners have found their fences to be convenient places to store firewood, not realizing that what burns well in the fireplace can also spread embers throughout the neighborhood. The photo below is an example of an accident waiting to happen!

### **Fences: Possible Solutions**

1. Any fences or gates that are attached to houses should be designed to reduce the fire hazard. Metal gates and heavy wooden fence sections can minimize this problem. Below is a combination of wooden framing with wire mesh, which minimizes the amount of combustible material in the fence.



2. For fences in "zero-lot-line" situations, consider using a non-combustible material, fire-resistant lumber (fire retardant treated for exterior exposure), or thicker dimension lumber (1 1/2 inch). Another option is to use a chain-link fence with climbing vines to provide privacy. Of course, the vines must be maintained so that they do not become a fire hazard!

3. Keep the bottom of fence boards clear of debris (leaves, trash, etc.) and make sure that they are not in or touching soil. A good rule of thumb is to create about a one-inch gap at the bottom.

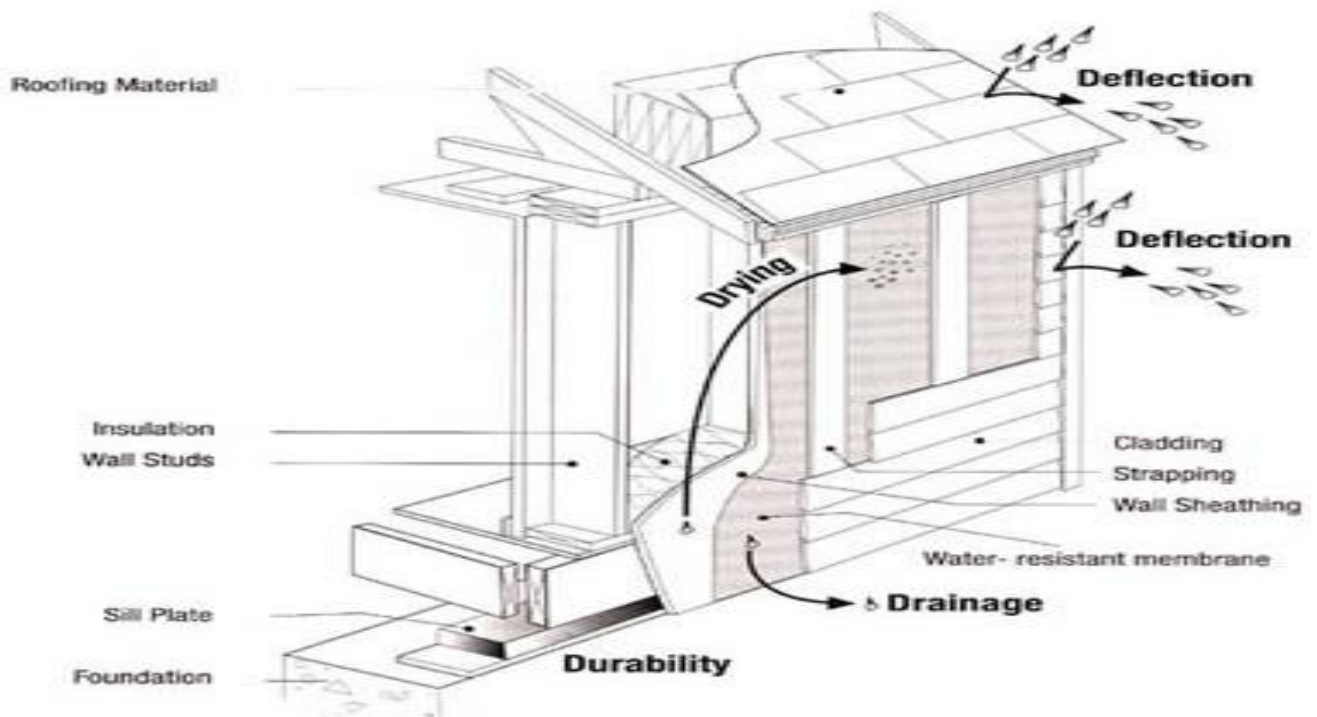


4. Do not store combustibles (such as firewood) against fences.

### Siding

The best siding material from a fire perspective is one that will not burn. This can be stucco, cement, or stone. The next best siding would be homes built of logs. Even though logs are combustible, the low surface to volume ratio causes it to burn very slowly, which makes it very appropriate for medium and high fire risk situations. The most common siding throughout the community is wood panels such as T1-11 plywood. Wood panels and boards are the most common and economical forms of siding, but they are readily combustible. This siding is usually not very thick, 1/2 inch to 3/4 inch, and will burn through to the structure behind it in less than 10 minutes.

Siding (cladding) is an important esthetic attribute for houses, but it also has a key role as part of a protective enclosure to help shed rain, while permitting excessive vapor to move through and out of the house, as shown in the photo below.



## Siding: Possible Problems

Combustible siding provides a rapid vertical path for flames to reach vulnerable portions of a house such as the eaves or windows.

In a fire test, burn-through (through siding and sheathing) did not occur for the shingle siding below, but the fire spread vertically and quickly penetrated the soffit, which was 1/4-inch plywood. Even 1-inch solid wood is inadequate as a soffit material because of the edge gaps, unless it is tongue and groove.



Keep in mind that combustible siding needs a source of ignition. In many cases that will be caused by plants near the house, or from other combustibles, such as firewood.

Some plastic siding deforms with heat and can expose the sheathing or the wall cavity to fire.



Tests conducted by the University of California Forest Products Laboratory have shown that siding without sheathing (both combustible and non-combustible) ultimately fails by burning through laps or conduction of heat to the studs. However, the presence of sheathing (plywood or OSB) largely prevents failure. The type of lap is also very important; the plain bevel siding (on the left below) failed in just over one minute, but the rabbit bevel siding (on the right) lasted over 21 minutes.

The relationship observed with horizontal lap siding would also apply to vertically lapped products, such as T1-11-type panel products and board-and-batten siding. A more complicated joint is preferable from a flame entry perspective. Panel products can have a butt-joint covered with a sealant, or with 'batten' cover, or have a more complicated joint. Board-and-batten consist of a number of wood-to-wood joints similar to plain bevel, and so flame penetration into the stud cavity would occur more easily in these cases.



### **Siding: Potential Solutions**

All lapped wood siding should have an interlocking type of lap (such as the rabbit bevel shown above) to prevent flame penetration. If you have combustible siding, carefully inspect it annually for gaps and make sure that they are filled with a high-quality caulk.

A possible solution to the soffit problem (with boxed eaves) is to replace it with cement board that is properly filled with fire-resistant material at all joints

For buildings that are 2-story, there is a real opportunity to break up the vertical combustion path with a non-combustible first-story.



If you do replace your siding, consider several other options to improve your fire, seismic, and durability performance.

Add structural sheathing (plywood or OSB) to improve both your fire and earthquake resistance. To find the earthquake hazard rating for your area, go to: <http://www.consrv.ca.gov/cgs/rghm/ap/index.htm>. Have your sill plates (the lumber that is fastened to the foundation) inspected to see if they need upgraded hold-downs (again for seismic protection).

If you reinstall your windows, make sure that they are properly flashed to prevent leaking and subsequent decay. Also, think about potential upgrades for more fire-resistant windows (see the section on Windows for more information).

### **Limbs**

Trim tree limbs that are within 10 feet of chimneys and/or stove pipes and trim and remove all dead limbs hanging over the house. "Limb up" your trees and maintain a clearance of 3 times the height of the lower fuel layer from the ground to the bottom. Clear flammable vegetation and "limb up" trees within 10 feet of the road to reduce fire spread and provide a safer escape route.

### **Propane Tanks**

Keep Liquid Petroleum Gas (LPG) tanks or other flammable materials at least 30 feet from structures, fences, and other combustible materials

### **Homes with plastic tarps next to the home or under a deck**

Tarps are used to cover firewood or vehicles such as snowmobiles. Tarps are made of plastic, a material high in very flammable hydrocarbons. Once ignited, they burn similar to another hydrocarbon known as gasoline.

### **Firefighter Access**

Firefighter access is based on how easy it would be to find and back a fire engine into a driveway. When fire engines perform structure protection, they back into a driveway so if fire conditions worsen, they can quickly escape. Access in general is very poor due to the extremely narrow roads; the roads are too narrow for a Type 1 or municipal fire engine. During a serious wildland fire, it is probable that road congestion will occur, especially on a weekend when visitation is high. This very dangerous condition can lead to injury and/or death.

### **Education to reduce structural ignitability**

State and local fire agencies having jurisdiction within the W.U.I. continually provide wildland fire prevention education to those living in the W.U.I., including recommendations to reduce the chances of structure ignition. This is accomplished through face to face contact involving

home inspections, representation at public events such as county fairs, visits to the fire station. Publications such as “Are You Prepared” and “Living with Fire – -A guide for Homeowners” have been distributed at public functions. These publications are typically provided to residents and provide numerous recommendations on improving the defensibility of one’s home, including a six-step process on creating defensible space. Also included in this plan in the Homeowner Information Section are copies of publications such as, fire-safe plants recommended for use in landscaping, Before During and After a Wildfire, Power Line Safety, Homeowner Checklist, Safe Equipment Use, and personal and Animal Evacuation guides.

## **Defensible Space**

Property owners living in State Responsibility Areas (SRA) are required by Public Resource Code (PRC) 4291 to maintain clearance of flammable vegetation around their property. A property owner’s clearance responsibility is limited to 100 feet from his or her structure(s) or to the property line, whichever is closer, and is limited to their lands. However, coordination with adjacent landowners to achieve maximum defensible space is encouraged. Similar constraints have been developed for areas outside the SRA, within and adjacent to the W.U.I.

Wildland fires can spread out of control and destroy everything in their path, especially when structures and roadways are overgrown with vegetation. This can cause homes to ignite and prevent access by firefighters and fire protection equipment. Overgrown roads delay response time and obstruct efforts to extinguish the fire and create unsafe conditions for firefighters and evacuating residents. Many homes can be saved during a wildland fire provided there is adequate defensible space near the structure and roads. Throughout the W.U.I., state and local fire departments are available to conduct home defensible space inspections. Depending on the policy of the individual department, these inspections are made automatically, when requested, or by complaint. When making an inspection, fire officers evaluate at a variety of factors including surrounding vegetation, topography, aspect and location of the structure, type of structure, and roadway access. Recommendations are then provided to the homeowner to reduce the potential of structural ignition and allow improved ability for firefighters to successfully defend a home or structure.

A summary of common practices for creating and maintaining defensible space are provided below. Because this C.W.P.P. covers a large and varied landscape, it is beyond the scope of this plan to provide in-depth discussion of possible modifications that should be made to these general guidelines according to site specific conditions (fuel type, terrain, access, weather patterns, etc.). Additionally, this summary is not intended to supersede any state, county, or local codes or regulations in regards to defensible space and vegetation removal. Homeowners are advised to seek guidance in making appropriate, site-specific modifications that conform to all applicable rules and regulations.

Maintain a firebreak by removing and clearing away all flammable vegetation within 30 feet of each structure. Single specimens of trees or other vegetation may be retained provided they are well-spaced and well-pruned, in order to avoid spread of fire to other vegetation or to the structure. In the area from 30 to 100 feet from the structure, dead and dying woody

surface fuels and aerial fuels should be removed. Downed logs, when embedded in the soil may be retained. In the area from 30 to 100 feet, create clearance between fuels both horizontally and vertically.

Residents may consider the removal of large trees when addressing the defensibility of their homes. Before a large tree is removed, the appropriate professionals should be contacted to evaluate the feasibility of removing the tree. CAL FIRE receives numerous timber harvest permits for thinning of redwood and Douglas-fir for fire hazard reduction. Many consider the retention of large trees as a good defense against wildfire, considering the fire resistant nature of local large conifers. Although there is no such thing as a fire resistant forest, a good defense against wildfire is a healthy and resilient one. There are instances where management of the surrounding forest (thinning, removal, and pruning) is appropriate. There are also situations where retention of larger trees, while managing the ground fuels is the best option.

Closed canopy forests void of a large buildup of dead fuel, reduces the amount light hitting the forest floor, maintain ground moisture and limit growth of understory species which may reduce the risk of a surface fire transitioning to the canopy. However, when a fire enters and becomes established in the canopy, control is very difficult.

The Calaveras County C.W.P.P. has added brochures for defensible space in the section titled "Useful Homeowner Documents and Resources".

#### **Pertinent websites related to recommendations to reduce structural ignitibility**

<http://www.fire.ca.gov/>

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

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#### **Plants**

While plants close to a building can be a major fire hazard, those farther away can also serve as buffers against radiation and convective heat, and fire brands. Trees, in particular, can block many of these hazards by diverting wind flow away from the house. These townhouses in a rim location were protected by the trees at the rim edge.



## Plants: Potential Problems

Plants against combustible siding present the greatest hazard since their flames make direct contact with the siding and can cause vertical flame spread.

As the separation from plants to building increases, then we are concerned about the radiant energy from combustion (like the heat generated from a fireplace). There is a very large difference in the amount of radiant energy felt by the siding as the distance increases, for example, the same plant 4 feet away as compared to 1 foot would only have about 10% of the radiant effect on the siding.

All plants within the "home zone" should be assessed using the four key criteria: size, location, structure, and condition.

Size and location: These effects go together. A small plant (about 2-feet high) against combustible siding under a window or at an inside corner is a real threat. A plant just under or next to a window is a primary concern. A typical window will last about 1 to 3 minutes when exposed to fire.



Another bad place is an inside corner of a building, which can be ignited much more easily than simply the side of a house.

Structure: Plants with a lot of fine materials, such as junipers or cedars ignite easily and can release a lot of heat in a short period of time. For example, the 1-foot juniper below generated 10-foot flames, which in many cases can reach up to the eaves.



Condition: Dead material in or under plants can add substantially to the dry fuel, which in the fire season can be a formula for disaster.

### **Plants: Possible Solutions**

Size and location: The smaller the better, especially close to combustible siding, under a window, or at an inside corner. Better still; consider using ground cover wherever possible next to combustible siding or near windows for any type of siding.

Structure: Look for "leggy" plants with succulent leaves. For example, plants similar to oleander are a good choice, as are roses.



Condition: Any plants near a house should be pruned, regularly watered (preferably dripped) and any dead material removed, including at the soil level. Along with these precautions, don't use bark or other combustible natural materials as plant bedding. Embers can land in this, smolder, and later go into flaming combustion.

The burned cedars in these photos had all of the wrong characteristics!



The picture shows one green cedar (far right) and one scorched (center).



This picture is over to the right of the same side of the house where the scorching of the area around the window is evident from a cedar just below the window. A fire crew arrived just in time.

### **Fire Resistive Plants**

When landscaping around a home, most homeowners are interested in creating a landscape that is aesthetically pleasing, complements their home, and has variations in color, texture, flowers, and foliage.

Another important aspect of home landscaping is safety. While planning your landscape, you must consider fire safety in general, and plants flammability in particular. Remember that flammable plants in your landscape will increase fire risks around your home as they can act as fuel and contribute to the intensity of a fire.

There are many fire prevention techniques, applicable to your backyard and outdoors area as describes in the article [Prevent Fire Damage in the Outdoors](#). However, planting fire resistant or fire resistive plants is one of the best techniques you can use to promote fire safety.

### **What Are Fire Resistant Plants?**

Fire resistant plants are plants that have a higher capacity to withstand heat associated with fire and are therefore less likely to be ignited by flame or other ignition sources. Fire resistant plants' foliage and stems will not contribute significantly to the fire's intensity.

Keep in mind that fire resistant plants are not fire proof and can be damaged by fire.

In general, fire-resistive plant characteristics include:

- ) Supple and moist leaves
- ) Water-like sap (usually the sap will not have a strong scent)
- ) Thicker bark
- ) High moisture content
- ) Low resin content

### **Where to Plant Fire Resistant Plants?**

Surrounding your home with fire resistant plants won't guarantee your home's safety but it will decrease the risk. Another advantage is the fact that a garden filled with fire resistant plants will grow back looking good even should the worst happen.

Good placement of fire resistant plants will help protect your home by blocking intense heat. Plant the most drought tolerant and fire resistant plants closest to the house within about three feet.

There is a wide array of plants and trees to choose for your landscape that are both attractive and fire resistant.

#### **Grasses, groundcovers, vines, perennials and annuals**

African daisy, Black-eyed Susan, Iris, Ivy, Thyme, Yucca, Poppy, Lavender, Red hot poker, Clematis, Coral bells.

#### **Trees & Shrubs**

Oleander, Lilac, Jasmine, Poplar, Oak, Plum, Peach, Maple, Elm, Ash, Birch, Cherry

Included in the Homeowner Information Section you will find a pamphlet on fire resistive landscaping from Firewise as well as fire safe landscaping brochures for the California Fire safe Council for three different landscapes; Timberland, Brushland and Grasslands.

### **General recommendations**

One of the goals of the C.W.P.P. is to prioritize fuel reduction projects. This plan identifies "high priority" areas, where fuel reduction projects should take precedence. When individual projects are implemented, site specific guidelines shall be developed by the persons/agency responsible for project development. Any proposed project shall conform to all applicable local, county, and state regulations concerning fuel modification projects. The following general recommendations are not intended to be site specific, but rather a tool to aid in the development of appropriate prescriptions.

### **Reduction of fuels adjacent to roads**

Overgrown vegetation on or adjacent to the traveled road surface makes access difficult for fire fighters and equipment. Additionally, roadside vegetation, including tree limbs, brush, and grass is responsible for numerous fire starts each year. This is a problem adjacent to all types of roads in the County. There are many narrow, one-lane roads that often make it

difficult for emergency vehicles to access a fire area while residents are simultaneously leaving. During a wildland fire, ingress/egress may be obstructed by roadside vegetation.

Vegetation impeding and growing into the road right of way should be reduced to a level allowing greater ease of access for emergency response personnel and equipment, and to reduce the number of roadside fire starts. This vegetation removal is also used for the safety of fire suppression personnel using roads as fire control lines. County Public Works and Caltrans routinely conduct roadside clearing for access, visibility and fire safety. Historically, this work was accomplished through a combination of chemical and mechanical means. In recent years, there has been increasing public pressure to eliminate the use of chemicals as a roadside treatment. Most of the work has been completed with mechanical mowers, hand crews and masticators.

### **Strategically placed fuel breaks (including shaded fuel breaks)**

The primary goal of a fuel break or shaded fuel break project is to change the behavior of a fire entering the fuel-altered zone. To reduce large flame lengths and high energy output, fuels should be modified to reduce flame length and decrease energy output. Changing fire behavior may be the key to allowing fire crews to protect people and property from wildland fire.

Effective fuel breaks may:

- Act as an anchor point for indirect attack on wildland fires.
- Allow for fire fighter to use fire as operational tool (firing out).
- Support safer ingress/egress for emergency responders.

With reduced fuel adjacent to roadways and structures, flame lengths, fire activity, and heat production will be reduced, making it safer for firefighters to access the area and protect structures in the community. A fuel break typically refers to the removal of all or the majority of vegetation in a specific strategic area. A shaded fuel break refers to “thinning” of vegetation in a specific area with the remaining vegetation shading the ground. Non-shaded fuel breaks are typically used in non-residential, less visible areas. For the purposes of large scale wildland firefighting, these types of fuel breaks are preferable to shaded fuel breaks because they make little to no fuel available combustion. However, shaded fuel breaks are often preferred because they are less invasive to sensitive resources on the landscape and often have more support from adjacent property owners.

The type and size of fuel reduction projects should be determined on a project by project basis. The widths of roadside shaded fuel breaks generally range from 10 feet up to 50 feet, and in certain instances may even be wider. Strategic fuel breaks can be as wide as 400 feet. The responsible fire agency as well as the community should collaboratively develop projects that meet the needs of the stakeholders.

Shaded fuel breaks can be placed around individual structures, a community or neighborhood identified to be at risk. For example, after a community has developed defensible space out

to 100 feet from structures, they may wish to augment that with an extended fuel break. Depending on the topographical location of the community, an extended fuel break around the residences may be of strategic importance. There is no specific prescription for this type of project. It should be developed in collaboration with the community and responsible fire agency, and be adapted to local environmental constraints.

### **Roadside Fuel Break**

There are many communities and neighborhoods identified as priority areas in this document where a roadside fuel break would be beneficial. Stakeholders in both counties consistently agreed, reducing fuel loading adjacent to roads is one of the most important and highest priority projects. There is no standard distance recommended from the roads edge, other than more is often better. Extended fuel reduction projects may be reduced in some areas with continued maintenance and treatment of roadside grass and continued trimming of vegetation. Roadside fuel breaks are typically between 10 and 40 feet wide. The exact distance should be based on fuel type, slope, aspect, and be environmentally feasible.

Other general recommendations include maintaining defensible space around the home. This is discussed in the “Reducing Structural Ignitability” section of this plan. There are a variety of methods used to create a fuel break or shaded fuel break, however, the primary method is manual labor using chainsaws. Locally, many fuel reduction projects are completed by CAL FIRE inmate fire crews, residents, and private contractors. Although chainsaws are the primary vegetation removal tool, other methods may include livestock, mowing, or other mechanical means such as a masticator. Treatment of the removed vegetation can be accomplished by a variety of methods, listed below.

### **Chipping**

The CFFSC routinely secures funding for Door-to-Door Chipper programs within the County. Independent contractors with chippers are also available for hire in the county. When a fuels reduction project requires use of a chipper, vegetation to be treated should be placed in a location easily accessible to a chipping crew arranged in a manner to allow for efficient chipping. Such specifications are determined in project planning according to the size of the chipper. Depending on the location and project goals, the chips will be either left on site, or be taken away for proper disposal.

### **Debris burning**

Though this is a very effective means of fuel treatment, vegetation piles can become an increased fire hazard if left untreated. Other factors to consider are the risk of escape and smoke management and air quality restrictions. The agency having jurisdictional authority should be contacted prior to burning for information on all applicable fire and air quality rules and regulations.

In general, guidelines for debris burning include:

Burn only during approved burn hours if applicable.

Have adequate fire tools and water onsite.

Piles shall be no larger than 4-feet x 4-feet and no taller than 4-feet.

10-foot clearance around each pile

Obtain appropriate permit based on the size of your property, if required.

Additionally, burning can only occur on “burn days” set by: The Calaveras County Air Pollution Control District: (209) 754-6600

Also we have provided the debris burning pamphlet from Cal Fire in the Homeowner Information Section.

### **Timber Removal**

Mechanical removal of trees (Timber Harvests), that have been declared by the local Forest Agency to be legitimate fuel breaks or fuels treatment areas and would be sufficient for fire safety and suppression.

### **Removal to off-site location**

If there are no feasible on-site treatment options, vegetation can be removed to an appropriate off-site location.

### **Masticators**

Another option for reducing fuel involves the use of a masticator. Masticators are a mechanical means of vegetation removal, in which spinning blades “masticate” or “chew” vegetation. The masticator head can be attached to the end of an excavator arm or to the front of a tracked or wheeled vehicle such as a dozer or loader. They are primarily used in fuel break situations, rather than shaded fuel breaks, due in part, to the large swath of vegetation they remove. Masticators cut, as well as treat the vegetation they remove, pulverizing the vegetation into a loose “chip like” material, obviating the need for a chipper. Masticators are very effective in roadside and ridgetop fuel breaks. Smaller masticators are now being used in some shaded fuel breaks.

### **Controlled / Broadcast / Prescribed Burns**

Involves the burning of surface fuels in a predetermined area, under the supervision of trained fire personnel. Prescribed burns are planned in detail, occurring only when favorable conditions exist. A prescribed fire takes place under predetermined weather and fuel conditions. Other factors affecting prescribed burning include resource availability and atmospheric conditions favorable for adequate smoke dispersion. Prescribed burns have been implemented on Public Lands and several private ranches for the purpose of fuel reduction and habitat improvement. While prescribed fire is an effective means of reducing fuels in the wildland, it is not widely used as treatment locally for a variety of reasons including: limited resources available for burning, smoke management, negative public perception of burning, and the potential threat of escape. CAL FIRE will cooperate with

interested landowners to determine opportunities for the appropriate use of controlled burning.

### **Vegetation Management Program (VMP)**

The CAL FIRE Vegetation Management Program (VMP) is a cost-sharing program with landowners. The program focuses on the use of prescribed fire and mechanical means to address wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands.

### **BLM Hazardous Fuels Reduction Variance Program**

Property owners who share boundaries with BLM land may apply for permits to clear and maintain a 100' buffer on the BLM side of the fence. All fuel reduction activities including the cost associated with those activities are the responsibility of the applicant. The BLM Mother Lode Field Office will issue free permits in their service area which includes Calaveras County. Permit applications are considered individually and are written specifically for each site stipulating the area to be cleared and the methods to be used. Prior to permitting, BLM will survey each area for threatened and endangered plants and animals, cultural resources, and natural resources that require special attention or protection.

To be eligible for the Hazardous Fuel Reduction Variance Program, you must be in compliance with the following conditions.

- ) Prior to the Folsom Field Office issuing a hazardous fuel reduction Variance Permit, your home must be Compliant with California Public Resources Code (PRC) 4291, Defensible space requirement of 100 feet around your home. (The BLM parcel that is next to your property may be within the 100 feet requirement).
- ) All stipulations that are outlined in the permit must be followed and adhered to.
- ) All fuel reduction work is limited to within 100 feet of the BLM property line.
- ) Currently, all fuel reduction activities and the cost associated with those activities are the responsibility of the applicant.
- ) Not all applicants will receive a Permit.
- ) Vegetation larger than 6 inches will not be cut.
- ) Debris burning is prohibited on BLM land.
- ) Other stipulations may be outlined in the Variance Permit.
- )

For more information on the BLM Hazard Fuel Reduction Variance Program contact your local Folsom BLM Field Office at:

- ) 5152 Hillside Circle  
El Dorado Hills, CA 95762  
Phone: (916) 941-3101

## **Road data**

Whether private, dirt, rock or paved, there is agreement between stakeholders that proper mapping and identification of road systems throughout the county is a high priority. Complete and accurate road mapping is vital during a wildland fire incident. Proper mapping allows emergency responders to locate and manage an incident. In many instances, out of county emergency responders do not know the local road systems in the vicinity of the wildfire. The County has Geographic Information Systems (GIS) personnel who maintain county data.

Although the county roads data is accurate, there are large areas where data is lacking. These omissions primarily occur in the more rural areas of the county and on large private and public landholdings. Over the past several years, some local government agencies have begun compiling roads data, utilizing a variety of sources. This process should continue into the future. Collaboration between stakeholders to prepare a comprehensive map and interoperable system is a priority.

## **Roads, Bridges and Water in the W.U.I.**

In terms of new construction within the W.U.I., there are many common standards in terms of access, road width, water supply, and bridge specifications. These standards take into consideration the risk of wildland fire and the needs of responding fire agencies. There was, however, considerable construction in the W.U.I. prior to modern fire code. There are, throughout the county, numerous residences accessed by narrow, unmaintained roads, sometimes by inadequate bridges.

This coupled with a limited water supply can result in disaster during a wildfire. The following issues should be strategically addressed:

- Identifying inadequate bridges and plan for fixes.
- Identify existing water supplies in the wildland.
- Identify locations for additional wildland water supplies.
- Identify, prioritize, and mitigate high risk roads in the W.U.I.

## **Truck Trails/Fire Roads**

There are numerous “truck trails” or “fire roads” located throughout the county, most of which are historic logging roads, referred to as truck trails for the purpose of this plan. The current conditions of truck trails are varied. Many are maintained at minimal levels, while others are neglected, often because of insufficient resources. Some have been abandoned due to poor initial location, improper construction, and failures due to landslides or washouts. Truck trails bisect a variety of properties of both public and private ownership. The importance of these roads in the event of a wildfire cannot be overstated. Accurate mapping, appropriate maintenance, relocation of problem areas, and consideration of abandoning failed sections is needed on all truck trails.

## **Structure Protection Planning**

One of the common difficulties during the wildfire season in California is when fire crews respond to regions they are unfamiliar with. This problem is compounded when responders have limited information on roads, number of structures, evacuation routes, water supply, and other hazards. Agencies within the County could consider a project to identify pre-determined protection planning zones. The zones should be identified by local fire and emergency services officials and should include pre-packaged information, which will be provided to first responders in the event of an emergency.

Fuel Breaks, Shaded Fuel Breaks and Roadside Fuel Breaks have been previously discussed in the plan. This plan has identified areas where fuel reduction projects should take place. There is a need to further investigate environmentally and socially acceptable landscape level fuel breaks. Part of the benefit of bringing multiple parties to the table, is that priority areas and assets at risk have become identified. This allows planners to consider not only community or neighborhood specific projects but also landscape level projects.

## **Planning Areas**

During the initial phases of C.W.P.P. development, it was determined that due to the large geographic area included in the plan, there needed to be smaller planning areas to account for the wide variety of agencies, fuels, etc. For planning purposes, the C.W.P.P. stakeholders broke the County into five C.W.P.P. planning areas. These smaller planning areas will allow more efficient local planning, the idea being County projects should not be compared or compete with those in throughout the County.

The following section contains a map showing each planning area boundary and W.U.I. boundary and a brief description of each planning area. Additionally, a list of fire protection agencies, volunteer companies, and other agencies with jurisdictional influence are included. Each section then identifies assets at risk, as determined through stakeholder meetings.

Finally, in an effort to show hazard areas from a technical standpoint, the plan includes a Fuel Rank Hazard Assessment, created from data prepared by the CALFIRE Fire and Resource Assessment Program ( F.R.A.P.). This map has been provided for the entire county rather than each planning area.

## **Hazard Assessments**

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (F.R.A.P.) provide a variety of products including extensive technical and public information for statewide fire threat and fire hazard. Much of this information involves Geographic Information System (GIS) analysis, tables, maps, data and calculation tools that are available on this website.

For more information about F.R.A.P., please visit the F.R.A.P. website at:

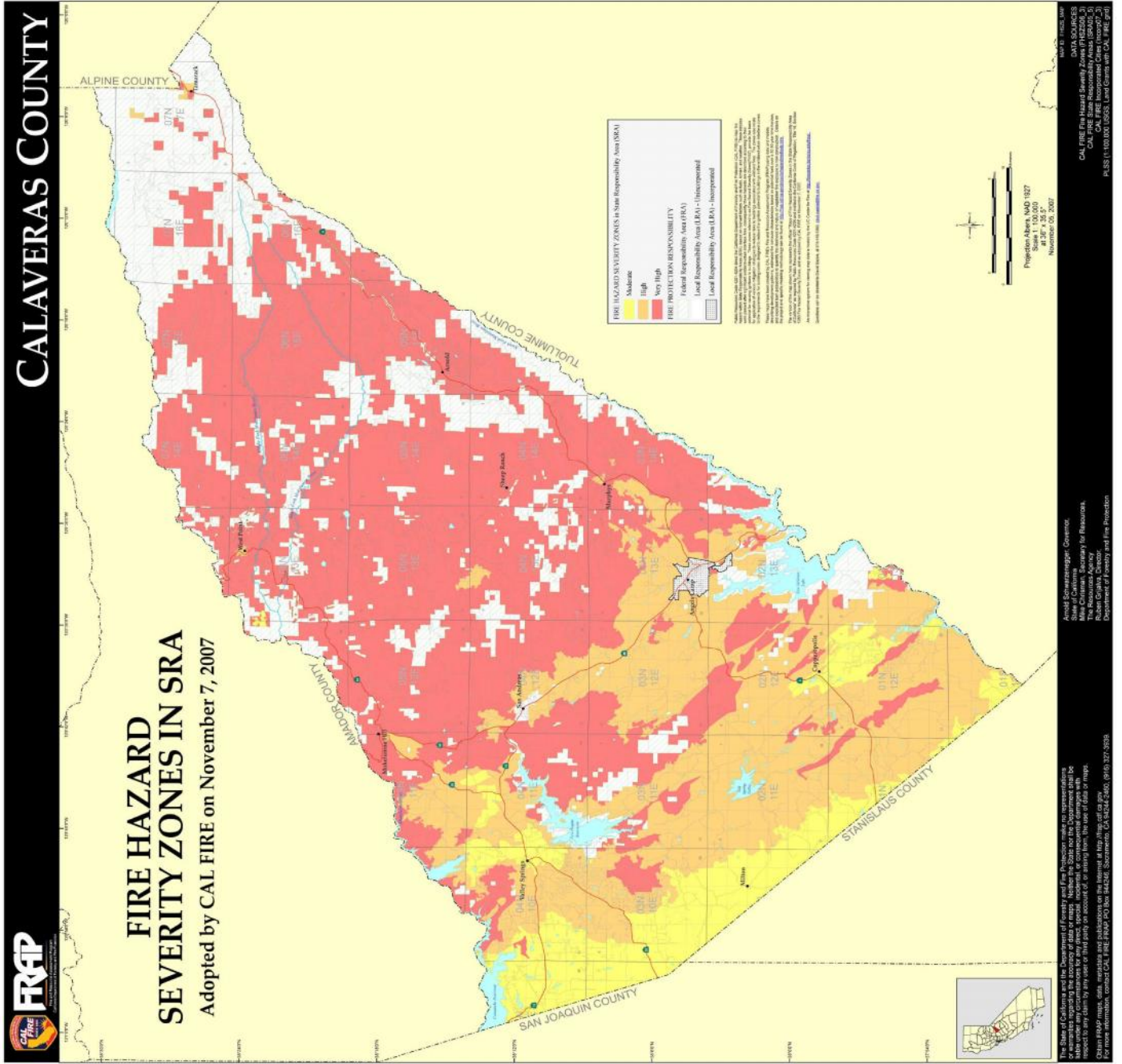
<http://F.R.A.P.cdf.ca.gov>

Fuel Rank – This map indicates moderate, high, and very high fuel rankings based on inputs such as fuel, slope, brush density and tree density. CAL FIRE has developed a Fuel Rank assessment methodology for the California Fire Plan to identify and prioritize pre-fire projects that reduce the potential for large catastrophic fire. The fuel ranking methodology assigns ranks based on expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition (wind speed, humidity, and temperature). The procedure makes an initial assessment of rank based on an assigned fuel model and slope.

Rugged topography occurs through much of the area, and severe fire weather occurs on 35 percent of the days during the fire season across much of the county. Fire weather is sampled daily during the wildfire season at stations throughout California to create critical fire weather frequency, which is classified in three categories. Calaveras County is rated in the highest frequency class. The geographic extent of this hazard in Calaveras County is **large**. More than 50 percent of the planning area is affected. Generally, wildfire risk is highest across a broad section of the central and eastern sections of the planning area. Areas of very high or high wildfire threat constitute at least 85 percent of the county

F.R.A.P. also identifies and ranks Fire Hazard Severity Zones. For the purpose of this report, the following hazard map depicts the magnitude of Calaveras County's wildfire potential.

# Calaveras County F.R.A.P. Map



## Communities at Risk

### History

During the 2000 fire season wildfires burned millions of acres throughout the United States. These fires dramatically illustrated the threat to human lives and development. Under Executive Order, the National Fire Plan was created as a cooperative, long-term effort of the USDA Forest Service, Department of the Interior, and the National Association of State Foresters, to protect communities and restore ecological health on Federal lands.

A major component of the National Fire Plan was funding for projects designed to reduce fire risks to people and their property. A fundamental step in realizing this goal was the identification of areas that are at high risk of damage from wildfire. Federal fire managers authorized State Foresters to determine which communities were under significant risk from wildland fire on Federal lands.

The California Department of Forestry and Fire Protection undertook the task of generating the state's list of communities at risk. With California's extensive Wildland-Urban Interface situation the list of communities extends beyond just those on Federal lands.

Three main factors were used to determine wildland fire threat to Wildland-Urban Interface areas of California.

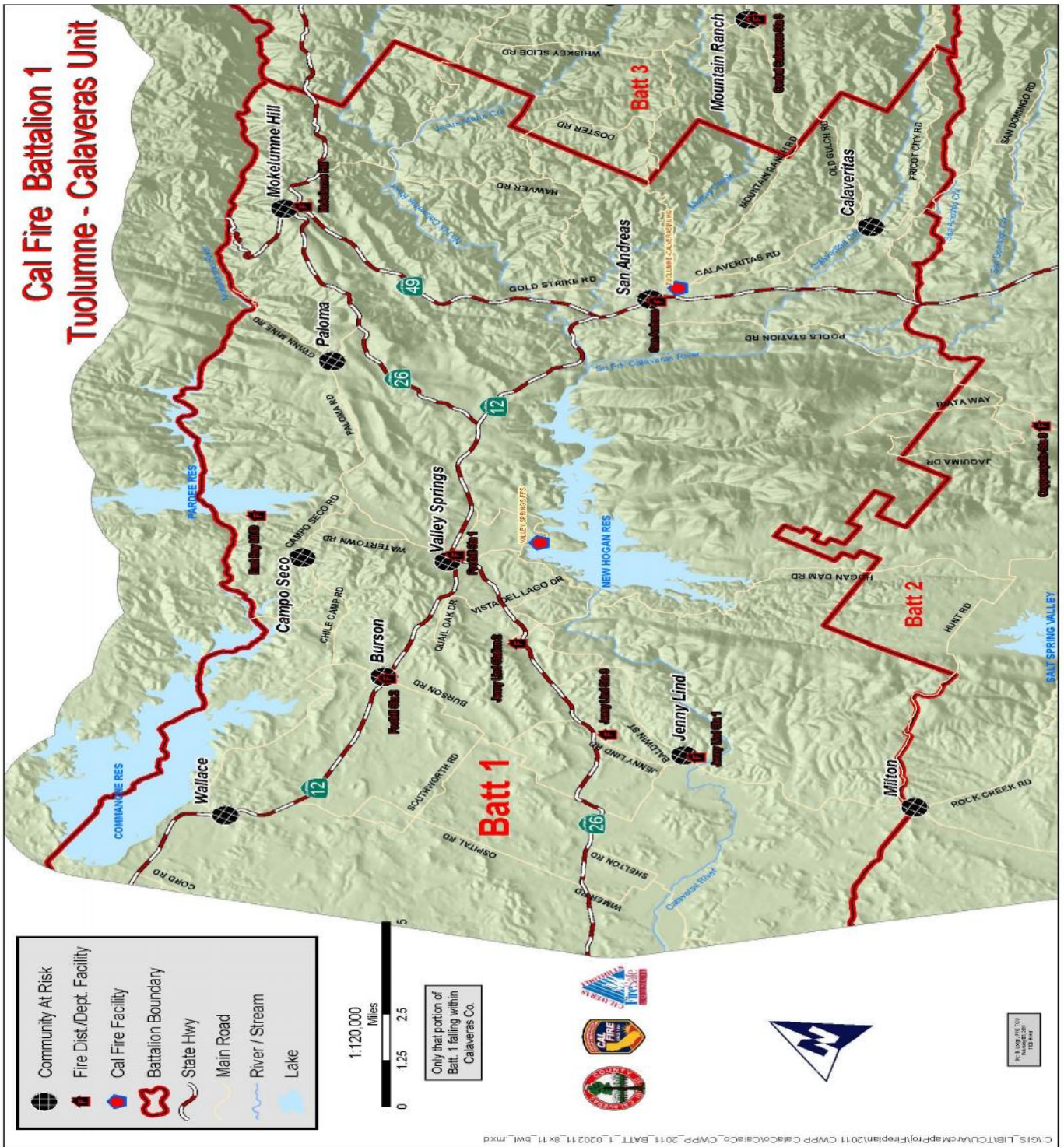
- ) **Ranking Fuel Hazards** = ranking vegetation types by their potential fire behavior during a wildfire.
- ) **Assessing the Probability of Fire** = the annual likelihood that a large damaging wildfire would occur in a particular vegetation type.
- ) **Defining Areas of Suitable Housing Density that Would Create Wildland-Urban Interface Fire Protection Strategy Situations** = areas of intermingled wildland fuels and urban environments that are in the vicinity of fire threats.

The Communities at Risk List includes a total of 1,264 communities. Of those, 843 are adjacent to federal lands (USDA Forest Service, Bureau of Land Management, Department of Defense, etc.) and are indicated as such with a checkmark in the Federal Threat column. The Hazard Level Code included on the list designates a community's fire threat level with 3 indicating the highest threat.

Calaveras County has 35 communities at risk. The communities at risk list can be viewed at:

[http://osfm.fire.ca.gov/fireplan/fireplanning\\_communities\\_at\\_risk](http://osfm.fire.ca.gov/fireplan/fireplanning_communities_at_risk)

# Battalion 1 Overview Map



## **Battalion 1 - San Andreas Battalion: Nick Casci - Battalion Chief**

### **Pre-Fire Management Plan - Overview**

The San Andreas Battalion consists of 229,486 acres, stretching through the general area of Highways 12, 26 and 49 in Northwestern Calaveras and Eastern San Joaquin Counties. The elevation ranges from around 200' in the western plains to near 2500' in the eastern foothills. In its eastern third, the Battalion is bisected by multiple east-west drainages that have a history of supporting fire spread. In the western two-thirds, the Battalion is bisected by a set of unique geographic features, two prominent ridgelines that run north-south - the northern half of the Hogback Mountains and the less prominent northern extent of Gopher Ridge. See the map, in the Exhibits section, page M2.

The Battalion's fire control organization is comprised of two Forest Fire Stations: Headquarters FFS – a two (2) engine station, the Battalion Headquarters co-located with the Unit headquarters; Valley Springs FFS – a one (1) engine station located in the near New Hogan Reservoir. Primary local government fire protection is provided by three Fire Protection Districts: Calaveras Consolidated (greater Valley Springs Area), San Andreas and Mokelumne Hill; along with a small contingent of fire control personnel with the East Bay Municipal Utilities District at Lake Comanche.

The communities of Wallace, Burson, Campo Seco, Paloma, Valley Springs, Jenny Lind, San Andreas and Mokelumne Hill are within this Battalion. Several of these communities serve as bedroom communities for the larger cities in the San Joaquin Valley and even the Bay Area. The most populated area in the Battalion is a seven mile wide north/south swath extending from Comanche Reservoir along the northern county and Battalion boundary to Jenny Lind, south of Hwy 26.

With the exception of the San Andreas Fire District, the entire Battalion is SRA/State DPA comprised of relatively small private land holdings – no large commercial or federal timber lands for instance. There are some relatively small Federal holdings: Bureau of Land Management in the Bear Mountains and in the eastern foothills of the battalion, and on the battalion 1 / 3 boundary, and Army Corp of Engineers lands along the shores of Hogan Lake. All federal lands are designated State DPA. The East Bay Municipal Utilities District owns large tracks of land in the north of the Battalion bordering Comanche and Pardee reservoirs and stretches of the Mokelumne River.

In addition to providing protection for life and property, Battalion 1 provides protection for critical watershed values. The major watershed in the Battalion is the Calaveras River and its primary tributaries: Jesus Maria, Murray, Willow, Calaveritas and San Antonio Creeks – the primary sources for New Hogan Reservoir. The south side of the Mokelumne River drainage and the two major reservoirs it supplies, Comanche and Pardee, is also under the Battalion's protection. The value of these watersheds reaches far beyond the boundaries of the Battalion and the Tuolumne-Calaveras Unit.

The majority of the eastern third of the Battalion has been designated by CAL FIRE as *Very High* Fire Hazard Severity Zone lands. The western two-thirds features Zones designated *Moderate*, *High* and *Very High* with the *Moderate* designation dominating.

The western two-thirds of the Battalion (lower) falls within the *Foothills West* Fire Danger Rating Area (FDRA), while the eastern third (upper) falls within the *Foothills East* FDRA.

## **Battalion 1 Assessment Summaries:**

### **Assets at Risk, Fuels, Weather and Fire History**

**Assets at Risk:** Primary Assets at risk within the Battalion cannot be listed by priority, due to the intrinsic value placed upon private citizen's assets. However, listed below are assets at risk that have been considered, relating to Pre-Fire Management within the San Andreas Battalion:

- **Life Safety:** As is the case throughout much of CAL FIRE's jurisdiction, within minutes of any wildland fire start individual homes or entire subdivisions are likely to be threatened. The need for fire defense improvements, concerted educational campaigns, safe access/egress routes and a coordinated initial response remains the priority in the minds of Battalion personnel.
- **Residential and Commercial Development:** The list of officially designated "Communities at Risk" in the Battalion includes: Burson, Campo Seco, Paloma, Valley Springs, Jenny Lind, San Andreas and Mokelumne Hill; but all developed areas face considerable threat from wildland fire whether they are on the list or not. The areas with the highest density population and residential construction are located in the lower areas of the Battalion – the 7 mile wide swath as noted on previous page. The Pattison Fire Complex of 2004 burned within this area, resulting in a loss of seventeen homes. However, many rural homes are also located in the upper (eastern) area of the Battalion and also face a significant threat, due to the history of major fires in that geographical area.

The entire Battalion was predominantly ranch land before development started to increase in the open areas over the last 50+ years. The oldest rural residential development dates from the 1940's - 1960's and is often on multi-acre parcels. As a result, outdated design features such as shake roofs, wood siding, wood decks, and large single pane windows are common in these areas. Rapid development over the last 20+ years has led to the addition of many new homes throughout the Battalion, either in subdivision style configuration or as individual ranchette style homes scattered throughout. The newer subdivision style developments, closer to the community centers, typically feature higher density development on small lots similar to those found in more urban environments.

Though these newer subdivisions in the lower Battalion feature newer materials such as stucco or concrete siding, tile roofing and double pane windows, they are still at risk, often due to being sited in hazardous locations. This rate and kind of development is expected to continue into the future, but will incorporate the latest Chapter 7A building codes, resulting in more ember resistant/fire safe structures.

- Fricot City and Mokelumne Hill – These two communities are located on terrain directly above major drainages. As such they face a significant threat from wildland fire. Each has evacuation challenges relating to population density and poor road

systems. Neither has seen a significant amount of new residential development in recent years.

- **Watershed:** Watershed protection and enhancement is key in developing a sufficient water supply for human consumption. The Calaveras River and its primary tributaries: Jesus Maria, Murray, Willow, Calaveritas and San Antonio Creeks run through the center of the Battalion and constitute the primary source for New Hogan Reservoir. Both the Calaveras River system and the Mokelumne watershed support assets important to an area far beyond the Battalion and Unit boundary. The Mokelumne River watershed is the water source for Pardee and Comanche Reservoirs and provides 90% of the water that goes to the East Bay Municipal Utility District (EBMUD). EBMUD's water system serves approximately 1.3 million people in a 331-square-mile area of Alameda and Contra Costa Counties, including the major cities of Oakland and Berkeley and east to Walnut Creek and the San Ramon Valley.
- **Recreation Values:** Tourism and recreation is an important element of the economy threatened by wildfire within the Battalion. The reservoirs mentioned above, along with the primary watersheds supporting them, include significant recreational opportunities: Army Corps of Engineer campgrounds and boating facilities; privately owned RV parks and campgrounds; hiking, equestrian and mountain bike trails; fisheries and hunting grounds, among others.
- **Agricultural Values:** The large cattle ranches in the western portion of the Battalion depend on the annual grass crop to feed their livestock. The expansion of vineyards, orchards and other crop lands in the west continues to slowly take land out of SRA designation. Horse ranches are a growing component of the local agriculture industry also at risk from wildland fire.
- **Community Infrastructure:** Water storage and delivery systems (see Watershed above); electrical distribution equipment; telecommunications systems; transportation networks; schools.
  - Transportation infrastructure ranks as a critical asset in need of protection. Portions of three State Highways bisect the Battalion: 12, 26 and 49. Thousands of miles of county and private roads spread throughout the Battalion. While road surfaces themselves are only rarely damaged by wildfire, the supporting infrastructure can easily be damaged. Even when no physical damage is suffered the disruption of traffic caused by fire control operations can cause a range of negative impacts from short delays to significant disruptions to the economy.
  - Telecommunications is another critical element of the infrastructure present within the Battalion. Several government agencies and private communications companies take advantage of the topography within the Battalion for the location of communications system facilities. These installations are by necessity placed in threatened locations atop ridges and mountains.
  - Schools are at risk in the same way as the rest of the community is. Their importance as one of the prime choices for use as evacuation centers makes them doubly important in the event of a significant wildland fire.

**Fuels:** The primary fuels within this Battalion include manzanita, chamise, toyon, oak, gray pine and various grasses. Much of the brush is over-mature and exceeds six feet in height. Fuel loading in much of the upper (eastern) portion of the Battalion is heavy. Historical data indicates that fires in the upper portions of this Battalion, with this type of fuel loading, are difficult to contain and exhibit potential for large and damaging fires.

The lower elevations of this Battalion have a combination of chaparral brush, oak woodland, bull pine, and grass. Though the fuel loading is generally lower here, the population density is greater, thus increasing the threat to life and property. Much of the fuel bed in the lower elevations is broken up by the road system and grasslands found throughout this area.

**Weather:** Typical fire season temperature patterns range from lows in the upper 50's to highs in the 90's. Periods of triple digit highs, 100-110 degrees, are not uncommon, and can last from a couple days to a couple weeks. Relative humidity runs in the mid-teens to mid-twenties during daylight hours, often with poor overnight recovery. Periods of extreme heat are occasionally accompanied by single digit humidity. Prevailing wind is generally from the north along the Hwy 49 corridor, from west to northwest out west of Hogback Mountain on the western plains and west/up canyon during the day in the drainages of the eastern portion of the Battalion. Overnight, a strong down-canyon wind across the ridge tops adjacent to the Mokelumne river drainages is common. August and September often bring the threat of thunderstorm activity, but it is not unusual to experience thunderstorms at any time throughout the summer season. As is the case throughout the Sierra Nevada front country, the typical summer weather is ideal for wildland fire.

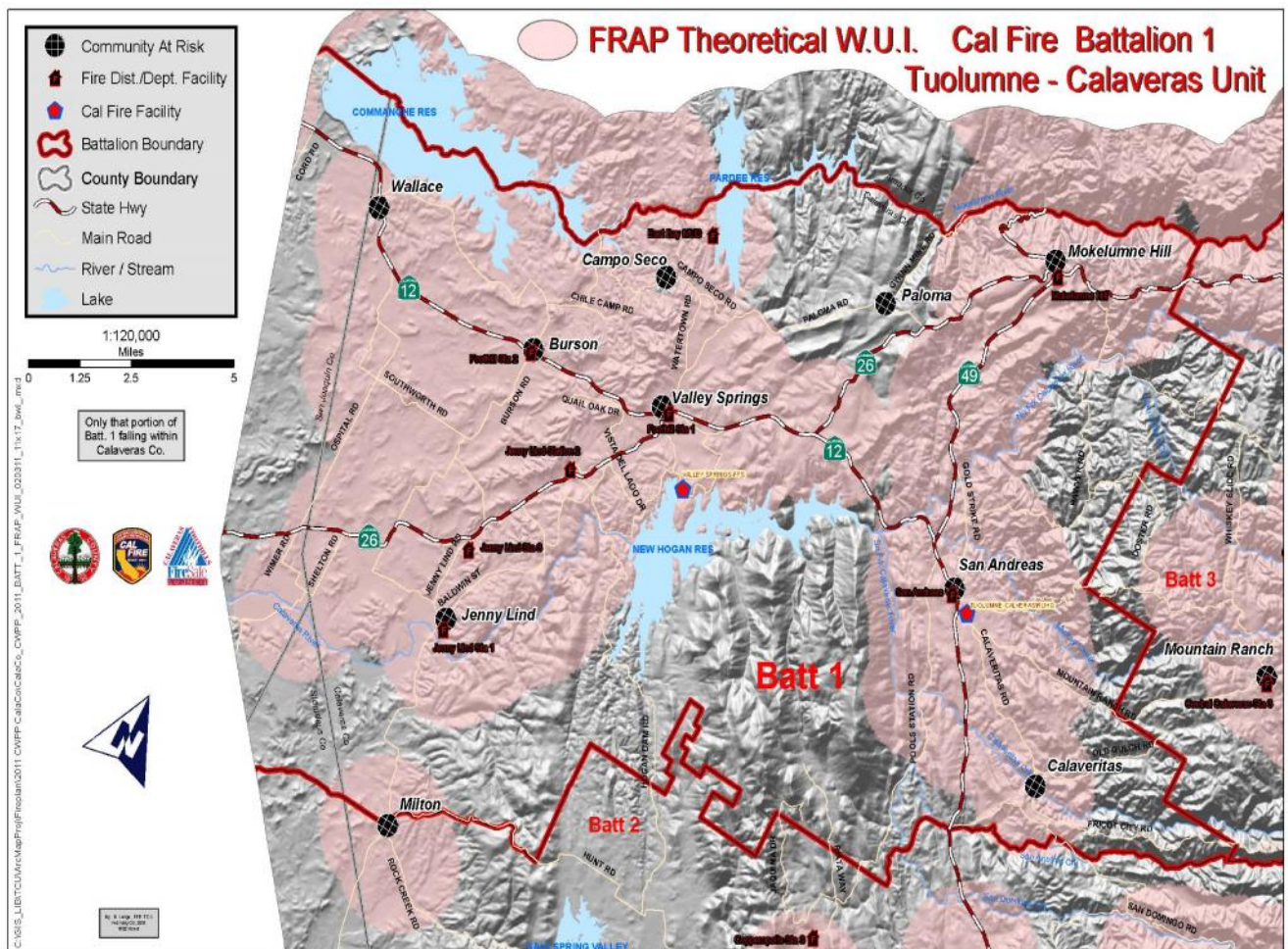
**Fire History:** Historical fire data on large damaging fires within Battalion 1 reveals fires typically occurring at the lower end of drainages located in the upper (eastern) Battalion, east of Hwy 49. These fires follow terrain and fuels, burning up slope / up drainage into the western portions of Battalions 3 or 4. On September 9, 2015, the Butte Fire that started in Amador County quickly spread into Calaveras County along the Mokelumne River Drainage in the eastern portion of the Battalion. Due to the terrain and fuels in this area, the fire burned a total of 70,868 Acres (approximately 67,000 acres in Calaveras County), destroyed 534 residences and 4 commercial properties. The Butte Fire is a clear example of the potential of large damaging wildfires in this area due to a combination of heavy fuel loading and extreme topographic features. This fire in particular behaved much different than previous fires in the area, making a strong progression from north to south. Fire behavior was so extreme, it is estimated that fire growth on September 11, 2015 was 32,754 acres in a single burn period. Like with most fires that have occurred in this area, containment occurs primarily due to changes in fuels, topography, and/or weather which offered fire suppression resources opportunities to attack the head and flanks of these fires. The Butte Fire is the single largest and most damaging fire that has occurred in Calaveras County.

Large wind driven grass fires are not uncommon in the lower western-most grassland areas of the Battalion. But these have typically occurred in lightly populated agricultural areas. The Pattison Complex of fires in 2004 added a new dimension to the history of large damaging fires within the Battalion. It occurred in the lower elevation western portion of the Battalion, but instead of burning lightly populated agricultural lands, it spread through portions of the densely populated greater Valley Springs area. Pushed by 20 mph winds the Pattison fires grew at extreme rates of spread through a variety of fuel models, taxed fire resources to their limits and destroyed seventeen homes on its way to a final size of 2,483 acres.

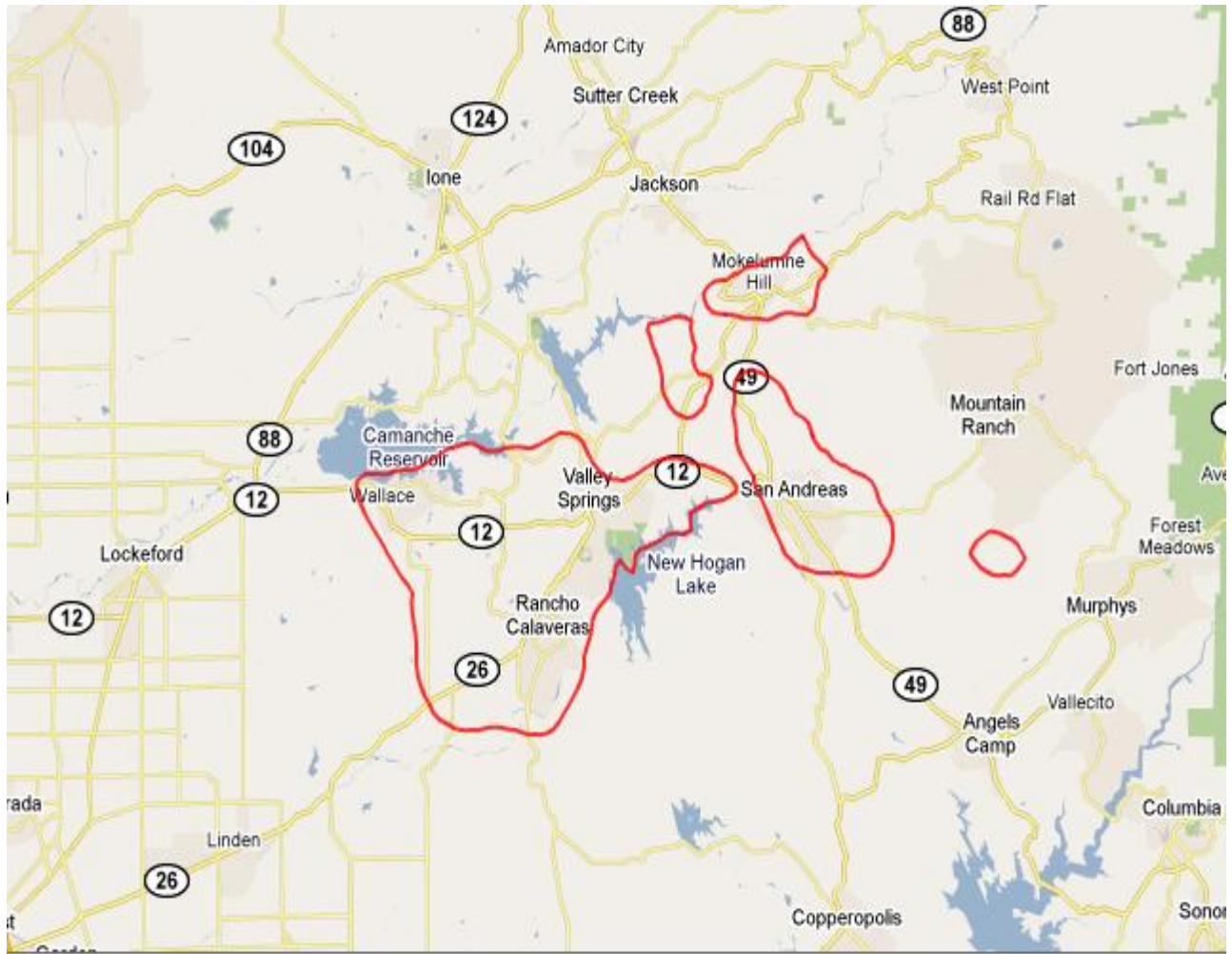
## Battalion 1 W.U.I. Information

The following communities are considered at risk by the California Fire Alliance and Cal Fire; Burson, Campo Seco, Paloma, Valley Springs, Jenny Lind, San Andreas and Mokelumne Hill. A public meeting was held on February 3, 2011 in San Andreas to discuss the C.W.P.P. as well as to set W.U.I. boundaries for the Battalion 1 section of the plan. The public in attendance with the assistance of Cal Fire Battalion Chief Cam Todd set the W.U.I. boundaries that are to follow. W.U.I. boundaries were set using several key factors including, topography, fuels, fire history, dependability of communities and safety of community members as well as emergency services employees. A F.R.A.P. map of all the Battalion 1 W.U.I.'s, a map of the publics determined battalion 1 W.U.I.'s and an individual W.U.I. area map is provided as well as a general description and history of the communities within that W.U.I. boundary have been provided. Also included at the end of the projects section of the Battalion 1 Plan is public comment in response to our February 3, 2011 meeting.

## Battalion 1 F.R.A.P. W.U.I. Map



# Battalion 1 W.U.I. Map



POWERED BY  
Google + SCRIBBLE  
MAPS

## Fricot City W.U.I. Map



POWERED BY  
Google + SCRIBBLE  
MAPS

There are no communities officially designated as a community at risk in the Fricot City W.U.I. During the Battalion 1 Public meeting held on February 3, 2011 it was determined that Fricot City due to its Boys home and community need to be recognized as a community at risk.

Our history is liberally sprinkled with fascinating characters. Some have been notorious, while most have been honorable. And then there are the few who make a difference. Such a person was Désiré Fricot, who left an invaluable legacy to the Sierra Nevada region and especially to Nevada County. The Fricot family owned and operated a number of mines in Nevada and Calaveras County.

Additionally, Désiré Fricot was a leader in the establishment of the Calaveras Big Trees as a protected state park. His significant contributions of time and money are recognized by a plaque within the North Grove of the park. But Fricot was also involved in many other lasting efforts. Fricot was a principal in establishing water systems and agencies in the Sierra Nevada;

he was a strong promoter of the Boy Scouts and was known as the “father” of the Boy Scout program in the Central Sierra; he was an ardent advocate of improved roads and was a dedicated proponent of the Mother Lode Highway, which came to be known as Highway 49; and he purchased property that was rebuilt into the Calaveras County History Museum in San Andreas. Fricot established his homestead in Calaveras County on a remote hilltop knob that was six miles from his nearest neighbor. He called the estate Fricot City. Today, the property is utilized by the Rite of Passage program.

## Mokelumne Hill W.U.I. Map



Mokelumne Hill is the only community designated as a community at risk in the Mokelumne Hill W.U.I. During the Battalion 1 Public meeting held on February 3, 2011 it was determined that the Boston Yale Ranch Subdivision needed to be recognized as a community at risk. During the Butte Fire of 2015, Boston Yale Ranch suffered numerous structures lost as well as a fire engine that was lost during structure protection operations, just as the community had predicted during the initial public meetings of 2011.

## Mokelumne Hill

Mokelumne Hill (also, Big Bar, Mokelumne Hill, and The Hill) is a census-designated place (CDP) in Calaveras County, California, United States. It is commonly referred to as "Moke Hill" by locals. The town takes its name from the neighboring Mokelumne River, which in turn is Miwok for the "people of Moke," the likely name of an Indian village in the area.

Mokelumne Hill was one of the richest gold mining towns in California. Founded in 1848 by a group of Oregonians, the placers were so rich that the miners risked starvation rather than head to Stockton to replenish their supplies (one finally did and made it rich by becoming a merchant). Soon after, gold was discovered in the nearby hills, so much so that miners were restricted to claims of 16 square feet (1.5 m<sup>2</sup>), and yet many of those claims were reported to have paid up to \$20,000.

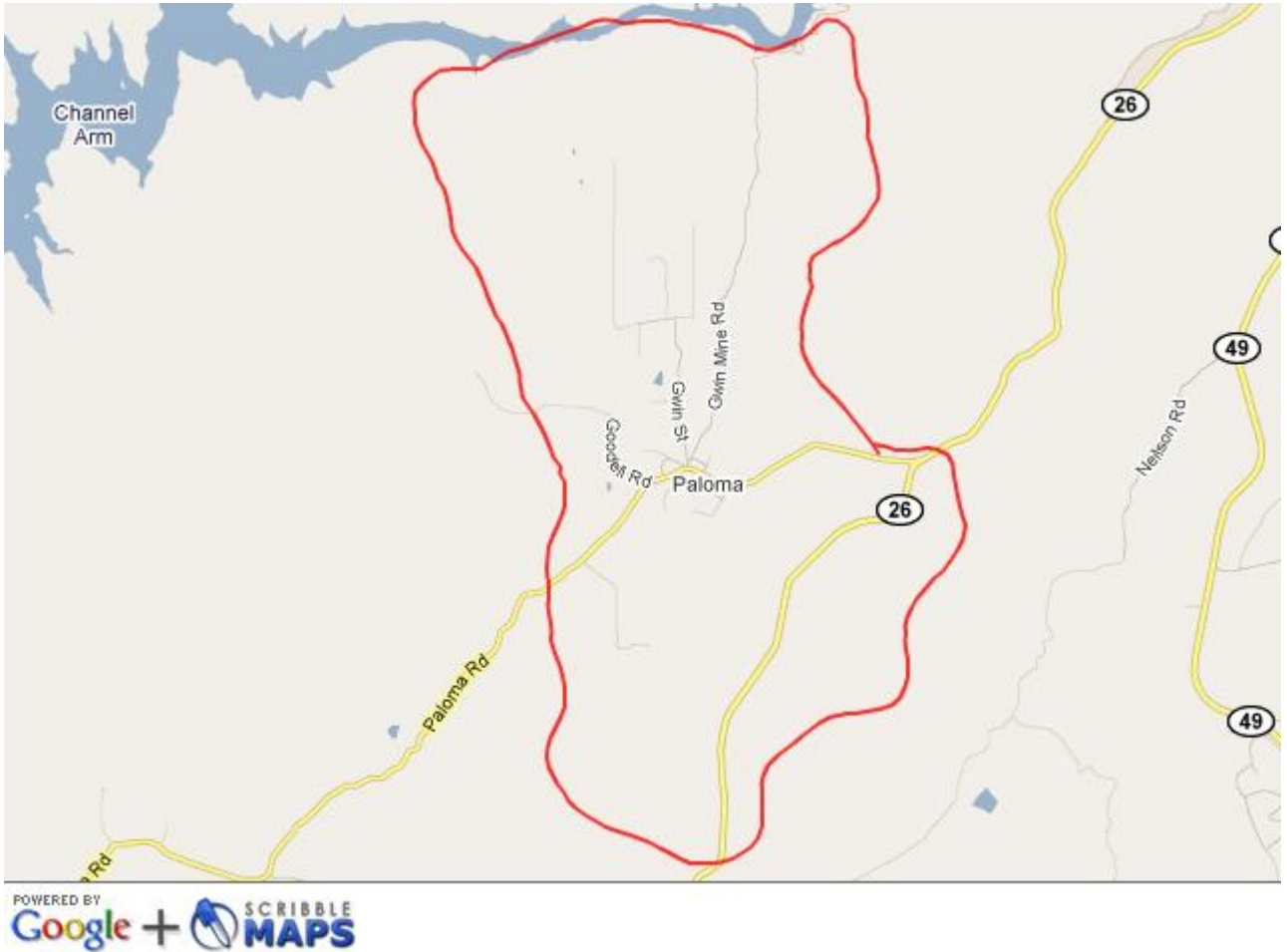
By 1850 the town was one of the largest in the area, with its population reaching as high as 15,000 with people of all nationalities: Americans, Frenchmen, Germans, Spaniards, Chileans, Mexicans, Chinese, and others. Besides racial tensions, the easy gold attracted criminal elements, and the town gained a reputation as one of the bawdiest in the area. Notorious bandit Joaquin Murietta is said to have been a frequent visitor to the gambling venues. Violence was a major problem as well. In 1851, there was at least one homicide a week for seventeen consecutive weeks. A "vigilance committee" was formed and by 1852, the worst of the crime was eliminated. That year, the town became the county seat.

By the 1860s the gold started to run out and the town's population and importance diminished. When San Andreas became the new county seat in 1866, Mokelumne Hill's status declined even further. The town today is a quiet place, with lots of tourism due to its historic status. The first post office was established in 1851. Mokelumne Hill is registered as California Historical Landmark #269. Major landmarks include:

- ) The I.O.O.F. Hall (CHL #256) is said to be California's first three-story building to be erected outside the coastal towns.
- ) The Congregational Church building (CHL #261) is the oldest such in the state.
- ) The Leger Hotel (CHL #663) is one of the oldest continuously-operating hotels in California. One of its buildings was the county courthouse when the town was the county seat.
- ) The original elementary school in Mokelumne Hill, which is still standing but has been converted to a private residence, was built in 1852 and was used until 1964. Unconfirmed legend has it that a bond issue to build the school failed, but citizens of the town built it anyway.

According to the United States Census Bureau, the CDP has a total area of 3.1 square miles (8.0 km<sup>2</sup>), all of it land.

## Paloma W.U.I. Map

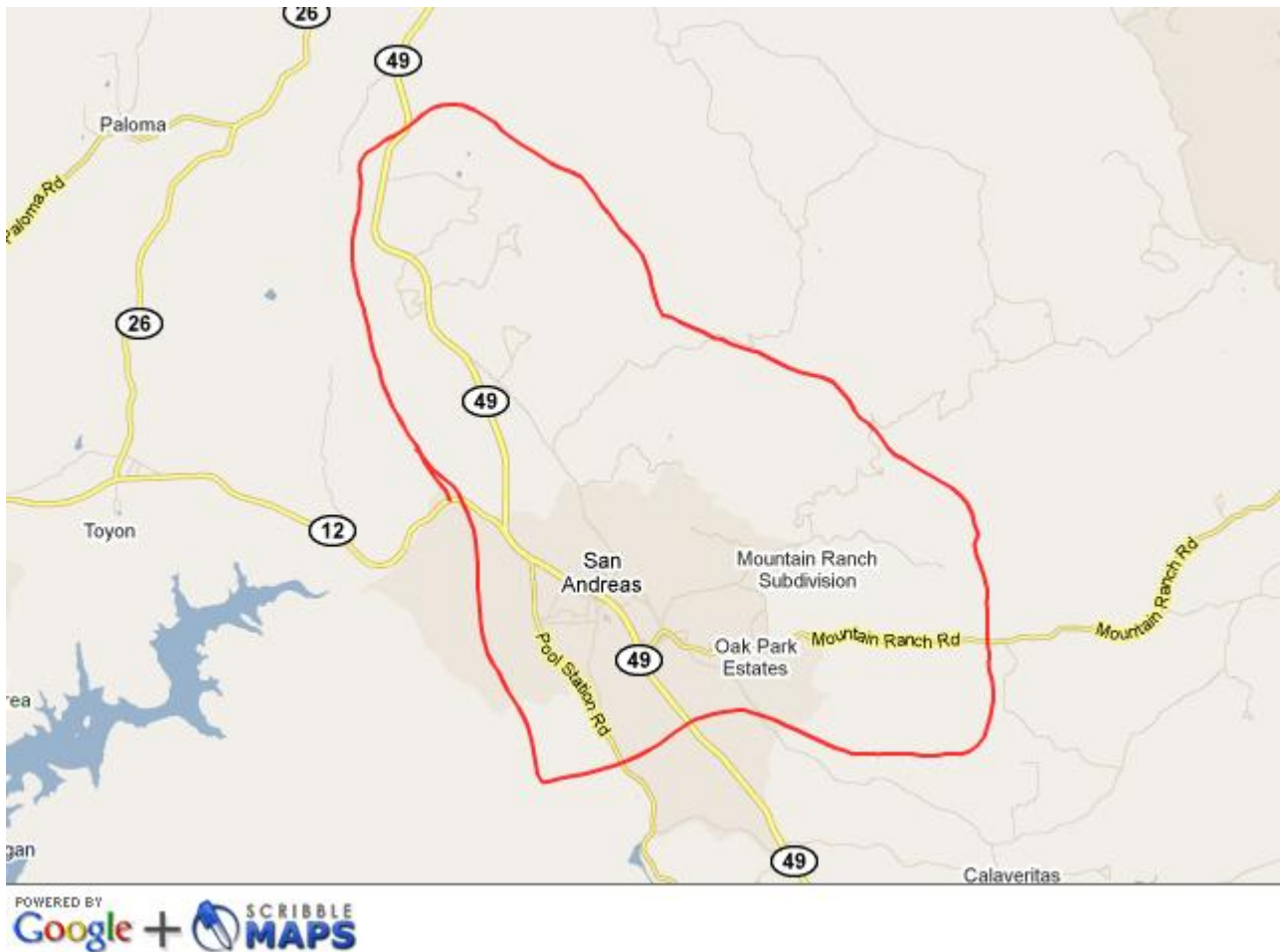


Paloma is the only community designated as a community at risk in the Paloma W.U.I..

### **Paloma**

Paloma (Spanish for "dove"; formerly, Fosteria and Frenchman's Ranch) is an unincorporated community in Calaveras County, California. It lies at an elevation of 1362 feet (415 m). Gwin Mine, Paloma, and Lower Rich Gulch were mined for placer gold in 1849, and quartz was discovered by J. Alexander in 1851. Property here was acquired by William M. Gwin, California's first U.S. Senator, in 1851. After yielding millions of dollars in gold, the Gwin Mine closed in 1908. The town today is registered as California Historical Landmark #295. The town's post office operated from 1903 to 1918, when the name was Fosteria - from the Foster family, early pioneers.

## San Andreas W.U.I. Map



Calaveritas and San Andreas are the only communities designated as a communities at risk in the San Andreas W.U.I.. During the Battalion 1 Public meeting held on February 3, 2011 it was determined that the Mountain Ranch Subdivision needed to be recognized as a community at risk.

### **Calaveritas**

Calaveritas is an unincorporated community in Calaveras County, California. It sits on the banks of the Calaveritas Creek at an elevation of 1,109 feet (338 m) above sea level.

Founded by Mexicans in 1849, the mining camp was relatively successful and by 1853, Calaveritas was well-established with one livery stable, two butcher shops, several general stores, restaurants, saloons, gambling halls, and fandango houses. Notorious bandit Joaquin Murietta was supposedly a frequent visitor to the latter two.

The town reached its peak in 1857, with an estimated population of around 800, the majority being Mexican or Chinese, but on August 3, 1858, a fire destroyed most of the buildings. By

this time, the gold production had greatly declined and most of its inhabitants moved to other locales. The town today is registered as California Historical Landmark #255. Early on, the town was called Upper Calaveritas to distinguish it from another settlement Lower Calaveritas about 3.5 miles to the west. Lower Calaveritas has since become abandoned.

### **San Andreas**

San Andreas is an unincorporated census-designated place and the county seat of Calaveras County, California. Like most towns in the region, it was originally founded during the California Gold Rush. The town is located on State Route 49 and is registered as California Historical Landmark #252.

The old Calaveras County Courthouse, built 1867, served in that role for 100 years. Afterward it was turned into the Calaveras County Museum and was listed on the National Register of Historic Places (NRHP).

Settled by Mexican gold miners in 1848 and named after the Catholic parish St. Andrew, the town has been a noted mining camp since early days. The gold from the initially discovered placers gave out after a few years, but the discovery of gold in an underground river channel in 1853 revitalized the camp and it soon became a town. Mining of the channels was lucrative enough for the town to completely rebuild after fires in 1858 and 1863. The gold discovered here contributed greatly to the success of the Union during the Civil War. In 1866, San Andreas became the seat of Calaveras County. It was said to be a rendezvous location for Joaquin Murietta. Notorious highwayman Black Bart was tried here and sent to prison. The post office was established in 1854.

According to the United States Census Bureau, the CDP has a total area of 8.8 square miles (22.7 km<sup>2</sup>), of which, 8.7 square miles (22.6 km<sup>2</sup>) of it is land and 0.04 square miles (0.1 km<sup>2</sup>) of it (0.23%) is water.

## Valley Springs W.U.I. Map



Burson, Campo Seco Jenny Lind, Vallejo Springs, Vallejo Springs and Wallace are the only communities designated as communities at risk in the Valley Springs W.U.I..

### **Burson**

Burson is an unincorporated community in Calaveras County, California. It lies at an elevation of 413 feet (126 m). Burson was founded along the San Joaquin and Sierra Nevada Railroad, and named for Daniel Smith Burson, a farmer and Civil War veteran. Burson's first post office was established in 1884.

### **Campo Seco**

Campo Seco ("dry camp" in Spanish) is an unincorporated community in Calaveras County, California. It sits an elevation of 564 feet (172 m) above sea level. Founded by Mexicans in

1849, the mining camp was quite cosmopolitan, with forty different nationalities of miners. The town was almost destroyed by a fire in 1854, but as the placers were still producing, much of the town was rebuilt. Most of the buildings that are still standing date from after the fire. The town also contains the largest living cork oak tree in California, which was planted in 1858. The town today is registered as California Historical Landmark #257. The first post office was established in 1854.

### **Jenny Lind**

Jenny Lind is an unincorporated community in Calaveras County, California. It lies at an elevation of 253 feet (77 m). Located on the north bank of the Calaveras River, Jenny Lind was a placer mining town as early as 1849. Most of the placer mining was done along the hillsides above the river; later the river was mined with dredgers. In 1864 the population was said to be 400, half of them Chinese. Being on the main road from Stockton, it was also an important freighting center for the area.

The town is named after the Swedish singer Jenny Lind, although there are several tales as to why this is so. One story has it that it was really named for Dr. John Y. Lind. Another says that the braying of pack mules prompted the miners to use the singer's name in sarcastic humor. Most likely, it was named in the singer's honor, although she never came to California. The town today is registered as California Historical Landmark #266. A post office operated at Jenny Lind from 1857 to 1944 and again from 1947 to 1951.

In 1885 the San Joaquin and Sierra Nevada Railroad completed a narrow-gauge railroad from Brack's Landing to Valley Springs. The line eventually became the property of Southern Pacific Railroad, and a standard-gauge line into Valley Springs was substituted. A post office was opened here in 1872, closed in 1879, and re-established in 1882.

According to the United States Census Bureau, the CDP has a total area of 9.8 square miles (25.4 km<sup>2</sup>), all of it land.

### **Valley Springs**

Valley Springs (formerly, Spring Valley and Valley Spring) is a census-designated place (CDP) in Calaveras County, California, United States. The town is located at the intersection of State Route 12 and Route 26. It is registered as California Historical Landmark #251.

### **Wallace**

Wallace is a census-designated place (CDP) at the far west edge of Calaveras County, California, United States on State Route 12. The population was 220 at the 2000 census.

On the 1883 map of the town site is the name of the surveyor, John Herbert Wallace. It has been widely assumed that he is the one the town is named after. However, according to historian Sal Manna in the July 2006 issue of *Las Calaveras*, the quarterly magazine of the Calaveras County Historical Society, the town is named for John Herbert Wallace's father, John Wallace, who was a well-known engineer and surveyor in the area. He had been elected San Joaquin County surveyor. John Wallace was also an elder brother of Alfred Russel

Wallace, a leading 19th century British naturalist who independently developed a theory of natural selection around the same time as Charles Darwin. John Wallace had originally come to California for the California Gold Rush, but was unsuccessful as a miner.

According to the United States Census Bureau, the CDP has a total area of 4.3 square miles (11.2 km<sup>2</sup>), of which, 4.2 square miles (11.0 km<sup>2</sup>) of it is land and 0.1 square miles (0.2 km<sup>2</sup>) of it (2.08%) is water.

### **Battalion 1 Mitigation Efforts**

Due to the topographic and fuel differences within the San Andreas Battalion, mitigation prescriptions are organized into three geographic designations: the Upper Battalion (higher elevation east); the Lower Battalion (lower elevation west); and Battalion Wide efforts. The Pattison Complex has demonstrated a need for an aggressive fire prevention plan throughout the Battalion emphasizing education and mitigation of hazards on private and public property. As advances in alternative methods of fuel removal/modification become available, these will be studied and used if applicable.

### **Defensible Space Inspections**

#### Battalion Wide

LE-100 Inspections: Utilizing engine company personnel, with VIP assistance, areas identified as high hazard will have the greatest emphasis. A blanket approach for specific locations within the Battalion is being considered, along with a public relations campaign focusing on notification of possible inspections as well as information relating to minimizing hazards around the residence.

Removing fuels around structures provides the single most effective action for increasing structure survivability during a wildfire. An aggressive inspection program can provide firefighters with defensible space for structure protection operations. In 2010, the Battalion partnered with the CFFSC and employed part-time, grant funded defensible space inspectors. This program was highly successful and generated an additional 801 inspections within the Battalion.

### **Fuel Reduction/ Breaks**

Utilizing historical fire data, fuel break agreements and construction will be pursued in areas identified as favorable to stop future fires before they become catastrophic. Control burns will be conducted as needed in conjunction with the above projects with a goal of fuel modification from a brush model to grass with oak over story model.

#### Upper Battalion:

Jesus Maria Project – Jesus Maria Road is in the Jesus Maria Creek canyon east of Mokelumne Hill. The fuels in the area vary from oak woodland to dense brush. Homes are scattered throughout the area and it is anticipated that more will be built in the future. Due to the high

hazard fuels and steep canyon, many of the homes are at great risk when wildfires occur. The objective of this project is to reduce the fuel hazard around the homes. In tandem with the Jesus Maria Pre-Attack Plan compilation. No timeline has been set for implementation.

Additional Upper Battalion projects currently under review, in priority order:

Ponderosa Way to San Antonio Creek – Fuel Break (Old Gulch Fire).

Hawver Road to Highway 26 at Mokelumne Hill – Fuel Break.

Mokelumne Hill above Mokelumne River canyon– Fuel Break: This fuel break will protect the Mokelumne Hill Community from fires that originate in the Mokelumne River Canyon. It will be constructed near the top of the canyon adjacent to the community. Some parts of the fuel break area currently have light fuels, but other areas contain heavy brush and dense woodland. The heavier fuels will be treated during this project. No date has been set for its completion.

Lower Battalion:

Buys V.M.P. – Lower Battalion: A major multi-discipline project incorporating training programs into a fuel reduction project. The training component included: a class from the CAL FIRE Academy’s Heavy Fire Equipment Operator’s certification program used to cut fire line, pile brush, and a wide variety of other relevant training evolutions; a fully sanctioned S-234 Firing class; Unit hand crews conducted “Bautista” style training and evaluations.

Hogan Lake Access Road: The only north-south through-road access immediately adjacent to the south shore of Hogan Lake and the west slopes of the Bear Mountains. Annual maintenance ensures its effectiveness as the primary fuel break separating the grass lands of the Lower Battalion from the steep, brush and oak covered slopes of the Bear Mountains; and its availability as the primary fire access road to the south and east shore of the lake and the mountains.

Additional Lower Battalion projects currently under review:

Hogan Lake VMP Series – Series of burns targeting a conversion from brush to grass and the eradication of non-native weed species from the lake shore.

### **Strategic Planning: Upper Battalion**

Mokelumne Hill Evacuation Plan: No details available.

Jesus Maria Pre-Attack Plan: An ongoing data collection project producing a structure location inventory and where critical firefighting resources are located in the Jesus Maria Road Area. In tandem with the Jesus Maria fuels reduction project.

### **Public Education: Battalion Wide**

Fire Prevention Signs: Post fire prevention signs year-around, to better educate the public on fire hazards and methods of prevention. Additional signs are needed along the Highway 49 corridor and Mountain Ranch Road.

Issuance of burn permits after May 1 annually: Provide fire prevention education materials and positive agency contact with each permit, explaining debris burning fire safety requirements.

Campfire permits: Another important opportunity to make an educational contact with members of the local and visiting population.

**Law Enforcement:** Battalion Wide

Cause Determination and Code Enforcement: A determined effort by Company Officers and LE staff, as needed, to determine a cause for all wildland ignitions. Accurate cause determination impacts several programs beyond the confines of the Battalion (Fire History, Fire Plan, Funding for example) and can be crucial to the subsequent ability of LE staff to issue citations for violations of the various PRC and PC codes, including debris burning, arson, power line clearance, and equipment related violations, among others.

Law Enforcement Support of Inspections Program: Continued close cooperation between Battalion inspectors and the Unit's LE staff in support of the Defensible Space Inspection Program in the form of a willingness to write citations as needed.

## Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**

**Priority: 1**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Bill Fullerton**

**Status: Planning**

**Sponsor: CFFSC**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source: Unknown**

**In-Kind:**

**Acres: 100**

**Length/Mi:**

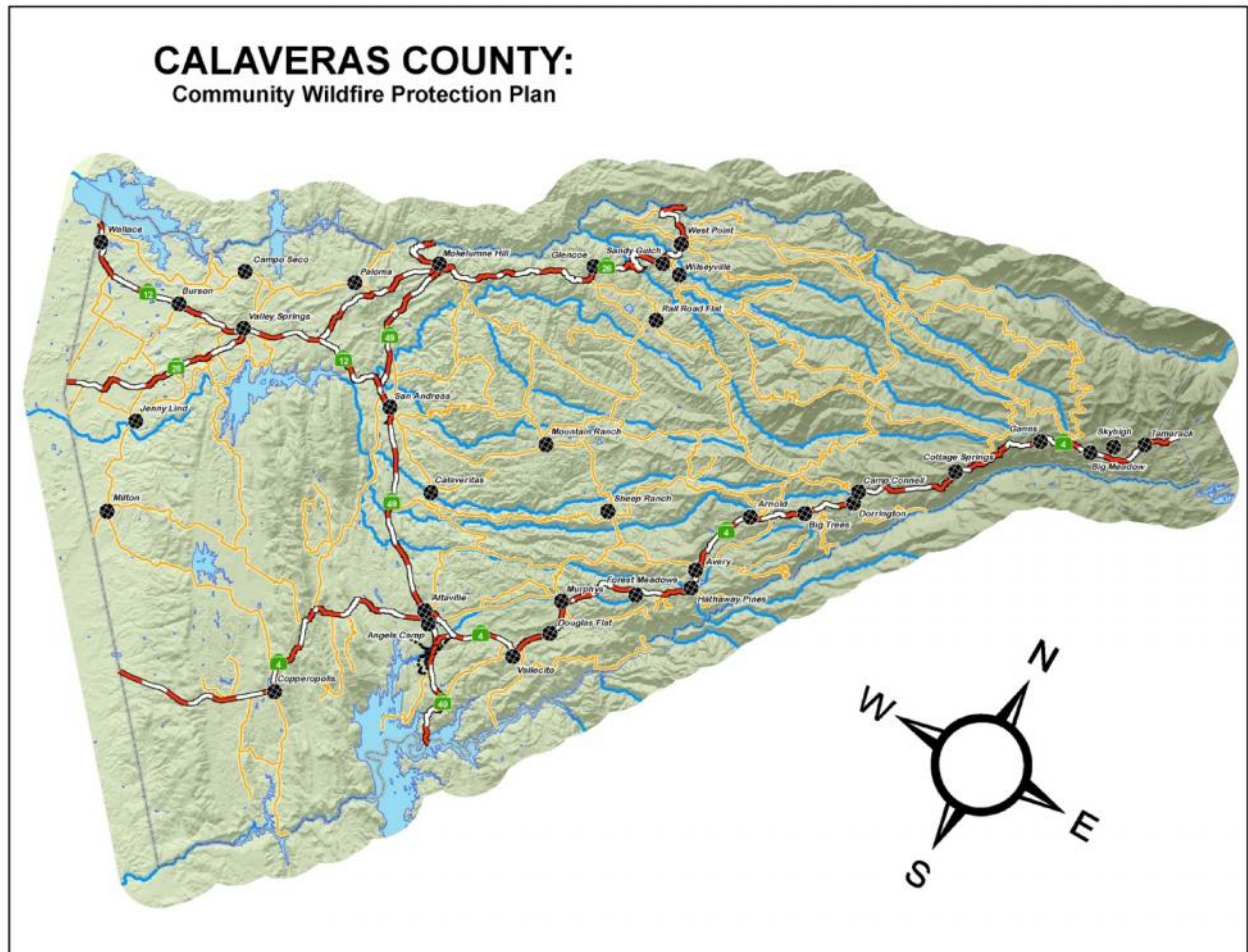
**Tons/Fuel:**

**Amount:**

**Total:**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**

**Priority: 2**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Bill Fullerton**

**Status: Planning**

**Sponsor: CFFSC**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source: Unknown**

**In-Kind:**

**Acres: 100**

**Length/Mi:**

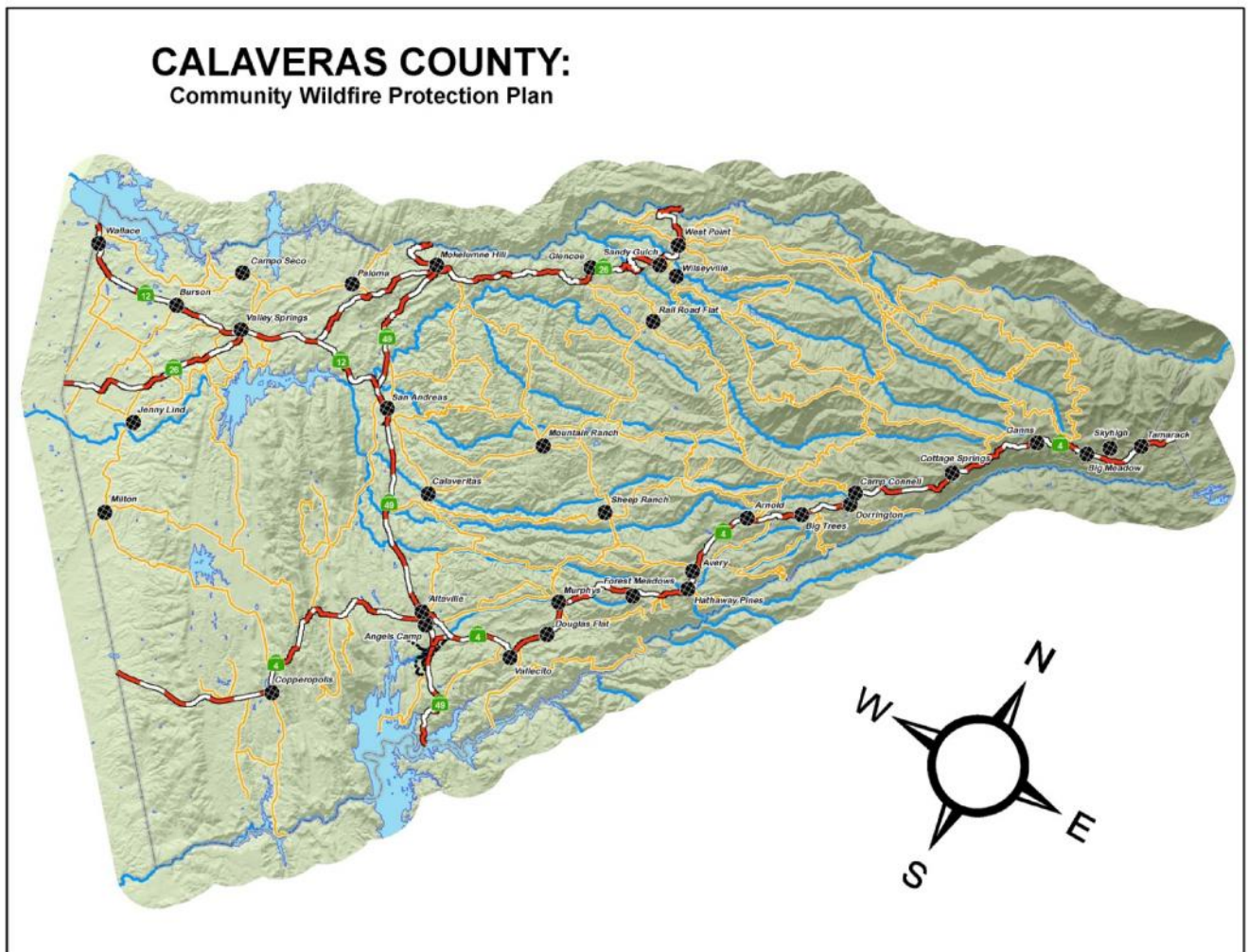
**Tons/Fuel:**

**Amount:**

**Total:**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clear



## Public Roadways Fire Break

**Initial Checklist/Battalion: 1-4**

**Priority: 3**

**Within W.U.I? : Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Bill Fullerton**

**Status: Planning**

**Sponsor: CFFSC**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source: Unknown**

**In-Kind:**

**Acres: 30**

**Length/Mi:**

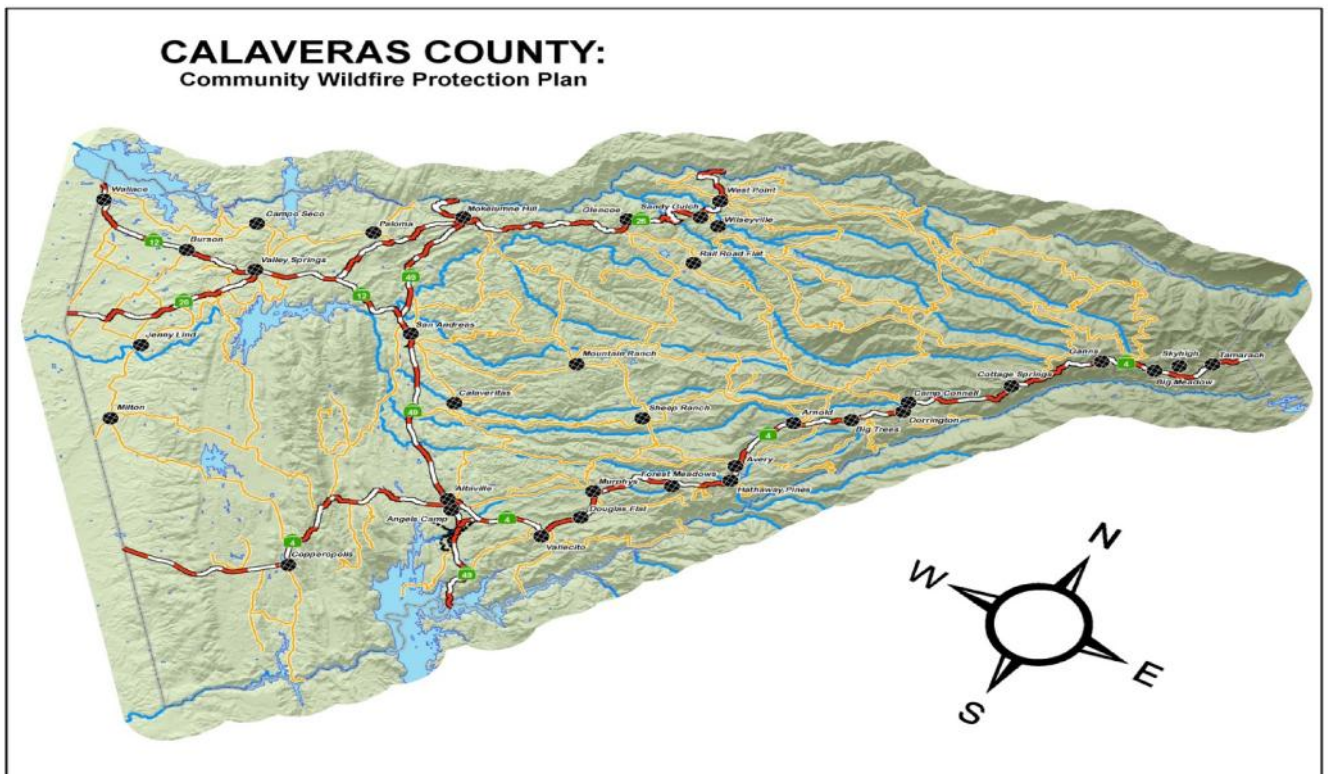
**Tons/Fuel:**

**Amount:**

**Total:**

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway. Clearing of brush along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.



## Jenny Lind Hazard Fuels Reduction

Initial Checklist/Battalion: 1

Priority: 4

5

Within W.U.I?: Yes

Document Effective Date: 1/1/2011

Author Name: Cam Todd

Status: Planning

Sponsor:

Lat/Long: N 38.07.20.55 W 120 50 05.45

Funding Source:

In-Kind:

Acres:

Length/Mi:

Tons/Fuel:

Amount: \$

Total:

### PROJECT DESCRIPTION:

Create a shaded fuel break along the Western flank of the Calaveras River.



## Leanord Fire Fuel Break

Initial Checklist/Battalion: 1

Priority: 5

5

Within W.U.I?: Yes

Document Effective Date: 1/1/2011

Author Name: Cam Todd

Status: Planning

Sponsor:

Lat/Long:

Funding Source:

In-Kind:

Acres:

Length/Mi:

Tons/Fuel:

Amount: \$

Total:

### PROJECT DESCRIPTION:

Create a fuel break using existing fire lines from the Leanord Fire and expanding them to go from Hawver Rd to Mountain Ranch Rd.



## Hogan Rd Maintenance

**Initial Checklist/Battalion: 1**

**Priority: 6**

**5**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Cam Todd**

**Status: Planning**

**Sponsor:**

**Lat/Long:**

**Funding Source:**

**In-Kind:**

**Acres:**

**Length/Mi:**

**Tons/Fuel:**

**Amount: \$**

**Total:**

### PROJECT DESCRIPTION:

The only north-south through-road access immediately adjacent to the south shore of Hogan Lake and the west slopes of the Bear Mountains. Annual maintenance ensures its effectiveness as the primary fuel break separating the grass lands of the Lower Battalion from the steep, brush and oak covered slopes of the Bear Mountains; and its availability as the primary fire access road to the south and east shore of the lake and the mountains.

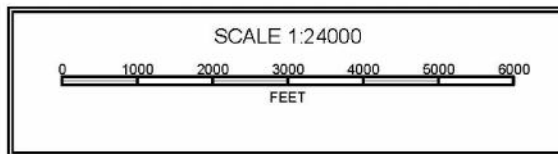
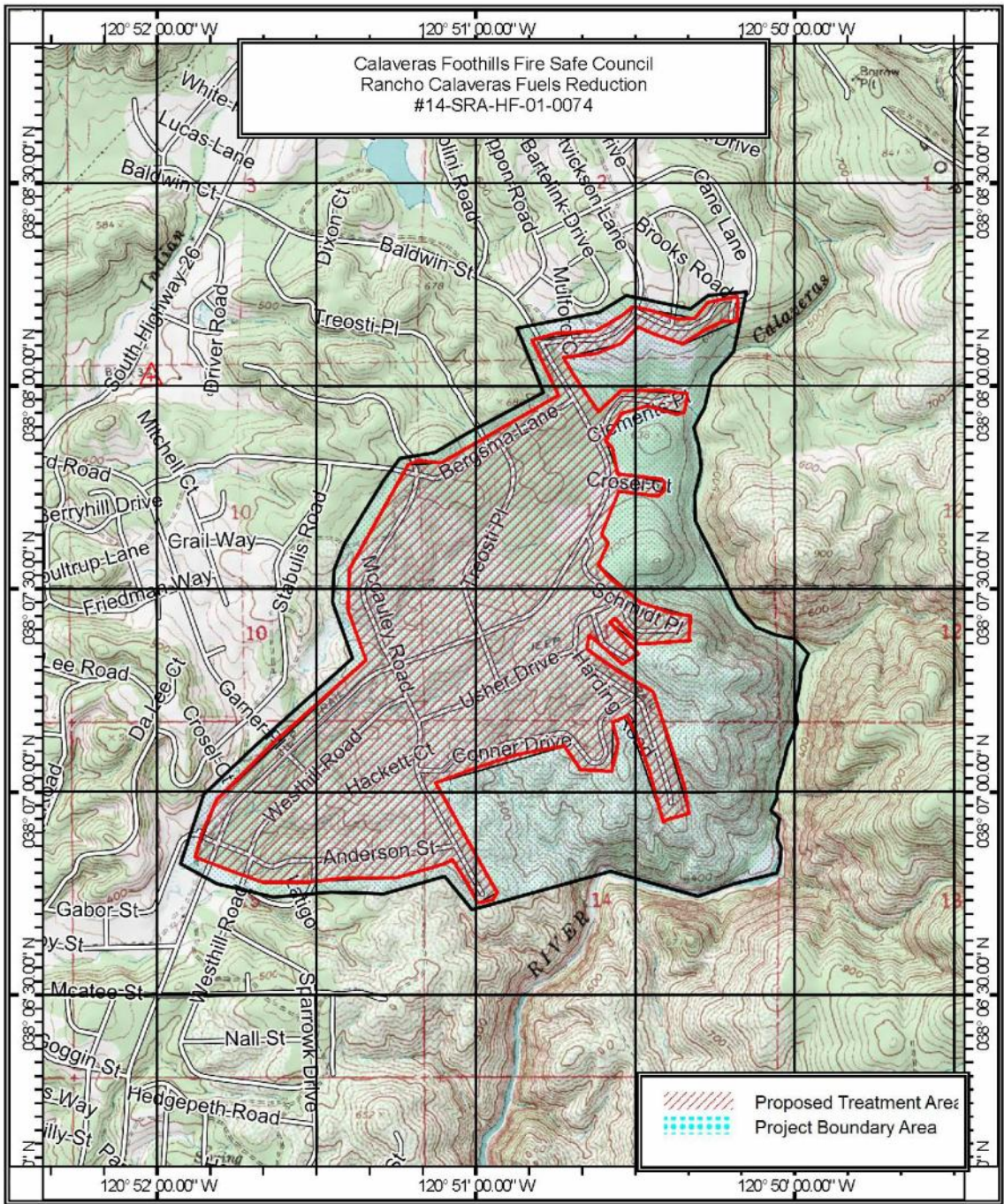


## Jenny Lind Hazard Fuels Reduction

<b>Initial Checklist/Battalion: 1</b>	<b>Status: Current</b>	<b>Acres: 670</b>
<b>Priority: 1</b>	<b>Sponsor: Calaveras Fire Safe</b>	<b>Length/Mi:</b>
<b>5</b>		
<b>Within W.U.I?: Yes</b>	<b>Lat/Long: N 38.07.20.55 W 120 50 05.45</b>	<b>Tons/Fuel:</b>
<b>Document Effective Date: 1/1/2015</b>	<b>Funding Source: CA State Fire Fee</b>	<b>Amount: \$150,000</b>
<b>Author Name: Nick Casci</b>		<b>In-Kind:</b>
		<b>Total:</b>
<b>\$150,000</b>		

### PROJECT DESCRIPTION:

The Valley Springs area offers a large wildland urban intermix population which is located in low elevation rolling hills of Calaveras County. This area typically produces a large number of wildland fires each year which result in a significant structure threat. Due to the rolling hill topography of the area in addition to the large number of intermix residents, the most viable option for protection from wildland fires is LE100 compliance by residence and reducing the fuels located on the undeveloped parcels which surround them. Both of these items combined would allow for a large area of reduced fuel which would allow for better chance at mitigating the threat of a wildland fire. By combining these mitigating factors together and implementing them on western ridge line of the Calaveras River drainage, the end result would be the best use of available topographic features. The area in which to be treated covers approximately 500 acres of wildland urban intermix in the transitional fuel type of mixed brush. The project area is located in the Rancho Calaveras area which is to the south east of the community of Valley Springs. Within this area the project boundaries would be north of Anderson Street, east of highway 26, south of Hartvickson Lane and west of the Calaveras River. The primary streets which to be included are; Baldwin Street, Harding Road, Usher Drive, Connor Drive and McCauley Road. This area has a high density of homes on that are settled on anywhere from 1/2 acre to multiple acre parcels. In an effort to reduce hazardous fuels such chemise, the fuel reduction would be to areas that are undeveloped or extending parcel clearing past the minimum 100' defensible space requirement for structures in the intermix area. By reducing the hazardous fuels from vacant parcels and accompanying it with CAL FIRE provided LE 100 Defensible Space Inspections, the end result would be a reduced fuel area around homes which are located on the western portion of the Calaveras River Drainage. This would not only provide a better reduced fuel area around homes but would also allow for a reduced fuel area to help slow or stop a wildland fire. The method to reduce fuels would be mastication of brush along with hand crews with chain saws that would then cut, pile and burn the brush. Create a shaded fuel break along the Western flank of the Calaveras River.



## State Fire Fee Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**

**Status: Current**

**Acres: 50**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.439 N 120.376 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: State Fire Fee**

**Amount: \$99,000**

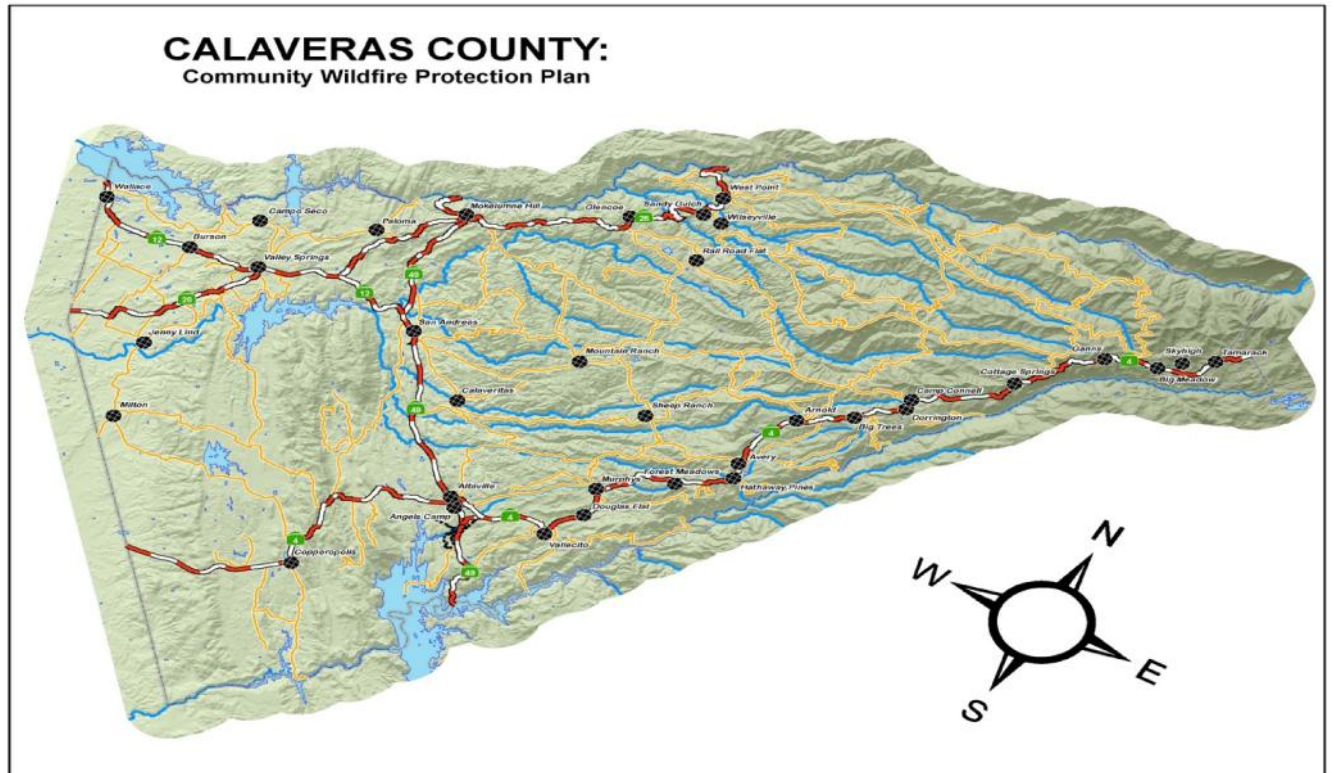
**Author Name: Bill Fullerton**

**In-Kind: \$**

**Total: \$99,000**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## Locally Based Biomass Utilization Projects

Initial Checklist/Battalion: 1

Status: Current

Acres:

Priority: 7

Sponsor: CHIPS/ACCG

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source:

Amount: \$

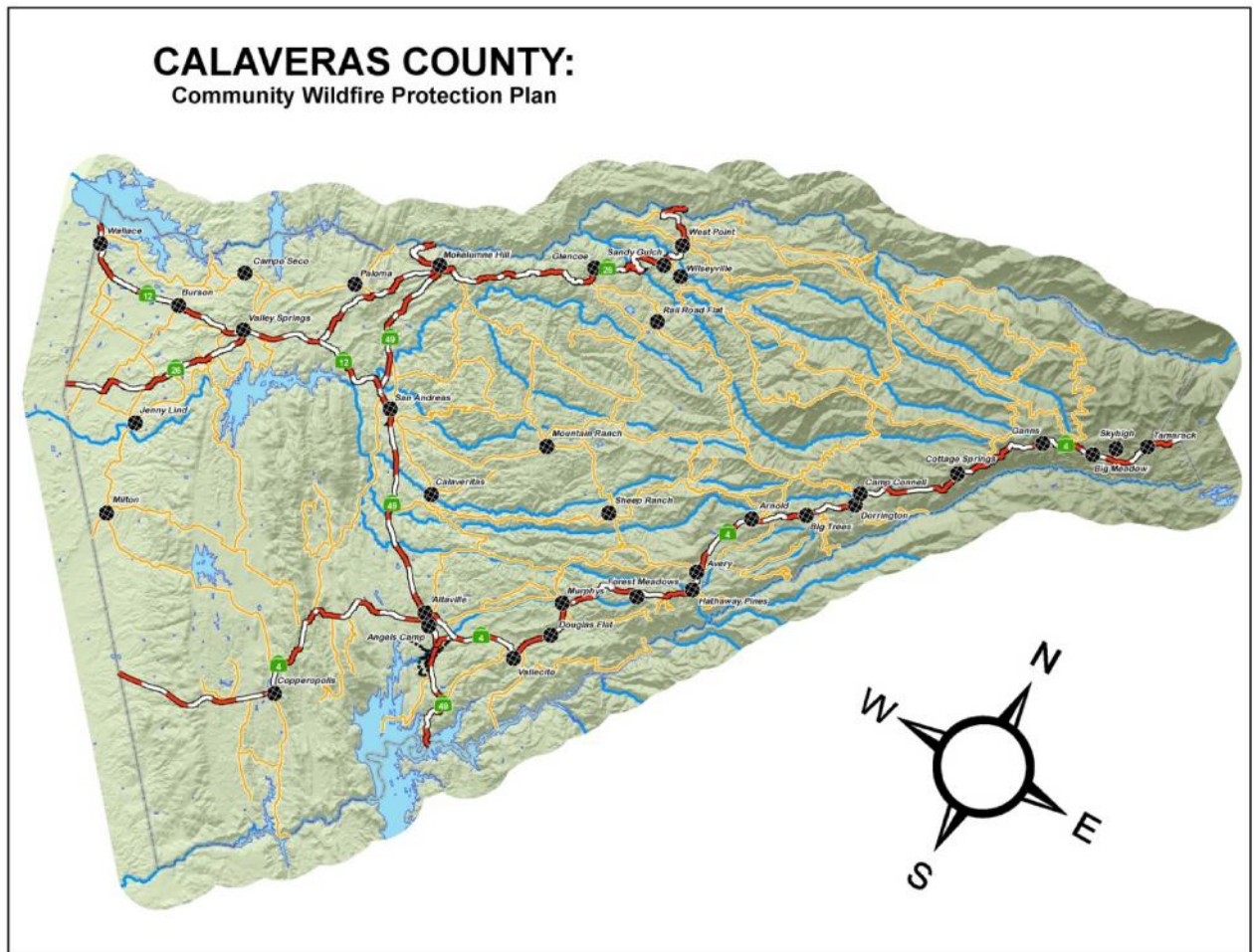
Author Name: Rick Breeze-Martin

In-Kind:

Total:

### PROJECT DESCRIPTION:

Development and implementation of small-scale biomass projects, owned and operated by Calaveras/Amador residents, providing jobs, fuels reduction and energy for local residents and communities. Possible projects include pelletizing operations, small biomass heating or electrical generation for local use. Projects should utilize ecological stewardship fuels reduction methods approved by ACCG and/or CHIPS.



# Structural Ignitability Reduction and Fire Resiliency Building Techniques

**Initial Checklist/Battalion: 1**

**Status: Current**

**Acres:**

**Priority: 8**

**Sponsor: CHIPS**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source:**

**Amount: \$**

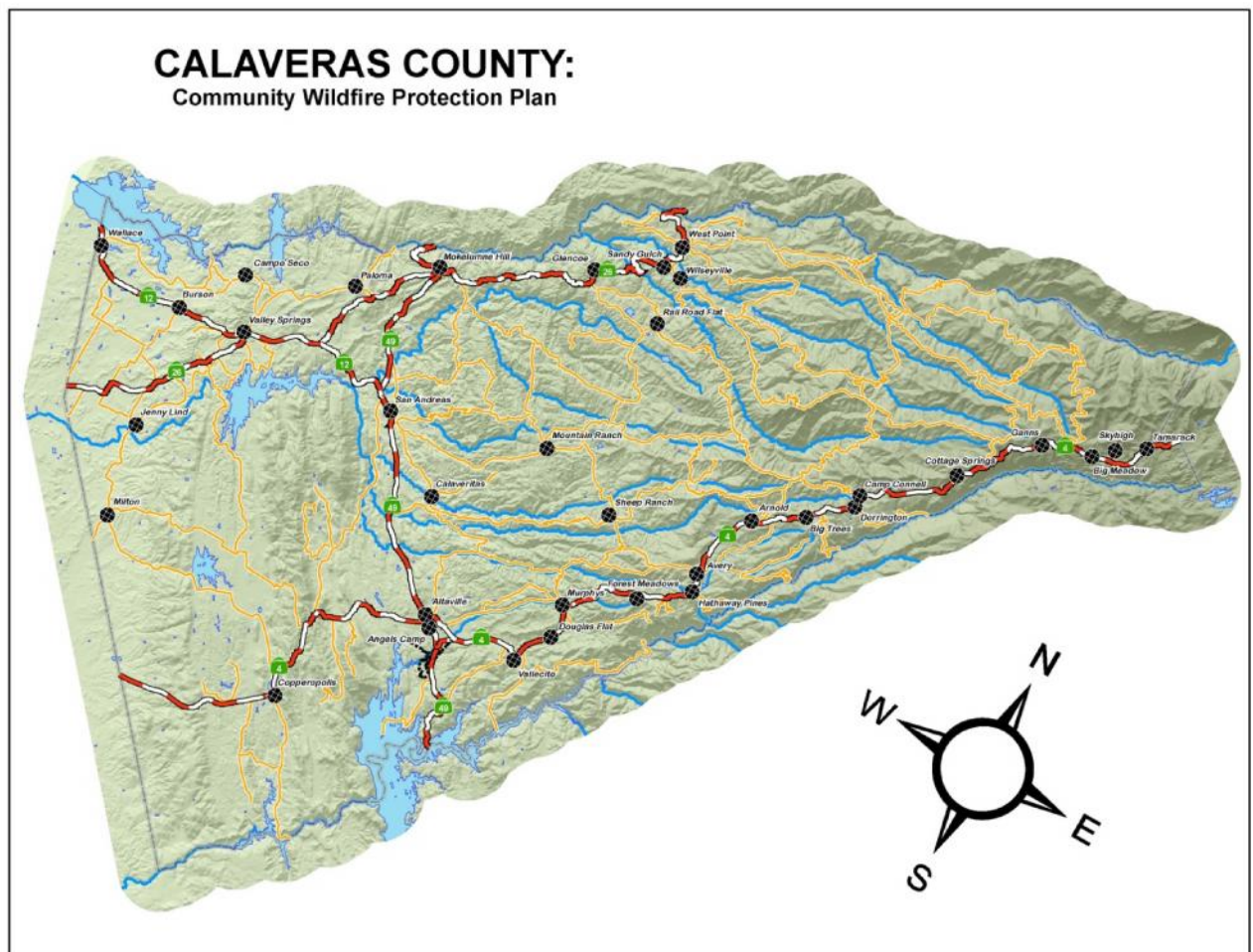
**Author Name: Rick Breeze-Martin**

**In-Kind:**

**Total:**

## PROJECT DESCRIPTION:

Provide public education on structural ignitability reduction and fire resiliency building techniques. Train inspectors for residences on these topics. Identify and/or train contractors to provide services. Secure funding to lower costs for services for all residents, not just disabled or low income.



# Mokelumne Hill Fuel Break

Initial Checklist/Battalion: 1  
Priority: 1  
5

Status: Maintenance  
Sponsor: Calfire

Acres:  
Length/Mi:

Within W.U.I?: Yes  
Document Effective Date: 1/1/2011  
Author Name: Cam Todd

Lat/Long:  
Funding Source:

Tons/Fuel:  
Amount: \$  
In-Kind:  
Total:

## PROJECT DESCRIPTION:

This fuel break will protect the Mokelumne Hill Community from fires that originate in the Mokelumne River Canyon. It will be constructed near the top of the canyon adjacent to the community. Some parts of the fuel break area currently have light fuels, but other areas contain heavy brush and dense woodland. The heavier fuels will be treated during this project.



## Gold Strike Fuel reduction Project

Initial Checklist/Battalion: 1

Status: Maintenance

Acres: 68

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38 12.8653 N 120 37.6597 Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount:

\$13,600.00

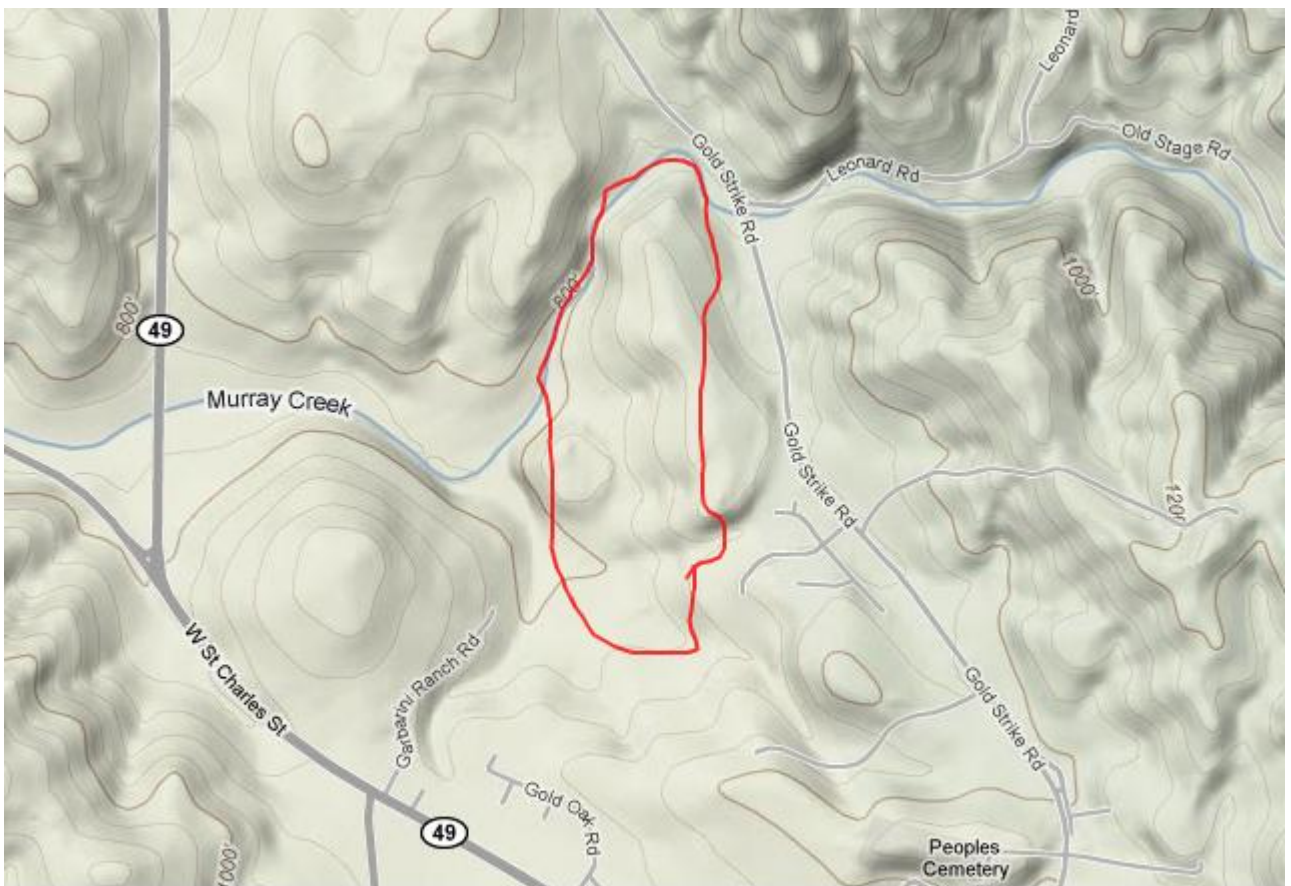
Author Name: Cam Todd

In-Kind:

Total: \$13,600.00

### PROJECT DESCRIPTION:

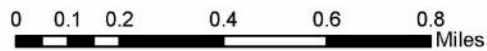
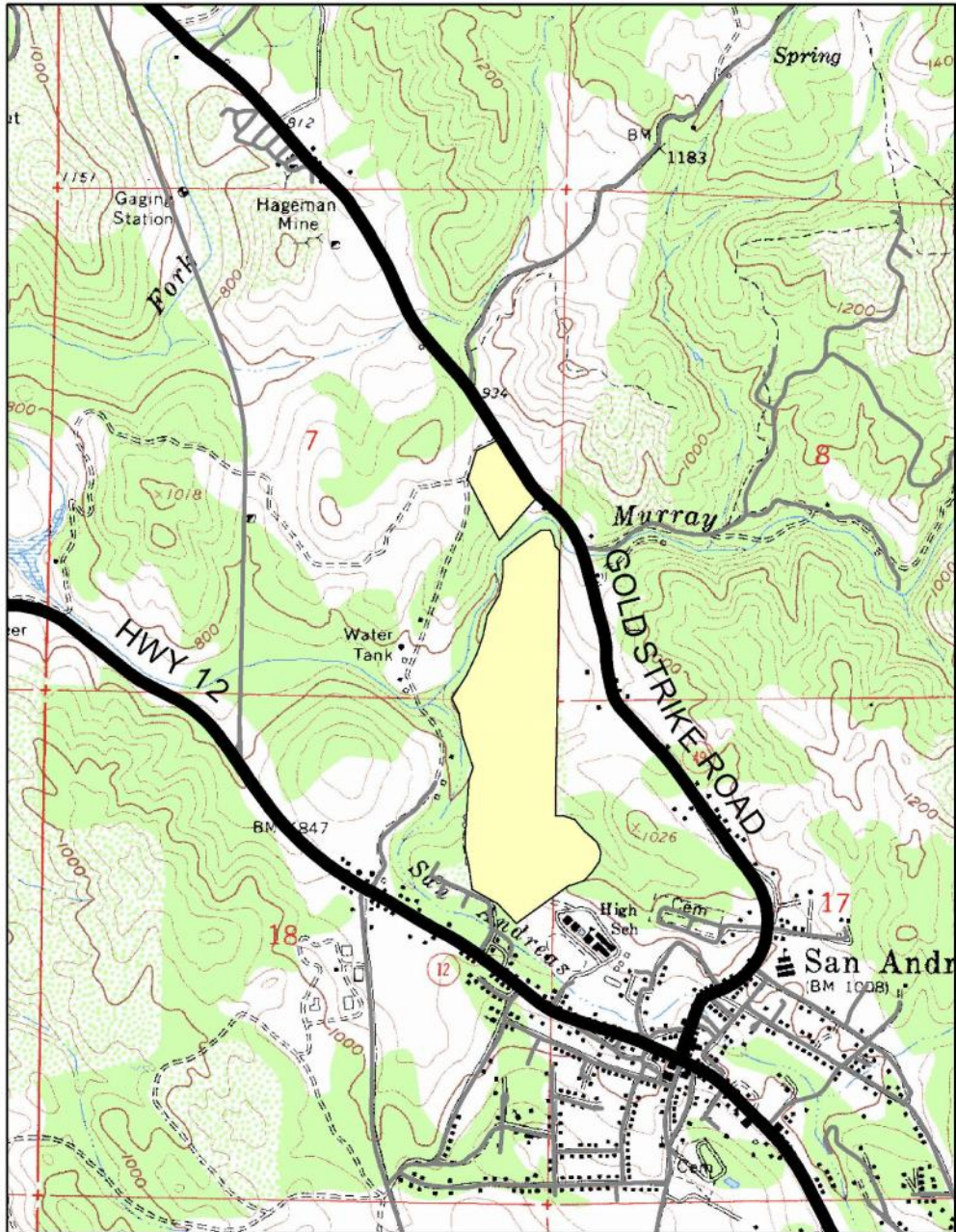
Cut, pile and burn to create a shaded fuel break.





POWERED BY  
Google + SCRIBBLE  
MAPS

# Gold Strike Fuel Break



Author: Kelly C. Dolan  
Date: 01-19-11

## 2011-Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Priority: 1

Within W.U.I?: Yes

Document Effective Date: 1/1/2011

\$74,806.00

Author Name: Bill Fullerton

Status: Maintenance

Sponsor: CFFSC

Lat/Long: 38.439 N 120.376 W

Funding Source: USFS

Acres: 50

Length/Mi:

Tons/Fuel:

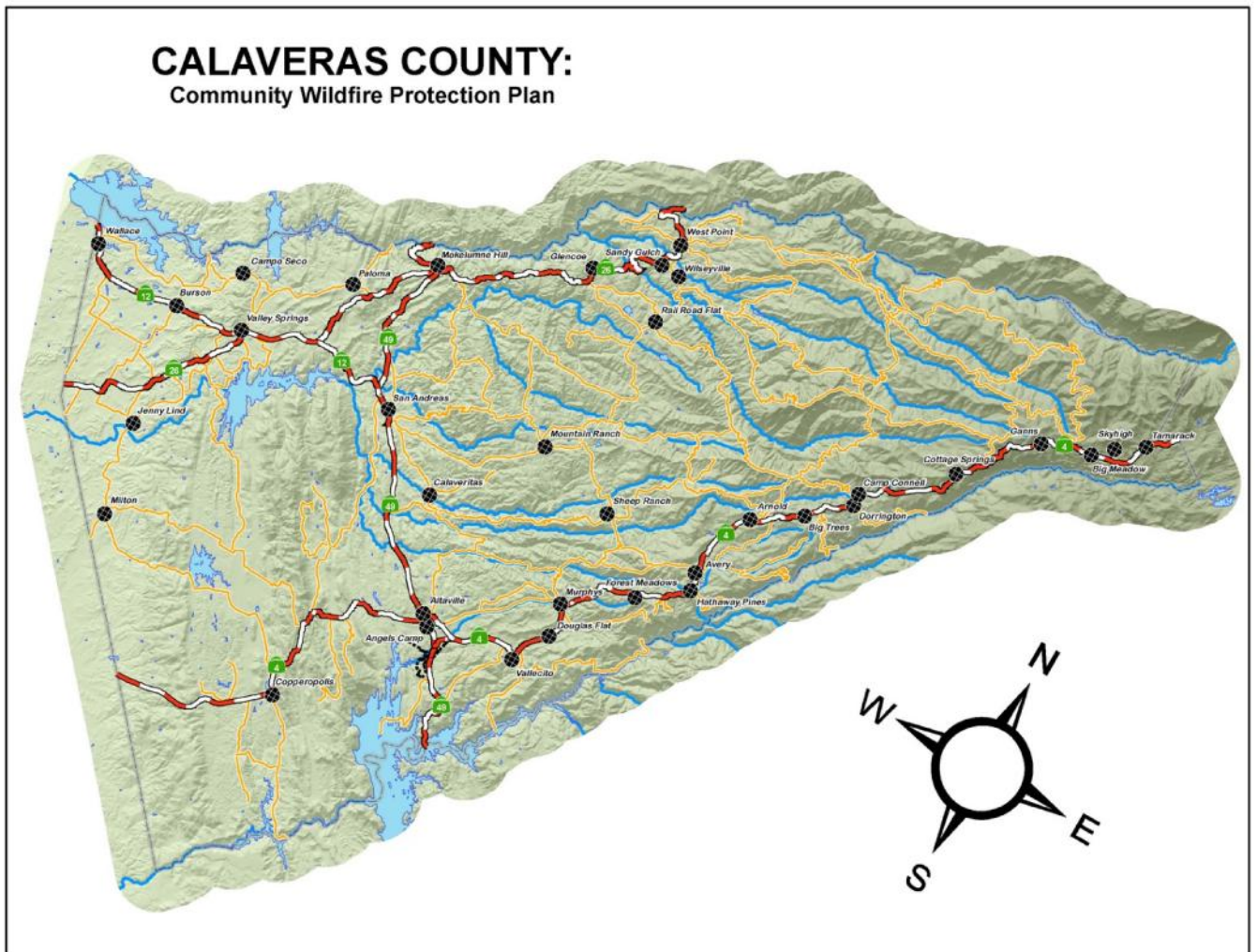
Amount:

In-Kind: \$65,650.00

Total: \$140,456.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## 2009 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 100

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: USFS 09UFS0023 Amount: \$85,950.00

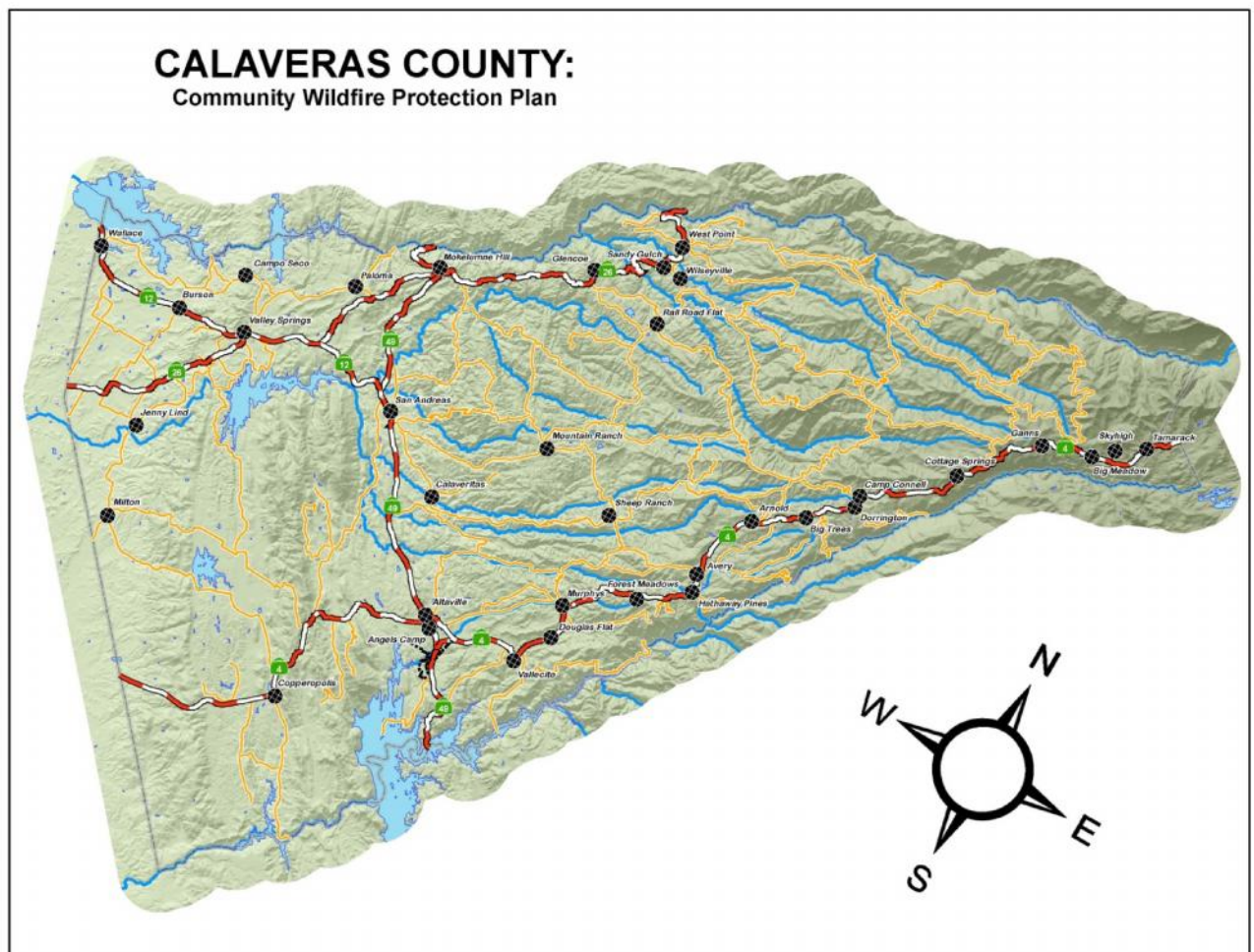
Author Name: Bill Fullerton

In-Kind: \$49,380.00

Total: \$135,330.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## 2009 Public Roadways Fire Break Phase 4

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 30

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: BLM 05BLM0068 Amount: \$53,943.00

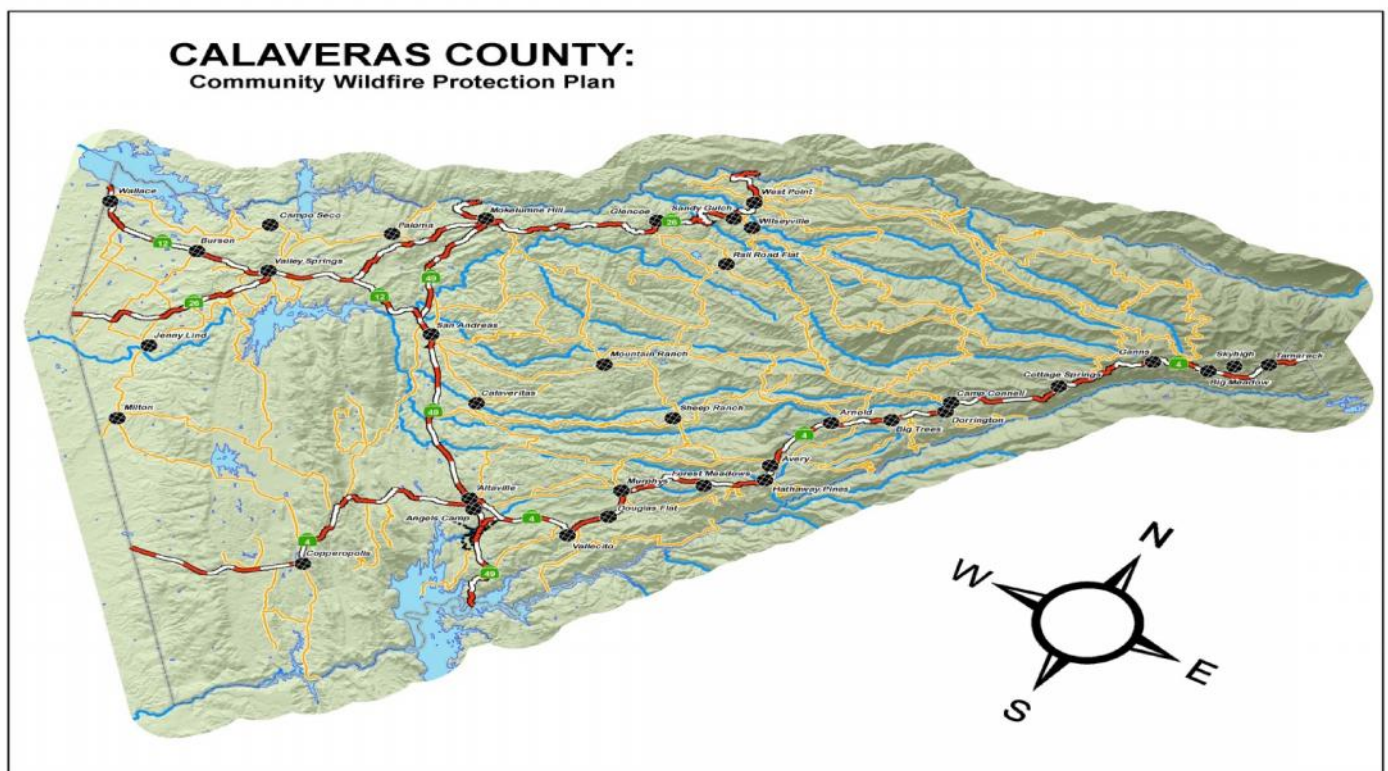
Author Name: Bill Fullerton

In-Kind: \$63,137.00

Total: \$117,080.00

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway. Clearing of brush along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.



## 2009 Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Priority: 1

Within W.U.I?: Yes

Document Effective Date: 1/1/2011 Funding Source: USFS 09UFS0022

Author Name: Bill Fullerton

Status: Maintenance

Sponsor: CFFSC

Lat/Long: 38.196 N 120.679 W

Acres: 100

Length/Mi:

Tons/Fuel:

Amount: \$104,400

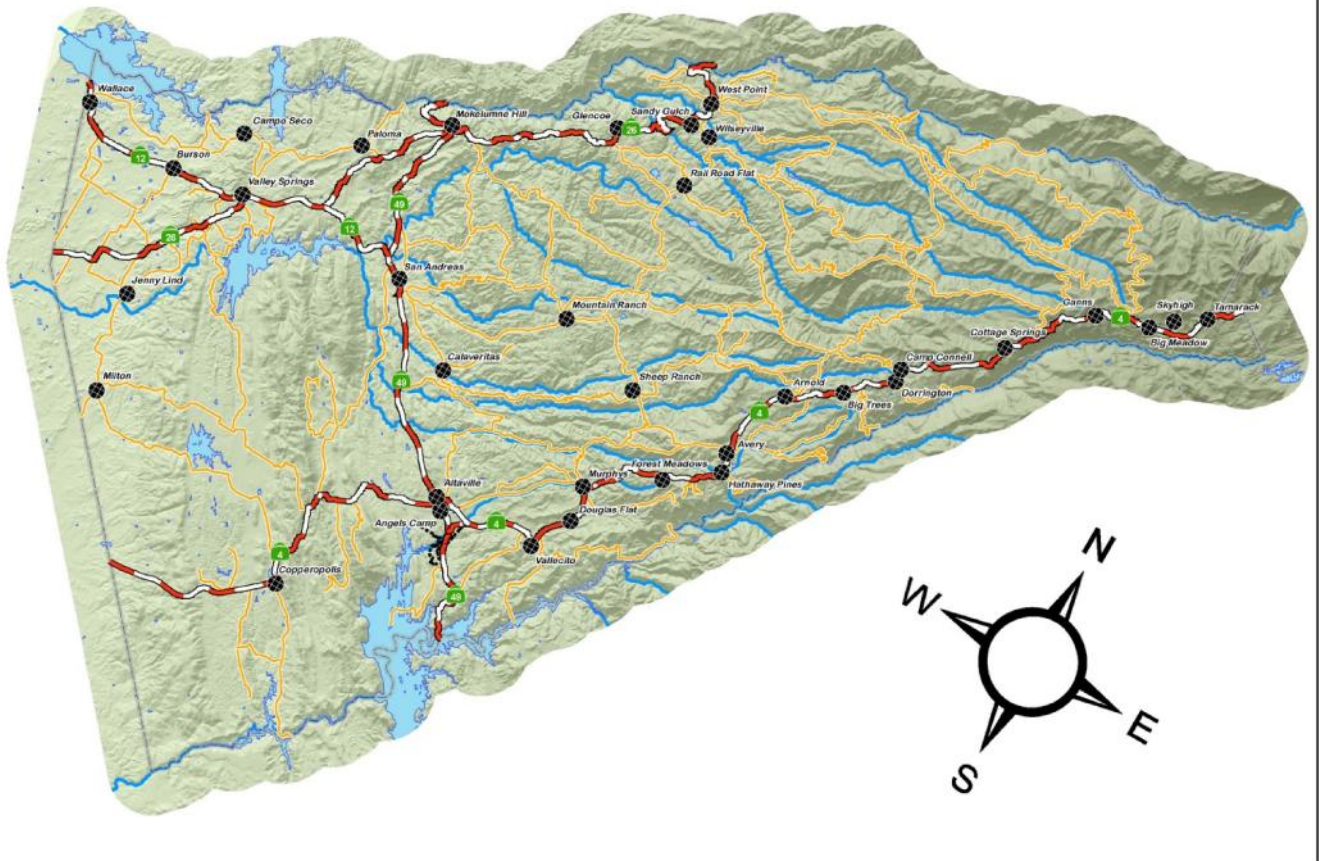
In-Kind: \$52,480.00

Total: \$156,880.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan





## 2008 Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres: 100**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I? : Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: USFS 08UFS0003**

**Amount: \$104,400**

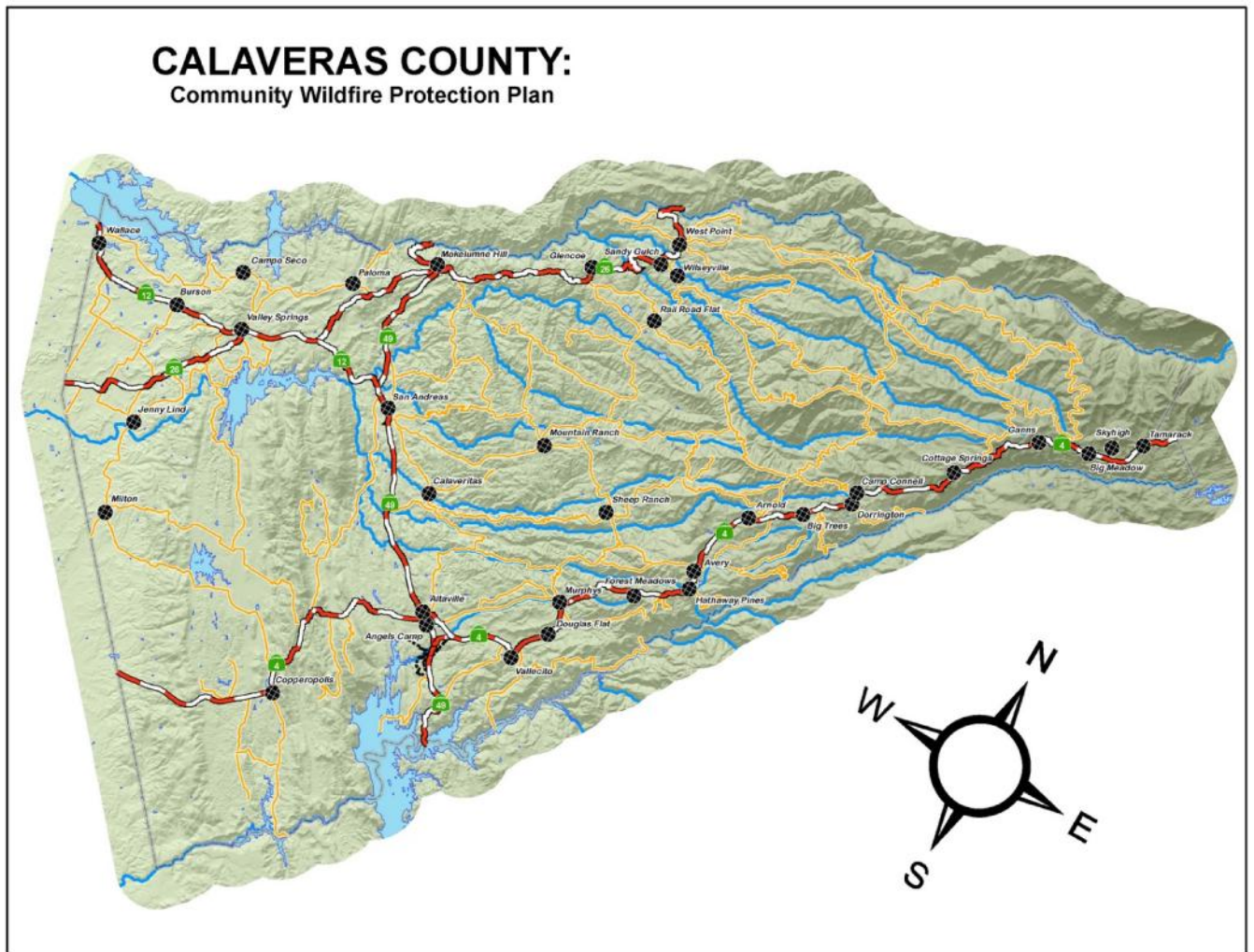
**Author Name: Bill Fullerton**

**In-Kind: \$16,000.00**

**Total: \$120,400.00**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## 2008 MMRC Goats #2

Initial Checklist/Battalion: 1

Status: Maintenance

Acres: 50

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.431 N 120.482 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40  
\$64,152.00

Amount:

Author Name: Bill Fullerton

In-Kind:

Total: \$64,152.00

### PROJECT DESCRIPTION:

Reduce Fuel Loads through grazing of goats.



## 2007 MMRC Goats #1

Initial Checklist/Battalion: 1

Priority: 1

Within W.U.I?: Yes

Document Effective Date: 1/1/2011  
Funding Source: Prop 40  
\$11,858.00

Author Name: Bill Fullerton

Status: Maintenance

Sponsor: CFFSC

Lat/Long:

Acres:

Length/Mi:

Tons/Fuel:

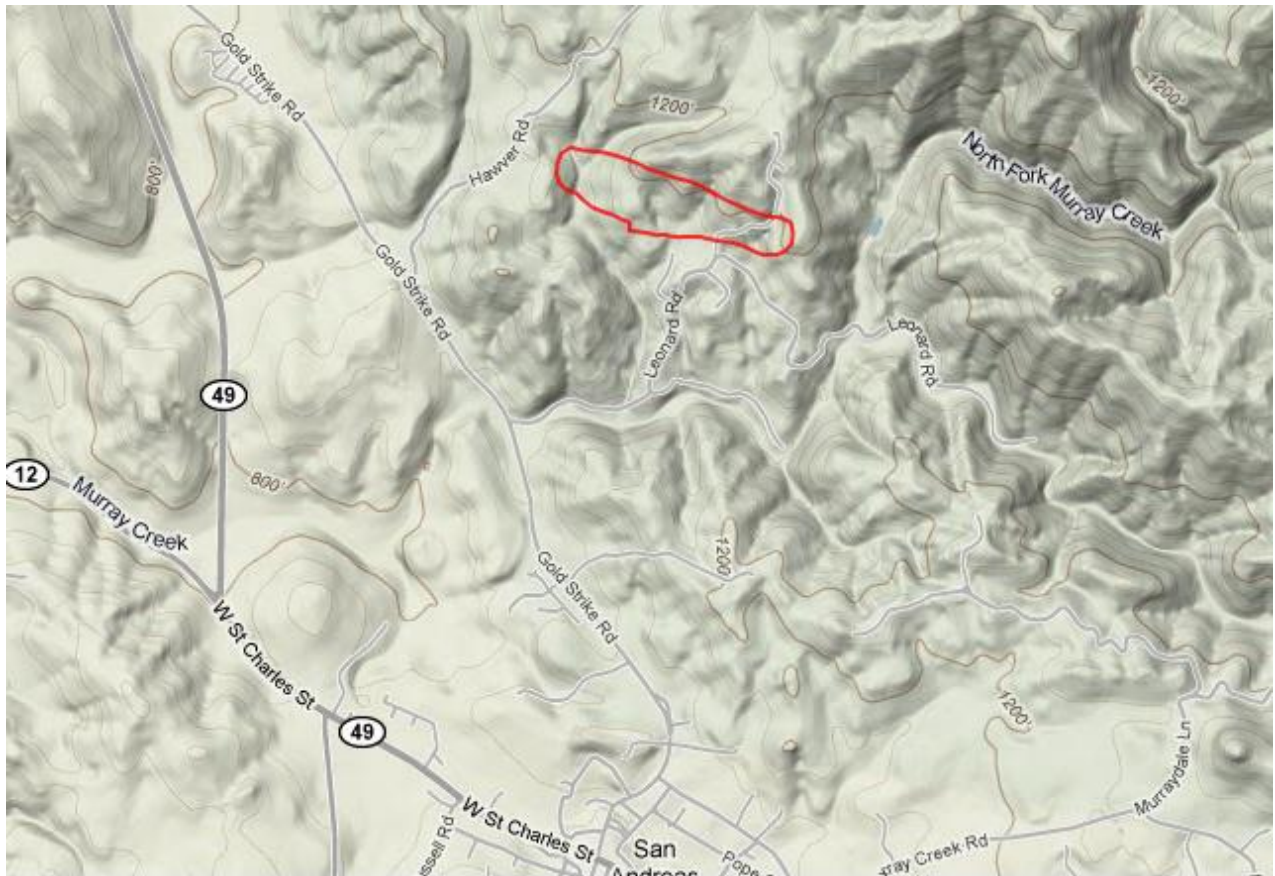
Amount:

In-Kind:

Total: \$11,858.00

### PROJECT DESCRIPTION:

Reduce Fuel Loads through grazing of goats.



## 2007 PAWS Fuels Reduction

**Initial Checklist/Battalion: 1**

**Priority: 1**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**\$41,472.00**

**Author Name: Bill Fullerton**

**Status: Maintenance**

**Sponsor: CFFSC**

**Lat/Long: 38 12.8653 N 120 37.6597**

**Funding Source: Prop 40**

**Acres:**

**Length/Mi:**

**Tons/Fuel:**

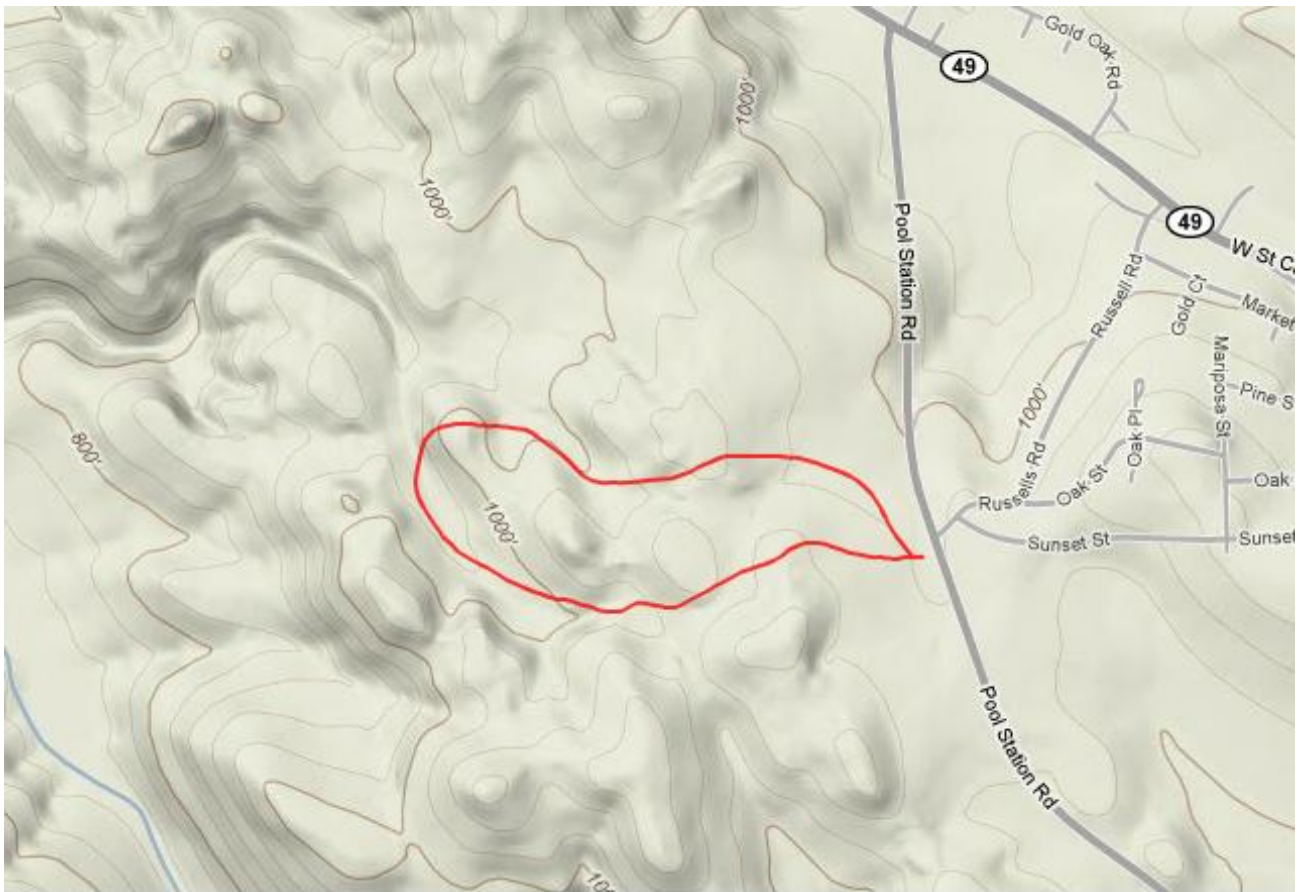
**Amount:**

**In-Kind:**

**Total: \$41,472.00**

### PROJECT DESCRIPTION:

FUELS REDUCTION PROJECT AROUND THE PAWS FACILITY.



## 2007 Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Priority: 1

Within W.U.I?: Yes

Document Effective Date: 1/1/2011 Funding Source: BLM 07BLM9489

\$56,950.00

Author Name: Bill Fullerton

Status: Maintenance

Sponsor: CFFSC

Lat/Long: 38.196 N 120.679 W

Acres: 90

Length/Mi:

Tons/Fuel:

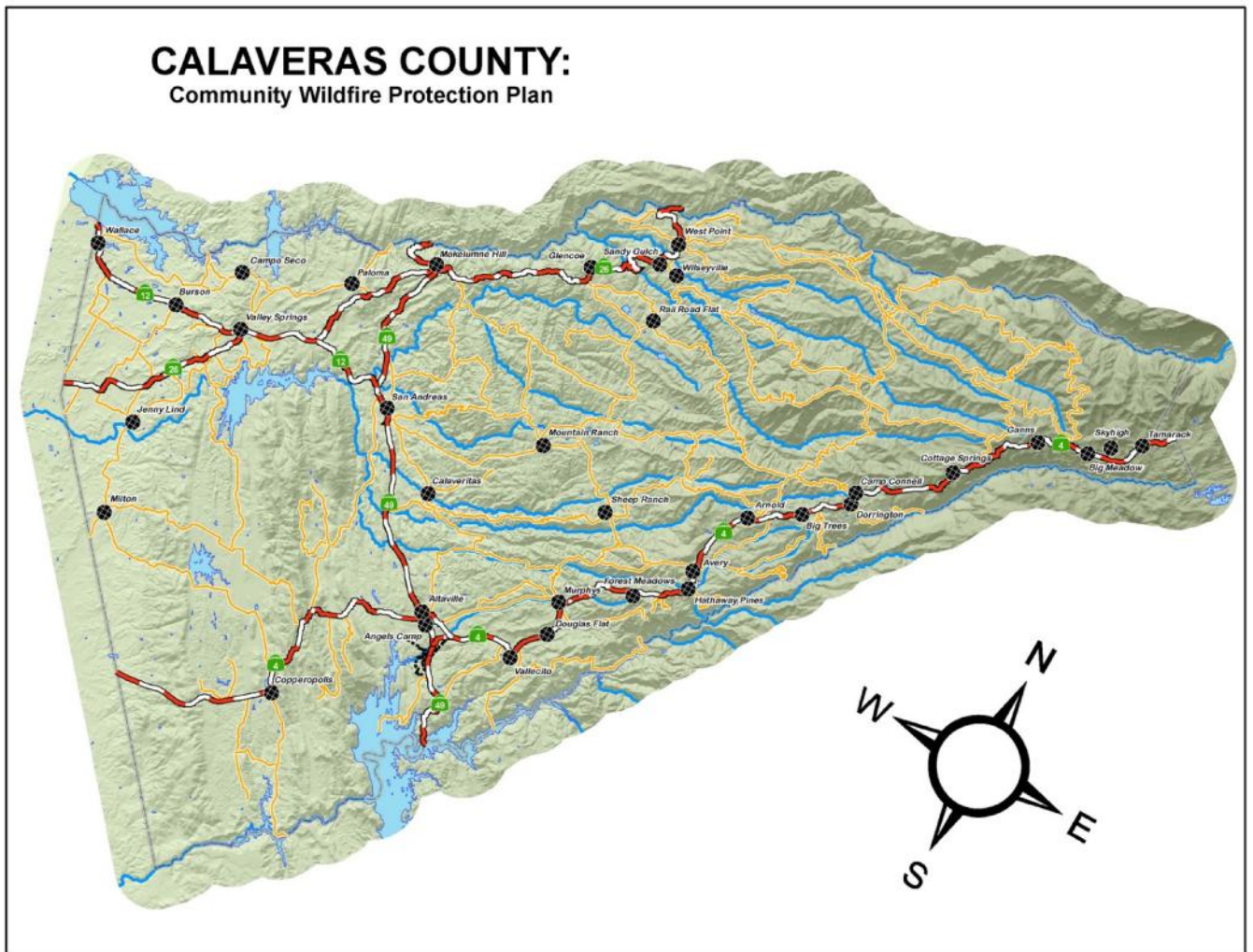
Amount:

In-Kind: \$12,000.00

Total: \$68,950.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## 2007 Prop. 40 Roads Phase III

**Initial Checklist/Battalion: 1-4**

**Priority: 1**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011 Funding Source: Prop 40**

**\$60,000.00**

**Author Name: Bill Fullerton**

**Status: Maintenance**

**Sponsor: CFFSC**

**Lat/Long: 38.196 N 120.679 W**

**Acres:**

**Length/Mi:**

**Tons/Fuel:**

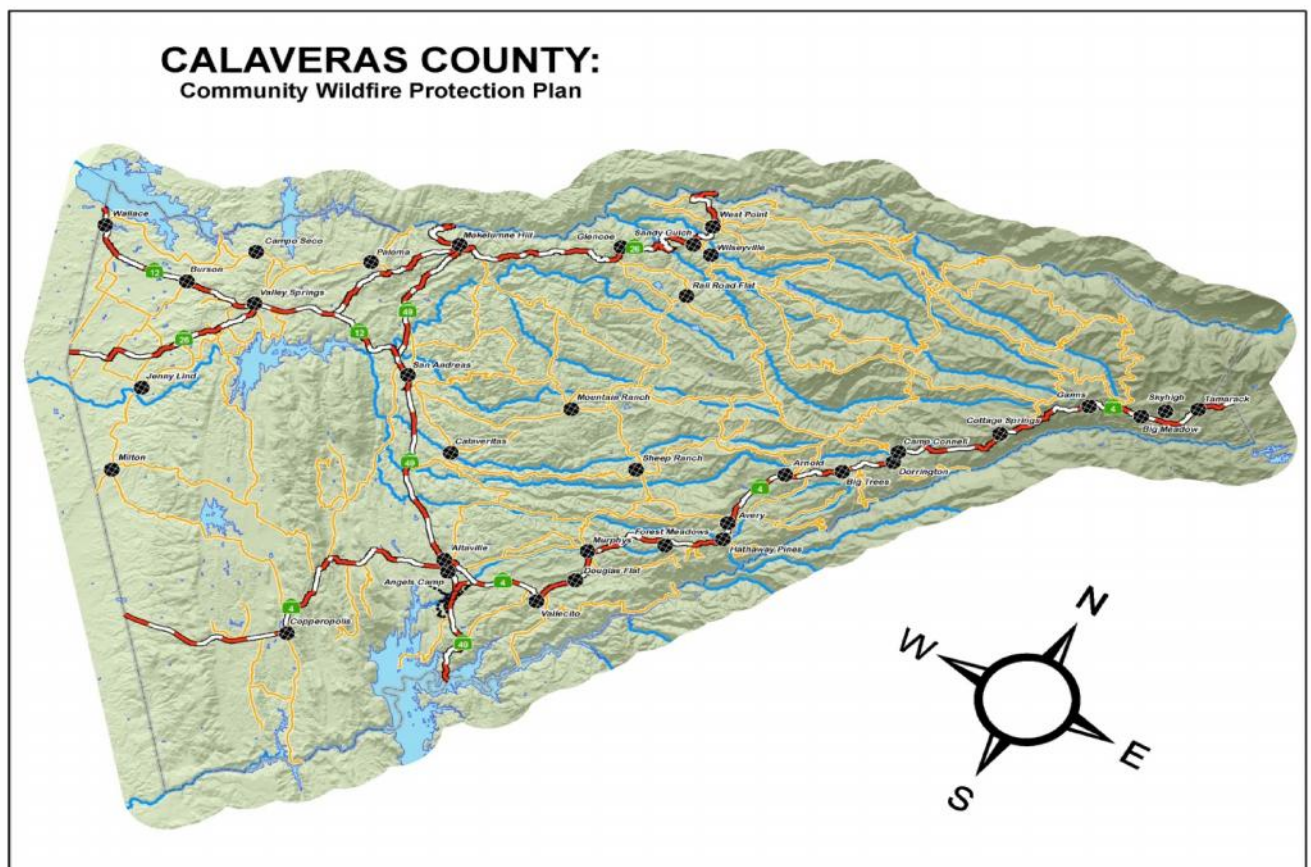
**Amount:**

**In-Kind: \$**

**Total: \$60,000.00**

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway. Clearing of brush along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.



## 2007 Prop 40 Roads Phase II

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40  
\$72,960.00

Amount:

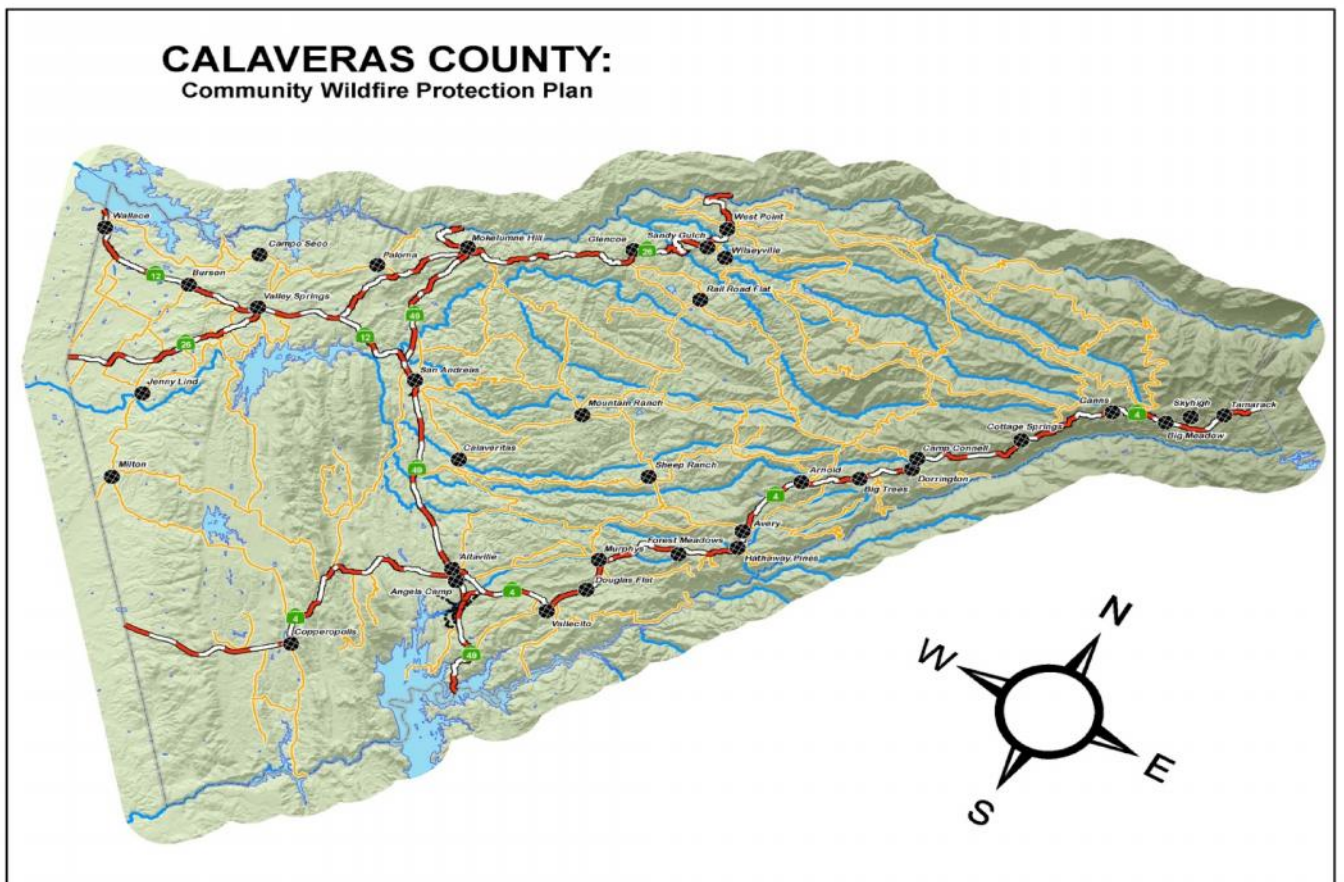
Author Name: Bill Fullerton

In-Kind: \$

Total: \$72,960.00

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway. Clearing of brush along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.



## 2006 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 32.5

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: USFS 06UFS9054

Amount:

\$66,200.00

Author Name: Bill Fullerton

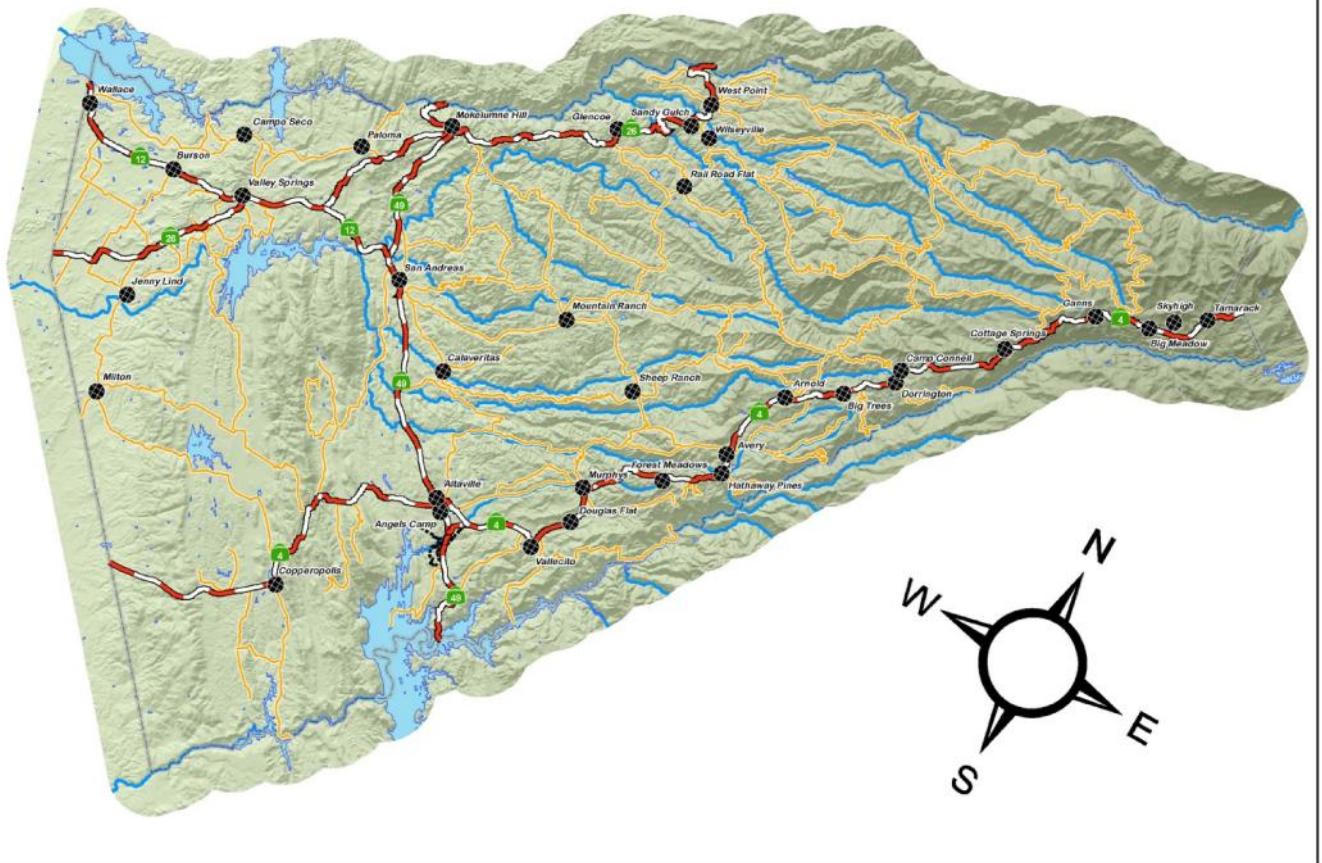
In-Kind: \$13,477.00

Total: \$79,677.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2005 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 30

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: BLM 05BLM0068

Amount:

\$53,943.00

Author Name: Bill Fullerton

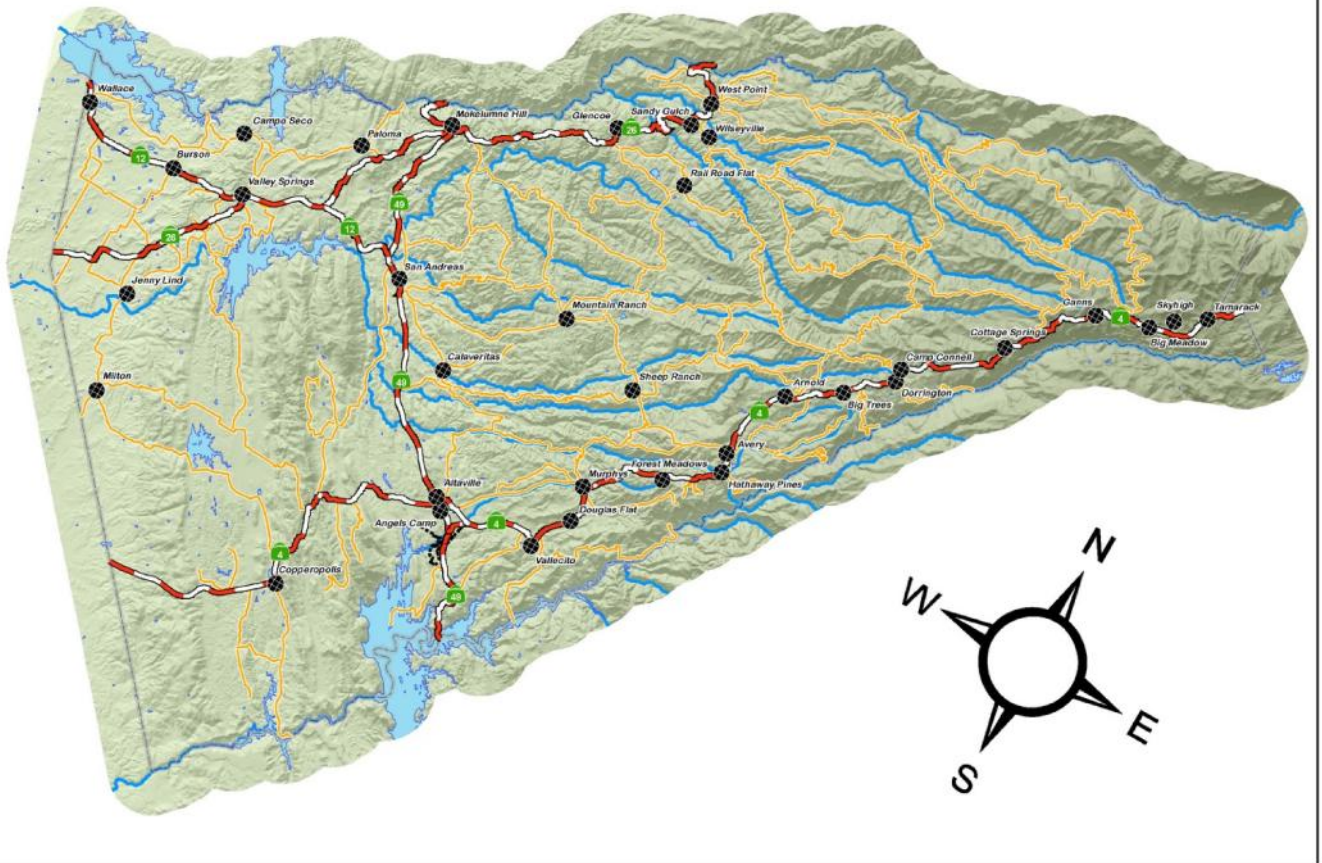
In-Kind: \$63,137.00

Total: \$117,080.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2005 Calaveras County APCD Chipper program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Calaveras County Amount:

\$13,200.00

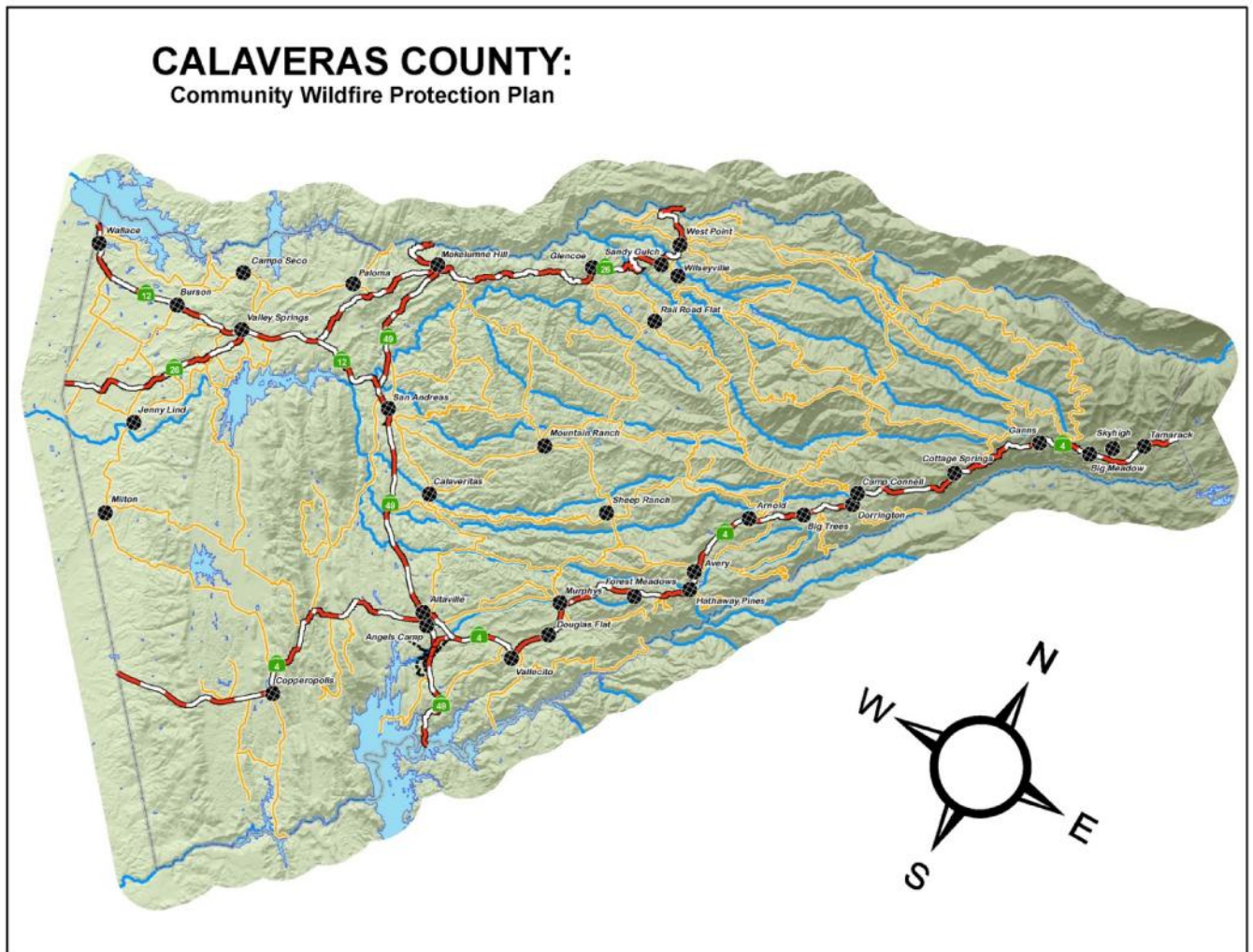
Author Name: Bill Fullerton

In-Kind: \$

Total: \$13,200.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## 2004 Calaveras County APCD Chipper Program

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: Calaveras County Amount:**

**\$15,000.00**

**Author Name: Bill Fullerton**

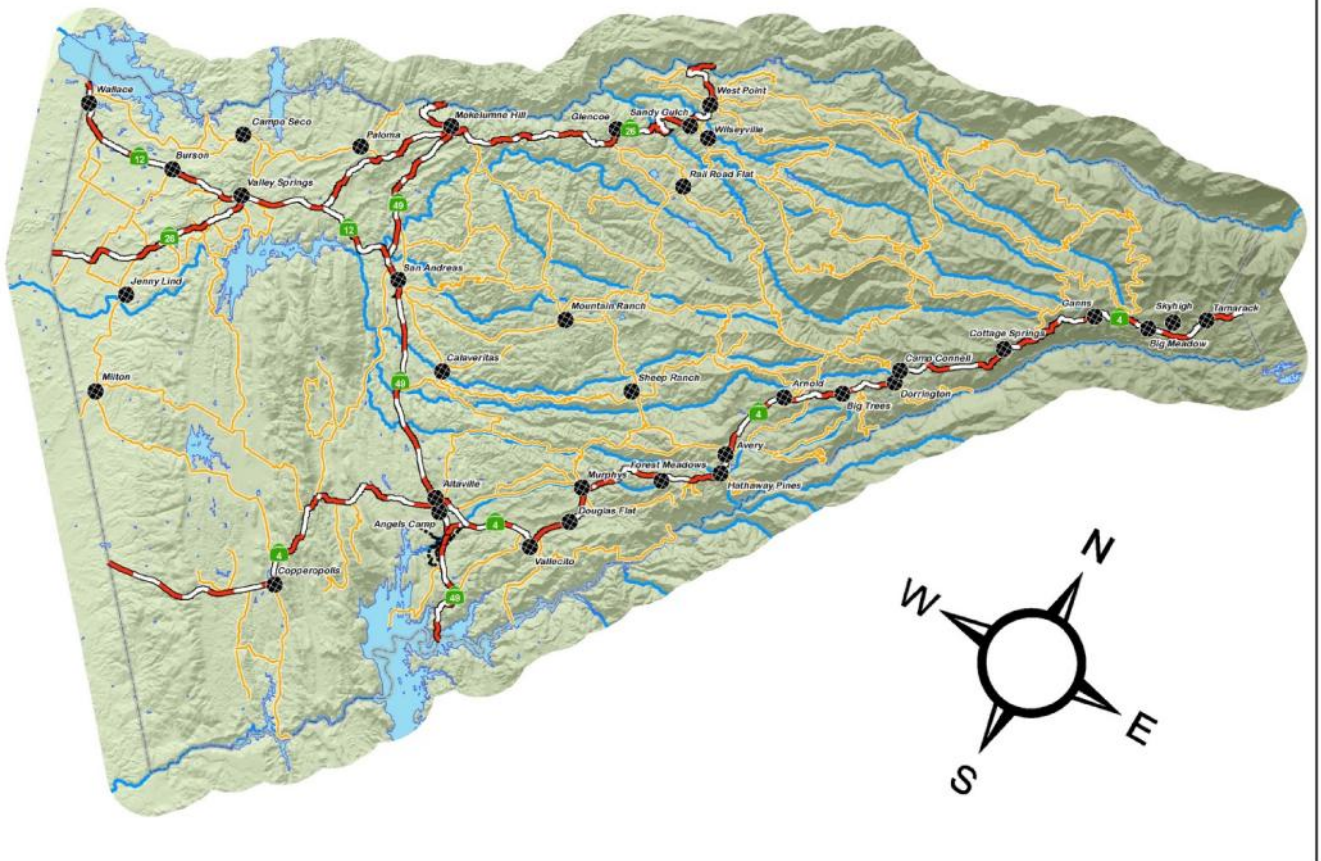
**In-Kind: \$**

**Total: \$15,000.00**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## **Battalion 1 Cooperators Mitigation Efforts**

### **Jenny Lind Fire Protection District:**

- ) #1 Priority – Educate community on fire hazards
- ) Initiate fire hazard inspection program.
- ) Initiate Public Safety Awareness Day.
- ) Notify and inform landowners of unimproved lots of fire risk and hazard reduction measures.
- ) Distribute material to Real Estate Offices for new owners in the community.
- ) Grant funding to be sought.
  
- ) #2 Priority – Hazardous Fuels Reduction
- ) Establish program to maintain clearances utilizing available methods.
  
- ) #3 Priority – Hazardous Fuels Reduction
- ) Shaded fuel break along western flank of Calaveras River drainage utilizing mechanical and hand crew methods.
- ) CEQA to be contracted.
- ) Homeowner agreements must be established.
- ) Grant funding to be sought.
  
- ) #4 Priority – Wildland Fire Water System Upgrade
- ) Improve water storage with the purchase and installation of larger water tanks around District.
- ) Grant funding to be sought.

### **East Bay Municipal Utility District: Pardee and Comanche Lake areas:**

- ) Annual Disking – 18.7 miles per year.
- ) Annual fire road/trail mowing – 110.6 miles per year.
- ) Annual mowing in campgrounds and other recreation areas - 387 acres.
- ) Fuel modification due to grazing: 13,604 acres.
- ) Heavy fuels modification in acres: 15 acres.
- ) Removal of downed trees and excess brush around MHP.
- ) Fuel wood Program – Woody Fuels Management Program.
- ) Annual fire training of employees – 16-24 hours per year.
- ) Annual Fire extinguisher training for concession employees.

- ) Annual Fire Safety Audit of District facilities.
- ) Red Flag Protocol – Minimum of 2 rangers on patrol during red flag events.
- ) Prescribed burns.
- ) Fire Prevention Plans for Concessionaire.

**Calaveras Foothills Fire Safe Council:** Since 2001 the FSC has been fully engaged in the success of several fuel reduction efforts, including : the production and implementation of the Calaveras County Community Wildfire Protection Plan; production and distribution of Public Education materials, and programs; identification, planning and implementation of numerous on-the-ground fuel reduction projects.

# Valley Springs Area Public Comments

## WUI's In Calaveras County

What is a WUI? It starts locally with the Calaveras Fire Safe Council [FSC]

([http://firesafecouncil.org/find/view\\_council.cfm?c=80](http://firesafecouncil.org/find/view_council.cfm?c=80))

The FSC is a private non-profit organization that applies for grants to help communities with fire prevention is working on a Community Wildfire Protection Plan [CWPP] using a grant from the Federal “Healthy Forests Restoration Act of 2003 [HFRA]”

The major reason to have a CWPP is because the Federal Government will not fund “fuel projects” without a CWPP in place at the county level.

### The minimum requirements for a CWPP as described in the HFRA are:

- Collaboration: A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties.
- Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure.
- Treatment of Structural Ignitability: A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

A major tool in focusing the CWPP's goals is designating Wildland / Urban Interface [WUI] areas. The WUI is used to show: “...in which conditions are conducive to a large-scale wildland fire disturbance event; and for which a significant threat to human life or property exists as a result of a wildland fire disturbance event.”

### Problems with FSC and HFRA:

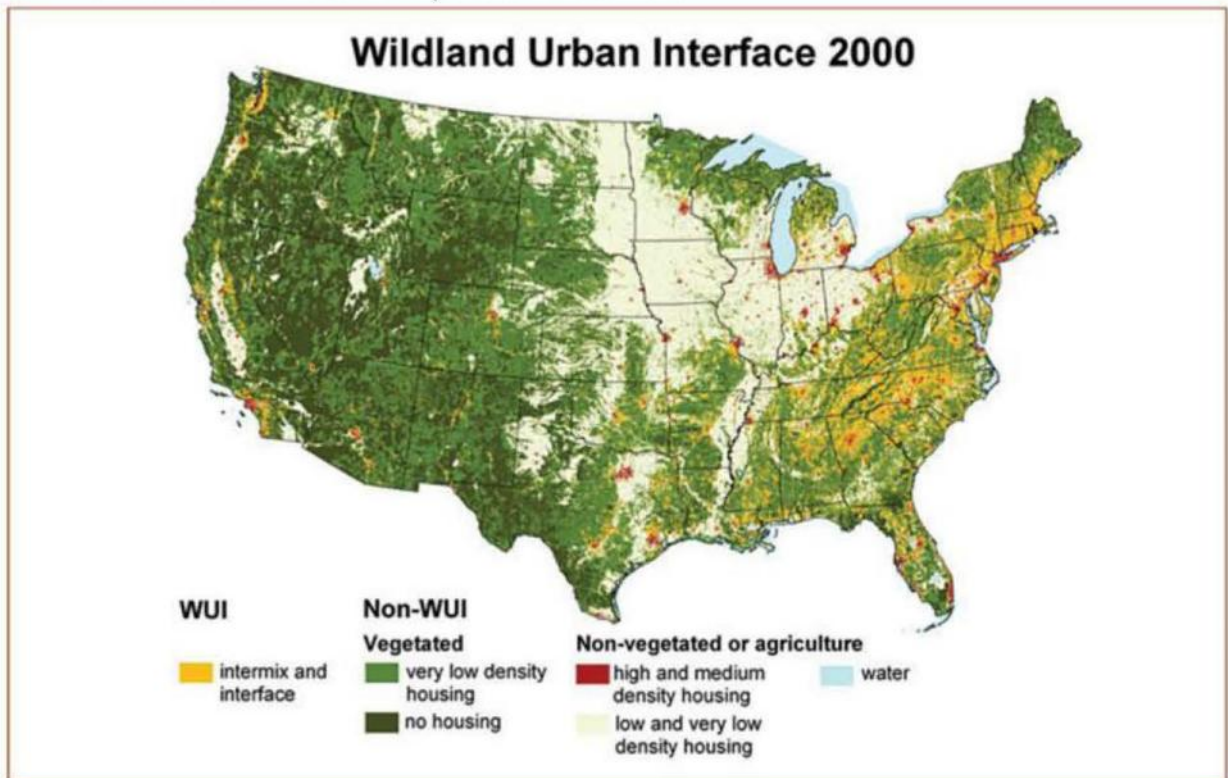
- Bureaucrats at national, state and local levels **add cost to the taxpayers without providing services**. For example the FSC, hired a consultant to gather community input and consensus for the current CWPP.
  - The Federal Government through the HFRA doles out grants for **anything** that can be loosely construed as helping healthy forests.
  - In Calaveras some HFRA grants are split three ways, some to FSC, some to the Sheriff's office, and finally to the Department of education. WUI educational material includes topics on **Global Warming, population's impact on biodiversity and the destruction caused by sprawl**.
  - HFRA is administered by the Department of Agriculture and their varied agencies, including the National Forest Service. The NFS web site says, “Homeowners living in the wildland urban interface **must become** “Firewise”. (<http://www.firewise.org/>) Firewise.org is a web site for NFPA National Fire
-

Protection Association. Their web site says, “The mission of the **international** nonprofit organization is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating **consensus codes** and standards, research, training, and education.” There are 348 consensus codes, ([http://www.nfpa.org/aboutthecodes/list\\_of\\_codes\\_and\\_standards.asp](http://www.nfpa.org/aboutthecodes/list_of_codes_and_standards.asp)). Among them are: **Standards for Electrical Inspections for Existing Dwellings**, Standard for Ovens and Furnaces, and Standard for Protection of Life and Property from Wildfire.

- These codes are created by the international community, and ignore the American legislative process. These codes have created **increased construction and inspections costs**. These costs will be born by the property owners, either directly or in local government fees and taxes.

### Problems with WUI's:

- The first question, is where are the WUI's and how are the boundaries decided? Is it just the 500' feet outside an incorporated city? Is it 200 feet around properties with no inhabitants? According to FSC, the state level bureaucrats have decided the entire Calaveras County should be a WUI!



## California Wildland Urban Interface 2000



Copyright 2004 R.B. Hammer and V.C. Radeloff  
University of Wisconsin-Madison

- A WUI... “while also protecting natural habitat. Native plants are essential ecosystem components and provide habitat for native birds, butterflies and other wildlife. California is known as a global hotspot for its diversity of unique plants and animals. To preserve this natural heritage, it’s important to live responsibly in the wildland-urban interface.” The WUI allows remote satellite and local inspections for sensitive species. WUI can define where sensitive plants and animal habitats exists and create Habitat Conservation Plans, **which allow planning departments (and general plans), to deny construction or impose mitigation costs** – not based directly on fire but on species.
  - State Fire Marshal is publishing this “WUI Products Handbook”, a readily list of “compliance WUI products”. WUI Materials **drive up the construction costs**, and code compliance **drives up the cost of engineering** for new home construction.
  - WUI’s Impacts Homeowner Insurance:
    - Support of the International Wildland Urban Interface Code® adoption
    - New guidelines for writing homeowner policies
    - **Re-underwriting what is already insured**
    - If the property requires significant measures to rectify the hazards, the customer will receive a letter asking that he or she arrange a meeting on
-

the property with 38 local fire service officials to **develop a wildfire mitigation plan**. This letter will also advise the customer that he or she will have 18-24 months to obtain the plan and complete the recommended treatments. **Any charges assessed for the help of the fire service officials are the responsibility of the customer.**

### Problems with the FSC:

- The FSC is funded largely by taxpayer funded grants and is totally **a cost center** providing grant services.
- Searches for fuel reduction grants, which is simple wealth redistribution.
- Current Grants:
  - Council is approved for a grant for no cost door to door chipping services. For more info contact Bill Fullerton 209-728-8785.
  - Council completed grant for no cost lot clearing for seniors and disabled persons. For more info contact Bill Fullerton 209-728-8785.
  - Council receives grant funding to clear county road right of ways for roadside fire prevention.
  - Council hires new part time paid coordinator to run grants and administer day to day operations.

### State FSC Grant Clearinghouse

- Total value of USFS projects selected for funding in FFY 2011: \$8.0 million
- Average size of USFS grants in FFY 2011: \$102,645
- Total value of NPS projects selected for funding in FFY 2011: \$123,000.
- Average size of NPS grants selected for funding in FFY 2011: \$61,500.

### Conclusion:

The government sees a problem that wildfires are caused by development! “The problem has been identified – people moving into previously unpopulated areas where there are heavy fuels but little infrastructure for fire protection” The **assault on rural living** is coming from every angle!

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## **Battalion 2 - Angels Camp Battalion:** Mario Hernandez – Battalion Chief

### **Pre-Fire Management**

#### **Plan Overview**

Battalion 2 extends over 290,576 acres of the southwest and south-central portions of Calaveras County, from the San Joaquin Valley at about 100' elevation, east approximately 48 miles into the Sierra Nevada foothills up to around 2500' elevation. In its eastern third, the Battalion is bisected by multiple east-west drainages that have a history of supporting fire spread. In the western two-thirds the Battalion is bisected by a set of unique geographic features – two prominent ridgelines that run north-south: the southern end of the Bear Mountains, and the bulk of Gopher Ridge. Also bisecting the Battalion is State Highway 4 west to east, and State Highway 49, north to south. See the map, near the end of this document, in the Exhibits section, page M3.

The Battalion's fire control organization is comprised of three Forest Fire Stations: Copperopolis FFS - a one (1) engine station in the west; Altaville FFS – the Battalion Headquarters, a one (1) engine and (1) bulldozer station serving the center of the Battalion; Murphys FFS – a one (1) engine station on Hwy 4 in the east. Also located within the Battalion boundaries, not part of the Battalion organization, is Vallecito Conservation Camp, located just off Hwy 4 about midway between Angels Camp and Murphys. Battalion responsibilities also include maintenance of Fowler Peak Lookout, located in the Bar XX subdivision.

The major communities in the Battalion are positioned on or in close proximity to the Hwy 4 corridor, including: the greater Copperopolis area; subdivisions adjacent to the north shore of Lake Tulloch; Angels Camp (the only incorporated city); Vallecito; Douglas Flat; Murphys and its adjacent subdivisions. The communities of Murphys, Angels Camp and the Tulloch/Copperopolis areas are growing rapidly. Much of the oldest residential development outside the community centers dates back to the 60's, and is often on multi-acre rural style parcels. Newer development such as that around Murphys, Angels Camp and the greater Copperopolis area often features higher density development similar to those found in more urban environments.

The entire Battalion is SRA/State DPA comprised of relatively small private land holdings – no large commercial timber lands for instance. There are some relatively small Federal holdings: Bureau of Land Management and Bureau of Reclamation along the shores of New Melones Reservoir and the Stanislaus River; BLM north of Murphys extending across the Battalion 2/3 boundary. All federal lands are designated State DPA. CAL FIRE has designated approximately half of the Battalion as *High* Fire Hazard Severity Zone; mostly the western and central portions. Relatively large swaths of territory in the Bear Mountains, along Gopher Ridge and in the eastern third of the Battalion are designated as *Very High* FHSZ. A small swath in the greater Copperopolis area, and some of the westernmost boundary areas are designated as *Moderate*.

In addition to providing protection for life and private property, Battalion 2 provides protection for critical watershed and recreational values. The major watershed in the Battalion is the Stanislaus River and its northern tributaries – the primary source for New Melones Reservoir and Tulloch Lake. Important smaller

watersheds include San Antonio and San Domingo Creeks, both tributaries of the Calaveras River system, supporting New Hogan Reservoir in Battalion 1; and Angels Creek which supports New Melones reservoir. Dozens, maybe hundreds of small, mostly seasonal creeks, originating in the Bear Mountains and along Gopher Ridge provide water to Salt Spring Valley Reservoir in the west and Tulloch Lake in the south. Protection of these watersheds provides benefits that reach far beyond the boundaries of the Battalion and the Tuolumne - Calaveras Unit.

Primary local government fire protection is provided by six (6) fire districts and one (1) city department. Angels City provides service within the city limits of Angels Camp. The Copperopolis FPD, the largest district in the Battalion, includes everything west of the Bear Mountains to the Stanislaus County line with the exception of a chunk of territory protected by Calaveras Consolidated Fire. The Altaville-Melones FPD, the 2<sup>nd</sup> largest district, provides services in the heart of the Battalion surrounding Angels City. In the east the Murphys FPD protects Murphys and a large swath of territory south to the County line, and north to the Battalion 2/3 boundary. Very small portions of the eastern most perimeter of Battalion 2 are protected by the Ebbetts Pass FPD and Central Calaveras FPD.

### ***Battalion 2 Assessment Summaries:***

#### **Assets at Risk, Fuels, Weather and Fire History**

**Assets at Risk:** There are several significant assets at risk within Battalion 2 including homes and businesses; watershed resources including water collection and distribution infrastructure; electrical power generation and distribution infrastructure; communications infrastructure; recreational resources; and historical and archeological sites.

- **Life Safety:** The population centers within Battalion 2 can be characterized as widely dispersed high density communities and subdivisions; ranging from the greater Lake Tulloch area in the southwest and the greater Copperopolis area in the west central portion of the Battalion to the greater Angels Camp/Altaville area straddling Hwy 49 and east up Hwy 4 to Murphys. The need for fire defense improvements, concerted educational campaigns, safe access/egress routes and a coordinated initial response remains utmost in the minds of Battalion personnel.
- **Residential and Commercial Development:** The list of officially designated “Communities at Risk” in the Battalion includes: Altaville, Angels Camp, Copperopolis, Douglas Flat, Milton, Murphys, and Vallecito (including the significant associated subdivisions within those community’s sphere of influence). The County General Plan and zoning laws have allowed several large, modern, high density subdivisions such as Greenhorn Creek and Saddle Creek, as well as several less dense developments such as those in Pennsylvania Gulch, Copper Cove and the Bar XX, Circle XX, and the Diamond XX subdivisions. Several of the older developments date back to the 1940’s through 1960’s. As a result, outdated design features such as shake roofs, wood siding, wood decks, and large single pane windows are common in these areas. Though the newer subdivisions feature newer materials such as stucco and concrete siding, tile roofing and double pane windows, they are still at risk, often due to being sited in hazardous locations. As development continues the new Chapter 7A building codes will result in more ember resistant and fire safe structures.
- **Watershed:** The broad spectrum of watershed values noted elsewhere may be less

obvious, but are none the less important within and far beyond the Battalion boundary. Salt Spring Valley Reservoir is supported by a large number of small creeks draining the east side of Gopher Ridge and the west side of the Bear Mountain range. Angels Creek drains the central portion of the Battalion and supports New Melones Reservoir. The San Domingo Creek drainage cuts a path through the north-eastern portion of the Battalion on its way to New Hogan Reservoir in Battalion 1.

- **Recreation Values:** The large reservoirs previously mentioned, along with the primary watersheds supporting them, include significant recreational values – everything from developed BOR campgrounds and boating facilities, to hiking and mountain bike trails, fisheries and hunting grounds. Even wine tasting and wildflower viewing are growing in popularity. BLM lands, inherently important as watershed, are also utilized for their recreational opportunities; hunting and fishing being two of the most common.
- **Agricultural Values:** The large cattle ranches in the western portion of the Battalion depend on the annual grass crop to feed their livestock. Vineyards, orchards and horse ranches are a growing component of the local agriculture industry also at risk from wildland fire. Despite the loss of some acres to development agriculture remains an economically significant asset.
- **Community Infrastructure:** Water storage and delivery systems; electrical distribution equipment; telecommunications systems; transportation networks; schools.
  - Domestic and agricultural water collection and distribution systems including the Calaveras County Water District, and the Stockton East Water District (SEWD), are critical assets. These systems rely on a significant system of ditches and flumes to transport water throughout the Battalion.
  - The balance of the Battalion is serviced by individual domestic water wells. With the enactment of PRC 4290, water delivery for fire protection is addressed by an optional formula. Although some residents have chosen to install on-site water tanks, the majority of new development has opted to pay the in-lieu fee to fund the Calaveras County Fire Service Water Tender program. On-site tanks are minimal and there is not currently a system to guarantee functionality of the existing tanks.
  - Telecommunications is another critical element of the infrastructure present within the Battalion. Several government agencies and private communications companies take advantage of the topography within the Battalion for the location of communications system facilities. These are expensive installations that are by necessity placed in threatened locations atop ridges and mountains. The most noteworthy may be the multiple installations on Fowler Peak in the Bear Mountain range overlooking Angels Camp to the northern reaches of New Melones reservoir, and Copperopolis to the West.
  - Schools are at risk in the same way as the rest of the community is. But their importance as one of the prime choices for use as evacuation centers makes them doubly important in the event of a significant wildland fire.
  - Electrical distribution systems are ubiquitous throughout the Battalion, and a critically important asset. The watersheds in the Battalion supply water to several local, regional and state-wide power generation systems, including the Calaveras Public Utility District, and Northern California Power Authority. Power distribution lines and equipment are unique

among assets as being both a potential cause of wildland fire and a threat to firefighting operations. While not nearly as frequently a cause of wildland fire as they were historically, they remain a threat to aerial firefighting operations. Most every wildland fire has some potential to damage this equipment; the biggest fires present the most serious threat. Disruption of the power distribution system is likely to have a significant impact on lives and the economy.

- Transportation infrastructure ranks as a critical asset in need of protection. Portions of two State Highways bisect the Battalion: 4 and 49. Thousands of miles of county and private road spread throughout the Battalion. While road surfaces themselves are only rarely damaged by wildfire, the supporting infrastructure can easily be damaged. Even when no physical damage is suffered the disruption of traffic caused by fire control operations can cause a range of negative impacts from short delays to significant disruptions to the economy.

**Fuels:** Approximately 75% of the Battalion features grass and oak-woodland fuels; almost everything west of Hwy 49; the exception being a mosaic of brush fields on the slopes of Gopher Ridge and the Bear Mountain. The grass and oak-woodland dominated west transitions to a brush dominated fuel model as one climbs east from Hwy 49. As one moves further into the eastern portions of the Battalion the brush begins to mix with stands of oak and conifer, eventually becoming dominated by the mixed forest model along the eastern Battalion boundary.

The effects of a series of annual low elevation snow falls starting in March of 2006 remain a consideration for the fuels between the 1,500 and 3,000 foot elevations. Battalion 2 was less affected than other Battalions, but snow storm impacts are evident in the eastern-most areas as elevations rise toward 3000', and along the crest of the Bear Mountain in the center of the Battalion. These events primarily affect the live oaks, black oaks and gray pines, breaking off branches and tops, adding significantly to the amount of down-dead fuels. This in turn increases the availability of ladder fuels thereby increasing the difficulty of fire control through the creation of fuel "jackpots" that burn at a high intensity.

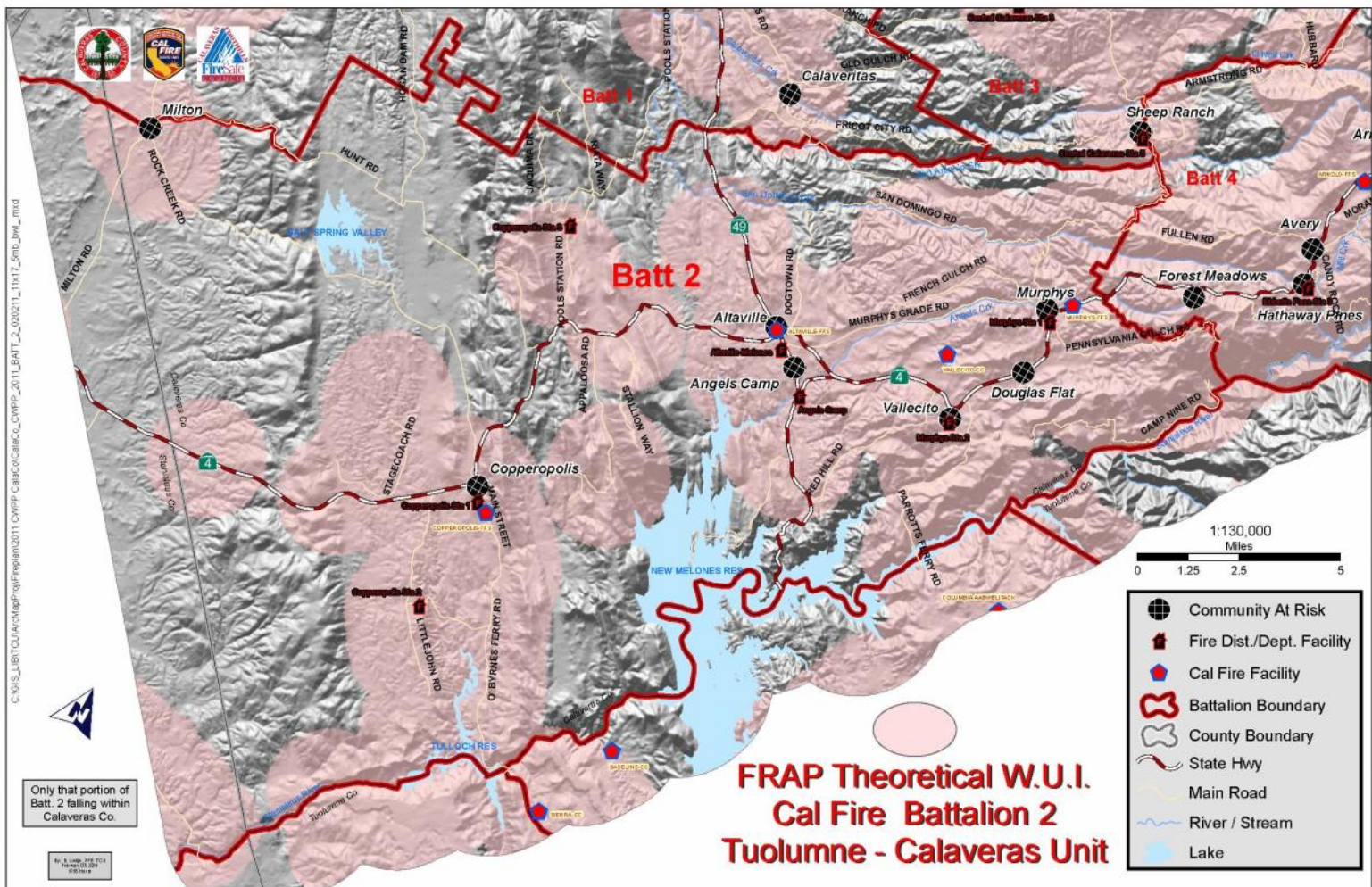
**Weather:** Typical fire season temperature patterns in the Battalion reflect lows in the 60's and highs in the 90's to the 100's. Relative humidity runs in the mid-teens to mid- twenties during daylight hours often with poor overnight recovery. Prevailing wind is generally from the west. North wind events usually result in an increase in fire activity and it is not uncommon to experience an east wind event. Late August and September bring the threat of thunderstorm activity and it is not uncommon for dry lightning to occur over the Bear Mountain Range and Gopher Ridge. These natural ignition causes mixed with high temperatures and low humidity's can produce large late season fire incidents.

**Fire History:** Large fire occurrence in the Battalion has been on roughly a 10 year cycle. The areas of concern during a large fire will be in and around the town of Murphys, and the subdivisions of Bar XX, Circle XX, and Diamond XX.

## Battalion 2 W.U.I. Information

The following communities are considered at risk by the California Fire Alliance and Cal Fire; Altaville, Angels Camp, Copperopolis, Douglas Flat, Milton, Murphys, and Vallecito. A public meeting was held on February 4, 2011 in Murphys to discuss the C.W.P.P. as well as to set W.U.I. boundaries for the Battalion 2 section of the plan. The public in attendance with the assistance of Cal Fire Battalion Chief Mario Hernandez set the W.U.I. boundaries that are to follow. W.U.I. boundaries were set using several key factors including, topography, fuels, fire history, defendability of communities and safety of community members as well as emergency services employees. A F.R.A.P. map of all the Battalion 1 W.U.I.'s, a map of the publics determined battalion 1 W.U.I.'s and an individual W.U.I. area map is provided as well as a general description and history of the communities within that W.U.I. boundary have been provided.

## Battalion 2 F.R.A.P. Map

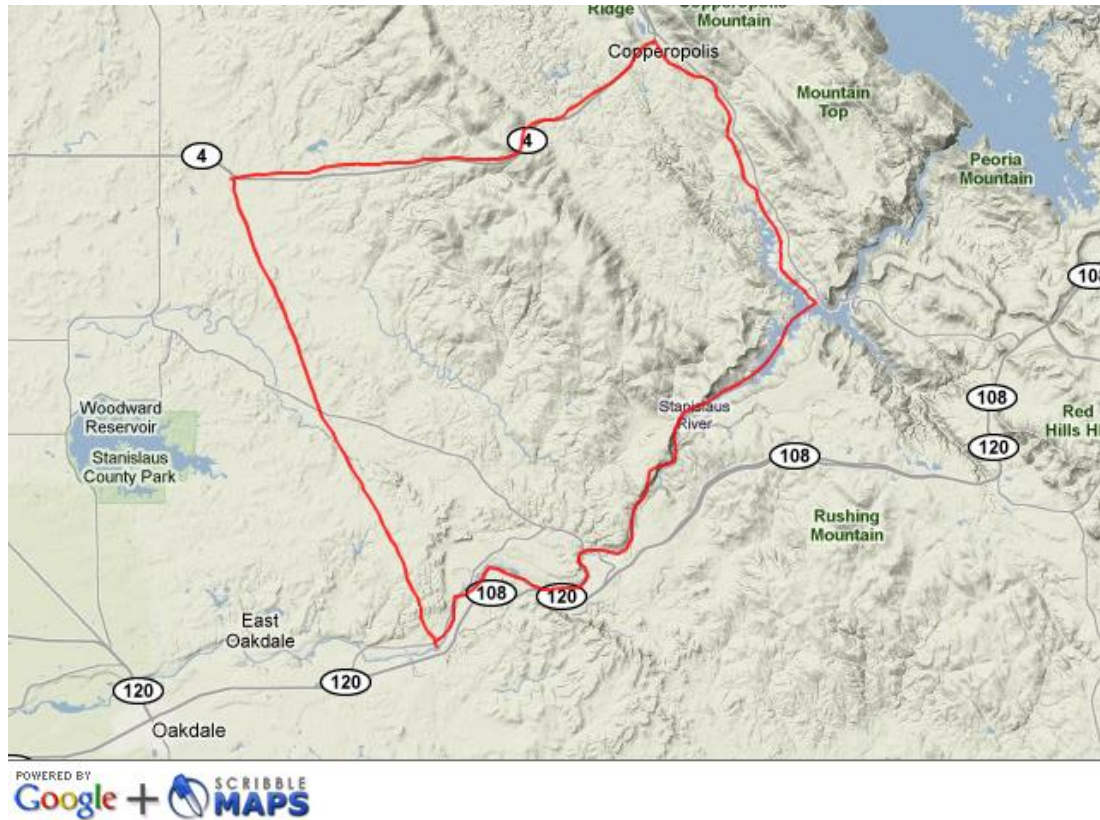


## Battalion 2 W.U.I. Map



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## Copper Cove 2-1 W.U.I. Map



Copperopolis is the only community designated as a community at risk in the Copper Cove W.U.I.. During the Battalion 2 Public meeting held on February 4, 2011 it was determined that Copper Cove Subdivision as well as Copper Village subdivision need to be recognized as communities at risk.

### **Copperopolis**

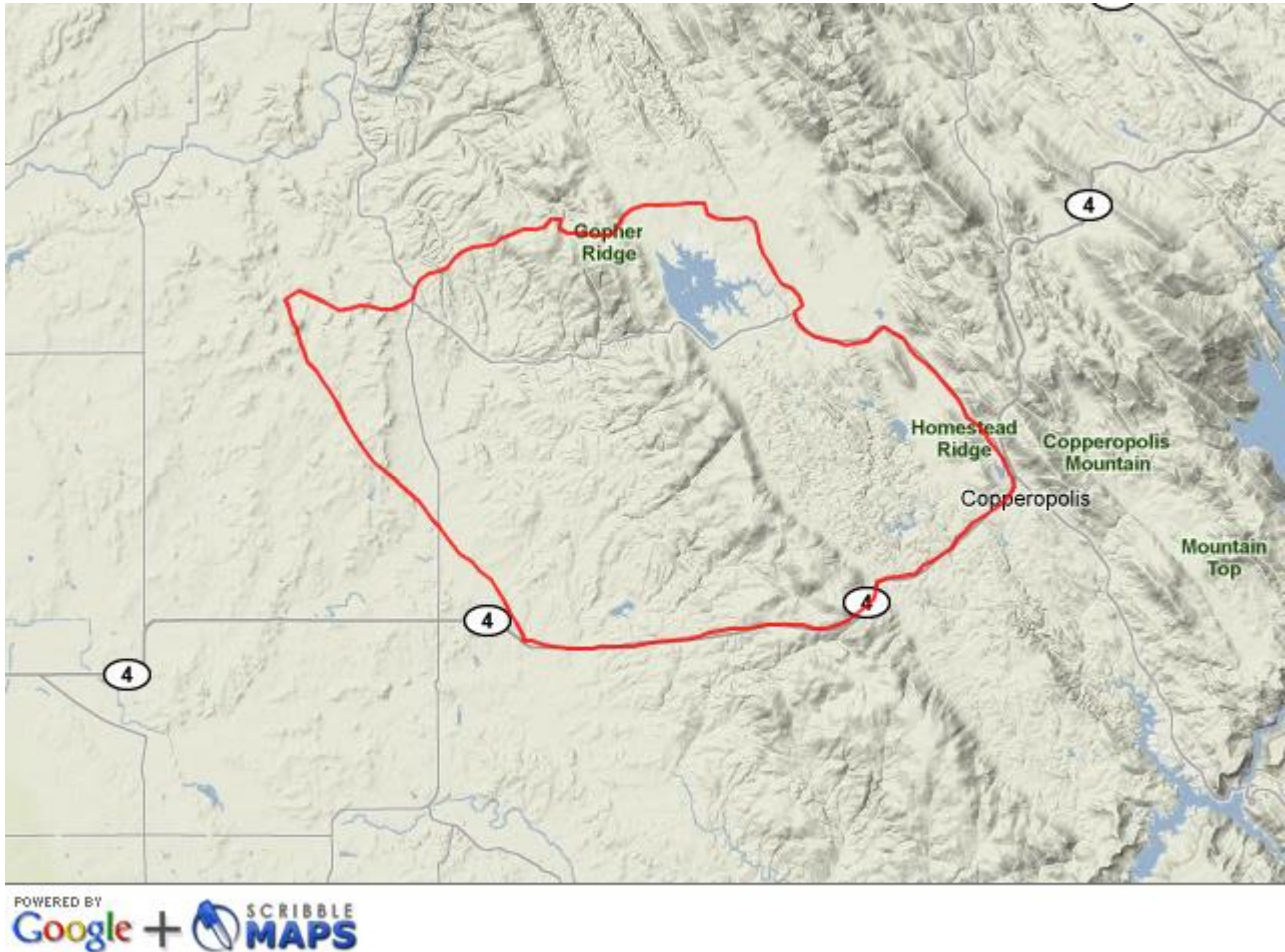
Copperopolis is a census-designated place (CDP) in Calaveras County, California, United States. The population was 2,363 at the 2000 census. The town is located along State Route 4 and is registered as California Historical Landmark #296.

Unlike most of the other mining towns in the county, Copperopolis' claim to fame isn't gold, but copper. It was founded in 1860 by William K. Reed, Dr. Allen Blatchly, and Thomas McCarty, at the site of the second big discovery of copper ore in the region (the first was nearby Telegraph City). The town grew rapidly, as the need for copper during the Civil War to make bullets was great. The copper was sent to Stockton and then on to San Francisco, where it was loaded onto ships and taken around Cape Horn before finally arriving in smelters on the East Coast.

After the war ended, the expense of mining and shipping copper proved to be too high and the population dwindled as the mines closed. However, a Boston company purchased the mines in the 1880s and mining operations resumed. The town went through boom periods during the two World Wars, when demand for copper went up again. By the time the mines closed in 1946, according to the U.S. Bureau of Mines, they had produced 72,598,883 pounds of copper worth over \$12 million. No copper mining has been done since.

The first post office was established in 1861. Copperopolis has four buildings listed on the National Register of Historic Places: Copperopolis Armory, Copperopolis Congressional Church, Hongsberger Store and Reed's Store. According to the United States Census Bureau, the CDP has a total area of 22.1 square miles (57.4 km<sup>2</sup>), of which, 21.5 square miles (55.7 km<sup>2</sup>) of it is land and 0.6 square miles (1.7 km<sup>2</sup>) of it (2.89%) is water.

## Diamond XX 2-2 W.U.I. Map



Copperopolis is the only community designated as a community at risk in the Diamond XX W.U.I. During the Battalion 2 Public meeting held on February 4, 2011 it was determined that the Diamond XX Subdivision needs to be recognized as a community at risk.

### **Copperopolis**

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## **Milton**

Milton is an unincorporated community in Calaveras County, California. It lies at an elevation of 394 feet (120 m). Completion of the Southern Pacific Railroad in 1871 marked the birth of the town of Milton. Named after Milton Latham, one of the railroad construction engineers, this town was the first in Calaveras County to have a railroad. Freight and passengers continued their journeys to other parts of Calaveras County by wagon and stagecoach. The town was also the terminus of the Stockton and Copperopolis Railroad. The town today is registered as California Historical Landmark #262. A post office was established in 1871 and closed in 1942.

## Bar XX 2-3 W.U.I. Map



Copperopolis is the only community designated as a community at risk in the Bar XX W.U.I. During the Battalion 2 Public meeting held on February 4, 2011 it was determined that the Bar XX Subdivision needs to be recognized as a community at risk.

### **Copperopolis**

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The first post office was established in 1861. Copperopolis has four buildings listed on the National Register of Historic Places: Copperopolis Armory, Copperopolis Congressional Church, Hongsberger Store and Reed's Store. According to the United States Census Bureau, the CDP has a total area of 22.1 square miles (57.4 km<sup>2</sup>), of which, 21.5 square miles (55.7 km<sup>2</sup>) of it is land and 0.6 square miles (1.7 km<sup>2</sup>) of it (2.89%) is water.

## Circle XX 2-4 W.U.I. Map



Altaville, Angels Camp and Copperopolis are the only communities designated as communities at risk in the Circle XX W.U.I. During the Battalion 2 Public meeting held on February 4, 2011 it was determined that the Circle XX Subdivision needed to be recognized as a community at risk.

### **Altaville**

Altaville (formerly, Cherokee Flat, Forks-of-the Road, Low Divide, and Winterton) is a former unincorporated community in Calaveras County, California, now located in the northwest portion of the city of Angels Camp. It sits at an elevation of 1,542 feet (470 m) above sea level, at the intersections of SR 49 and SR 4.

The town was established in 1852 on Cherokee Creek. Notorious bandit Joaquin Murrieta supposedly spent so much time here that a mountain northwest of the creek was named Joaquin Mountain. Although gold was discovered here in 1854, it didn't last long, but the town survived due to its position as an important point for supplies and machinery. D.D.

Demerest established a foundry here in 1854, and others soon followed. Most of the stamp mills and a large part of the mining machinery erected in Calaveras and Tuolumne Counties were built at the Altaville Foundry. A brick schoolhouse was built at Altaville in 1858 and the town site was established in 1873. A post office was established in 1904, closed it in 1943, and re-established it in 1944. Altaville was also the site of an archaeological hoax, the Calaveras Skull. The town today is registered as California Historical Landmark #288.

### **Angel Camp**

Angels Camp, also known as City of Angels and formerly Angel's Camp, Angels, Angels City, Carson's Creek, and Clearlake, is the only incorporated city in Calaveras County, California, United States. It lies at an elevation of 1378 feet (420 m).

Mark Twain based his short story "The Celebrated Jumping Frog of Calaveras County" on a story he claimed he heard at the Angels Hotel. The event is commemorated with a Jumping Frog Jubilee each May at the Calaveras County Fairgrounds, just east of the city. Because of this, Angels Camp is sometimes referred to as "Frogtown." United States Ski Team member and two time Alpine skiing World Cup Downhill Champion Kyle Rasmussen lives in Angels Camp.

The city is California Historical Landmark #287. The Angels Hotel is listed on the National Register of Historic Places (NRHP).

Henry and George Angel were soldiers serving under John C. Frémont during the Mexican-American War. When the California Gold Rush started, they tried their hand at prospecting, but decided they didn't like the labor involved, so they set up a trading post, which became a camp, and eventually a town. The placers around their camp were very productive but gave out after a few years, and the population began to dwindle until gold-bearing quartz veins were discovered in the town, which brought people back. Those mines operated for the next few decades, producing over \$20 million worth of gold, processed by stamp mills in town. It was said that when the last mill finally ceased operations, the townspeople couldn't sleep, the silence was so loud.

The first post office was established in 1851 (and called Carson's Creek). It was renamed along with the town in 1853. The city was incorporated under the name of "Angels" in 1912. According to the United States Census Bureau, the city has a total area of 3.0 square miles (7.8 km<sup>2</sup>), all of it land.

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## Angels Camp W.U.I. 2-5 Map



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Altaville, Angels Camp and parts of Vallecito are the only communities considered at risk within the Angels Camp W.U.I.

### **Altaville**

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## **Angel Camp**

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## **Vallecito**

Vallecito ("Little Valley" in Spanish; formerly, Murphy's Old Diggings, Valacito, Vallicita, Vallicito) is a census-designated place (CDP) in Calaveras County, California, United States. The population was 427 at the 2000 census. The town is registered as California Historical Landmark #273. Nearby is Moaning Cavern, the largest cave chamber in California, which the Miwok Indians used as a burial ground.

Vallecito was one of California's important early-day mining towns. Gold was discovered here by the Murphy brothers in 1849, and it was originally called "Murphys Diggings," which became "Murphys Old Diggings" when they moved on to greener pastures at "Murphys New Diggings" (which became the town of Murphys). The town was revitalized in 1852 when extremely rich deposits of gold were discovered running practically through the center of town. A post office was established in 1854, which is still in use today.

The Vallecito Bell, cast at Troy, New York in 1853, was brought around Cape Horn. It was purchased from the ship with funds contributed by early-day residents and brought to Vallecito to be erected in a large oak tree in 1854. It was used to call the people together until February 16, 1939, when a severe wind blew the old tree down. The first post office opened in 1854 as Vallicita; the town's name was changed to Vallecito in 1940. According to the United States Census Bureau, the CDP has a total area of 8.6 square miles (22.2 km<sup>2</sup>), all of it land.

## Dogtown 2-6 W.U.I. Map



Parts of Angels Camp, Vallecito and Altaville are the only communities designated at risk in the Six Mile North W.U.I.

### **Altaville**

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Mark Twain based his short story "The Celebrated Jumping Frog of Calaveras County" on a story he claimed he heard at the Angels Hotel. The event is commemorated with a Jumping Frog Jubilee each May at the Calaveras County Fairgrounds, just east of the city. Because of this, Angels Camp is sometimes referred to as "Frogtown." United States Ski Team member and two time Alpine skiing World Cup Downhill Champion Kyle Rasmussen lives in Angels Camp.

The city is California Historical Landmark #287. The Angels Hotel is listed on the National Register of Historic Places (NRHP).

Henry and George Angel were soldiers serving under John C. Frémont during the Mexican-American War. When the California Gold Rush started, they tried their hand at prospecting, but decided they didn't like the labor involved, so they set up a trading post, which became a camp, and eventually a town. The placers around their camp were very productive but gave out after a few years, and the population began to dwindle until gold-bearing quartz veins were discovered in the town, which brought people back. Those mines operated for the next few decades, producing over \$20 million worth of gold, processed by stamp mills in town. It was said that when the last mill finally ceased operations, the townspeople couldn't sleep, the silence was so loud.

The first post office was established in 1851 (and called Carson's Creek). It was renamed along with the town in 1853. The city was incorporated under the name of "Angels" in 1912. According to the United States Census Bureau, the city has a total area of 3.0 square miles (7.8 km<sup>2</sup>), all of it land.

## **Vallecito**

Vallecito ("Little Valley" in Spanish; formerly, Murphy's Old Diggings, Valacito, Vallicita, Vallicito) is a census-designated place (CDP) in Calaveras County, California, United States. The population was 427 at the 2000 census. The town is registered as California Historical Landmark #273. Nearby is Moaning Cavern, the largest cave chamber in California, which the Miwok Indians used as a burial ground.

Vallecito was one of California's important early-day mining towns. Gold was discovered here by the Murphy brothers in 1849, and it was originally called "Murphys Diggings," which became "Murphys Old Diggings" when they moved on to greener pastures at "Murphys New Diggings" (which became the town of Murphys). The town was revitalized in 1852 when extremely rich deposits of gold were discovered running practically through the center of town. A post office was established in 1854, which is still in use today.

The Vallecito Bell, cast at Troy, New York in 1853, was brought around Cape Horn. It was purchased from the ship with funds contributed by early-day residents and brought to Vallecito to be erected in a large oak tree in 1854. It was used to call the people together until February 16, 1939, when a severe wind blew the old tree down. The first post office opened in 1854 as Vallicita; the town's name was changed to Vallecito in 1940. According to the United States Census Bureau, the CDP has a total area of 8.6 square miles (22.2 km<sup>2</sup>), all of it land.

## Douglas Flat 2-7 W.U.I. Map



Douglas Flat, Vallecito and parts of Murphys are the only communities considered at risk in the Murphys South W.U.I.

### **Douglas Flat**

Douglas Flat (formerly, Douglas flat and Douglass Flat) is an unincorporated community in Calaveras County, California. It lies at an elevation of 1965 feet (599 m). Douglas Flat was a roaring mining camp of the early 1850s. In 1857 the Harper and Lone Star Claims produced \$130,000 worth of gold. The so-called Central Hill Channel, an ancient river deposit from which vast quantities of gold have been taken, is located here. The town today is registered as California Historical Landmark #272. The first post office opened in 1879, and was closed for a time in 1891 before reopening. The town's name honors Tom Douglas, and 1850s merchant.

### **Murphys**

Murphys (formerly, Murphy, Murphy's, Murphy's Camp, Murphy's Diggins, Murphys New Diggings, and Queen of the Sierra) is a census-designated place (CDP) in Calaveras County, California, United States. John and Daniel Murphy were part of the Stephens-Townsend-Murphy Party, the first immigrant party to bring wagons across the Sierra Nevada to Sutter's Fort in 1844. They earned a living as merchants, but like many others, began prospecting when the California Gold Rush began. They first started in Vallecito, which was known as "Murphys Old Diggings," before moving to another location in 1848 which became "Murphys New Diggings," "Murphy's Camp," and eventually just "Murphys."

The placer mining in this location was wildly successful. Miners were limited to claims of 8 square feet (0.75 m<sup>2</sup>) and yet many were still able to become rich. The Murphy brothers themselves, however, made far more money as merchants than as miners. In fact, John was so successful that he left town at the end of 1849 and never returned, having a personal fortune of nearly \$2 million. Roughly \$20 million in gold was discovered in Murphys and the surrounding area. Two of the richest diggings were named Owlsburg and Owlburrow Flat.<sup>[1]</sup>

Murphys was also a popular destination as a tourist resort, as the nearby giant sequoia trees in what is now Calaveras Big Trees State Park were a major draw, and they continue to be so today. After visiting, John Muir wrote in his book, *The Mountains of California* (1894):

"MURPHY'S CAMP is a curious old mining-town in Calaveras County, at an elevation of 2,400 feet (730 m) above the sea, situated like a nest in the center of a rough, gravelly region, rich in gold. Granites, slates, lavas, limestone, iron ores, quartz veins, auriferous gravels, remnants of dead fire-rivers and dead water-rivers are developed here side by side within a radius of a few miles, and placed invitingly open before the student like a book, while the people and the region beyond the camp furnish mines of study of never-failing interest and variety."

Like many other mining towns, fire was its bane and the town was destroyed three times by flames, in 1859, 1874, and 1893. After the second major fire, there was little gold left to mine, and so the town was never rebuilt to its boomtown condition. However, Murphys continued to thrive as a merchant center, supplying many of the silver mines in Nevada with provisions via Ebbetts Pass. The town is registered as California Historical Landmark #275. A "Hall of Comparative Oventions" built by a chapter of the clampers still stands in Murphys. The picture below labeled "Murphys' Famous Residents Wall" is a picture of the "Wall of Comparative Oventions" at the "Old Timer Museum" in Murphys, CA. The plaques on the wall are installed and maintained by members of "E Clampus Vitus." The first post office was established as Murphy's in 1851. The name was changed to Murphy in 1894, and finally to Murphys in 1935.

According to the United States Census Bureau, the CDP has a total area of 10.3 square miles (26.7 km<sup>2</sup>), all of it land.

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## Murphys Pines 2-8 W.U.I. Map



Murphys and parts of Douglas Flat and Vallecito are the only communities considered at risk in the Murphys North W.U.I.

### **Douglas Flat**

Douglas Flat (formerly, Douglas flat and Douglass Flat) is an unincorporated community in Calaveras County, California. It lies at an elevation of 1965 feet (599 m). Douglas Flat was a roaring mining camp of the early 1850s. In 1857 the Harper and Lone Star Claims produced \$130,000 worth of gold. The so-called Central Hill Channel, an ancient river deposit from which vast quantities of gold have been taken, is located here. The town today is registered as California Historical Landmark #272. The first post office opened in 1879, and was closed for a time in 1891 before reopening. The town's name honors Tom Douglas, an 1850s merchant.

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## **Battalion 2 Mitigation Efforts**

History has shown that all assets within the Battalion have the potential to experience the threat of wildfire at some time or another. The best way to address this will be to prioritize Battalion 2 mitigation efforts based on the following criteria:

- o First Priority – Occupied residential and commercial structures.
- o Second Priority – Grass and Rangeland utilized for cattle and sheep production.
- o Third Priority – Watershed protection.

The western areas and communities in Battalion 2, below 2000 foot elevation, consist of scattered ranches and farms, or are in rural subdivision configurations, such as the “XX” and Copper Cove subdivisions. The size of these developed parcels, typically larger than the “urban” sized parcels of the newest subdivisions and in many cases over five acres, provides the opportunity to implement the required 100 foot fuel removal well within the property boundary. The fuel model for these areas is predominately grass, and oak woodlands. The ranchlands are often grazed off by midsummer, significantly inhibiting the spread of fire, and supplementing the clearance work done around structures. However, within the subdivisions no such benefit is realized, so a concerted effort toward promoting 4291 compliance remains important in the west.

In those areas of the Battalion above 2000’ elevation, typically east of Hwy 49, the heavier brush fuels are reaching their most vulnerable state, fire behavior wise, by midsummer. The result is a particularly significant fire threat to the various assets in these Wildland Urban Interface areas; such as the greater Murphys area.

Defensible Space Inspections: Removing fuels around structures provides the single most effective action for increasing structure survivability during a wildfire. An aggressive inspection program can provide firefighters with defensible space for structure protection operations. Achieving initial compliance with the 100’ and related requirements involves a great deal of effort on the part of CAL FIRE engine company personnel doing the inspections. It starts with educating the property owners, and continues with on-site consultations over the course of multiple inspection visits to the same property. This initial compliance is a challenge for property owners as well due to the substantial volume of material that must be removed. This removal is often hindered by the cost of hiring out the work, APCD and CAL FIRE burning restrictions, and the travel time to the few collection / disposal sites. As a result of the required effort the Battalion’s focus will be on quality over quantity.

- o PRC4291: As part of the Unit wide effort to increase compliance with and enforcement of PRC-4291 requirements, three areas within Battalion 2 are targeted for onsite inspection by engine company personnel.
- o Altaville FFS personnel will be active in the Bar XX subdivision and areas adjacent to New Melones reservoir.

- o Murphys FFS personnel are targeting the Murphys Pines and Darby subdivisions and immediately adjacent parcels.
- o Copperopolis FFS personnel will be working within the Copper Cove subdivision along with the Diamond XX and Circle XX subdivisions.

All targeted areas present challenges to fire control operations should any fire become established within them. The Murphys Pines and Darby area subdivisions were planned and built out from the 1960's to the 1980's. Both feature road system designs allowing only single roadway ingress and egress. In addition, the construction materials and techniques used predates ignition resistant building construction standards. The Bar XX subdivision presents similar challenges - narrow roads hindering ingress and egress, a mix of mostly widely scattered older homes and ranchettes, narrow driveways, dense brush fuels and rolling terrain in close proximity to New Melones reservoir. In the Copperopolis area the Copper Cove, Diamond XX and Circle XX subdivisions feature light flashy fuels over rolling terrain, one way in/out vehicle access, close proximity to both a highway corridor with an active fire history and steep terrain with heavy fuels.

Fuel Reduction / Breaks: Due to the lack of large land owners, such as Sierra Pacific Industries and the US Forest Service, landscape scale fuel reduction projects like fuel breaks are more difficult to identify and implement. As a result, the Battalion focuses fuel reduction efforts on the residential parcels within Communities at Risk by way of PRC 4291 enforcement. To supplement 4291 enforcement, the Battalion continues to pursue and support fuel reduction efforts initiated by the local Fire Safe Council, Fire Districts and individual ranch and residential property owners.

- o Bar XX Fire Defense Project: an "Active" project as of early 2012, this Project consists of 3 Treatments:
  - o Whittle VMP: May of 2010, we were contacted by Perry Whittle, a land owner in the Bar XX area. Mr. Whittle has completed a Vegetation Management agreement with CAL FIRE in the year 2011. The Vegetation Management Plan is through the CEQA process. The Project is in active Status. The property owner as indicated an interest in maintaining this treatment area well into the future.
  - o Bar XX Safe Access / Egress Enhancement: To improve the safety of responding emergency personnel and retreating residents, CAL FIRE Hand Crews will brush 25' per side off the center line of the road system throughout the subdivision. In addition to improved access/egress, these treated roads may serve as control lines or aid the development of anchor points from which fire line construction can begin. This project was completed in early 2013.
  - o Bear Mountain Shaded Fuel Break: Construction of a Shaded Fuel Break along the ridge line of Bear Mountain in the vicinity of the Fowler Lookout. This fuel break will provide direct protection to multiple high-value communications installations including public safety repeaters mounted on the lookout, an FAA radar site and numerous privately owned telephone and misc. communications service repeaters. This treatment will also provide a temporary refuge site for residents of Stallion Rd who have just the one access/egress option and could be prevented from evacuating to highway

4 due to fire activity and/or incoming emergency resources. Ongoing maintenance thru the Whittle VMP.

- o Murphys Pines Subdivision Fire Defense Project Phase II - Roads Fuel Reduction Project: This new Treatment expanded on Proposition 40 work done previously within the subdivision for the purpose of “opening” access / egress routes. Intended to enhance public and responder safety, while providing fire control points within the subdivision; the Treatment outcome is a road system featuring the characteristics of a “shaded fuel break” straddling the roads. Activities included Cal Fire hand crews cutting and chipping or burning brush along designated roads within the Murphy’s Pines subdivision.

- o Calaveras County Roads Fuel Reduction Project: This project will maintain work that was done under the Proposition 40 program, as well as some additional roads. CAL FIRE hand crews will work with the County Road Department to cut and chip brush along the road right-of-ways of primary roads in Calaveras County. Roads have been prioritized by B4412 and B4413.

**Public Education:**

A variety of education methods are routinely employed in Battalion 2, including:

- o LE-62 Burn Permit Administration: The issuance of this so-called “door yard burn permit”, required for residential burning during portions of the year, provides a valuable opportunity for agency personnel to educate the general public on the threat posed by wildland fire to their homes and community, in addition to the specific burn requirements. The permits are valid for a period of two years which gives us the opportunity to reeducate the public when they are renewed.

- o Campfire Permits: This is another important opportunity to engage the public, especially those from out of the area seeking camping and outdoors experiences within the Battalion.

- o Roadside Sign Program: Battalion staff will continue promoting the fire prevention message regarding equipment caused fires via the 4x8 roadside signs. One additional signboard has been installed on Copper Cove Drive to better carry this message to the residents of Copper Cove, Saddle Creek, and Oak Canyon. In addition, we are working with the California Department of Transportation (CalTrans) to secure a location on State Hwy 4 at the Calaveras/Stanislaus county line for an additional sign. Being a primary entry point for commuters, part-time residents and visitors to Calaveras County, this stretch of highway experiences a very large volume of traffic, making it an excellent point from which to publicize our fire prevention messages. Another sign on Hwy 49 south of Angels Camp is used to announce outdoor debris burning related messages. This is an annual program in which signs are posted throughout the fire season.

- o Calaveras County Fair (aka Frog Jump): Battalion personnel continue their participation in the educational programs at the fair: helping to staff the CAL FIRE booth; participating with Smokey the Bear; static engine displays etc. This is an annual event.

- o School Fire Prevention Programs: Battalion personnel will continue to support and participate in annual school fire prevention programs in the Battalion in order to increase fire safety education and awareness.

**Law Enforcement:**

Continued close cooperation between Battalion personnel and the Unit's Law Enforcement staff in the event citations are needed to gain compliance with 4291 requirements is a priority. Without the full support of the Unit's LE staff, as evidenced by a willingness to issue citations, it's difficult for Battalion 4291 inspectors to maintain credibility within the community.

- o Cause Determination and Code Enforcement: A determined effort by Company Officers and LE staff, as needed, to determine a cause for all wildland ignitions. Accurate cause determination impacts several programs beyond the confines of the Battalion (Fire History, Fire Plan, Funding for example) and can be crucial to the subsequent ability of LE staff to issue citations for violations of the various PRC and PC codes, including debris burning, arson, power line clearance, and equipment related violations, among others.

- ) Ponderosa Fuel Break – Work with property owners to re-establish the Ponderosa Fuel Break between Fricot City road and the Murphys Pines Subdivision off of French Gulch road.
- ) Murphys Fuel Break – Work with Property owners and Cooperator's to maintain the Murphys Fuel break that runs from the top of Utica Grade along the North side of Murphys and tie it into the Murphys Pines Subdivision and Ponderosa Fuel Break. This fuel break has been utilized to protect the community of Murphys during the 1992 Old Gulch Fire and it was reopened during the 2015 Butte fire as a contingency line. Our hope is to keep this strategic line maintained for future use if the need arises.

**Battalion 2 Cooperators Mitigation Efforts**

Calaveras Foothills Fire Safe Council: Since 2001 the Fire Safe Council has been fully engaged in the planning and implementation of several successful county-wide fuel reduction and public education efforts, including: the production and distribution of Public Education materials, and programs; identification, planning and implementation of numerous on-the-ground fuel reduction projects; and the rewrite of the Community Wildfire Protection Plan. In the spring of 2011 their contractor finished work on the Calaveras County Community Wildfire Protection Plan, which was signed and ratified by the County Board of Supervisors in early June of 2011. In 2012 the FSC was unable to secure funding for the continuing activation of the following three projects; however, applications for 2013 funding for these projects have been submitted to the California Fire Safe Council Clearinghouse.

- o Seniors and Disabled Defensible Space Program: A program designed to aid seniors and the disabled in attaining compliance with PRC4291 requirements for 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

- o Door-to-Door Chipper Program: The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

- o Public Roadways Fire Break Phase 4: The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county road Fire Break Management Project, implemented in cooperation with the Calaveras Co Public Works Dept., will help in the following ways:

- o Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for emergency personnel and equipment as well as citizens involved in the evacuation process

- o Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics.

- o Create enhanced vehicle view along the roadway.

Clearing of brush along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

Based on the anticipated success of these projects, expansion of this project into the greater Murphys and Sheep Ranch areas (high elevation fuels) is anticipated in subsequent years.

Calaveras County: The County is a valuable partner in Battalion efforts to improve fire safety for residents and visitors. Access to Public Works staff and equipment has been instrumental in the success of several projects over the years. In July 2011 the Board of Supervisors ratified a new Community Wildfire Protection Plan.

- o Fuel Waste Program: Since 2003 disposal of forest fuels has been made much easier for local residents working to comply with state 4291 regulations, thanks to the County's Fuel Waste Disposal program. Under this program, homeowners may take all unwanted yard debris (brush, grass, pine needles, etc.) to local transfer stations and dump these materials for a nominal fee. The program has been very successful in encouraging compliance with fuel reduction around structures while improving air quality as a result of less "dooryard" burning by residents.

City of Angels Camp: The Angels Camp Fire Dept. has a "Fire Hazard Abatement Plan" similar to the State's 4291 requirements, concerning defensible space clearances around structures. Their inspection and enforcement efforts are completed each year by the end of May. Residents are

subject to a citation for non-compliance after June 1st. In June of 2012 the City adopted a Residential Debris Burning ordinance requiring residents to obtain a “door yard” burning permit from May through the end of the declared fire season. Burn procedural and safety rules and regulations continue in effect after fire season, however no permit is required. The City also has a Fireworks ordinance outlining the proper use of Safe and Sane fireworks within the City.

The city also has an ordinance regulating the use of fireworks within the city limits.

The specifics of the City’s weed abatement and fireworks regulations can be found here, under Title 8 Health and Safety:

<http://www.codepublishing.com/CA/angels/>

# Ponderosa Fuel Break Project

**Initial Checklist/Battalion: 2**  
**Priority: 1**  
**1**

**Within W.U.I?: Yes**  
**Document Effective Date: 5/1/16**  
**Author: Mario Hernandez**

**Status: Planning**  
**Sponsor: CFFSC**

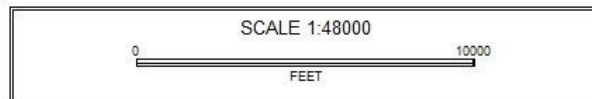
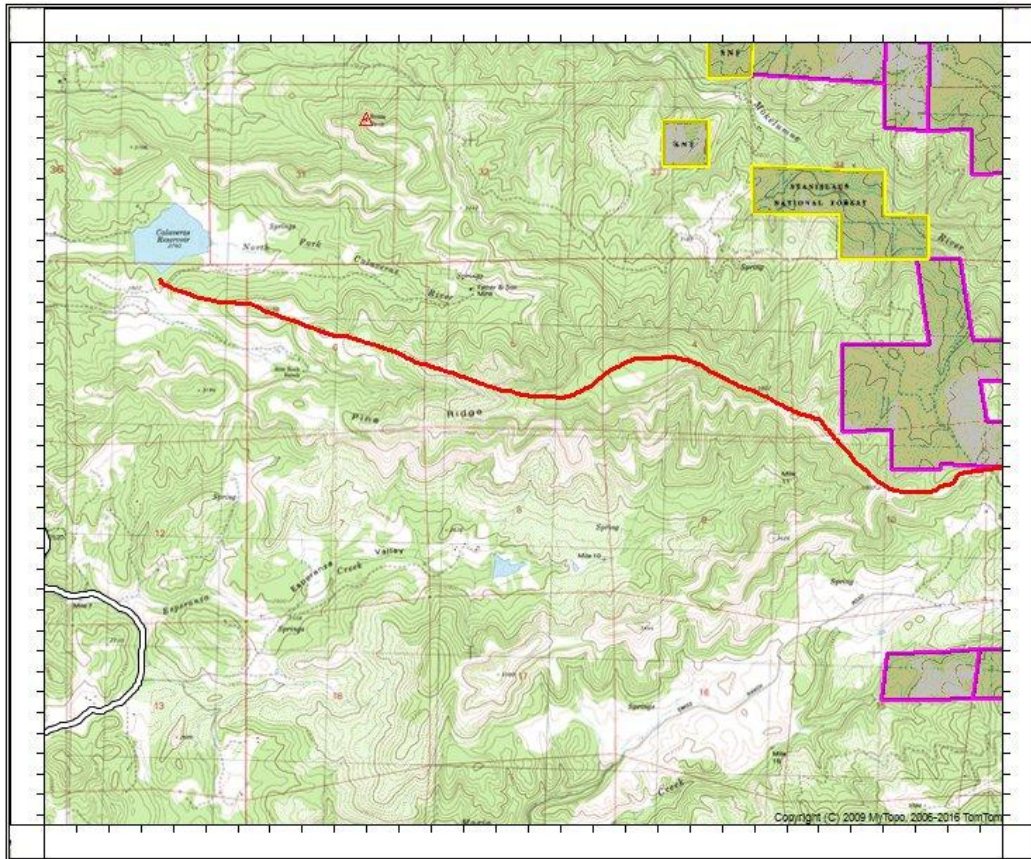
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**Funding Source: Unknown**  
**In-Kind:**

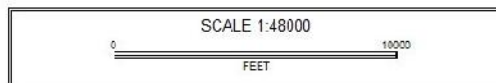
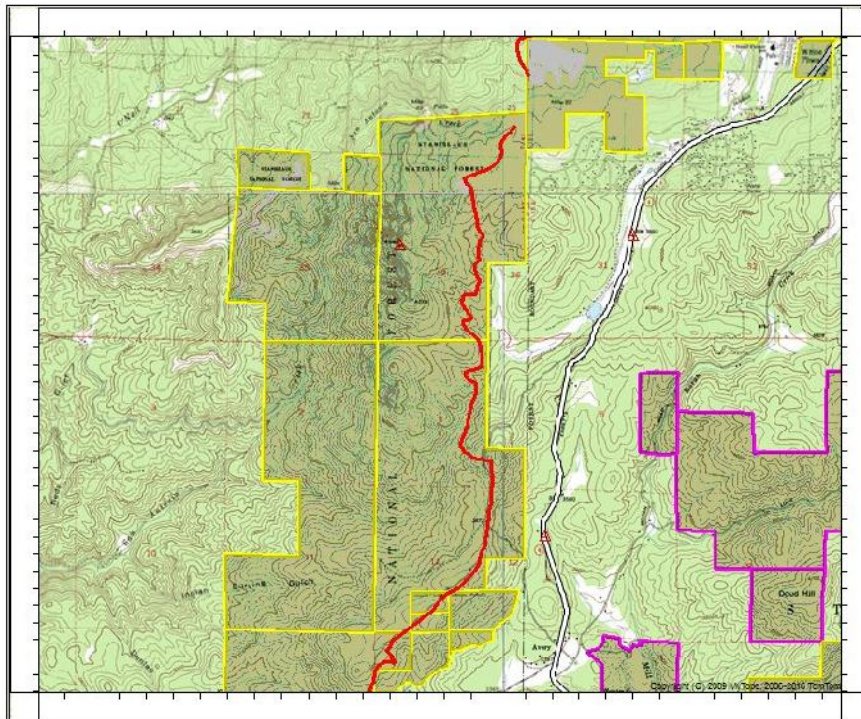
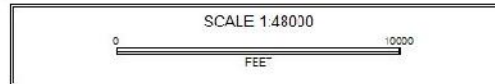
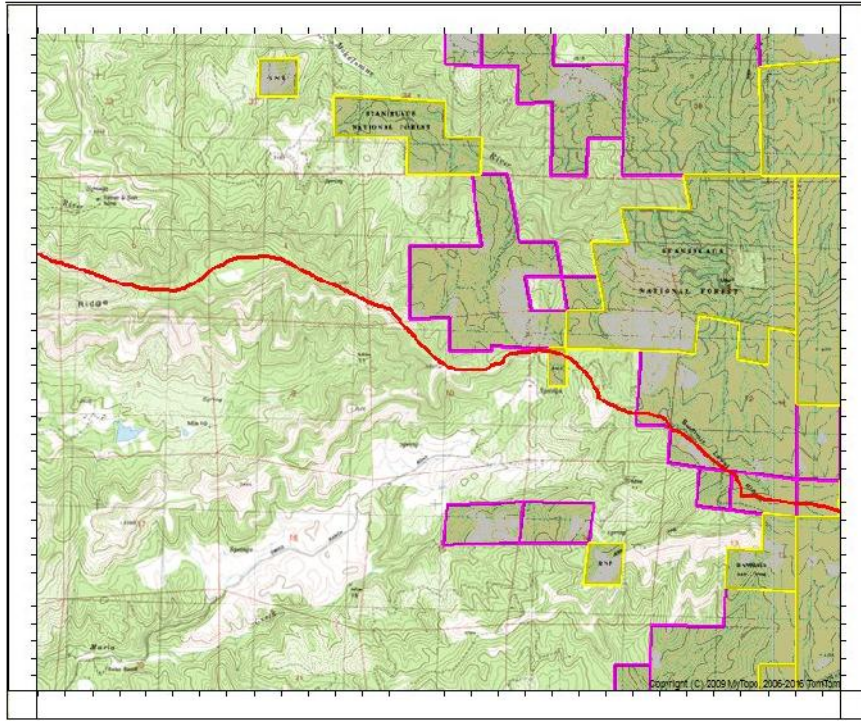
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**Length/Mi:**

**Tons/Fuel:**  
**Amount:**  
**Total:**

## PROJECT DESCRIPTION:

Shaded fuel break to provide strategic firefighting points as well as protect the Community of Murphys.





# Murphys Fuels Reduction Project

**Initial Checklist/Battalion: 2**

**Priority: 2**

**1**

**Within W.U.I? : Yes**

**Document Effective Date: 5/1/16**

**Author: Mario Hernandez**

**Status: Planning**

**Sponsor: CFFSC**

**Lat/Long: 38.144 N 120.438 W**

**Funding Source: Unknown**

**In-Kind:**

**Acres:**

**Length/Mi:**

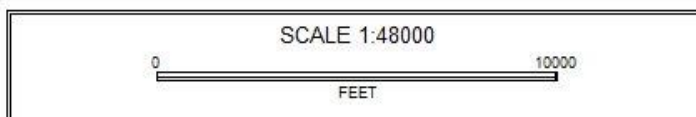
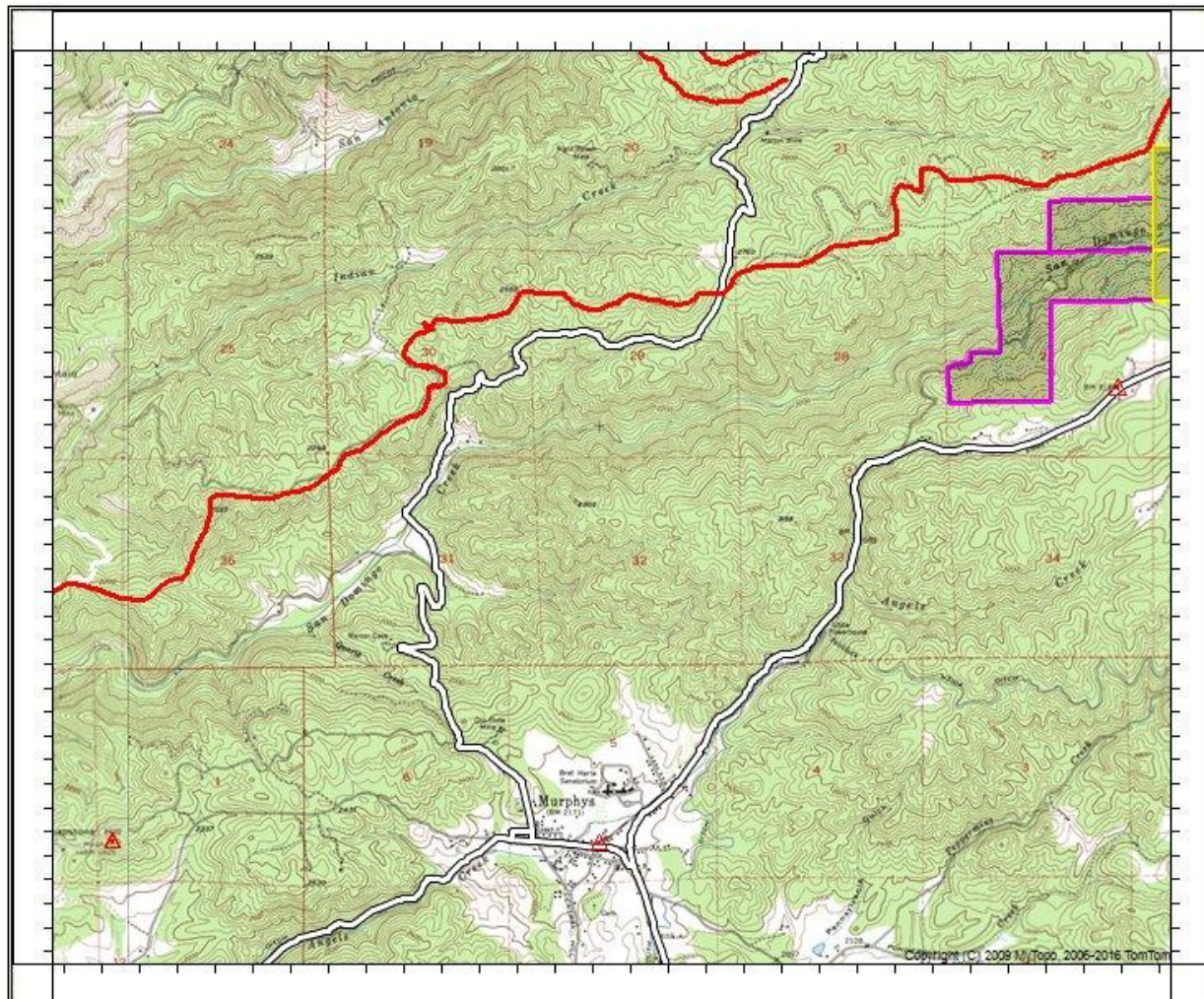
**Tons/Fuel:**

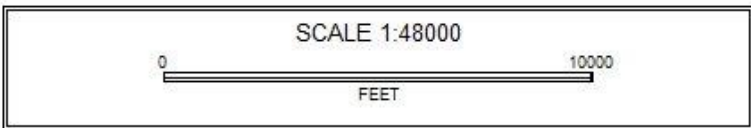
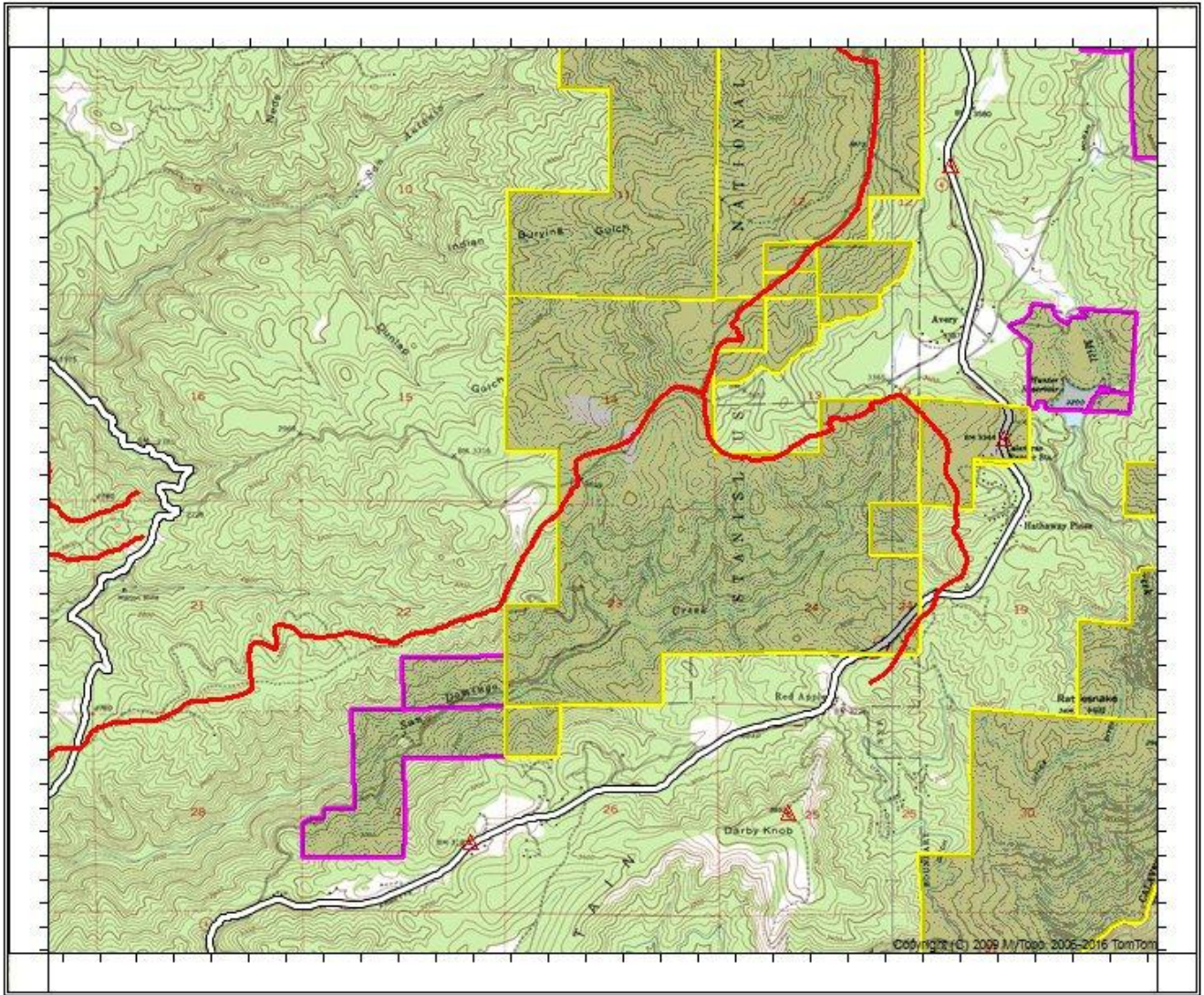
**Amount:**

**Total:**

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## Whittle VMP

**Initial Checklist/Battalion: 2**

**Priority: 3**

**Length/Mi:**

**Within W.U.I?: Yes**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**\$**

**Author Name: Mario Hernandez**

**Status: Current**

**Sponsor:**

**Lat/Long:**

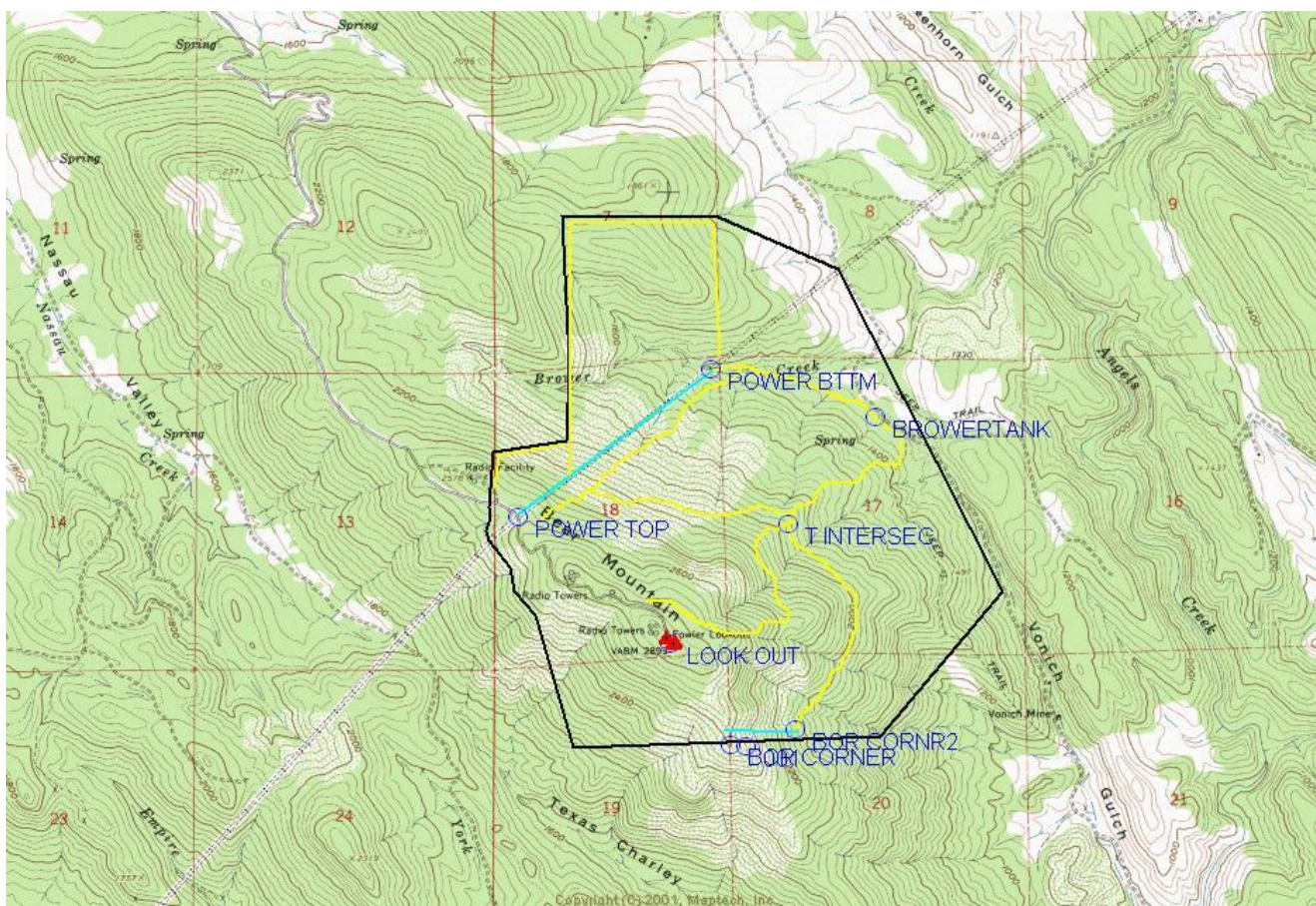
**Funding Source:**

**Acres:**

**Amount:**

**In-Kind:**

**Total:**



## Thompson Ridge Fire Access Rd.

**Initial Checklist/Battalion: 2**  
**Priority: 4**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Document Effective Date: 1/1/2011**  
**\$**

**Author Name: Mario Hernandez**

**Status: Planning**  
**Sponsor:**

**Lat/Long:**

**Funding Source:**

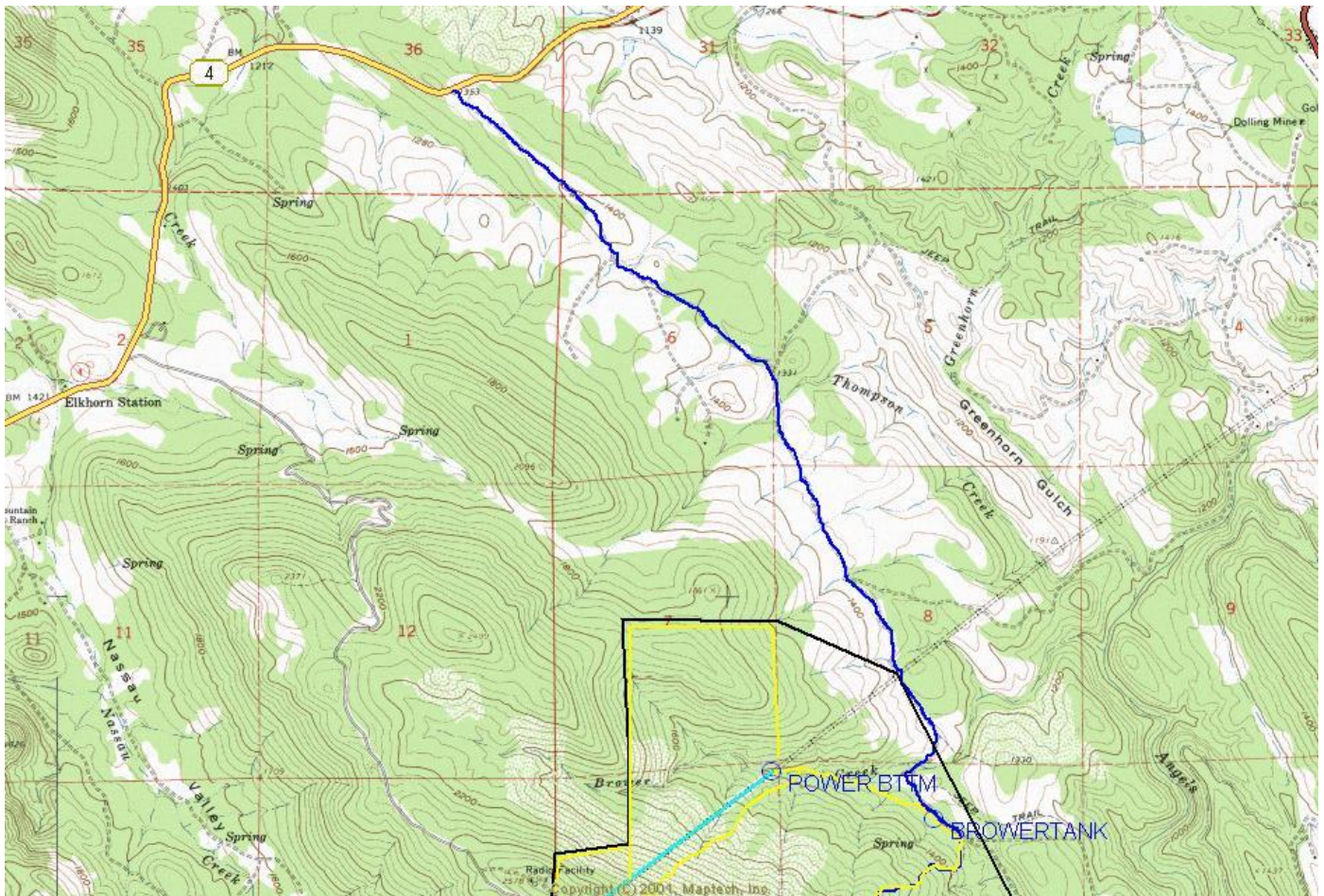
**Acres:**

**Amount:**

**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

Thompson Ridge Fire road from Hwy 4 to the top of Fowler.



## Spence Ranch Fire Road Access

**Initial Checklist/Battalion: 2**  
**Priority: 5**

**Length/Mi:**  
**Within W.U.I?: Yes**

**Tons/Fuel:**  
**Document Effective Date: 1/1/2011**  
**\$**

**Author Name: Mario Hernandez**

**Status: Planning**  
**Sponsor:**

**Lat/Long:**

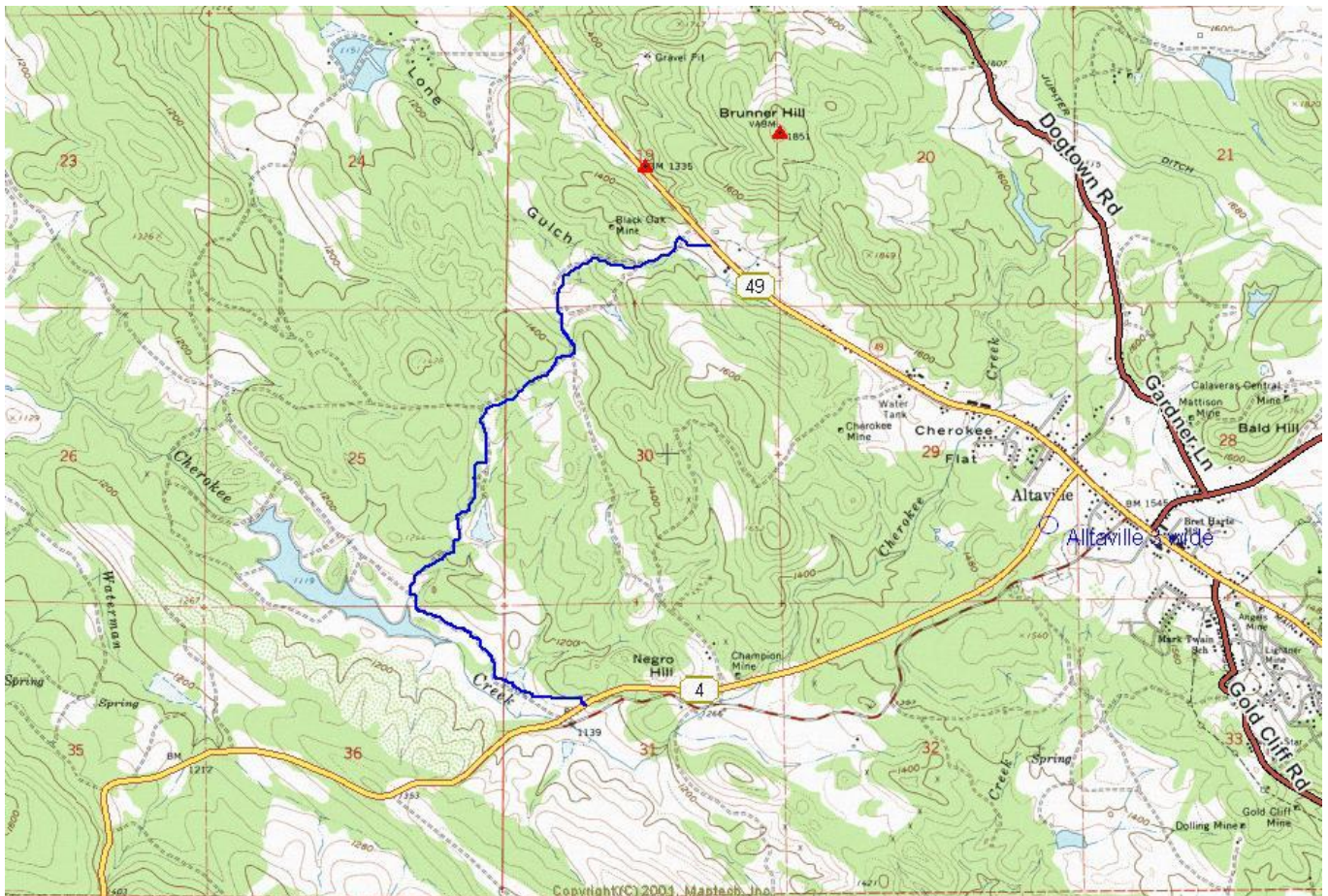
**Funding Source:**

**Acres:**

**Amount:**

**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:



## Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**  
**100**

**Status: Planning**

**Acres:**

**Priority: 6**

**Sponsor: CFFSC**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

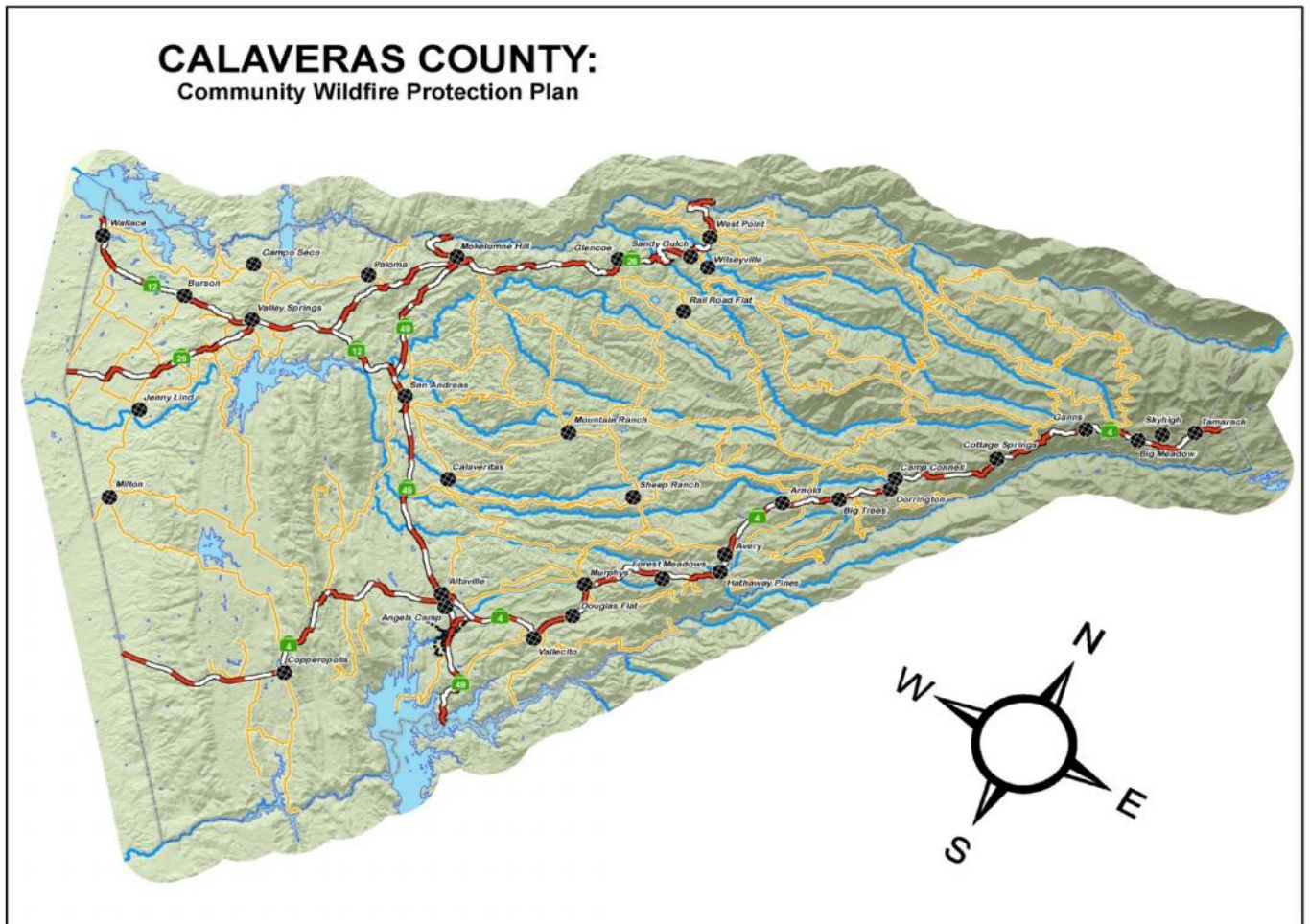
**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011** **Funding Source:**  
**Author Name: Bill Fullerton**

**Amount:**  
**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## Public Roadways Fuels Reduction

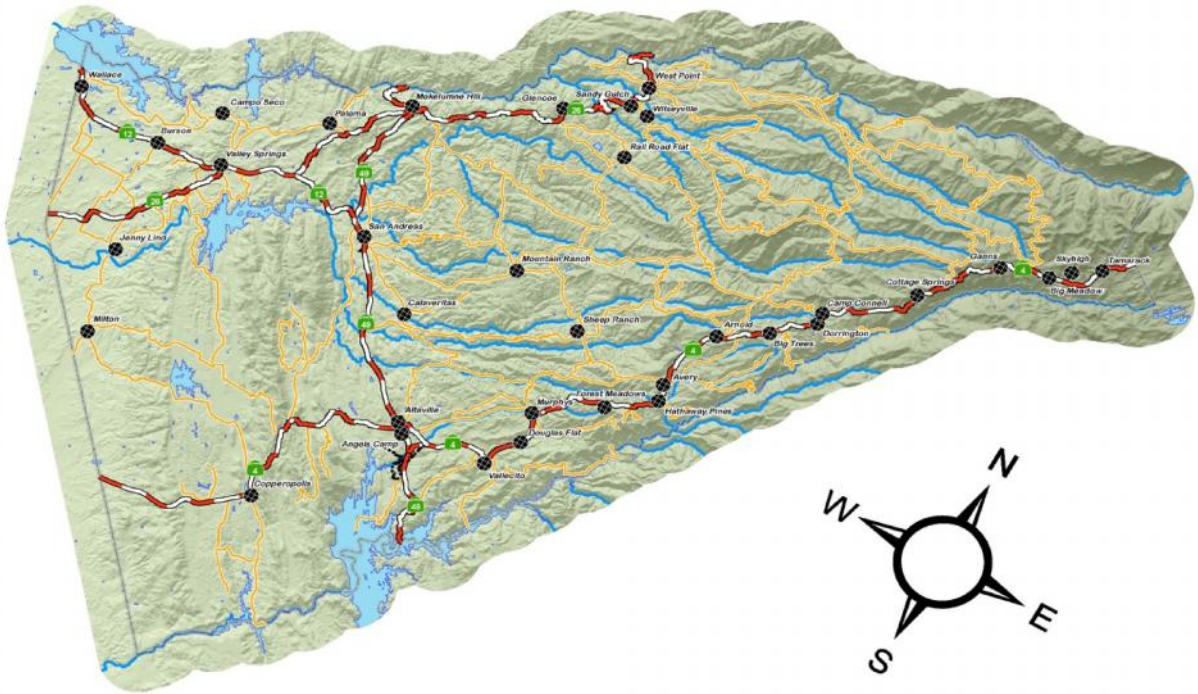
<b>Initial Checklist/Battalion: 1-4</b>	<b>Status: Planning</b>	<b>Acres: 30</b>
<b>Priority: 7</b>	<b>Sponsor: CFFSC</b>	
<b>Length/Mi:</b>		
<b>Within W.U.I?: Yes</b>	<b>Lat/Long: 38.196 N 120.679 W</b>	
<b>Tons/Fuel:</b>		
<b>Document Effective Date: 1/1/2011</b>	<b>Funding Source: Unknown</b>	<b>Amount:</b>
<b>Author Name: Bill Fullerton</b>		<b>In-Kind:</b>
		<b>Total:</b>

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush  
along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

# CALAVERAS COUNTY: Community Wildfire Protection Plan



# Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**  
**100**

**Status: Planning**

**Acres:**

**Priority: 8**

**Sponsor: CFFSC**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

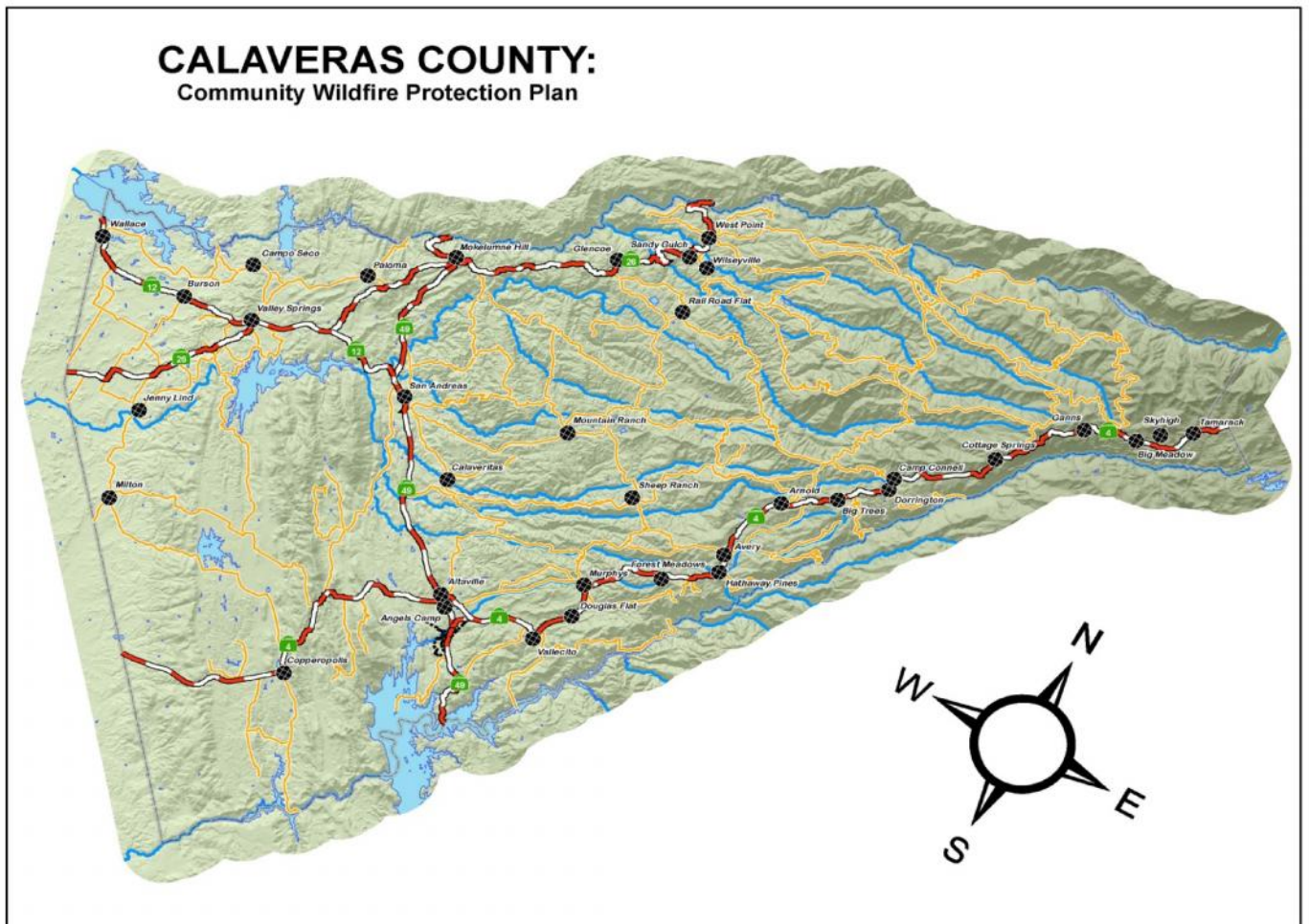
**Document Effective Date: 1/1/2011** **Funding Source:**  
**Author Name: Bill Fullerton**

**Amount:**  
**In-Kind:**  
**Total:**

## PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County.

The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles.



## Mt. Davis Fuels Reduction Project

**Initial Checklist/Battalion: 2**

**Priority: 9**

**1**

**Within W.U.I?: Yes**

**Document Effective Date: 5/1/16**

**Author: Ernst Mikkelsen**

**Status: Planning**

**Sponsor: CFFSC**

**Lat/Long: 38.144 N 120.438 W**

**Funding Source: Unknown**

**In-Kind:**

**Acres: 8**

**Length/Mi:**

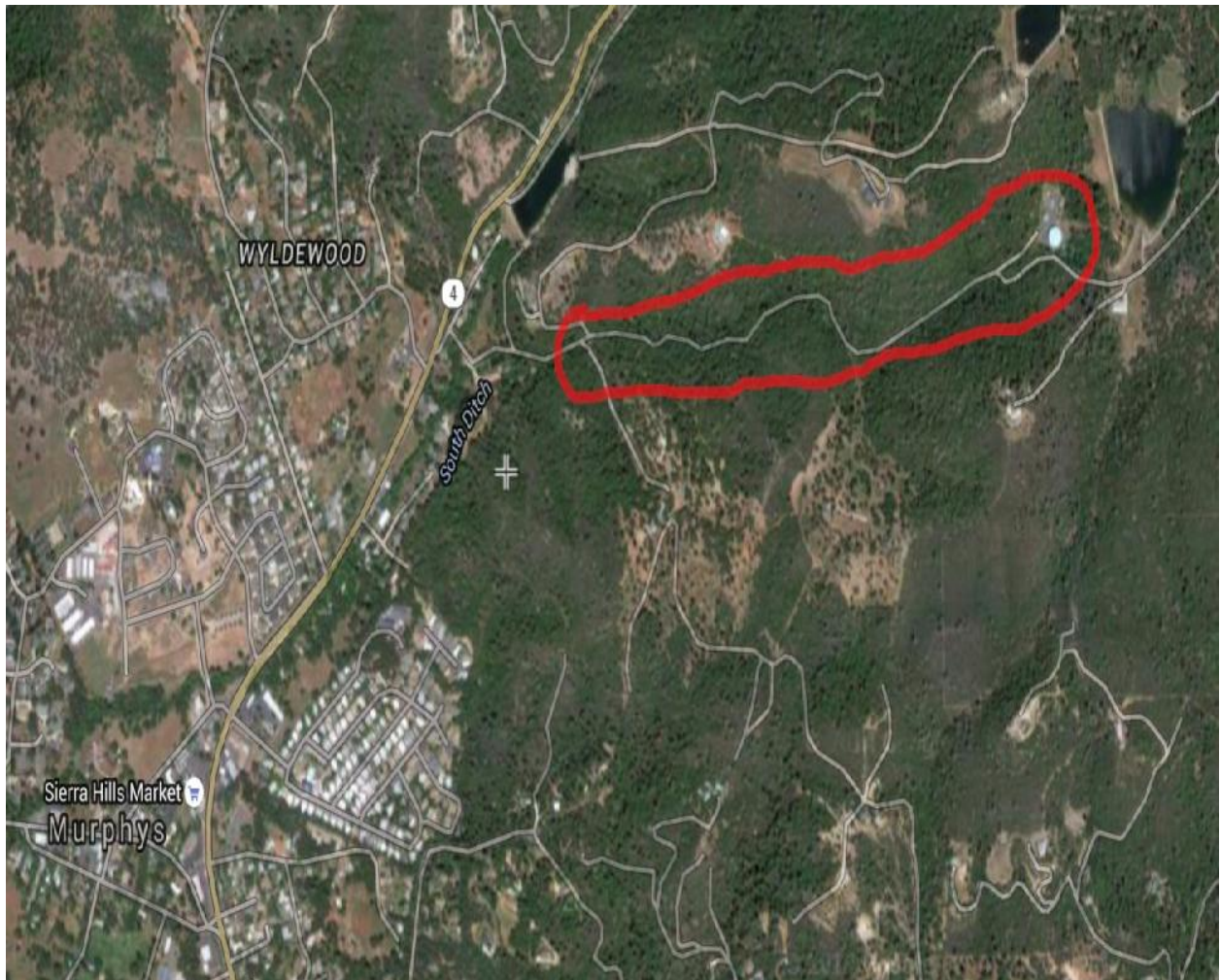
**Tons/Fuel:**

**Amount:**

**Total:**

### PROJECT DESCRIPTION:

Roadside fuels reduction along the length of Mt. Davis road up to UPUD water treatment plant and potable water storage facility.



## Crestview Fuels Reduction Project

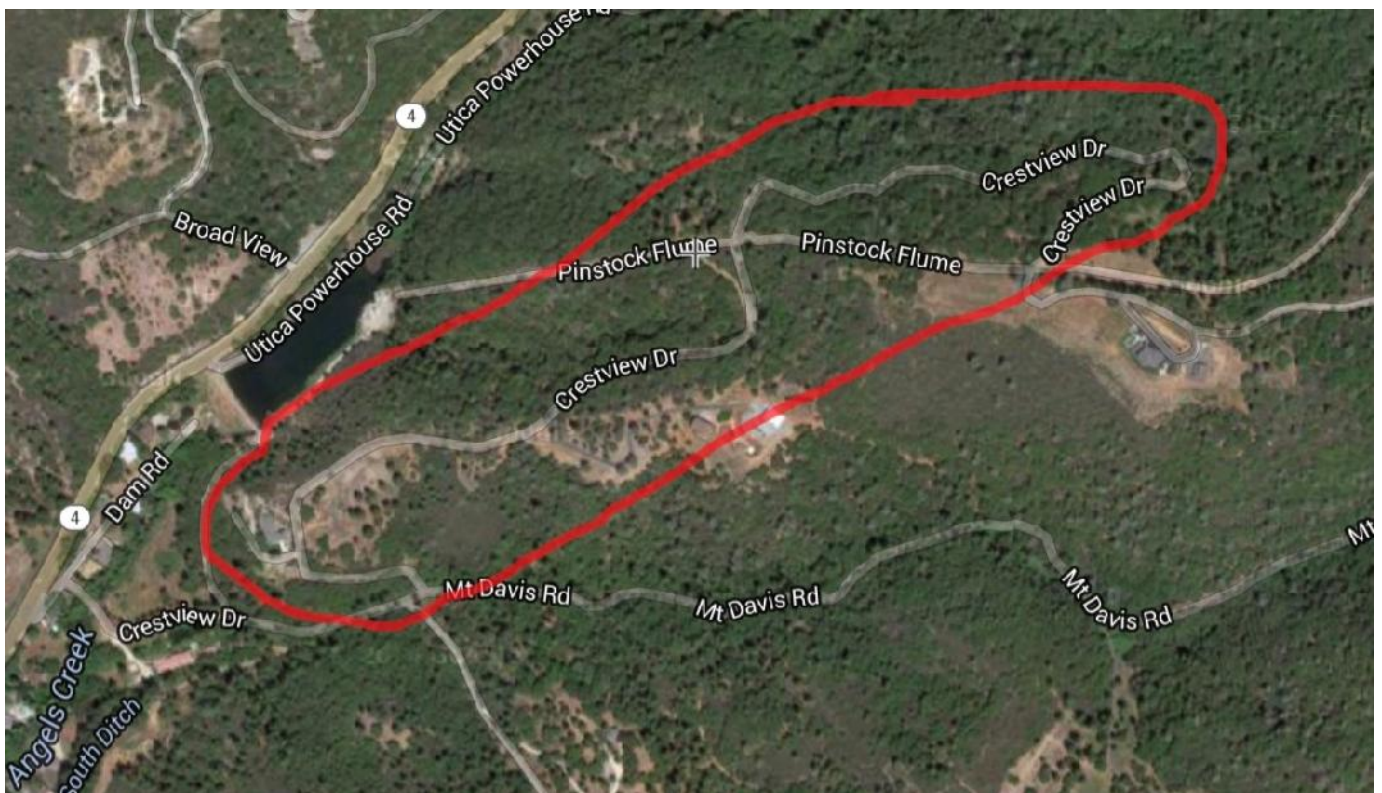
**Initial Checklist/Battalion:** 2  
**Priority:** 10  
1.5  
**Within W.U.I?:** Yes  
**Document Effective Date:** 5/1/16  
**Author:** Brian and Joanna Inks

**Status:** Planning  
**Sponsor:** CFFSC  
**Lat/Long:** 38.151 N 120.459 W  
**Funding Source:** Unknown  
**In-Kind:**

**Acres:** 10  
**Length/Mi:**  
**Tons/Fuel:**  
**Amount:**  
**Total:**

### PROJECT DESCRIPTION:

Roadside fuels reduction along the length of Crestview Drive up to UPA water fore bay & AT&T communication tower.



# Structural Ignitability Reduction and Fire Resiliency Building Techniques

**Initial Checklist/Battalion: 1**

**Status: Planning**

**Acres:**

**Priority: 11**

**Sponsor: CHIPS**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source:**

**Amount: \$**

**Author Name: Rick Breeze-Martin**

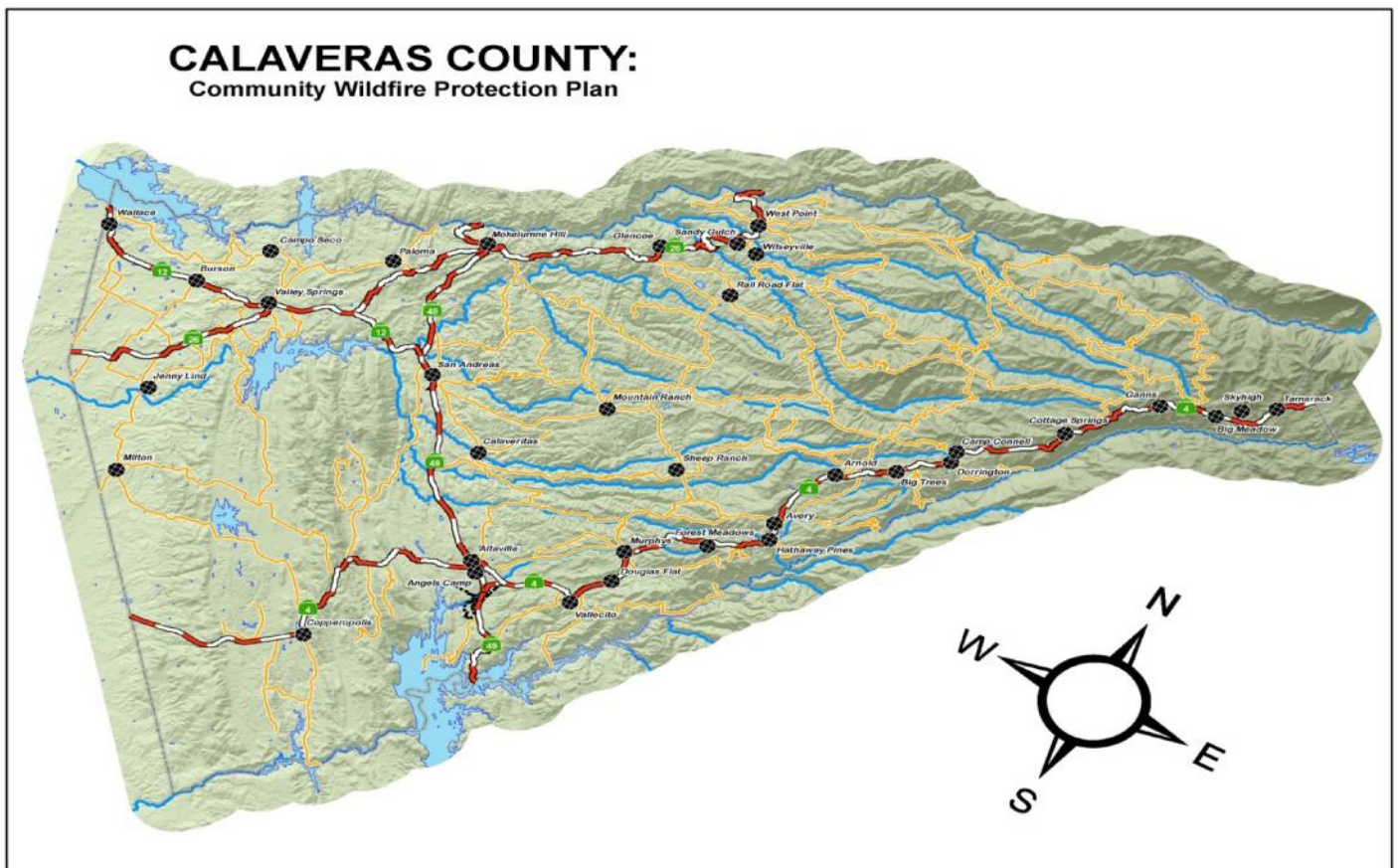
**In-**

**Kind:**

**Total:**

## PROJECT DESCRIPTION:

Provide public education on structural ignitability reduction and fire resiliency building techniques. Train inspectors for residences on these topics. Identify and/or train contractors to provide services. Secure funding to lower costs for services for all residents, not just disabled or low income.



## Locally Based Biomass Utilization Projects

**Initial Checklist/Battalion: 1**

**Status: Planning**

**Acres:**

**Priority: 12**

**Sponsor: CHIPS/ACCG**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source:**

**Amount: \$**

**Author Name: Rick Breeze-Martin**

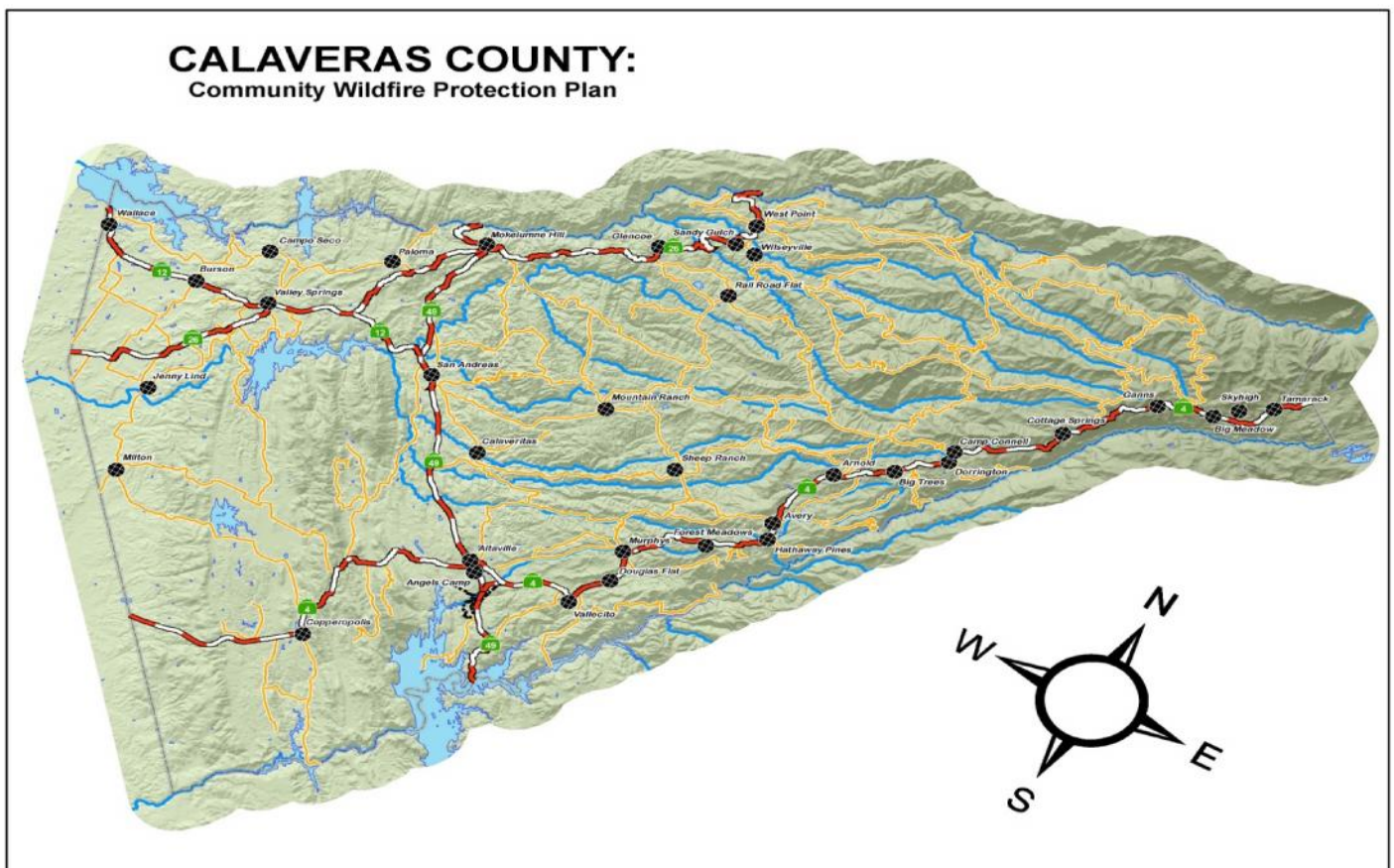
**In-**

**Kind:**

**Total:**

### PROJECT DESCRIPTION:

Development and implementation of small-scale biomass projects, owned and operated by Calaveras/Amador residents, providing jobs, fuels reduction and energy for local residents and communities. Possible projects include pelletizing operations, small biomass heating or electrical generation for local use. Projects should utilize ecological stewardship fuels reduction methods approved by ACCG and/or CHIPS.



## Diamond XX Roadside Fuels Reduction

**Initial Checklist/Battalion: 2**  
**Priority: 13**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Document Effective Date: 1/1/2011**  
**\$**

**Author Name: Mario Hernandez**

**Status: Planning**  
**Sponsor:**

**Lat/Long:**

**Funding Source:**

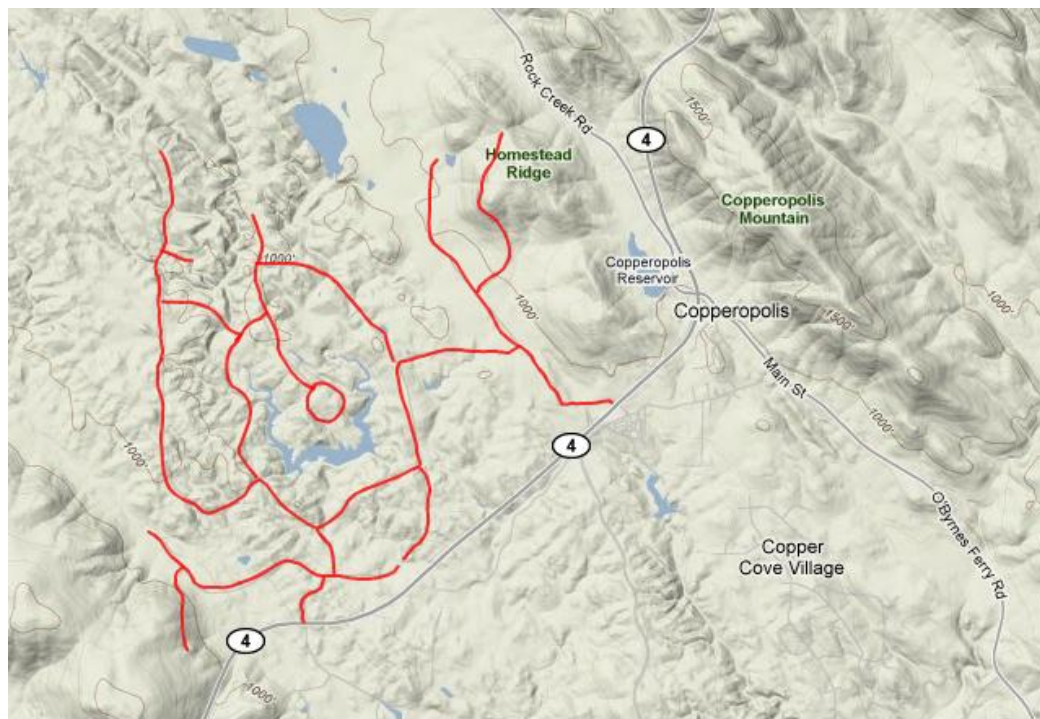
**Acres:**

**Amount:**

**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

In the event of a wildfire, subdivision roadways become crucial routes for ingress of firefighting personnel and the rapid egress of the public. Three subdivisions have been identified as needing attention, the Diamond XX subdivision, the Circle XX subdivision, and the Bar XX subdivision. The Roadside Right-of-Way Fuels Reduction Project aims to reduce the brush, small trees, and hanging ladder fuels along identified roadways in the “XX” subdivisions. Fuel reduction will be accomplished by CAL FIRE fire crews, with disposal of the removed vegetation accomplished by either “pile & burn” or mechanical chipping methods. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse that was originally approved in 2005; Initial work on this project began in 2005 and continued thru 2008.



## Circle XX Roadside Fuels Reduction

**Initial Checklist/Battalion: 2**

**Priority: 14**

**Length/Mi: 5**

**Within W.U.I?: Yes**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**\$**

**Author Name: Mario Hernandez**

**Status: Planning**

**Sponsor:**

**Lat/Long:**

**Funding Source:**

**Acres:**

**Amount:**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

In the event of a wildfire, subdivision roadways become crucial routes for ingress of firefighting personnel and the rapid egress of the public. Three subdivisions have been identified as needing attention, the Diamond XX subdivision, the Circle XX subdivision, and the Bar XX subdivision. The Roadside Right-of-Way Fuels Reduction Project aims to reduce the brush, small trees, and hanging ladder fuels along identified roadways in the “XX” subdivisions. Fuel reduction will be accomplished by CAL FIRE fire crews, with disposal of the removed vegetation accomplished by either “pile & burn” or mechanical chipping methods. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse that was originally approved in 2005; Initial work on this project began in 2005 and continued thru 2008.



## Bar XX Roadside Fuels Reduction

**Initial Checklist/Battalion: 2**  
**Priority: 1**

**Length/Mi: 5**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Document Effective Date: 1/1/2011**  
**\$**

**Author Name: Mario Hernandez**

**Status: Planning**  
**Sponsor:**

**Lat/Long:**

**Funding Source:**

**Acres:**

**Amount:**

**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

In the event of a wildfire, subdivision roadways become crucial routes for ingress of firefighting personnel and the rapid egress of the public. Three subdivisions have been identified as needing attention, the Diamond XX subdivision, the Circle XX subdivision, and the Bar XX subdivision. The Roadside Right-of-Way Fuels Reduction Project aims to reduce the brush, small trees, and hanging ladder fuels along identified roadways in the “XX” subdivisions. Fuel reduction will be accomplished by CAL FIRE fire crews, with disposal of the removed vegetation accomplished by either “pile & burn” or mechanical chipping methods. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse that was originally approved in 2005; Initial work on this project began in 2005 and continued thru 2008.



## State Fire Fee Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**  
**100**

**Status: Current**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: State Fire Fee**

**Amount: \$99,000**

**Author Name: Bill Fullerton**

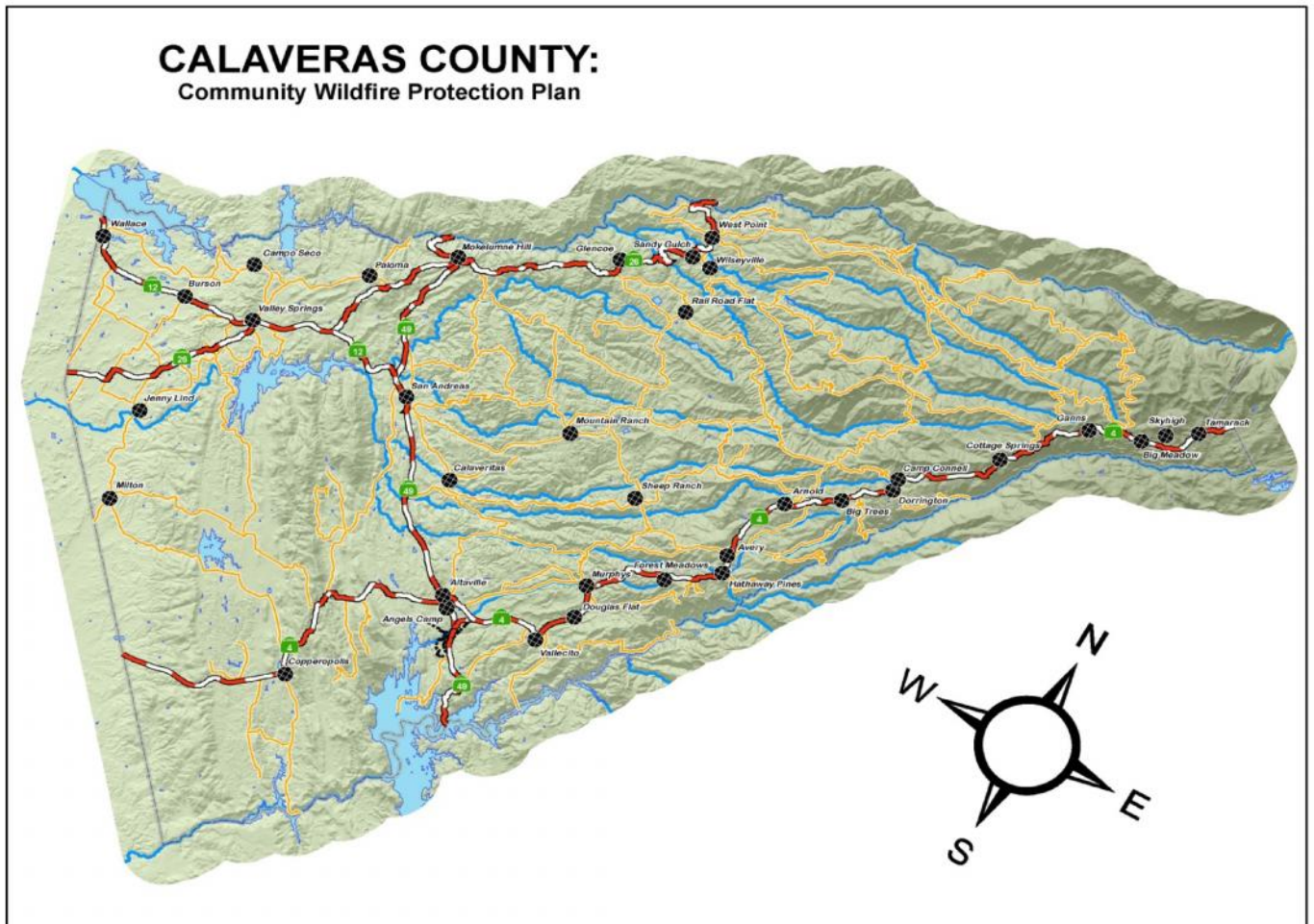
**In-Kind:**

**Total: \$99,000**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County.

The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles.



# PGE Door-to-Door Chipper/Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**

**Status: Current**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: PGE**

**Amount: \$75,000**

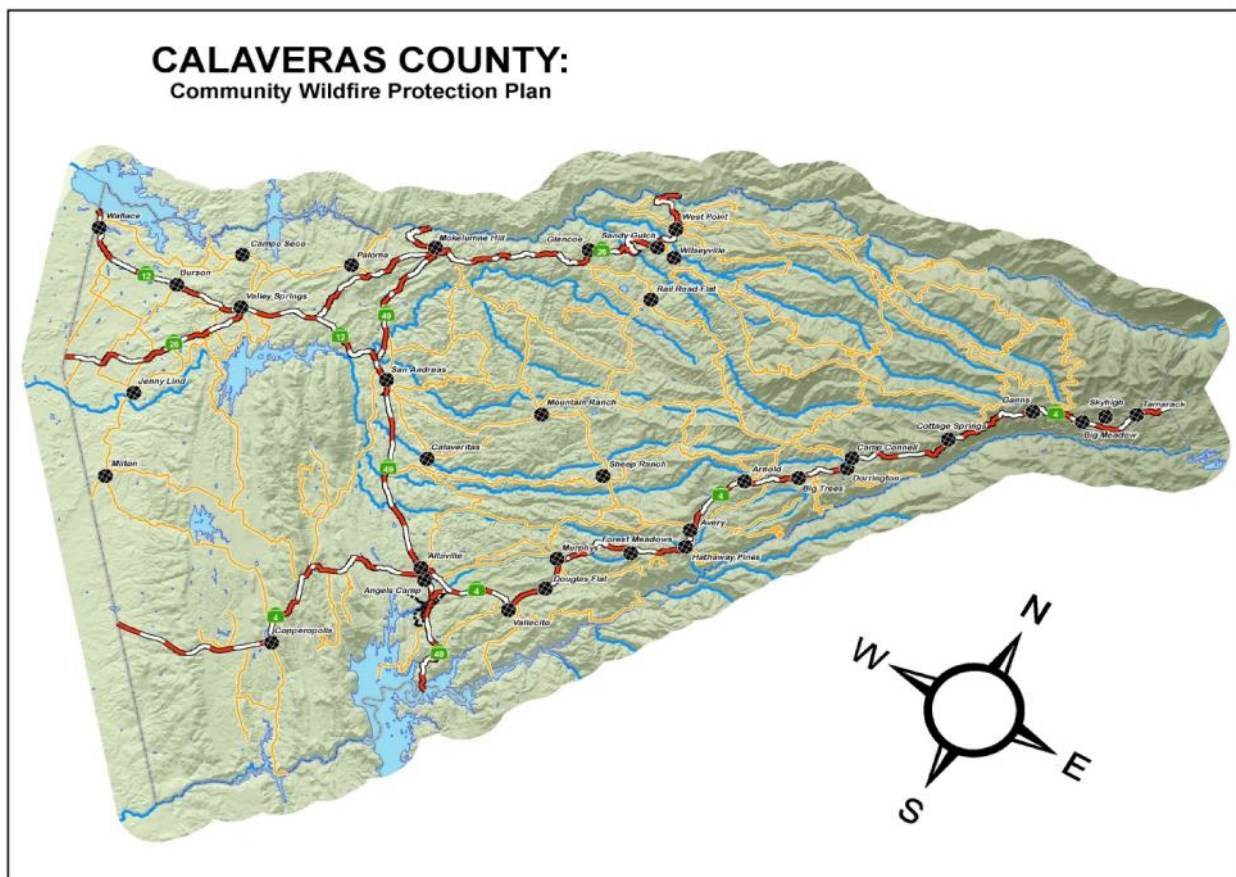
**Author Name: Bill Fullerton**

**In-Kind:**

**Total: \$75,000**

## PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident. The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles.



## Defensible Space Inspection Program

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres: NA**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

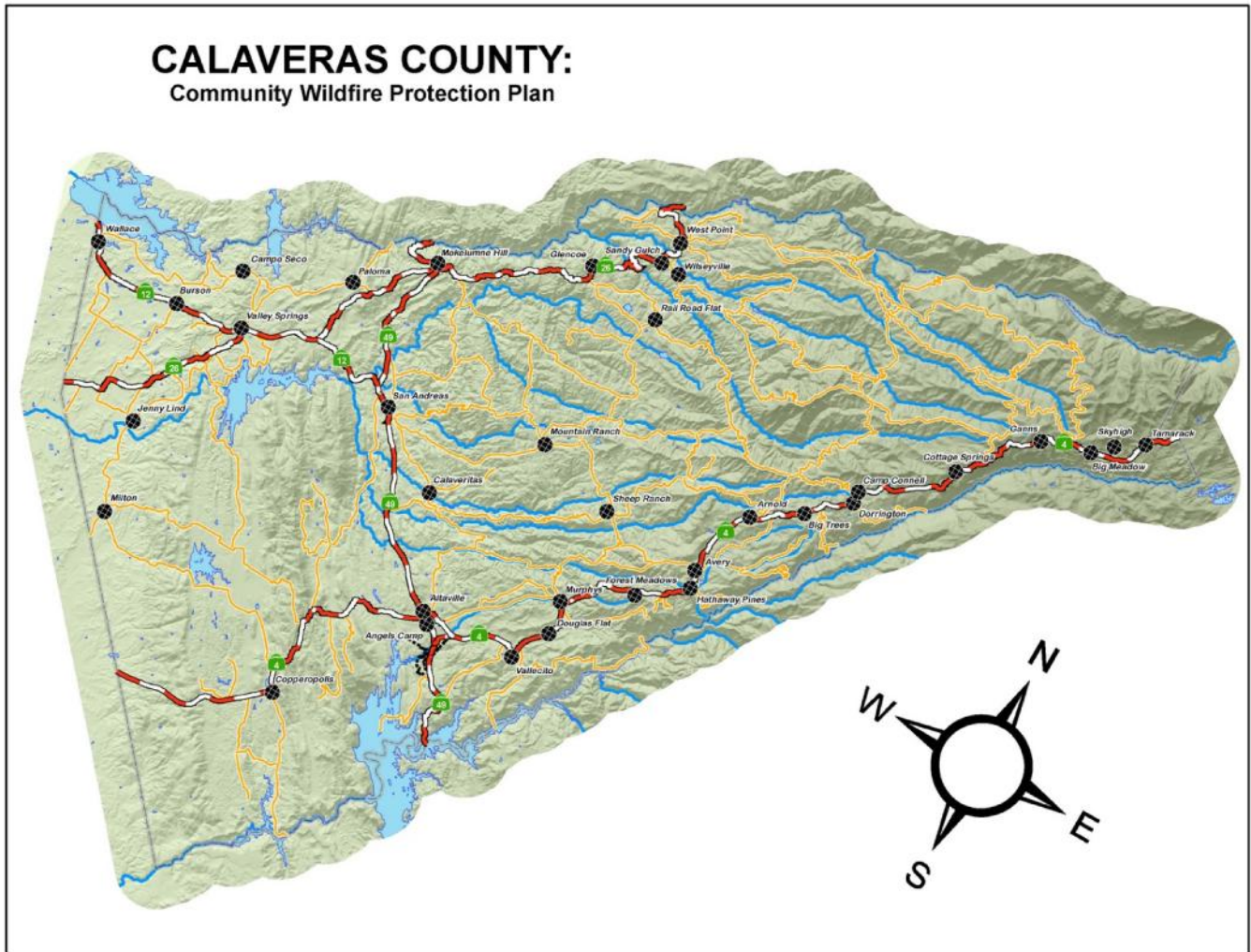
**Document Effective Date: 1/1/2011** **Funding Source:**  
**Author Name: Bill Fullerton**  
**\$0**

**Amount:**  
**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

The CFFSC will contract with Cal Fire seasonal employees to perform over 4,000 4291 Inspections throughout Calaveras County.





## 2010 Murphys Roads Fuels Reduction

**Initial Checklist/Battalion: 2**  
**Priority: 1**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Document Effective Date: 1/1/2011**  
**\$12,000.00**

**Author Name: Steve Kovacs**

**Status: Maintenance**  
**Sponsor: Cal Fire**

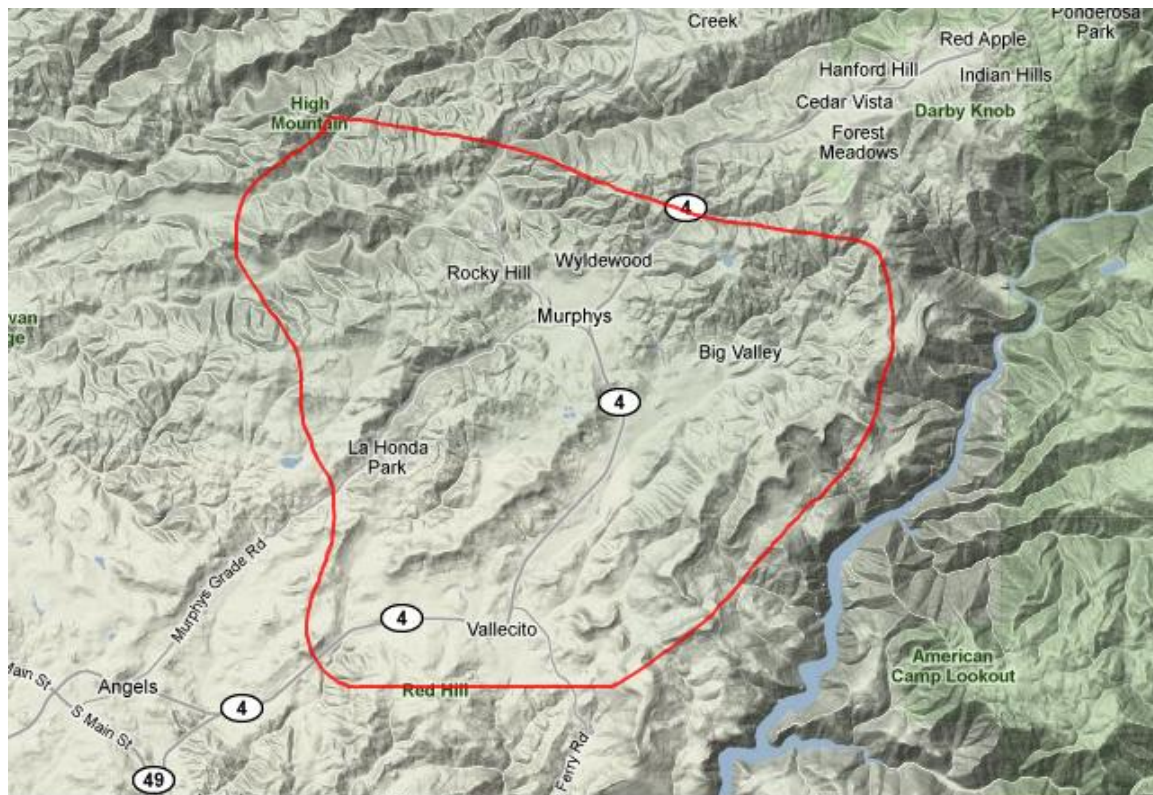
**Legal: Sec. 5, T4N, R14E**

**Funding Source: Prop. 40** **Amount:**

**In-Kind:**  
**Total: \$12,000.00**

### PROJECT DESCRIPTION:

This County Roads Fuels Break Reduction Project will help in the following ways; 1. Create enhanced vehicle view along the roadway; 2. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 3. Creates a more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside, and a fuel bed conducive to backfiring and direct suppression tactics. Clearing of brush along easements will be to the property line or approximately 30 feet.



## Union Public Utilities District Fuel Break

**Initial Checklist/Battalion: 2**

**Status: Maintenance**

**Acres: 31**

**Priority: 1**

**Sponsor: Cal Fire**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38 8'44.53"N 120 28'15.05"W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: Prop. 40**

**Amount:**

**\$6,200.00**

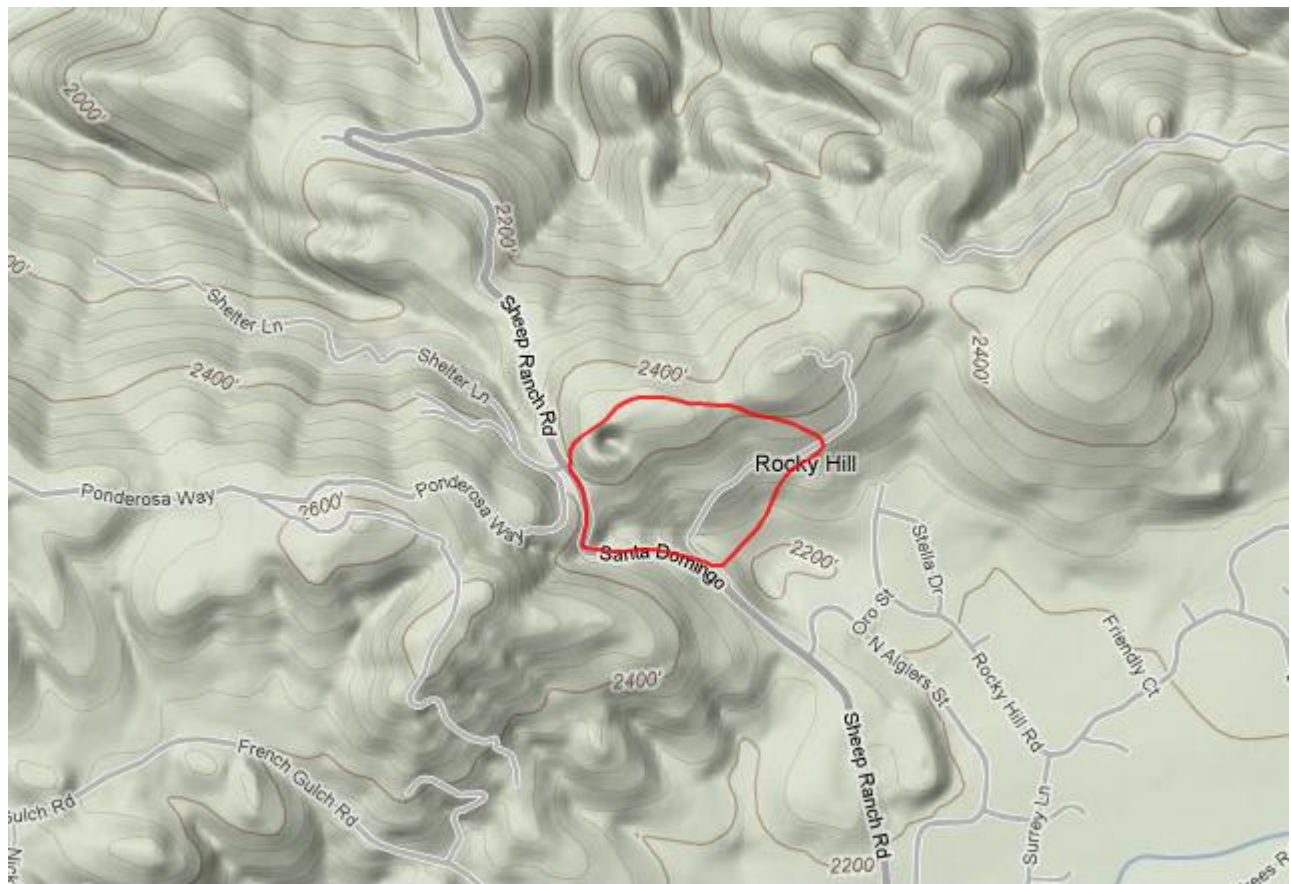
**Author Name: Steve Kovacs**

**In-Kind:**

**Total: \$6,200.00**

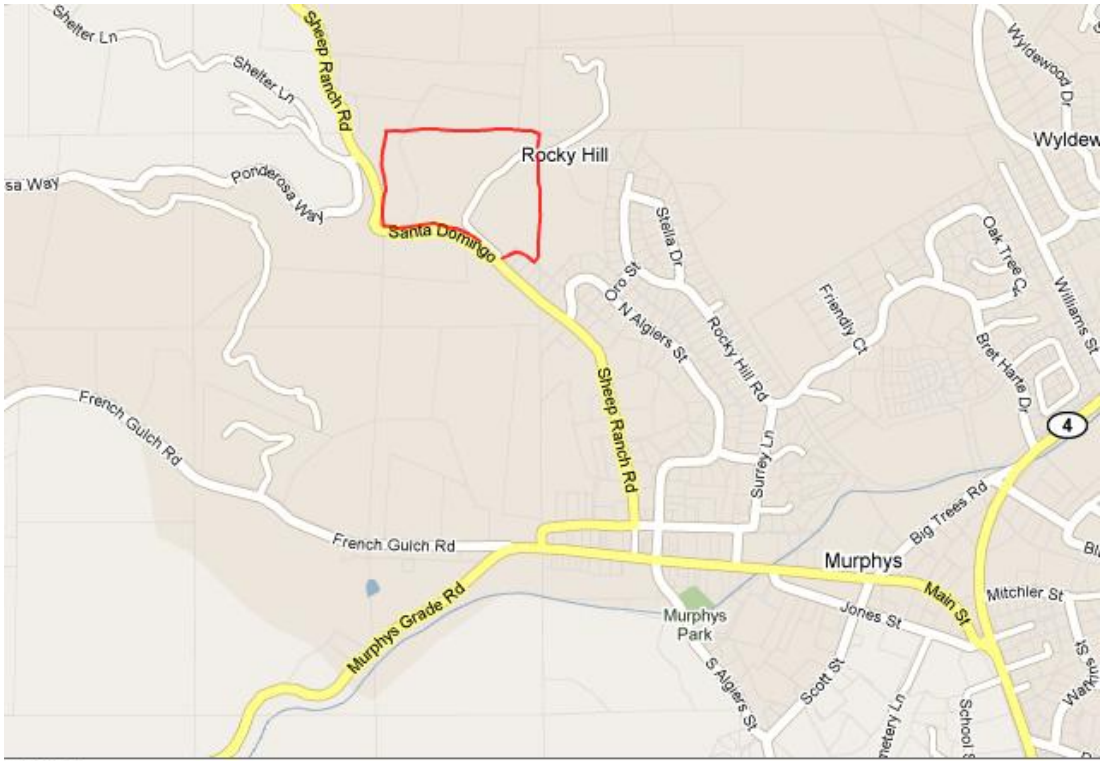
### PROJECT DESCRIPTION:

This project will provide a shaded fuel break to protect the water supply, residential and commercial structures in Murphys. It is approximately 31 Acres of Manzanita and Oak Woodland. Crews will be used to cut, pile and burn.



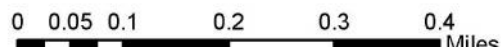
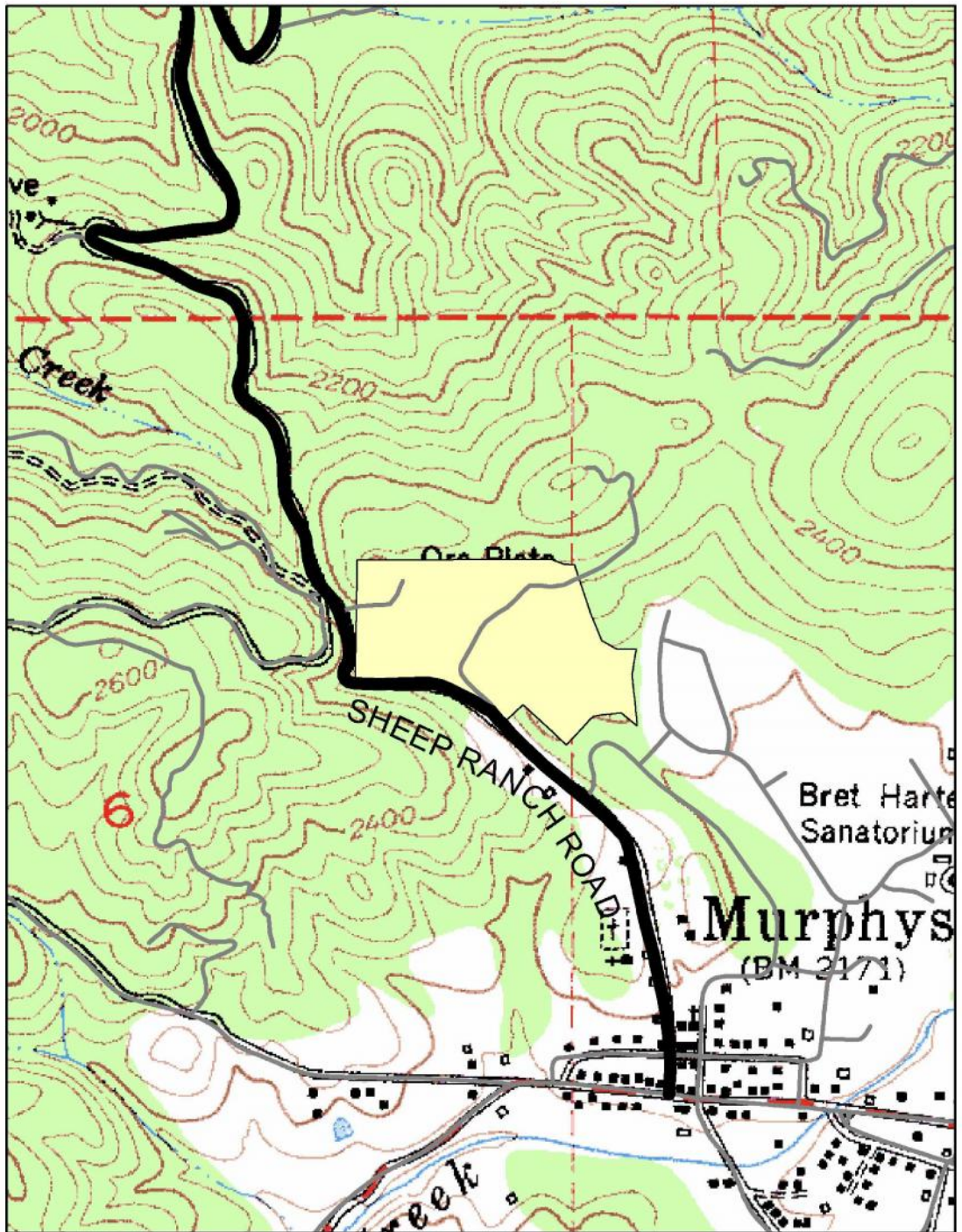


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# Union Public Utilities District Fuels Reduction Project



Author: Kelly C. Dolan  
Date: 01-19-11

## 2011 Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres: 50**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.439 N 120.376 W**

**Document Effective Date: 1/1/2011**  
**\$74,806.00**

**Funding Source: USFS**

**Amount:**

**Author Name: Bill Fullerton**  
**\$65,650.00**

**In-Kind:**

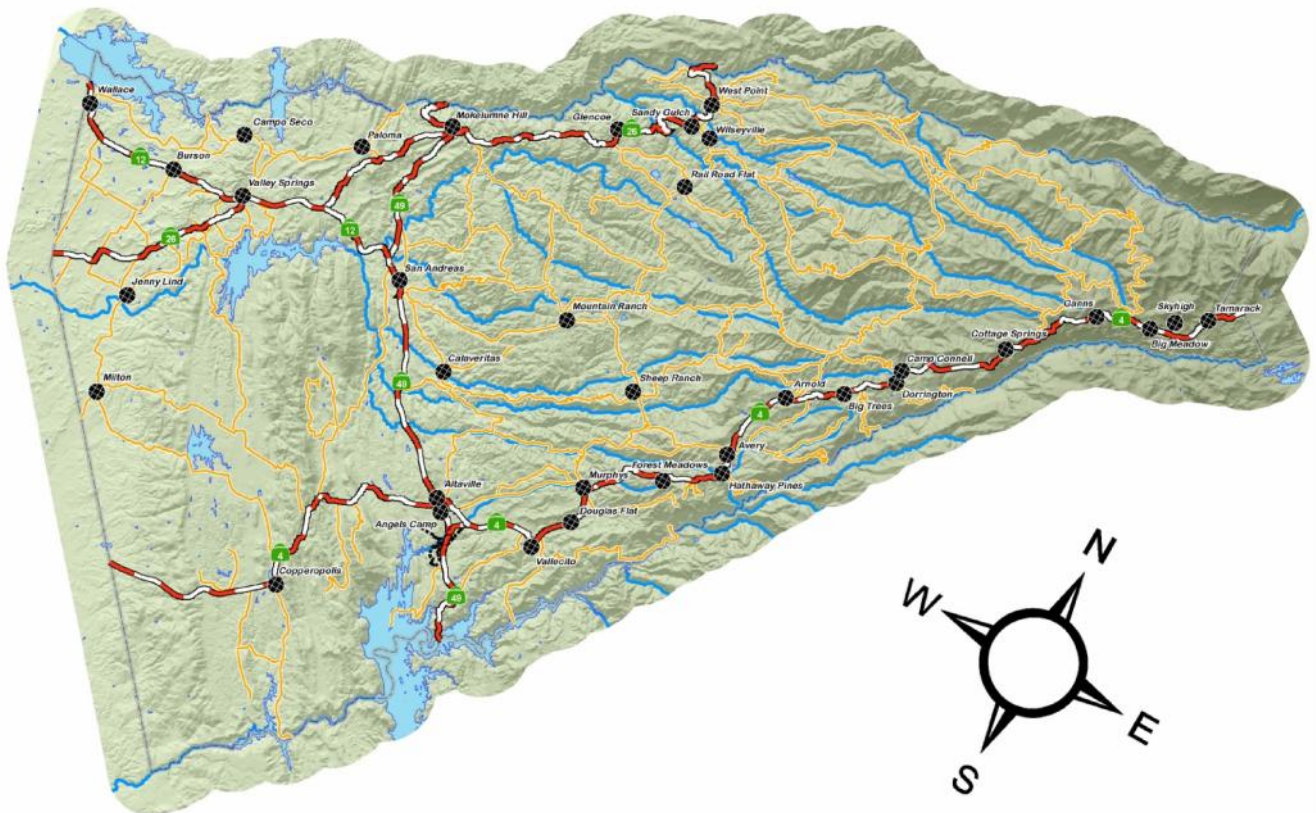
**Total:**

**\$140,456.00**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## Bar XX Roadside Fuels Reduction

**Initial Checklist/Battalion: 2**  
**Priority: 1**

**Length/Mi: 5**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Document Effective Date: 1/1/2011**  
**\$**

**Author Name: Mario Hernandez**

**Status: Maintenance**  
**Sponsor:**

**Lat/Long:**

**Funding Source:**

**Acres:**

**Amount:**

**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

In the event of a wildfire, subdivision roadways become crucial routes for ingress of firefighting personnel and the rapid egress of the public. Three subdivisions have been identified as needing attention, the Diamond XX subdivision, the Circle XX subdivision, and the Bar XX subdivision. The Roadside Right-of-Way Fuels Reduction Project aims to reduce the brush, small trees, and hanging ladder fuels along identified roadways in the “XX” subdivisions. Fuel reduction will be accomplished by CAL FIRE fire crews, with disposal of the removed vegetation accomplished by either “pile & burn” or mechanical chipping methods. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse that was originally approved in 2005; Initial work on this project began in 2005 and continued thru 2008.



## Circle XX Roadside Fuels Reduction

<b>Initial Checklist/Battalion: 2</b>	<b>Status: Maintenance</b>	<b>Acres:</b>
<b>Priority: 1</b>	<b>Sponsor:</b>	
<b>Length/Mi: 5</b>		
<b>Within W.U.I?: Yes</b>	<b>Lat/Long:</b>	
<b>Tons/Fuel:</b>		
<b>Document Effective Date: 1/1/2011</b>	<b>Funding Source:</b>	<b>Amount:</b>
<b>\$</b>		
<b>Author Name: Mario Hernandez</b>		<b>In-Kind:</b>
		<b>Total:</b>

### PROJECT DESCRIPTION:

In the event of a wildfire, subdivision roadways become crucial routes for ingress of firefighting personnel and the rapid egress of the public. Three subdivisions have been identified as needing attention, the Diamond XX subdivision, the Circle XX subdivision, and the Bar XX subdivision. The Roadside Right-of-Way Fuels Reduction Project aims to reduce the brush, small trees, and hanging ladder fuels along identified roadways in the “XX” subdivisions. Fuel reduction will be accomplished by CAL FIRE fire crews, with disposal of the removed vegetation accomplished by either “pile & burn” or mechanical chipping methods. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse that was originally approved in 2005; Initial work on this project began in 2005 and continued thru 2008.



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## Diamond XX Roadside Fuels Reduction

**Initial Checklist/Battalion: 2**

**Priority: 1**

**Length/Mi:**

**Within W.U.I?: Yes**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**\$**

**Author Name: Mario Hernandez**

**Status: Maintenance**

**Sponsor:**

**Lat/Long:**

**Funding Source:**

**Acres:**

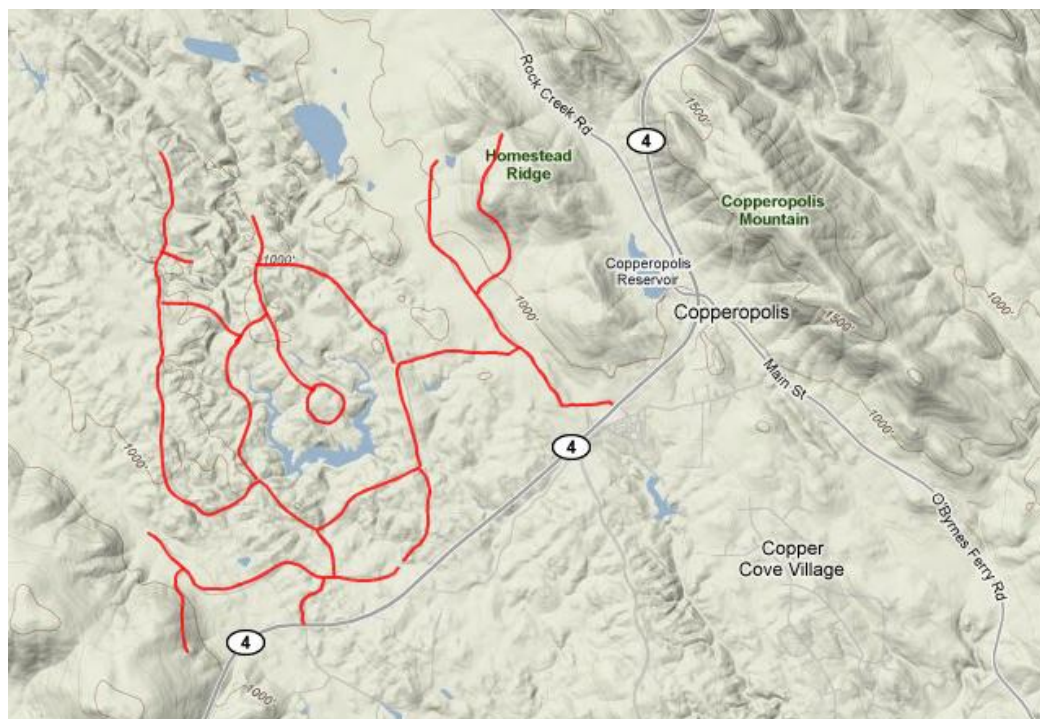
**Amount:**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

In the event of a wildfire, subdivision roadways become crucial routes for ingress of firefighting personnel and the rapid egress of the public. Three subdivisions have been identified as needing attention, the Diamond XX subdivision, the Circle XX subdivision, and the Bar XX subdivision. The Roadside Right-of-Way Fuels Reduction Project aims to reduce the brush, small trees, and hanging ladder fuels along identified roadways in the “XX” subdivisions. Fuel reduction will be accomplished by CAL FIRE fire crews, with disposal of the removed vegetation accomplished by either “pile & burn” or mechanical chipping methods. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse that was originally approved in 2005; Initial work on this project began in 2005 and continued thru 2008.



## 2010 Murphys Pines Roadside Fuels Reduction

**Initial Checklist/Battalion: 2**  
**Priority: 1**

**Length/Mi:**  
**Within W.U.I?: Yes**

**Tons/Fuel:**  
**Document Effective Date: 1/1/2011**  
**\$**

**Author Name: Steve Kovacs**

**Status: Maintenance**  
**Sponsor: Murphys Fire District**

**Lat/Long:**

**Funding Source:**

**Acres:**

**Amount:**

**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

In the event of a wildfire, subdivision roadways become crucial routes for ingress of firefighting personnel and the rapid egress of the public. Fuel reduction will be accomplished by CAL FIRE fire crews, with disposal of the removed vegetation accomplished by either “pile & burn” or mechanical chipping methods. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse that was originally approved in 2005; Initial work on this project began in 2005 and continued thru 2008.



## 2010 Defensible Space Inspection Program

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres: NA**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: Sierra Nevada Cons. Amount:**

**\$19,150.00**

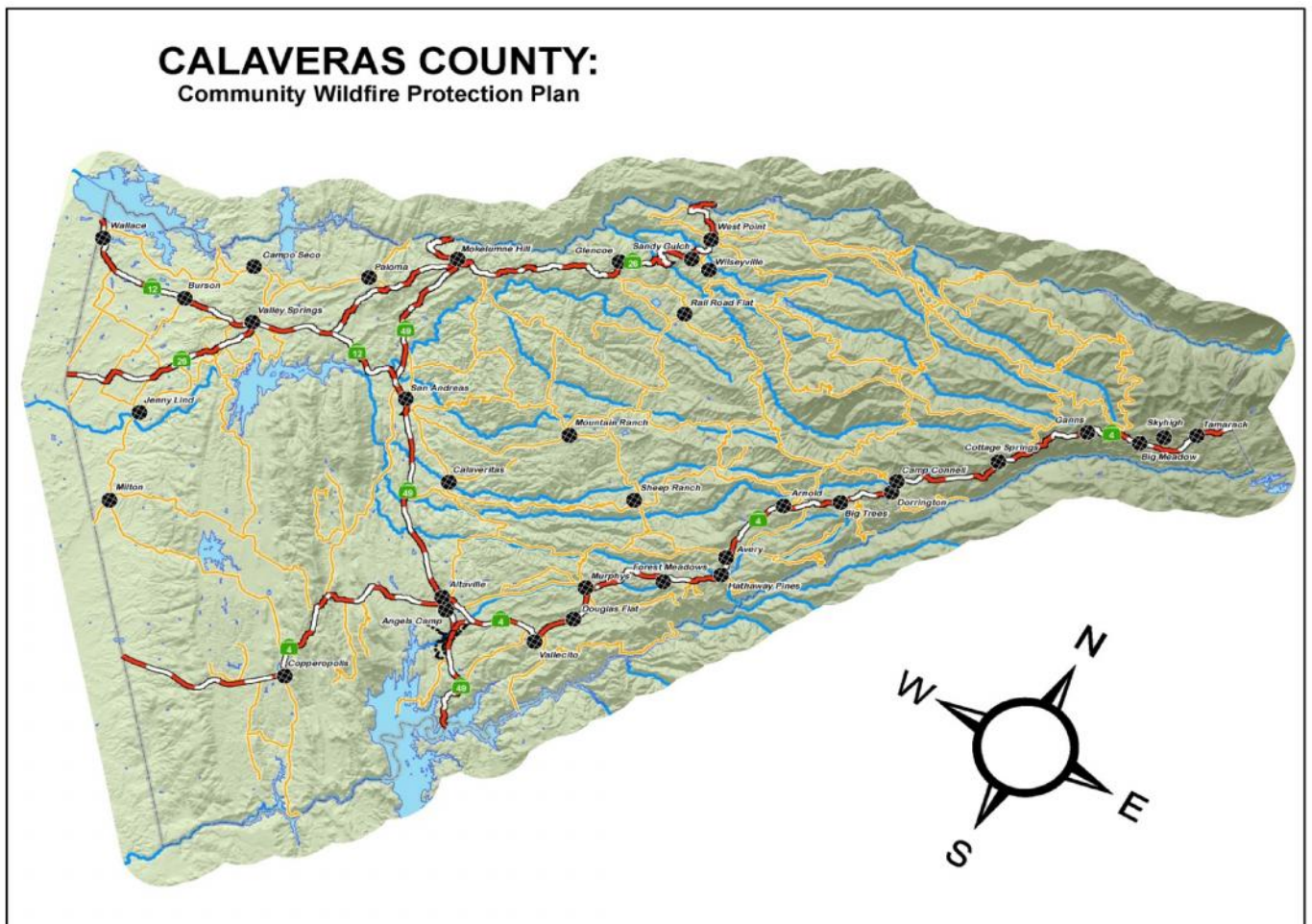
**Author Name: Bill Fullerton**

**In-Kind: \$0**

**Total: \$19,150.00**

### PROJECT DESCRIPTION:

The CFFSC will contract with Cal Fire seasonal employees to perform over 4,000 4291 Inspections throughout Calaveras County.



## 2009 Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**  
**100**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: USFS**

**Amount:**

**\$85,950.00**

**Author Name: Bill Fullerton**

**In-Kind:**

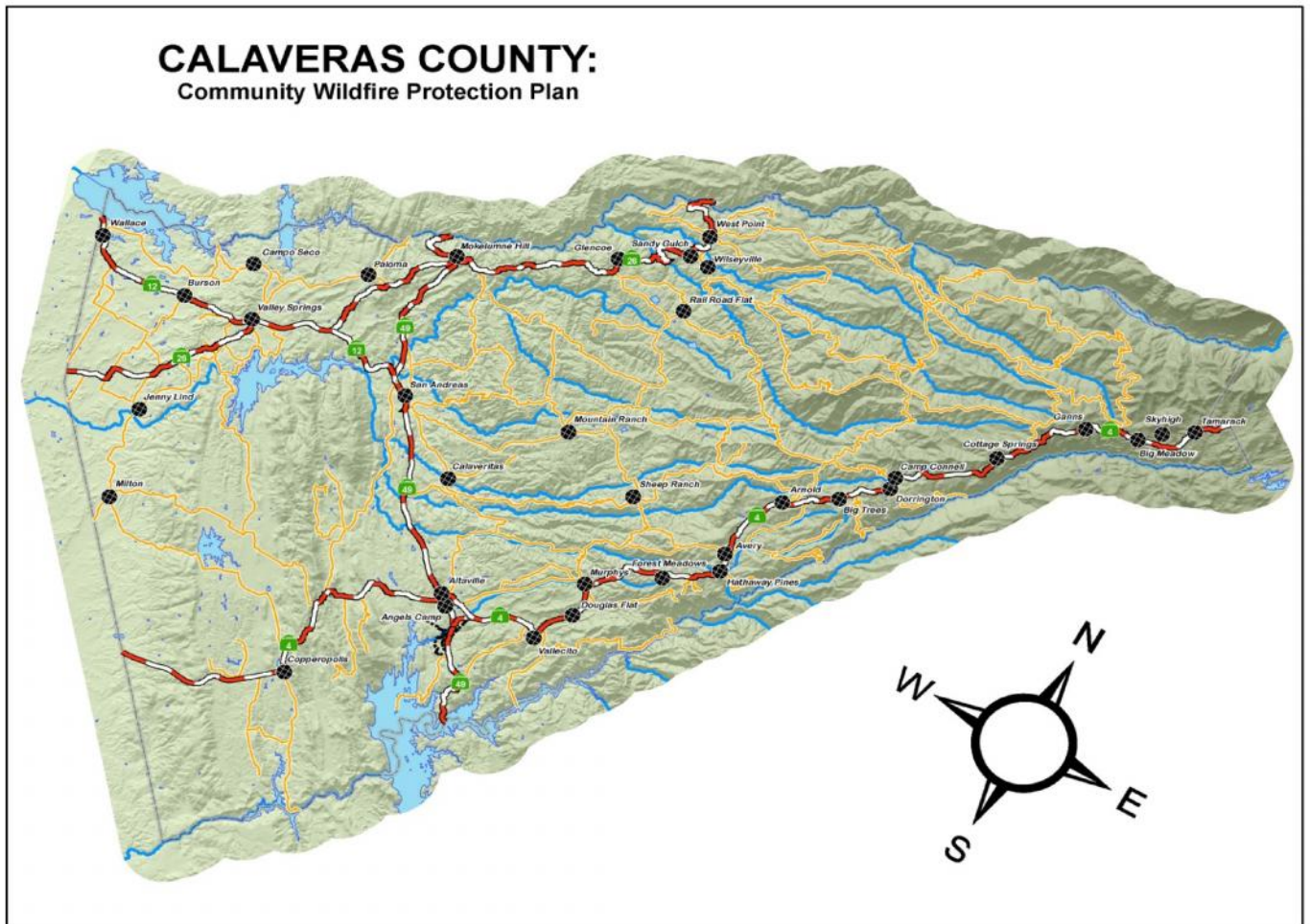
**\$49,380.00**

**Total:**

**\$135,330.00**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## 2009 Public Roadways Fire Break Phase 4

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres: 30**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011**  
**\$53,943.00**

**Funding Source:**

**Amount:**

**Author Name: Bill Fullerton**  
**\$63,137.00**

**In-Kind:**

**\$117,080.00**

**Total:**

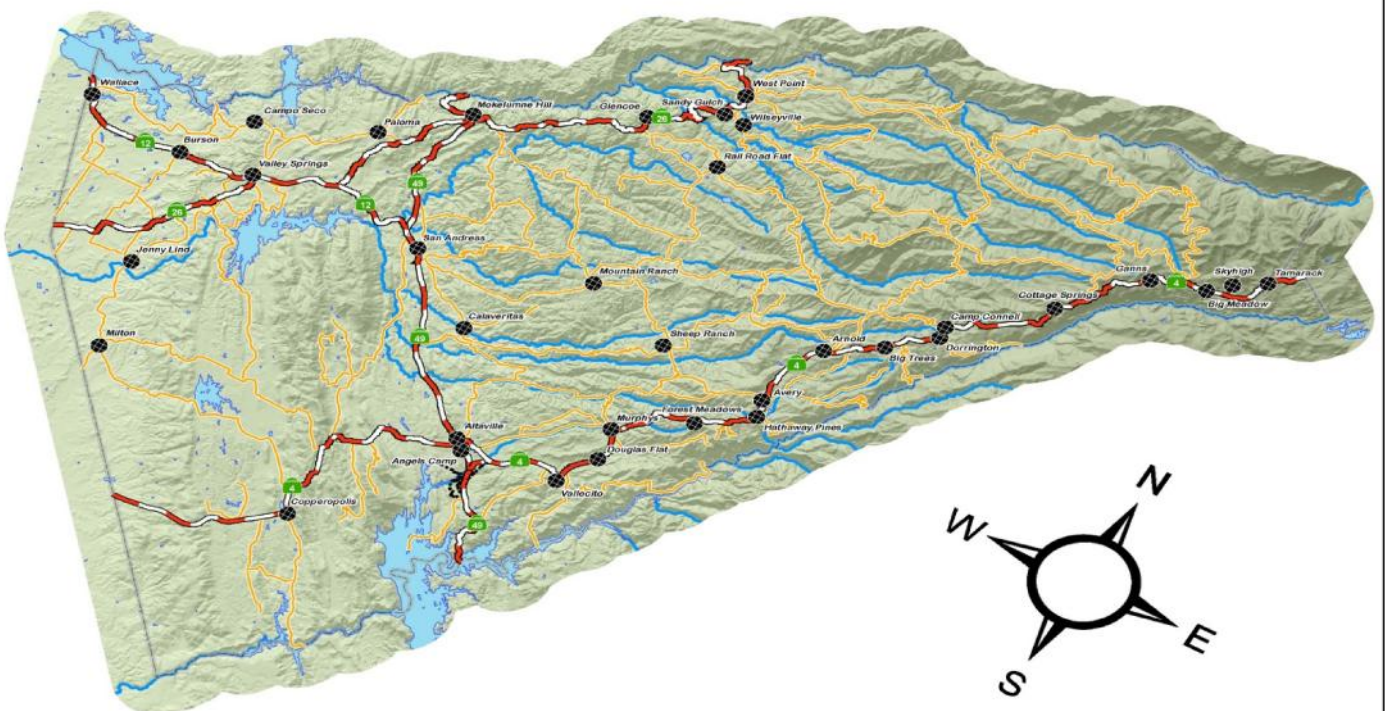
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

#### Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



# 2009 Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**  
**100**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011** **Funding Source: USFS**  
**\$104,400**

**Amount:**

**Author Name: Bill Fullerton**  
**\$52,480.00**

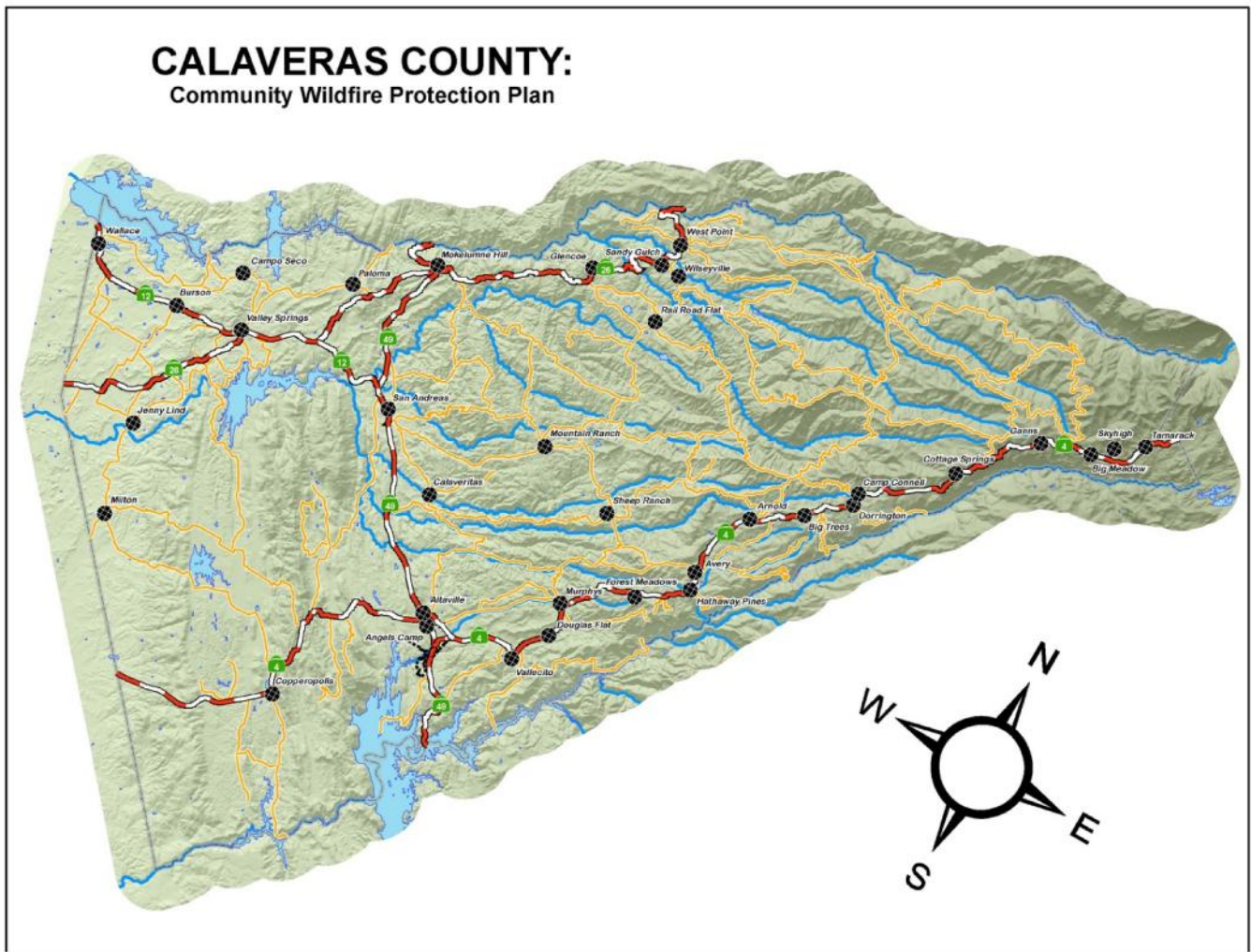
**In-Kind:**

**\$156,880.00**

**Total:**

## PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## 2008 Prop. 40 Roads Phase 4

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres:**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011** **Funding Source: Prop. 40**  
**\$54,000.00**

**Amount:**

**Author Name: Bill Fullerton**

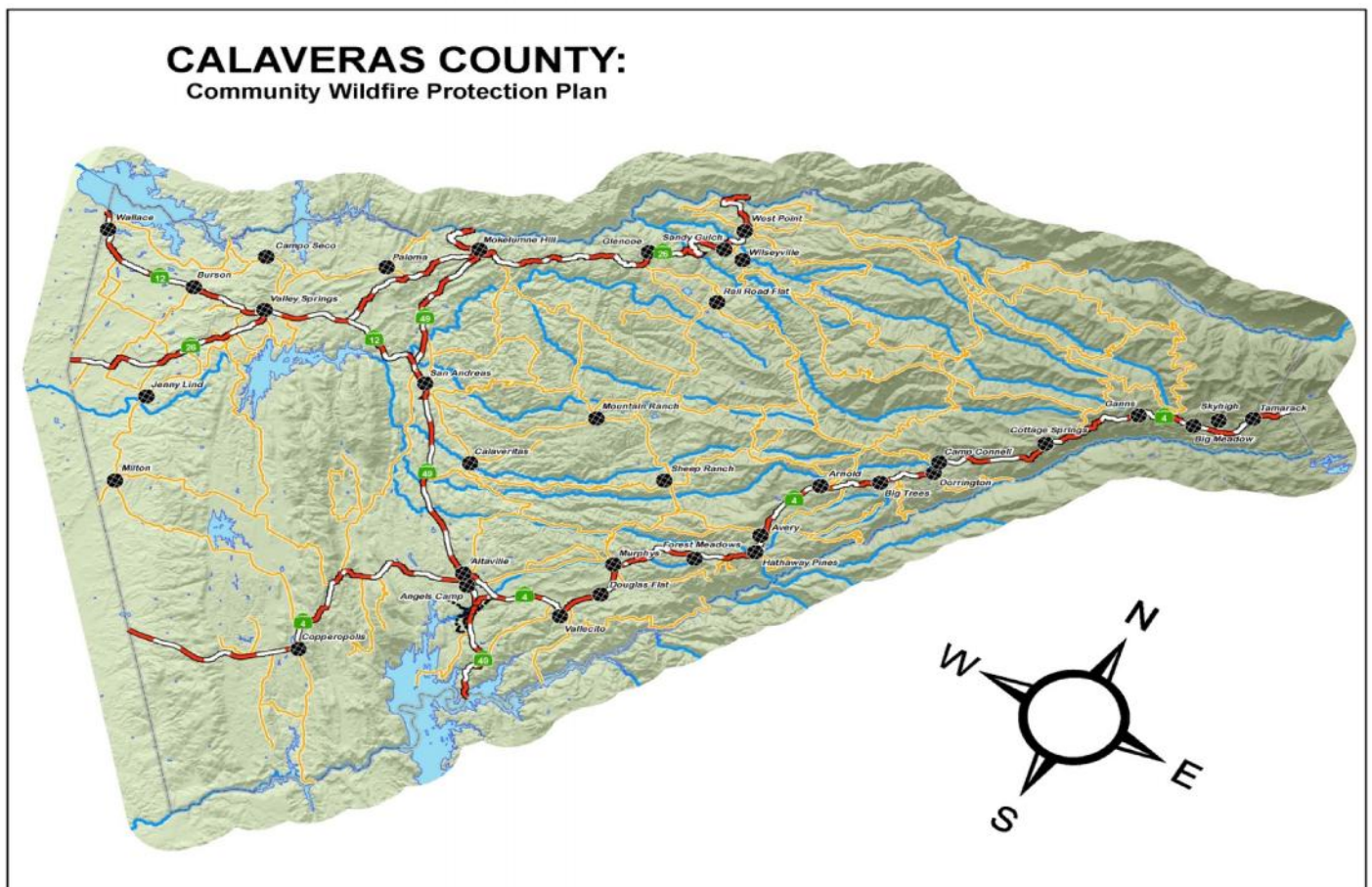
**In-Kind: \$**  
**Total: \$54,000.00**

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

#### Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.



## 2008 Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**  
**100**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: USFS**

**Amount:**

**\$73,267.00**

**Author Name: Bill Fullerton**

**In-Kind:**

**\$41,700.00**

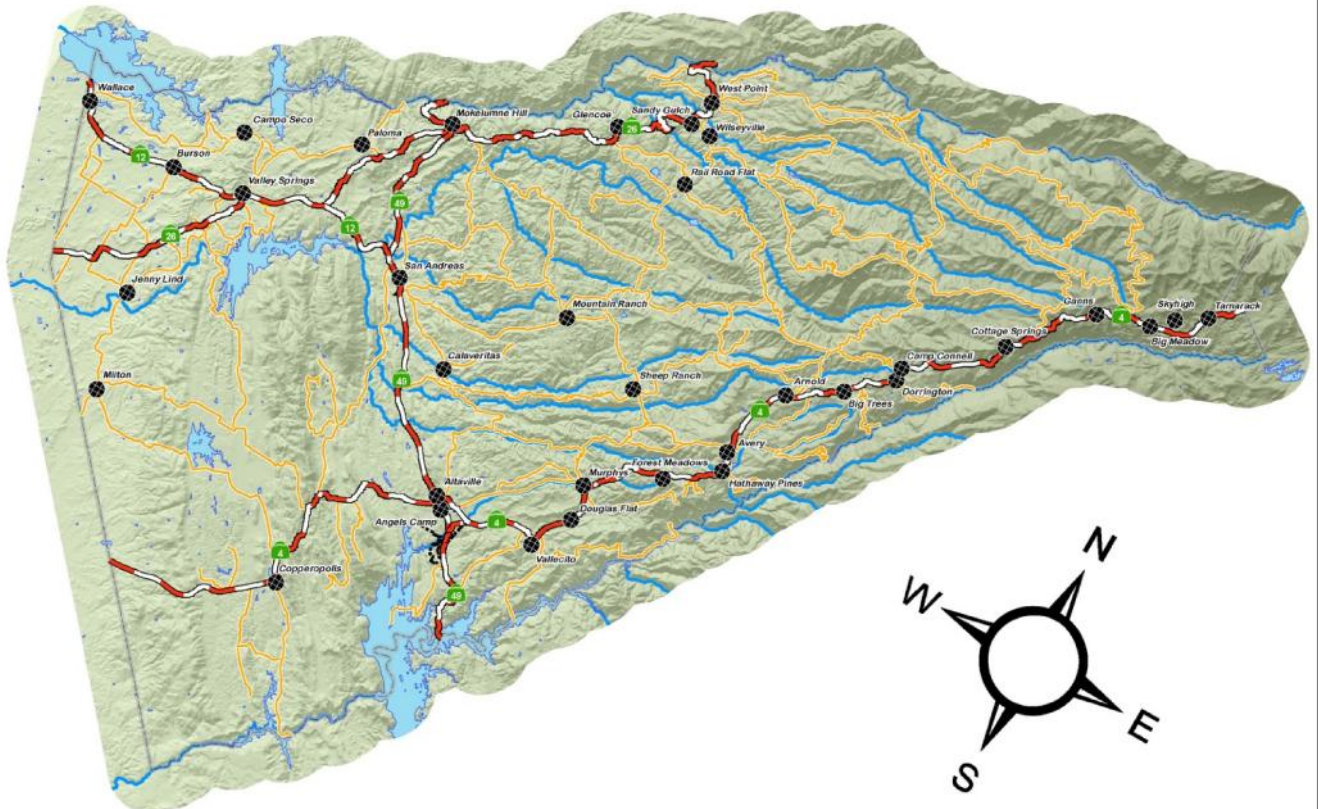
**Total:**

**\$114,967.00**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2007 Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres: 90**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011**  
**\$56,950.00**

**Funding Source: BLM**

**Amount:**

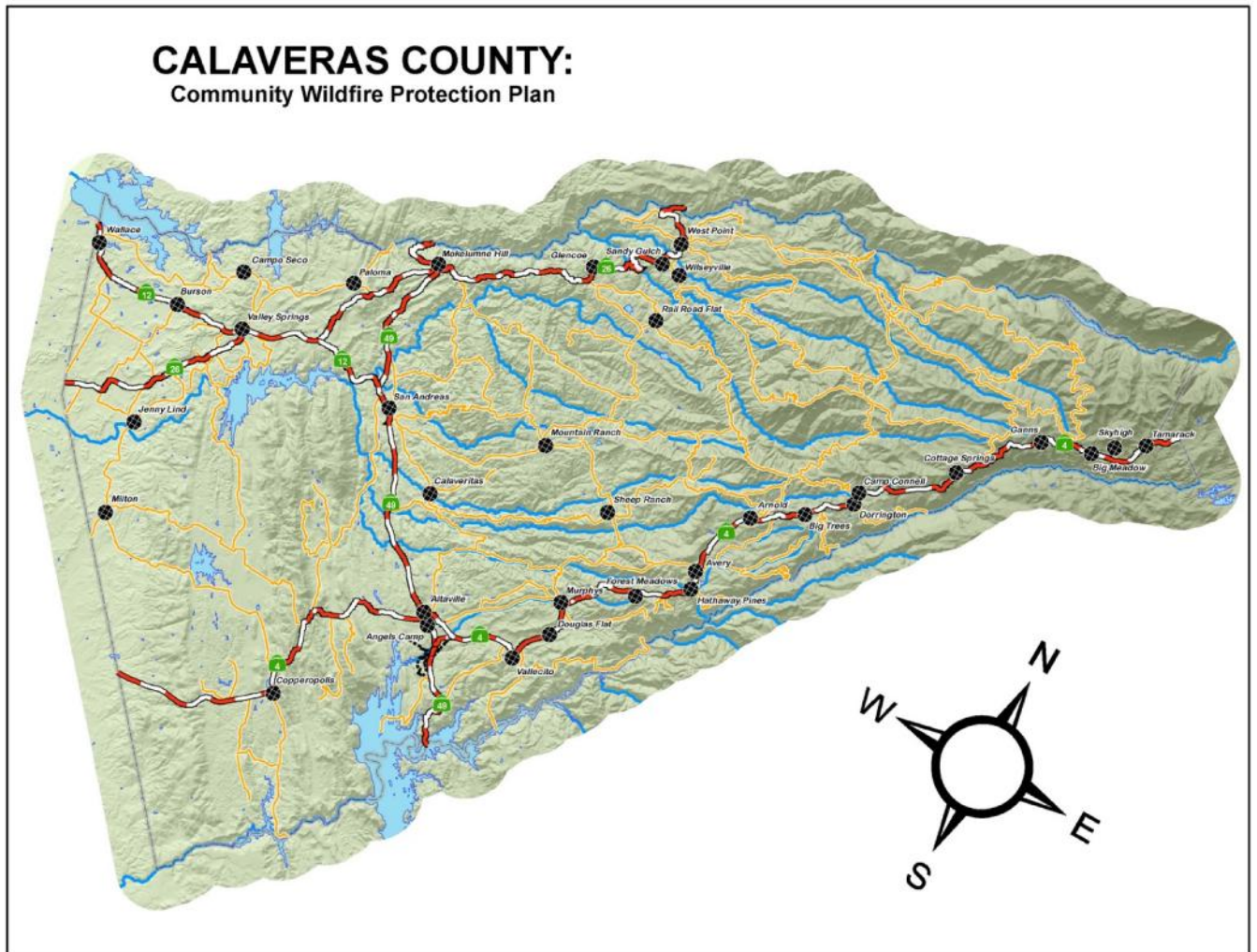
**Author Name: Bill Fullerton**  
**\$12,000.00**

**In-Kind:**

**Total: \$68,950.00**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



# 2007 Prop. 40 Roads III

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres:**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011 Funding Source: Prop 40**  
**\$60,000.00**

**Amount:**

**Author Name: Bill Fullerton**

**In-Kind: \$**  
**Total: \$60,000.00**

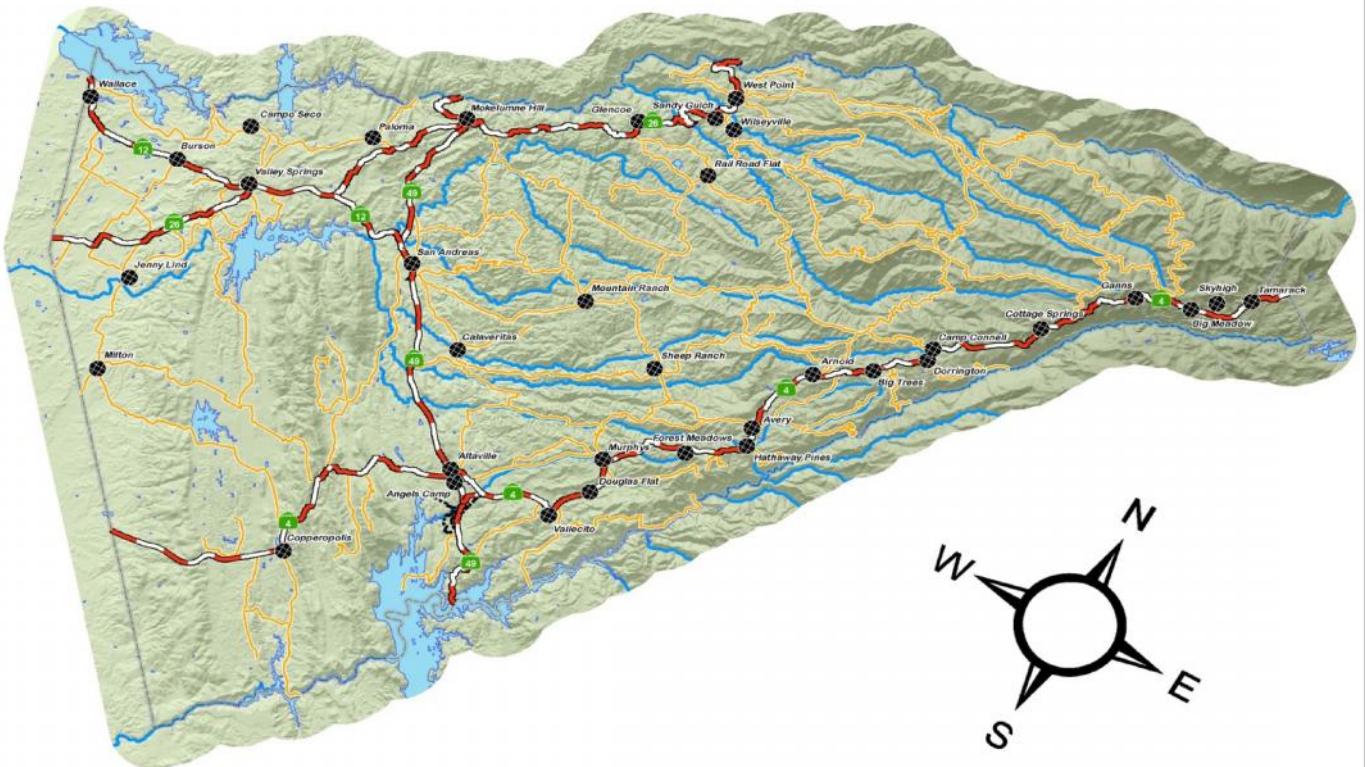
## PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

### Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

## CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2007 Prop. 40 Roads II

**Initial Checklist/Battalion: 1-4**

**Priority: 1**

**Length/Mi:**

**Within W.U.I?: Yes**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**\$72,960.00**

**Author Name: Bill Fullerton**

**Status: Maintenance**

**Sponsor: CFFSC**

**Acres:**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source: Prop 40 Amount:**

**In-Kind: \$**

**Total: \$72,960.00**

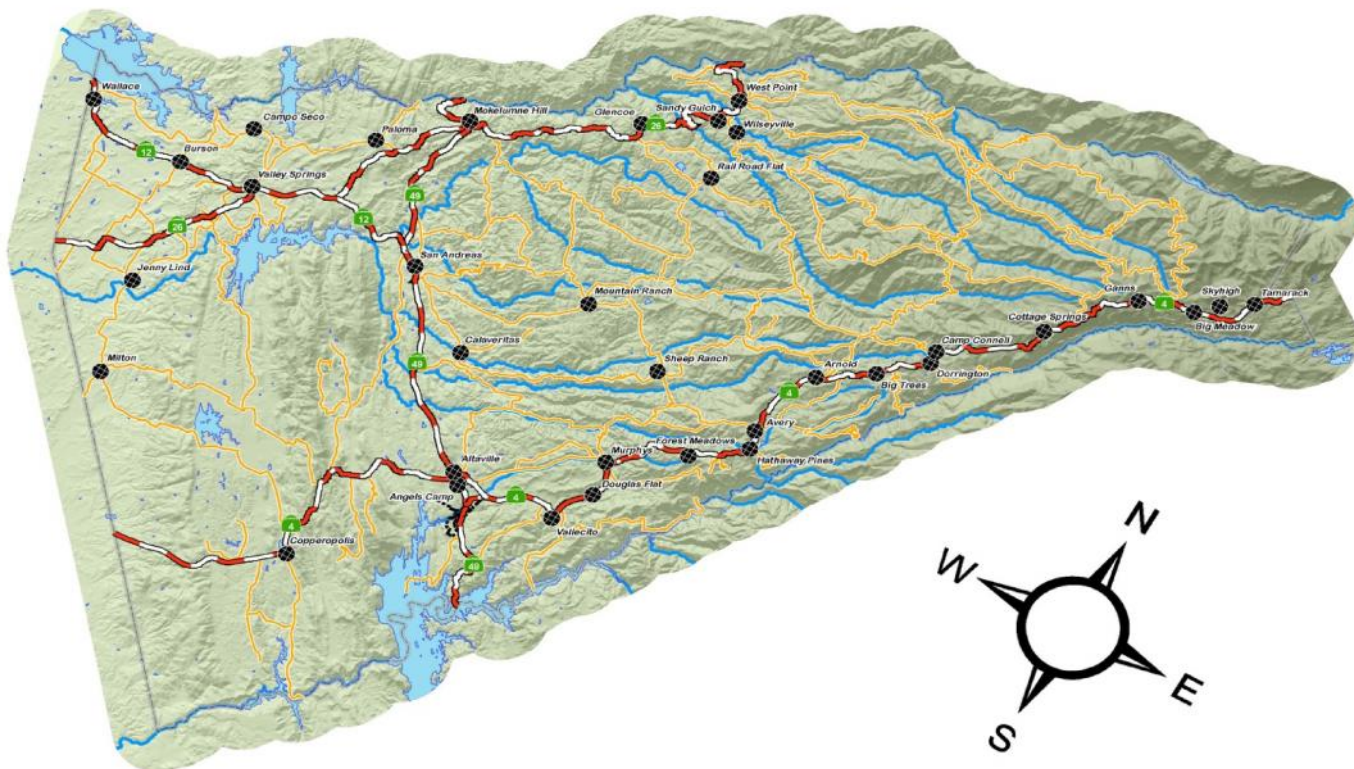
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2006 Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**  
**32.5**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: USFS**

**Amount:**

**\$66,200.00**

**Author Name: Bill Fullerton**

**In-Kind:**

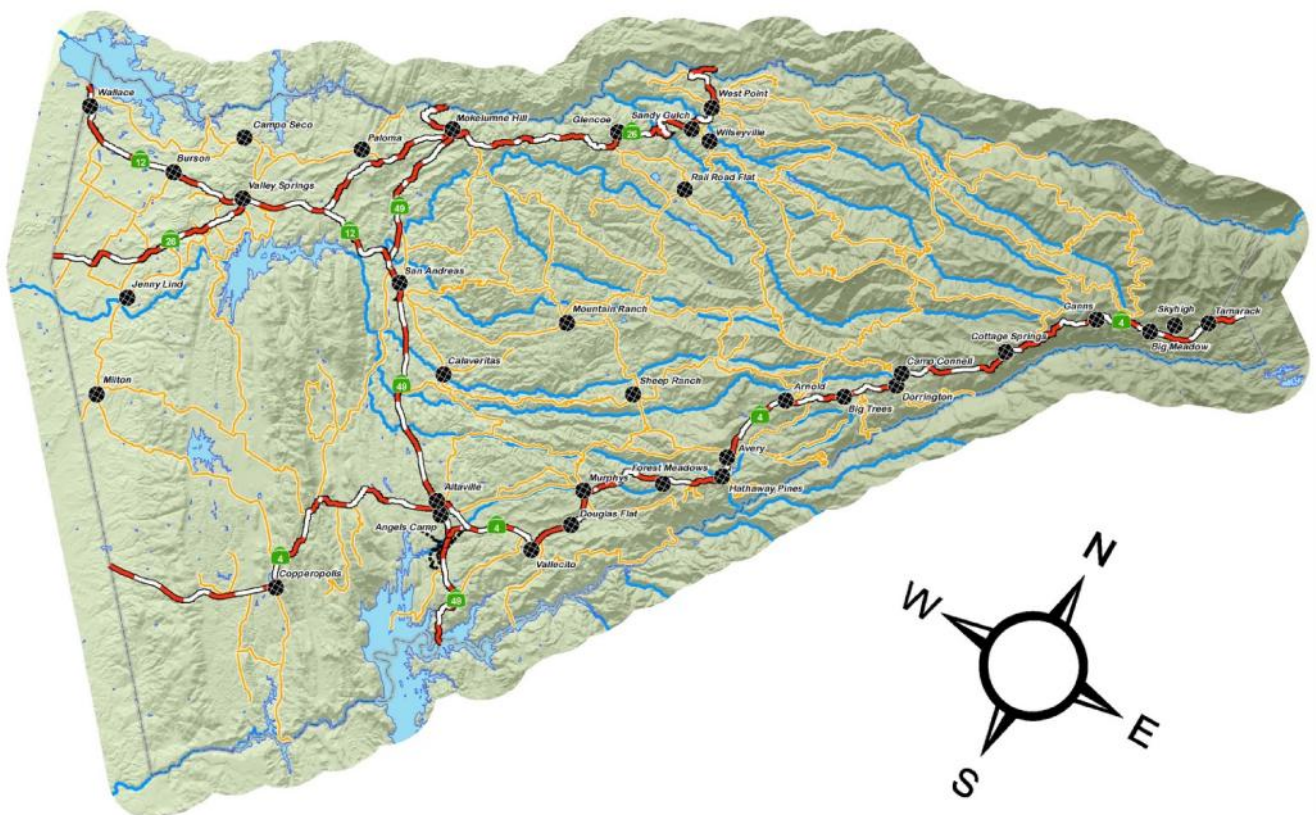
**\$13,477.00**

**Total: \$79,677.00**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2005 Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres: 30**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011**  
**\$53,943.00**

**Funding Source: BLM**

**Amount:**

**Author Name: Bill Fullerton**  
**\$63,137.00**

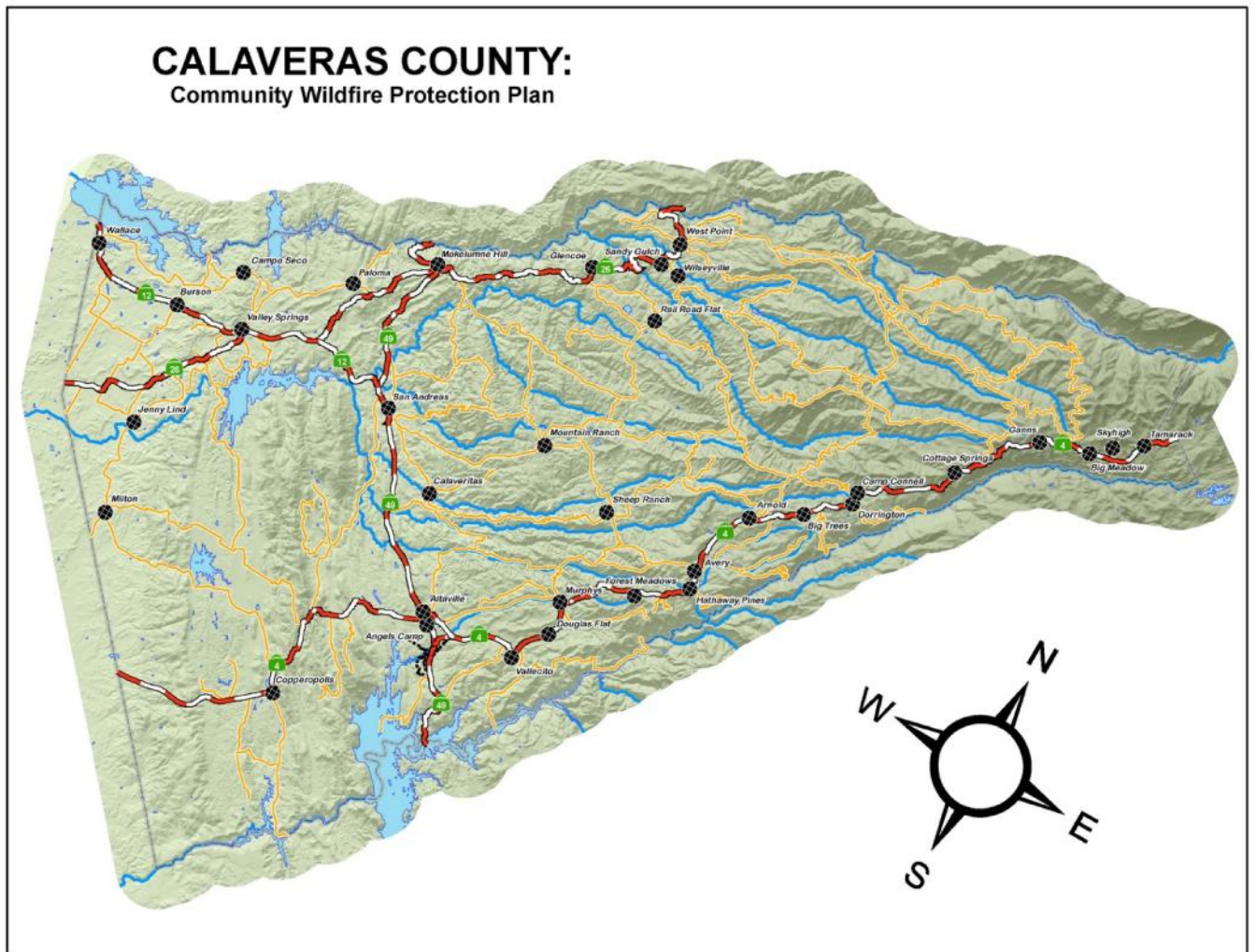
**In-Kind:**

**\$117,080.00**

**Total:**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## 2005 Calaveras County APCD Chipper Program

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres:**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

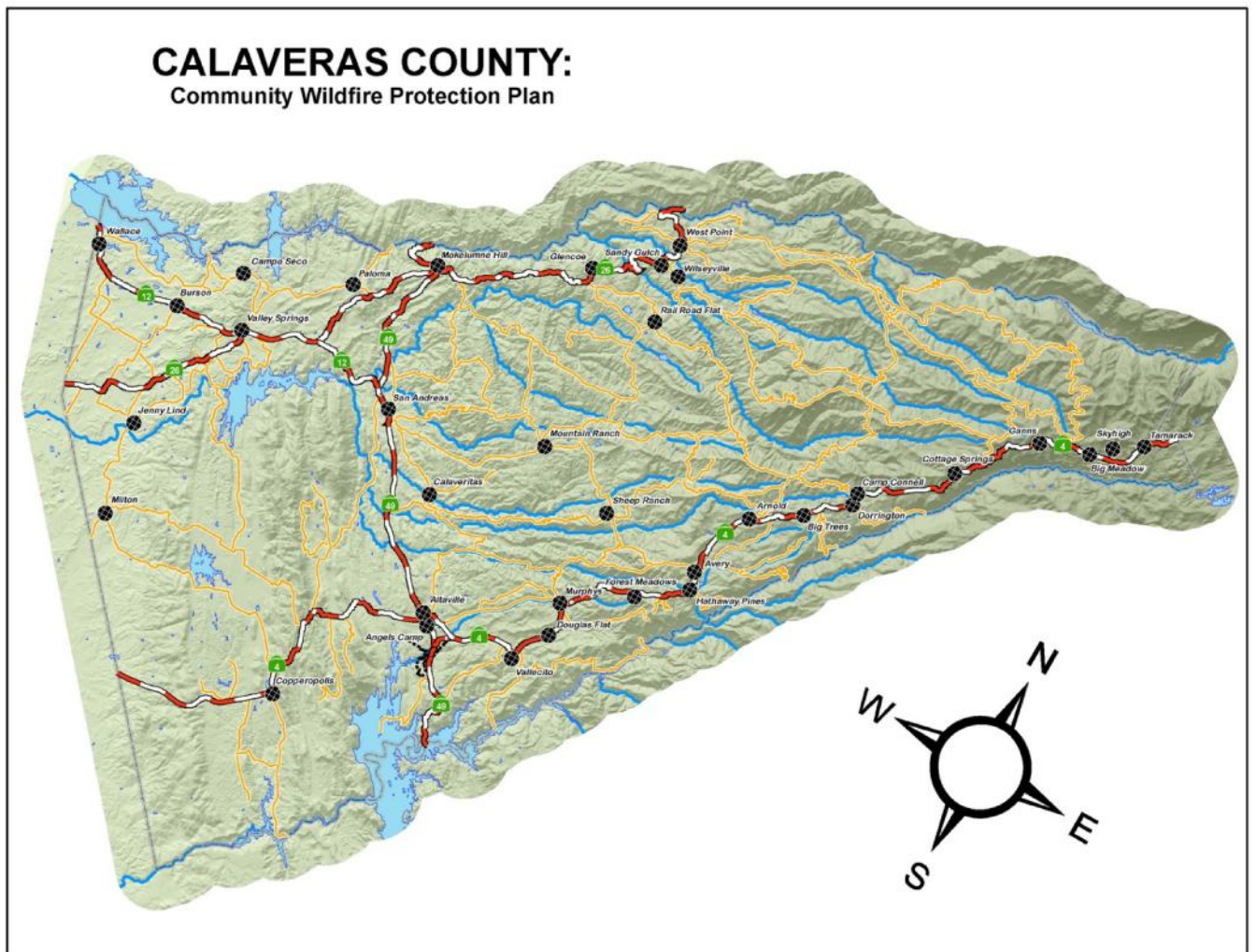
**Document Effective Date: 1/1/2011 Funding Source: Calaveras County Amount:**  
**\$13,200.00**

**Author Name: Bill Fullerton**

**In-Kind: \$**  
**Total: \$13,200.00**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## 2004 Calaveras County APCD Chipper Program

**Initial Checklist/Battalion: 1-4**  
**Priority: 1**

**Status: Maintenance**  
**Sponsor: CFFSC**

**Acres:**

**Length/Mi:**  
**Within W.U.I?: Yes**  
**Tons/Fuel:**

**Lat/Long: 38.196 N 120.679 W**

**Document Effective Date: 1/1/2011 Funding Source: Prop 40**  
**\$15,000.00**

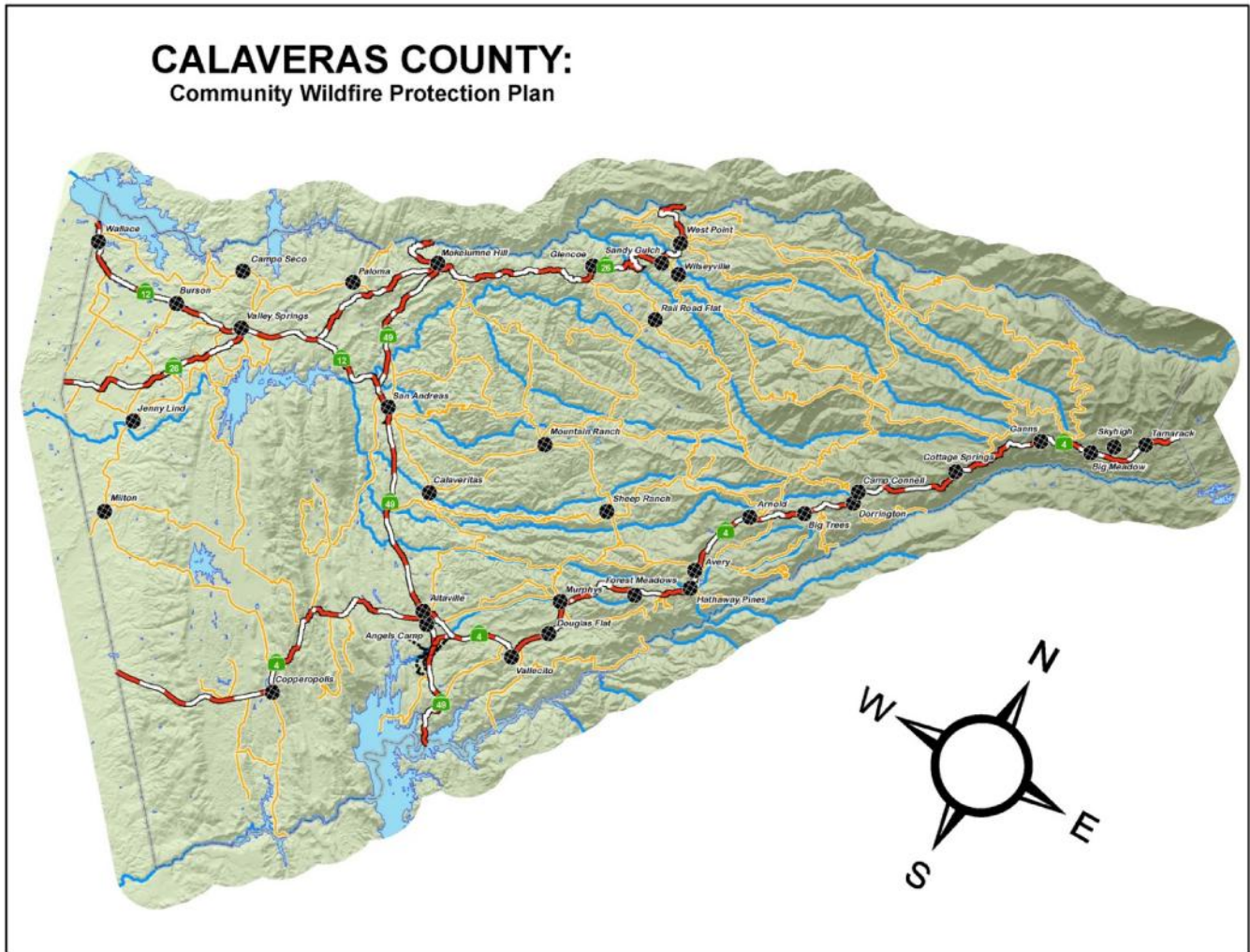
**Amount:**

**Author Name: Bill Fullerton**

**In-Kind: \$**  
**Total: \$15,000.00**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## **Battalion 2 Cooperators Mitigation Efforts**

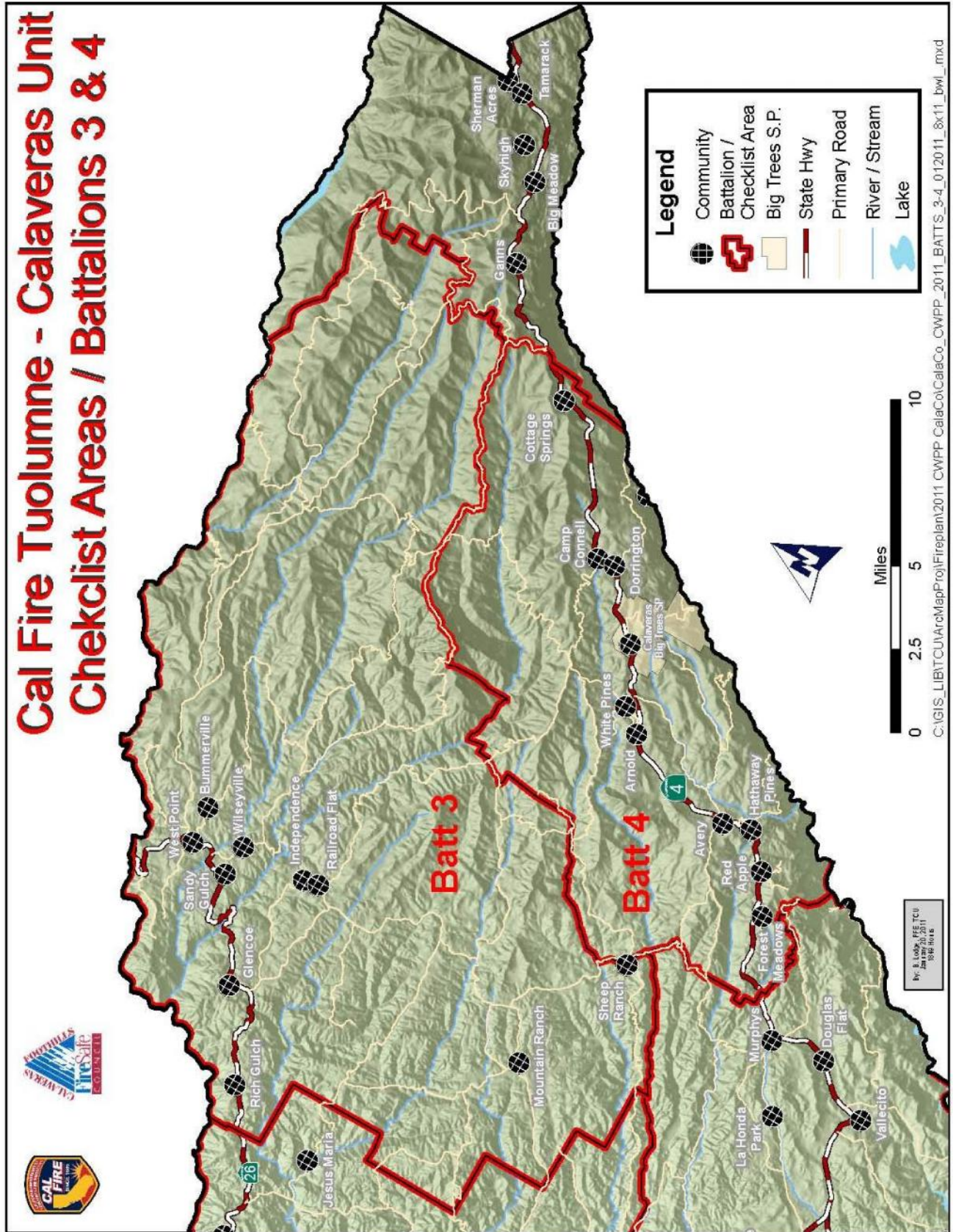
**City of Angels Camp:** The Angels Camp Fire Dept. has a “Fire Hazard Abatement Plan” similar to the State’s 4291 requirements. Their LE-100 style enforcement efforts are completed each year by the end of May. Residents are subject to a citation after June 1<sup>st</sup>.

Beginning in the fall of 2007 the TCU Pre Fire Engineer began a series of meetings with City of Angels representatives regarding implementation and adoption of new State building code requirements dealing with ember resistant building materials and techniques. These new “Chapter 7A” codes are tied to Fire Hazard Severity Zone designations within Local Response Area jurisdictions. In January of 2009 the City accepted the FHSZ maps for the city, setting in motion final production and distribution of the FHSZ map by the state, and their adoption process.

**Calaveras Foothills Fire Safe Council:** Since 2001 this FSC has been fully engaged in the success of several fuel reduction efforts, including : the production and implementation of the Calaveras County Community Wildfire Protection Plan; production and distribution of Public Education materials, and programs; identification, planning and implementation of numerous on-the-ground fuel reduction projects.

# Battalion 3 Map

## Cal Fire Tuolumne - Calaveras Unit Checklist Areas / Battalions 3 & 4



## **Battalion 3 Plan**

See Addendum 1 for the Glencoe/Rich Gulch C.W.P.P. which has been developed separately to this plan and includes detailed information and projects for the Glencoe and Rich Gulch areas.

**Battalion 3 - West Point Battalion:** Mike Blankenheim – Battalion Chief

### **Pre-Fire Management Plan – Overview**

The West Point Battalion consists of approximately 175,979 acres located in the northeast portion of Calaveras County. The Battalion ranges in elevation from 1,600 feet in the west to 6,800 feet at its eastern boundary and is bisected by multiple east- west river drainages.

The Battalion's fire control organization is comprised of three Forest Fire Stations. West Point FFS, a two (2) engine station, is the Battalion Headquarters located in the community of West Point; Esperanza FFS, a one (1) engine station, is located 1 mile east of the community of Mountain Ranch; and Hermit Springs FFS, a one (1) engine station, located 18 miles east of West Point at the 6,000 foot elevation on SPI land, at the Battalion's eastern DPA boundary adjacent to the STF.

Battalion 3 is served by three primary transportation corridors: State Highway 26, Ridge Road and Winton Road running west to east through its' northern portion, the combination of Railroad Flat Road and Mountain Ranch Road running generally north to south through the center of the Battalion and Sheep Ranch Road in the southern portion of the Battalion.

There is a significant forest road system on Sierra Pacific Industries (SPI) and Stanislaus National Forest (STF) lands east and south of West Point, between the North Fork of the Mokelumne River south to the north side of Blue Mountain, all within the Battalion's direct protection area (DPA).

The Battalion also benefits from several long, intact and contiguous traditional sections of the Ponderosa Way, which runs from north to south through the western portion of the Battalion from the main stem Mokelumne River all the way to Calaveritas Creek. The Ponderosa Way section which crosses the North fork of the Calaveras River, is accessible from both Calaveras and Amador Counties, but can no longer be crossed by vehicle.

The primary developed communities in the Battalion are West Point, Wilseyville, Glencoe, Railroad Flat, Mountain Ranch and Sheep Ranch. These population centers are located in the western half of the Battalion along the roadways mentioned above. There

are no incorporated towns, and these community centers are relatively small with most of the Battalion's population spread across a wide expanse of territory on parcels of 5 acres or more.

The western half of the Battalion also includes several large parcels of Federal Bureau of Land Management (BLM) lands in the Mokelumne River drainages and also in the Calaveras River and Calaveritas Creek drainages straddling both the eastern boundary with Battalion 1 and northern boundary with Battalion 2.

The eastern half of the Battalion is an inter-mix of private commercial timberland owned by Sierra Pacific Industries (SPI) along with portions of the Stanislaus National Forest, Calaveras Ranger District (STF), BLM lands and some private parcels.

All Federal lands within the Battalion are designated as CAL FIRE DPA under the California Master Cooperative Wildland Fire Management Agreement (CFMA). The entire Battalion has been designated by CAL FIRE as having a *Very High* Fire Hazard Severity Zone rating. It has also been categorized as having a *High* Fire Hazard rating by the United States Forest Service (USFS).

The western half of the Battalion lies within the Unit's *Foothills-East* Fire Danger Rating Area. The eastern half comprised primarily of SPI and USFS lands, falls within the *Sierra* FDRA.

CAL FIRE in the West Point Battalion protects life and private property and provides vital economic and natural resource protection to critical watershed, timber, and recreational values.

The Battalion protects a sizeable portion of the Mokelumne and Calaveras River watersheds, including the North, South and Licking Forks of the Mokelumne River and the North Fork of the Calaveras River.

The Mokelumne River watershed provides water to Tiger Creek, Pardee and Camanche Reservoirs and is the primary water source for the East Bay Municipal Utility District. The Calaveras River watershed provides the primary water source for New Hogan Reservoir. Several significant tributaries of the above rivers, which may be smaller in volume, but often equal in length, also bisect the Battalion, including Murray, Jesus Maria, Forest and Blue Creeks.

The commercial timberlands in the Battalion have supported an active logging industry for decades and continue to play a vital role in the local and state economy. Active logging on SPI lands within the Battalion and associated activities within the surrounding commercial forested lands are still active and routine.

Natural resource and recreation values are important resources under CAL FIRE's protection within Battalion 3. Hunting, fishing, hiking, cycling and OHV activities are active during the summer season when both public lands and private SPI lands are fully

accessible to the public. Jamboree type concert, barbeque and RV group events occur regularly on several large private ranches within the SRA in various locations in the Battalion.

Local government fire protection within Battalion 3 is provided by three (3) fire districts. Central Calaveras Fire Rescue Protection District provides local government fire protection to the west end of the Battalion serving the communities of Mountain Ranch, Glencoe, Railroad Flat and Sheep Ranch. West Point Fire District protects the north and central areas of the Battalion including the communities of West Point, Wilseyville, Lily Valley and Upper Blue Creek. Ebbetts Pass Fire District is responsible for the extreme eastern portion of the Battalion.

### Battalion 3 Assessment Summaries:

#### **Assets at Risk, Fuels, Weather and Fire History**

**Assets at Risk:** There are many significant assets at risk in the West Point Battalion. These include rural communities on private parcels, homes and businesses. There are critical downstream urban watershed resources which include water collection and distribution infrastructure and hydro-electric power generation and distribution infrastructure. There are major private commercial timber holdings and transportation and communications infrastructure. Also included are significant parcels of federally owned public lands comprised of watershed, timber, wildlife habitat and recreational resources along with historic and pre-historic sites.

- **Life Safety:** The western half of the Battalion is characterized by a handful of small communities that function as the hubs for a widely dispersed population. The eastern half, being private and federal timberland, is sparsely populated. The need for fire defense improvements, concerted educational campaigns, safe access/egress routes and a coordinated initial response remains utmost in the minds of Battalion personnel.
- **Residential and Commercial Development:** Officially designated “Communities at Risk” in the Battalion include West Point (including the Lilly Valley and Blue Creek Subdivisions), Wilseyville, Glencoe, Railroad Flat, Mountain Ranch, and Sheep Ranch.

There has historically been fragmented growth throughout the west half of the Battalion. Subdivisions that can be classified as modern and high density are rare, with an average parcel size of five (5) acres. Communities within the Battalion can generally be classified as rural and older with the majority of the development dating back to the 1940’s through 1960’s.

As a result, outdated design features such as shake roofs, wood siding, wood decks, and large single pane windows are common in Battalion 3. Wood frame construction remains the primary preference for new development construction.

However, newer building codes should result in more ember resistant and fire safe structures into the future.

- **Watershed:** The broad spectrum of watershed values noted above may be less obvious, but are tremendously important within and far beyond the Battalion boundary.

The Mokelumne River watershed is the water source for Pardee and Camanche Reservoirs and provides 90% of the water that goes to the East Bay Municipal Utility District (EBMUD). EBMUD's water system serves approximately 1.3 million people in a 331-square-mile area of Alameda and Contra Costa Counties, including the major cities of Oakland and Berkeley and east to Walnut Creek and the San Ramon Valley.

This watershed also provides for electric power through the Tiger Creek Reservoir and related infrastructure as a component of Pacific Gas and Electric's (PG&E) hydro-electric distribution system.

The watersheds in Battalion 3 also supply water to the Amador Water Agency, Stockton East Water District, Calaveras Public Utility District and the Calaveras County Water District.

The South Fork and Licking Forks of the Mokelumne are the primary water sources for the Calaveras Public Utilities District (CPUD), with their intake just south of the confluence of the South and Licking Forks where water is pumped into Jeff Davis Reservoir located in the Railroad Flat area.

The North Fork Calaveras River is a primary water source for New Hogan Reservoir. Calaveras County Water District and the Stockton East Water District (SEWD) utilize New Hogan for water storage and delivery. Calaveras County Water District (CCWD) utilizes the Bear Creek and Forest Creek Drainages.

- **Recreation Values:** The same critical importance holds true in the western portion of Battalion 3 where CAL FIRE provides direct wildfire protection to the large areas of Bureau of Land Management (BLM) lands along the main stem of the Mokelumne River adjacent to the community of Glencoe. Inherently important as watershed, BLM lands may be most utilized for their recreational opportunities; hunting and fishing being two of the most common. This particular section of the Mokelumne River watershed is currently being managed by the BLM in anticipation of future potential Wild and Scenic River designation. There are also long term plans for the creation of a major trail along this stretch of the river that would connect to a system designed to link the Pacific coast with the Sierra crest.

Additional large tracks of BLM lands protected by CAL FIRE in Battalion 3 include the North fork of the Mokelumne River east of the community of West Point to the Tiger Creek Reservoir, the Middle Fork of the Mokelumne River along Silver Mountain, as well as BLM parcels around and adjacent to the North Fork of the Calaveras River and south of the community of Mountain Ranch south to Calaveritas Creek.

- **Agricultural Values:** Much of the high elevation timberland in the eastern half of the Battalion is used via lease agreements as summer range by low country cattleranchers.
- **Community Infrastructure:** Water storage and delivery systems, electrical

distribution equipment; telecommunications systems; transportation networks; schools.

- Water delivery systems within the Battalion are critical assets. Calaveras County Water District services the West Point and Wilseyville area. Calaveras Public Utilities District services the communities of Railroad Flat and Glencoe. The community of Mountain Ranch has a single storage tank and hydrant located near Senders Market.

The balance of the Battalion is serviced by individual wells. With the enactment of PRC 4290, water delivery for fire protection is addressed by an optional formula. Although some residents have chosen to install on-site water tanks, the majority of new development has opted to pay the in-lieu fee to fund the Calaveras County Fire Service Water Tender program. On-site tanks are minimal and there is not currently a system to guarantee functionality of the existing tanks.

- Telecommunications is another critical element of the infrastructure present within the Battalion. Several government agencies and private communications companies take advantage of the topography within the Battalion for the location of communications system facilities. These are expensive installations that are, by necessity, placed in threatened locations atop ridges and mountains.
- Schools are at risk in the same way as the rest of the community is. But their importance as one of the prime choices for use as evacuation centers makes them doubly important in the event of a significant wildland fire.
- Electrical distribution systems are ubiquitous throughout the Battalion, and a critically important asset. Power distribution lines and equipment are unique among assets as being both a potential cause of wildland fire and a threat to firefighting operations. While not nearly as frequently a cause of wildland fire as they were historically, they remain a threat to aerial firefighting operations. Most every wildland fire has some potential to damage this equipment; the biggest fires present the most serious threat. Disruption of the power distribution system is likely to have a significant impact on lives and the economy.
- **Commercial Timber Resources:** Sierra Pacific Industries (SPI) owns large tracks of valuable commercial timber land within the SRA in the eastern half of the Battalion. The Stanislaus National Forest (STF) also owns a large number of acres managed for commercial timber among other uses. BLM parcels comprise most of the remaining portions of the eastern high-elevation zones in Battalion 3, with some interspersed private parcels.

These private and Federal timber lands are directly linked to the viability of the above mentioned watersheds, water collection and distribution systems, recreation values, and the economies of Calaveras and surrounding counties. When considered as a broad interconnected system one can begin to see the

critical importance of the wildland fire protection provided by the CAL FIRE within the West Point Battalion.

**Fuels:** With the exception of two small blocks (downtown West Point and the west end of Spink Rd), the entire West Point Battalion has been designated by CAL FIRE as a *Very High Fire Hazard Severity Zone*.

At the lowest elevations of the Battalion, there is a mix of brush, grass and oak woodlands. There are timber fuel models with heavy brush understory at the mid and higher elevations. This mixture of fuels - grass with an over story of brush and brush with an over story of timber, creates a highly volatile fuel situation. The grass and brush fuel models act as the primary ladder fuels that carry fire vertically into the over story. The high potential for vertical fire spread, that is caused by the increased understory fuel loading, increase both fire intensity and spotting potential.

The effects of a series of annual low elevation snow falls starting in 2006 through 2011 remain a consideration for the fuels between the 1,500 and 3,000 foot elevations. These events primarily affect the live oak, black oak and gray pine, breaking off their branches and tops.

This adds significantly to the amount of dry dead and down fuels in the under story and, in turn, increases the availability of ladder fuels. This increased dead fuel loading increases the difficulty of fire control through the creation of fuel jackpots that burn with high intensity.

**Weather:** When normal Central Valley summer heat waves begin to subside, Battalion 3 eventually receives the beneficial effects from the "Delta Breeze" about 24 hours after its fire dampening effects are felt in the San Joaquin Valley and the lower elevations of the Unit. This extends the effects of high hazard fire weather patterns a full one day longer than the lower elevations experience.

In the upper elevations of the Battalion, it is not uncommon to experience relative humidity in the low teens to the single digits from the middle of September until the rainy season begins. Correspondingly, the 10-hour fuel moistures can stay below 5% for much of the fall season. Battalion 3 frequently experiences East and North wind events at the higher elevations. During these dry wind events, high winds coupled with low humidity develop with little or no warning. The Mokelumne River drainages typically come under the greatest influence from these events. A late season, east wind driven fire event most likely represents the greatest threat for major timber fire growth in the Battalion. The Power fire on the north side of the Mokelumne River drainage on the El Dorado National Forest burned approximately 13,000 acres and destroyed a large area of both public and private timberland in 2004 under this fall east wind condition.

**Fire History:** As with all Battalions in the Tuolumne - Calaveras Unit, the West Point Battalion has had its share of large and damaging wildfires, including:

The Butte Fire in September of 2015 has been the largest and most damaging fire in TCU's history. The fire started on the north side of the Mokelumne River and soon crossed in to Calaveras County on the Battalion 1/3 border. The fire burned a total 70,868 acres. Approximately 42,000 of those acres were in Battalion 3.

The Moore Fire (2001) located in Moore Creek on the North Fork of the Mokelumne River burned approximately 579 acres of timber.

The Leonard Fire (2001) burned onto the western boundary of the Battalion burning approximately 5,188 acres.

The Harley fire south east of Wilseyville which began on April 1, 2000 burned approximately 158 acres of timber.

The Winton Fire (Lightning #31) (1999) 6 miles east of West Point burned approximately 114 acres of timber.

The Lightning #14 fire (1996) in the Swiss Ranch area burned approximately 2,647 acres.

The Old Gulch Fire (1992) burned on the southern boundary of the Battalion south of Mountain Ranch burning approximately 17,419 acres.

The Railroad Flat Complex (1988) consisting of the Bridge (6,690 acres) and Mason (4,050 acres) fires located to the East of Railroad Flat and Mountain Ranch burning a total of 10,740 acres.

The Forest Creek Fire (1959) located 10 miles east of West Point burned approximately 528 acres of timber.

The Battalion has experienced an additional 27 large fires since 1918 ranging from 5 to 1,748 acres.



# Battalion 3 W.U.I. Map



## Glencoe W.U.I. Map



Glencoe is the only community considered at risk within the Glencoe W.U.I. During the Battalion 3 Public meeting held on January 26, 2011 it was determined that Rich Gulch needs to be recognized as a community at risk.

### **Glencoe**

Glencoe (formerly, Mosquito and Mosquito Gulch) is an unincorporated community in Calaveras County, California. It lies at an elevation of 2749 feet (838 m). Glencoe was formerly called Mosquito Gulch. The business portion of the town was on the north side of Mosquito Gulch, but not one of the old buildings remains. The mines were first worked by Mexicans in the early 1850s. Quartz mining predominated but there was some placer mining as well.

The town today is registered as California Historical Landmark #280. The first post office was opened at Mosquito in 1858 but closed in 1869; it was re-established as Mosquito Gulch in 1873. The name was changed to Glencoe in 1912; the post office closed again in 1916, but was re-established in 1947.

## West Point W.U.I. Map



The Sandy Gulch, West Point and Wilseyville are the only communities considered at risk within the West Point W.U.I. During the Battalion 3 Public meeting held on January 26, 2011 it was determined that the Community of Bummerville needs to be recognized as a community at risk.

### **Sandy Gulch**

Sandy Gulch is an unincorporated community in Calaveras County, California, just southwest of West Point on State Route 26. It lies at an elevation of 2592 feet (790 m) above sea level.

It was established in 1849 as a trading center for miners of the area. The settlement, in an area that was home to many Miwok Indians, was named after the gulch where William and Dan Carsner found large nuggets of gold embedded in the coarse sands. Water for mining was brought from the middle fork of the Mokelumne River through Sandy Gulch and Kadish Ditches. Quartz mining began in the early 1850s, and the first custom stamp mill in the district was located at the head of Sandy Gulch. School and election precincts were established early, and one of California's many Hangman's Trees stood near the center of town. It is registered as California Historical Landmark #253.

### **West Point**

West Point (formerly, Indian Gulch and West Point) is a census-designated place (CDP) in Calaveras County, California, in the United States. The town is registered as California Historical Landmark #268. West Point was originally the name of a camp established here by scout Kit Carson, who was searching for a pass over the Sierra Nevada. The town was originally named Indian Gulch when founded in 1852; the name was changed to West Point in 1854. The first post office was opened in 1856, the name changed to West Point in 1895 and changed back to West Point in 1947.

One emigrant road forked by Big Meadows — its north branch came directly to West Point, which was a thriving trading post prior to the gold discovery. Author Bret Harte lived there for a time. According to the United States Census Bureau, the CDP has a total area of 3.7 square miles (9.7 km<sup>2</sup>), all of it land.

### **Wilseyville**

Wilseyville is an unincorporated community in Calaveras County, California. It lies at an elevation of 2769 feet (844 m). Wilseyville is notorious for the ranch owned by Leonard Lake which was used in his serial killings, and used to dispose of the bodies of his victims. Wilseyville's post office was established in 1947. Wilseyville was named after Lawrence A. Wilsey, an executive at the American Forest Products Company.

## Railroad Flat W.U.I. Map



Railroad Flat is the only community considered at risk within the Railroad Flat W.U.I. During the Battalion 3 Public meeting held on January 26, 2011 it was determined that Independence needs to be recognized as a community at risk.

### **Railroad Flat**

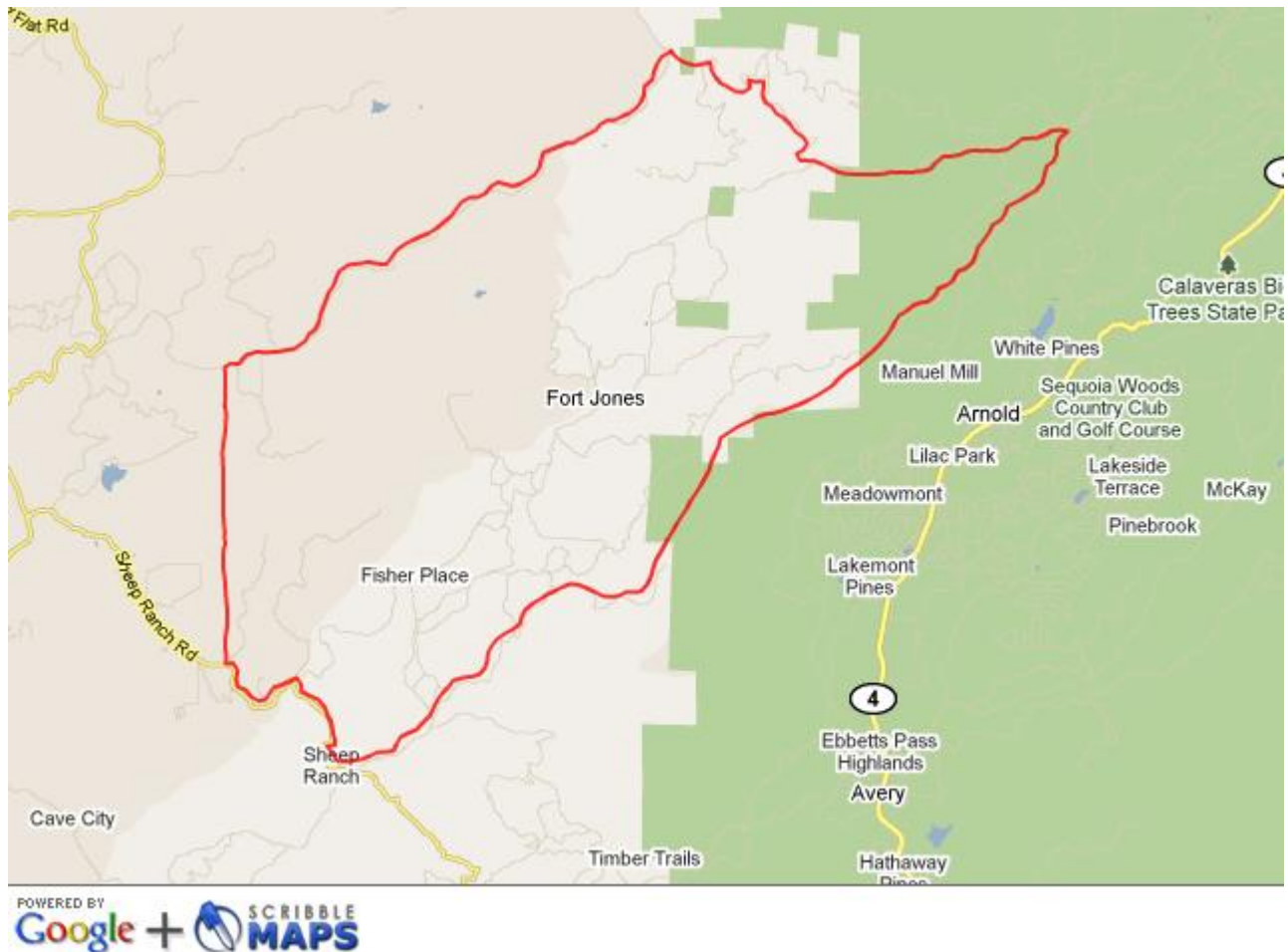
Rail Road Flat is a census-designated place (CDP) in Calaveras County, California, United States. The population was 549 at the 2000 census.

This historic mining town, elevation 2,600 feet (788 m), was named after primitive mule-drawn ore cars used here. There was never actually a railroad here. The town was established in 1849. It was the site of an Indian council as well as the center of rich placer

and quartz mining. Its largest producer was the Petticoat Mine. The post office was established in 1857, closed in 1858, and re-established in 1869 and the Edwin Taylor store built in 1867. The town's population was decimated in 1880 by black fever.

The Clark Reservoir was created when an engineer named W.V. Clark constructed a ditch from the Mokelumne River, as there was not much water to work the placers. The reservoir, located on his property, supplied water to the mines and to the town. The town is registered as California Historical Landmark #286. According to the United States Census Bureau, the CDP has a total area of 33.0 square miles (85.5 km<sup>2</sup>), of which, 32.8 square miles (85.1 km<sup>2</sup>) of it is land and 0.2 square miles (0.4 km<sup>2</sup>) of it (0.48%) is water.

## Sheep Ranch W.U.I. Map



Sheep Ranch is the only community considered at risk within the Sheep Ranch W.U.I.

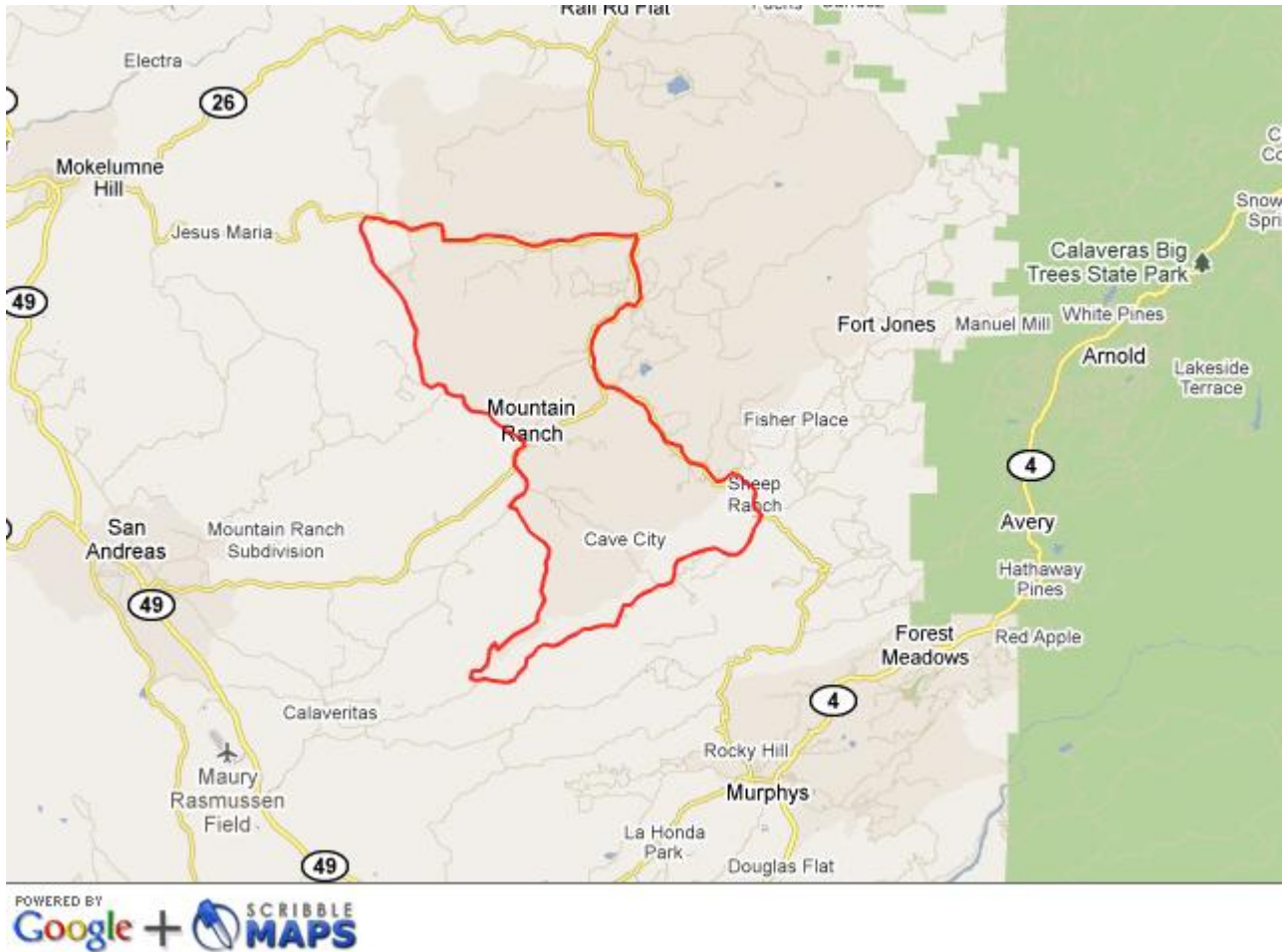
### **Sheep Ranch**

Sheep Ranch (formerly, Sheepranch) is an unincorporated community in Calaveras County, California. It lies at an elevation of 2359 feet (719 m). Sheepranch was named after a sheep ranch. Officially listed as "Sheep Ranch", the official post office stamp did at one time read "Sheepranch" (Zip: 95250). One of the very few "free-range" areas in California, there are several hundred freely roaming sheep throughout the town. Sheepranch is located approximately half-way between O'Neal Creek and San Antonio Creek on Sheep Ranch Road in the center of Calaveras County.

Sheepranch has a surprisingly colorful history. The town was once surrounded by sheep corrals, and in 1860 gold ore was discovered in the corrals where the sheep were kept at night. Soon Sheepranch was a bustling gold mining town. Before the turn of the century there were five flourishing gold mines and one had a ten-stamp mill. The town also supported 15 saloons." The town was patented on August 4, 1880 by Judge Ira Hill Read.

The main mine in town was known as the Hearst mine. George Hearst, who with partners bought the mine in 1897, was the father of William Randolph Hearst. The mine operated under various company names until shut down by the government in 1942. At one time the town of Sheepranch held two churches, one Catholic and the other Protestant. The local red school house, which still stands as a private home, employed two teachers until 1907 when the enrollment dwindled to 30 pupils taught by one teacher. The Eagle Hotel and the Pioneer Hotel were the two prominent local establishments, but only the Pioneer Hotel still stands. The first post office opened in 1877, and was renamed Sheepranch in 1895.

## Mountain Ranch W.U.I. Map



Mountain Ranch is the only community designated to be a community at risk in the Mountain Ranch W.U.I. During the Battalion 3 Public meeting held on January 26, 2011 it was determined that Cave City needs to be recognized as a community at risk.

### Mountain Ranch

Mountain Ranch (formerly, El Dorado and El Dorado Town) is a census-designated place (CDP) in Calaveras County, California, United States. The town is registered as California Historical Landmark #282. The town center is quite small with less than 50 people living in it, the 5 mile square area surround the town accounts for the balance of the population.

Mountain Ranch's post office was established in 1858. In 1868, it was moved to another town called El Dorado Camp 1.5 miles south, as there was already an El Dorado post office

in CA, El Dorado Camp became known as Mountain Ranch. Currently, there are 3 post office buildings in the town. The present one, a small post office which was built in 1956, and a post office built in 1923 which was once billed as the world's smallest post office. The original location of the town of Mountain Ranch also has a historical landmark. The bell on the historical marker was used in the local school from 1885 to 1953. Established as Cave City School District in 1855, this school joined with the Banner District in 1946 to become the El Dorado Union Elementary School District.

According to the United States Census Bureau, the CDP has a total area of 41.3 square miles (106.9 km<sup>2</sup>), of which, 41.2 square miles (106.7 km<sup>2</sup>) of it is land and 0.1 square miles (0.2 km<sup>2</sup>) of it (0.15%) is water.

### **Battalion 3 Mitigation Efforts**

The Calaveras County General Plan and Zoning Codes are the governing rules for development. The common 5 acre parcel size required therein contributes to the limited ability to modify fuels over large geographical areas in the populated west half of the Battalion. Large private and Federal land ownership in the eastern half of the Battalion affords a far greater opportunity for cooperative projects which are very beneficial to the associated watershed concerns. As a result, Battalion 3 will continue to focus on the following successful approach to reducing the wildland fire threat:

**Defensible Space Inspections:** Removing fuels around structures provides the single most effective action for increasing structure survivability during a wildfire. An aggressive inspection program can provide firefighters with defensible space for structure protection operations. Battalion 3 has a focused LE-100 program. As stated previously, the majority of the Battalion is divided into parcels of 5 acres or larger. The size of the parcels provides the opportunity to implement the required 100 foot fuel removal within the property boundary in a majority of the situations. As a result of the initial application of the 100 foot requirement, a large amount of time is required to educate the home owners as to what is required, often requiring multiple inspections. The emphasis of the program will be on education and eventual compliance. The amount of fuel to be removed is substantial in many cases. The removal is hindered by burning restrictions such as APCD rules and/or travel time to waste disposal sites at approximately 1 ½ hours per load. The focus will be on quality and not quantity.

Within the Esperanza area, we will target the areas of East Murray Creek and Jesus Maria Roads. Within the West Point area, the focus will be on the rim of the North Fork of the Mokelumne River and the Lynn Park Acres subdivision area.

**Fuel Reduction/Breaks:** Fuel breaks are the primary mitigation measure used to modify fuels in Battalion 3. In the eastern portion of the Battalion, Sierra Pacific Industries (SPI) is the primary landowner, followed in total acres by the United States Forest Service – Stanislaus National Forest. SPI, the Stanislaus National Forest (STF), and the California Department of Forestry and Fire Protection (CAL FIRE TCU, including AEU’s Pine Grove Camp) have initiated an extensive network of fuel breaks comprising approximately 71 miles (approximately 2,400 acres) of completed and proposed fuel breaks. These fuel breaks are typically located on a predominant ridge line utilizing a 300’ wide shaded fuel break configuration.

As additional sections of the fuel break network are completed in the coming years, for those portions completed early in the program maintenance will become an issue.

- ) West Blue #1 Project – This is a cooperative project between CAL FIRE, Sierra Pacific Industries (SPI) and local landowners. There are 2 main objectives of the project. First, to construct a fuel break on the ridge that extends westward from Blue

Mountain. This fuel break is part of the Calaveras-Tuolumne Fuel Break Project. Second, to reduce fuels on wildland adjacent to existing structures in the project area. About 150 of the 370 project acres have been treated to date.

- J Winton-Schaads VMP, in July, 2007, Cal Fire entered into a Vegetation Treatment Program agreement with Sierra Pacific Industries covering an area approximately 6,342 acres in the area east of West Point and Wilseyville and surrounding the community of Lilly Gap, also encompassing a portion of the Winton Road Fuel Break. This project is designed to allow for multiple burns utilizing mechanized or hand crew fuel removal methodologies on multiple plots of varying acreages. All designed to take advantage of fuel, weather and resource availability issues. This project uses a systematic approach to reduce fuels, initially in the Wildland-Urban interface. Between July 1, 2008 and June 30, 2009, we have treated approximately 126 acres utilizing prescribed fire and manual thinning with a fire crew. A total of 174 acres has been treated within the VTP.
- J Winton Road Fuel Break – During 2008/09, we successfully treated approximately 104 additional acres utilizing prescribed fire under the Winton/Schaads VTP agreement.
- J Winton Road Roadside Fuel Reduction Project – This is a cooperative project between CAL FIRE Sierra Pacific Industries (SPI), local land owners and the Stanislaus National Forest. The road is owned by Sierra Pacific Industries. There are 2 main objectives of the project. First is to reduce the fuels availability immediately adjacent to the main forest road utilized by the public and the logging industry. Second, the reduction in fuels will dramatically improve sight distance for vehicle travel. Winton Road is the primary response road for the Hermit Springs FFS. Providing this clearance will greatly enhance the safety of CAL FIRE Personnel, the logging industry and the public. In 2007 this project was completed through the use of Prop 40 funds and mechanical equipment.

**Defensible Space Inspections:** Removing fuels around structures provides the single most effective action for increasing structure survivability during a wildfire. An aggressive inspection program can provide firefighters with defensible space for structure protection operations. In 2010, the Battalion partnered with the CFFSC and employed part-time, grant funded defensible space inspectors. This program was highly successful and generated an additional 1214 inspections within the Battalion.

## Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Planning

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Unknown

Amount:

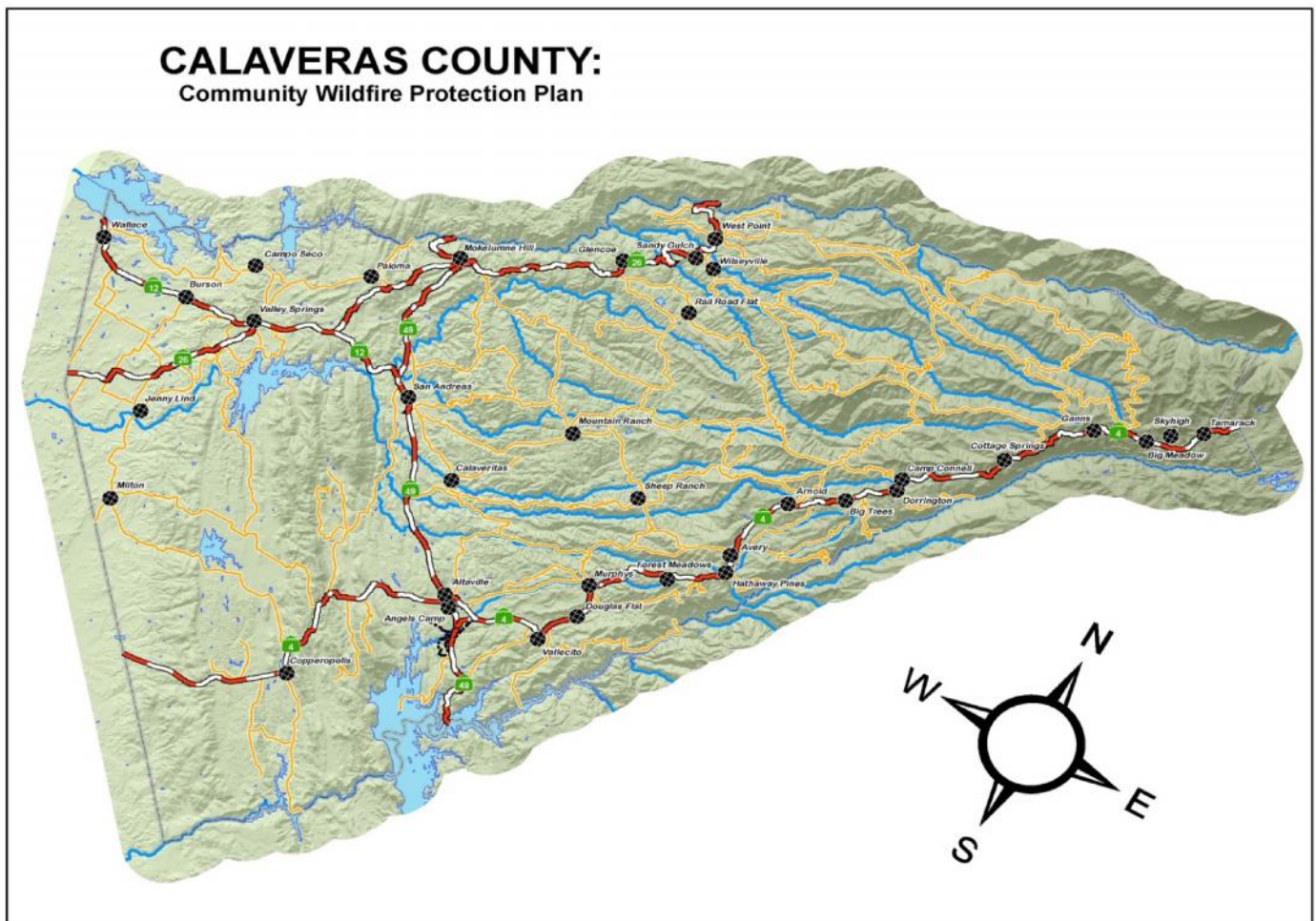
Author Name: Bill Fullerton

In-Kind:

Total:

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Status: Planning

Acres:

Priority: 2

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Unknown

Amount:

Author Name: Bill Fullerton

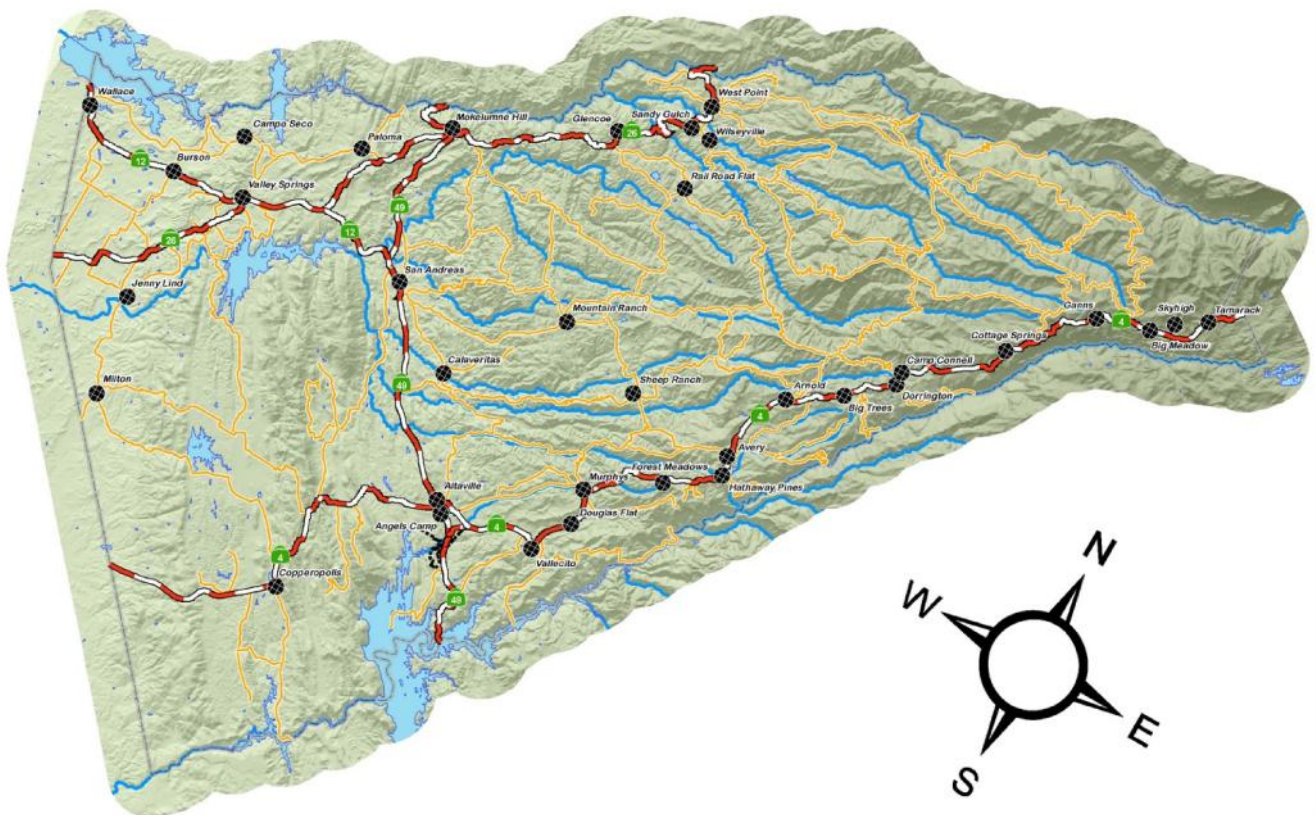
In-Kind:

Total:

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## Public Roadways Fire Break Phase

**Initial Checklist/Battalion: 1-4**

**Status: Planning**

**Acres: 30**

**Priority: 3**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: Unknown**

**Amount:**

**Author Name: Bill Fullerton**

**In-Kind:**

**Total:**

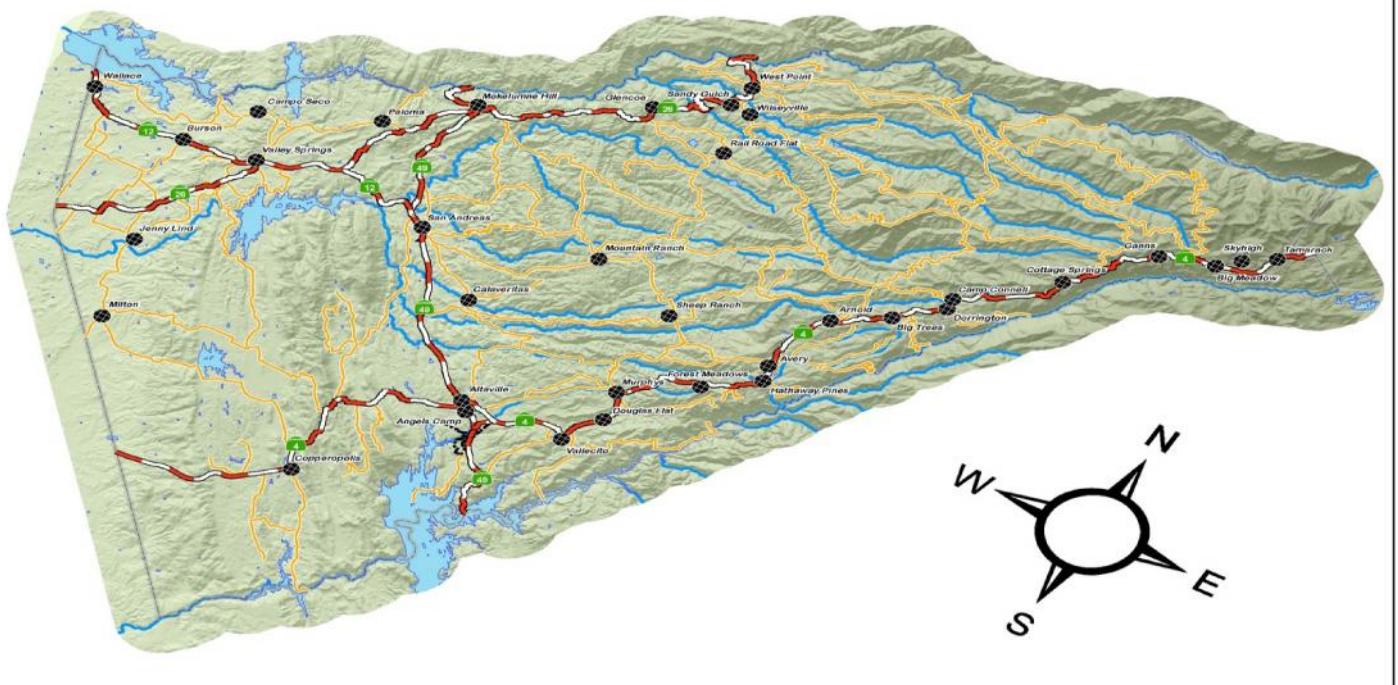
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## Tiger Creek Fuel Break

Initial Checklist/Battalion: 3

Status: Planning

Acres:

Priority: 4

Sponsor:

Length/Mi:

Within W.U.I?: Yes

Lat/Long:

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source:

Amount: \$

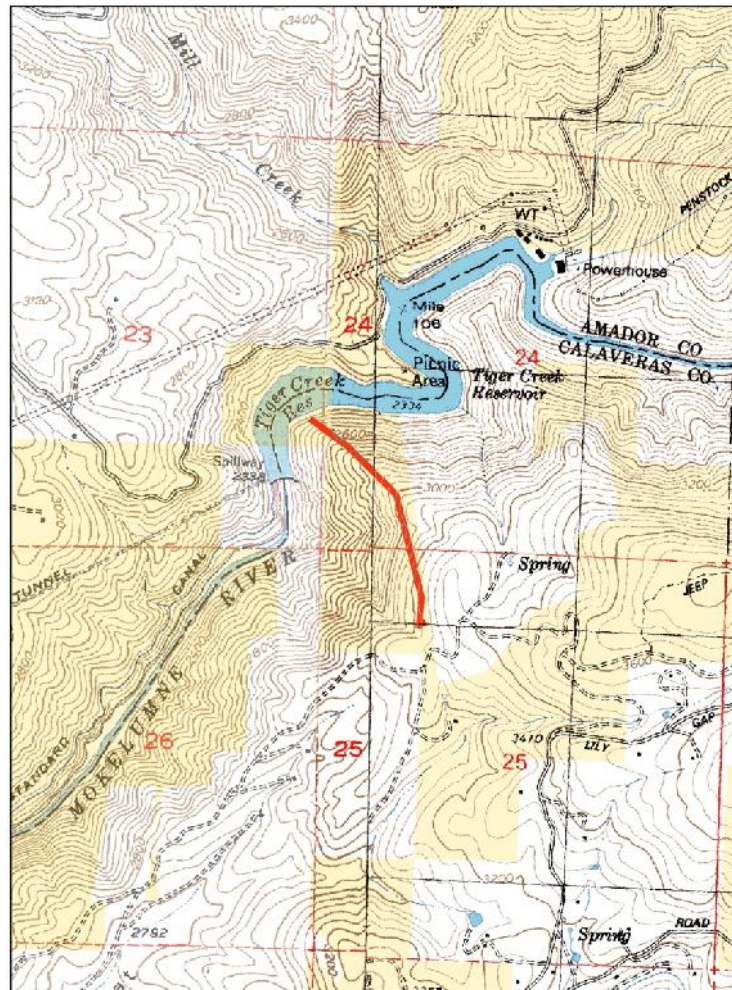
Author Name: Chris Post

In-Kind:

Total:

### PROJECT DESCRIPTION:

Reduce surface and ladder fuels to create a shaded fuel break.



## Alabama Hill Fire Break

Initial Checklist/Battalion: 3

Status: Planning

Acres:

Priority: 5

Sponsor:

Length/Mi:

Within W.U.I?: Yes

Lat/Long:

Document Effective Date: 1/1/2011 Funding Source:

Tons/Fuel:

Author Name: Chris Post

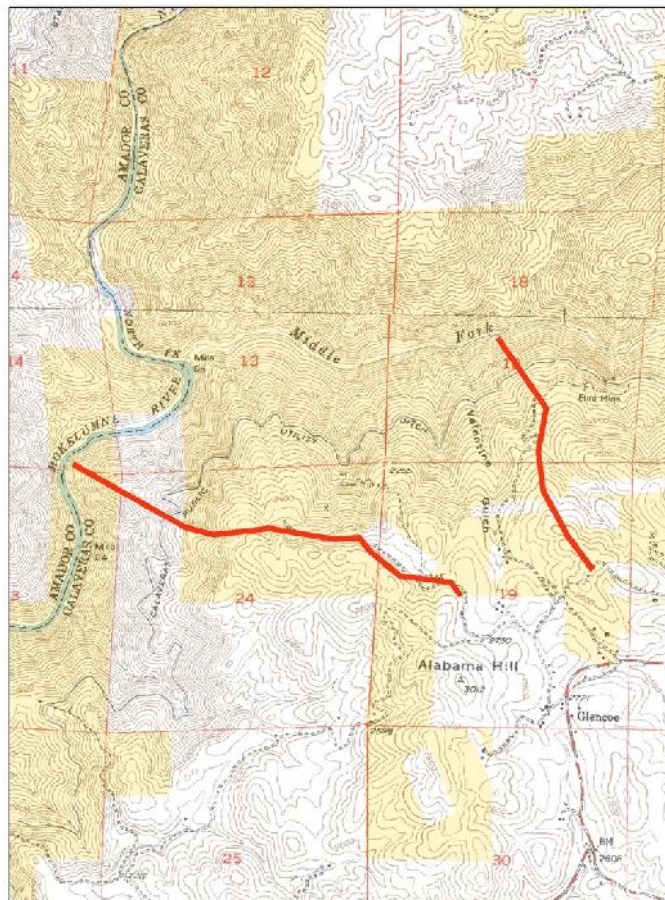
Amount: \$

In-Kind:

Total:

### PROJECT DESCRIPTION:

Anchors to the Perimeter Fuel Break on Upper Dorry Road, follows a dirt road down the ridge nose for 0.8 miles, and continues cross-country over Marble Point to the Main Stem Mokelumne River. The length is ~1.4 miles and the change in elevation is ~1,730'.



## Red Corral Fire Break

**Initial Checklist/Battalion: 3**

**Status: Planning**

**Acres:**

**Priority: 6**

**Sponsor:**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long:**

**Document Effective Date: 1/1/2011**

**Funding Source:**

**Tons/Fuel:**

**Author Name: Chris Post**

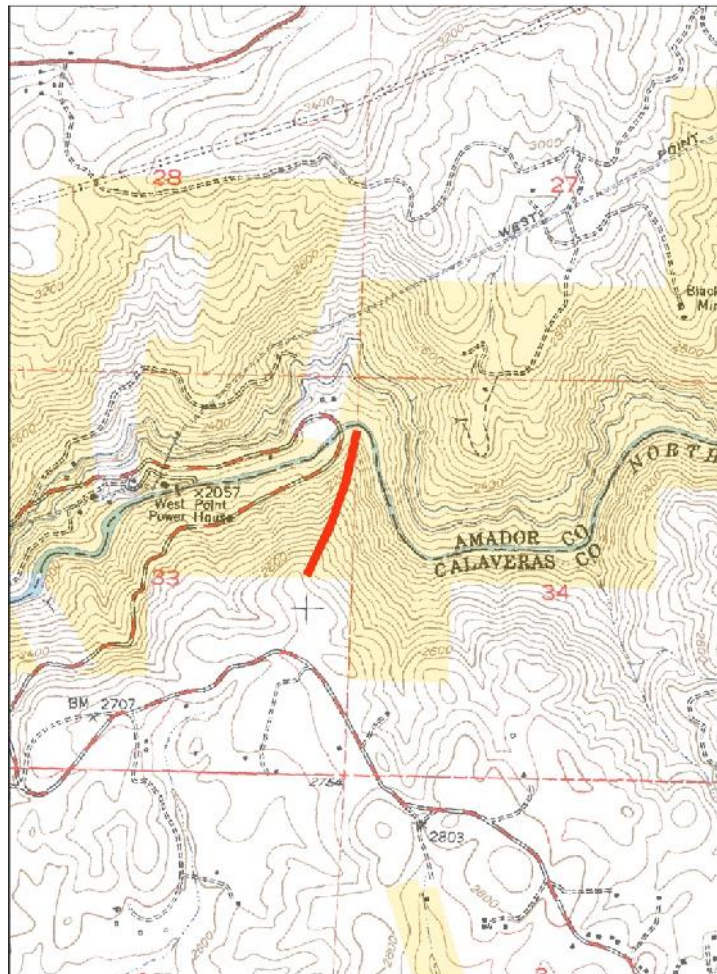
**Amount: \$**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

Reduce surface and ladder fuels to create a shaded fuel break.



## Lilly Gap Biomass

Initial Checklist/Battalion: 3

Priority: 6

Length/Mi:

Within W.U.I?: Yes

Document Effective Date: 1/1/2011

Author Name: Chris Post

Status: Planning

Sponsor:

Lat/Long:

Funding Source:

Acres:

Tons/Fuel:

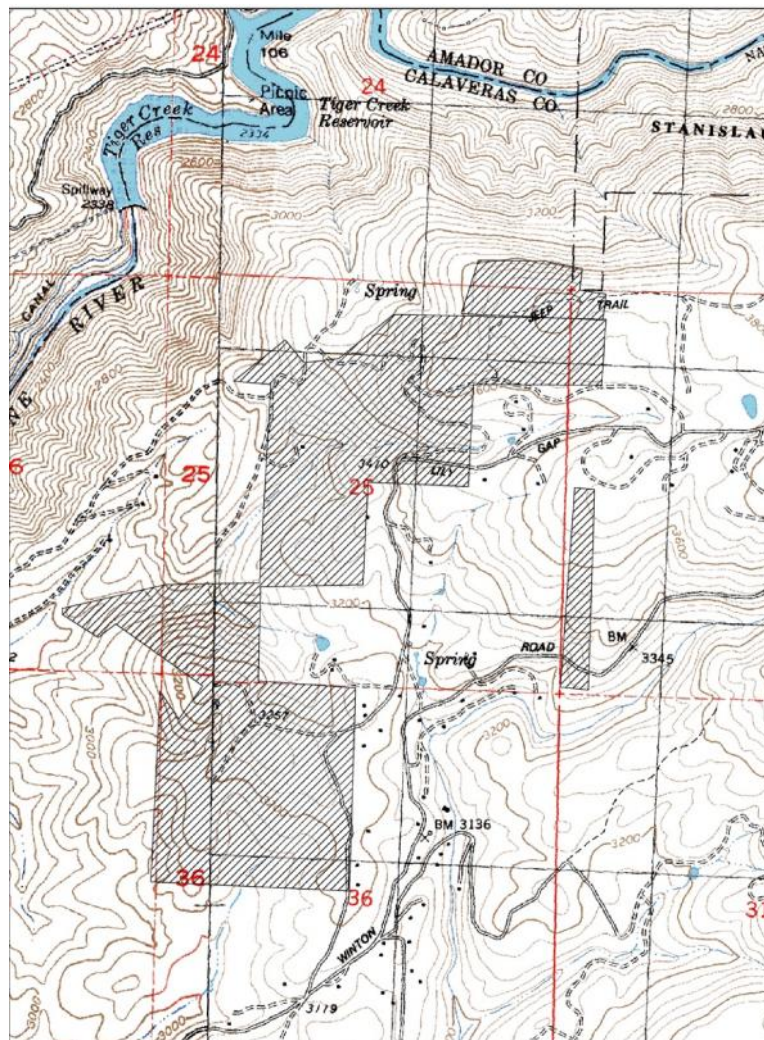
Amount: \$

In-Kind:

Total:

### PROJECT DESCRIPTION:

Reduce ladder and surface fuels while using removed fuels for biomass.



## Locally Based Biomass Utilization Projects

**Initial Checklist/Battalion: 1**

**Priority: 7**

**Length/Mi:**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Rick Breeze-Martin**

**Status: Planning**

**Sponsor: CHIPS/ACCG**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source:**

**Acres:**

**Tons/Fuel:**

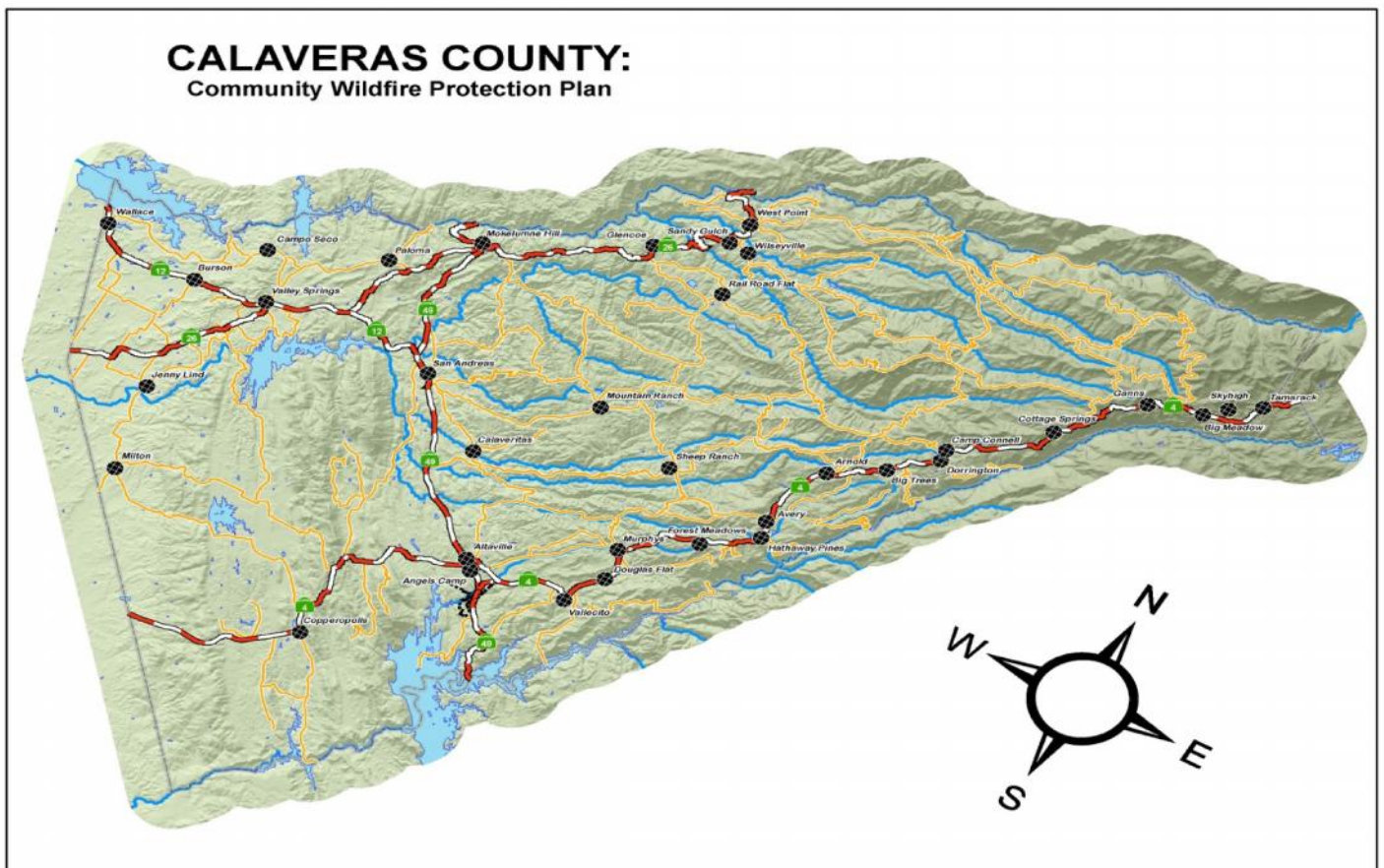
**Amount: \$**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

Development and implementation of small-scale biomass projects, owned and operated by Calaveras/Amador residents, providing jobs, fuels reduction and energy for local residents and communities. Possible projects include pelletizing operations, small biomass heating or electrical generation for local use. Projects should utilize ecological stewardship fuels reduction methods approved by ACCG and/or CHIPS.



## Structural Ignitability Reduction and Fire Resiliency Building Techniques

**Initial Checklist/Battalion: 1**  
**Priority: 8**

**Status: Planning**  
**Sponsor: CHIPS**

**Acres:**

**Length/Mi:**  
**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**  
**Amount: \$**

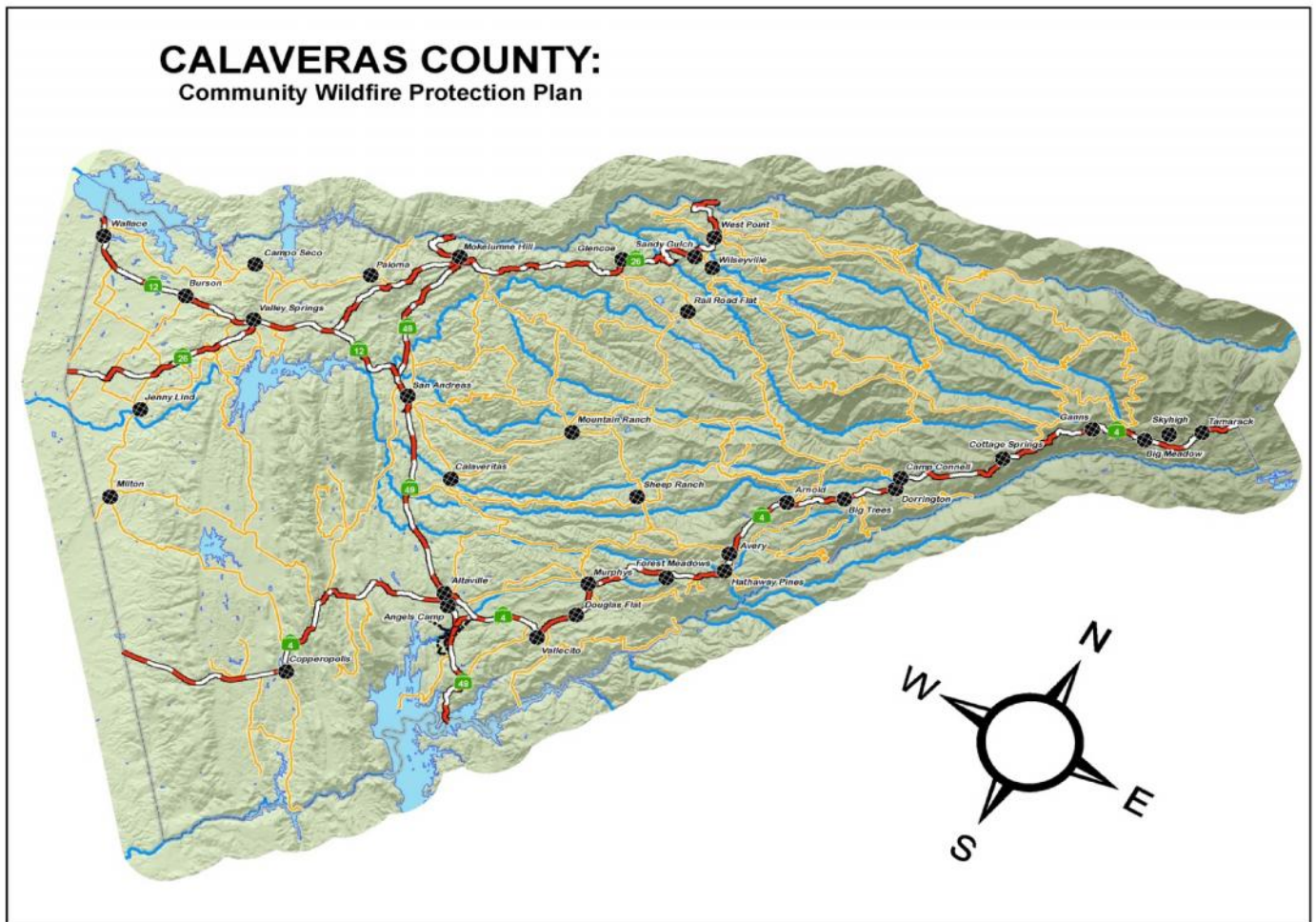
**Document Effective Date: 1/1/2011**  
**Author Name: Rick Breeze-Martin**

**Funding Source:**

**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

Provide public education on structural ignitability reduction and fire resiliency building techniques. Train inspectors for residences on these topics. Identify and/or train contractors to provide services. Secure funding to lower costs for services for all residents, not just disabled or low in



## State Fire Fee Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**

**Status: Current**

**Acres: 100**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: State Fire Fee**

**Amount: \$99,000**

**Author Name: Bill Fullerton**

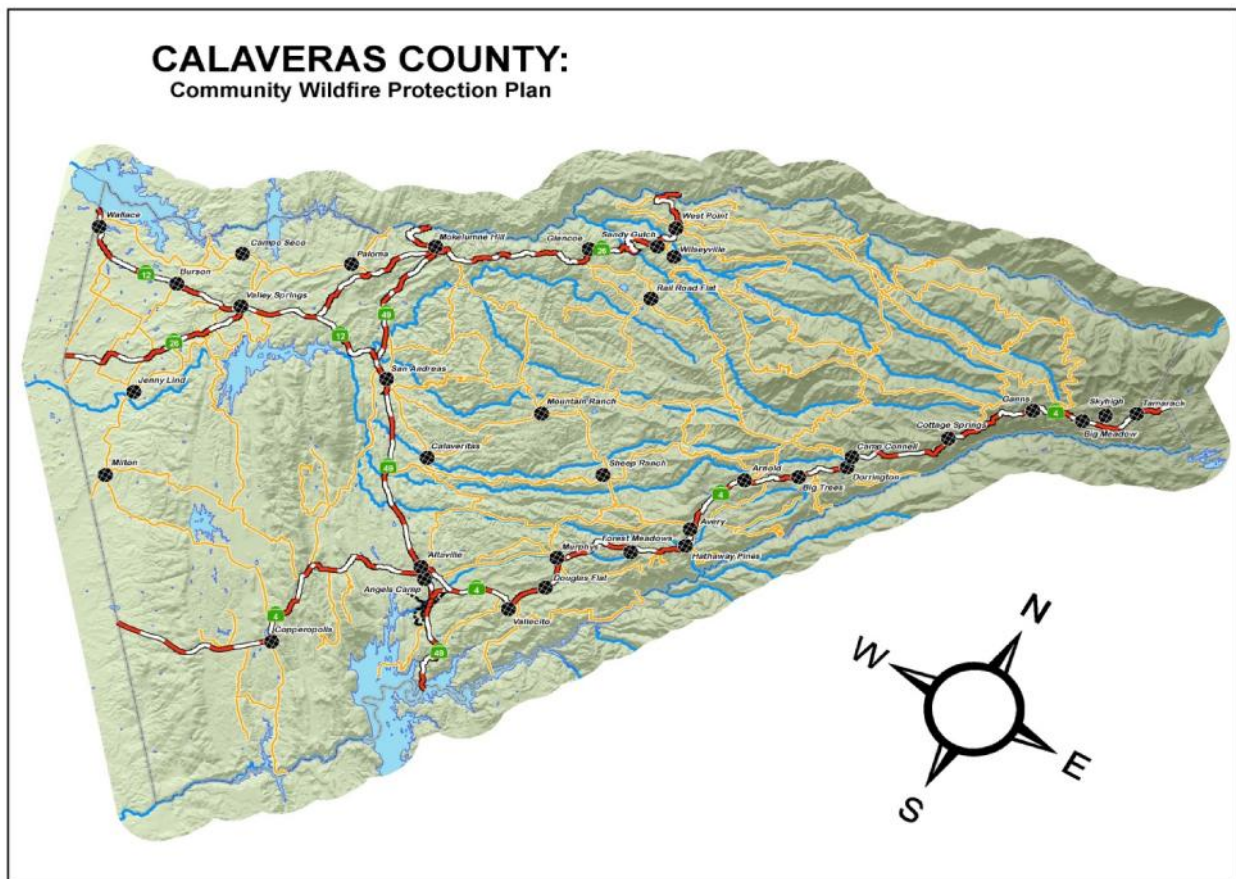
**In-Kind:**

**Total: \$99,000**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County.

The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles.



# PGE Door-to-Door Chipper/Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**

**Status: Current**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: PGE**

**Amount: \$75,000**

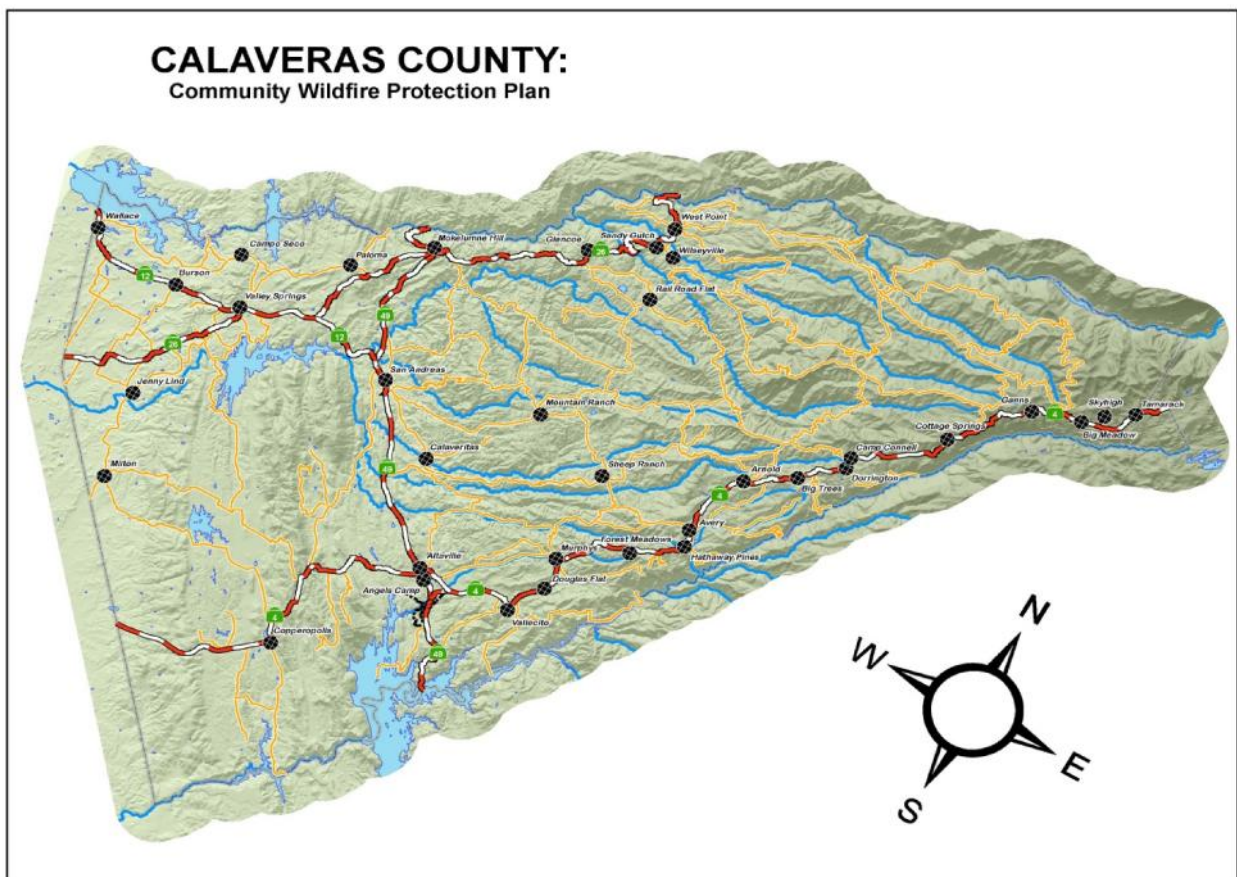
**Author Name: Bill Fullerton**

**In-Kind:**

**Total: \$75,000**

## PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident. The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents' homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles.



## Sandy Gulch Ln Fuels Reduction

**Initial Checklist/Battalion: 3**

**Priority: 1**

**Length/Mi:**

**Within W.U.I? : Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Dick Roth**

**Status: Current**

**Sponsor: Calfire/Blm**

**Lat/Long:**

**Funding Source:**

**Acres:**

**Tons/Fuel:**

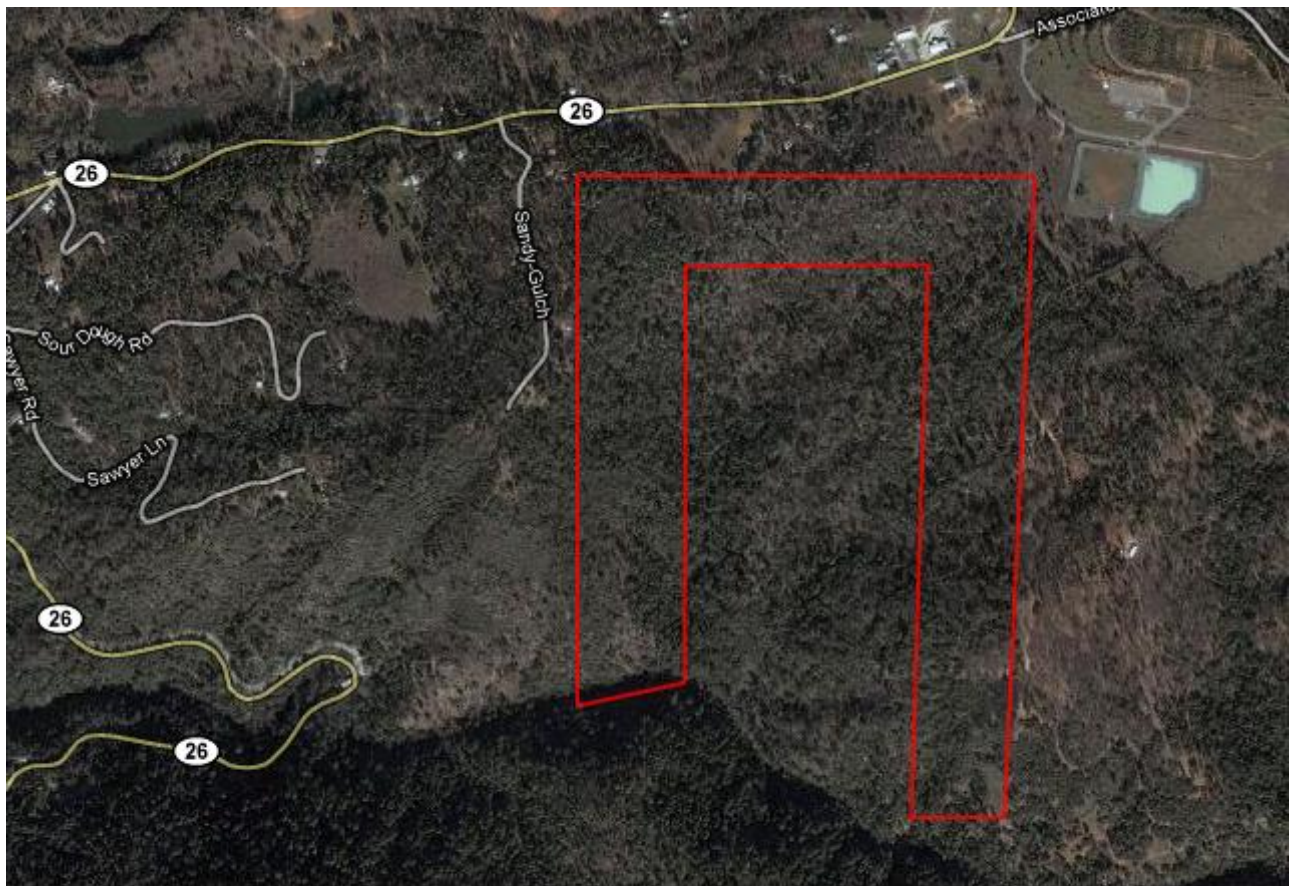
**Amount: \$**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

Reduce surface and ladder fuels to create a shaded fuel break.



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MAPS

## 2011 Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Status: Current

Acres: 50

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.439 N 120.376 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: USFS

Amount:

\$74,806.00

Author Name: Bill Fullerton

In-Kind:

\$65,650.00

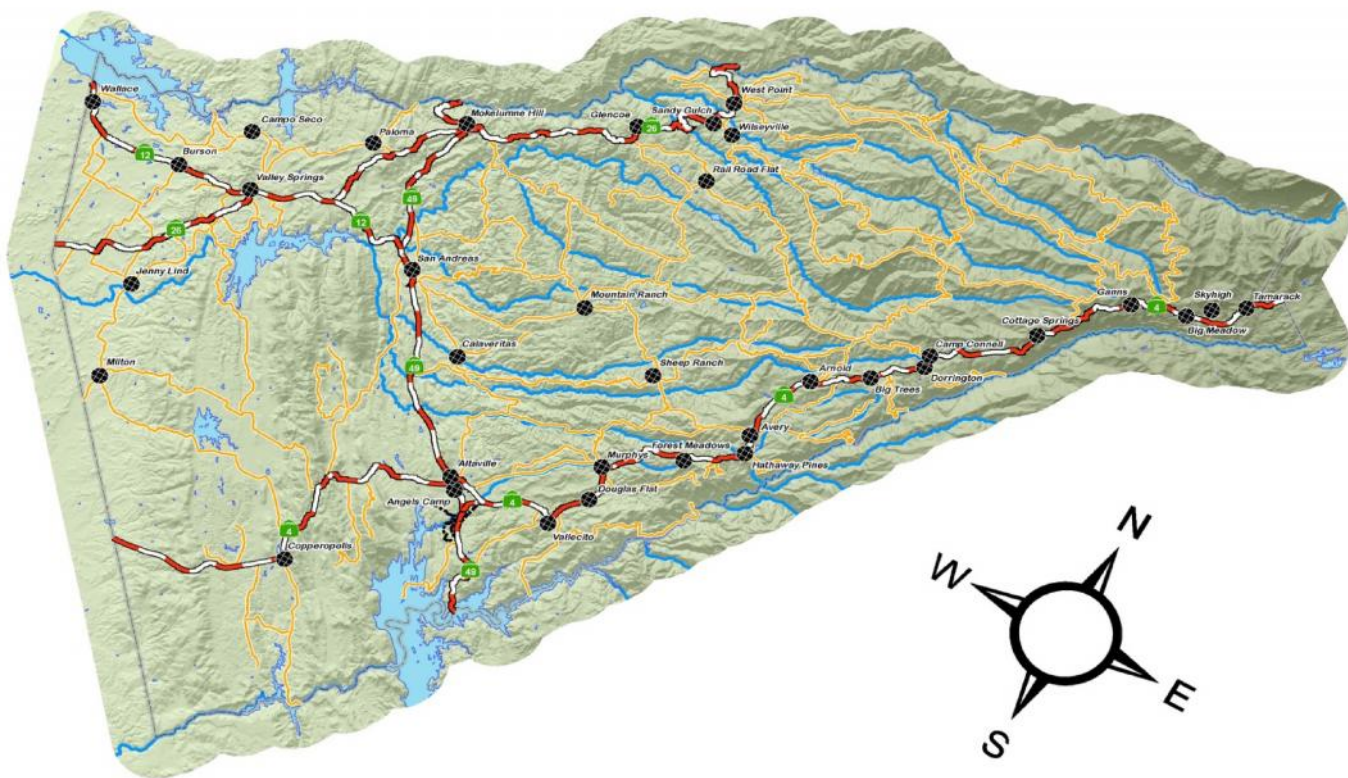
Total:

\$140,456.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2011 Winton-Schaads VMP

Initial Checklist/Battalion: 3

Status: Current

Acres: 146

Priority: 1

Sponsor: Cal Fire

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38 26.01 N 120.273 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount:

\$29,200.00

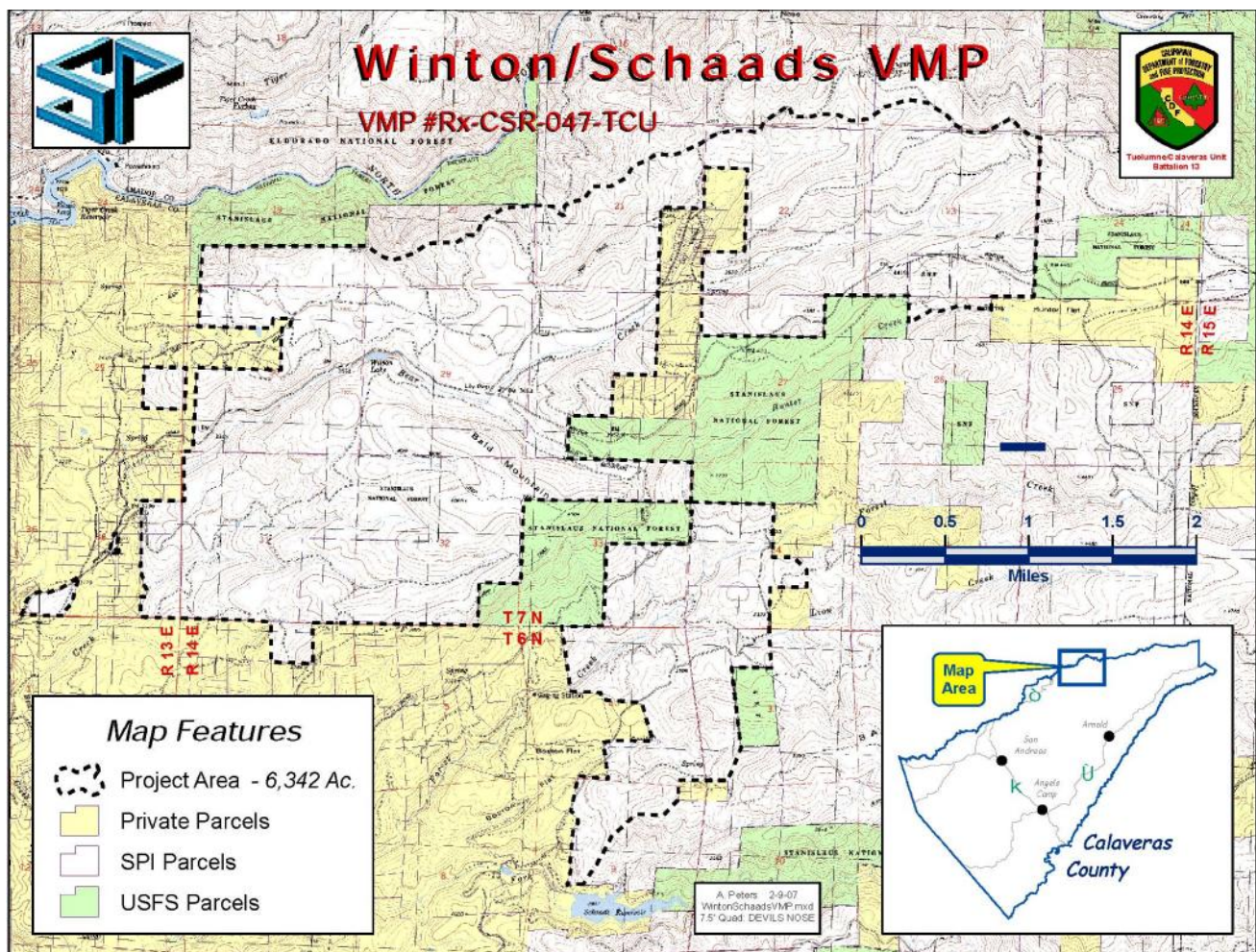
Author Name: Chris Post

In-Kind:

Total: \$29,200.00

### PROJECT DESCRIPTION:

The objectives of the project are to create a shaded fuel break on the ridge top to protect Sierra Pacific Industries timberlands, USFS timberlands, and the surrounding subdivisions from an uncontrolled wildfire. Protect the mixed conifer over story by reducing surface fuel loading, and increasing canopy base height. Enhance wildlife habitat and protect homes and future homes within the Lily Valley Estates and Blue Creek subdivisions.



# County Roads Fuels Reduction

Initial Checklist/Battalion: 3

Status: Current

Acres: 100

Priority: 1

Sponsor: Cal Fire

Length/Mi: 69.4

Within W.U.I?: Yes

Legal: Sec. 16, T5N, R13E

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount:

\$14,000.00

Author Name: Chris Post

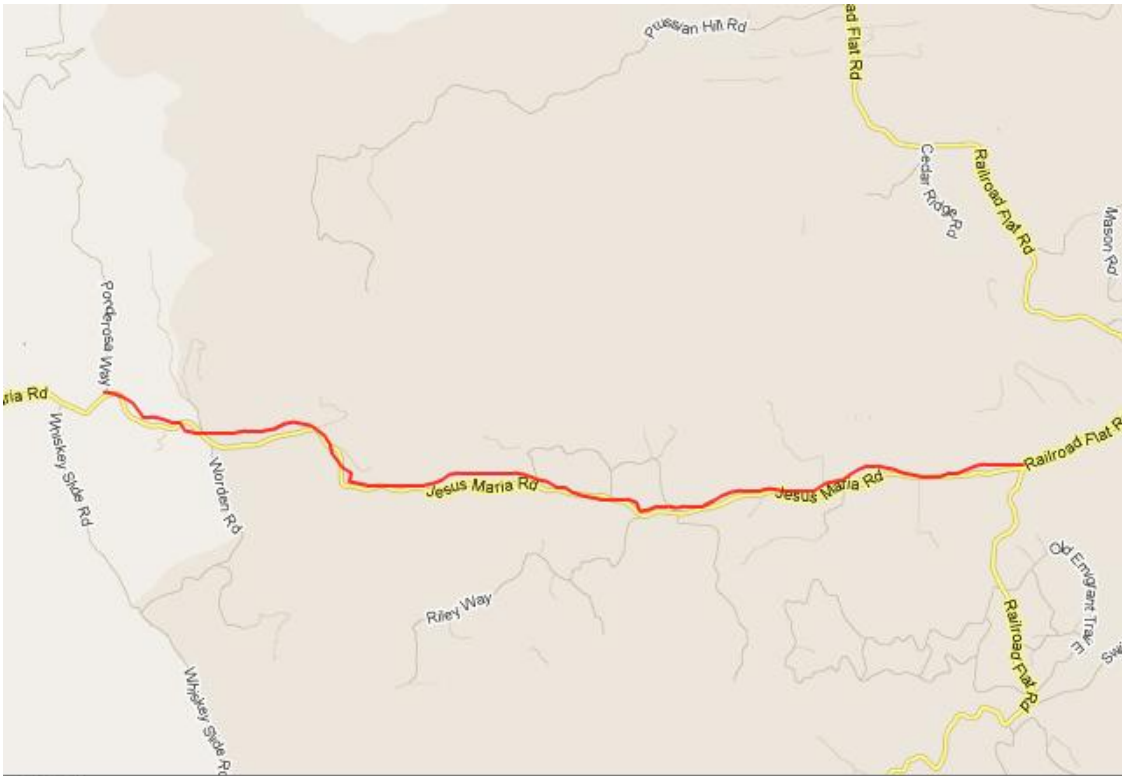
In-Kind:

Total: \$14,000.00

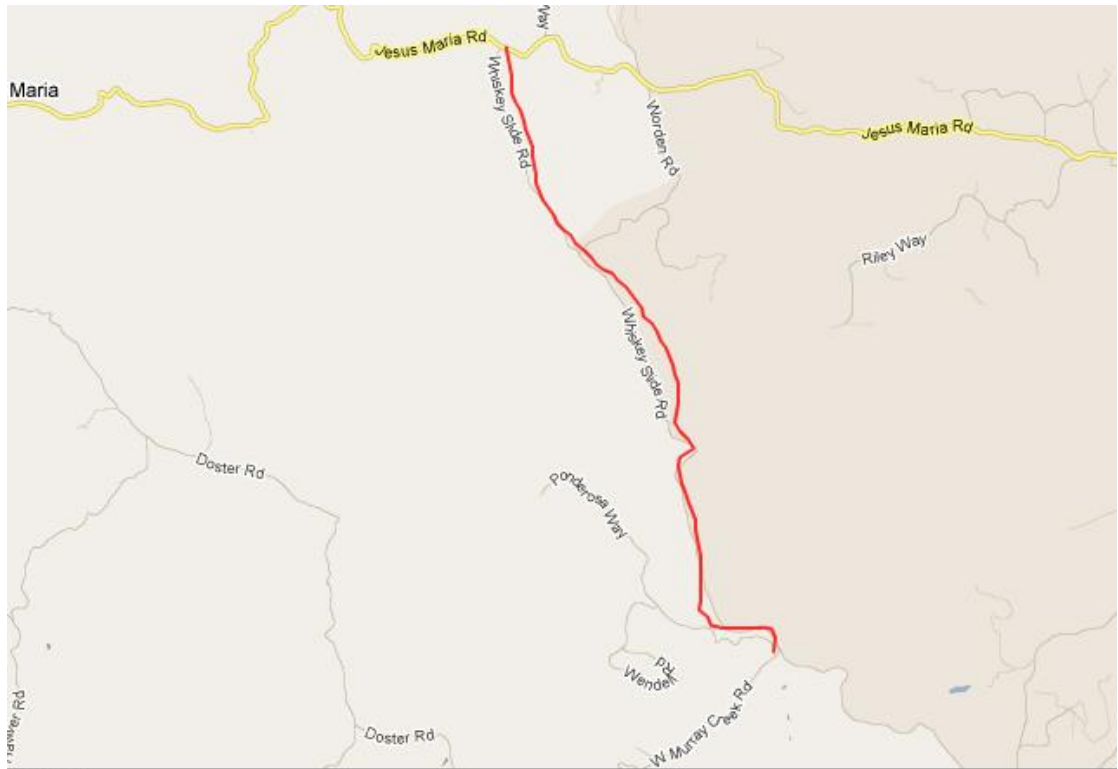
### PROJECT DESCRIPTION:

This project will maintain current fuels reduction work performed on county roads to provide fuel breaks as well as strategic control points for fire suppression activities. CAL-FIRE crews will work with county roads personnel to treat fuels along county right-of-way.

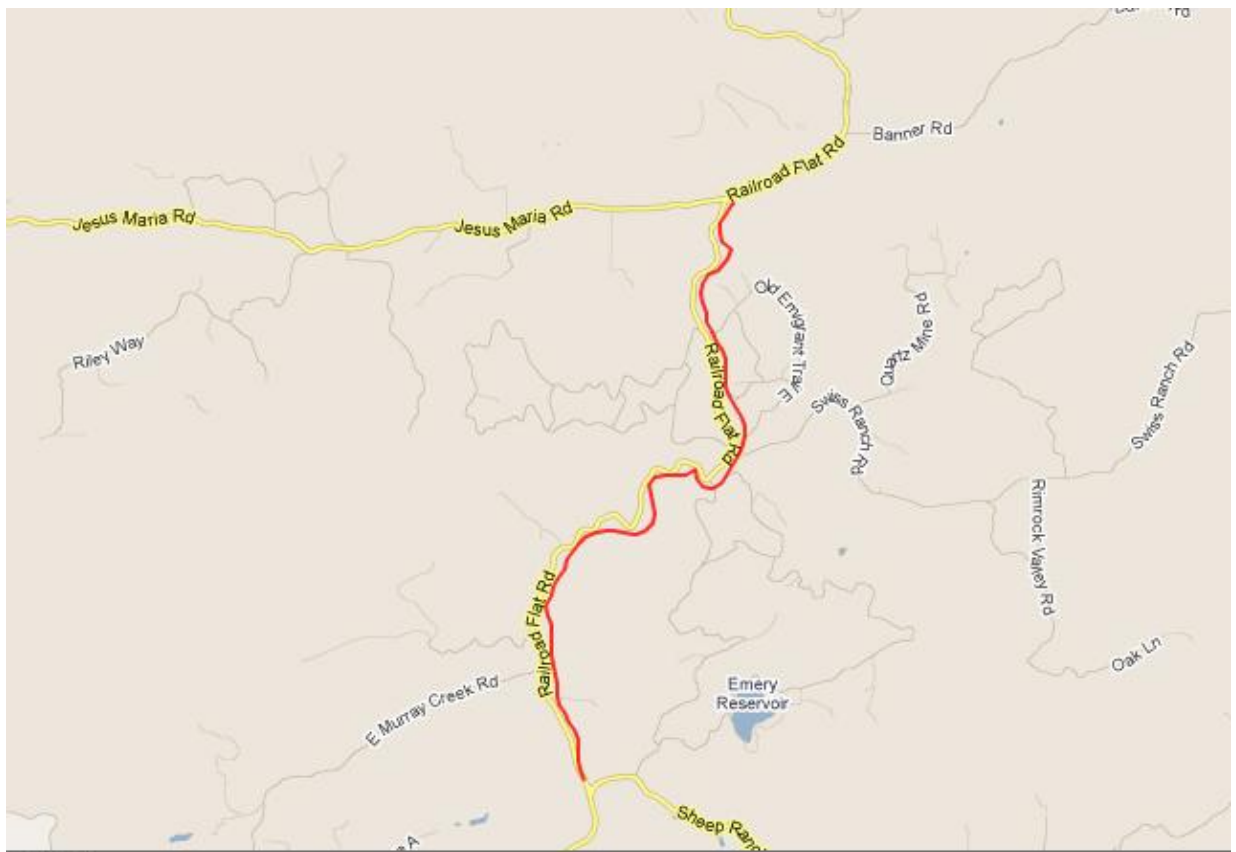




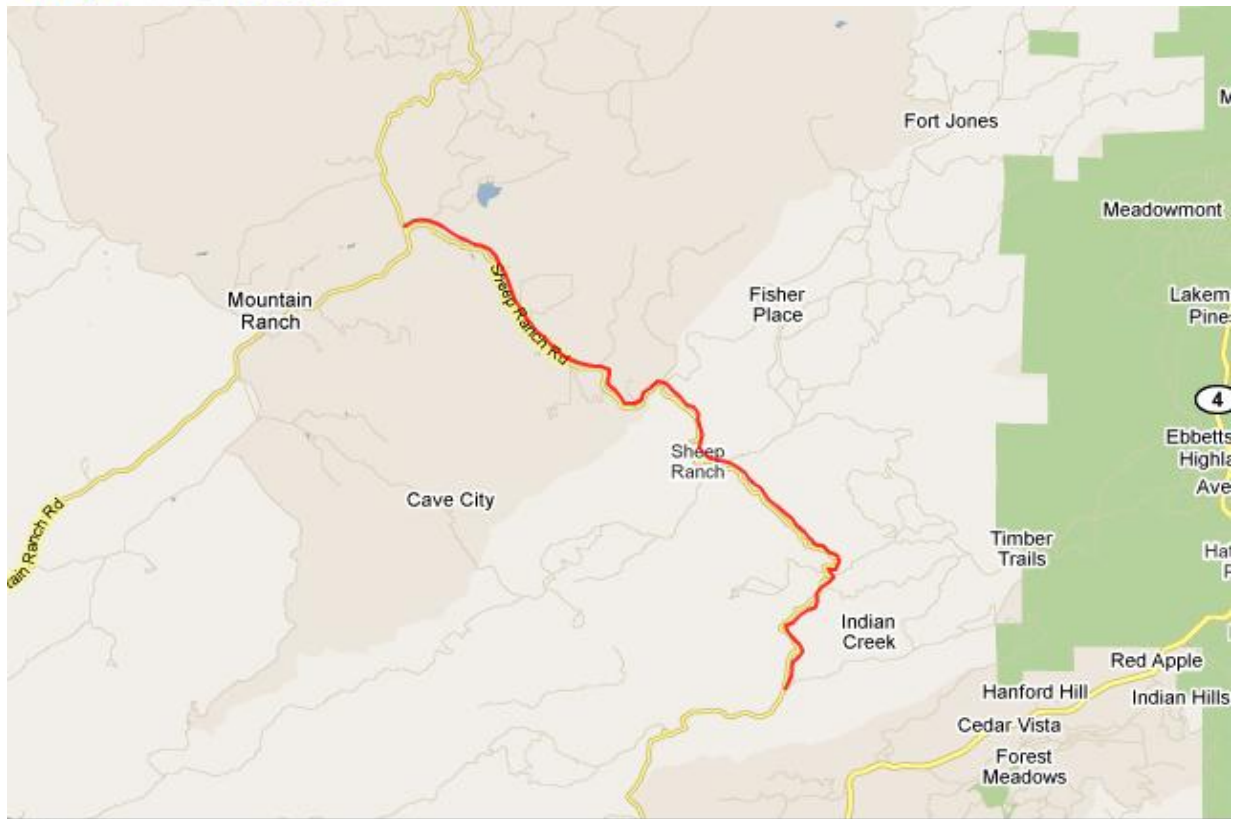
POWERED BY  
Google + SCRIBBLE MAPS



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## Ponderosa Way Fire Protection Project

<b>Initial Checklist/Battalion: 3</b>	<b>Status: Current</b>	<b>Acres: 120</b>
<b>Priority: 1</b>	<b>Sponsor: Cal Fire</b>	
<b>Length/Mi: 2.5</b>		
<b>Within W.U.I?: Yes</b>	<b>Legal:</b>	<b>Tons/Fuel:</b>
<b>Document Effective Date: 1/1/2011</b>	<b>Funding Source: Unknown</b>	<b>Amount: \$</b>
<b>Author Name: Jim Hemminger, Steve Wilensky, Anita Paque</b>		<b>In-Kind:</b>
		<b>Total: \$</b>

### PROJECT DESCRIPTION:

This project focuses on a five-mile stretch of Ponderosa Way southerly from Upper Michel toward Fricot City Road. This road segment is strategically located south of the town of Mountain Ranch and provides a critical link in the countywide fire protection plan that extends along the full length on Ponderosa Way southerly from the Mokelumne River. The northern 2.5-mile stretch of Ponderosa Way within the project area is bounded by property that is privately owned and the southern 2.5-mile stretch is generally bounded by BLM-owned land. See attached maps. Much of the project area along the full length of roadway is overgrown with brush, dry grasses, and occasional dense pockets of manzanita and other fuel sources.

Currently, the roadway is in very poor shape hindering or preventing emergency vehicular access to critical areas along the roadway including hundreds of acres of BLM-owned property along the southern portion of the proposed project. The northern stretch of road (with an average width of about 12 feet) was chip-sealed over 12 years ago. Despite periodic patching by adjacent property owners, the road surface has deteriorated significantly. The southern stretch of road through BLM land has no surface treatment and has not been graded in many, many years.

In consideration of the strategic importance of Ponderosa Way and the need to reduce the threat of potentially catastrophic wildfires in the area, the proposed Ponderosa Way Fire Protection Project consists of four basic elements. These elements include:

- **Fuels Reduction Along Ponderosa Way including Private Property and BLM-Owned Land.** The project provides for brush clearing and fuel reduction along the entire 5-mile length of Ponderosa Way within the project area. The “public” portion of the northern section of Ponderosa Way is quite narrow with fence line-to-fence line distances averaging less than 25-30 feet. For this reason, the project sponsors living on Ponderosa Way have agreed to solicit authorization from all property owners adjacent to the roadway to allow for fuel reduction on private property up to 50-100 feet from the centerline of Ponderosa Way.
- **Creation of a Continuous Community-Wide Fire Break.** Upon completion of the fuel reduction work described above and in anticipation of full participation by adjacent property owners, previous and on-going work to establish a countywide firebreak along Ponderosa Way from the

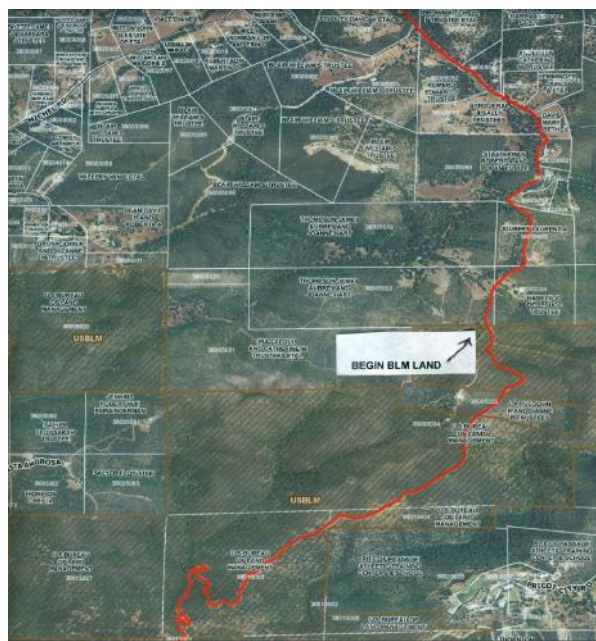
Mokelumne River can be continued southerly. This will provide a continuous fire break to help control and battle wildland fires in the area.

- **Improved Access Along Ponderosa Way for Emergency Vehicles.** As noted above, the existing roadway is in very poor shape and substantial improvements are needed to provide safe and reliable access for emergency and other vehicles. Ideally, the northern section of roadway would be overlaid with a 2-to-4 inch thick leveling course of asphalt. If funding is not sufficient at this time to provide for this overlay, selective patching and leveling using an asphaltic cold mix would provide for improved access. Provided that outside resources (equipment and man-power) are made available, property owners would be willing to contribute to the cost of these asphaltic materials. Grading of the southern portion of Ponderosa Way is proposed.

The project also includes drainage improvements along the full length of the roadway (including ditch clearing and grading and culvert cleaning) to help maintain surface improvements. Property owners are willing to contribute to the cost for purchasing any new culverts that may be required on the northern section of the project area.

Additionally, the project should also include selective thinning/felling of trees that limit the width of the traveled way and restrict access and contribute to excessive fuel loading. Also, several older trees are “leaning” over the roadway and appear to be in danger of falling. If this were to occur, emergency vehicle access would be impossible and evacuation routes would be obstructed. These trees should be removed.

- **Potential for Creation of Cross-County Emergency Access/Egress Route.** Currently Ponderosa Way provides only one way in-or-out access/egress for residents along the road and for emergency vehicles. This is a potentially dangerous situation. As part of this project it is proposed to evaluate the feasibility of establishing a cross-country emergency access and evacuation route from Ponderosa Way within the project area. Extension of Starlight Lane (as shown on the attached map) may be able to provide for this. Much of the route shown on the map is located on BLM property. The proposed access route does, however, cross one at least one privately owned parcel (APN 038-005-021). As such, coordination with the property owner would need to be part of the proposed project.



## 2010 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 100

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: USFS

Amount:

\$85,950.00

Author Name: Bill Fullerton

In-Kind:

\$49,380.00

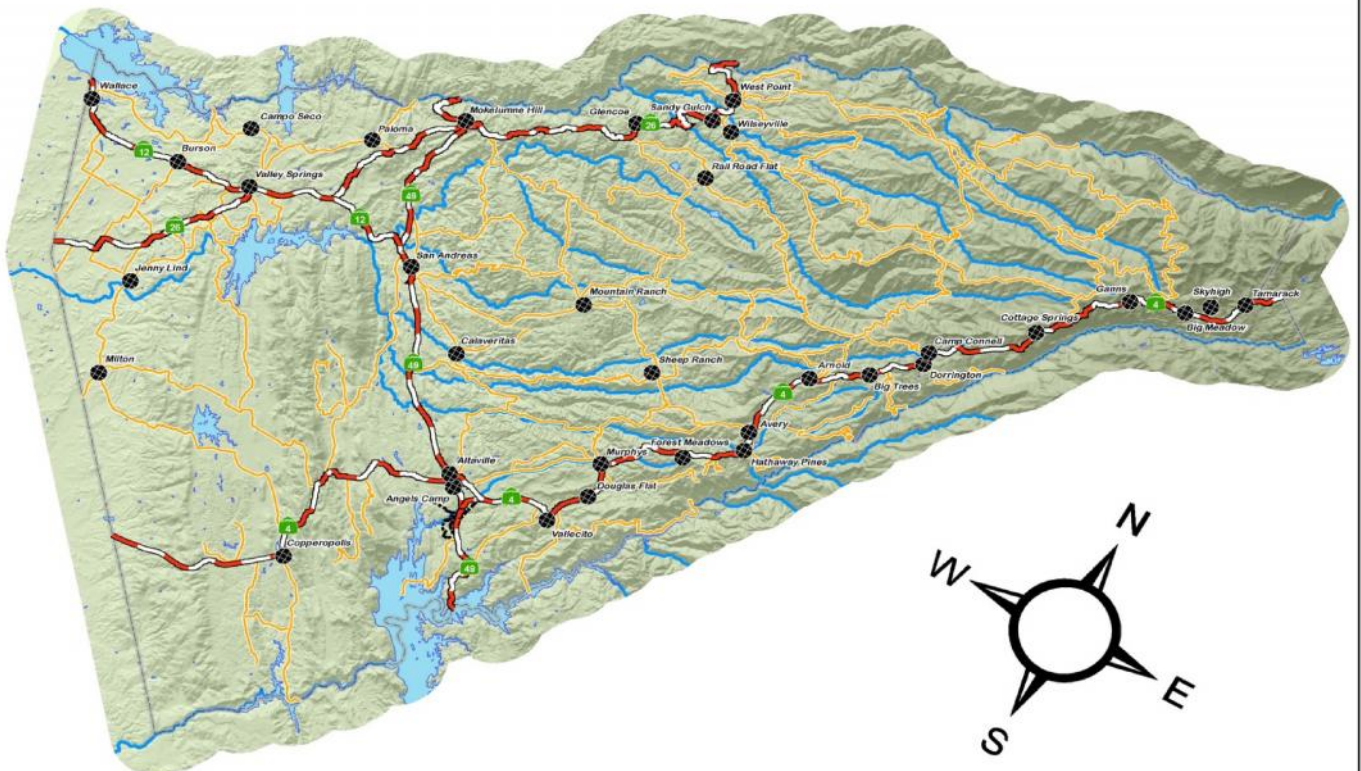
Total:

\$135,330.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

## CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2010 Glencoe Project

Initial Checklist/Battalion: 3

Status: Maintenance

Acres:

Priority: 1

Sponsor:

Length/Mi:

Within W.U.I?: Yes

Lat/Long:

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source:

Amount:

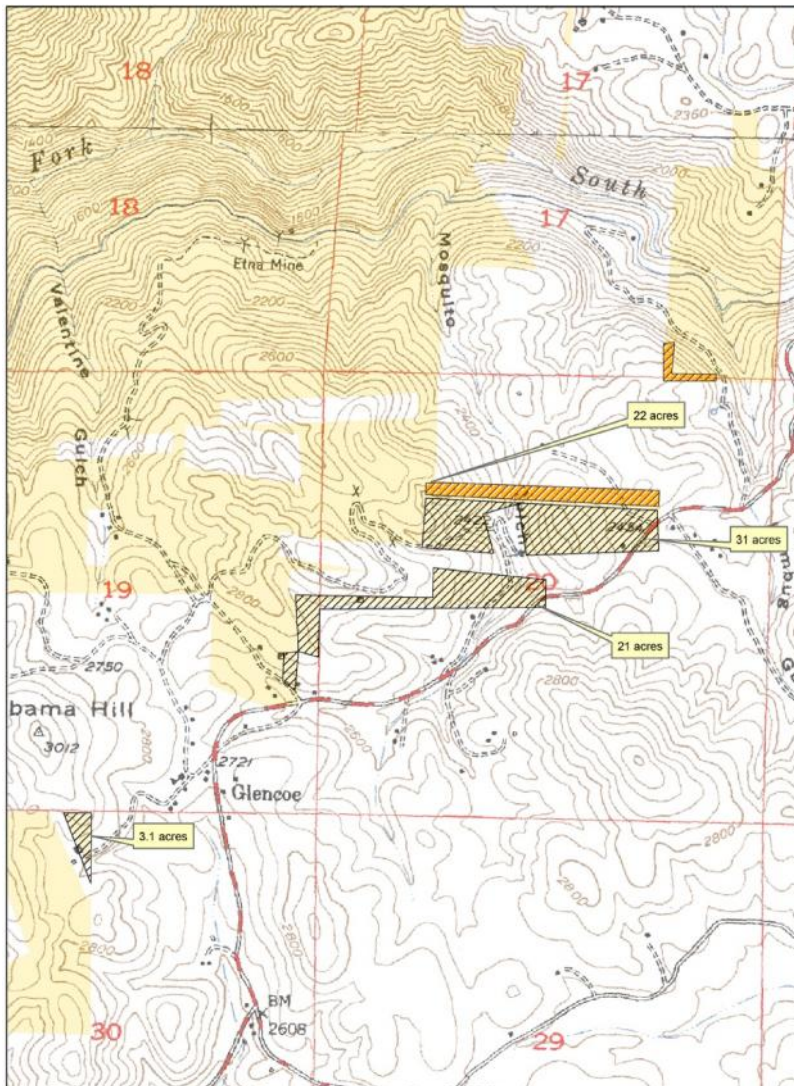
Author Name:

In-Kind:

Total:

### PROJECT DESCRIPTION:

Masticate surface and ladder fuels to create a shaded fuel break.



## 2009 Lilly Circle Fuels Reduction

**Initial Checklist/Battalion: 3**

**Status: Maintenance**

**Acres: 66**

**Priority: 1**

**Sponsor: West Point Fire**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.431 N 120.482 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: Prop 40**

**Amount:**

**\$64,152.00**

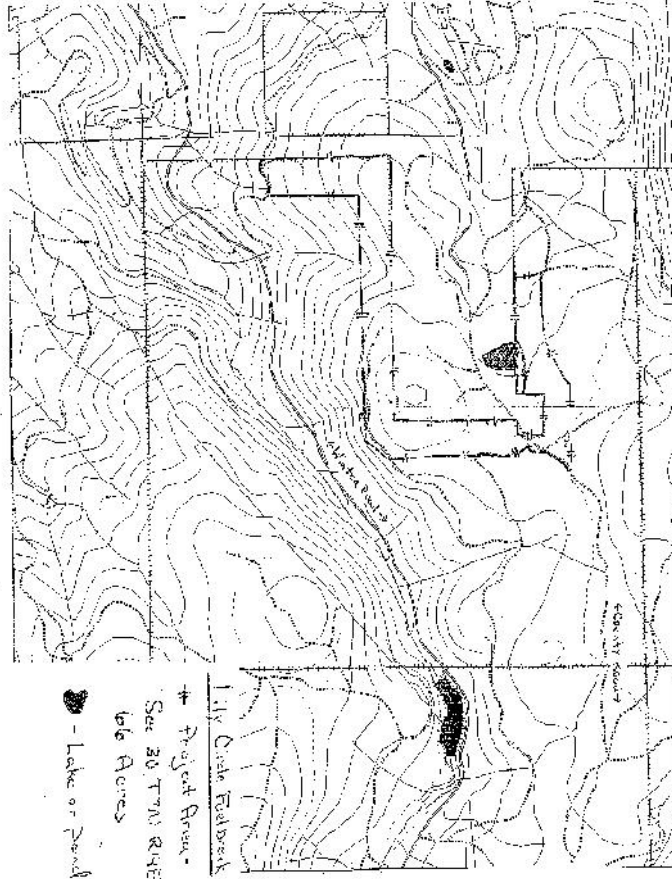
**Author Name: Bill Fullerton**

**In-Kind:**

**Total: \$64,152.00**

### **PROJECT DESCRIPTION:**

Masticate surface and ladder fuels to create a shaded fuel break.



## 2009 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 100

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: USFS

Amount:

\$85,950.00

Author Name: Bill Fullerton

In-Kind:

\$49,380.00

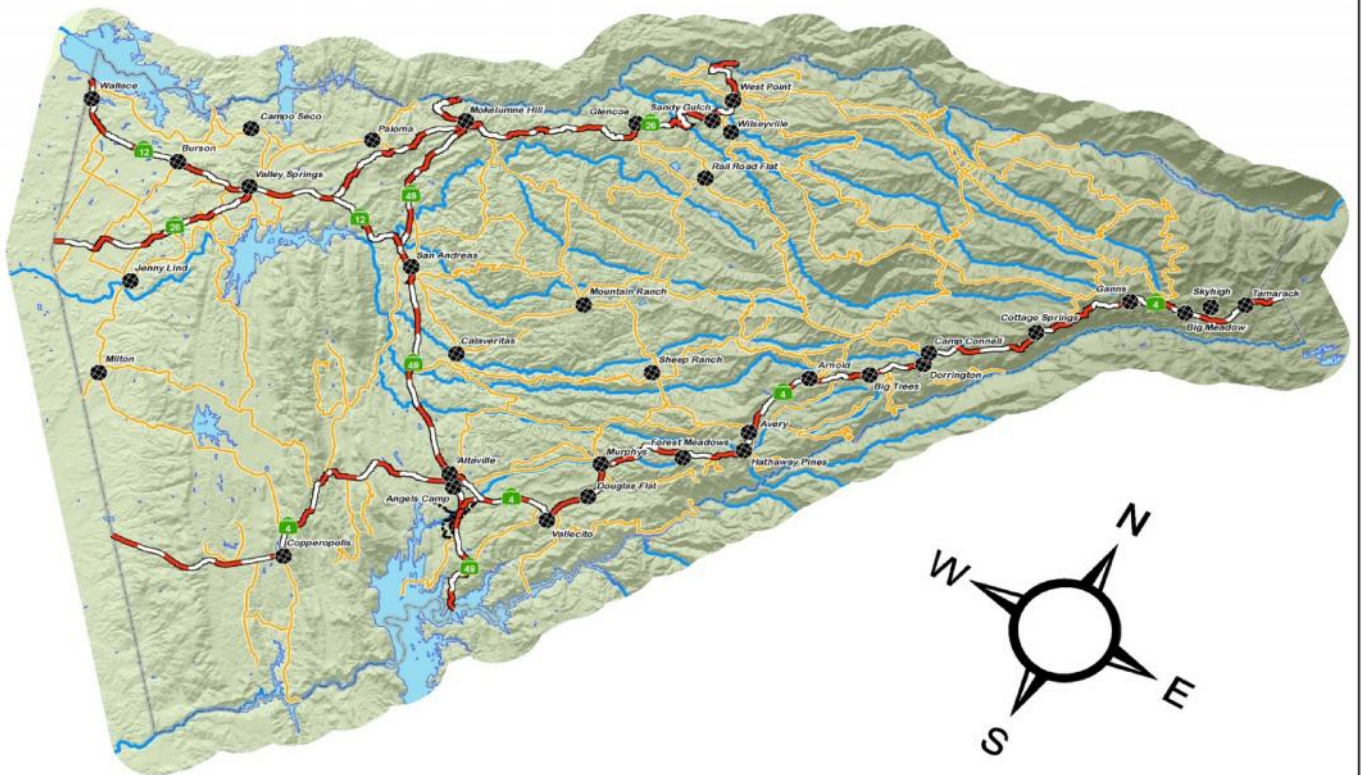
Total:

\$135,330.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2009 Public Roadways Fire Break Phase 4

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres: 30**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: BLM**

**Amount:**

**\$53,943.00**

**Author Name: Bill Fullerton**

**In-Kind:**

**\$63,137.00**

**Total:**

**\$117,080.00**

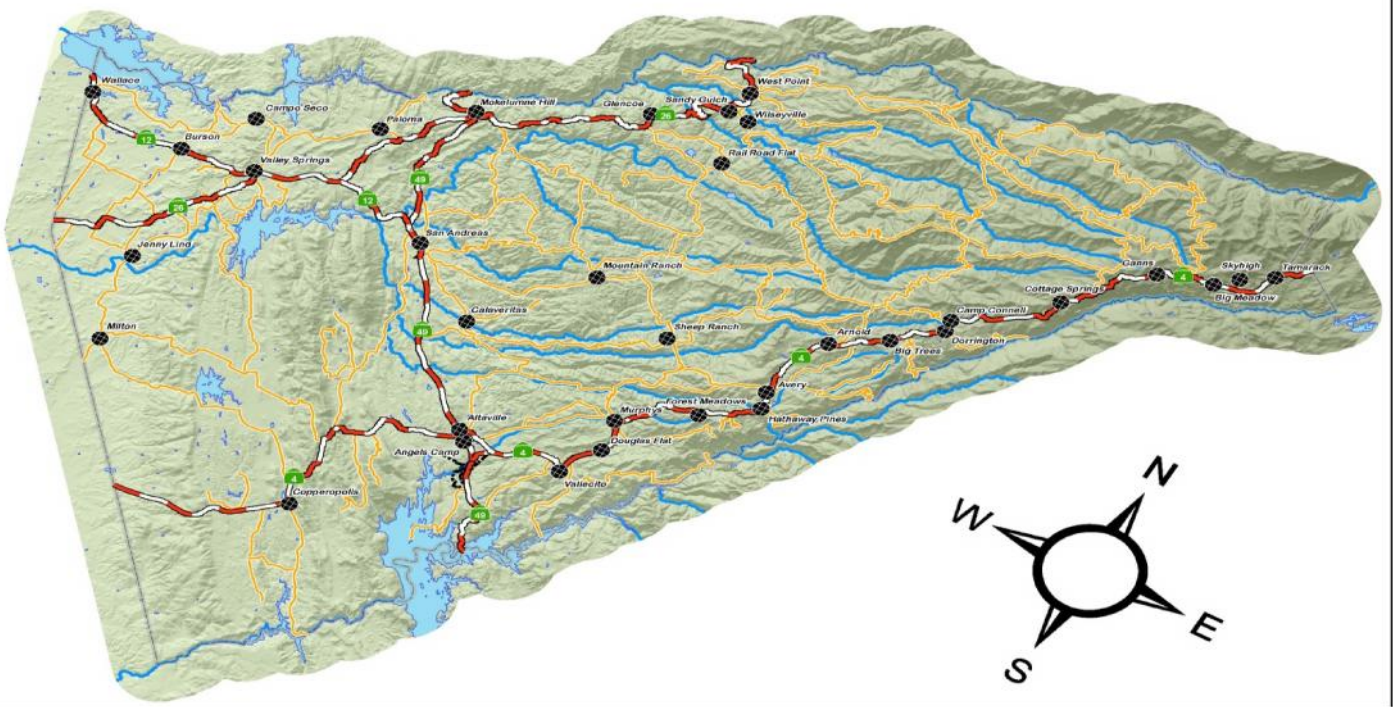
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2009 Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 100

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: USFS

Amount:

\$104,400

Author Name: Bill Fullerton

In-Kind:

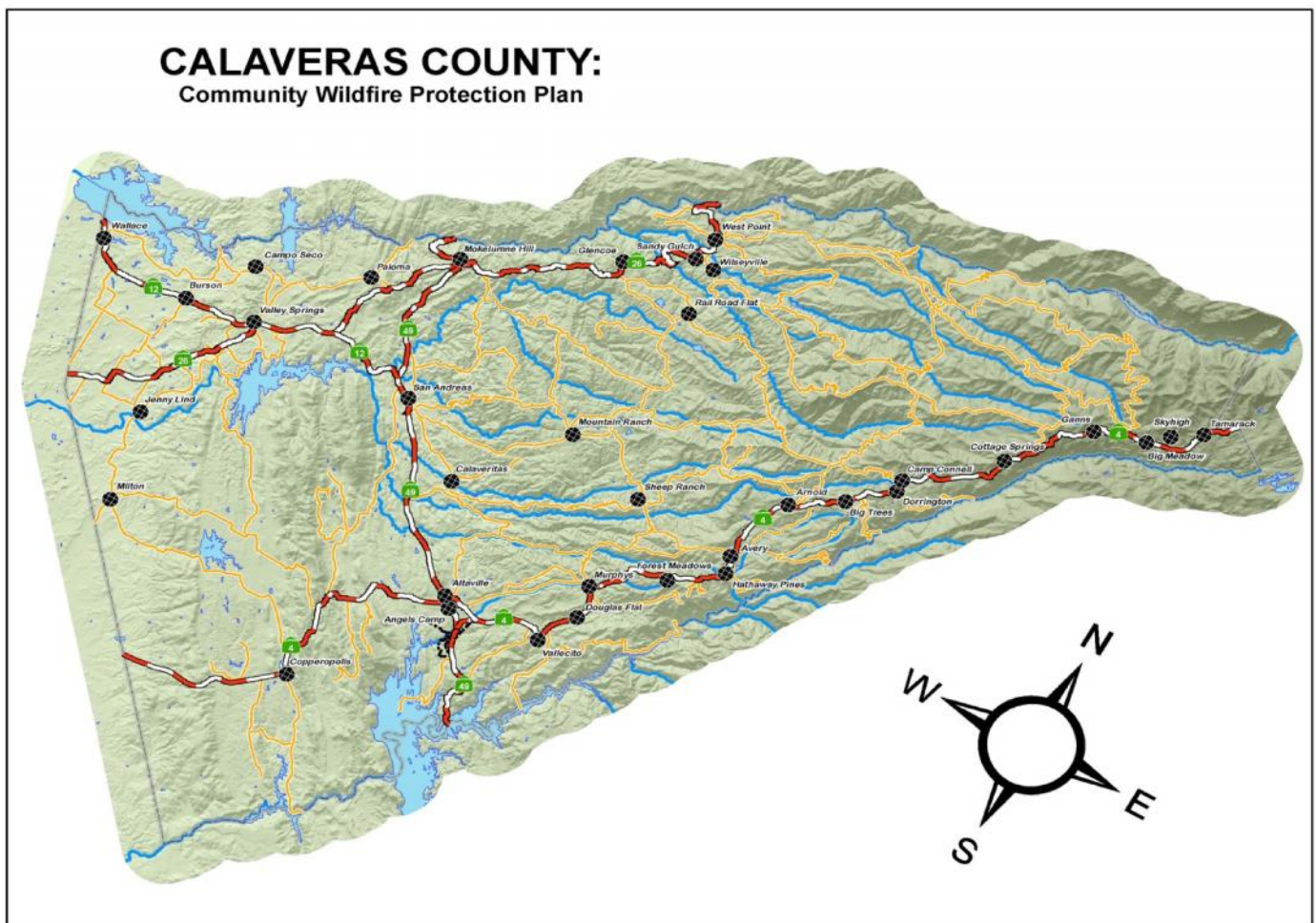
\$52,480.00

Total:

\$156,880.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



2009 Eagle Ridge

**Initial Checklist/Battalion: 3**

**Priority: 1**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011 Funding Source: Prop 40  
\$57,240.00**

**Author Name: Bill Fullerton**

**Status: Maintenance**

**Sponsor: CFFSC**

**Lat/Long:**

**Acres:**

**Length/Mi:**

**Tons/Fuel:**

**Amount:**

**In-Kind:**

**Total: \$57,240.00**

**PROJECT DESCRIPTION:**

Reduce surface and ladder fuels to create a shaded fuel break.

Map unavailable

## 2008 Blagen Fuels Reduction

Initial Checklist/Battalion: 3

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long:

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount:

\$26,082.00

Author Name: Bill Fullerton

In-Kind:

Total: \$26,082.00

### PROJECT DESCRIPTION:

Masticate surface and ladder fuels to create a shaded fuel break.



## 2008 Markwoods Fuel Break

Initial Checklist/Battalion: 3

Status: Maintenance

Acres: 25

Priority: 1

Sponsor: West Point Fire District

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.439 N 120.376 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount:

\$27,153.00

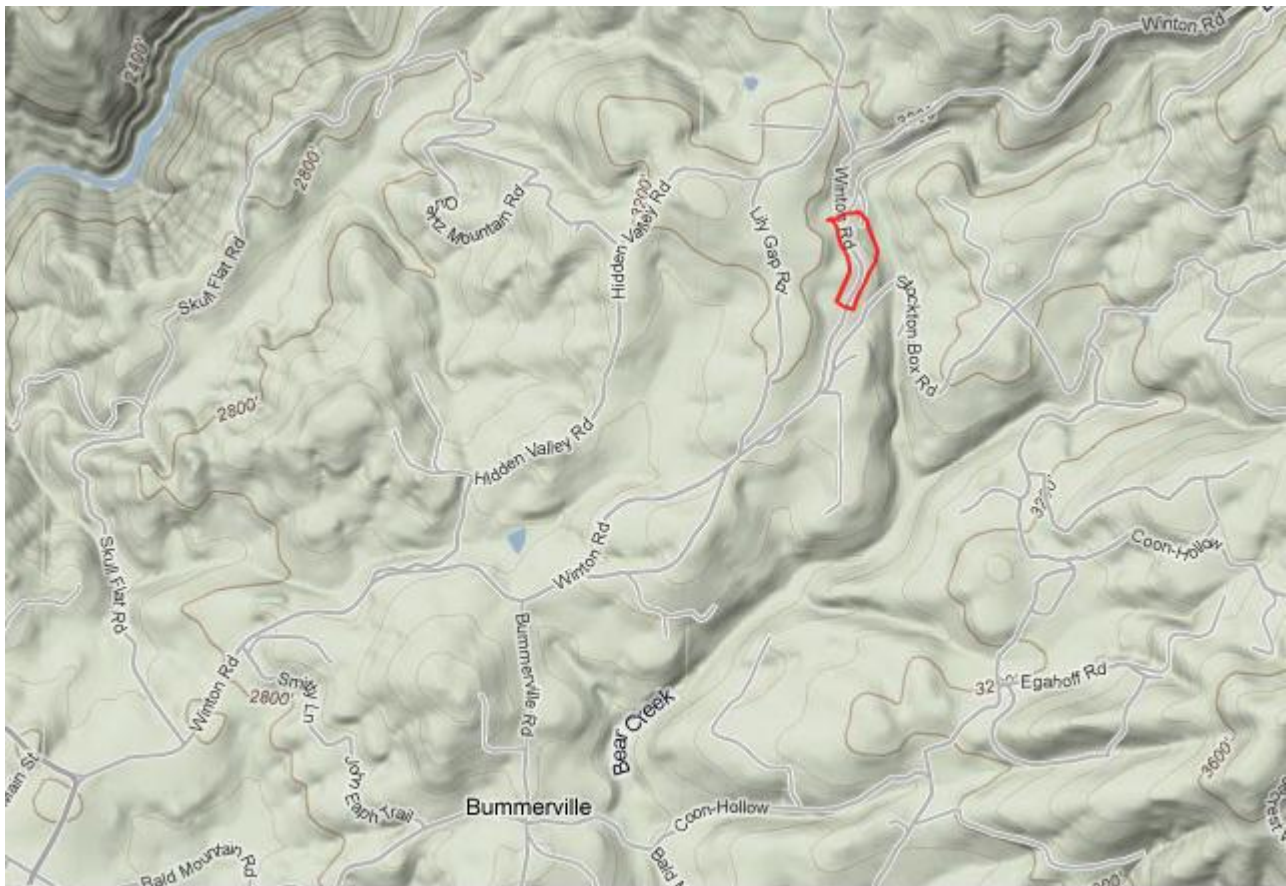
Author Name: Bill Fullerton

In-Kind:

Total: \$27,153.00

### PROJECT DESCRIPTION:

Mastication project for a shaded fuel break.



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Google + SCRIBBLE  
MAPS

## 2008 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Priority: 1

Within W.U.I?: Yes

Document Effective Date: 1/1/2011

\$73,267.00

Author Name: Bill Fullerton

\$41,700.00

\$114,967.00

Status: Maintenance

Sponsor: CFFSC

Lat/Long: 38.196 N 120.679 W

Funding Source: USFS

Acres: 100

Length/Mi:

Tons/Fuel:

Amount:

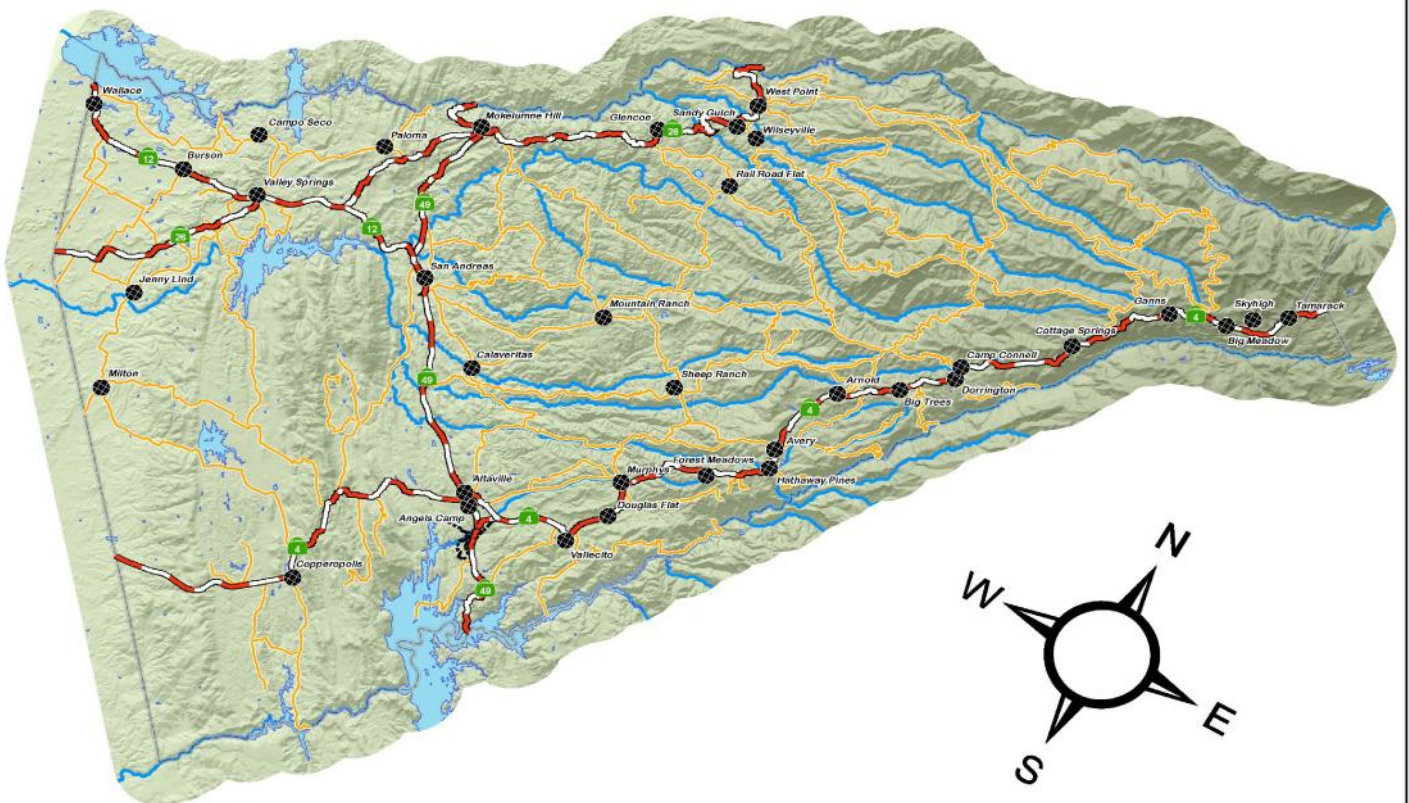
In-Kind:

Total:

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

## CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2008 Prop. 40 Roads 4

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: Prop. 40**

**Amount:**

**\$54,000.00**

**Author Name: Bill Fullerton**

**In-Kind:**

**Total: \$54,000.00**

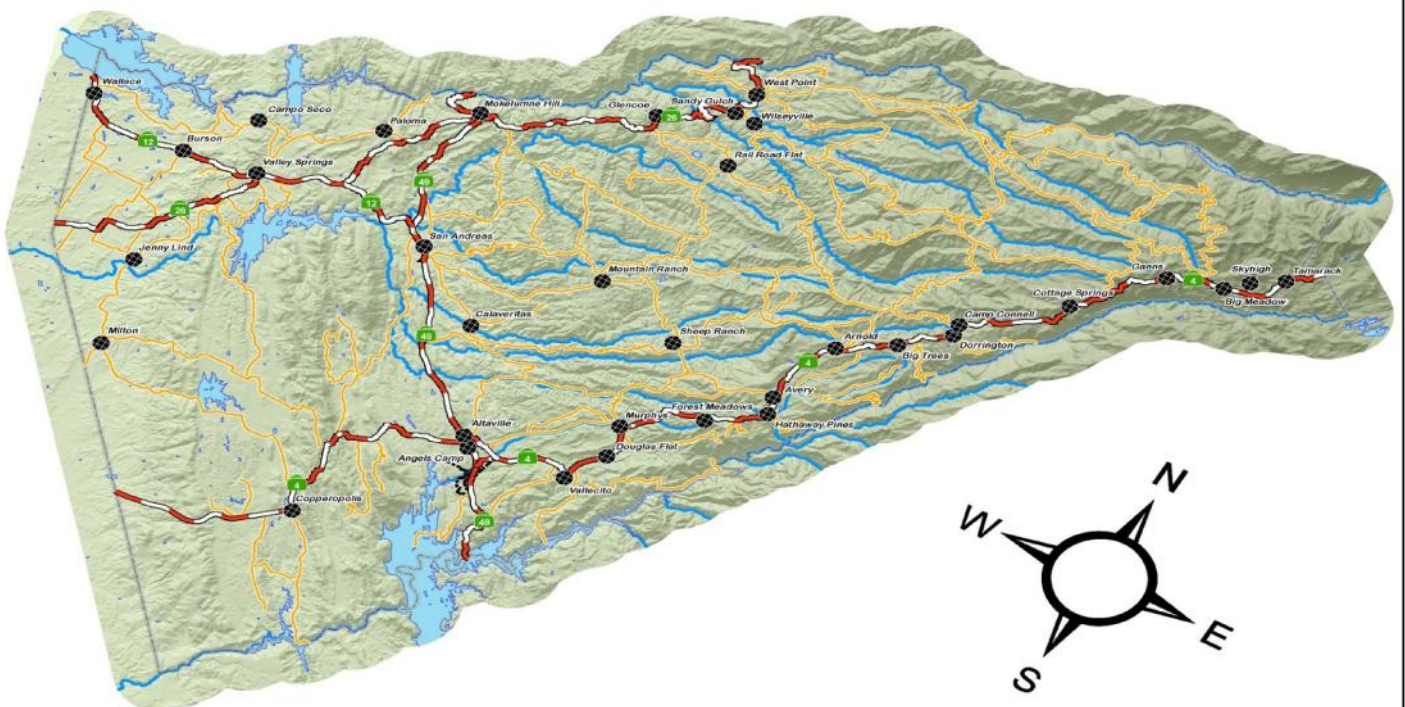
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2007 Prop. 40 Roads III

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount:

\$60,000.00

Author Name: Bill Fullerton

In-Kind:

Total: \$60,000.00

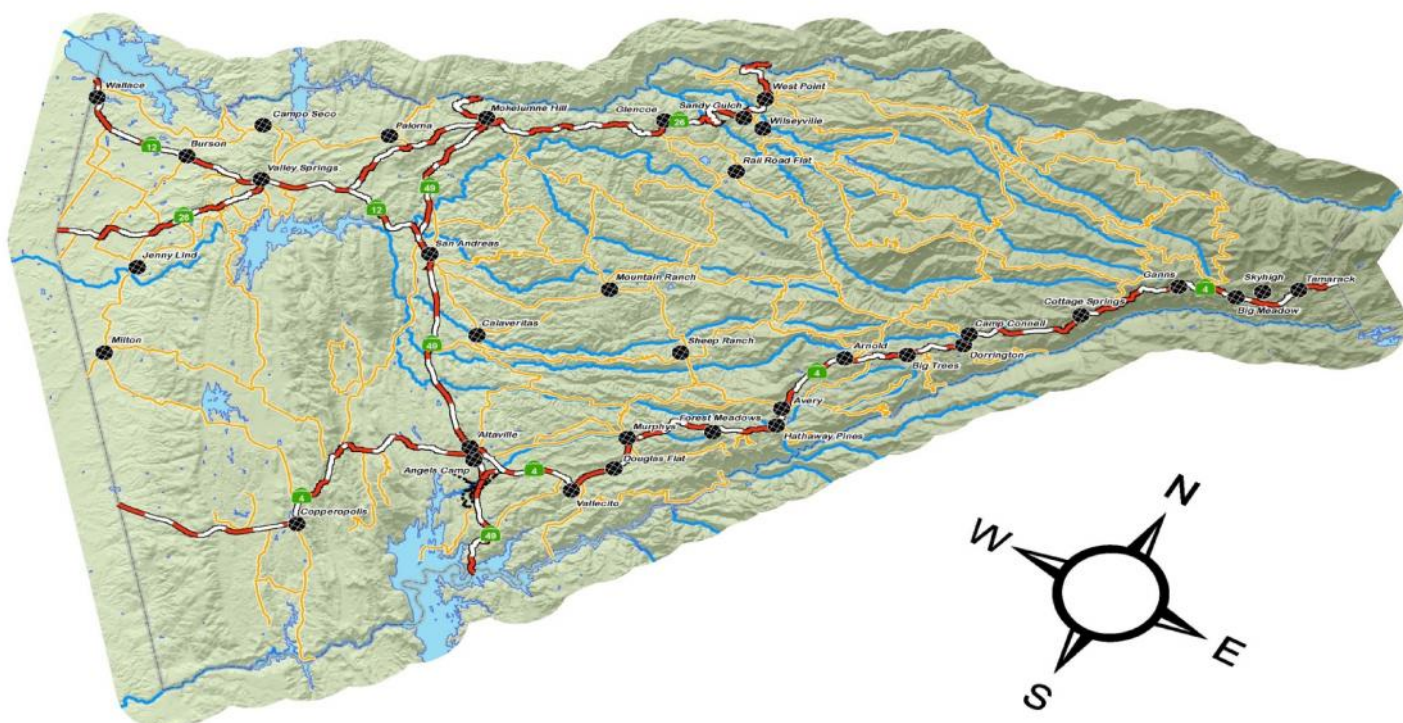
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2007 Prop. 40 Roads II

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount:

\$72,960.00

Author Name: Bill Fullerton

In-Kind:

Total: \$72,960.00

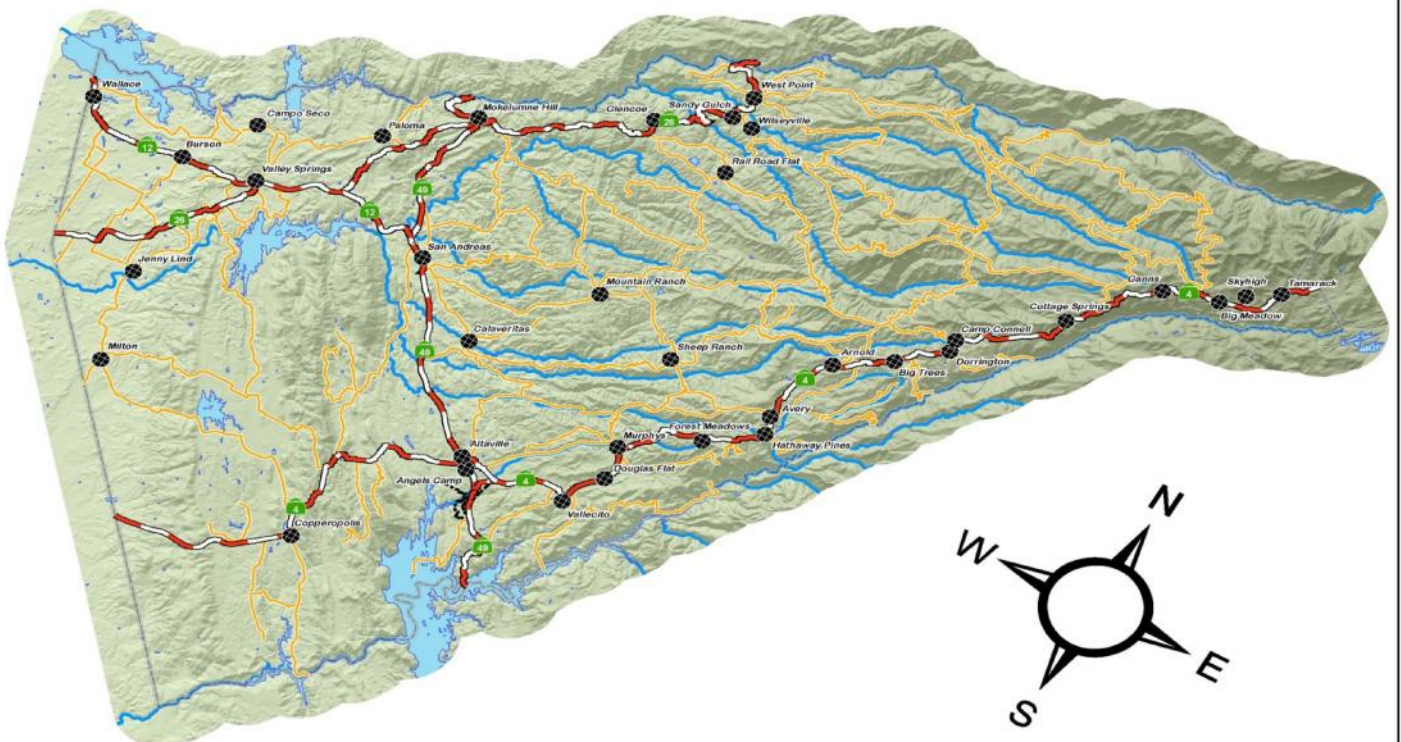
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2007 Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:90

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: BLM

Amount:

\$56,950.00

Author Name: Bill Fullerton

In-Kind:

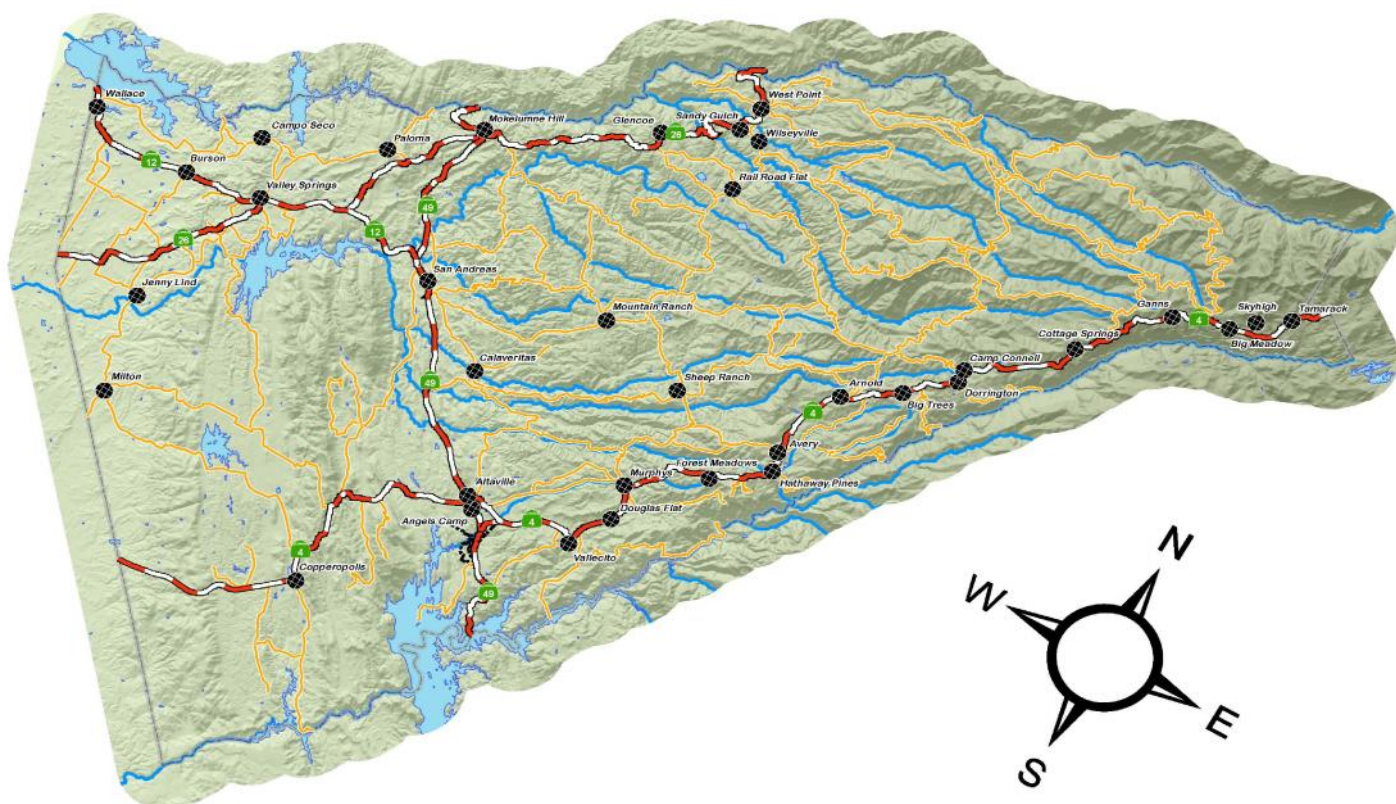
\$12,000.00

Total: \$68,950.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2006 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4  
32.5

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: USFS

Amount:

\$66,200.00

Author Name: Bill Fullerton

In-Kind:

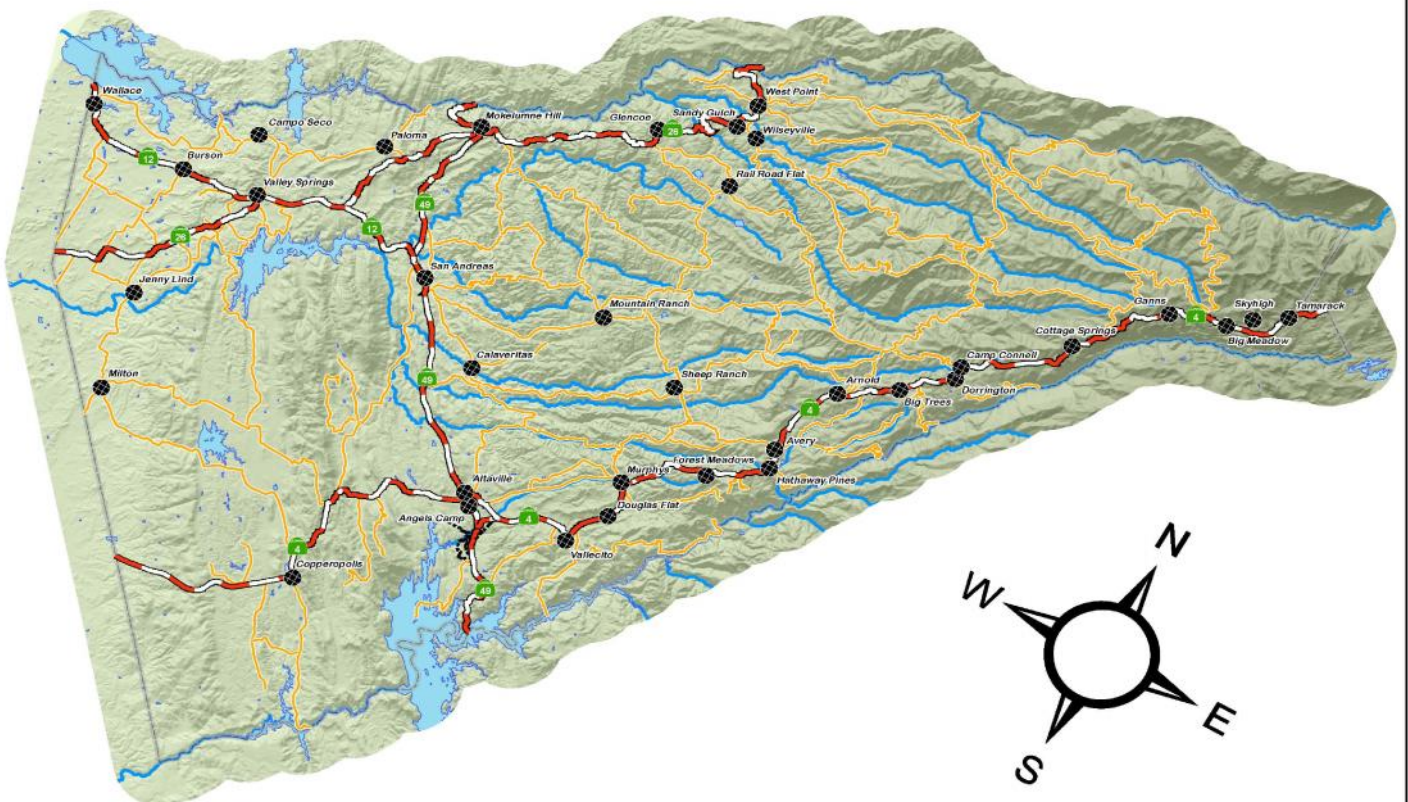
\$13,477.00

Total: \$79,677.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

## CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2005 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:30

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: BLM

Amount:

\$53,943.00

Author Name: Bill Fullerton

In-Kind:

\$63,137.00

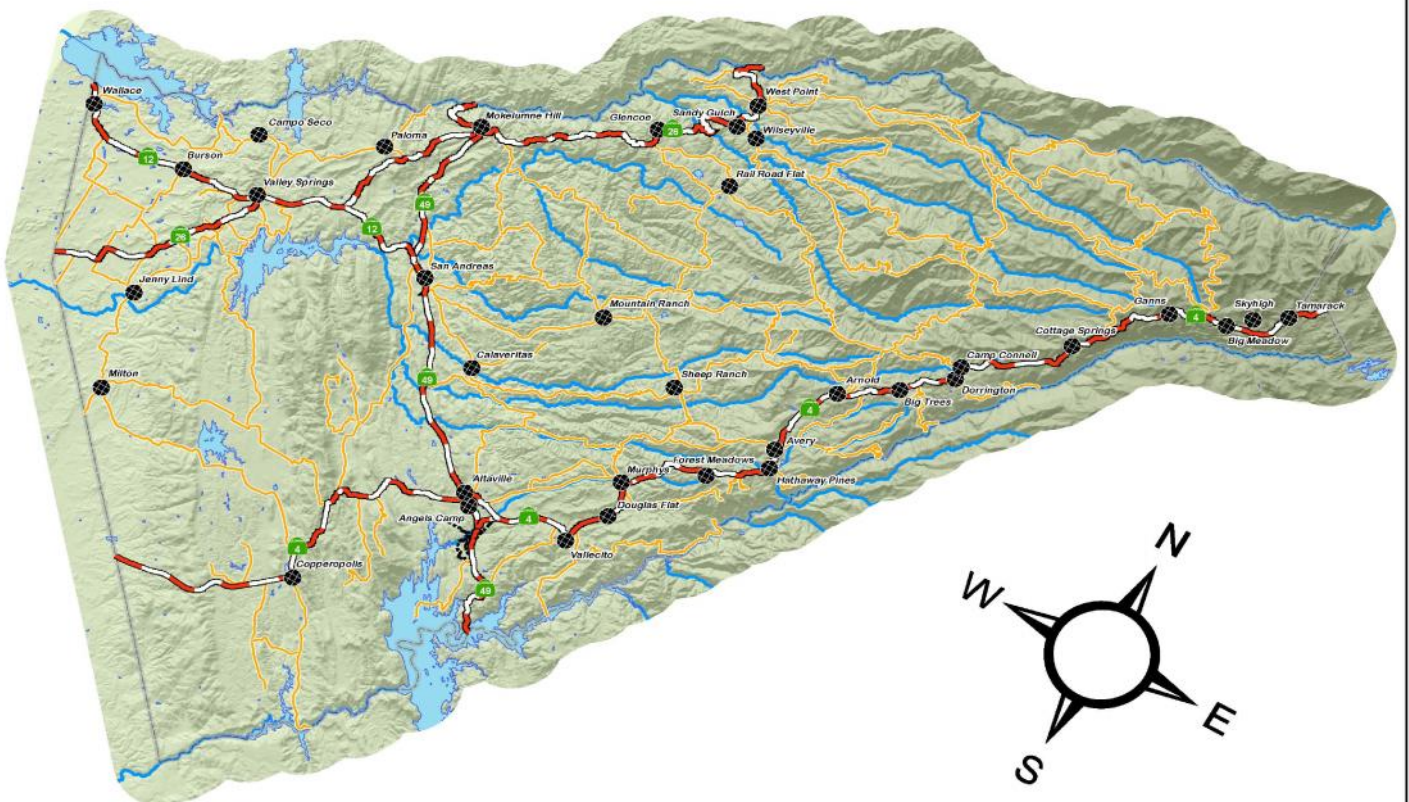
Total:

\$117,080.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

## CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2005 Calaveras County APCD Chipper Program

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I? Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: Calaveras County Amount: \$13,200.00**

**Author Name: Bill Fullerton**

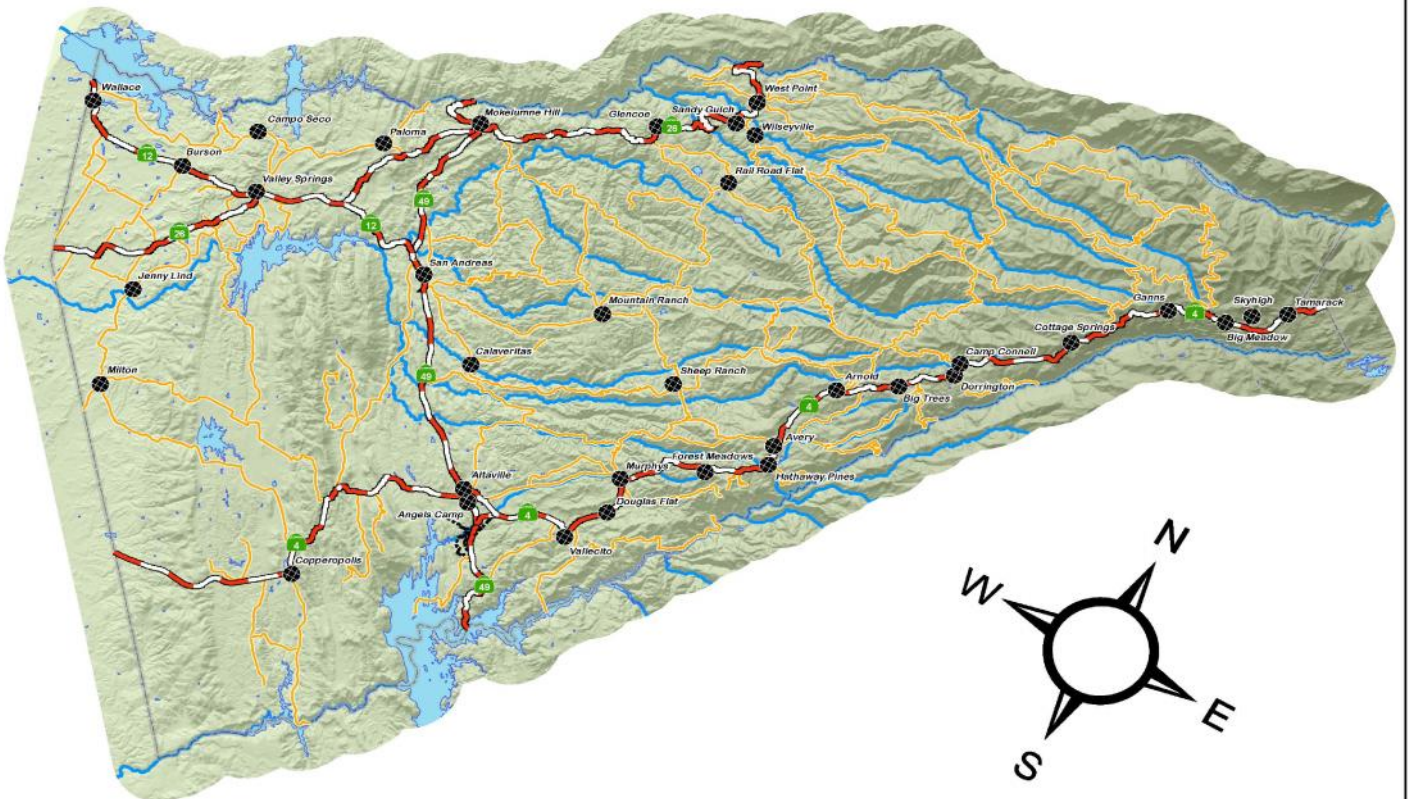
**In-Kind:**

**Total: \$13,200.00**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2004 Calaveras County APCD Chipper Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Calaveras County Amount:

\$15,000.00

Author Name: Bill Fullerton

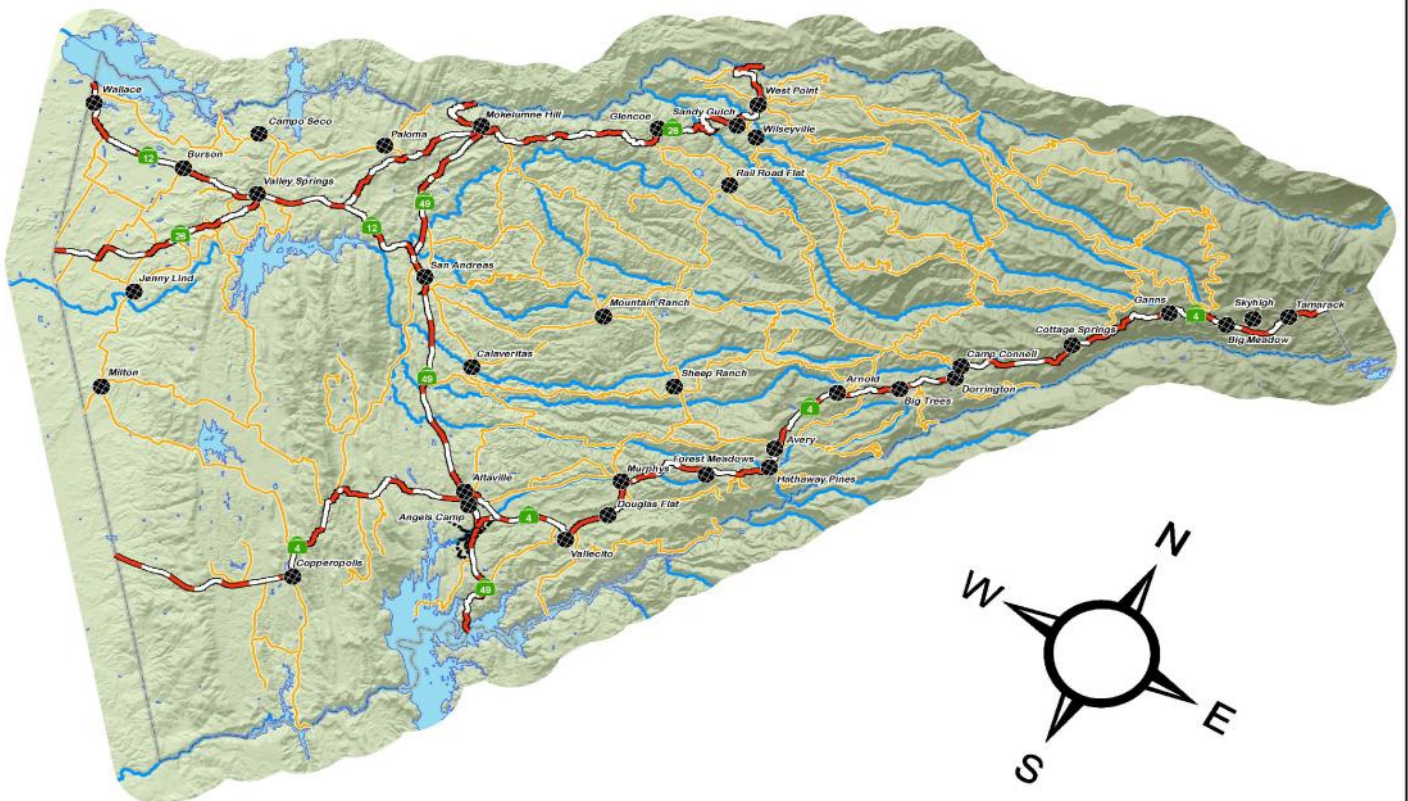
In-Kind: \$

Total: \$15,000.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



**Strategic Planning:** The Battalion benefits from Structure Protection Plans, originally compiled beginning in 2002, covering all of the significant communities with the battalion.

**Public Education:**

- ) Roadside Sign Program: We have 3 sign locations within the Battalion. Signs are hung annually, depicting varying fire prevention messages.
- ) School Programs: Battalion personnel will continue to support the Fire prevention Specialist's elementary school fire safety and prevention message program.
- ) West Point Lumberjack Days: Battalion personnel will continue to participate in the annual parade and associated events, during which the majority of the West Point community is present to see the fire prevention message on displayed.

**Law Enforcement:**

- ) Cause Determination and Code Enforcement: A determined effort by Company Officers and LE staff, as needed, to determine a cause for all wildland ignitions. Accurate cause determination impacts several programs beyond the confines of the Battalion (Fire History, Fire Plan, Funding for example) and can be crucial to the subsequent ability of LE staff to issue citations for violations of the various PRC and PC codes, including debris burning, arson, power line clearance, and equipment related violations, among others.
- ) Law Enforcement Support of Inspections Program: Continued close cooperation between Battalion inspectors and the Unit's LE staff in support of the Defensible Space Inspection Program in the form of a willingness to write citations as needed.

**Battalion 3 Cooperators Mitigation Efforts**

**Calaveras Healthy Impact Products Solutions**

While facing many economic and social challenges, these communities' residents possess an indomitable spirit of community and a determination to revitalize their area and themselves. Through Community interest and involvement, a coalition was established in 2005 to address the local fire threat and economic deterioration. From this collaboration, the CHIPS project emerged.

The C.H.I.P.S. committee is a coalition of organizations and individuals from the West Point, Wilseyville and Rail Road Flat areas that are looking into the feasibility of using wood waste in ways that could provide jobs, reduce energy costs and improve fire safety for area residents. Members of the coalition include the Calaveras County District 2 Supervisor, Calaveras County Mountain Mi-Wuk Tribal Council, Sierra Pacific Industries, BLM, Calaveras Band of Mi-Wuk Indians, Mother Lode Job Training, Calaveras Foothills Fire Safe Council, Foothill Conservancy, and Sierra Nevada Forest Protection Campaign. The wood waste would come from the Wilseyville solid waste transfer station, residual timber harvest debris, and forest wildland fuel reduction efforts. It is hoped that this program would provide jobs, reduce energy costs and improve the safety for local residents.

### **Goals**

CHIPS, in its first stages of developing local business solutions, accesses and utilizes small-diameter wood and underbrush from private and public lands to create a chipped product for landscape mulch. Subsequent phases anticipate manufacture of wood pellets, posts and poles, pressed logs, craftsman woodworking products and energy generation.

### **Mission**

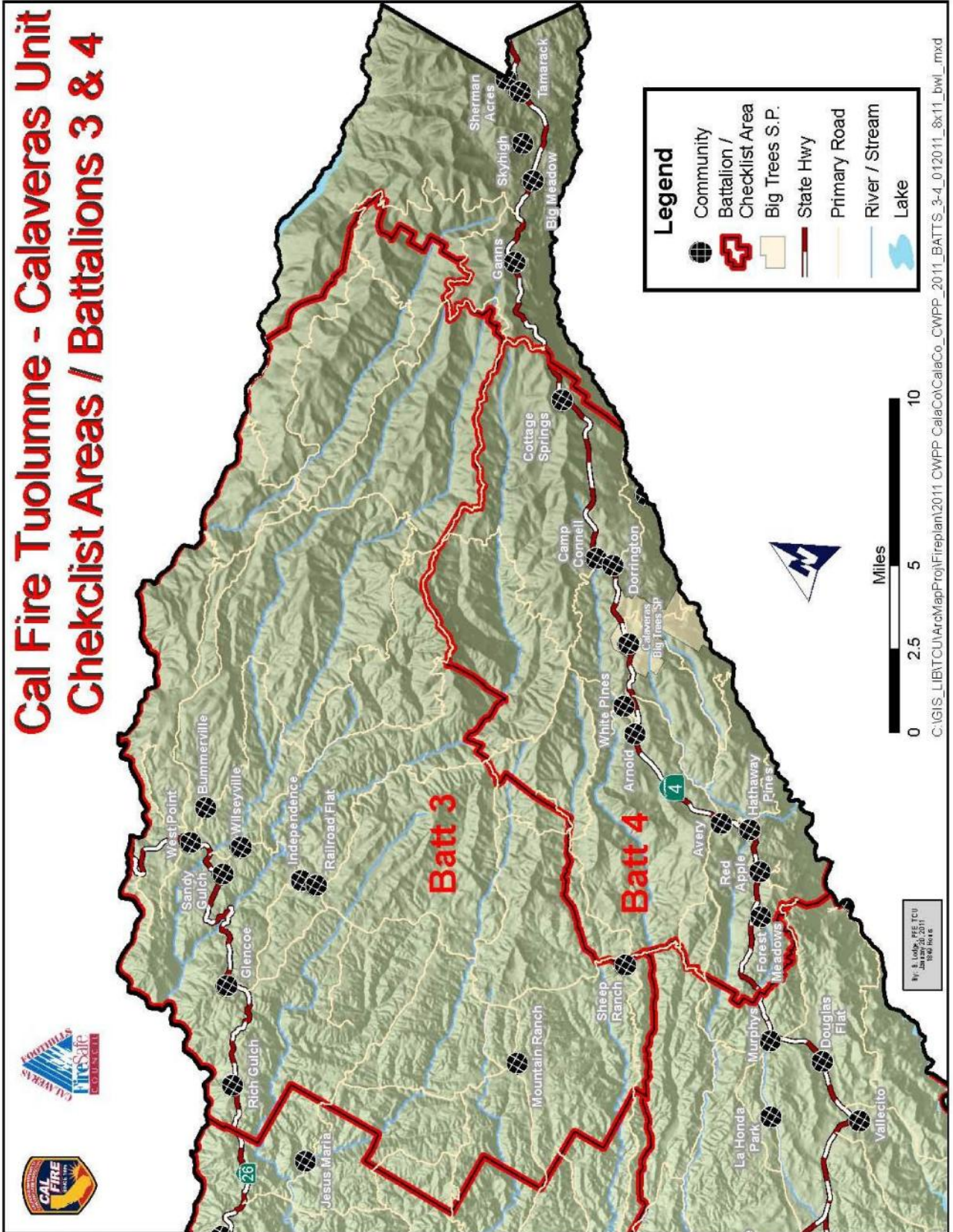
To address the communities extreme fire threat while creating healthy forest lands. Committed to building a sustainable model of economic and social development that stimulates economic recovery and an enhanced capacity to address social needs.

**Calaveras Foothills Fire Safe Council:** Since 2001 this FSC has been fully engaged in the success of several fuel reduction efforts, including : the production and implementation of the Calaveras County Community Wildfire Protection Plan; production and distribution of Public Education materials, and programs; identification, planning and implementation of numerous on-the-ground fuel reduction projects.

**Calaveras County:** Since 2003 disposal of forest fuels has been made much easier for local residents, thanks to the County's Fuel Waste Disposal program. Under this program, homeowners may take all unwanted yard debris (brush, grass, pine needles, etc.) to local transfer stations and dump these materials at no charge. The program has been very successful in encouraging compliance with PRC-4291 fuel reduction requirements while improving air quality as a result of a reduction in burning. The utilization of this service has dramatically increased due to the PRC-4291 changes requiring up to 100 foot of clearance.

**Stanislaus National Forest:** The primary focus of the Calaveras District of the Stanislaus National Forest is on their lands comprising the state DPA surrounding the greater Arnold community in Battalion 4. However, they will be continuing their work on their segments of the Moore/Blue and Winton Road fuel breaks in Battalion 3. They also have thinning and under burning plans for the Moore and Blue Garnet timber sales.

# Battalion 4 Map



## **Battalion 4 - Arnold Battalion:** Scott Fremd – Battalion Chief

### **Pre-Fire Management Plan - Overview**

The Arnold Battalion consists of 136,520 acres, covering the southeast portion of Calaveras County, and a significant portion of north-eastern Tuolumne County. The Battalion includes a wide geographic area, with elevations ranging from 1400 to 6800 feet and is bisected by multiple east-west drainages that have a history of supporting fire spread. Also bisecting the Battalion is State Highway 4, recently designated a State of California Scenic Byway.

In addition to providing protection for life and private property, the Arnold Battalion provides resource protection for critical watershed, timber, and recreational values. The Battalion protects portions of the Calaveras, Mokelumne, and Stanislaus river watersheds. Protection of these watersheds provides benefits that reach far beyond the boundaries of the Battalion and the Tuolumne - Calaveras Unit. The commercial timberland in the Battalion has supported an active logging industry for decades, playing a vital role in the local and state economy. The scenic beauty of the area supports a vibrant year-round local tourism industry that caters to all types of outdoor enthusiasts. The Battalion also protects Big Trees State Park, a highly visited park that features magnificent groves of Sierra Redwoods, Cedar, Sugar Pine and Douglas Fir.

The overwhelming majority of the Battalion has been designated by CAL FIRE as having a *Very High* Fire Hazard Severity Zone rating. It has also been categorized as having a *High* Fire Hazard rating by the United States Forest Service (USFS). With exception of a small portion of its western lower elevation areas, the Battalion lies within the Unit's Sierra Fire Danger Rating Area.

## **Battalion 4 Assessment Summaries:**

### **Assets at Risk, Fuels, Weather and Fire History**

**Assets at Risk:** There are multiple assets at risk within the Battalion, homes and businesses, watershed resources including major commercial timber holdings, water collection and distribution infrastructure, electrical power generation and distribution infrastructure, communications infrastructure, recreational resources, and historical and archeological sites. The following list reflects those assets that will be considered in pre fire planning for the Battalion:

- **Life safety:** A very large percentage of the population of the greater Arnold area is comprised of temporary residents. A large number of vacation homes exist in the upper Highway 4 corridor which leads to intermittent increases in population throughout the year in response to summer recreation opportunities, holiday weekends and the ski season.

- **Residential and Commercial Development:** Battalion 4 assets include all communities along the Highway 4 corridor. Officially designated “Communities at Risk” in the Battalion include: Arnold, Avery, Big Trees Village, Camp Connell, Cottage Springs, Dorrington, Forest Meadows, and Hathaway Pines. Included in and/or adjacent to these communities are numerous subdivisions and commercial developments. See Section III Pt. B for Communities at Risk information.

These communities include a wide variety of residential development: modern subdivisions featuring mid-sized homes on small urban-sized lots; large modern luxury homes on multi-acre lots within a subdivision or individually located in a purely rural setting; mobile and manufactured homes in parks and/or on multi-acre rural parcels; and widely scattered 50+ year old homes, among others.

Given the long history of development, a wide variety of building materials and design features are present. The oldest structures in the Battalion are often at significant risk due to threatening locations and non-Fire Safe construction practices. Mid-slope, chimney and ridge-top locations and outdated design features such as shake roofs, wood siding, wood decks, and large single pane windows are common. The newer development features many improvements in construction materials (double pane windows and fire resistant roofs and siding for example) but often remain at significant risk due to dense concentrations of structures on small parcels carved out of dense forest and brush fuels, often on steep terrain. Both newer and older residential communities feature many steep and narrow roads and driveways. Development will undoubtedly continue in the interface, but will incorporate the latest Chapter 7A building codes, resulting in more ember resistant / fire safe structures.

- **Watershed:** The most significant watershed asset is the production of water. The Battalion provides protection to critical watersheds, including the South Fork Mokelumne River headwaters; South Fork Calaveras River headwaters, consisting of San Antonio and San Domingo Creeks, among others. These watersheds support New Hogan Reservoir. South of Hwy 4 is the Stanislaus River North and Middle Fork systems, including Griswold, Beaver, Soap and Skull Creeks, among significant numbers of others. The Stanislaus River watershed supplies water to New Melones Reservoir and Tulloch Reservoir. The watersheds all support assets important to an area far beyond the Battalion and Unit boundary, including: water storage for local and regional domestic use, industrial and agricultural use; recreational opportunities; power generation; and wildlife habitat among others.
- **Recreation Values:** A third watershed asset is recreation. Fishing, hunting, motor sports, hiking, biking, and other activities are having an increasingly positive effect on the local economy. Arguably, the most important influence of recreation on the Battalion is the impact of the ski season on commerce in the greater Arnold area. Not only do thousands of skiers pass through on any given weekend, but thousands also reside in and around Arnold on winter weekends and over holidays. The summer season also sees huge influxes of people into the greater Arnold area, especially on the traditional 3-day holidayweekends.

- **Agricultural Values:** Though not as numerous or significant as in the lower elevation Battalions, agriculture related assets, including orchards, vineyards and cattle grazing, are present and economically important.
- **Community Infrastructure:** Water storage and delivery systems (flumes, tanks & reservoirs); electrical distribution equipment; telecommunications system; roads and bridges; schools.

There are various water delivery systems within the Battalion, including a major flume operated by Utica Power Authority. The Calaveras County Water District and the Blue Lake Springs Mutual Water Company also operate facilities within Battalion 4.

Several government agencies and private communications companies take advantage of the topography within the Battalion for the location of communications system facilities. Power transmission lines are also present. Highway 4, a designated State Scenic Byway, is a vital transportation link, providing access for tourism and recreation within the Battalion as well as to the Federal high country and the east side of the Sierra range.

- **Big Trees State Park:** Located just east of Arnold along Highway 4, BTSP features significant groves of old growth Sierra Redwood as well as large stands of old growth Sugar Pine and Cedar, among others. The park is well known, experiences very high visitor numbers and is crucial to the economy of the adjacent communities and the county at large.
- **Commercial Timber Resources - Private and Federal:** Another important watershed asset is the commercial timber. The majority of commercial timber resources within these watersheds is owned and managed by Sierra Pacific Industries. Their large holdings between the North and Middle Forks of the Stanislaus River, historically known as the Standard Block, was considered the most valuable stand of virgin Sugar Pine in the world during the middle of the last century. A significant number of acres belonging to the USFS Stanislaus National Forest are also within the Battalion.

**Fuels:** The majority of the Battalion has been designated by CDF as a *Very High Fire Hazard Severity Zone*. It has also been categorized as having a *High Fire Hazard* rating by the USFS. Fuels in the Battalion range from dense stands of mature brush mixed with oak woodlands at the lower elevations, mixed conifer forests dominated by ponderosa pines in the mid-range elevations and fir and lodge pole pine dominated stands at the upper elevations. Fuel Models 1 (grass), 2 (oak woodland), 4 (heavy brush), 6 (medium brush), and 10 (heavy timber) are all present. This variety of fuels coupled with the rugged topography creates a highly volatile fire environment that has promoted extreme fire behavior on several occasions over past decades.

The effects of a series of annual low elevation snow falls starting in 2006 through 2011 remain a consideration for the fuels between the 1,500 and 3,000 foot elevations. These events primarily affect the live oak, black oak and bull pine, breaking off their branches and tops. This adds significantly to the amount of dry dead and down fuels in the under story and, in turn, increases the availability of “ladder fuels.” This increased dead

fuel loading increases the difficulty of fire control through the creation of fuel “jackpots” that burn with high intensity.

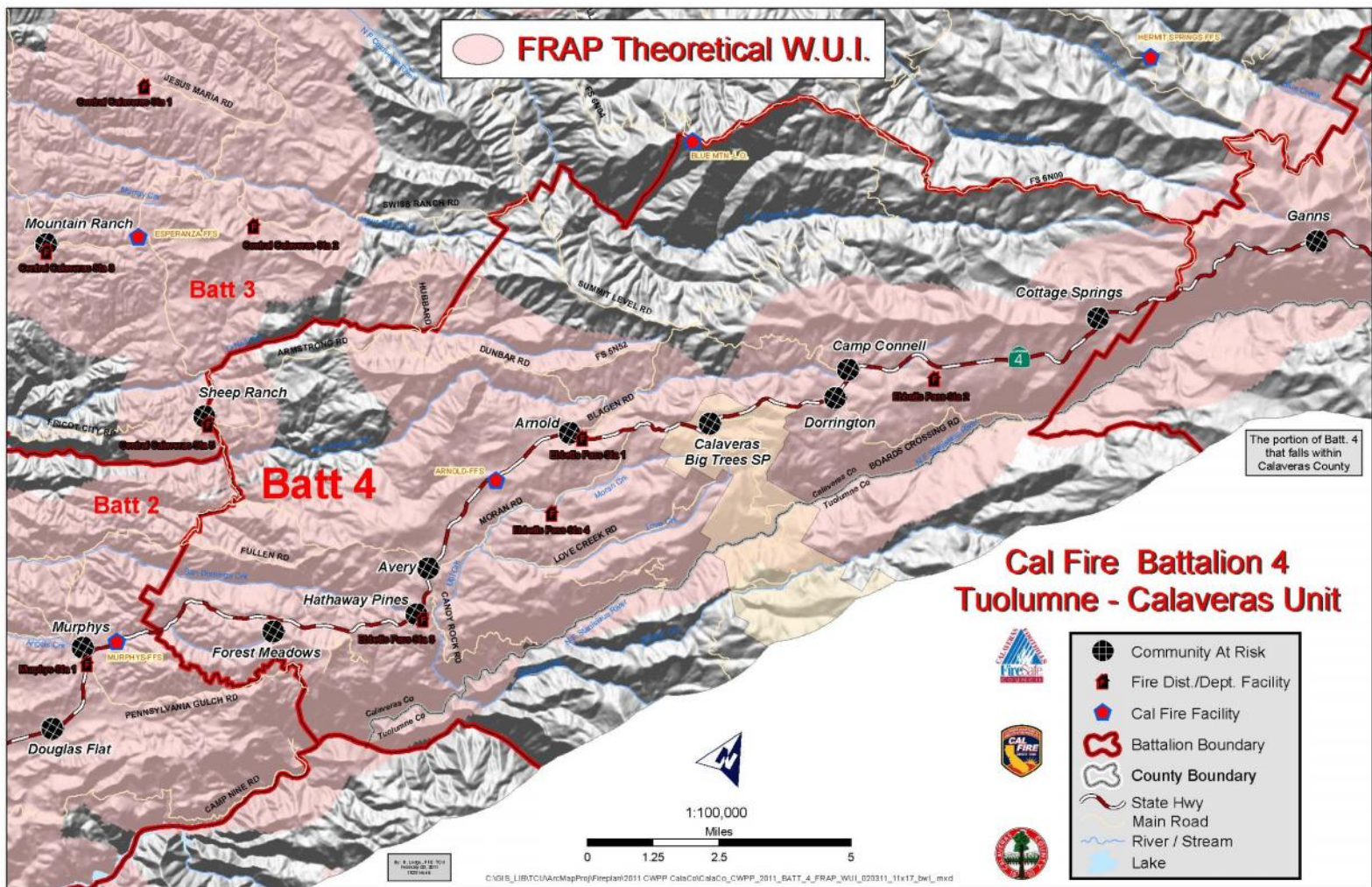
**Weather:** Summer (fire season) weather in the Battalion is characterized by periods of high heat ranging from 90-105° degrees with relative humidity ranging from 10-24%. The Battalion experiences frequent summer heat waves where the temperature may remain in the high 90’s for several days. As the normal summer heat waves begin to subside, the Battalion receives the beneficial effects from the delta breeze about 24 hours after its effects are felt in the San Joaquin Valley and the lower elevation portions of the Unit. This extends the effects of high hazard weather patterns one day longer than the lower elevations experience. In the upper elevations of the Battalion, it is not uncommon to experience relative humidity in the low teens from the middle of September until the rainy season. Correspondingly, 10-hour fuel moistures can stay below 5% for much of the fall. The Battalion frequently experiences East and North wind events at the higher elevations during the fall. During these events, high winds coupled with low humidity develop with little or no warning. The Mokelumne and Stanislaus River drainages typically come under the greatest influence from these events as is evident by a handful of large fires that have occurred after the official close of fire season in the fall.

**Fire History:** Despite the relatively low number of ignitions and acres burned that occur on an annual basis, the Arnold Battalion has a history of large and damaging wildfires, most recently the Armstrong #1 and #2 (2004), Sourgrass (2002), Darby (2001), and Gulch (1992) fires. In some cases, these fires originated in low country Battalions (Gulch, Darby) and have spread eastward up the drainages that dominate the topography. These fires have been terrain and fuel driven and containment has occurred primarily due to changes in fuels and topography or moderation in weather conditions. In other instances, large and damaging fires have occurred in response to wind events in the Mokelumne and Stanislaus River drainages. Several of these fires have occurred after the close of fire season. In prior years their acreages were not included in the statistics provided in the analysis. Recent changes to reporting policy and procedures have allowed us to capture these “off season” fires in our records and statistical analysis. The “Blue” complex of December 2011 is an example of one of these “off season” fires.

## Battalion 4 W.U.I. Information

The following communities are considered at risk by the California Fire Alliance and Cal Fire; Arnold, Avery, Big Meadow, Big Trees Village, Camp Connell, Cottage Springs, Dorrington, Forest Meadows, Ganns, Tamarack and Hathaway Pines. A public meeting was held on February 9, 2011 in Arnold to discuss the C.W.P.P. as well as to set W.U.I. boundaries for the Battalion 4 section of the plan. The public in attendance with the assistance of Cal Fire Battalion Chief Chris Post (Filling in for Battalion Chief Jeff Millar) set the W.U.I. boundaries that are to follow. W.U.I. boundaries were set using several key factors including, topography, fuels, fire history, defendability of communities and safety of community members as well as emergency services employees. A F.R.A.P. map of all the Battalion 1 W.U.I.'s, a map of the publics determined battalion 1 W.U.I.'s and an individual W.U.I. area map is provided as well as a general description and history of the communities within that W.U.I. boundary have been provided.

## Battalion 4 F.R.A.P. Map



# Battalion 4 Overall W.U.I. Map



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MAPS

## Arnold W.U.I. Map



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MAPS

Arnold, Avery, Forest Meadows and Hathaway Pines are the only communities designated to be a community at risk in the Arnold W.U.I.

### **Arnold**

Arnold is a census-designated place (CDP) in Calaveras County, California, United States. Arnold is located on State Route 4.

Arnold is named after Bob and Bernice Arnold, who, in 1927 opened the Ebbetts Pass Inn. Prior to that, the community consisted of two large ranches where logging was the main industry. The inn served as a stop for people traveling along the Ebbetts Pass route as well as lodging for those visiting nearby Calaveras Big Trees State Park. In 1928, Camp Wolfeboro was established nearby as a Boy Scout camp and continues to be in operation today. The first post office was opened in 1934. According to the United States Census Bureau, the CDP

has a total area of 14.9 square miles (38.6 km<sup>2</sup>), of which, 14.8 square miles (38.4 km<sup>2</sup>) of it is land and 0.1 square miles (0.2 km<sup>2</sup>) of it (0.47%) is water.

### **Avery**

Avery is a census-designated place (CDP) in Calaveras County, California, United States. Avery is located on State Route 4 and is home to the oldest continually operating hotel in the county, the Avery Hotel Restaurant & Saloon. Built in 1853, it was known as the "Half Way House," being located between Murphys, Arnold, and Calaveras Big Trees State Park. According to the United States Census Bureau, the CDP has a total area of 4.5 square miles (11.7 km<sup>2</sup>), all of it land. The place is named after George J. Avery, its first postmaster. The first post office was established in 1885, closed in 1943, and re-established in 1949.

### **Forest Meadows**

Forest Meadows is a census-designated place (CDP) in Calaveras County, California, United States. According to the United States Census Bureau, the CDP has a total area of 5.7 square miles (14.7 km<sup>2</sup>), all of it land.

### **Hathaway Pines**

Hathaway Pines is an unincorporated community in Calaveras County, California, 8 km (5 mi) south of Arnold and 20 km (12.5 mi) northeast of Angels Camp. It lies at an elevation of 3323 feet (1013 m). Hathaway Pines' post office was established in 1943. The place's name honors Robert B. Hathaway, a vacation resort promoter who became the first postmaster.

## Big Trees W.U.I. Map



Big Trees is the only community designated to be a community at risk in the Big Trees W.U.I.

### **Big Trees**

Big Trees is an unincorporated community in Calaveras County, California. It lies at an elevation of 4728 feet (1441 m). A post office was established in 1865, closed for a time in 1903, and closed for good in 1943. Calaveras Big Trees State Park (CBTSP) on the western slope of the Sierra Nevada in Calaveras and Tuolumne Counties. CBTSP is a contiguous unit approximately 6,500 acres in size and has a northwest southwest elongation.

CBTSP is roughly divided into two parts by the North Fork Stanislaus River. The river forms a deep, steeply sided canyon that is the dominant topographic feature of the unit, with walls descending nearly 1200 feet and slopes ranging up to 40 or 50%. Elevations in the unit range from 3,400 to 5,500 feet.

Ridges within CBTSP have a northeast southwest trend and form boundaries between the major drainage systems (Big Tree Creek, Big Trees Creek, and the North Fork Stanislaus River). Major water systems at CBTSP are found in deeply entrenched, steep walled canyons that have a northeast southwest trend. Minor systems, usually small, spring fed streams feed into the larger systems. Smaller, ephemeral streams flow down canyon slopes, while larger, perennial minor systems follow the same northeast southwest trend previously noted. The unit has been placed into State Hydrologic Area B (San Joaquin River), specifically into Hydrologic Units B05C (South Fork Calaveras Hydrologic Area) and B09D (North Fork Stanislaus Hydrologic Area). Most of CBTSP is either part of the North Fork Stanislaus River drainage or of its tributaries.

CBTSP lies within the Lower Montane Forest of the Sierran Floristic Province. The park is situated in a thriving coniferous forest. The dominate tree type is ponderosa pine (*Pinus ponderosa*) with associated trees species such as incense cedar (*Calocedrus decurrens*), sugar pine (*Pinus lambertiana*), white fir (*Abies concolor*), black oak (*Quercus kelloggii*), bigleaf maple (*Acer macrophyllum*), and Pacific dogwood (*Cornus nuttallii*). An extremely significant species at CBTSP is the giant sequoia (*Sequoiadendron giganteum*). Canyon live oak (*Quercus chrysolepis*) is found on drier slopes of the Stanislaus River canyon. Shrub species include Greenleaf Manzanita (*Arctostaphylos patula*), whitethorn ceanothus (*Ceanothus cordulatus*), and deer brush (*Ceanothus integerrimus*).

### **Current Land Uses**

For more than 145 years the North Grove area at CBTSP has been used primarily for diverse recreational purposes. The North Grove area is possibly the oldest continuously opened units of the California State Park system. It is also one of the most visited recreation sites in California. Land uses outside the boundary of the park include small parcels of adjacent United States Forest Service lands, private residential subdivisions, privately owned timber lands (Sierra Pacific Industries), and small private ownership.

## Big Trees Village W.U.I. Map



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MAPS

Big Trees Village, Camp Connell and Dorrington are the only communities designated to be a community at risk in the Big Trees Village W.U.I.

### **Big Tress Village**

Big Trees Village is an unincorporated community in Calaveras County, California. It lies at an elevation of 5164 feet (1574 m).

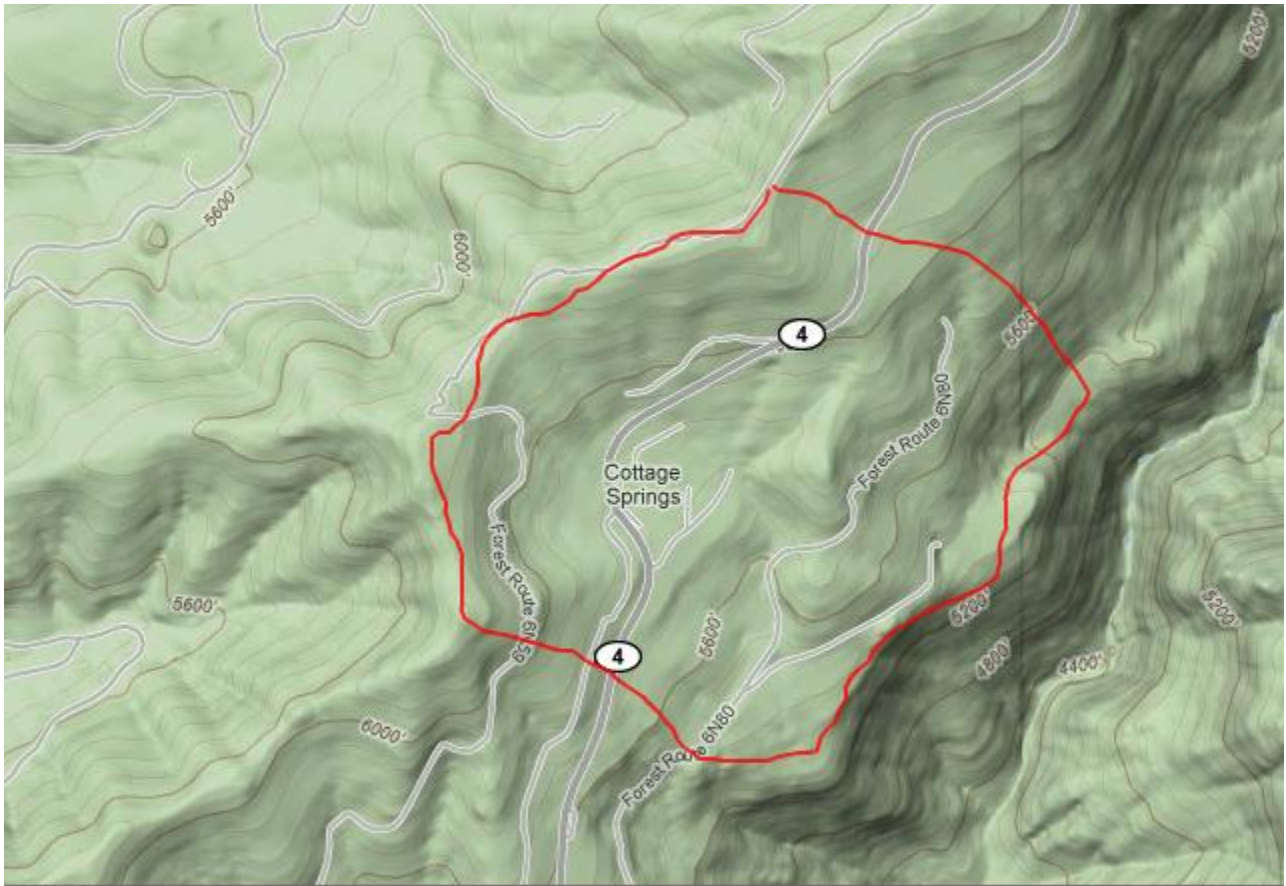
### **Camp Connell**

Camp Connell is an unincorporated community in Calaveras County, California. It lies at an elevation of 4760 feet (1451 m). The first post office was established in 1934 and landowner John F. Connell was appointed first postmaster; the place is named after him.

## **Dorrington**

Dorrington is a census-designated place (CDP) in Calaveras County, California, United States. Originally known as Cold Spring Ranch until 1902 (because of an icy spring), the town sits on State Route 4 and historically was a stopping point along the toll road between Murphys and Ebbetts Pass, often serving as a resort for visitors to what is now Calaveras Big Trees State Park. Dorrington is also home to the second largest Sugar Pine in the world, measuring 32 feet (9.7 m) in circumference and 220 feet (67 m) tall. According to the United States Census Bureau, the CDP has a total area of 3.7 square miles (9.5 km<sup>2</sup>), all of it land. Originally known as Cold Springs Ranch, the town's name changed upon establishment of the post office in 1902. The name Dorrington was the maiden name of the first postmaster's wife. The post office was discontinued in 1919, but re-established in 1921 and closed for good in 1934.

## Cottage Springs W.U.I. Map



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Cottage Springs is the only community designated to be a community at risk in the Cottage Springs W.U.I.

### **Cottage Springs**

Cottage Springs is an unincorporated community in Calaveras County, California. It lies at an elevation of 5827 feet (1776 m).

## Ganns W.U.I. Map



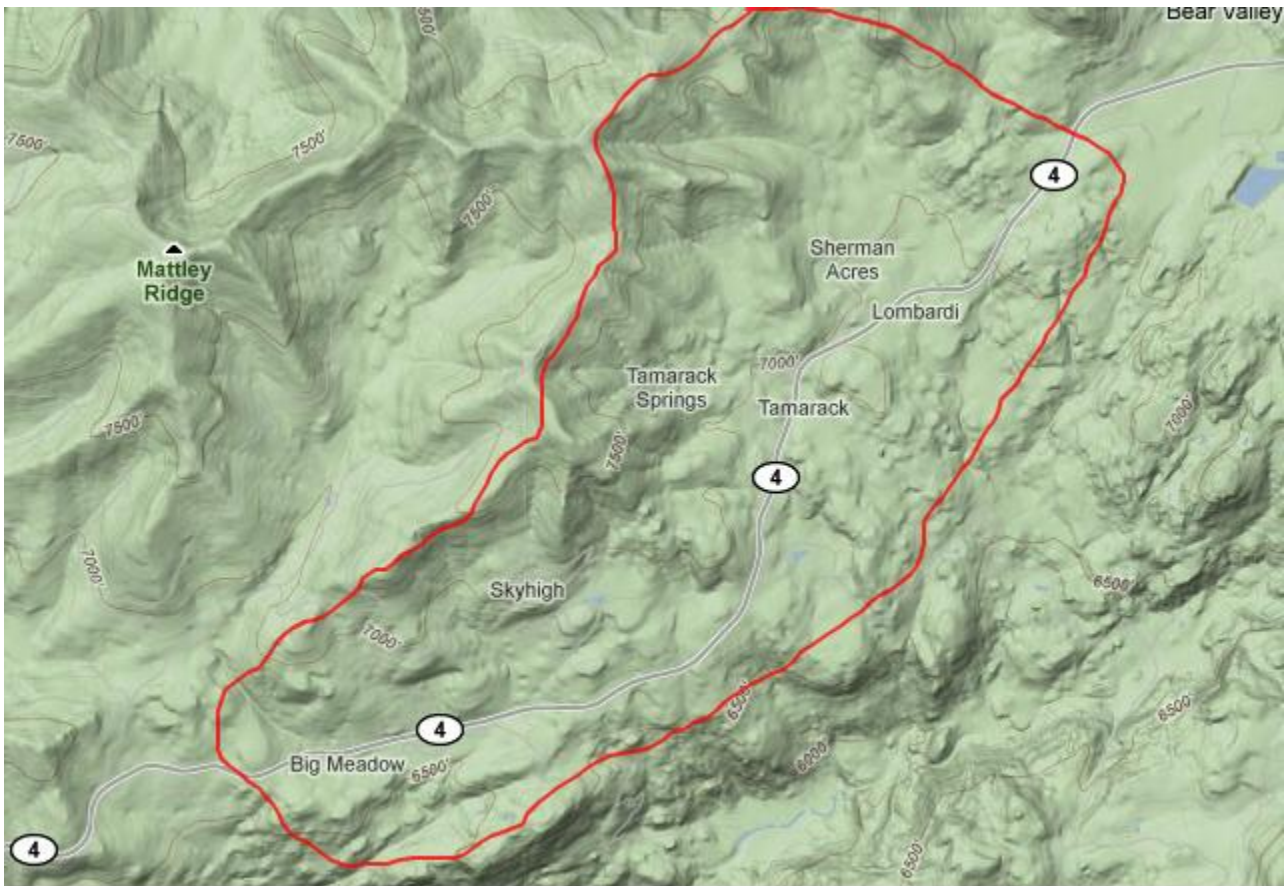
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MAPS

Ganns is the only community designated to be a community at risk in the Ganns W.U.I.

### **Ganns**

Ganns is an unincorporated community in Calaveras County, California. It lies at an elevation of 6742 feet (2055 m).

## Sky High W.U.I. Map



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MAPS

Big Meadow, Tamarack, and Sky High are the only communities designated to be a community at risk in the Sky High W.U.I.

### **Big Meadow**

Big Meadows is an unincorporated community in Calaveras County, California, about 2.5 miles (4 km) south of Tamarack. It lies at an elevation of 6558 feet (1999 m).

### **Tamarack**

Tamarack is an unincorporated community in Calaveras County, California, United States. A nearby weather station, located across the Alpine County line, has been the site of United States meteorological records. The community was founded in the 1920s.

Tamarack's weather station owns the national snowfall record for one month: in January 1911, Tamarack received 390 inches (32.5 feet) of snow. It also set the American seasonal snow depth record of 454 inches (37.8 ft.), measured on March 10, 1911. During the winter of 1911 Tamarack was buried beneath a total of 767 inches (63.9 feet) of snow, most of which fell during that notorious January. Tamarack also holds the California seasonal snowfall record of 884 inches.

Tamarack is located at an elevation of 6,913 feet (2,107 m), on the west slope of the Sierra Nevada near Bear Valley and south of South Lake Tahoe.

## **Battalion 4 Mitigation Efforts**

Other than lightning, there is no consistent and statistically significant fire cause trend in the Battalion. County General Plan and Zoning Codes are the governing rules for development. Within the densely populated areas of the Battalion small parcel sizes limit the ability to modify fuels over broad expanses of terrain. Large private land ownership (SPI) intermingled with USFS lands provides greater opportunity for large scale cooperative fire prevention projects. As a result, Battalion 4 will continue to focus on its successful two-prong approach to reducing the wildland fire threat:

**Defensible Space Inspections:** Removing fuels around structures provides the single most effective action for increasing structure survivability during a wildfire. An aggressive inspection program can provide firefighters with defensible space for structure protection operations. The Battalion has developed a model program utilizing VIP assistance to implement a vigorous home inspection program. In the past two years, the Battalion has conducted over 10,500 inspections annually, far exceeding the Unit's inspection target. We continue to work with the media in developing community awareness of PRC-4291 requirements and its benefits. Compliance is further encouraged by an annual enforcement "ticket blitz" (see below).

In 2010, the Battalion partnered with the CFFSC and employed part-time, grant funded defensible space inspectors. This program was highly successful and generated an additional 1000 inspections within the Battalion.

**Fuel Reduction / Breaks:** A network of fuel breaks has been completed in cooperation with the Stanislaus National Forest, Big Trees State Park, and Sierra Pacific Industries. Due to the fact that CAL FIRE does not control these lands, our role has been limited to providing technical advice regarding the location of these fuel breaks and assisting with the incorporation of private parcels into existing projects. To date, cooperative fuel breaks have been constructed around the western portions of Lakemont Pines, Hathaway Pines, and the McKay's Road area. These efforts will provide protection to homes in these areas and future efforts to maintain these projects are planned.

The fuels reduction serves a dual purpose in that it protects homes from encroaching wildfires and protects wildland areas from fires starting in adjacent subdivisions.

Over the years, several fuel break projects have been completed by CAL FIRE:

Love Creek Ranch Fuel Reduction Demonstration Project – In 2003, TCU staff applied for and received a USFS grant of \$54,000 to partially fund a demonstration fuel reduction project on the Love Creek Ranch near Avery. The project was completed in 2006. This was a cooperative project between CAL FIRE, the Stanislaus National Forest, the Ebbetts Pass Fire Protection District, and the landowner, Mr. David Alford. The goal of the project was to expand the network of fire defense improvements in the Arnold area. The project is

immediately adjacent to a fuel break constructed by the Stanislaus National Forest and was successful in expanding the buffer of treated lands between National Forest lands and concentrations of rural subdivisions. The existing fuel break is part of the Calaveras-Tuolumne Fuel Break System that was used to contain the Darby Fire in 2001.

Because of its proximity to numerous forest subdivisions, the project provides an opportunity for the public to view the effects of mechanized removal of hazardous forest fuels. It also provided employment to logging contractors who have experienced a significant reduction in employment opportunities as a result of declining timber harvest levels in Calaveras County. All forest biomass removed from the 120 acre project area was utilized for the generation of electric energy.

Big Trees Village Fuel Break – A fuel break around the southeast side of the Big Trees Village was completed in cooperation with Calaveras Big Trees State Park, Sierra Pacific Industries, CAL FIRE, and the Big Trees Village Homeowners Association. The purpose of the project was to reduce fuels along the subdivision – State Park interface in order to slow fire spread into and out of either the subdivision development or Big Trees State Park.

Moran Road Fuel Break – A fuel break along the ridge that separates Moran Road and Love Creek is in the planning stages. Sierra Pacific Industries is planning a timber harvest in this location with the goal of developing a shaded fuel break condition upon completion of harvest. This project would provide additional protection to the more densely populated portions of the Battalion.

## Meadowmont Perimeter Fuel Break Project

<b>Initial Checklist/Battalion:</b> 4	<b>Status:</b> Planning	<b>Acres:</b> 270
<b>Priority:</b> 1	<b>Sponsor:</b> CFFSC	<b>Length/Mi:</b>
<b>Within W.U.I?:</b> Yes	<b>Lat/Long:</b> 38.246 N 120.371 W	<b>Tons/Fuel:</b>
<b>Document Effective Date:</b> 5/1/16	<b>Funding Source:</b> Unknown	<b>Amount:</b>
<b>\$100,000</b>	<b>In-Kind:</b>	<b>Total:</b>
<b>Author:</b> Jill Micheau		
<b>\$100,000</b>		

### PROJECT DESCRIPTION:

Defensible space around homes is critical if a wildfire breaches the perimeter of a WUI (wildland-urban interface) community. Infrastructure to fight fires within neighborhoods exists, but the best way to preserve homes and lives is to keep wildfires from entering neighborhoods.

Developing a standard for WUI communities would help determine how resources are allocated, assess which interfaces need attention, and would provide tangible projects with specific and measurable impact on the community.

Several approaches can be considered and employed, depending on the terrain and exposure to risk. Meadowmont asks that the decision on exactly how a perimeter is created, improved, or maintained be made by qualified experts. Options might include:

- **Creating/maintaining firebreaks at the perimeter of subdivisions. An example of this can be seen near the Valley View and Lakemont gates. Bulldozers cleared a large swathe of land to protect neighborhoods from the Butte fire in September of 2015.**



## Photos:

● **Creation of Additional Water Sources at fire breaks.** Consider installing traditional or “dry hydrants” to provide readily accessible water sources for firefighters. Dry hydrants eliminate the inefficiency and complexity of long-distance water shuttle operations and allows access from a roadway instead of soft ground. These hydrants could be positioned at local water sources like White Pines Lake, San Antonio Creek, the Meadowmont pond, the Lakemont lake, or Cowell Creek. In addition, water storage cisterns could be placed at strategic locations to create a network of water sources.

Advantages of dry-hydrant systems include:

- A non-pressurized pipe system.
- Made of relatively inexpensive piping materials and other supplies.
- Are permanently installed in existing lakes, ponds, streams and cisterns.
- Provide a means of access whenever needed, regardless of weather.
- Allow years of simple operation with a minimum of maintenance.
- When a strategically placed dry hydrant with all-weather road access allows more water to be distributed in less time, and the water can be applied effectively on the fire, fire fighter safety is improved.
- Savings can be financial, as well. For example, when the volunteer fire department in Forsyth County, Georgia used the dry hydrant water delivery system with proper training and equipment, county homeowners enjoyed a 49 percent drop in insurance rates. Fire departments also save money by reducing fuel and equipment costs through shorter transportation distances and lower operational demands. Communities can preserve more of their treated water supplies, since dry hydrants use untreated water.

○ To read more about how dry hydrants can benefit WUI communities, see the following webpage:

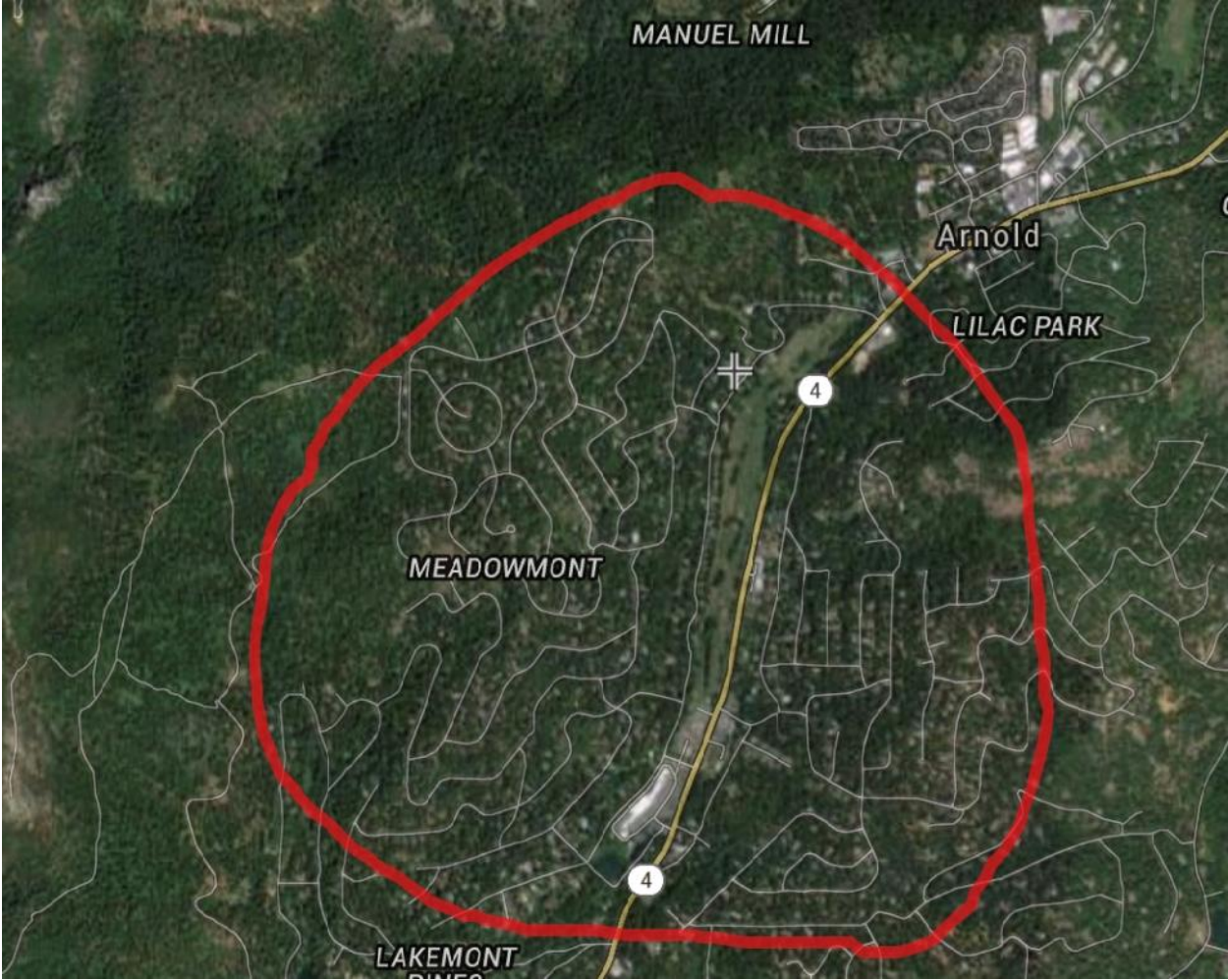
<http://www.nfpa.org/assets/gallery/firewise/operationWater/index.htm>.

**Use goats to clear/maintain a perimeter fire break.**

Goats are being used in many communities to clear ground fuels. They have proven to be a cost effective and environmentally friendly way to improve fire safety. The Forest Service has conducted several experiments to determine the effectiveness of goats in clearing land for fire breaks, and it appears that goats are pretty effective. A 2013 experiment conducted near San Diego cost between \$400 and \$500 per acre to use goats, versus nearly triple that for more common, labor-intensive methods of



brush clearing. We propose that the use of goats be considered as one of the tools available to us to create a defensible community perimeter. Remove dead trees that have been infested and killed by bark beetles. Dispose of the downed wood in such a way that the beetles do not spread to nearby trees.



## Indian Creek Fuel Break Project

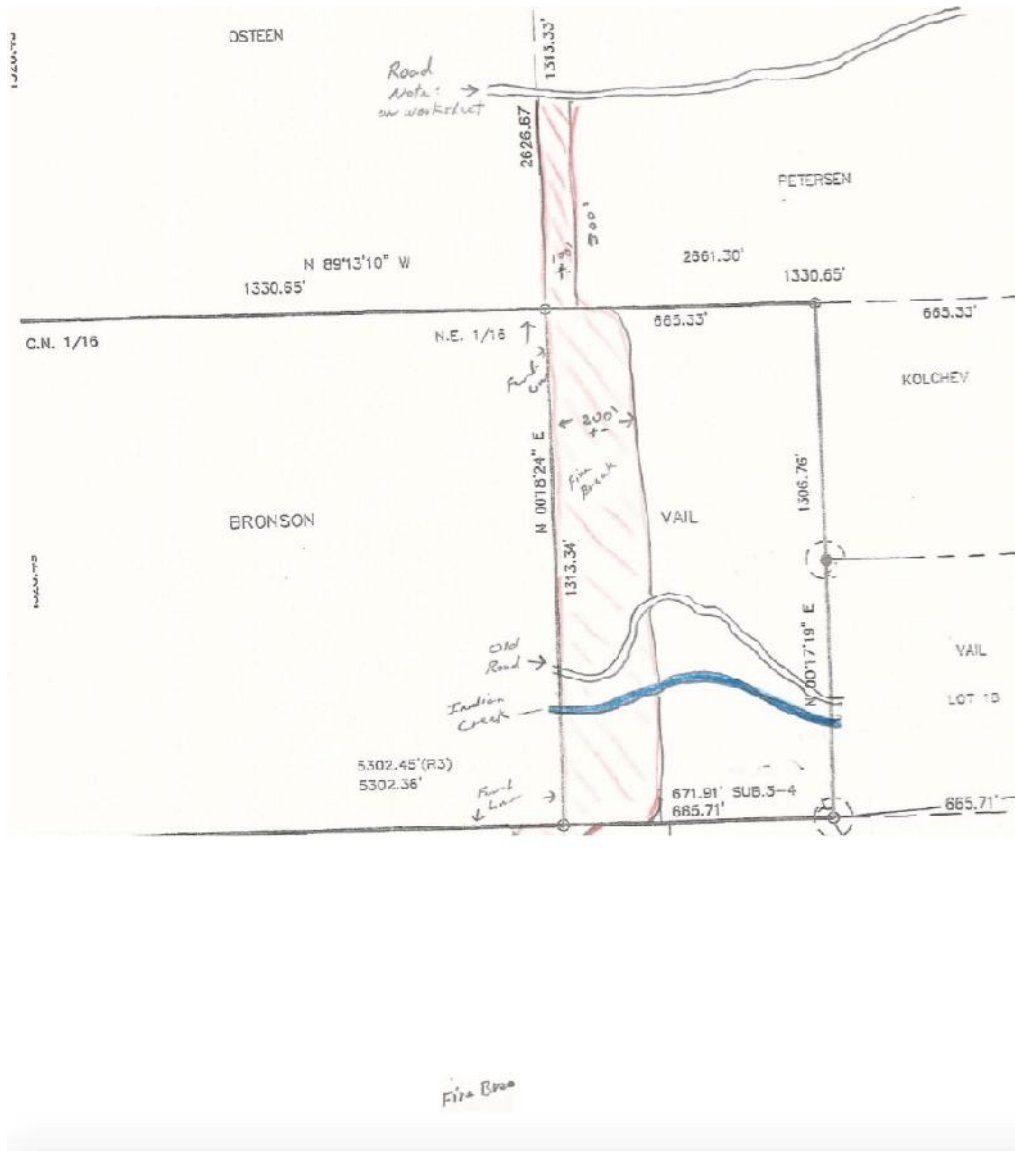
**Initial Checklist/Battalion: 4**  
**Priority: 2**  
**Within W.U.I?: Yes**  
**Document Effective Date: 5/1/16**  
**Author: Tom Vail**

**Status: Planning**  
**Sponsor: CFFSC**  
**Lat/Long: 38.121 N 120.425 W**  
**Funding Source: Unknown**  
**In-Kind:**

**Acres: 5**  
**Length/Mi:**  
**Tons/Fuel:**  
**Amount:**  
**Total:**

### PROJECT DESCRIPTION:

Continue existing shaded fuel break from Valente property at Fullen Rd. along Vail property line to dirt road on Peterson property.



## Ebbetts Pass Pine Needle Project

**Initial Checklist/Battalion: 4**  
**Priority: 3**  
**Within W.U.I?: Yes**  
**Document Effective Date: 5/1/16**  
**Author: Ebbetts Pass Fire Dist.**

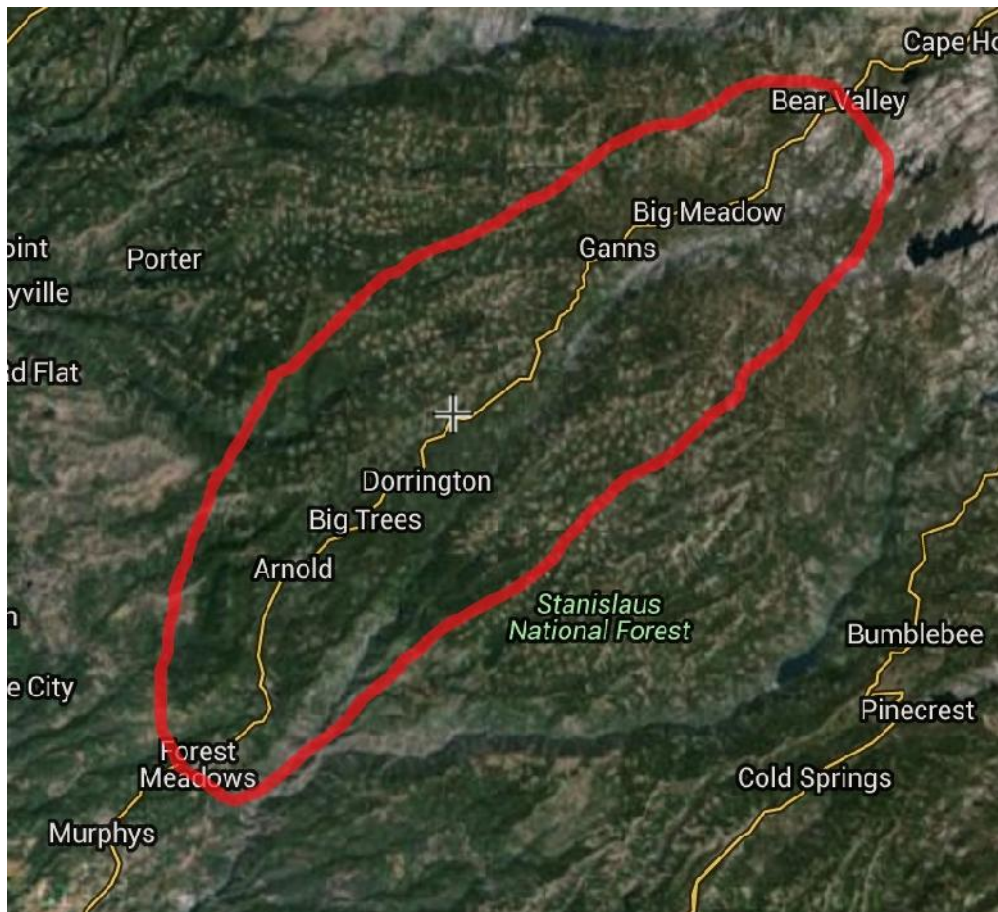
**Status: Planning**  
**Sponsor: CFFSC**  
**Lat/Long: 38.324 N 120.259 W**  
**Funding Source: Unknown**  
**In-Kind:**

**Acres: 3,000**  
**Length/Mi:**  
**Tons/Fuel:**  
**Amount:**  
**Total:**

### PROJECT DESCRIPTION:

Address prevention of Pine Beetle and removal on and around private lands where tree mortality has occurred. Keep health trees healthy versus becoming a drier, more flammable vegetative fuel. Remove dead trees from private lands to reduce wildfire threat, essentially improving structural survivability.

Possible treatment plan including but not limited to: Verbenone for prevention and fuels removal for dead trees.



## Meadowmont Beetle Tree Removal Project

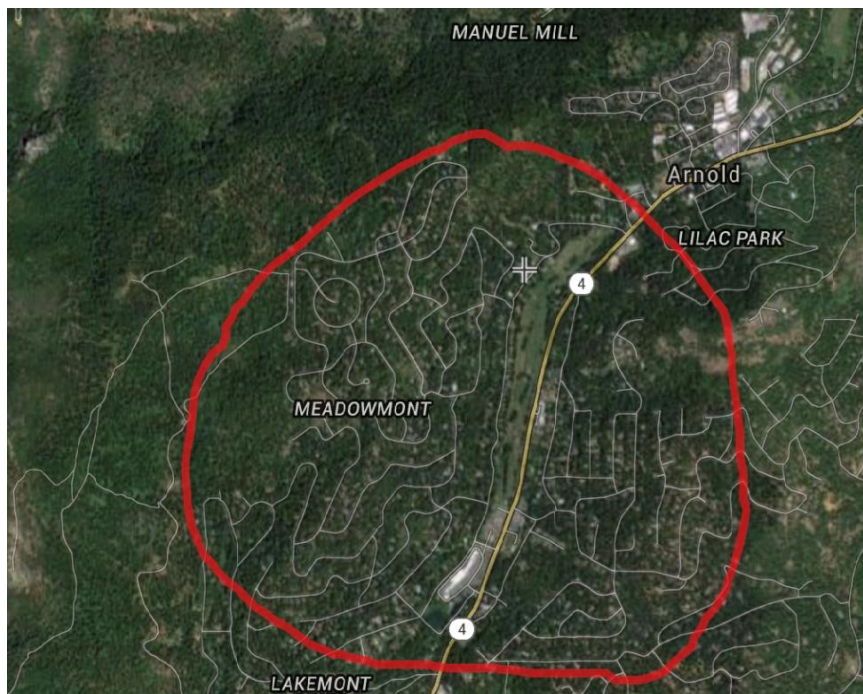
<b>Initial Checklist/Battalion: 4</b>	<b>Status: Planning</b>	<b>Acres: 10</b>
<b>Priority: 5</b>	<b>Sponsor: CFFSC</b>	<b>Length/Mi:</b>
<b>Within W.U.I?: Yes</b>	<b>Lat/Long: 38.246 N 120.371 W</b>	<b>Tons/Fuel:</b>
<b>Document Effective Date: 5/1/16</b>	<b>Funding Source: Unknown</b>	<b>Amount:</b>
<b>\$20,000</b>		
<b>Author: Jill Micheau</b>	<b>In-Kind:</b>	<b>Total: \$20,000</b>

### PROJECT DESCRIPTION:

Arnold's population includes a high percentage of retirees, elderly people, and low-income families. According to City-Data.com, the median age of Arnold residents is 57.7 years versus 35.7 for California. In addition, 12.8% of Arnold's residents have an income less than \$10,000, versus 6.2% for California.

The elderly are often unable to do the physical labor of clearing yard debris, and many are unable to afford to have the work done by professionals. The result is that several lots in the community do not meet Cal Fire requirements. These lots put the homes of neighbors and the community at higher risk for fires.

We propose that a fund be established to subsidize and/or pay for cleaning lots when the owners can demonstrate physical and/or financial inability to meet Cal Fire requirements. Work could be done by Cal Fire approved contractors.



## Meadowmont Beetle Tree Removal Project

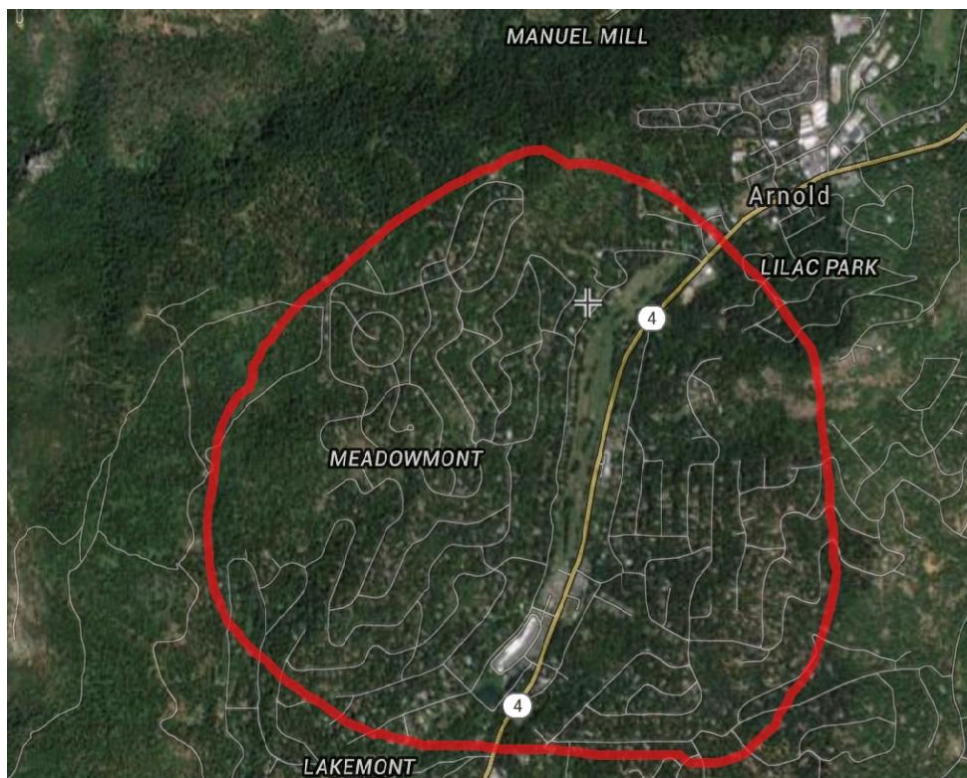
<b>Initial Checklist/Battalion: 4</b>	<b>Status: Planning</b>	<b>Acres: 10</b>
<b>Priority: 6</b>	<b>Sponsor: CFFSC</b>	<b>Length/Mi:</b>
<b>Within W.U.I?: Yes</b>	<b>Lat/Long: 38.246 N 120.371 W</b>	<b>Tons/Fuel:</b>
<b>Document Effective Date: 5/1/16</b>	<b>Funding Source: Unknown</b>	<b>Amount:</b>
<b>\$20,000</b>		
<b>Author: Jill Micheau</b>	<b>In-Kind:</b>	<b>Total: \$20,000</b>

### PROJECT DESCRIPTION:

Arnold's population includes a high percentage of retirees, elderly people, and low-income families. According to City-Data.com, the median age of Arnold residents is 57.7 years versus 35.7 for California. In addition, 12.8% of Arnold's residents have an income less than \$10,000, versus 6.2% for California.

The elderly are often unable to do the physical labor of clearing yard debris, and many are unable to afford to have the work done by professionals. The result is that several lots in the community do not meet Cal Fire requirements. These lots put the homes of neighbors and the community at higher risk for fires.

We propose that a fund be established to subsidize and/or pay for cleaning lots when the owners can demonstrate physical and/or financial inability to meet Cal Fire requirements. Work could be done by Cal Fire approved contractors.



## Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Priority: 7

Within W.U.I?: Yes

Document Effective Date: 1/1/2011

Author Name: Bill Fullerton

Status: Planning

Sponsor: CFFSC

Lat/Long: 38.196 N 120.679 W

Funding Source: Unknown

Acres: 100

Length/Mi:

Tons/Fuel:

Amount:

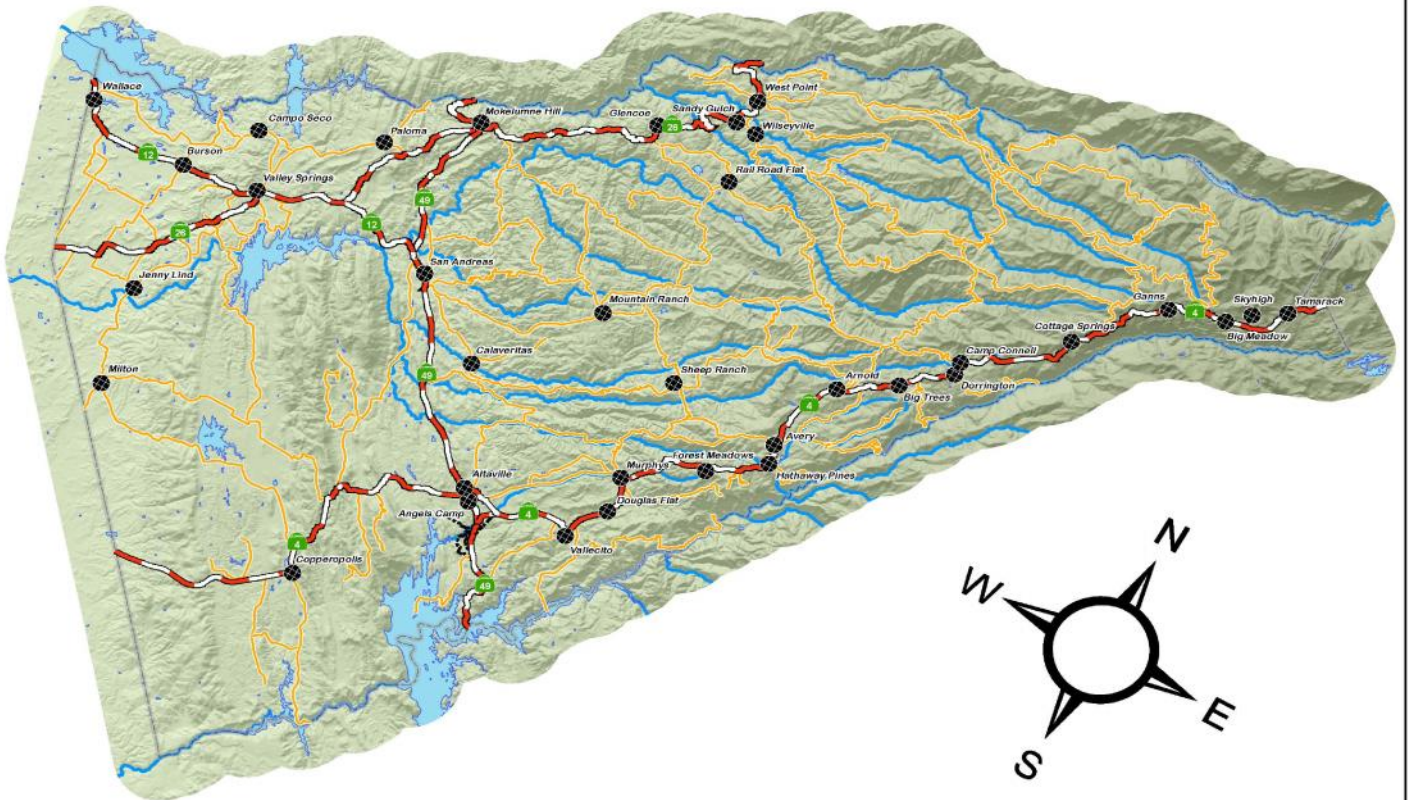
In-Kind:

Total:

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**

**Priority: 8**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Bill Fullerton**

**Status: Planning**

**Sponsor: CFFSC**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source: Unknown**

**Acres: 100**

**Length/Mi:**

**Tons/Fuel:**

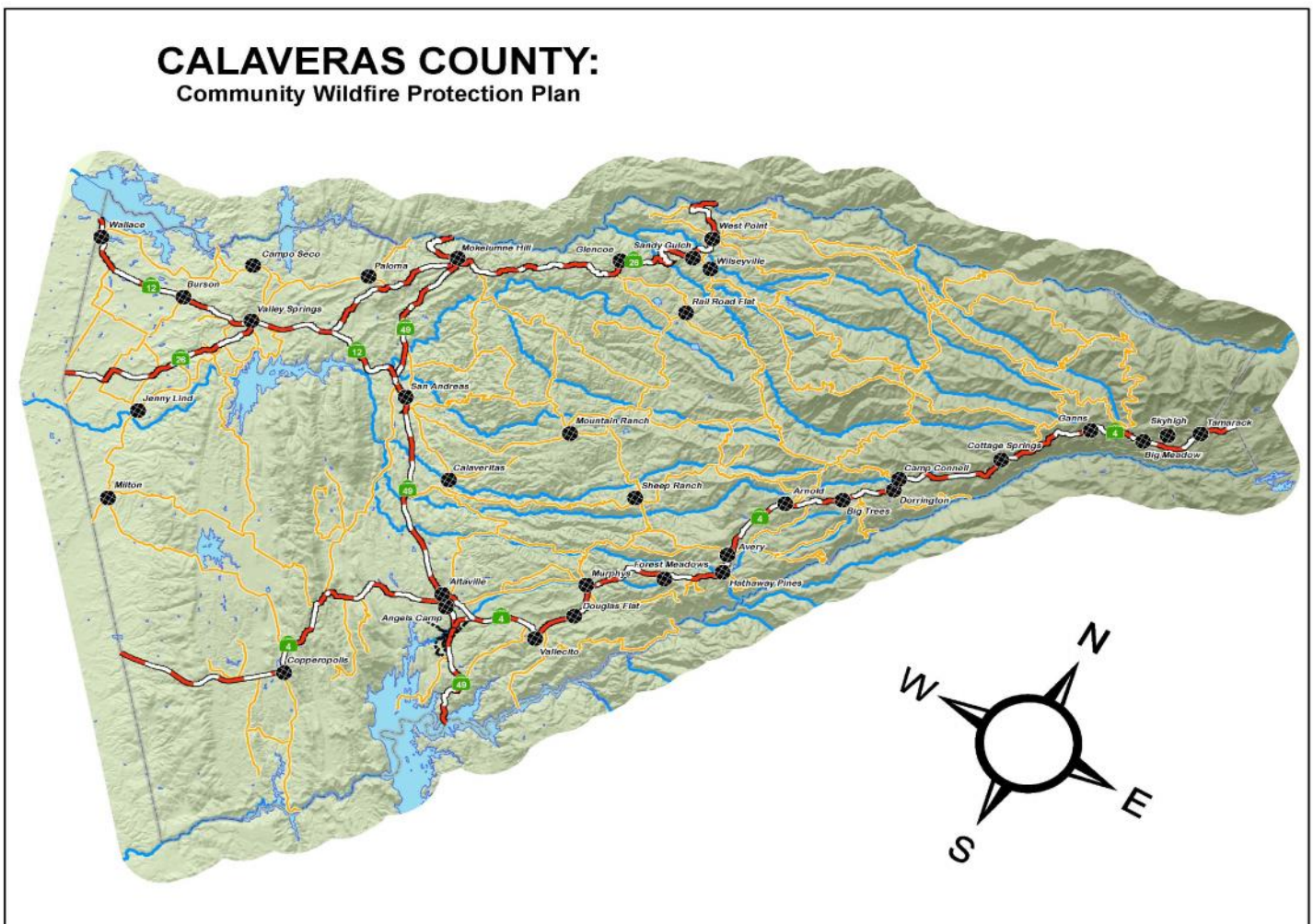
**Amount:**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## Public Roadways Fire Break

**Initial Checklist/Battalion: 1-4**

**Priority: 9**

**Within W.U.I? : Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Bill Fullerton**

**Status: Planning**

**Sponsor: CFFSC**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source: Unknown**

**Acres: 30**

**Length/Mi:**

**Tons/Fuel:**

**Amount:**

**In-Kind:**

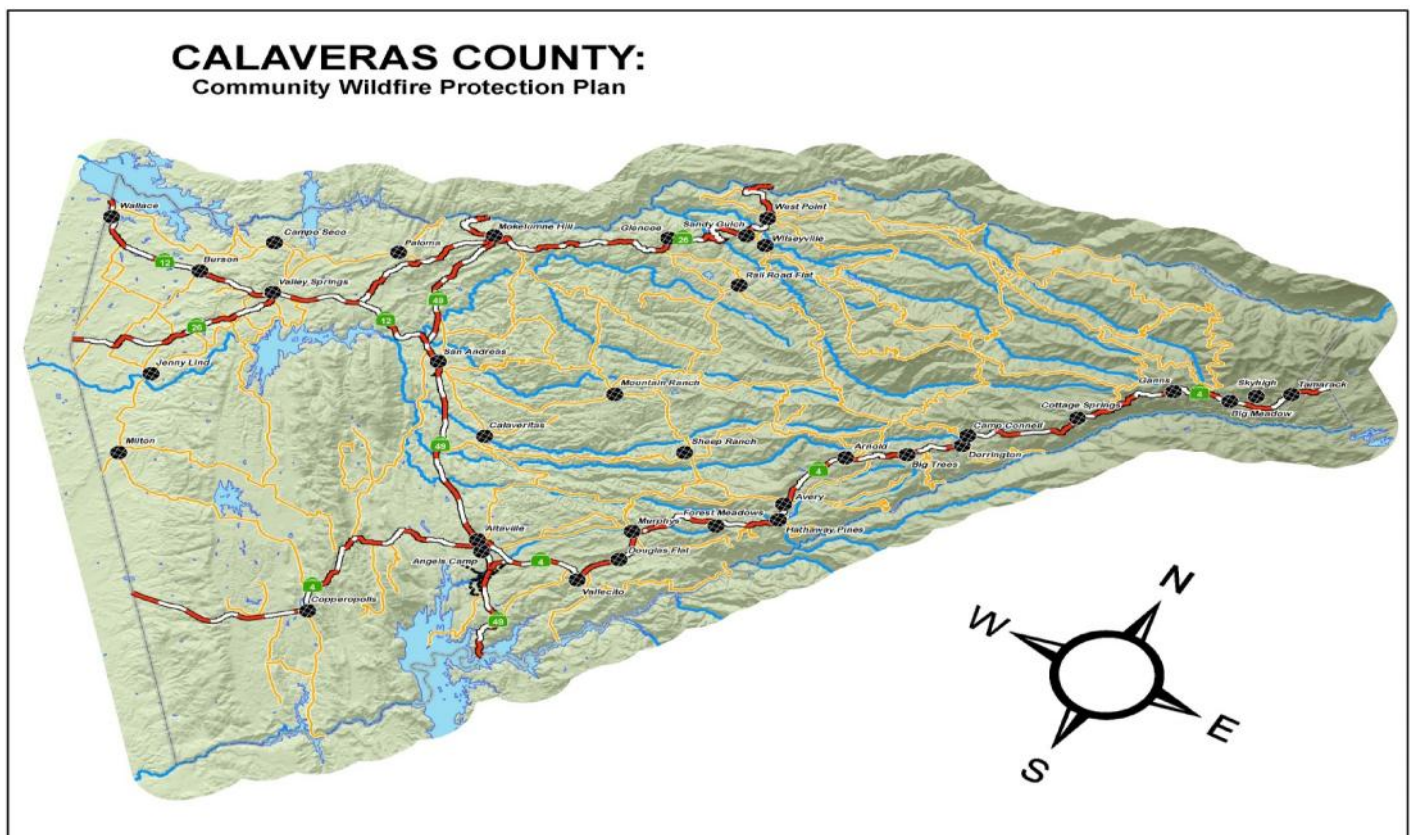
**Total:**

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.



## Moran Rd Fuel Break

**Initial Checklist/Battalion:** 4  
**Priority:** 10  
**Within W.U.I?:** Yes  
**Document Effective Date:** 1/1/2011  
**Author Name:** Jeff Millar

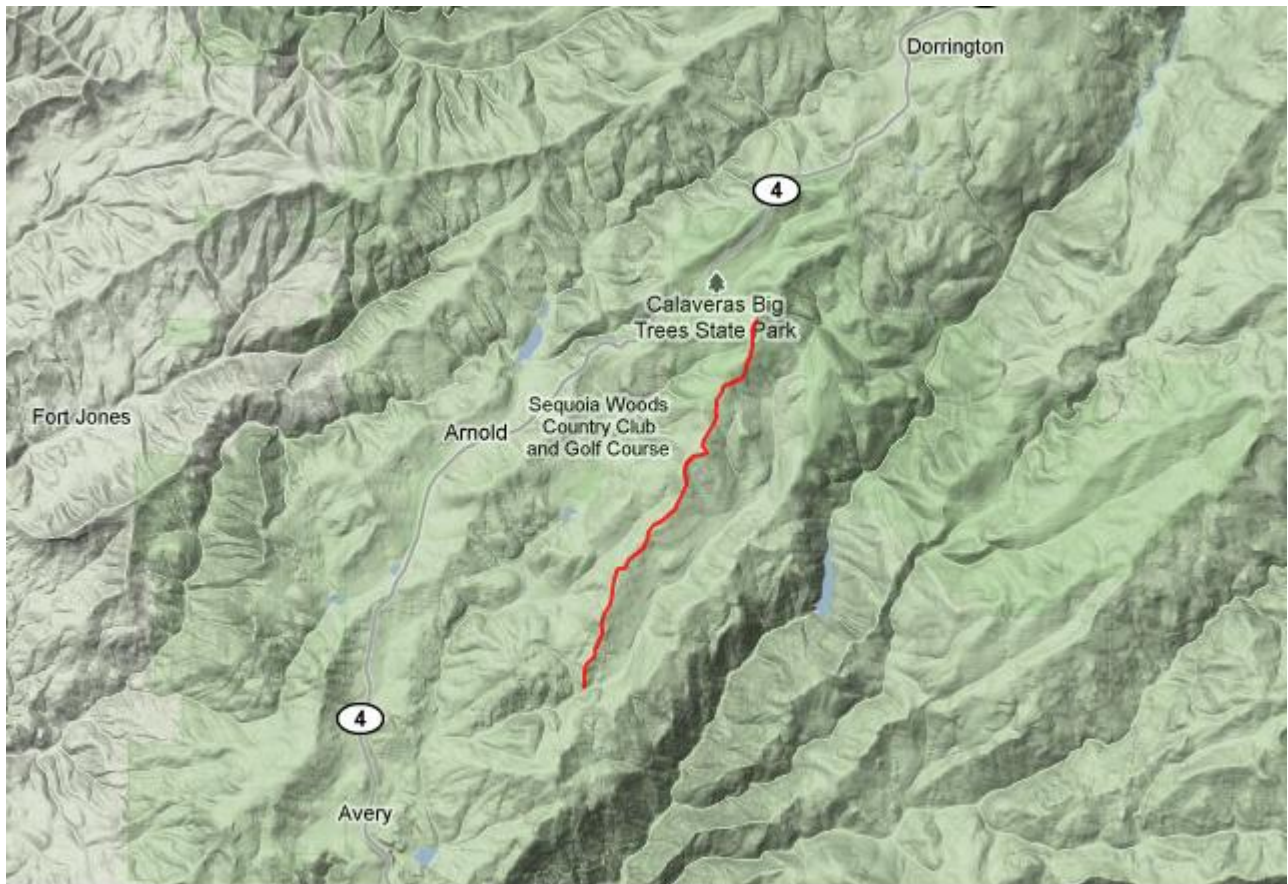
**Status:** Planning  
**Sponsor:**  
**Lat/Long:**

**Funding Source:**

**Acres:**  
**Length/Mi:** 5  
**Tons/Fuel:**  
**Amount:** \$  
**In-Kind:**  
**Total:**

### PROJECT DESCRIPTION:

Reduce surface and ladder fuels to create a shaded fuel break.



## East/West Arnold Shred

<b>Initial Checklist/Battalion: 4</b>	<b>Status: Planning</b>	<b>Acres: 360</b>
<b>Priority: 11</b>	<b>Sponsor: USFS</b>	<b>Length/Mi:</b>
<b>Within W.U.I?: Yes</b>	<b>Legal: T4N, R15E, Sec. 3 &amp; 4</b>	<b>Tons/Fuel:</b>
<b>Document Effective Date: 1/1/2011</b>	<b>Legal: T5N, R15E, Sec. 34 &amp; 35</b>	<b>Amount:</b>
<b>Funding Source: Unknown</b>	<b>Legal: T4N, R14E, Sec. 1,12,13,14</b>	<b>In-Kind:</b>
<b>Author Name: Steve Baran</b>	<b>Legal: T5N, R15E, Sec. 25 &amp; 36</b>	<b>Total:</b>

### PROJECT DESCRIPTION:

Maintenance of a fuel break through shredding of brush and specified Conifer trees. Additional acres were added to reduce fuel loading and ladder fuels within the W.U.I.

# Prather-Medusa Forest Restoration Project

Initial Checklist/Battalion: 4

Status: Planning

Acres: 6000

Priority: 12

Sponsor: USFS

Length/Mi:

Within W.U.I?: Yes

Legal: T6N, R16E, Sec. 6, 13, 17, 24, 25

Tons/Fuel:

Document Effective Date:

Legal: T6N, R17E, Sec. 7-10, 15-18, 19-22, 28-32

Funding Source: Unknown

Amount:

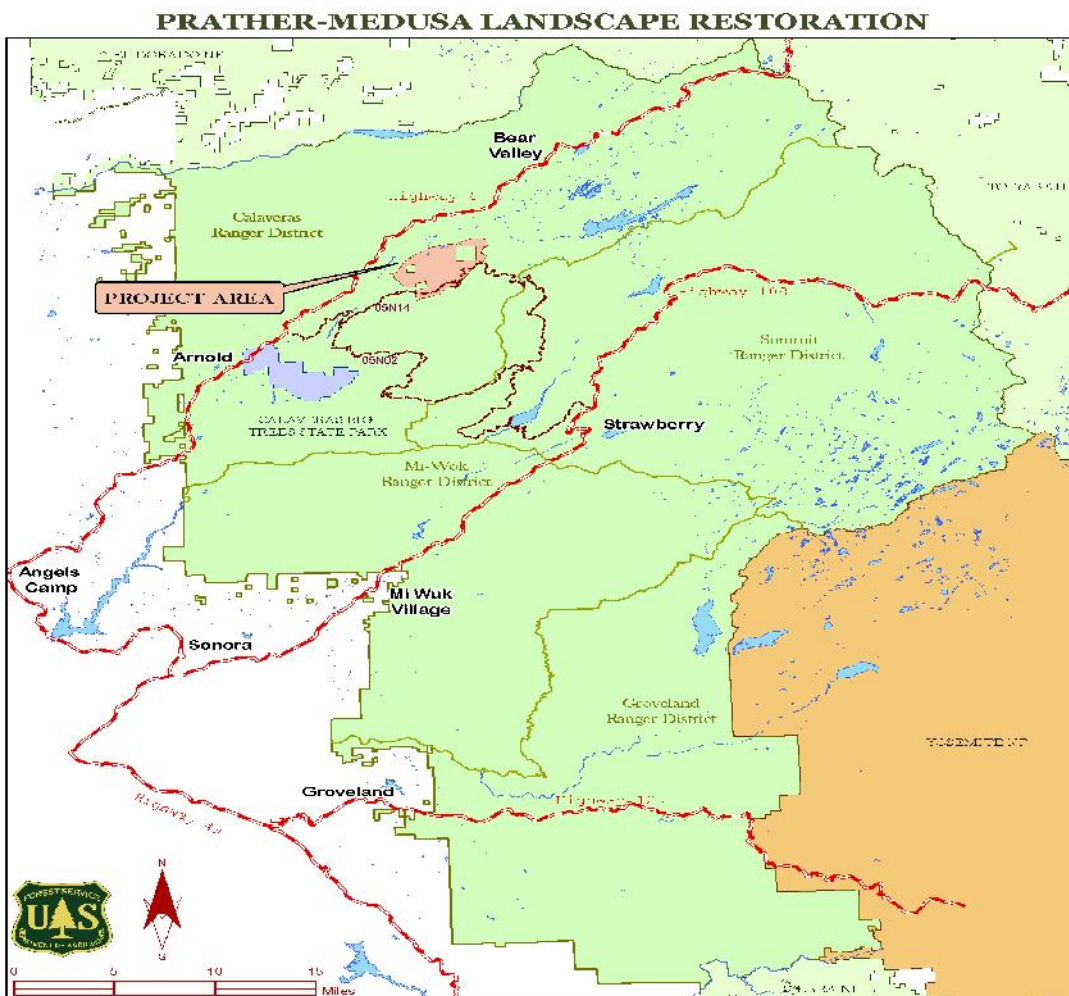
Author Name: Steve Baran

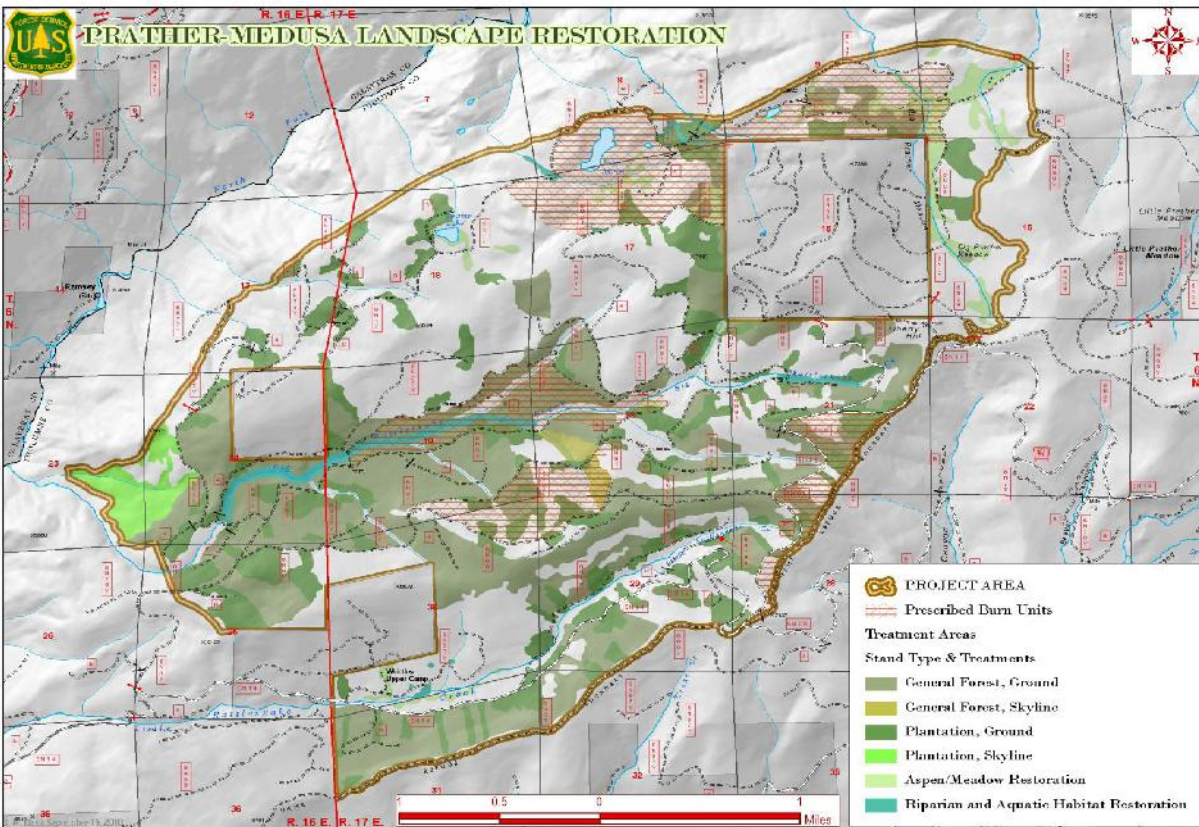
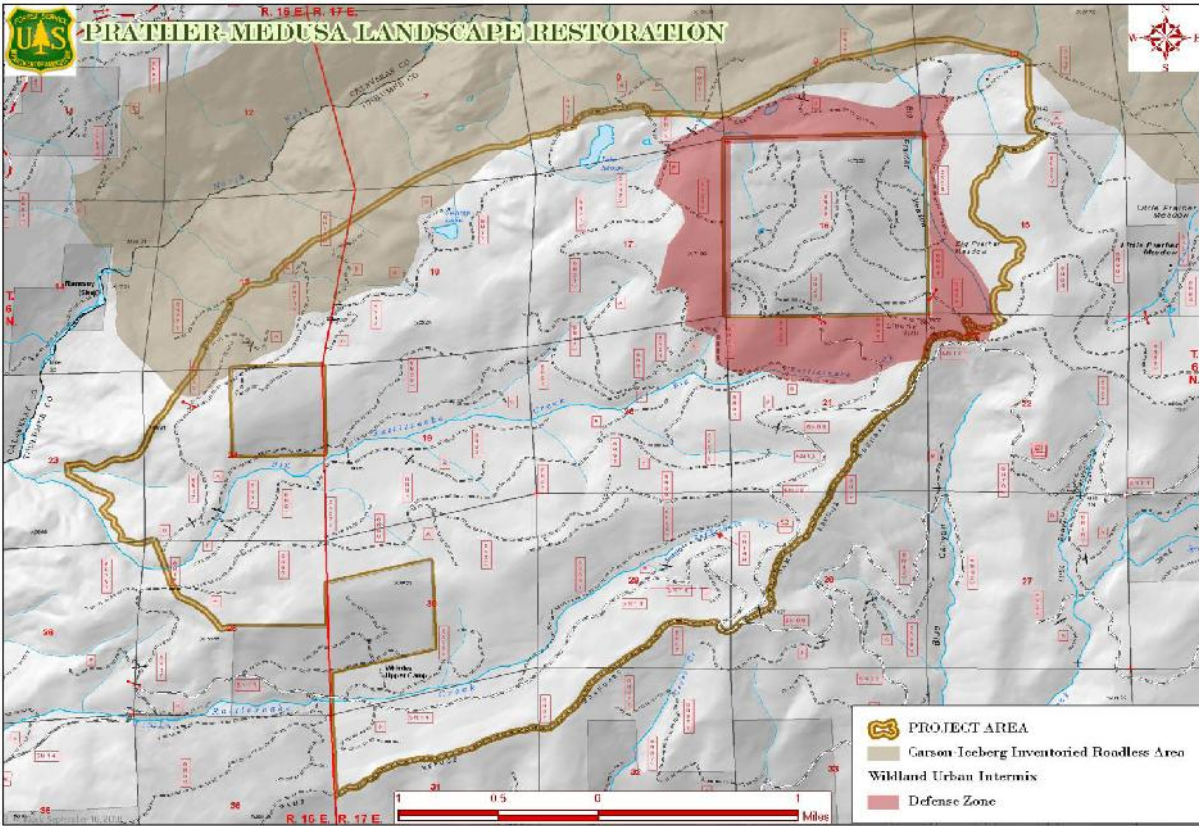
In-Kind:

Total:

## PROJECT DESCRIPTION:

Mechanical thinning, biomass removal, mastication and prescribed fire (Pile burning, understory burns and jackpot burning.)





## Locally Based Biomass Utilization Projects

**Initial Checklist/Battalion: 1**

**Priority: 13**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Rick Breeze-Martin**

**Status: Planning**

**Sponsor: CHIPS/ACCG**

**Lat/Long: 38.196 N 120.679 W**

**Funding Source:**

**Acres:**

**Length/Mi:**

**Tons/Fuel:**

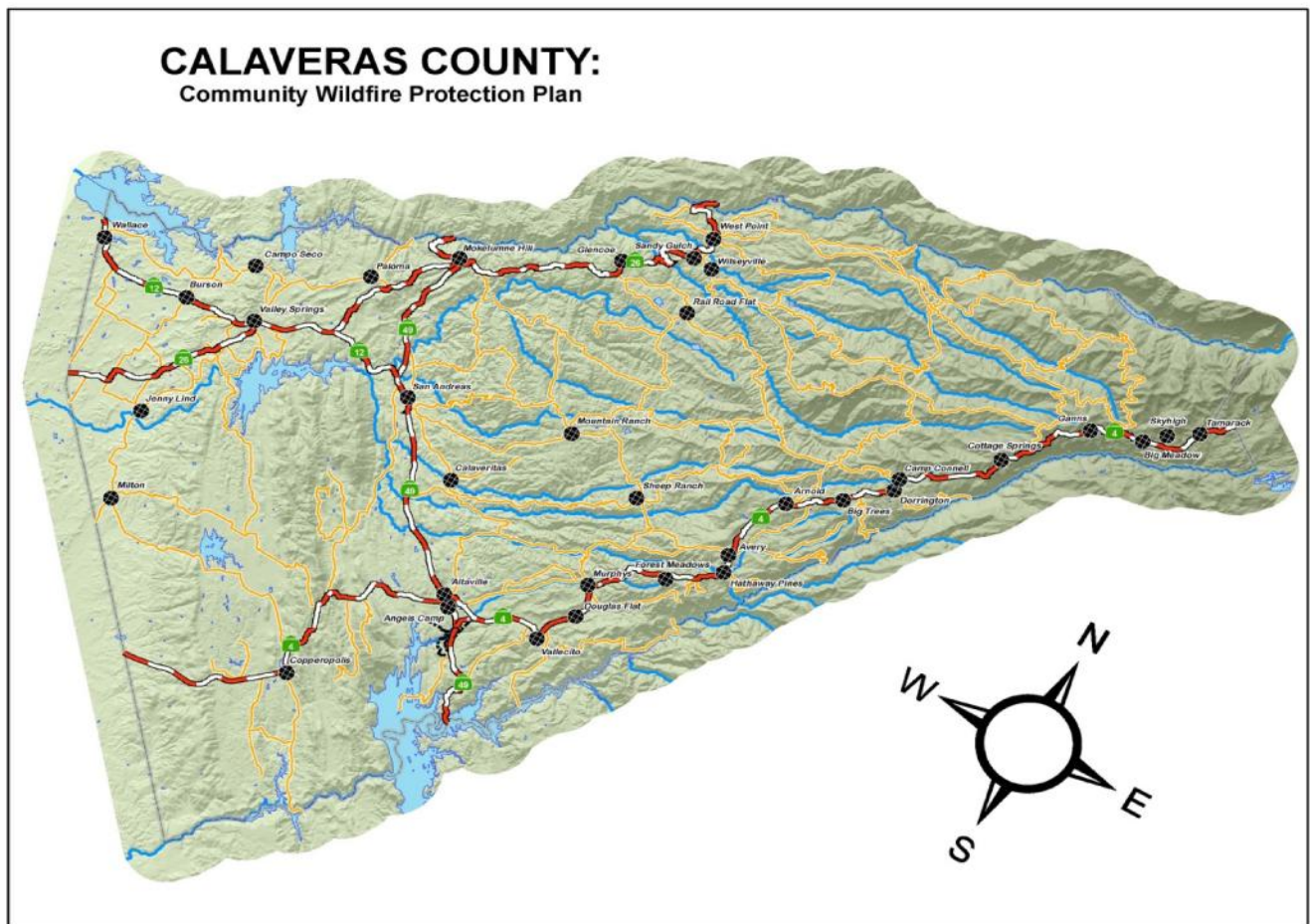
**Amount: \$**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

Development and implementation of small-scale biomass projects owned and operated by Calaveras/Amador residents, providing jobs, fuels reduction and energy for local residents and communities. Possible projects include pelletizing operations, small biomass heating or electrical generation for local use. Projects should utilize ecological stewardship fuels reduction methods approved by ACCG and/or CHIPS.



## Structural Ignitability Reduction and Fire Resiliency Building Techniques

**Initial Checklist/Battalion: 1**

**Status: Planning**

**Acres:**

**Priority: 14**

**Sponsor: CHIPS**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source:**

**Amount: \$**

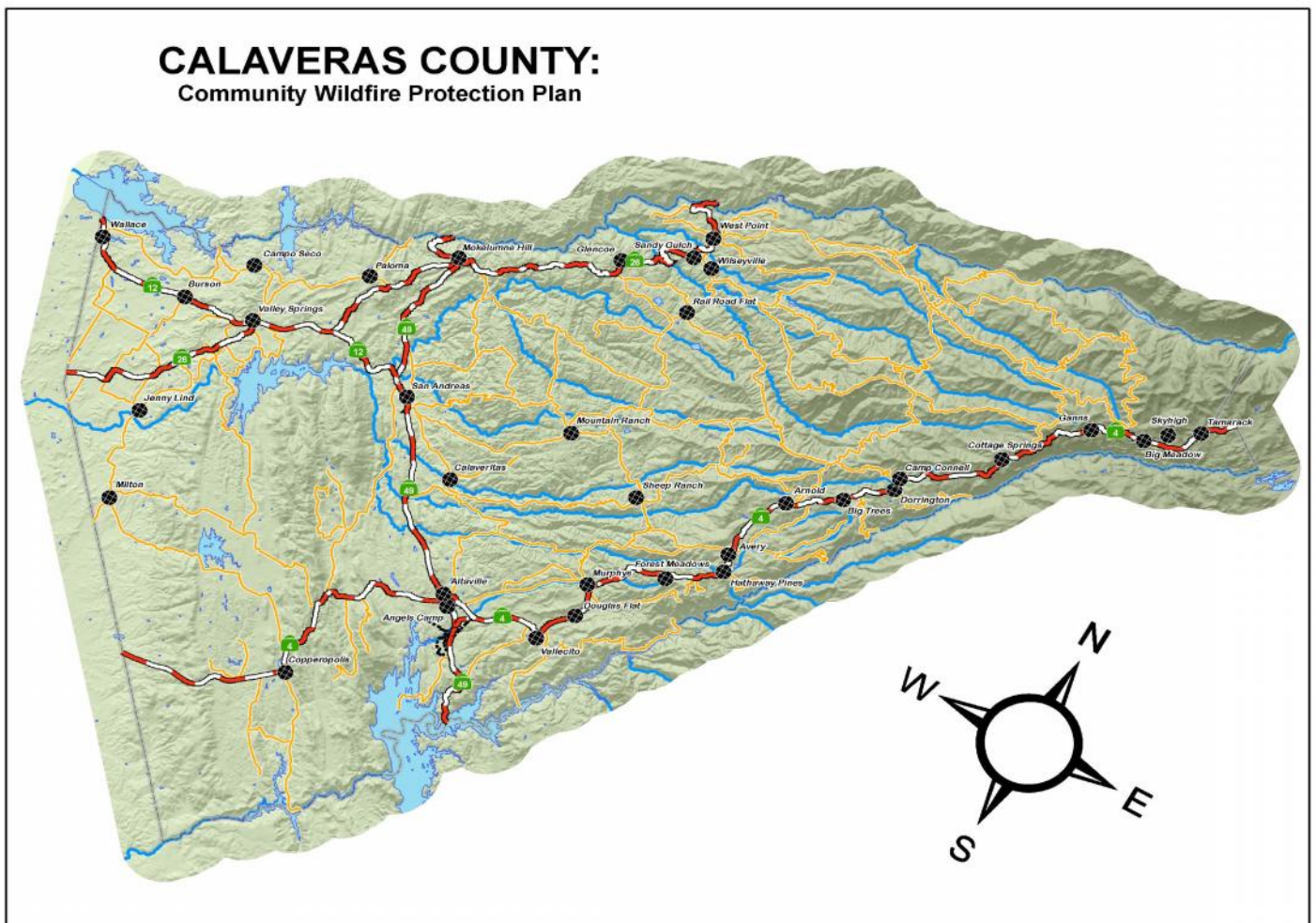
**Author Name: Rick Breeze-Martin**

**In-Kind:**

**Total:**

### PROJECT DESCRIPTION:

Provide public education on structural ignitability reduction and fire resiliency building techniques. Train inspectors for residences on these topics. Identify and/or train contractors to provide services. Secure funding to lower costs for services for all residents, not just disabled or low income.



## Big Trees State Park Planning Projects

**Initial Checklist/Battalion: 4**

**Priority: 15**

**Within W.U.I?: Yes**

**Document Effective Date: 1/1/2011**

**Author Name: Patty Raggio**

**Status: Planning**

**Sponsor: Big Trees State Park**

**Legal:**

**Legal:**

**Funding Source: Unknown**

**Acres:**

**Length/Mi:**

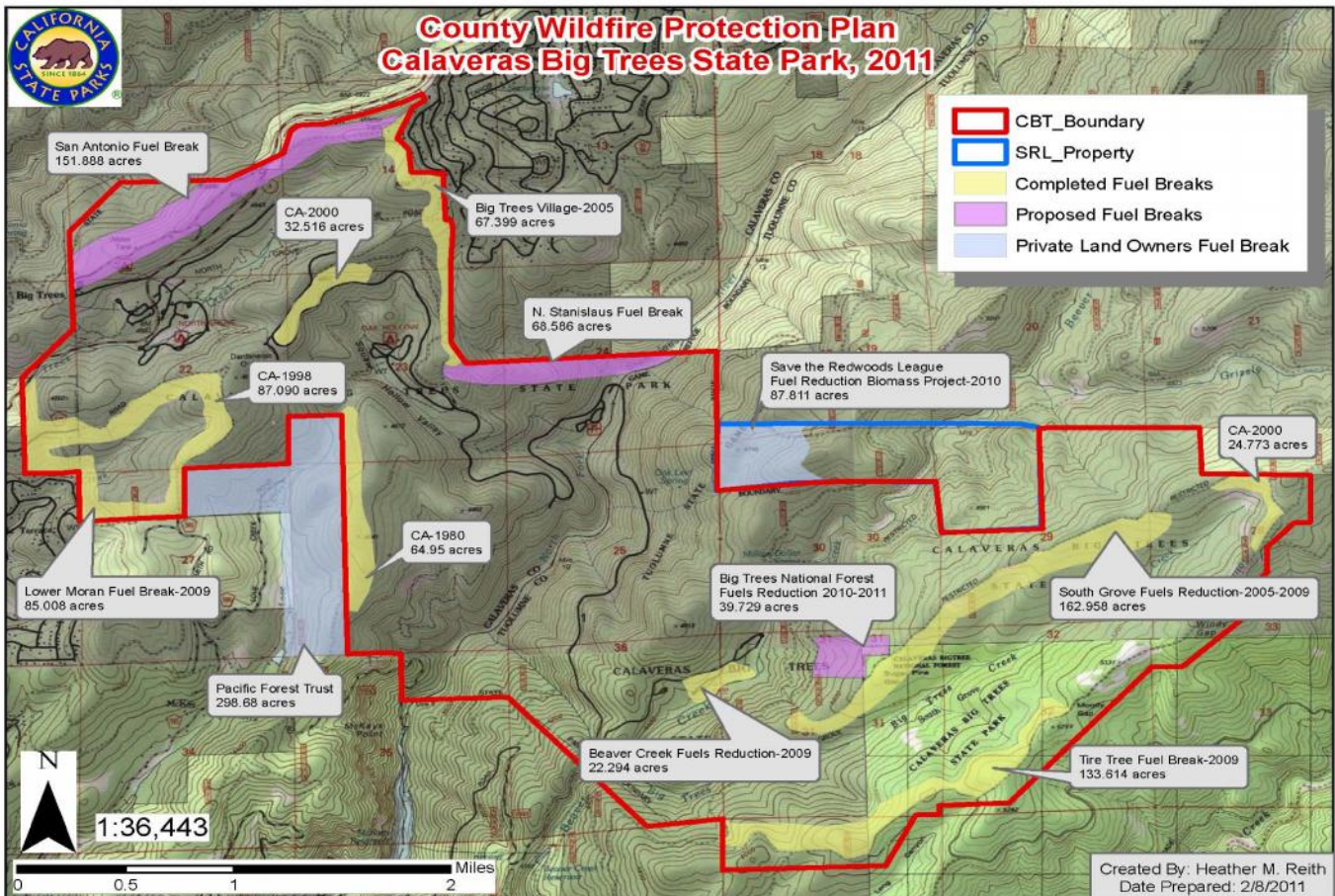
**Tons/Fuel:**

**Amount:**

**In-Kind:**

**PROJECT DESCRIPTION:**

Projected projects for 2011 include the Big Trees National Forest (BTNF) Restoration Project below the north rim of the South Grove Preserve. This is a 35 acre fuel reduction and ecological restoration project to not only provide another line of protection to the South Grove itself, but to restore and protect hundreds of old-growth sugar and ponderosa pines within the historic BTNF. There will also be the continuation of manual surface fuel and small tree-reduction within the South Grove Basin in preparation for prescribed burns, and about a 20 fuel break on the west corner of the South Grove Basin for a buffer with wildfires approaching from the west.



## Big Trees Village/Snowshoe Springs HOAs' Perimeter Fire Safety Project

<b>Initial Checklist/Battalion: 4</b>	<b>Status: Planning</b>	<b>Acres:</b>
<b>Priority: 16</b>	<b>Sponsor: Big Trees Village Property Owners B.O.D.</b>	<b>Within W.U.I?:</b>
<b>Yes</b>	<b>Legal:</b>	<b>Length/Mi:</b>
<b>Document Effective Date: 1/1/2011</b>	<b>Legal:</b>	<b>Tons/Fuel:</b>
<b>Author Name: Steve Lauterbach</b>	<b>Funding Source: Unknown</b>	<b>Amount:</b>
		<b>In-Kind:</b>

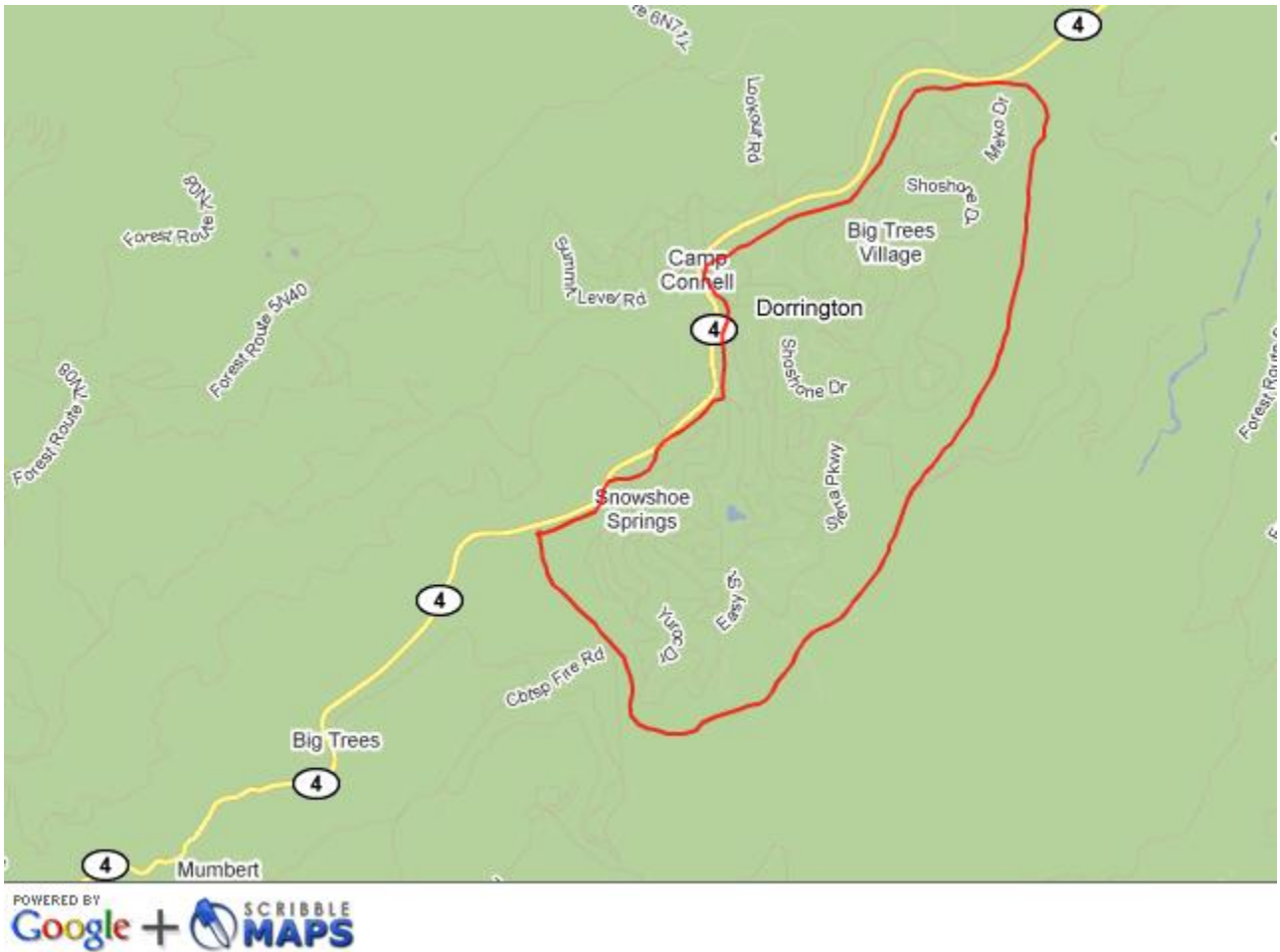
### PROJECT DESCRIPTION:

The Homeowner Associations of two continuous HOAs Big Trees Village and Snowshoe Thompson, located in the Camp Connell/Dorrington W.U.I., seek to protect their properties from wildfire spreading from the adjacent surrounding forests, and conversely to protect those forests from structure fires spreading from within those HOAs to those surrounding forests.

Collaboration: The two HOAs are surrounded by the following land managers: Calaveras Big Trees State Park to the west, Sierra Pacific Industries to the south, United States Forest Service to the east, and California Department of Transportation to the north (Highway 4). Big Trees Village and Snowshoe Thompson will work collaboratively with these land managers to create a fuel break around the perimeter of Big Trees Village/Snowshoe Thompson. We will also work collaboratively with Cal Fire to ensure that this application is scientifically sound.

Structural Ignitability: With regard to addressing structural ignitability issues, Big Trees Village is an active participant in Cal Fire's VIP program. Annually local residents from within Big Trees Village, who have been certified by Cal Fire as VIPs, conduct a thorough inspection which is submitted to Cal Fire for follow up enforcement. The BTV VIP committee then works with Cal Fire on follow-up inspections to ensure compliance. Also, Big Trees Village Property Owner's Association has education material on its website to teach its property owners about the 100' clearance requirements:  
<http://www.bigtreesvillage.org/newlotclearingre.html>

Summary: Big Trees Village and Snowshoe Thompson look forward to working collaboratively with the surrounding land managers to create a perimeter fuel break to protect their approximately 2,400 structures from fire spreading from adjacent forests, and to protect those forests from structure fires jumping into the canopy from within those HOAs.



## Arnold Lilac Park's Emergency Evacuation Plan

<b>Initial Checklist/Battalion: 4</b>	<b>Status: Planning</b>	<b>Acres: 102.5</b>
<b>Priority: 17</b>	<b>Sponsor: Lilac Park HOA</b>	
<b>Within W.U.I?: Yes</b>	<b>Lat.: 38.252</b>	<b>Length/Mi:</b>
<b>Document Effective Date: 1/1/2011</b>	<b>Long.: 120.349</b>	<b>Tons/Fuel:</b>
<b>Author Name: Grace Neurath/Mike Willemsen</b>		<b>Funding Source: Unknown</b>
		<b>Amount: \$22,500.00</b>
		<b>In-Kind:</b>

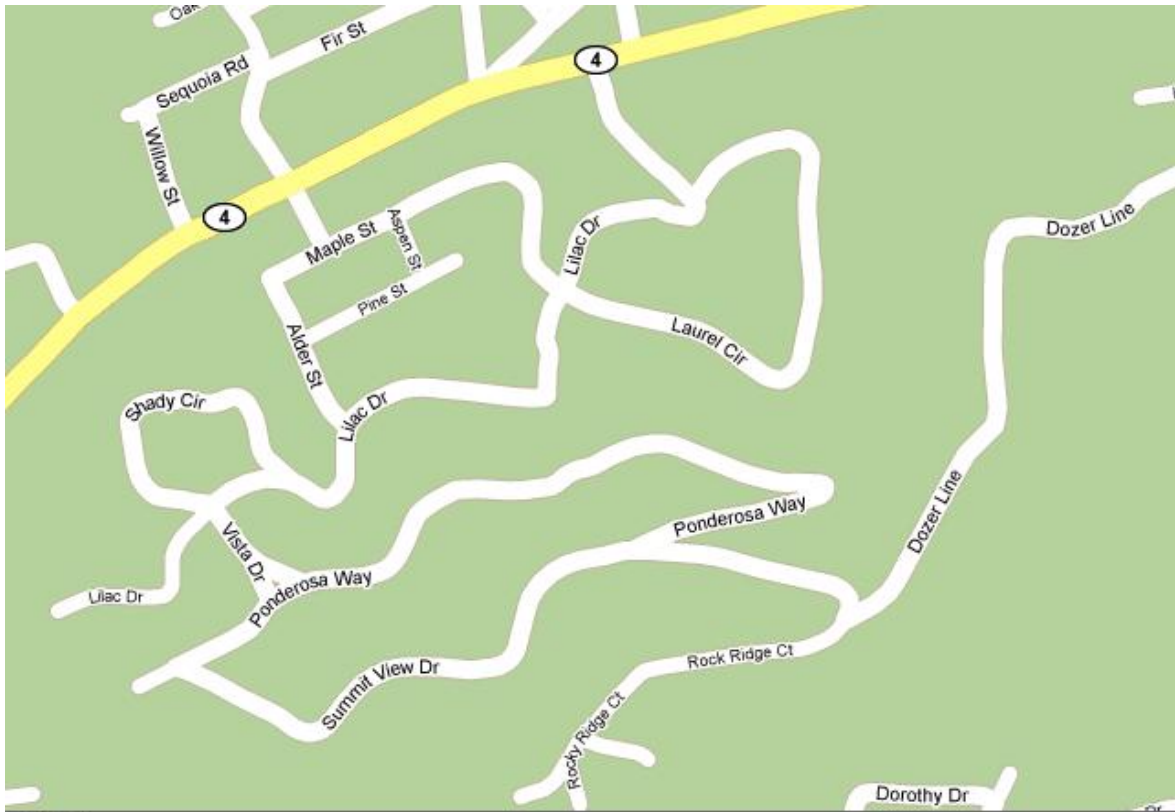
### PROJECT DESCRIPTION:

Lilac Park, a community of 206 lots, with approximately 50 year round residents, only has two exits, both of which merge onto Highway 4. If Highway 4 is inaccessible due to fire or other disasters, trapped homeowners currently have no alternative exit routes. Proposed treatment method would be hand crews so as to create as little ground disturbance as possible.

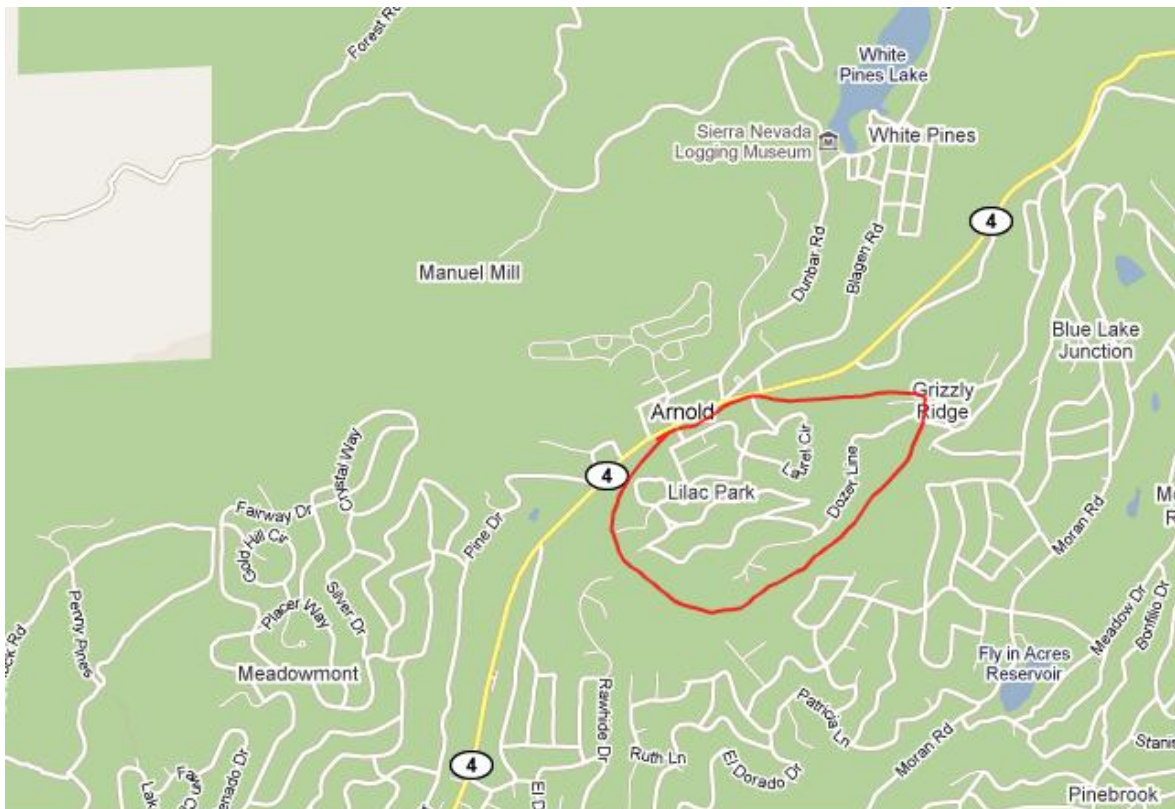
We recommend the following:

Create several potential exit routes. (Note that all proposed routes will impact the neighboring communities of Grizzly Ridge, Blue Lake Springs and Meadowmont.)

1. The Proposed exit routes are:
  - a. Laurel Circle East to Honey Ct./Bear Run Ct.
  - b. Lilac Dr. West to Rawhide Dr.
  - c. Ponderosa East to Bear Run Ct.
  - d. Ponderosa West to Rawhide Dr.
  - e. Upper Summit View Rd. East to Bear Run Ct.
  - f. Upper Summit View Rd. South to Dorothy Dr.
  - g. Rocky Ridge Court West to Rawhide Dr.
  
2. We would also need signs identifying the potential exit routes.



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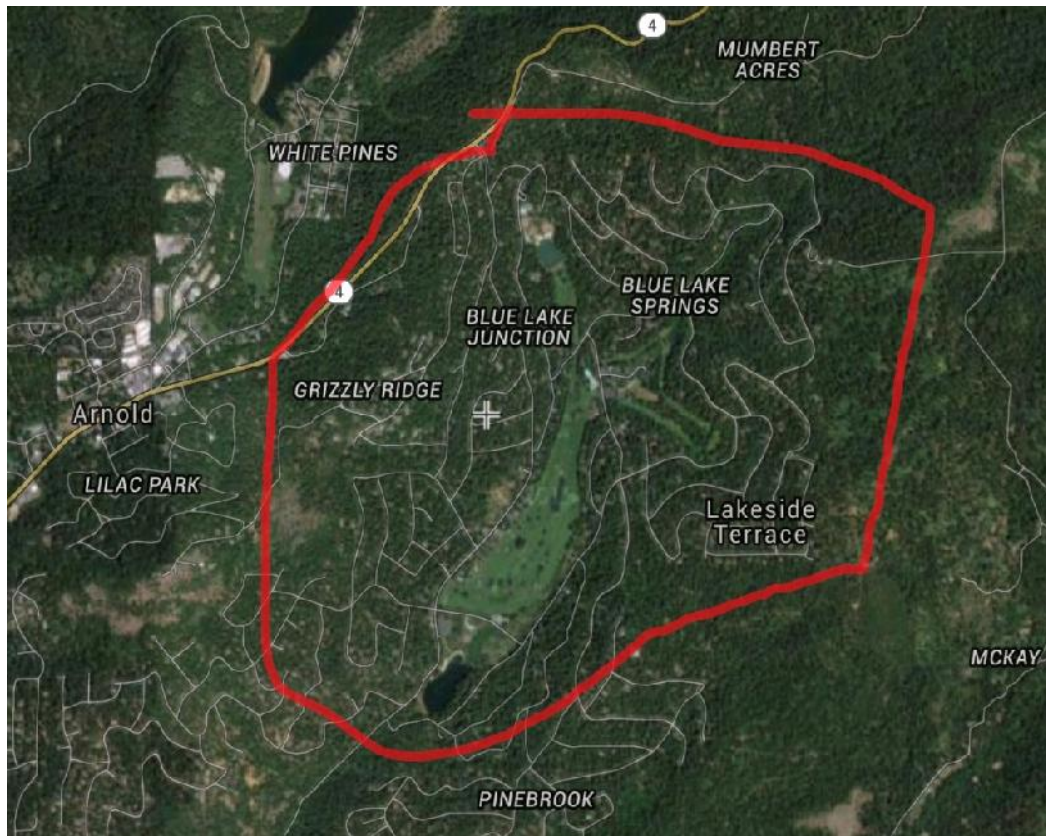
POWERED BY  
Google + SCRIBBLE MAPS

## Blue Lake Springs Homeowner's Association, Fuel Break Project

Initial Checklist/Battalion: 4	Status: Current	Acres: 175
Priority: 1	Sponsor: CFFSC	Length/Mi:
Within W.U.I?: Yes	Lat/Long: 38.262 N 120.331 W	Tons/Fuel:
Document Effective Date: 3/1/14	Funding Source: State Fire Fee	Amount: \$272,580
Author: Doug Nunes	In-Kind:	Total: \$272,580

### Project Description: The Blue Lake Springs homeowners Association

Project goal is to reduce buildup of trees and brush stands directly surrounding a residential community of 1731 single family residences known as Blue Lake Springs and to also protect the surrounding community where approximately 4900 single family dwellings exist in the greater Arnold area. This general area also includes National Forest Land, Calaveras Big Trees State Park and Sierra Pacific Industries property. A planned 300' fuel break will be placed on both sides of the BLS property boundary with approval of each land owner. By eliminating the buildup of fuels and opening the canopy cover to a more "open" feature, firefighting operations will benefit from reduced rates of spread and fire intensities making initial attack success more probable. This should also reduce overall firefighting costs and likely prevent a catastrophic wild land fire.



## PGE Door-to-Door/ Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**

**Status: Current**

**Acres: 50**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I? : Yes**

**Lat/Long: 38.439 N 120.376 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: PG&E**

**Amount: \$75,000**

**Author Name: Bill Fullerton**

**In-Kind: \$**

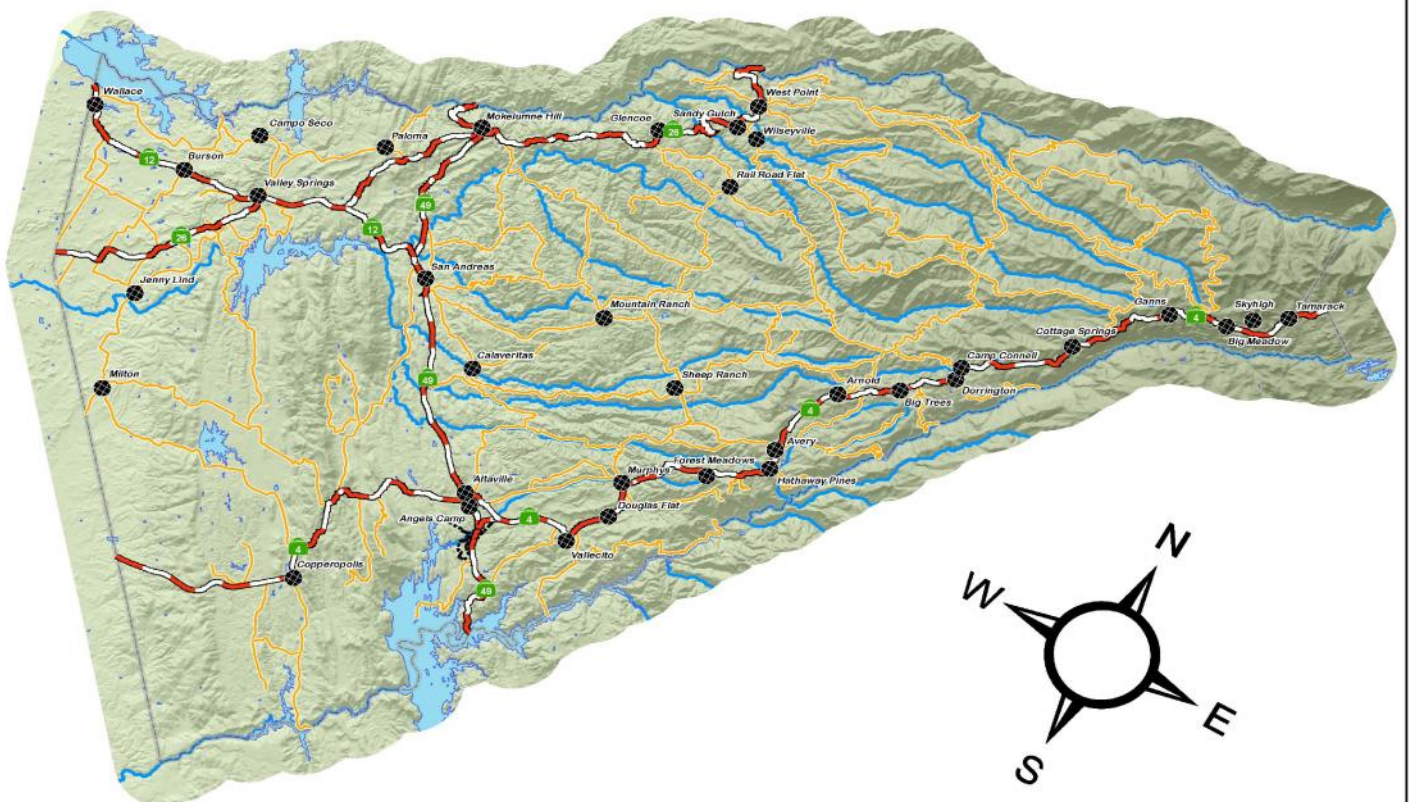
**Total: \$75,000**

### PROJECT DESCRIPTION:

This program combines two of our most successful grant programs into one funding source to greater optimize funds received. The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



# State Fire Fee Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Status: Current

Acres: 50

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.439 N 120.376 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: State Fire Fee

Amount: \$99,000

Author Name: Bill Fullerton

In-

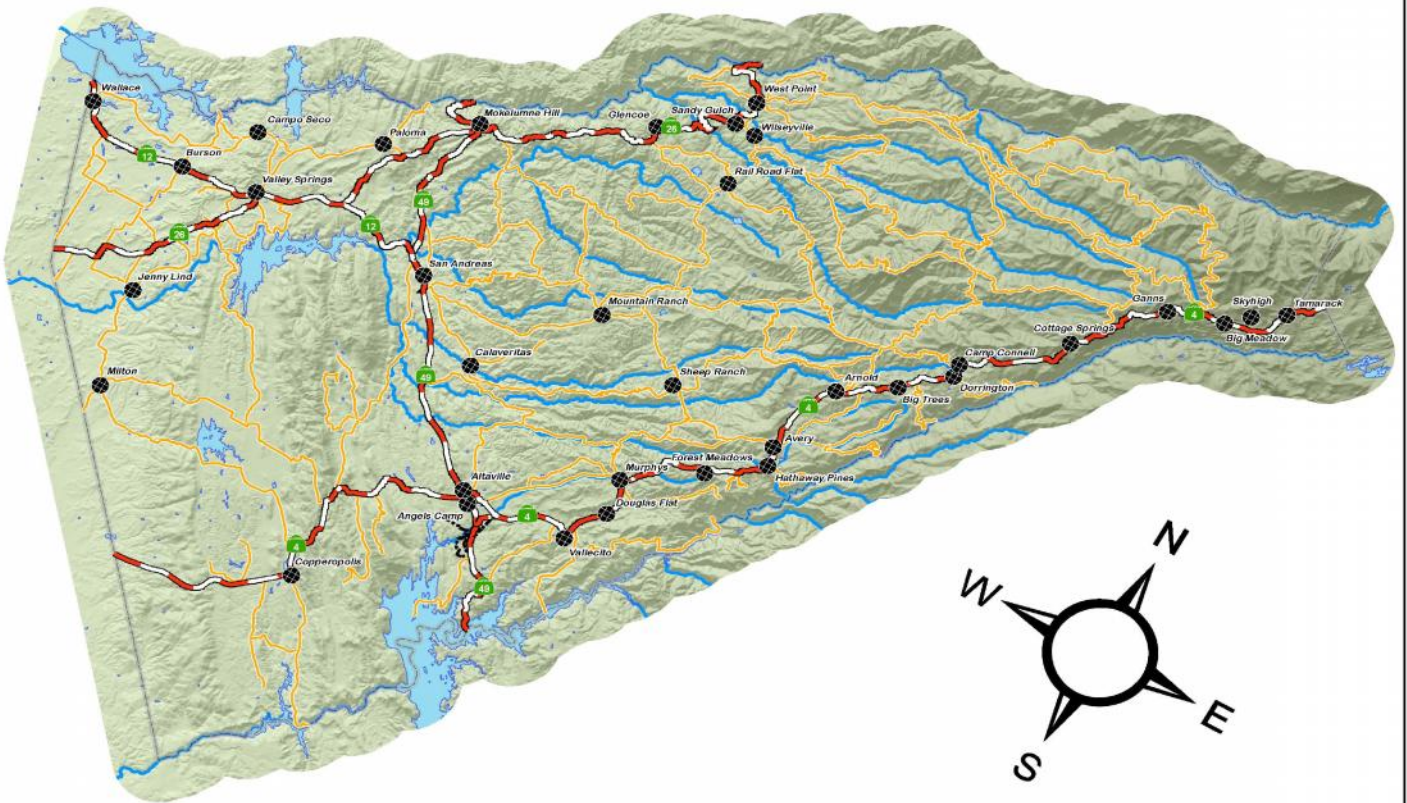
Kind: \$

Total: \$99,000

## PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

## CALAVERAS COUNTY: Community Wildfire Protection Plan



## Irish/O'Manuel Understory Burn

Initial Checklist/Battalion: 4

Status: Current

Acres:

Priority: 1

Sponsor: USFS

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: Unknown

Amount:

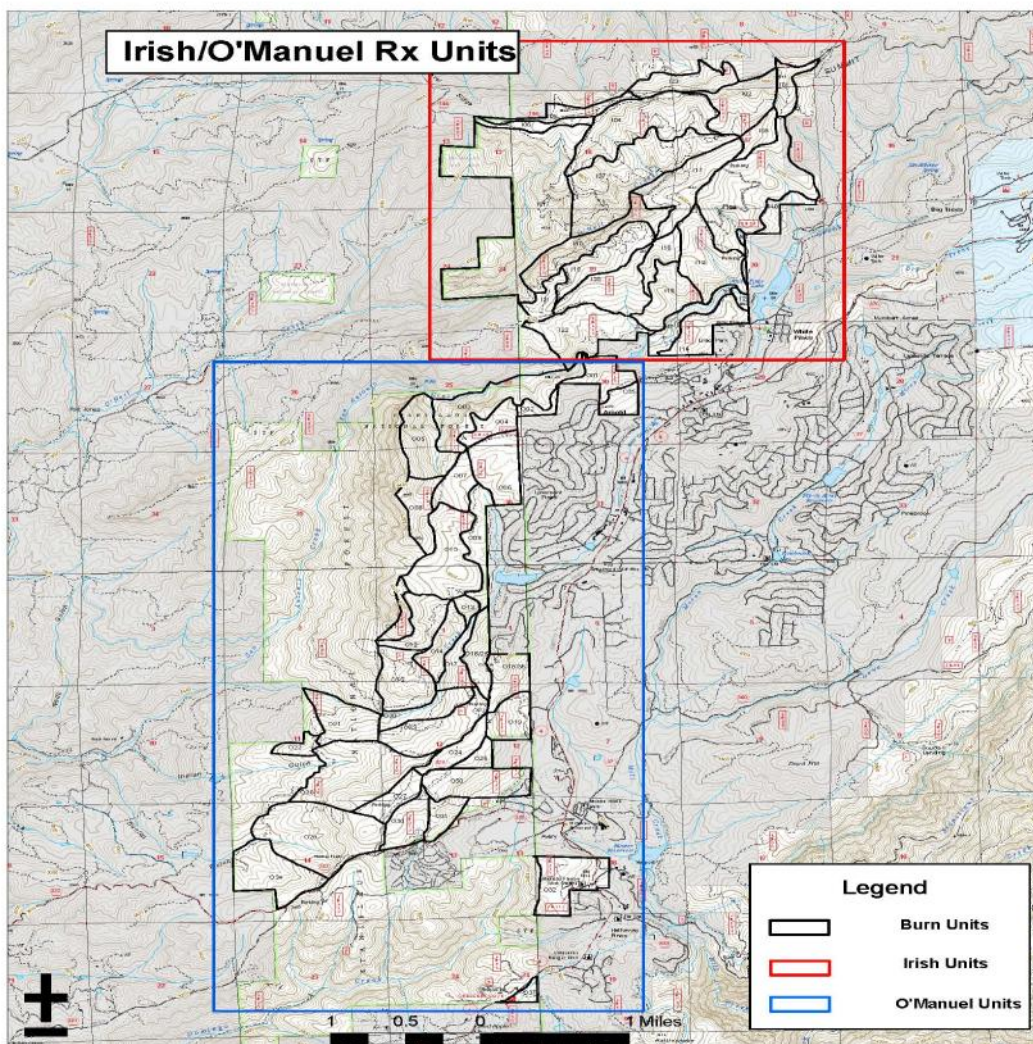
Author Name: Bill Fullerton

In-Kind:

Total:

### PROJECT DESCRIPTION:

Maintain existing fuel breaks utilizing prescribed understory burning. Reduce naturally occurring and activity created fuel loads through prescribed understory burning to minimize the potential for large wildfires and help to protect the communities of Hathaway Pines, Avery, White Pines and Arnold.



# Bloods Ridge Timber Stand Improvement

Initial Checklist/Battalion: 4

Status: Current

Acres: 24

Priority: 1

Sponsor: USFS

Length/Mi:

Within W.U.I?: No Legal: T7N, R17E, Sec. 13 Bloods Ridge

Tons/Fuel:

Document Effective Date: 1/1/2011 Legal: T7N, R13E, Sec 12 Bear Lake

Amount:

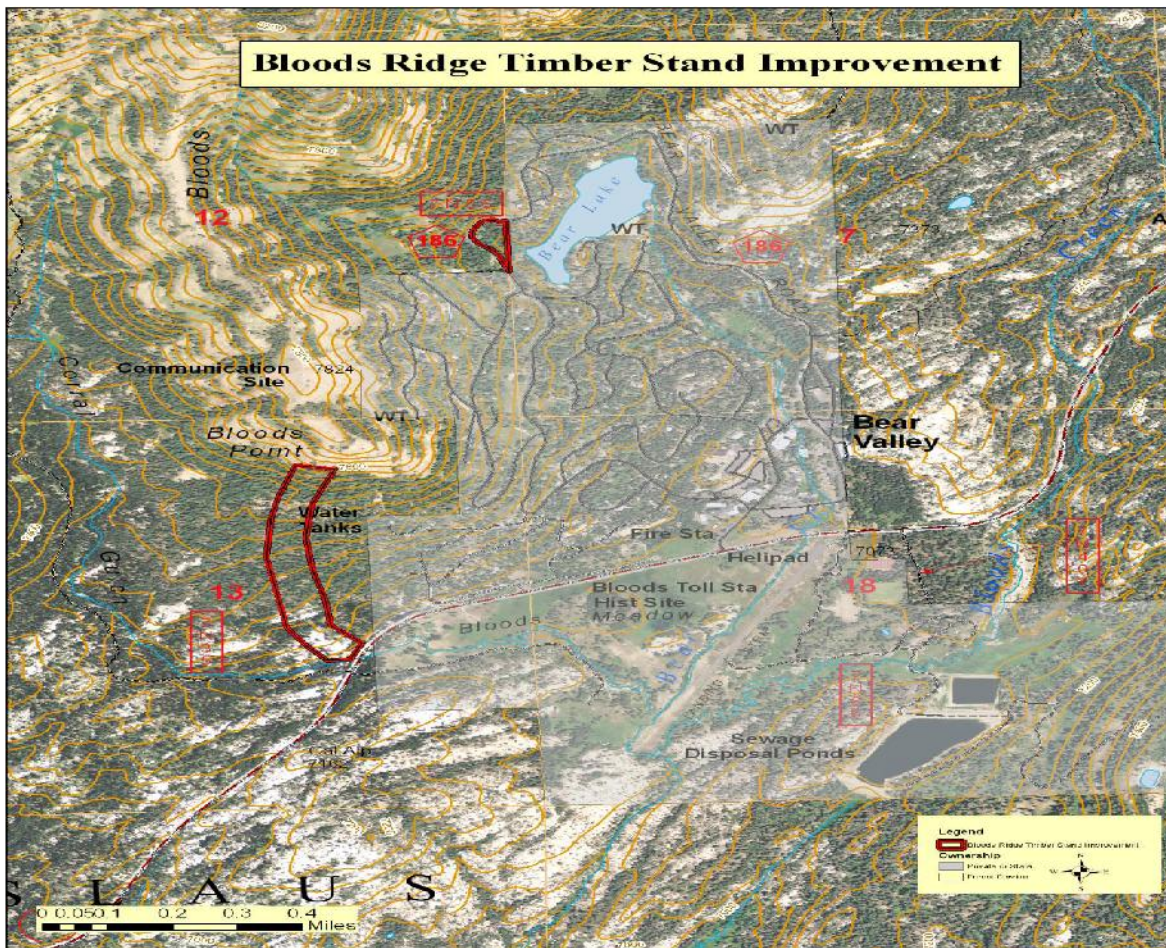
Author Name: Steve Baran

Funding Source: Unknown

In-Kind:

## PROJECT DESCRIPTION:

Thinning of shrubs and small diameter trees (Under 8 inch DBH) to improve residual tree vigor by increasing water and nutrient availability and reducing susceptibility to insects, pathogens and drought related stressors. Secondary benefits include reducing fuel loads, ladder fuels and breaking up the continuity of fuels, which in turn will help to protect mature stands and wildlife habitat from intense, severe wildland fires. It will also provide better wildland fire protection to the town of Bear Valley.



## Sourgrass Fuels Reduction and Vegetation Management Program

**Initial Checklist/Battalion: 4**

**Priority: 1**

**Within W.U.I?: No**

**Document Effective Date: 1/1/2011**

**Author Name: Steve Baran**

**Status: Current**

**Sponsor: USFS**

**Legal: T5N, R15E, Sec. 1**

**Legal: T5N, R16E, Sec. 4-6**

**Legal: T6N, R15E, Sec. 24**

**Legal: T6N, R16E, Sec. 19-21 & 29-33**

**Acres: 1,400**

**Length/Mi:**

**Tons/Fuel:**

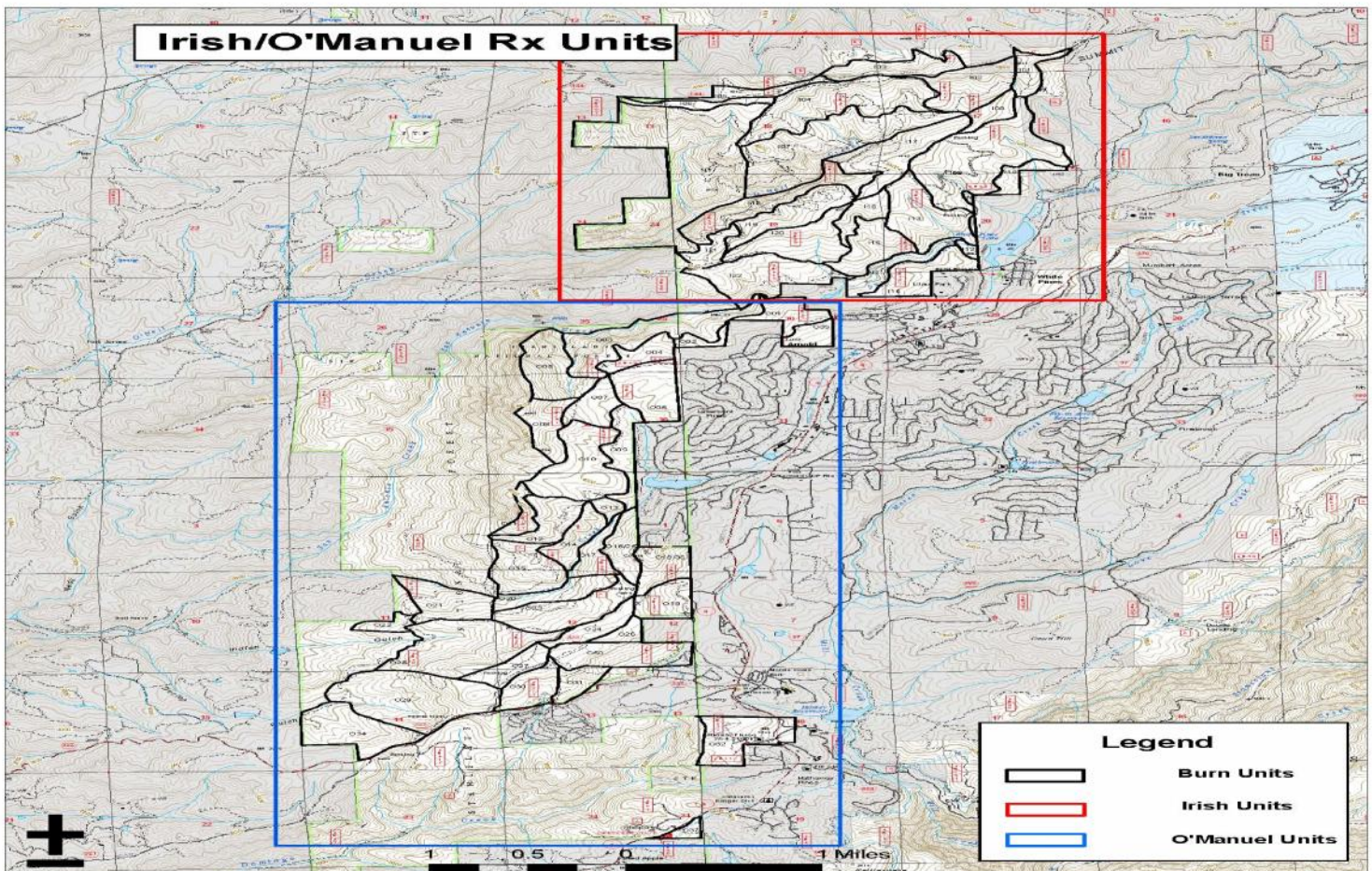
**Amount:**

**Funding Source: Unknown**

**In-Kind:**

### PROJECT DESCRIPTION:

Reduce forest surface, ladder fuels and lower timber stand densities to reduce the size and severity of future wildfires, reduce the risk of insect/pathogen drought related mortality and promote growth and vigor in residual trees, optimize visual quality, improve watershed conditions and restore or enhance habitat for riparian and aquatic species. Additionally, widen an existing fuel break, along Summit Level Ridge, utilized during the Sourgrass Complex, in T6N, R16E, Sec. 30, to connect with an SPI fuel break.



## Big Trees State Park Maintenance Projects

**Initial Checklist/Battalion: 4**

**Status: Current**

**Acres:**

**Priority: 1**

**Sponsor: Big Trees State Park**

**Length/Mi:**

**Within W.U.I?: Yes**

**Legal:**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Legal:**

**Amount:**

**Author Name: Patty Raggio**

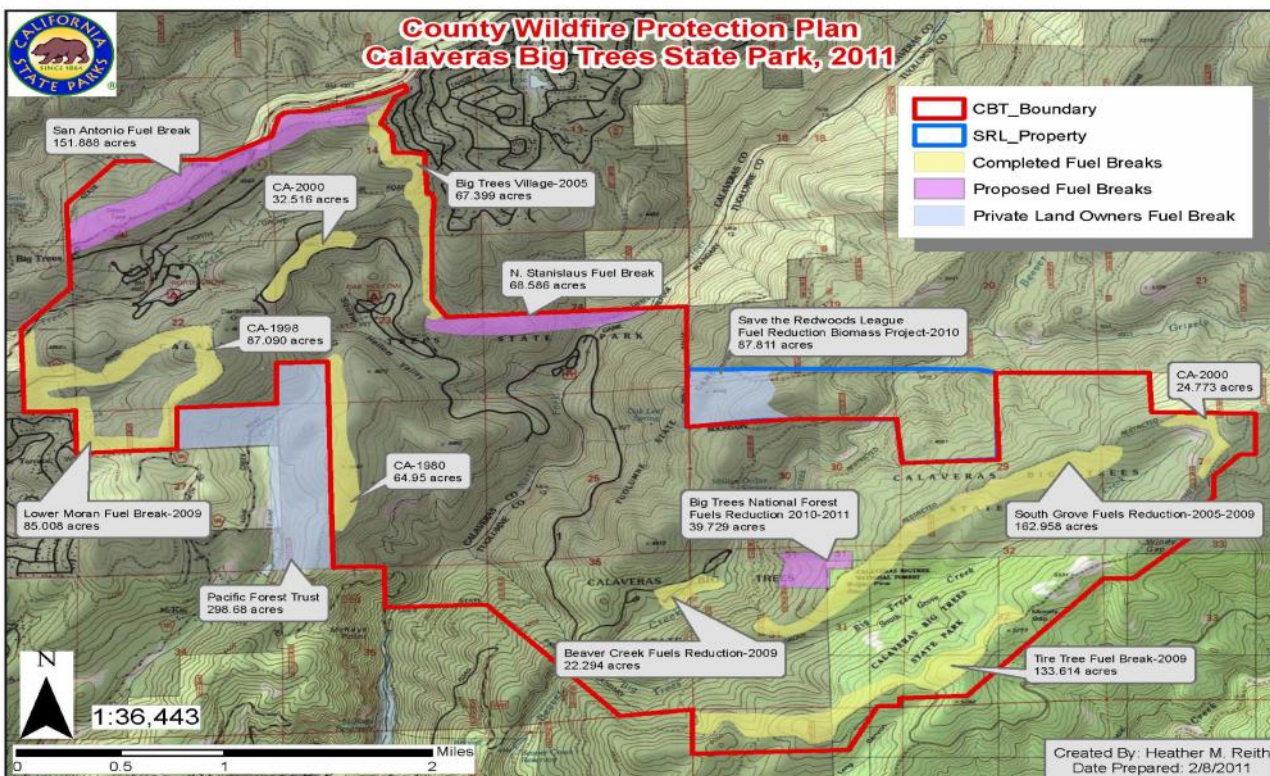
**Funding Source: Unknown**

**In-Kind:**

**PROJECT DESCRIPTION:**

In 2002 the Big Trees Village Shaded fuel break was completed along five miles of the east boundary with Big Trees Village Subdivision. Most of the other related projects conducted in the park are aimed at restoring forest stand conditions to reflect a natural fire regime, although the end results are essentially the same as a specific fuel reduction/fuel break projects. This allows State Parks to contribute to the effort to create a fire safe community, while also meeting its responsibility to preserve natural systems within the park.

Some of these additional projects include 45 acres treated (as part of a black oak woodland restoration project) along the ridge connecting Blue Lake Springs and Big Trees Village subdivisions, three separate projects to thin understory trees and reduce surface fuels along the Highway 4 corridor through the park (approximately 80 acres), and an ongoing effort to restore the forest community of the South Grove natural Preserve. In 2008-2010 the Beaver Creek Picnic Area, 20 acre fuel reduction/forest restoration project was completed along Beaver Creek picnic and camping areas.



## Big Trees Village Fuel Reduction Project

**Initial Checklist/Battalion: 4**

**Status: Maintenance**

**Acres: 18**

**Priority: 1**

**Sponsor: Cal Fire**

**Length/Mi:**

**Within W.U.I? : Yes**

**Legal: Sec. 12, 15 East, 6 North**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: Prop 40**

**Amount: \$4,000.00**

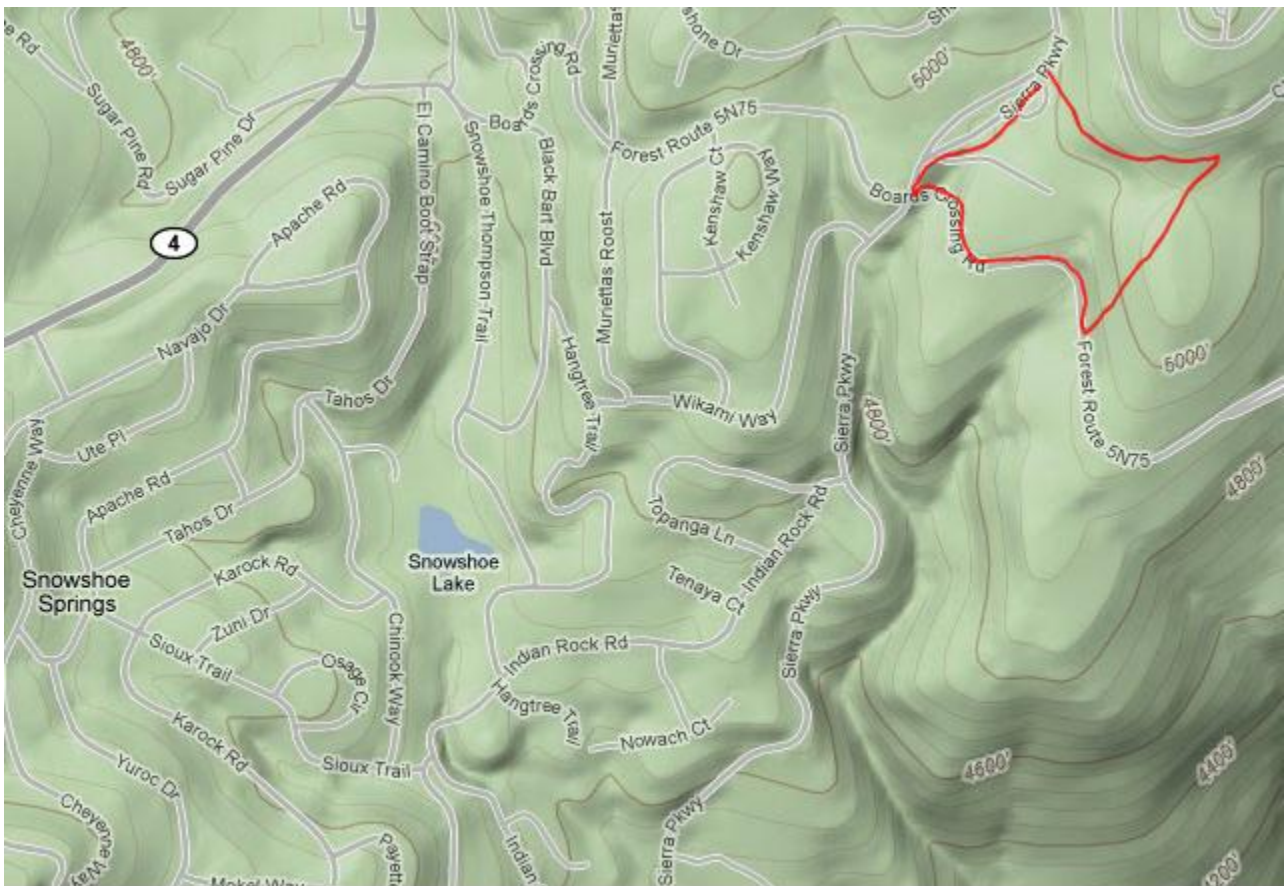
**Author Name: Steve Kovacs**

**In-Kind:**

**Total: \$4,000.00**

### PROJECT DESCRIPTION:

Fuels reduction on 18 acres of land that is situated on the rim of the Stanislaus River Canyon which would assist in protecting 2500+ residential and commercial structures within the Big Trees Village Subdivision. Crews will be utilized to cut and pile fuels for burning.



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## 2010 Lei Fuels Reduction

Initial Checklist/Battalion: 4

Status: Maintenance

Acres: 33

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.176 N 120.374 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount: \$35,640.00

Author Name: Bill Fullerton

In-Kind:

Total: \$35,640.00

### PROJECT DESCRIPTION:

Masticate and pile fuels for a shaded fuel break. Burn piles in winter when weather permits.



## 2009 Seniors and Disabled Defensible Space Program

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres: 100**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I? : Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: USFS Amount: \$85,950.00**

**Author Name: Bill Fullerton**

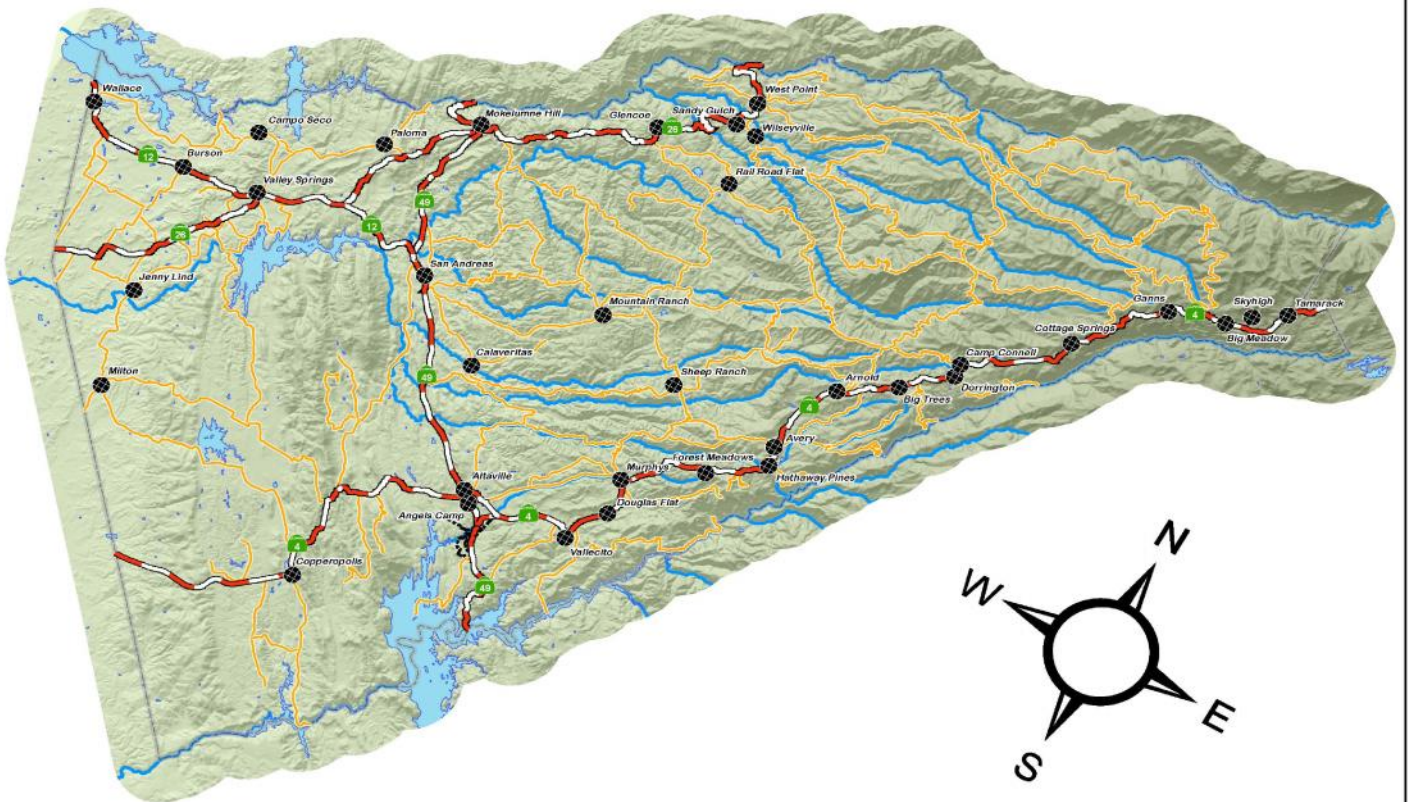
**In-Kind: \$49,380.00**

**Total: \$135,330.00**

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2009 Public Roadways Fire Break Phase 4

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 30

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: BLM

Amount: \$53,943.00

Author Name: Bill Fullerton

In-Kind: \$63,137.00

Total: \$117,080.00

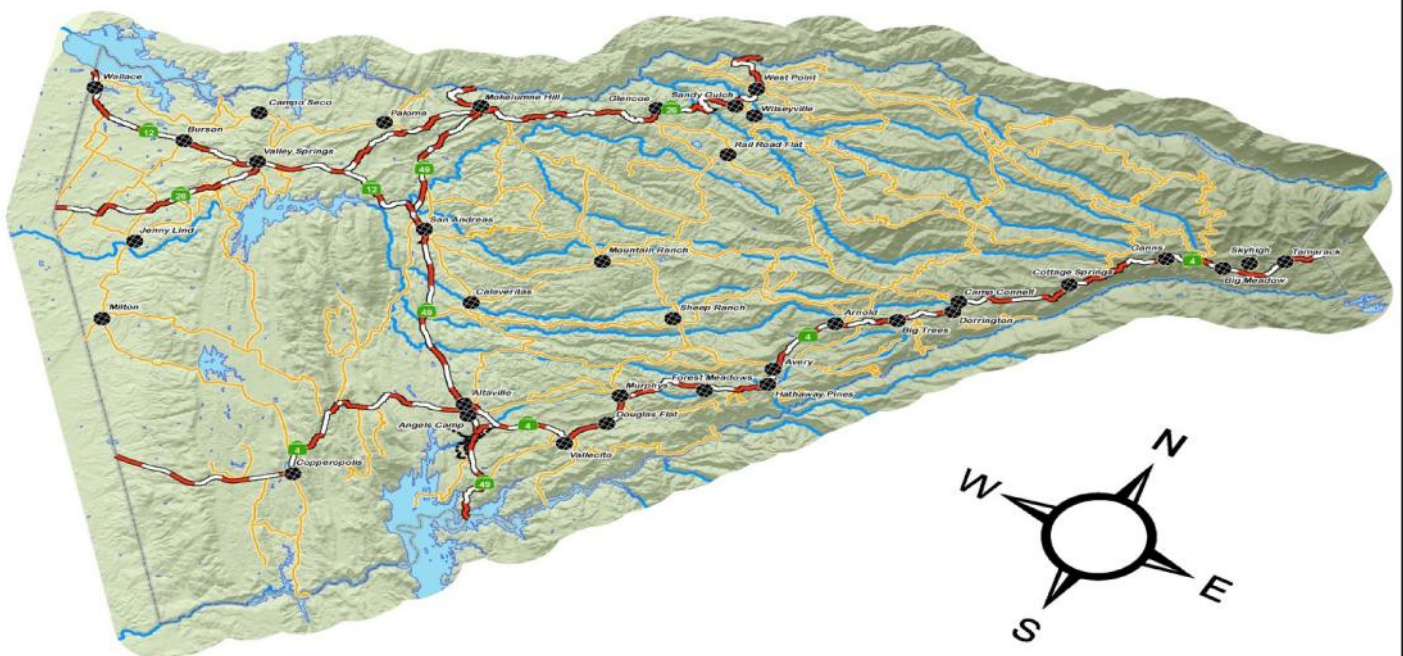
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2009 Door-to-Door Chipper Program

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres: 100**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I?: Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011 Funding Source: USFS**

**Amount: \$104,400**

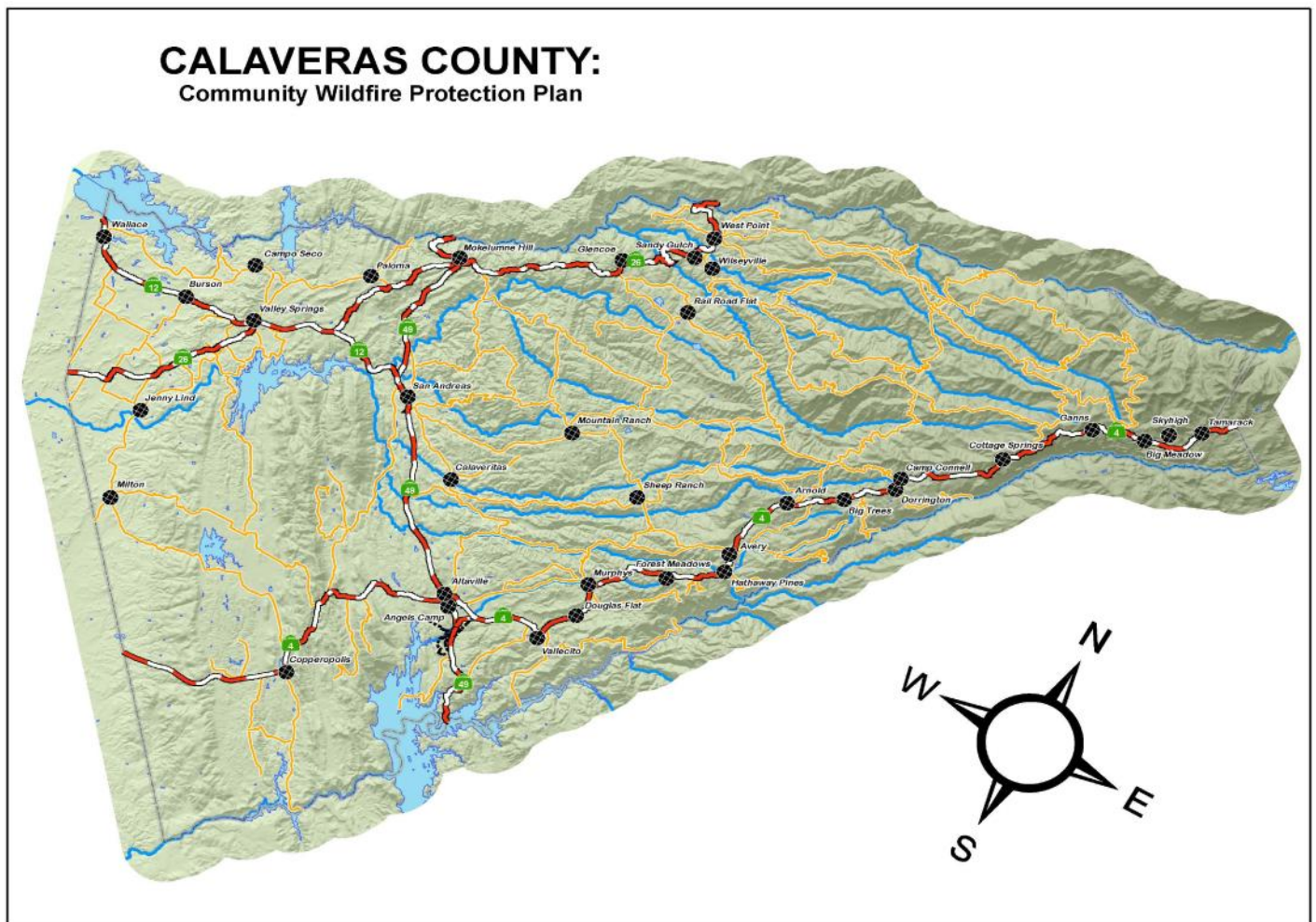
**Author Name: Bill Fullerton**

**In-Kind: \$52,480.00**

**Total: \$156,880.00**

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around resident's homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## 2008 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 100

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I? : Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: USFS

Amount: \$73,267.00

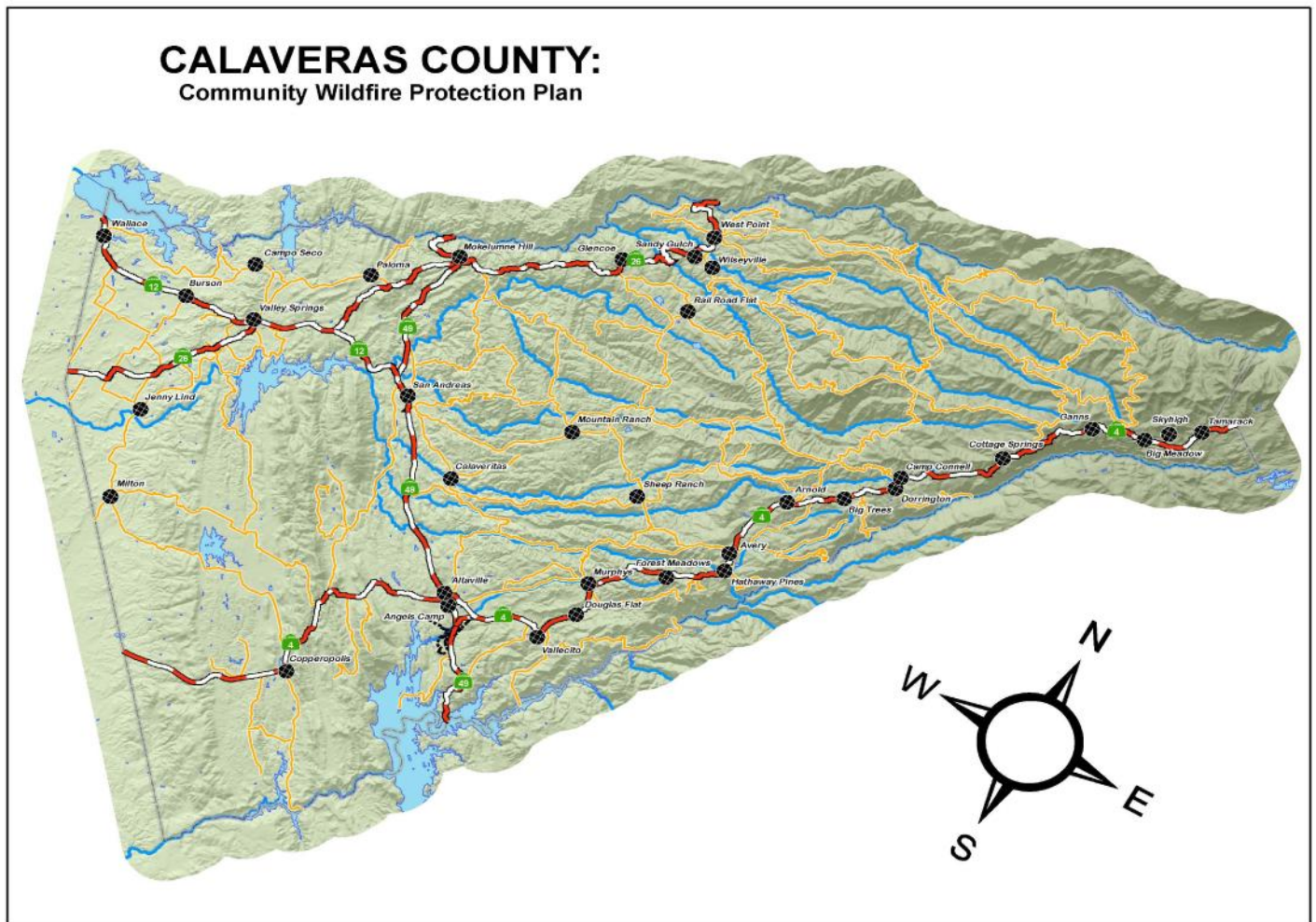
Author Name: Bill Fullerton

In-Kind: \$41,700.00

Total: \$114,967.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## 2008 Prop. 40 Roads 4

**Initial Checklist/Battalion: 1-4**

**Status: Maintenance**

**Acres:**

**Priority: 1**

**Sponsor: CFFSC**

**Length/Mi:**

**Within W.U.I? : Yes**

**Lat/Long: 38.196 N 120.679 W**

**Tons/Fuel:**

**Document Effective Date: 1/1/2011**

**Funding Source: Prop 40 Amount: \$54,000.00**

**Author Name: Bill Fullerton**

**In-Kind:**

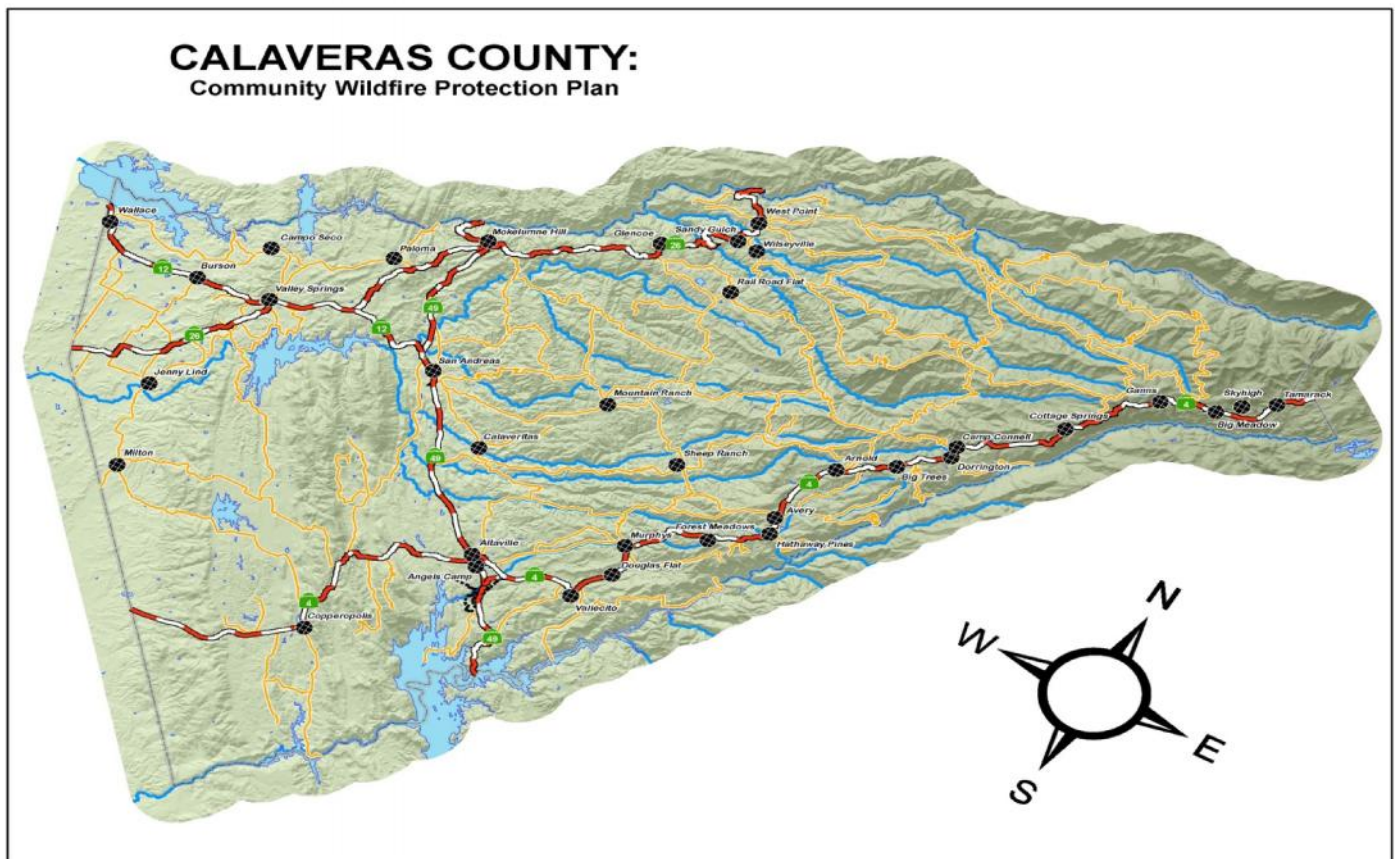
**Total: \$54,000.00**

### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.



## 2007 FMOA Phase II

Initial Checklist/Battalion: 4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: Prop 40

Amount: \$96,840.00

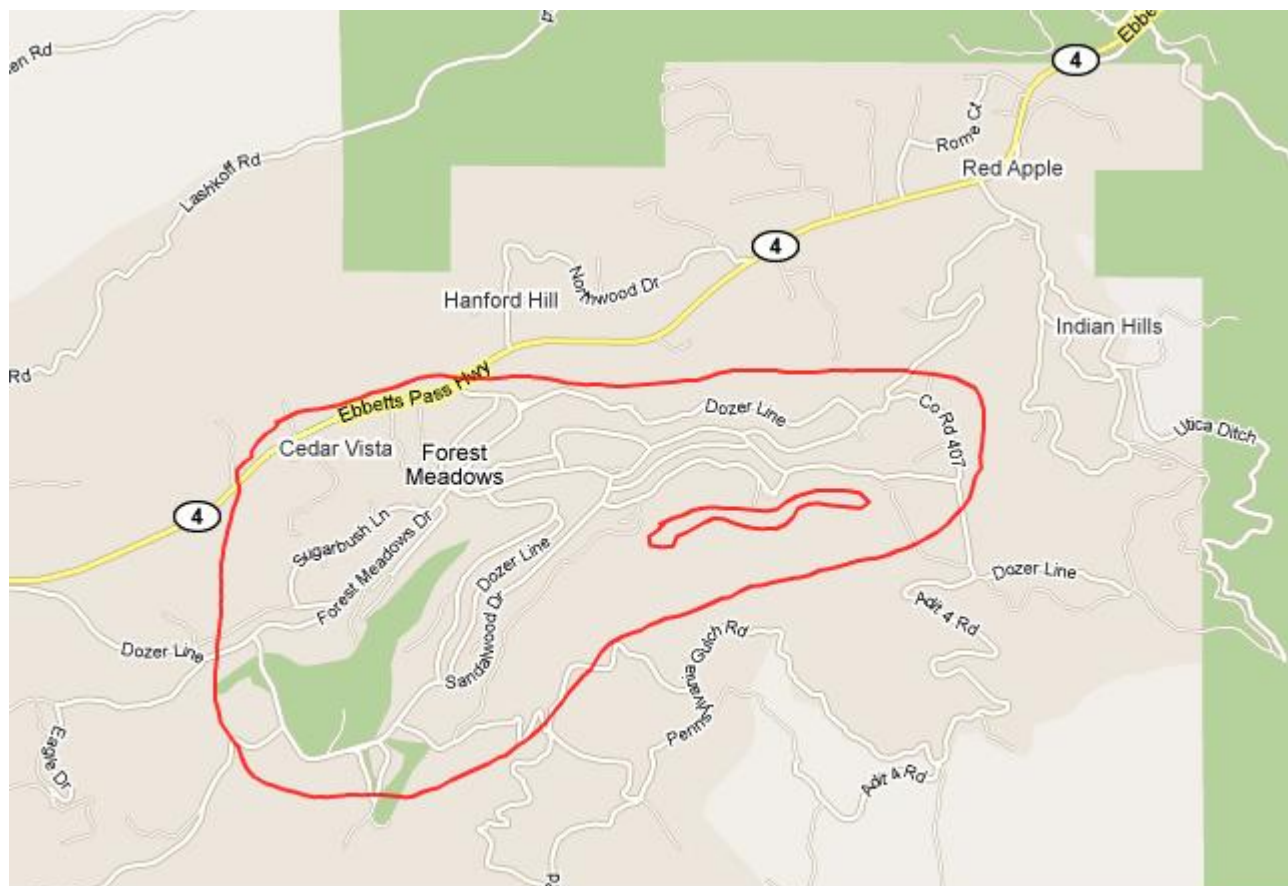
Author Name: Bill Fullerton

In-Kind:

Total: \$96,840.00

### PROJECT DESCRIPTION:

Continuation of the Wildfire Protection Plan that includes a test site for fuels reduction as well as approximately 25 acres of fuels reduction for a shaded fuel break along the Stanislaus River Canyon rim.



## 2007 FMOA Phase I

Initial Checklist/Battalion: 4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: Prop. 40

Amount: \$49,173.00

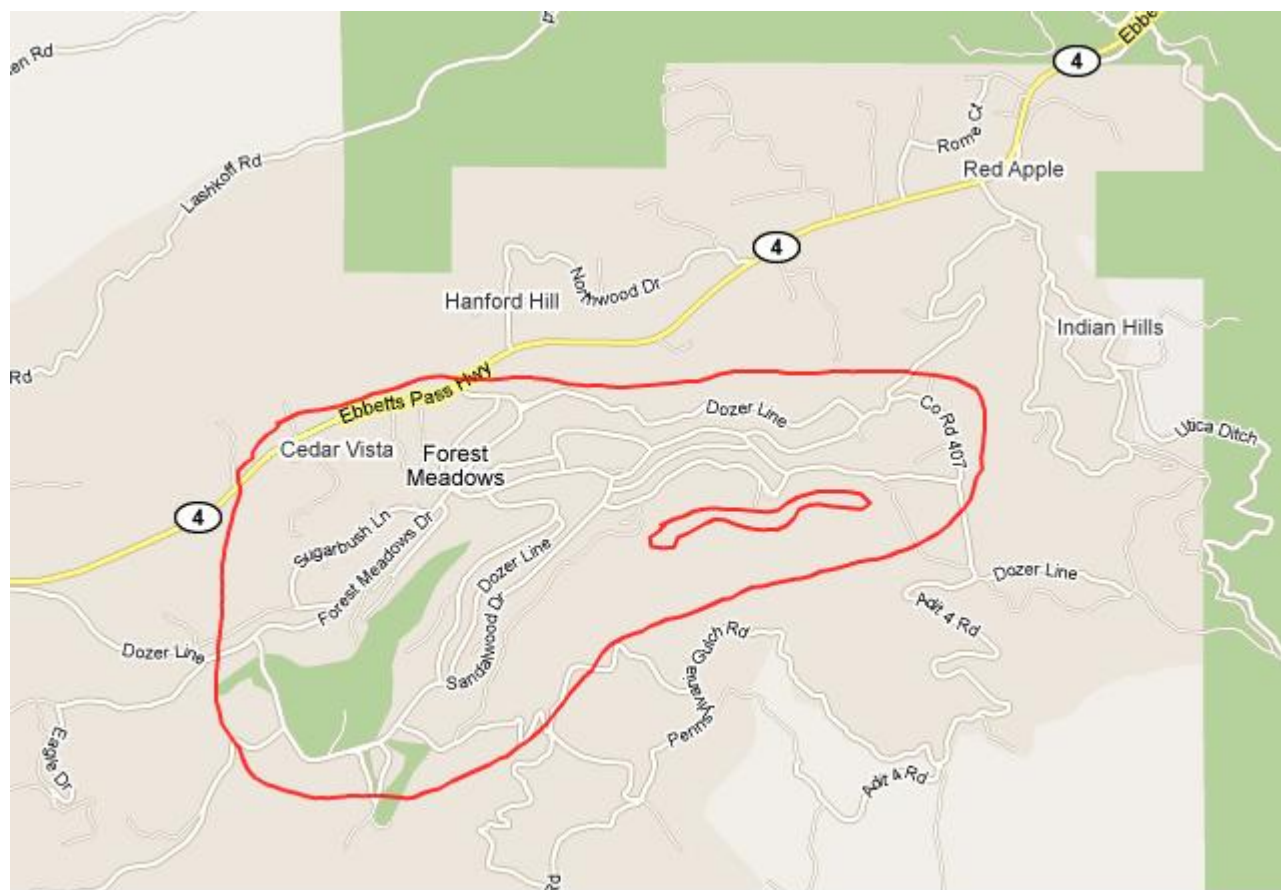
Author Name: Bill Fullerton

In-Kind:

Total: \$49,173.00

### PROJECT DESCRIPTION:

Development of a Wildfire Protection Plan for Forest Meadows.



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## 2007 Prop. 40 Roads Phase III

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: Prop 40

Amount: \$60,000.00

Author Name: Bill Fullerton

In-Kind: \$

Total: \$60,000.00

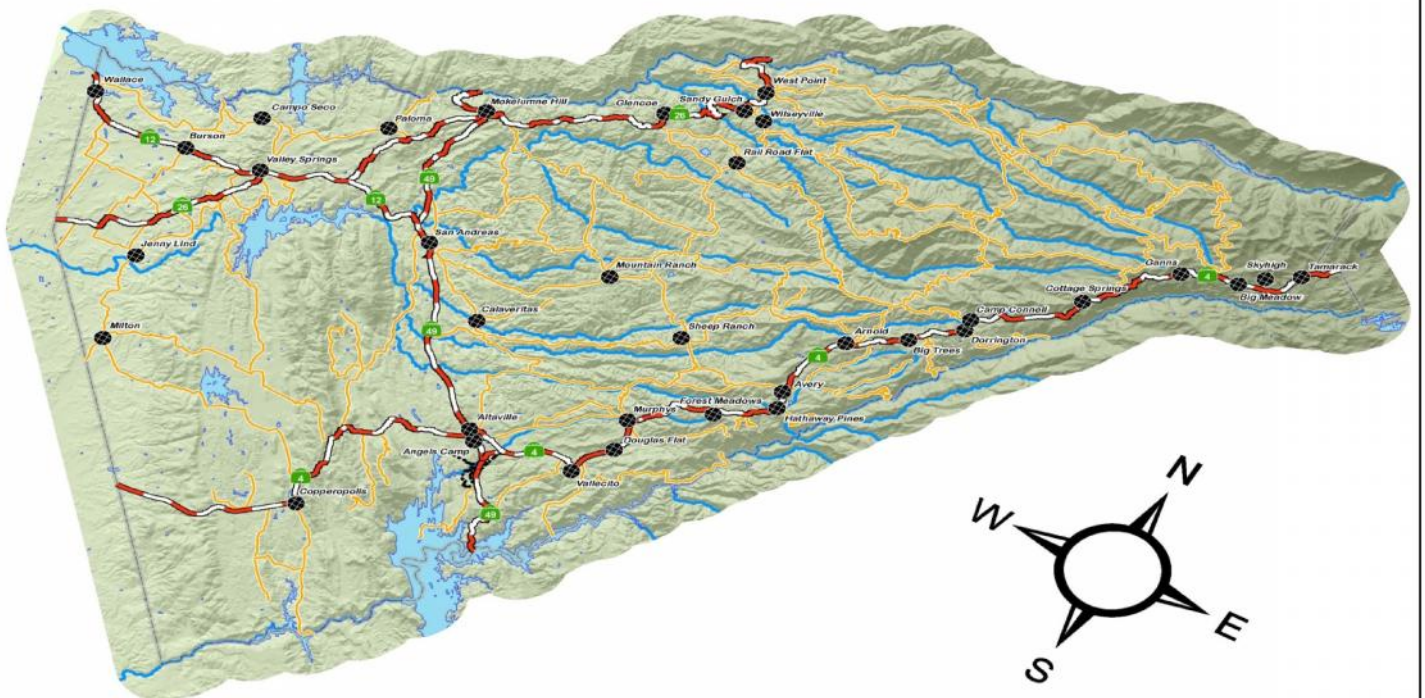
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2007 Prop. 40 Roads Phase II

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres:

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011 Funding Source: Prop 40

Amount: \$72,960.00

Author Name: Bill Fullerton

In-Kind: \$

Total: \$72,960.00

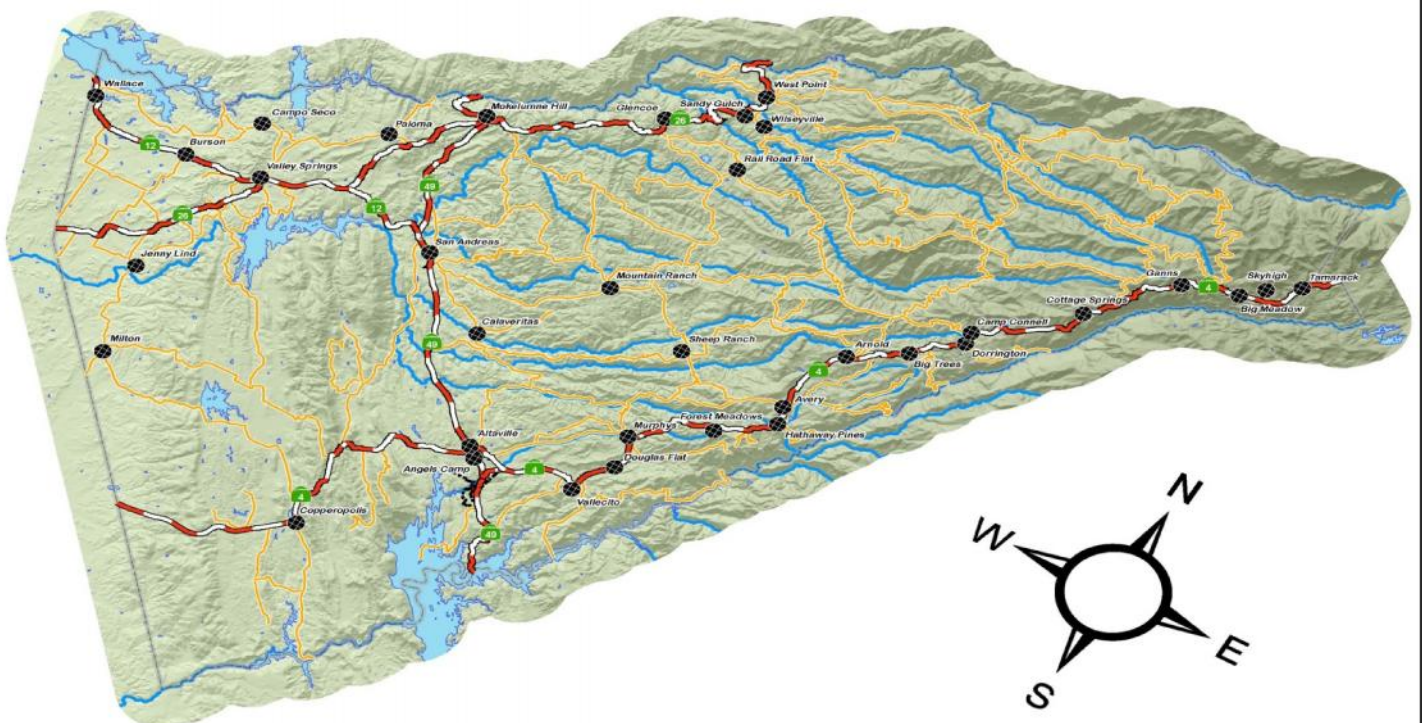
### PROJECT DESCRIPTION:

The Fire Safe Council will reduce brush, small trees and hanging ladder fuels along identified roadways within Calaveras County. This county roads Fire Break Management Project will help in the following ways; 1. Lessen wild fire intensity along the roadways in the event of a fire, providing safe ingress and egress routes for Emergency Personnel and equipment as well as citizens involved in the evacuation process; 2. Creates more advantageous fire control points to stop wild fires due to fire intensity interruption, reduction of spot fires to the opposite roadside and a fuel bed conducive to backfiring and direct suppression tactics. 3. Create enhanced vehicle view along the roadway.

Clearing of brush

along easements will be to the property line or approximately 30 feet. Reduction will be done by a crew utilizing hand and power tools. The brush will be immediately chipped in a mechanical chipper. The ground up chips will be redistributed back onto the roadway easement. This will provide ground cover that will temporarily inhibit growth of new fuel.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2007 Door-to-Door Chipper Program

Initial Checklist/Battalion: 1-4

Priority: 1

Within W.U.I?: Yes

Document Effective Date: 1/1/2011

Author Name: Bill Fullerton

Status: Maintenance

Sponsor: CFFSC

Lat/Long: 38.196 N 120.679 W

Funding Source: BLM Amount: \$56,950.00

Acres: 90

Length/Mi:

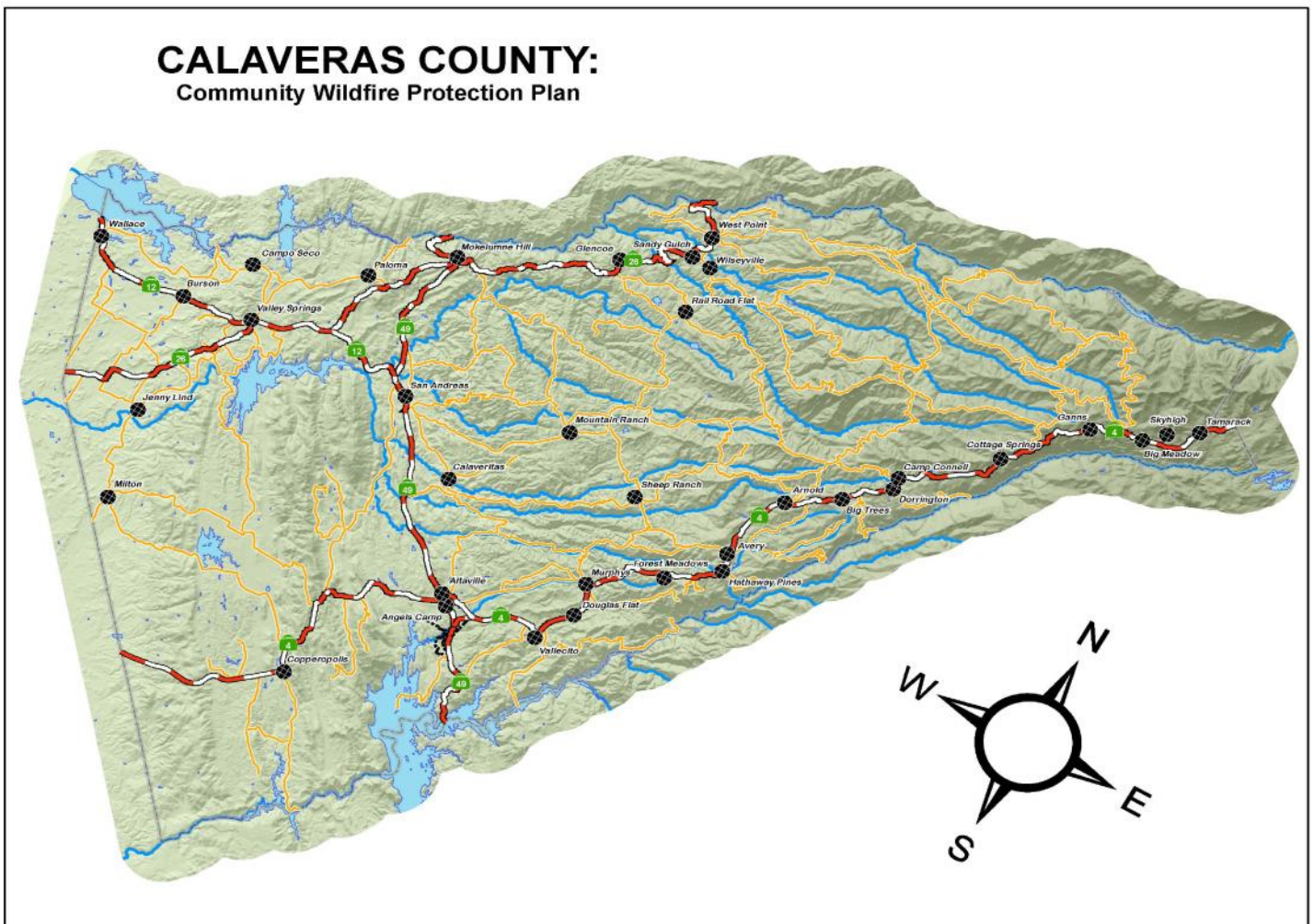
Tons/Fuel:

In-Kind: \$12,000.00

Total: \$68,950.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.



## 2006 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 32.5

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: USFS

Amount: \$66,200.00

Author Name: Bill Fullerton

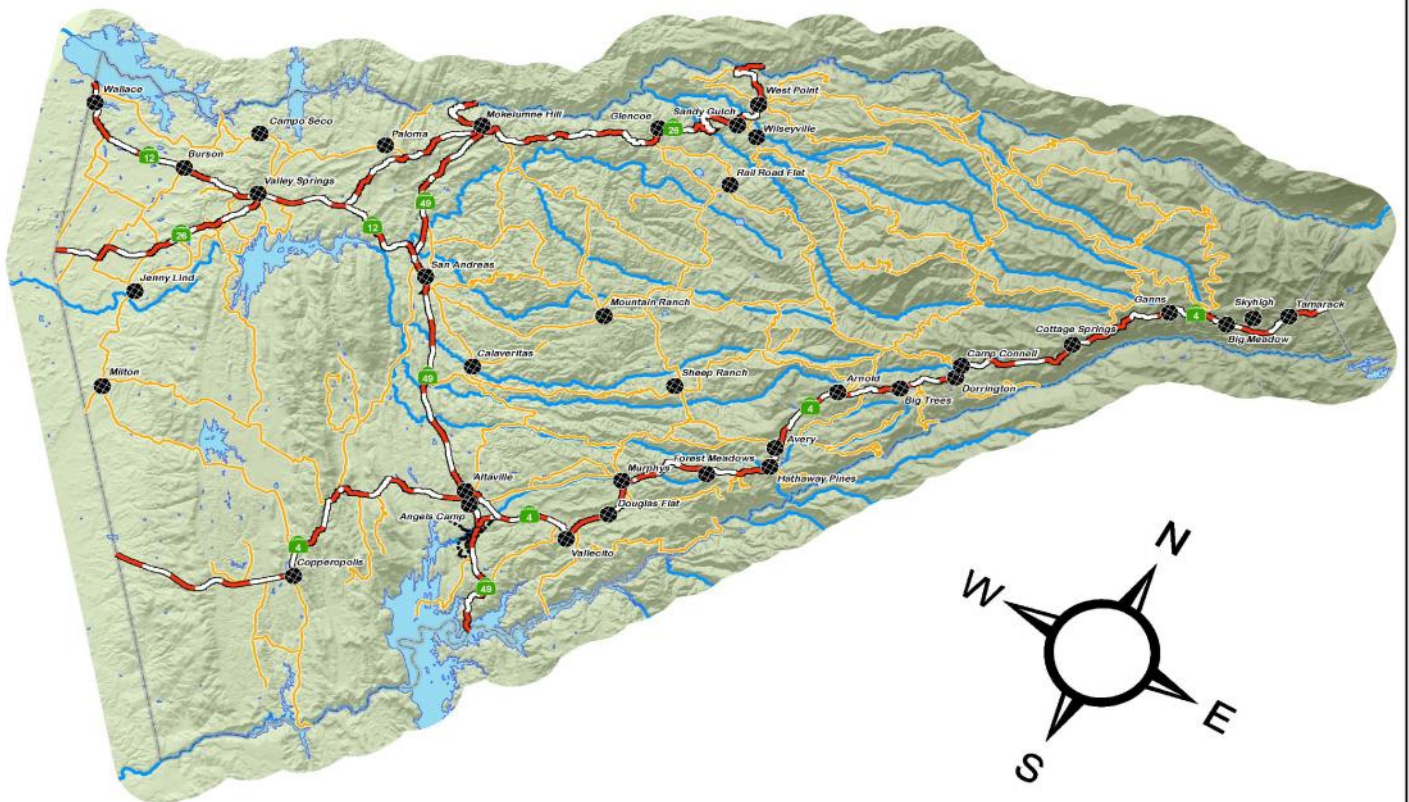
In-Kind: \$13,477.00

Total: \$79,677.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2005 Seniors and Disabled Defensible Space Program

Initial Checklist/Battalion: 1-4

Status: Maintenance

Acres: 30

Priority: 1

Sponsor: CFFSC

Length/Mi:

Within W.U.I?: Yes

Lat/Long: 38.196 N 120.679 W

Tons/Fuel:

Document Effective Date: 1/1/2011

Funding Source: BLM

Amount: \$53,943.00

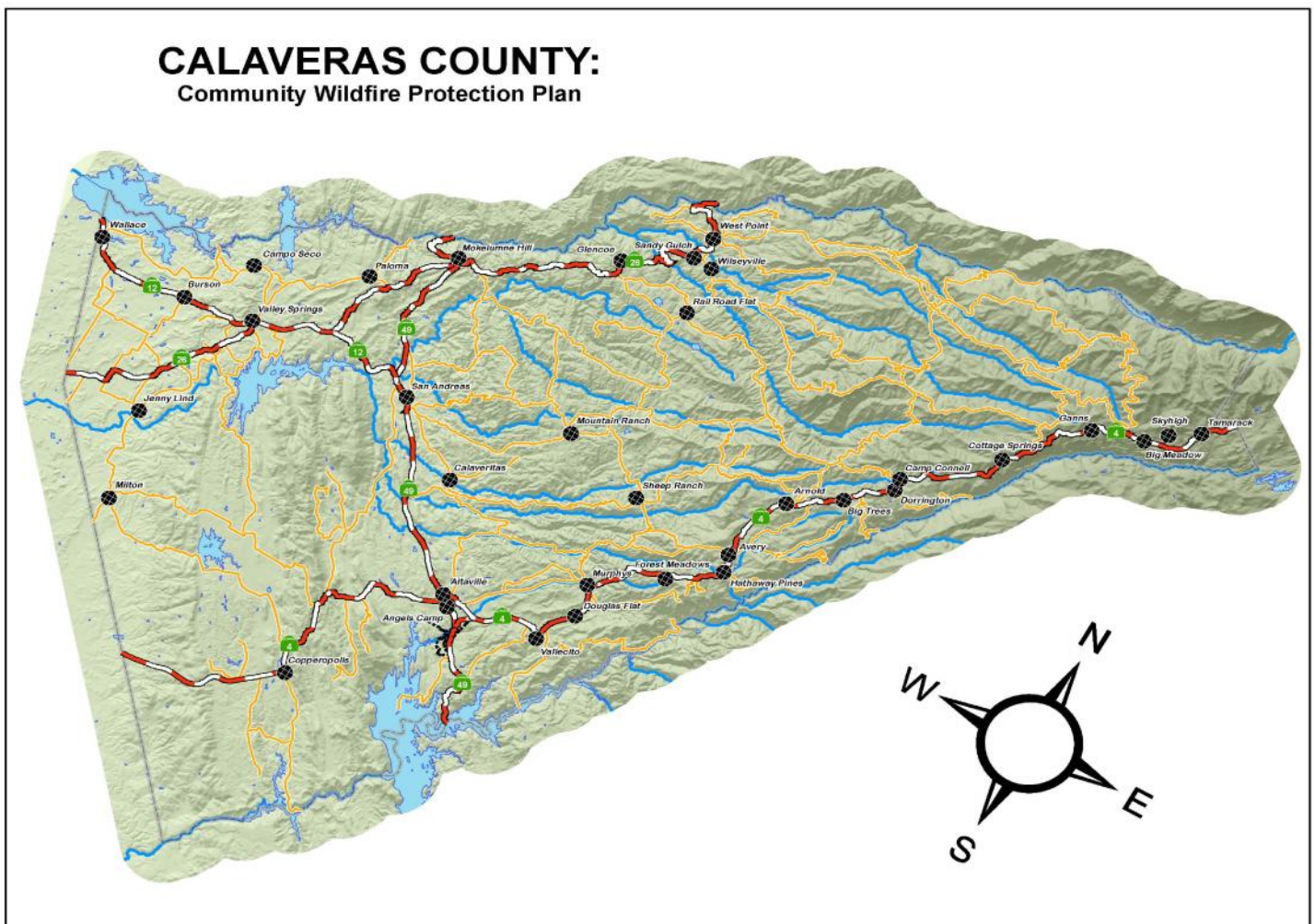
Author Name: Bill Fullerton

In-Kind: \$63,137.00

Total: \$117,080.00

### PROJECT DESCRIPTION:

The Seniors and Disabled Defensible Space Program is designed to aid Seniors and the Disabled to comply with PCR #4291 requiring 100 foot clearances around structures. The Fire Safe Council will hire a contractor to accomplish these requirements at no cost to the resident.



## 2005 Calaveras County APCD Chipper Program

**Initial Checklist/Battalion:** 1-4

**Status:** Maintenance

**Acres:**

**Priority:** 1

**Sponsor:** CFFSC

**Length/Mi:**

**Within W.U.I?:** Yes

**Lat/Long:** 38.196 N 120.679 W

**Tons/Fuel:**

**Document Effective Date:** 1/1/2011

**Funding Source:** Calaveras

**Amount:** \$13,200.00

**Author Name:** Bill Fullerton

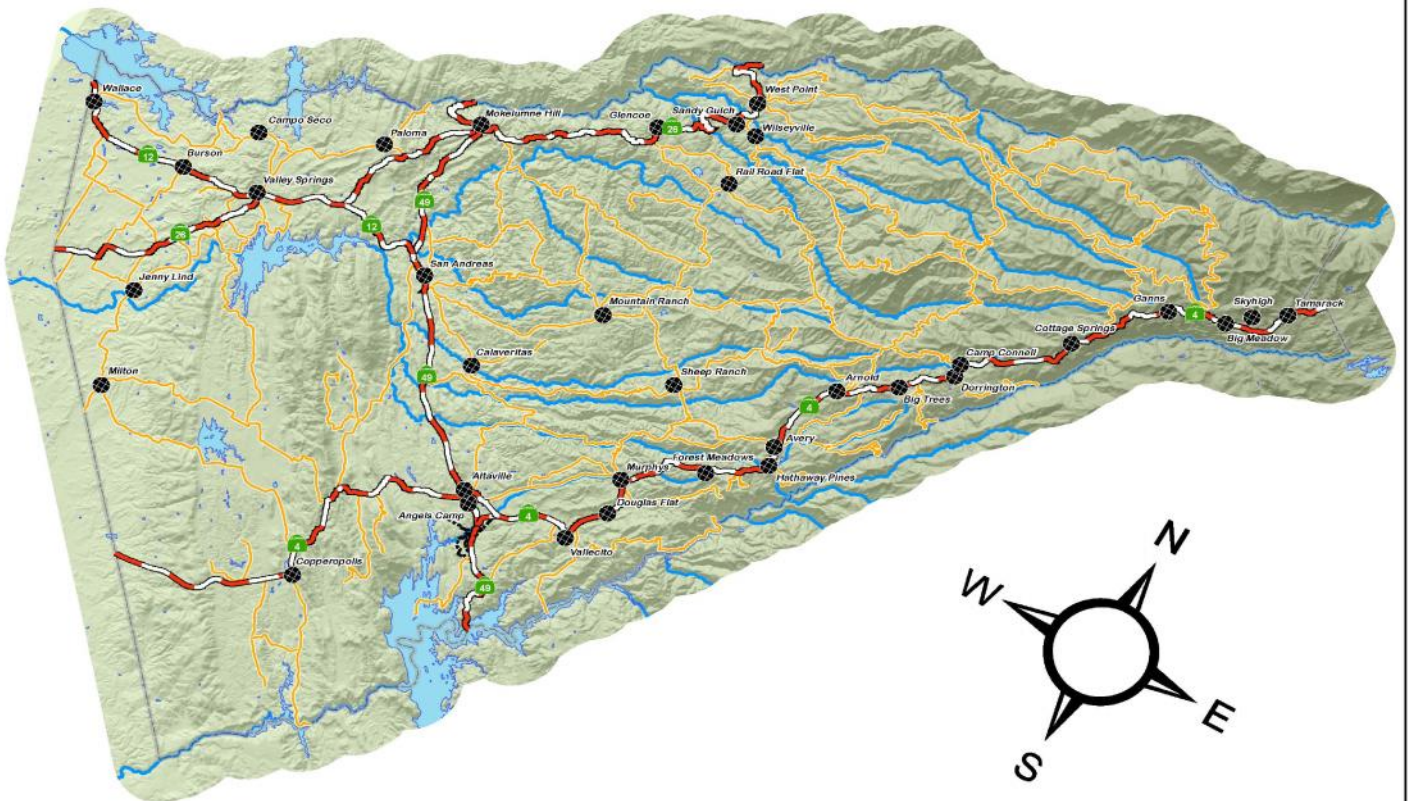
**In-Kind:** \$

**Total:** \$13,200.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



## 2004 Calaveras County APCD Chipper Program

**Initial Checklist/Battalion:** 1-4

**Status:** Maintenance

**Acres:**

**Priority:** 1

**Sponsor:** CFFSC

**Length/Mi:**

**Within W.U.I?:** Yes

**Lat/Long:** 38.196 N 120.679 W

**Tons/Fuel:**

**Document Effective Date:** 1/1/2011

**Funding Source:** Calaveras

**Amount:** \$15,000.00

**Author Name:** Bill Fullerton

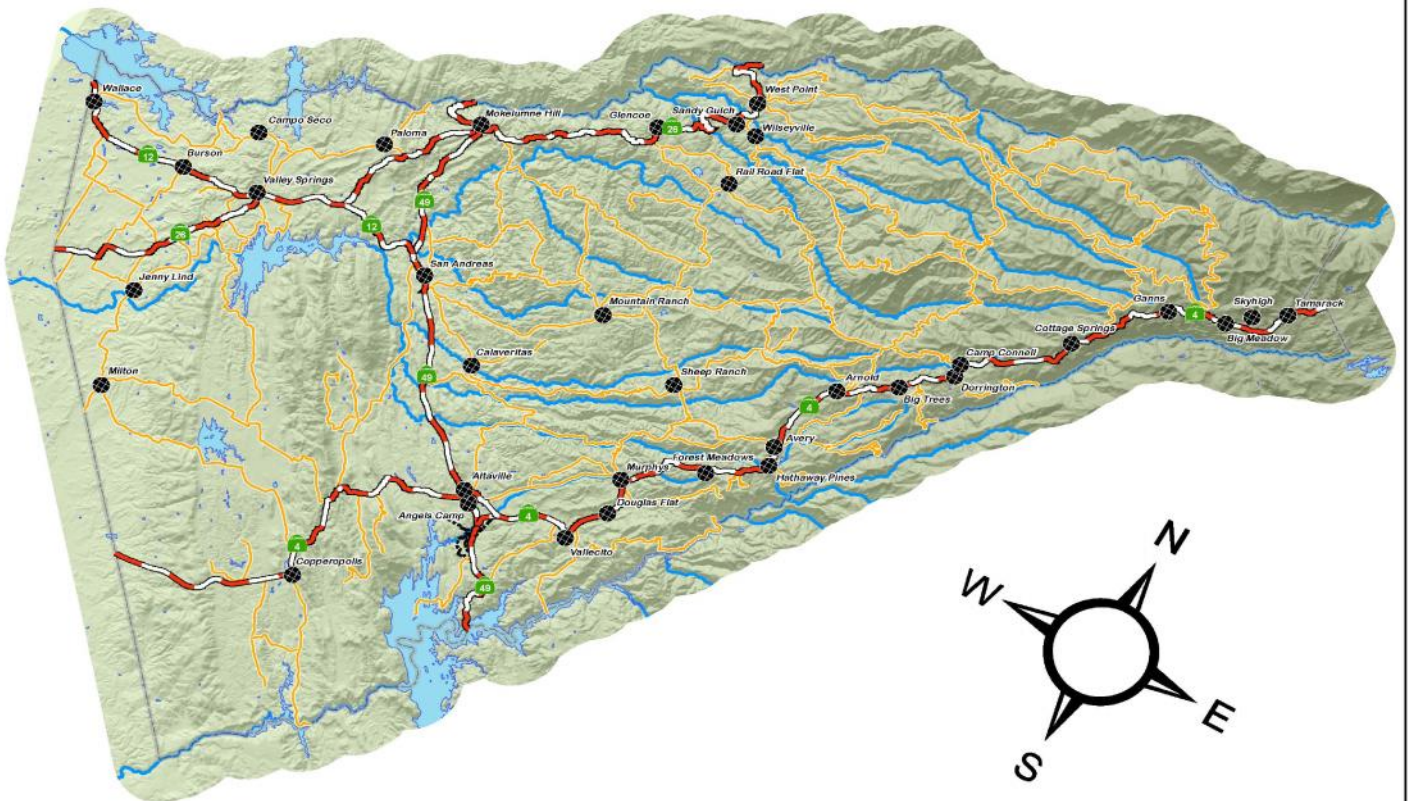
**In-Kind:**

**Total:** \$15,000.00

### PROJECT DESCRIPTION:

The Calaveras Foothills Fire Safe Council will offer free chipping services for residents throughout Calaveras County. The CFFSC provides a contract chipping crew for the disposal of brush and woody debris around residents homes in prioritized high fire-risk areas. Residents cut and stack slash along public roads and contract chipping crews chip the piles. The program assists residents in meeting the California vegetative clearance requirements of PRC4290/4291.

### CALAVERAS COUNTY: Community Wildfire Protection Plan



### **Strategic Planning:**

- ) Structure Protection Plans: Plans have been developed for all developed community areas within the Battalion, identifying hazards, topography, evacuation routes and tactical information.
- ) Evacuation Planning: Develop a Battalion evacuation plan outlining evacuation routes, facilities, agency contact numbers and fire prevention tips. Application has been made for a grant to fund this project.
- ) County Ordinance Application: Engage County Building and Public Works officials to support the enforcement of County ordinances which have been adopted as functional equivalents to PRC 4290, with regards to water supply, road standards, signage, and fuel modification.
- ) Fire Lookout Staffing: Restore funding of lookouts. The loss of Blue Mountain Lookout staffing reduced CAL FIRE's ability to quickly detect wildfires and dispatch appropriate resources. Restoration of these positions would improve CAL FIRE's early detection abilities.
- ) Right-of-Way Fuel Reduction: Engage County Public Works officials to promote the continuation of road-side fuel clearing projects and the importance of maintenance of previously cleared right-of-ways.

### **Public Education:**

- ) LE-262 Burn Permit Administration: Provide fire prevention education materials and positive agency contact with each permit, explaining debris burning fire safety requirements.
- ) Campfire Permits: Encourage all campers to obtain campfire permits.
- ) Fire Prevention Signs: Post fire prevention signs year-round, to better educate the public on fire hazards and methods of prevention. Messages will target causes identified in the ignition management analysis.
- ) School Fire Prevention Programs: Battalion personnel will continue to support and participate in annual school fire prevention programs in the Battalion in order to increase fire safety education and awareness.

## Law Enforcement:

- ) Law Enforcement Support of Inspections Program: Continued close cooperation between Battalion and VIP inspectors and the Unit's LE staff in support of the Defensible Space Inspection Program in the form of a willingness to write citations as needed.
- ) Cause Determination and Code Enforcement: A determined effort by Company Officers and LE staff, as needed, to determine a cause for all wildland ignitions. Accurate cause determination impacts several programs beyond the confines of the Battalion (Fire History, Fire Plan, Funding for example) and can be crucial to the subsequent ability of LE staff to issue citations for violations of the various PRC and PC codes, including debris burning, arson, power line clearance, and equipment related violations, among others.

## Battalion 4 Cooperators Mitigation Efforts

**Stanislaus National Forest, USFS:** For many years the Battalion 4 Chief has worked closely with his counterparts from the Calaveras District of the Stanislaus National Forest. Coordination of fuel reduction efforts continues to be a high priority given that several large subdivisions within the greater Arnold area are immediately adjacent to USFS lands. Though the majority of these Federal lands are designated as State DPA they remain the responsibility of the USFS for all other land management issues, including forest fuel treatment projects.

Within the USFS, efforts are ongoing to plan and carry out fuel reduction projects in 2011 and beyond. The Calaveras Districts' fuel treatment strategies are designed to reintroduce fire, reduce fuel levels, and mitigate the consequences of large damaging wildfires. These strategies allow managers to set priorities that protect fire fighters, the public, property, and natural resources. In general, landscape level fuel treatment strategies are designed to limit wildfire extent, modify fire behavior, and improve ecosystems. Fire and fuel management relies on a combination of strategies for modifying wildland fire behavior, achieving Fire Management Plan goals, and re-introducing fire across broad landscapes:

- ) Strategically placed area treatments.
- ) Defensible fuel profile and fuels reduction zones adjacent to communities and areas of high value.
- ) Wildland Fire Use.

Fire managers use these strategies for prioritizing projects over the entire Forest to determine priority areas for fuel treatment. The fuel management goals include:

- ) Protect life and property in the wildland urban intermix (W.U.I.) zone.
- ) Provide for firefighter and public safety.
- ) Improve forest health and fire resiliency.
- ) Reduce fire severity and level of resource damage.
- ) Adhere to the directions, standards, and guidelines in the Land and Resource Management Plan.
- ) Protect sensitive habitat.

Since 1992, over 15,000 acres have been treated in W.U.I. areas within the Calaveras District. An additional 8500+ acres of treatment is in the planning or implementation stage.

**Calaveras Big Trees State Park:** The California Dept. of Parks and Recreation (DPR) State Park has an aggressive fuel treatment program aimed at restoring the role of fire in park ecosystems while preserving and protecting the unique features of the park. State Park officials have conducted a number of fuel reduction projects at Calaveras Big Trees State Park. The largest single project was a 115-acre fuel break constructed along the boundary shared with Blue Lake Springs subdivision and on the ridge forming the upper watershed boundary of Moran Creek. Most of the other related projects conducted in the park are aimed at restoring forest stand conditions to reflect a natural fire regime, although the end results are essentially the same as a specific fuel reduction/fuel break project. This allows DPR to contribute to the effort to create a fire safe community, while also meeting its responsibility to preserve natural systems within the park.

Additional projects include 45 acres treated (as part of a black oak woodland restoration project) along the ridge connecting Blue Lake Springs and Big Trees Village subdivisions, three separate projects to thin understory trees and reduce ground fuels along the Highway 4 Corridor through the park, (approximately 80 acres), and an ongoing effort to restore the forest community of the South Grove Natural Preserve. In addition, approximately 45 acres of several smaller projects have been conducted to reduce fuel loadings that are particularly heavy, but that are not necessarily part of a strategic plan. The park has also been awarded a grant to treat 70 acres along its boundary between Big Trees Village subdivision. This project will provide valuable protection both the park and the subdivision from encroaching wildfires.

**Sierra Pacific Industries:** As the largest single landowner in the Battalion, Sierra Pacific Industries (SPI) is an obvious partner for collaborative projects. Currently, CAL FIRE is encouraging SPI to conduct additional thinning operations along the boundary of the Big

Trees Village subdivision and on additional parcels near Moran Road and Love Creek areas. In support of these efforts CAL FIRE personnel continue to maintain our targeted inspection program in areas that are adjacent to SPI land, in order to reduce the threat of wildfires spreading from developed subdivisions onto SPI timberlands.

**Ebbetts Pass Fire Protection District:** The Ebbetts Pass Fire Protection District (EPFPD) has been a supporter of CAL FIRE's fuel reduction plans. In addition, the District has an ordinance requiring fuel modification on unimproved parcels on a year-round basis. This ordinance is especially important to CAL FIRE, as it has no legislated authority to enforce fuel reduction on unimproved parcels. CAL FIRE supports the efforts of EPFPD by providing technical assistance to the district upon request

**Forest Meadows Homeowners Association: The subdivision is the only certified Firewise Community in the North Division.** The subdivision is the only certified Firewise Community in the north Division. The Association produced a Community Wildfire Protection Plan in 2007 that examines vegetation conditions, terrain, and climatic influences within the development and on appropriate adjacent lands. It addresses the impact of infrastructure (roads, trails, utility corridors, etc.) on fire behavior and examines the response situation. The plan has not yet been validated by CAL FIRE as per the requirements.

**Calaveras Foothills Fire Safe Council:** Since 2001 this FSC has been fully engaged in the success of several fuel reduction efforts, including : the production and implementation of the Calaveras County Community Wildfire Protection Plan; production and distribution of Public Education materials, and programs; identification, planning and implementation of numerous on-the-ground fuel reduction projects.

**Calaveras County Fuel Waste Program:** Disposal of forest fuels has been made much easier for local residents, thanks to the County's Fuel Waste Disposal program. Under this program, homeowners may take all unwanted yard debris (brush, grass, pine needles, etc.) to local transfer stations and dump these materials for a modest charge. The program has been very successful in encouraging compliance with fuel reduction around structures while improving air quality.

# **Glencoe/Rich Gulch-Community Wildfire Protection Plan**

**Edition 1, 5-June-11**

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**SUMMARY**

Glencoe and Rich Gulch are rural communities located on the Hwy 26 corridor, NE Calaveras County, California. The forest in and around these communities has been subjected to heavy logging since the Gold Rush and reforestation efforts have been minimal. In the absence of significant wildfires for some 160 years, there is an abundance of brush and ladder fuels second to none in the State. While the locals fear catastrophic wildfire more than anything else, neither community nor the fire service has implemented a significant pre-fire plan since 1934 when Roosevelt's CCC installed the Ponderosa Way fuel break through Rich Gulch. The following Community Wildfire Protection Plan (CWPP) presents a strategy to minimize the risk of catastrophic fire in Glencoe, Rich Gulch and the neighboring Upper Mokelumne and Upper Calaveras watersheds. This ambitious plan was developed by the Community with generous support from the Central Calaveras Fire District, Cal Fire, Foothill Fire Safe Council, and Bureau of Land Management (Appendix 3).

The Service Area for the CWPP is generally defined by the Mokelumne River on the North, North Calaveras River on the South, Rich Gulch Road on the West and Wet Gulch on the East, about 115 square miles or 73,600 Ac. While this first edition of the CWPP focuses on the threat of wildfire from the Mokelumne River Canyon in detail, future editions will address the threat from the North Calaveras River Canyon in greater detail.

Three lines of defense are defined inside the Service Area:

1. The Outer Defense was designed to protect the watersheds, the West Point Power House and the upstream communities of Rich Gulch, Glencoe, Rail Road Flat, Wilseyville and West Point. In the Mokelumne Watershed, three fuel breaks are proposed that descend from the canyon rim to the Mokelumne River, one from Rich Gulch and the other two from Glencoe. One fuel break is proposed for the Calaveras Watershed that descends from Rich Gulch to the North Calaveras River. BLM and Cal Fire will take the lead for installation and long-term maintenance of these fuel breaks.
2. The Perimeter Defense was designed to protect community assets in Glencoe and Rich Gulch. It consists of a shaded fuel break along the northern half of the Wildland Urban Interface (WUI) and was created by joining historic roads and ditches across BLM and private property. Thus, the Community, BLM and Cal Fire assume mutual responsibility for installation and maintenance.
3. The Inner Area of Defense focuses on the restoration of forest health inside the WUI and includes defensible space, the BLM Hazardous Fuels Reduction Variance Program, road maintenance, signage for emergency access, availability of emergency water, and right-of-way fuel reduction along County/State roadways. Implementation is largely a home-owner responsibility with support from the Calaveras Foothills Fire Safe Council, Central Calaveras Fire District, Cal Fire and BLM.

This CWPP is a working document that will change frequently. For example, the current edition focuses on the construction of fire breaks north of Hwy 26 where the topography and road networks are well known. In contrast, large areas of the Upper Calaveras watershed and Wet Gulch have not been explored on foot so the pre-fire strategy was created from maps and aerial images. The next edition of this CWPP will focus the southern flank.

## INTRODUCTION

The forest in and around the unincorporated communities of Glencoe and Rich Gulch on the Hwy 26 corridor of Calaveras County (Fig 1 Location Map) have been subjected to heavy logging since the Gold Rush. Reforestation programs have been minimal and the absence of significant wildfires for some 160 years leaves these Communities surrounded and inundated with an abundance of brush and ladder fuel second to none in California. Despite the catastrophic fires that occur throughout the State on an annual basis, the Communities have done little to protect themselves from the eventual wildfire. The current plan is called the Glencoe/Rich Gulch Community Wildfire Protection Plan (GRG-CWPP) and it is the first attempt to provide a strategy to minimize the risk of catastrophic fire on the Hwy 26 corridor since Roosevelt's Civil Conservation Corp built Ponderosa Way in 1934. The purpose of this plan is to identify fire threats and recommend pre-fire strategies to prevent catastrophic wildfires in greater Glencoe/Rich Gulch including the Upper Mokelumne and Upper Calaveras River Watersheds.

This CWPP was developed as a collaborative effort between the Community and government at all levels (Appendix 1) with major contributions from the Central Calaveras Fire, Cal Fire, BLM, Foothill Fire Safe Council and the Amador-Calaveras Consensus Group (<http://acconsensus.wordpress.com>)(Appendix 3). While the CWPP is a significant contribution to public safety, these agencies are the first to admit that it is a first edition that is incomplete because it focuses on the Mokelumne River Watershed at the expense of the North Fork Calaveras River Watershed. These agencies stress the need to re-evaluate, upgrade and expand the plan annually!

The GRG-CWPP conforms to the 'Healthy Forest Restoration Act of 2003' and the National Fire Plan which serves to prepare communities for the eventuality of fire (Appendix 2). With this Act, the federal government recognizes its responsibility for fire protection and sets a course of action to mitigate the spread of wildfire from its land to neighboring communities at risk. On the other hand, the Act places responsibility on each 'community at risk' to develop a CWPP that:

1. Defines the WUI across jurisdictional boundaries and landscapes;
2. Recommends the types and methods of treatment (i.e. control burns, mechanical removal, hand crews, etc) to be used for the installation of fuel breaks, forest restoration, and long-term maintenance.

Thus, the Community has primary responsibility for developing the GRG-CWPP and it must present evidence of community consensus. In addition, the CWPP must be reviewed and certified by the following agencies:

1. Chief, Central Calaveras Fire District;
2. Chief, Tuolumne-Calaveras Unit (TCU), California Department of Forestry and Fire Protection based in San Andreas; and the
3. Calaveras County Board of Supervisors.

The certified GRG-CWPP with its recommendations will enable BLM, Cal Fire and the Fire Safe Council to streamline their environmental assessments for fuel reduction projects because they already have community consensus which is required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The certified CWPP will also serve as a basis for these and other agencies to allocate their financial, personnel and equipment resources towards implementation.

Finally, Glencoe and Rich Gulch are classified as 'Communities at Risk' by the [California Fire Alliance](#) as they are nearly surrounded by federal land owned by BLM. As such, the BLM is obligated under the Healthy Forest Restoration Act to give the GRG-CWPP a high priority for implementation on its lands. It is noteworthy that the BLM recognizes its responsibility and has installed ~57 acres of shaded fuel break on its land in Glencoe. This 2010 project was completed under the 'BLM Variance Permit' and 'Timber Stand Improvement' Programs which will be described later (Appendix 4).

## **GOALS**

The goal of the current plan is to minimize the risk of catastrophic fire by implementing the following pre-fire strategy:

1. Assets: Map the distributions of assets in Glencoe/Rich Gulch and create a WUI around them by connecting historic roads and ditches when possible. The current WUI is around these communities is an estimated 17 miles in perimeter.
2. Service Area: Define the area of interest beyond of the WUI.
3. Wildfire Defense: Create three levels of defense against catastrophic fire in the Service Area:
  - a. Outer Defense:
    - i. Create three shaded fuel breaks extending from the WUI to the Mokelumne River, one from Rich Gulch and the others from Glencoe, to

- protect the Mokelumne Watershed, the communities upstream (Rich Gulch, Glencoe, Rail Road Flat, Wilseyville and West Point), and the West Point Power House.
- ii. Create one shaded fuel break from Rich Gulch to the North Fork Calaveras River to protect the Calaveras Watershed, Rich Gulch, Glencoe and Rail Road Flat.
- iii. Open and sign historic roads near the fuel breaks to provide access for the fire service.
- b. Perimeter Defense:
  - i. Create a shaded fuel break on or near the WUI by removing all underbrush and ladder fuel to protect the private and public property in Glencoe and Rich Gulch.
  - ii. Open and sign historic roads along the WUI so that the fire service can drive it.
- c. Inner Area of Defense:
  - i. Restore forest health inside the WUI by removing underbrush and ladder fuel to protect the assets in Glencoe and Rich Gulch (homes, farms, ranches, public buildings, utilities as well as pre-historic and historic sites).
  - ii. Plant conifers where appropriate and manage their long-term growth to shade-out the return of underbrush and produce timber.
  - iii. Clear, sign and maintain roads and driveways inside the WUI to assure access by emergency vehicles.
  - iv. Maintain 100' defensible space around all homes.
  - v. Register homeowner water storage tanks that comply with Calaveras County standards into the map book maintained by the Central Calaveras Fire District.
  - vi. Collaborate with Central Calaveras Fire District to identify strategic locations for 25,000 gallon water storage tanks and standpipes for fire suppression.
  - vii. Create a fire fuel free buffer along State Hwy 26 from Ponderosa Way on the west to Humbug Road on the east to minimize the spread of fire from cars and roadside arson giving first responders extra time to reach the scene.
  - viii. Maintain fence-to-fence clearance on Ponderosa Way from Jesus Maria Road to Hwy 26 to assure that this North-South transportation corridor through Central Calaveras County remains open to emergency traffic.

## **AREA DESCRIPTION**

**Service Area:** Glencoe and Rich Gulch are unincorporated rural communities in NE Calaveras County where the mountains are rugged and covered with a mixed coniferous forest, oak woodlands, grasslands and lots of brush. For the most part, the residents are distributed along a four mile stretch of State Hwy 26 from Ponderosa Way on the West to Humbug Creek Road on the east (Fig 1 [Location Map](#)). This stretch sits on a wide ridge between two watersheds, the deep Mokelumne River Canyon on the North and the Calaveras River Canyon on the South (Fig 2 [Watersheds Map](#)). Elevations on the ridge vary from 2- 3,000' while the rivers are 1-2,000' below

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(Fig 3 [Elevations Map](#)). The boundaries of the GRG-CWPP service area are defined by the Mokelumne River on the North, North Calaveras River on the South, Rich Gulch Road on the West, and Wet Gulch on the East (Fig 4 Service Area).

**Vegetation:** The types and frequency of the vegetation types found in greater Glencoe/Rich Gulch are shown in Table 1. (Expand scope of Table 1 in Edition II to include entire Service Area, not just the Perimeter Fuel Break)

Table 1. CALVEG types inside the 200 foot GRG\_WUI at the crest of the Mokelumne Canyon. This WUI intersects 93 vegetation polygons defined from LANDSAT TM imagery. Each 2.5 Ac polygon is assigned a CALVEG species, crown closure class, tree size class, and other attributes. (FRAP, <http://frap.cdf.ca.gov/>)

Primary Veg Type	Frequency of Veg Type Polygons	Primary Cover	Primary Size	Primary Canopy Closure Density (%)	Timber Production	Secondary Canopy Closure Density (%)	Sum Acres
Chamise	2	Shrub			Non-Prod		1.24
Northern Mixed Chaparral	1	Shrub			Non-Prod		0.73
Douglas-Fir - Pine	15	Conifer Forest	Sapling 1-6"	20-29	Productive	30-39	31.21
Annual Grass/Forbs	8	Herbaceous			Non-Forested		19.42
Mixed Hardwoods	3	Hardwood Forest	Sapling 1-6"	30-39	Non-Prod	30-39	1.53
Ponderosa Pine	58	Conifer Forest	Sapling 1-6"	10-19	Productive	30-39	97.00
Canyon Live Oak	1	Hardwood Forest	Sapling 1-6"	80-89	Non-Prod	80-89	1.30
California Black Oak	3	Hardwood Forest	Sapling 1-6"	30-39	Productive	30-39	3.26
Interior Live Oak	2	Hardwood Forest	Sapling 1-6"	70-79	Non-Prod	70-79	1.00
<b>Totals</b>	<b>93</b>						<b>156.69</b>

**History:** The Mi-Wuk inhabited the area for 10,000+ years and their distribution and culture have been documented by local historians, Judith Marvin, Donnie Ames and Paula Leitzell (2007). The Mi-Wuk villages were distributed near springs and creeks on the wide ridge between the deep Mokelumne and Calaveras River Canyons. Today these village sites are now the communities of Rich Gulch and Glencoe. The Mi-Wuk first met the Miners in 1849 at Pleasant Springs in Rich Gulch where Charles Grunsky established the first store and Dr. Adolph Hoershner founded the first Hospital for Miners. This early history was captured in John Doble's diary, a placer miner who lived in Pleasant Springs in 1852 (Camp, 1999).

As the population increased so did the need for water for mining, power and agriculture and this led to the construction of the Mokelumne Canal in 1852. It diverted water from the South Fork Mokelumne River about a mile west of the current Hwy 26 Bridge and delivered it to Mokelumne Hill, some 17 miles downhill. The six roads that still provide access to the deep Mokelumne Canyon were built by the Mokelumne Canal Company to transport men, equipment and supplies for construction and maintenance. The original Canal was predominantly wood that was cut and milled in Glencoe and one wonders if the current grasslands in the community center were clear cuts from the 1850s (Goddard, 1855). While the Mokelumne Canal and other ditches with their many extensions are now dry, they provide gentle walking trails across the steep slopes in the Canyons.

The arrival of the placer miners during the gold rush was the first period of immigration to Rich Gulch and Glencoe and it ended in the mid 1850s. During the next 90 years, the population stabilized and formed an economy based on hard rock mining, farming and timber networked together by a system of water ditches and roads that is still visible today. There must be a hundred tunnels, shafts and ore dumps with an occasional mill in and around the two communities. The grasslands seen in the aerial map were once the McKisson, Stoetzer, Woodcock, Danielson and Albers ranches (Fig 13 Aerial). The land was repeatedly logged with few efforts in forest restoration and now there are dense stands of trees with abundant brush, mostly Manzanita, covering the forest floor.

The second period of immigration was in the 1940s when the County and State realigned and paved the road system, principally Hwy 26, for the transport of logs and lumber by large trucks. Large lumber operations were built to log the vast timber stands in the Sierra, mill the logs, and ship the lumber all over the world in support of WWII. The Associated Lumber and Box Mill in Sandy Gulch recruited 300 men, largely immigrants who arrived with their families. The local economy boomed and the old homesteads were subdivided for family homes. The boom ended in 1969 when the Associated Mill in Wilseyville closed leaving local depression that persists today.

The third period of immigration started in the 1980s when retired folks as well as families immigrated to escape the urban sprawl of the Central Valley and San Francisco Bay Area. Parcel subdivision continued to provide additional homes with signs of urban sprawl and the decline of open space. County infrastructure became stressed, including the fire service.

**Prehistoric Artifacts:** The major prehistoric asset in the Service Area is the Mi-Wuk village of Apatawilu in Rich Gulch and its artifacts are under ground and fire safe (Marvin, Judith, Donnie Ames and [Paula Leitzell, 2007](#)).

**Historic Artifacts:** Historical assets include a large number of derelict gold mines, an arrasta (Mexican ore crusher), ore mills, a saw mill, an impressive rock dam, two major ditch systems, old barns, house foundations, soap stone fireplaces, vintage fruit trees, rock lined wells, a half dozen cemeteries, and a dozen roads and trails with rock retaining walls.

**Canyon Assets:** The most important asset in the river canyons are the watersheds themselves as they supply domestic and agricultural water to over a million homes in the foothills, San Joaquin Valley and East Bay:

1. The Mokelumne River Watershed is the source for Pardee and Camanche Reservoirs and the primary water supply for the East Bay Municipal Utility District and its 1.3 million customers in the East Bay. The South Fork and Licking Fork of the Mokelumne are the primary water sources for Jeff Davis Reservoir in Rail Road Flat and the water supply for Rail Road Flat, Mokelumne Hill and San Andreas conveyed by the Calaveras Public Utilities District. The Middle Fork is tapped by the Calaveras County Water District to serve the towns of West Point and Wilseyville during periods of drought. The North Fork is used by PG&E to generate electricity at four hydroelectric power houses: Salt Springs, Tiger Creek, West Point and Electra.
2. The North Fork Calaveras River Watershed is the primary water source for the New Hogan Reservoir. The Calaveras County Water District uses this water to supply its customers in Western Calaveras County while the Stockton East Water District provides domestic and agricultural water to Stockton and the San Joaquin Valley.

In addition to water and hydroelectric power, the Canyons provide abundant open space and landscapes of special beauty. The esthetic value of the Main Stem and North Fork Mokelumne Canyon was recognized by BLM which declared its eligibility to become part of the national Wild and Scenic River System (BLM, 2008). With approval by Congress, the Mokelumne Canyon would be protected from future impoundments while management would assure the protection and enhancement of the current 'Outstandingly Remarkable Values'. With this declaration, BLM adds its support to the Foothill Conservancy which has taken the lead in lobbying Congress to secure the 'National Wild and Scenic River, designation for the Mokelumne River (Foothill Conservancy).

While the health of these two watersheds is vital to Central California, it is ironic that the poor communities of Glencoe and Rich Gulch are taking the lead to protect them from catastrophic wildfire without support from Big Water and Big Hydroelectric Power!

**Community Assets:**

In addition to the historical and archeological artifacts listed above, community assets include homes, businesses, farms, ranches, timber stands and utilities. The Calaveras County Graphic Information System (GIS) was used to identify and locate these assets by flagging parcels with a home owner exemption, a good indicator of occupancy, and parcels with an assessed value >\$10,000 ). These valued parcels are distributed along the public road system on the wide divide above the two steep river canyons. The WUI was drawn to include these valued parcels (Fig 5 WUI Assets). GIS data reveal that there are 368 parcels inside or touching the WUI ranging from 0.1 – 557 acres with a mean of 17 acres and nearly all of them are privately owned.

The Community Assets described above are clustered on the wide divide between the Mokelumne and North Calaveras River Canyons indicating that the WUI should be drawn on the canyon rims. Exploration and mapping of the Mokelumne rim has revealed a system of historic roads that can be linked to the Mokelumne Canal and anchored to Hwy 26 to form the northern segment of the WUI (Fig 6 WUI Contours). On the east, Baugh Road and historic Humbug Road follow the North-South ridge above Wet Gulch and becomes the eastern segment of the WUI connecting Hwy 26 and Independence Road. The relationship of the assets and the WUI to the local topography is illustrated in the following figures (Fig 7 Slopes, Fig 8 Aspects and Fig 9 Vegetation).

The southern alignment of the WUI was drawn from parcel and topographic maps for the most part. Additional exploration is required to map the network of logging roads and ditches south of Hwy 26 and these results will probably influence the final alignment of the southern segment of the WUI. This is a task for the second edition of the CWPP.

## **WILDFIRE RISK**

### **Fuels, Weather, Level of Service and Assets at Risk:**

There is abundant fire fuel in and around Glencoe and Rich Gulch and the California Department of Forestry and Fire Protection lists this area to be under significant threat from wildland fire from both private and Federal lands. This designation stems from the CDF Fire and Resource Assessment Program (FRAP) that created a Geographic Information System (GIS) to assess the threat of catastrophic fire based on three main considerations:

1. Considering the potential fire behavior of the vegetation types, the steep slopes and the frequency of bad fire weather, **The Vegetative Fuel Hazard in Glencoe/Rich Gulch is classified as Very High.**
2. Considering the vegetation fuel condition, weather, ignitions source, fire suppression response and more, **The Chance of a Costly, Damaging Fire is High** and predicted to occur at a frequency of 1 or more fires every 100-300 years.
3. Considering the Urban-Interface housing density, 1 to 40 houses per 5 acres, **The Housing Density is classified as Rural.**

Based on the above considerations and additional data, FRAP has divided the State into three levels of threat, Low, Moderate and High (Fig 10 Threat Zones). In the final analysis **The Fire Threat in Glencoe/Rich Gulch is High!**

The 2005 Pre-Fire Management Plan for Cal Fire’s TCU provides local information on fuels, assets at risk, ignition and fire history in the Glencoe/Rich Gulch area. It describes a highly volatile situation with a brush dominated fuel type that is the primary fire carrier and an over story that enhances spotting and flame lengths. While fuel reduction treatments are currently being applied to large tracts of BLM land on the WUI, the application of this treatment inside the WUI is difficult to manage due to the high density of small parcels under private ownership with wood framed homes of high ignitability.

Glencoe and Rich Gulch are served by the Central Calaveras Fire District Station on Jesus Maria Road which is staffed year-round by professional full time firefighters supported with volunteers. The response times from the Jesus Maria Station to various points in the Service Area follow:

<u>Intersection</u>	<u>Miles (Minutes)</u>
Ridge Rd & Hwy 26	9.2 (15)
Hwy 26 & Deardorff Rd	11.0 (19)
Hwy 26 & Ponderosa Way	12.5 (19)

There is a fire station in Glencoe, but it is used sporadically depending on the number of qualified volunteers in the Service Area.

The Cal Fire station in West Point is manned during the fire season, usually from May to October, when it also serves Glencoe and Rich Gulch.

The Calaveras Public Utility District (CPUD, <http://www.goldrush.com/~cpud/index.html>) maintains nine fire hydrants along Hwy 26 and Independence Road. Six are classified by the National Fire Protection Association as Class C (<500 gpm) and five as Class B (500-1,000 gpm) (Fig 11 Hydrants). Although Glencoe east of Stormy Lane has the highest population density, it has neither hydrants nor stored water. The number and location of water storage tanks on private parcels and their serviceability has never been determined.

Taken together, the Insurance Service Organization (ISO) judges the Level of Service in Glencoe and Rich Gulch to be 8 out of a top score of 1. This low score of 8 portends the importance of pre-fire planning.

### **WILDFIRE HISTORY**

Despite the bleak picture painted above, Glencoe/Rich Gulch has not had a significant wildfire in living memory. The most recent threat was the Electra Fire of June 2008 that burned 600 acres in the Mokelumne Canyon above the Electra Power House some 2.5 miles downstream from the Mokelumne River Bridge (alias CC Bridge) on Ponderosa Way.

### **CAUSES OF WILDFIRES**

According to the TCU, the leading causes of wildfires during the fire season are ranked as follows: vehicle use, arson, equipment (mowers, trimmers, welding, cutting & grinding) and miscellaneous. In view of the recent Electra Fire, downed electrical lines should be added to this list.

### **FUEL BREAK SPECIFICATIONS**

The following sections of the CWPP recommend the installation of hazardous fuel breaks. While the structure of these breaks may vary according to the local environment, they will generally conform to the following standards.

The shaded fuel breaks will be built by hand crews on steep slopes using chain saws and other hand-held tools. Mechanical treatment on safe slopes is limited to brush chipper, masticator, blade with rake and brush hog. Clearing will reduce the vegetative canopy closure no less than 50 percent. Chips may be distributed evenly over the landscape not exceeding 6 inches in depth. Alternatively, chips and other biomass may be sold with profits returning to projects in the service area or to the local contractor.

Dead vegetation <6" in diameter will be cut and removed. Live trees with trunks <6" in diameter as measured 6" above ground will also be cut and removed. Tree trunks will be cut flush with the ground. Ladder fuels will be removed from the lower third of trees. Grasses and forbs may be cut with a string trimmer. The use of herbicides is discouraged, but might be considered in spot applications for long-term maintenance.

In the summer of 2010, a shaded fuel break was built by BLM on the north side of HWY 26 just west of Deardorff Road. The reader is encouraged to visit this site to see the forest after treatment and compare it to the untreated forest on neighboring property.

Finally, major fuel reduction plans, like the Outer and Perimeter Lines of Defense described below, authorized under the authority of this CWPP, cannot be implemented without a long-term maintenance plan that maximizes the longevity of the improvement while minimizing cost. The use of low intensity fire is acceptable for maintenance to remove returning brush while protecting young trees and accelerating their growth into an eventual shaded fuel break.

### OUTER LINE OF DEFENSE

The outer line of defense is focused on the protection of the two Watersheds and the spread of fire 1,000-2,000 feet up the Canyon walls to Glencoe and Rich Gulch. Four shaded fuel breaks, 200-300' wide, will be constructed down the ridge noses from the Perimeter Fuel Break on the canyon rim or Hwy 26 (Fig 12 Fuel Break Topo, Fig 13 Fuel Break Aerial). Primary responsibility for the construction of fuel breaks in the Outer Defense rests with BLM and Cal Fire. While these agencies traditionally bear responsibility for long-term maintenance, they are encouraged to recruit support from the utility districts that benefit the most from watershed management! These include the small local water districts and the large water districts that operate downstream, the East Bay Municipal Utility District (EBMUD) and the Stockton East Water District.

#### 1. **Alabama Fuel Break**

- a. Alignment: Anchors to the Perimeter Fuel Break on Upper Dorray Road, follows a dirt road down the ridge nose for 0.8 miles, and continues cross-country over Marble Point to the Main Stem Mokelumne River. The length is ~1.4 miles and the change in elevation is ~1,730'. At a width of 200' the area of this break will be 34 acres. It is anticipated that this break will someday be extended up the dominant ridge on the northern wall of the canyon to Clinton Road in Amador County.
- b. Land Ownership: This break crosses BLM land except for a 1,325 foot segment over two private parcels, APNs 012-001-001/004, owned by Juliet Aston et al. of Nevada.
- c. Access: The upper half of this break can be accessed by vehicle using the dirt road on the ridge nose. The lower half can be accessed by vehicle down Mokelumne Canal Road 5 across BLM land to the Mokelumne Canal. This is a 4-wheel drive road that needs grading and ditching, especially on the lower half mile. There is a foot path on the canal that goes west to Marble Point and beyond to Ponderosa Way.

- 
- d. Projections: NEPA studies will be scheduled for 2012 and implementation is projected for 2013.

## 2. Valentine Fuel Break

- a. Alignment: Anchors to the Perimeter Fuel Break on Mexican Mine Road and follows a dirt road down the ridge nose for 0.2 miles before going cross-country to the South Fork Mokelumne River. The length of this break is 0.8 miles and the elevation change is 1,000'. At a width of 200' the area of this break will be 20 acres.
- b. Land Ownership: This break will cross BLM land except for the edges of two parcels owned by Scott Stewart of Fresno. The break will cross 250' of APN 012-006-002 and 500' of APN 012-006-003.
- c. Access: The upper half of the break can be accessed by vehicle using the road down the ridge nose. The lower half can be accessed via Valentine Gulch Road from Upper Dorray Road to the Mokelumne Canal across BLM land. There is a gate at the entrance to the BLM land and it is kept locked by the occupant of two small parcels a quarter mile down the road. While the road passes near these parcels, it is unclear if the road actually crosses any private property. The road was improved illegally in the summer of 2008 and is now accessible by 2-wheel drive vehicles. A foot trail extends one mile from the Mokelumne Canal to the South Fork Mokelumne River.
- d. Projections: NEPA studies will be scheduled for 2012 and implementation is projected for 2013.

## 3. Ponderosa Fuel Break, Mokelumne River Segment

- a. Alignment: Anchors to Hwy 26 below Robinson Ranch and descends cross country to the Main Stem Mokelumne River, about one mile and a decent of ~1,000'. At a width of 200' the area of this break will be 25 acres. It is anticipated that this fuel break will someday connect to the Electra Fire Break on the northern slope in Amador County.
- b. Land Ownership: This break crosses a small piece of the Garibaldi parcel (APN 016-027-002) bordering Hwy 26 and then crosses two Long parcels (APNs 014-001-003/008).
- c. Access: The Long driveway offers access to much of this break. There is an old miner's road to the Hawkins Group of Mines that may provide access, but it needs to be mapped and brushed to be sure.
- d. Projections: NEPA studies and implementation have not been projected.

## 4. Ponderosa Fuel Break, Calaveras River Segment

- a. Alignment: This break will be anchored to the parcels owned by Scott Zellers near Hwy 26 and descends south down the dominant ridge to the North Fork Calaveras River, about one 1.1 mile and a decent of ~960'. At a width of 200' the area of this break will be 26.4 acres.
- b. Land Ownership: From top to bottom, this break will cross the following parcels: Scott Zellers (APNs 014-021-001/003), BLM (APN 014-005-007), and Ponderhills LLC (APNs 14-005-006 & 020-001-096).

- c. Access: The road network on the Zellers property offers access to the top of this break. Ponderosa Way offers access to the break in the deep Canyon.
- d. Projections: NEPA studies and implementation have not been projected.

**PERIMETER LINE OF DEFENSE ON THE WUI**

The Perimeter Fuel Break was designed to follow the canyon rim near the WUI. It will be a 2-300' wide shaded fuel break that is usually outside the WUI. When the roads on the WUI are cleared, the fire service will be able to transport firefighters and equipment throughout the Perimeter Fuel Break.

Work on the Perimeter Defense actually commenced in 2010 with the construction of ~57 acres of shaded fuel break by BLM on their property and this effort is described below (Appendix 4).

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**INNER AREA OF DEFENSE**

Creation of a pre-fire plan inside the WUI is a challenge because there are ~368 parcels averaging 17 acres and most of them are under private ownership. A collaborative strategy between these home owners and the fire service will be required to reduce the risk of catastrophic fire. The components for the Inner Defense are listed below with short descriptions of each. In general, each component has deficiencies requiring corrective action by the responsible agency. There is a need for the stakeholders (Community, Central Calaveras Fire District, Cal Fire and CPUD) to set local standards and operating procedures for each component.

1. Defensible Space. California Code, PRC4291, requires home owners to maintain a 100' perimeter of defensible space around their structures and Cal Fire enforces this code by conducting Fire Safety Inspections and issuing Legal Notices to correct violations. During the pre-fire season of 2010, Cal Fire Battalion 3 conducted ~1,500 inspections in their area of responsibility which includes West Point, Wilseyville, Glencoe, Rail Road Flat, Mountain Ranch and Sheep Ranch (Battalion Chief Chris Post, personal communication). Unfortunately, the inspection results are not available and neither the number of homes inspected in Glencoe/Rich Gulch nor the rate of code compliance is known. Cal Fire is encouraged to publish these results in the local news to inform the Community on the collective status for their home defense. Recognizing that the resources of the fire service are sparse, the Central Calaveras Fire District and community volunteers might support Cal Fire by creating maps, scheduling inspections and maintaining results with statistical analyses in a GIS.

The Fire Safe Council supports the Defensible Space Program by providing the following services when funding is available:

- a. No Cost Lot Clearing for Seniors and Disabled Persons
- b. No Cost Door to Door Chipping Service
- c. Roadside Right-of-Way Fuels Reduction
- d.

Once again, the frequency that these services are used in Glencoe/Rich Gulch is unknown and the Fire Safe Council is urged to publish its coverage in the local news.

2. Road Maintenance and Signage for Emergency Access. The value of Defensible Space is limited if the fire service cannot drive to the scene. During an emergency, the fire captain must evaluate the risk to crew and engine before entering a road or driveway. This decision depends on the road surface, roadside fuel clearance, vertical clearance, slope, and turnarounds. It is recommended that the annual Cal Fire homeowner inspections evaluate roadway access and provide a deficiency report to the responsible entity, home owner, road district or County. Signing and driveway standards should conform to the "fire and life safety chapter" of the Calaveras County Health and Safety Code (Chapter 8.10.200). At a minimum, the annual inspection would determine if:

- a. An address sign is posted at the head of the driveway with reflective letters that are 3" high and a 3/8" stroke. Letter coloring must contrast with the background.
  - b. The driveway is at least 10' wide and has 10' fire fuel clearance from the road edge and 15' vertical clearance.
  - c. The roadway has a turnaround that could be a terminus bulb or hammerhead 'T'.
3. Fire Hydrants. As mentioned above, CPUD maintains a gravity fed system of hydrants using water from the Jeff Davis Reservoir (Fig 11 Hydrants). Of major concern is that neither the Central Calaveras Fire District nor Cal Fire has any information on the serviceability of these hydrants. Upon request, CPUD provided their data on each hydrant (Table 1).

Table 1. Data provided by CPUD for fire hydrants in Rich Gulch, Glencoe & Rail Road Flat.

BRAND	PSI	Main in inches	LOCATION	P M P	O U T L E T	STATIC	R E S	FL O W	ID	Size	YEAR
American Darling	133	18	Rich Gulch and Hwy 26			133			18H-10		1993
Mueller	103	16	Flat Gulch Road			103			18H-20	4 1/2	1984
Wharf head (Jones)	214	2	Lower Dorray Road			214			18H-30	2 1/2	2010
M & H 445310	62	20	15069 Hwy 26			62			18H-40		1978
M & H 445310	15	6	15151 Stormy Lane			15			18H-50		1961
Mueller	5	27	Glencoe Pump station			5			18H-60	4 1/4	1970
Mueller	120	6	2540 Blue Ridge			120			18H-70	4 1/4	1971
M & H 445310	155	6	4875 Independence Rd			155			18H-80		1970
M & H 445310	156	6	4733 Independence Rd			156			18H-90		1970
Kennedy K81 - D	112	12	Post Office			112			18H-100	5 1/4	2001
Kennedy K81 - D	109	12	250 Rail Road Flat Rd			109			18H-110	5 1/4	2001
Kennedy K81 - D	82	12	56 Railroad Flat Rd			82			18H-120	5 1/4	2001
Kennedy K81 - D	55	12	686 Ridge Road			55			18H-130	5 1/4	2001

**Alpine County Community Fire****BEAR**

Mueller	70	6	Simpson road top Hydrant			70			18H-140	5 1/4	2003
Mueller	100	6	Simpson road bot Hydrant			100			18H-150	5 1/4	2003
Kennedy K81 - D	40	12	1089 Ridge Road			40			18H-160	5 1/4	2001
Kennedy	65	12	1398 Ridge Road			65			18H-170	5 1/4	2001
Kennedy	75	12	1624 Ridge Road			75			18H-180	5 1/4	2001
Mueller	130	6	4530 Independence Road			130			18H-190	4 1/2	1988

Note that the flow rate in gallons per minute (gpm) has not been determined for any of the hydrants and this is the very value needed by the fire service for hookup. According to the National Fire Protection Association, hydrants should be classified in accordance with their rated capacities, the flow available at 20 psi residual pressure or another designated pressure as follows:

NFPA 291, Paragraph 5.1

- ) Class AA—Rated capacity of 1500 gpm or greater
- ) Class A—Rated capacity of 1000-1499 gpm
- ) Class B —Rated capacity of 500-999 gpm
- ) Class C —Rated capacity of less than 500 gpm

NFPA 291 further states that the tops and nozzle caps of each hydrant should be painted with the following capacity-indicating color scheme:

Paragraph 5.2.1.2

- ) Class AA —Light blue
- ) Class A —Green
- ) Class B —Orange
- ) Class C —Red

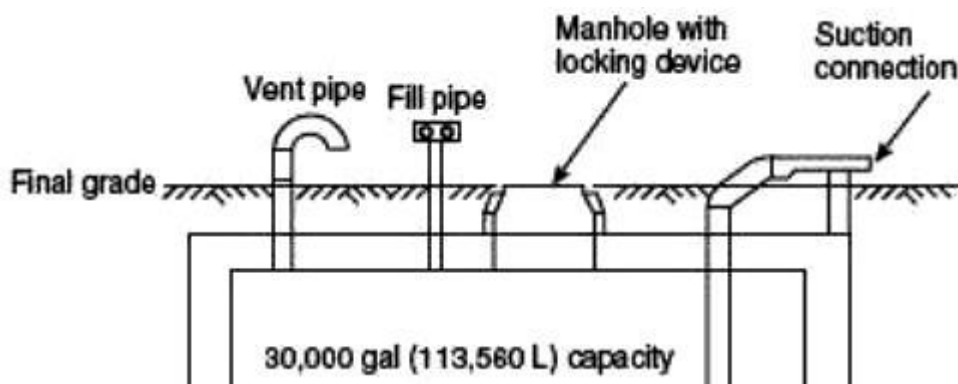
Since the CPUD has not determined the rated capacity for any of the hydrants, the current colors may, or may not, represent the actual capacity. It is important that the CPUD comply with the national standards so that both local and visiting fire fighters do not waste precious time seeking water from substandard or non-functional hydrants. Note that the California Public Utilities Commission (PUC) set the minimum flow requirement in rural residential areas with a lot density of two or less per acre at 250 gpm. Local hydrants not meeting this minimum must be removed from service.

It is recommended that the Chief of the Central Calaveras Fire District work with CPUD to create a plan to bring all hydrants into NFPA compliance. The plan should include annual maintenance inspections by the CPUD and operational inspections by the Central Calaveras Fire District to assure that their engines carry the fittings needed for hookup and their firefighters can operate each hydrant safely. The Public Utilities Commission “encourages all water utilities to provide fire hydrant service by agreement between the utility and the fire protection agency responsible for the use of the hydrants” and a formal Joint Use Agreement (JUA) might be the preferred instrument to clarify responsibilities for maintenance, operations and funding.

This agreement might be modeled after the simple agreement that the Calaveras County Water District implements with Fire Districts (Appendix 5). CCWD pays the Fire District \$20/year to test and paint each hydrant. To insure the accuracy of the flow data, CCWD purchased the test equipment. This agreement insures that the Fire District becomes familiar with the location and the operation of each hydrant. The Fire District takes this agreement seriously since its flow records affect their ISO rating.

4. Additional Sources of Fire Water. The CPUD hydrant system does not serve the Hwy 26 corridor of Glencoe east of the Ridge Road intersection and the Central Calaveras Fire District is urged to consider the installation of stand-alone storage system(s) in this area. One water point for consideration is the BLM land inside the WUI at the cross of Old Valentine Gulch Road and Hwy 26 where there is a turn-out and staging area suitable for engines and water tenders. A 25,000 gallon water tank installed on top of the adjacent hill could provide 100’ of head to a hydrant at the turnout, a distance of ~580’ (Fig 13 Aerial Map). Electrical service is on site and the neighbor has offered access to his well.

The use of water cisterns should also be considered. The spring at the Fire Station in Glencoe might be developed with the installation of a buried cistern according to the following design. The flow of this spring is unknown, but it might provide sufficient water in the winter to fill the cistern. Likewise, a cistern might be considered on Deardorff Road below the two ponds on Humbug creek.



It is recommended that the Central Calaveras Fire District develop a water plan for storage tanks and cisterns in Upper Glencoe and draft a grant for funding. It is further recommended that the Calaveras County Chief's Association consider the installation of cisterns as another option for homeowner water storage as discussed below.

5. Homeowner Water Storage. Calaveras County requires new home owners to pay \$900 for the purchase of water tenders or install a 2,500+ gallon water storage tank with an engine hookup. Information on the status of the County's Water Tender Program and Water Enhancement Fee, consult the Board of Supervisors Agenda Submittal by Clay Hawkins dated 7-Dec-2010 (<http://ccwgov.co.calaveras.ca.us/Portals/0/Archives/BOS/BoardDocs/2010/20101202bp.pdf>).

While these homeowner tanks may offer another source of water, there are no data on their number, location, volume, access and hookup fittings. At the moment, it is the operational policy of the Central Calaveras Fire District to assume that these tanks are not serviceable and to ignore them during a fire emergency.

As a first step to test the validity of this assumption, a 'Homeowner Tank' layer was added to the GIS of the GRG-CWPP to register the location of tanks with volumes 2,500+ gallons.

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As of January, 2011, five homeowner water tanks were recorded (Fig 11) and surveyed by former Chief Piccinini for serviceability using the general criteria that follow. It is recognized that the strategy of fighting fire at each site is different so criteria for serviceability might differ among the sites.

- a. Engine Access (for details see <http://www.centralcalaverasfire.org/residential.htm> )
  - i. Visible road names and driveway addresses posted on signs with reflective letters that are 3" high with a 3/8" stroke and colors that contrast with the background.
  - ii. Road width of 12' minimum and vertical clearance of 13.5'. Road surface that supports a 40,000 lbs. engine. A terminal turnaround present for driveways >300' in length. A grade <=16%.
  - iii. Parking space next to the standpipe that does not block vehicular traffic.
- b. Standpipe
  - i. Standpipe clearly visible, painted red and signed 'FDC' for 'Fire Department Connection'.
  - ii. 2 1/2" brass valve with fire thread located 36" above the parking space surface.
  - iii. For gravity fed systems, schedule 40 PVC pipe or thicker must be used. To assure adequate head pressure (psi) and flow (gpm) the bottom of the tank must be above the standpipe.
  - iv. For suction systems, 5" galvanized pipe must be used as PVC might collapse.
- c. Tank
  - i. 2,500 gallon minimum capacity filled to the top.
  - ii. For gravity systems use 2 1/2" schedule 40 PVC fittings and a brass gate valve. For suction systems, use 5" galvanized pipe.

None of the five tanks passed inspection. The signage from the State highway or County road to the standpipes was inadequate. None of the standpipes were painted red and marked 'FDC'. The tanks were filled between 85% & 100% of capacity, but only one tank had enough head pressure to drain the entire tank while the remaining would drain only 20% to 66% of capacity. The survey notes follow:

Homeowner Water System Survey

Former Chief Piccinini & Pat McGreevy (6-Jan-11)

Property	Protect	Needed		Access Road	Gallons Stored	Gallons Available	Notes
		Signage	Standpipe				
McGreevy	Home	Address & directions to standpipe	2.5" fire thread; <36" above ground; Not red.	Improve clearance	5,000	3,300	Move Standpipe downhill for max head pressure.
Mitchell	Home	Address & directions to standpipe	5" fire thread- must reduce to 2.5"; <36" above ground; Not red		2,500	1,250	CCFD Won't use to protect home. Move tank up hill above house for max head pressure & to serve 3+ neighbor's houses.
Diers	Home	Address & directions to standpipe	2.5" fire thread; 40" above ground; Not red.		2,250	2,250	Unlikely that fire fighters will see standpipe; Paint standpipe red and post a 'FDC' sign. Then call CCFD to register location in map book.
Elias	Home	Address & directions to standpipe	1.5" fire thread; 3" above ground; Not red.	Improve clearance	2,125	425	CCFD won't use to protect home. Must plumb tank with 2.5" galvanized steel for drafting.
Wilensky	Cider Plant, not home	Sign route to standpipe	2.5" connection	Mulch pile blocks gate; Pasture won't support 40,000 lbs. engine	Not full		Define & sign route to standpipe.

It is recommended that:

- a. The Central Calaveras Fire District includes a detailed description of a serviceable on-site water storage system on their website.
  - b. Landowners are encouraged to request an inspection from Central Calaveras Fire District when their system conforms to its recommendations.
  - c. If the system passes inspection, the Central Calaveras Fire District should label the address sign and standpipe with an 'FDC' certification and register its location in the Department's map book.
  - d. The Central Calaveras Fire District should work through the Calaveras County Fire Chiefs Association to change the building code so that the local fire districts approve new construction site plans and conduct the final inspection for all homeowner fire water systems.
6. BLM Hazardous Fuels Reduction Variance Program. Property owners who share boundaries with BLM land may apply for permits to clear and maintain a 100' buffer on the BLM side of the fence. All fuel reduction activities including the cost associated with those activities are the responsibility of the applicant. The BLM Mother Lode Field Office will issue free permits in their service area which includes Calaveras County. Permit applications are considered individually and are written specifically for each site stipulating the area to be cleared and the methods to be used. Prior to permitting, BLM will survey each area for threatened and endangered plants and animals as well as cultural resources and natural resources that require special attention or protection.

In 2010, three homeowners from Glencoe received permits and BLM, not the owner, cleared the buffer zones. To promote this program in 2011, an additional 43 private parcels that qualify for permits have been identified using GIS (Appendix 6). BLM has requested that each parcel owner complete their short application and submit them together as a Glencoe/Rich Gulch package. It is hoped that BLM will conduct the environmental surveys in the spring of 2011 and bundle the permitted parcels into a single fuel reduction contract with a local contractor funded by the Fire Safe Council. While the initial cost for construction of the fuel break would be free to the parcel owner, its long-term maintenance would be the responsibility of owner.

7. Roadside Right-of-Way Fuels Reduction. The combination of vehicular fires and roadside arson are the most common causes of wildland fires in Glencoe/Rich Gulch and stress the need for fire fuel clearance along State Hwy 26, County roads, (Ridge, Independence, and Deardorff), and the Three Cent Flat Road District's network. Parcel owners bordering roads should be encouraged to accept responsibility for cutting grass and removing ladder fuel on their frontage. In addition, Cal Fire should survey the roads at the beginning of fire season and assign inmate crews to reduce fuels in critical areas. Right of way road clearance projects should be submitted to the Fire Safe Council for funding.

8. Incentives. Without a doubt, support from the fire service to property owners as described above is significant and should be matched by the private sector. However, motivating home-owners towards forest restoration and long-term maintenance is a challenge. Typical constraints include a limited knowledge of forestry, lack of 'logging' skills, health constraints, and the availability of equipment (chain saws, pole saws, chippers and trucks). Despite these constraints, it is encouraging to see some home owners spend considerable resources to minimize fire fuel on their land. On the other hand, it is discouraging to witness the return of dense Manzanita during the following five years from the lack of maintenance (Fig 15 Failed Break). Private owners with old fuel breaks needing maintenance are encouraged to contact the Fire Safe Council for possible assistance.

## **PONDEROSA WAY**

In 1935, Roosevelt's Civilian Conservation Corps constructed Ponderosa Way through the Sierra Foothills from the Pitt River in the north to the Kern River in the south, a distance of 650 miles. This road was sandwiched with a 100' to 200' fuel break to protect the timberland in the upland Sierras from brush fires in the foothills. It also served as a motorway for the expeditious movement of fire fighters and equipment (Calaveras Prospect, 1934a). After the CCC was disbanded in 1942, Ponderosa Way was maintained by the Bureau of Land Management (BLM) and then by the California Department of Forestry until the 1980s when it became too costly. Since this time, parts of the road have been maintained by the local Counties, but most of it has been claimed by private landowners and many of them have installed gates that deny public access.

The following discussion divides Ponderosa Way into two segments:

1. Mokelumne River Segment from Hwy 26 north to the Mokelumne River Bridge on the Main Stem Mokelumne River;
2. Calaveras River Segment from Hwy 26 south to Jesus Maria Road.

Both Cal Fire and the Central Calaveras Fire District deem these segments essential for the expeditious movement of fire fighters and equipment through Central Calaveras County during suppression operations. These agencies prioritize the Calaveras Segment over the Ponderosa Segment.

### **Mokelumne River Segment.**

The Mokelumne Segment of Ponderosa Way from the Hwy 26 to the Mokelumne River Bridge (Caltrans 30F0003; alias CC Bridge) on the Main Stem Mokelumne River is 1.9 miles long with an elevation drop of 1,100 feet (Fig 16). This road provides the only public access to the Mokelumne River from Mokelumne Hill to the North Fork Bridge below West Point. While the Mokelumne segment of Ponderosa Way is on the Calaveras County Master Road List, the Department of Public

Works has not maintained it for the last 10 years because of budget constraints. Today, the drainage system barely works, 5+ culverts need replacement, deep ruts limit traffic to vehicles with high clearance, and three slides threaten closure.

The Bridge is on PG&E property, but is owned by Cal Fire. PG&E is concerned about liability and installed bollards to keep vehicles off the bridge and a chain link fence to exclude pedestrians. The fence has been destroyed by vandals and the deck of the Mokelumne was burnt by an arsonist in August, 2005. Since the bridge is no longer passable, Caltrans has removed it from its inventory and will no longer inspect it or report its condition to the Federal Government. Earlier (2002?) the bridge was identified by Caltrans as 'Functionally Obsolete' with a sufficiency rating of 45.7 (<80 is considered deficient by FHWA). These low ratings qualify the bridge for HBP funding (Calaveras County 2007 Regional Transportation Plan, <http://www.lscstahoe.com/projectsPDFS/Calaveras%20Final%20RTP%202007%20together.pdf>). This bridge is not listed in the Caltrans Historic Bridge Inventory, but its link to the CCC and WWII could make it eligible for protection under CEQA and other laws. While restoration of the bridge would provide access to Ponderosa Way in Amador County, public easements across private ranch land are not in place. For more information, consult Nichols (2009) and Phelps (2009 a,b,c).

### **Calaveras River Segment.**

This Segment runs south from the Hwy 26 across the Ponderosa Way Bridge over the North Fork Calaveras River to Jesus Maria Road, a distance of six miles. Long stretches of this segment run along the mountain ridge, the preferred location for a fuel break. In the past, the off-road stretches of the ridge were cleared by dozers to maintain the continuity of the break. Aerial views of the ridge and the road are shown in Google maps at <http://bridgehunter.com/ca/calaveras/30F0002/> .

The Calaveras River Segment is not on the County Master Road List and it belongs to private landowners. Hearsay has it that Cal Fire maintained this segment under access agreements with the landowners until the mid 1980s and that the original maintenance agreements are in a file cabinet at the TCU office in San Andreas. Today, this road is in good condition and passable in almost any vehicle, pickup to fire engine. Maintenance is being performed by local landowners including a segment with asphalt paving (Compliments of land owner John Valentine).

The Ponderosa Way Bridge, number 30F0002 (alias CA 30F-2), is owned by Cal Fire. A description of the bridge from the National Bridge Inventory is given at the following web site under number BH 10837 (<http://bridgehunter.com/ca/calaveras/30F0002/> ). The wood deck of the bridge needs repairs and the integrity of the concrete abutments and steel structure awaits an engineering inspection and report. Note that weight limits of the bridge are not posted so hauling a heavy

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dozer over this structure by tractor/trailer would be precarious. In January 2011, Cal Trans rated this bridge as Structurally Deficient with a sufficiency rating of 43.5 (<80 is considered deficient by FHWA) so it is eligible for HBP funding (<http://www.dot.ca.gov/hq/structur/strmaint/local/localbrlist.pdf>).

**Action Items.**

Towards this end, the following stakeholders met on 19-Jan-11 in West Point to develop a strategy to repair and maintain Ponderosa Way: D2 Supervisor, Calaveras Public Works, Cal Trans, BLM, Calaveras Historical Society, Calaveras Parks & Recreation Commission, Sierra Nevada Conservancy and the Stewardship Counsel. As of 26-Jan-11, the following actions are under consideration:

## Calaveras River Segment.

1. Funding has been secured for Cal Fire crews to brush the Calaveras River Segment in 2011. (Bill Fullerton, Foothill Firesafe Counsel, personal communication). Road maintenance with a Cal Fire dozer and road grader may follow brushing.
2. An engineer inspection and report on the Ponderosa Way Bridge is needed to determine repair costs before implementation can proceed. Bridge weight capacities must be determined and posted.

## Mokelumne River Segment.

1. Cal Fire is seeking funding to brush the Mokelumne River Segment. After it is brushed, Cal Fire may deploy a dozer and grader to start road restoration with initial focus on drainage (Chief Post, personal communication).
2. BLM has offered road fill material from its quarry near Hwy 26 to County free of charge (BLM Field Manager Bill Haigh, personal communication).
3. Scott Anderson, County Roads and Bridges, has requested a plan with cost estimates to replace the 5+ culverts and repair the three road slides. Pat McGreevy has drafted a plan and will submit it to County in April, 2011. He is also searching for sources of funding.
4. The chain-linked fence to exclude people from the bridge must be replaced.
5. Pat McGreevy will also draft a resolution to the Board of Supervisors to close the road to vehicular traffic during the wet season as part of a maintenance program.

**2010 FUEL REDUCTION PROJECTS**

During the first half of 2010, BLM completed NEPA studies on ~57 acres of federal land on the northern edge of the WUI in Glencoe and then created a shaded fuel break by removing the heavy underbrush, ladder fuels and over-crowded trees (Figs 17-20 Images; Appendix 4). Most of this work was done by hand crews and they created over 500 slash piles measuring 4'x4'x4' that will be burned by BLM and Cal Fire. A few acres of Manzanita were cleared by mastication and the wood chips were left on the forest floor. Finally, a derelict pine plantation was thinned and the culled logs were sold for animal bedding with profits returning to the Glencoe project. BLM contributed over \$60,000, both in-kind and directly, towards this project. More than \$20,500 in funding and support came from the California Indian Manpower Coalition, Calaveras-Mariposa Community Action Agency, Mother Lode Job Training and Cal Works. The cost per acre to build shaded fuel breaks in Glencoe approximates \$1,400.

It is important to note, that private landowners on the northern WUI have maintained ~59 acres of fuel breaks for years on the borders of their property (Fig 21). When combined, the BLM and private land owners have created ~116 acres of fuel breaks on the Perimeter Fuel Break on the WUI (Fig 22)!

#### **TIME LINE**

2011

January 31: **Community Consensus Meeting**, Veterans' Hall, Glencoe to endorse GRG-CWPP.

Spring: **Hazardous Fuel Reduction Variance Program**, submit applications for 41 parcel owners to BLM.

Spring: **BLM Environmental Assessment** for variance applicants.

Spring: **Cal Fire Home Inspections for Defensible Space**.

Spring: **Cal Fire signs Cooperative Agreements with Private Landowners** to brush the Calaveras River Segment of Ponderosa Way.

Summer: **BLM builds fuel breaks** under 2011 Variance Program.

Summer: **Cal Fire brushes the Calaveras River Segment** of Ponderosa Way and performs road repairs.

Summer: **Submit a plan to Calaveras Public Works** to restore the Mokelumne Segment of Ponderosa Way from Hwy 26 to the Mokelumne River

Fall: **Central Calaveras Fire District Develops a Water Plan** on the serviceability of CPUD fire hydrants and homeowner storage tanks and a grant application for a new 25,000 gallon tank & standpipe in Glencoe.

Fall: **BLM/Cal Fire Burn Slash Piles** from 2010 fuel break projects.

November: **GRG-CWPP Review & Revision.**

2012:

Spring: **BLM Environmental Assessment** on Alabama and Valentine Fuel Breaks.

Spring: **Cal Fire Home Inspections for Defensible Space.**

November: **GRG-CWPP Review & Revision.**

2013:

Spring/Summer: **BLM Builds Alabama and Valentine Fuel Breaks.**

## RECREATION

While the primary focus of the CWPP is on fire protection, recreational opportunities will be exploited as they are identified. The removal of the dense brush creates a beautiful forest with tall trees over an open floor with historic roads and ditches that make great trails for pedestrians, bicyclists and equestrians. To experience this new glimpse of nature, the reader is encouraged to explore the 2010 fuel break in Glencoe. To promote the public use of our BLM lands, the Sandy Gulch Park and Recreation Council, a 501(c)(3) serving Northeastern Calaveras County, is encouraged to create interpretive trail pamphlets with maps of public roads and canals for pedestrians, equestrians and bicyclists. The trail pamphlets might include the following routes:

1. Ponderosa Way North from Hwy26 to the 'Old Swimming Hole' on the Main Stem Mokelumne River with side hikes:
  - a. Mokelumne Canal from Ponderosa Way going west for a mile.
  - b. Butterfield Trail from Ponderosa way going east for two miles.
2. Mokelumne Canal Road 5 from Upper Dorray Road to the Mokelumne Canal and on to the confluence of the North and South Forks of the Mokelumne River.
3. Historic Valentine Gulch Road from Hwy 26 to the South Fork Mokelumne River via Clark's Ditch Extension, cross country to Houston Road, Valentine Gulch Road, across the Mokelumne Canal and down the Blue Bell Trail to the river. This route can be extended down stream to the confluence of the Middle and South Forks of the Mokelumne, a remote treasure of cascading waterfalls and intermittent pools.

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4. Historic Valentine Gulch Road from Hwy 26 to Clark's Ditch Extension and the network of trails and ditches on the BLM fuel break installed in 2010.

It must be emphasized that some these proposed recreational routes are currently under heavy use by OHVs which compromises the maintenance of a healthy watershed. While BLM's Sierra Resource Management Plan prohibits the use of OHVs in the Mokelumne Watershed, it has not posted its rules at the main access points or made any attempt to enforce them. OHV use will only increase with the installation of the shaded fuel breaks proposed in this CWPP and BLM is encouraged to implement its transportation policies.

## PROJECTS

Project 1: Finish 2010 fuel break project

- J Brush BLM parcel APN 012-006-021 that stretches from Hwy 26 near Mosquito Gulch to the Banner Mine (~2 Ac).
- J Burn 500+ slash piles

Project 2: Secure Cal Fire cooperative agreements with private landowners to perform fire fuel maintenance on the Calaveras River Segment of Ponderosa Way. Brush and repair the road. Conduct a Caltrans inspection and report that lists the repairs needed on the Ponderosa Way Bridge.

Project 3: Secure funding to brush and grade the Mokelumne River Segment of Ponderosa Way with focus on drainage. Submit a plan to County Public Works to restore the road for emergency access and secure funding for implementation. Coordinate with all stakeholders to determine the fate of the Mokelumne River Bridge and develop a strategy to either dispose or fix it.

Project 4: Encourage BLM and Cal Fire to initiate the NEPA studies and easement agreements with private landowners so that the following fuel breaks can be constructed in 2012: Alabama (30 Ac), Valentine (20Ac), Ponderosa Mokelumne Segment (25 Ac), and Ponderosa Calaveras Segment (26 Ac).

Project 5: Implement the 2011 BLM Variance Program.

- J Obtain permits for 43 parcels bordering BLM land Conduct NEPA studies on 100' buffer on BLM side of the fence.

- ) Construct the 100' clearance on BLM side of the fence (Acres to be determined later).

Project 6: Complete the Perimeter Fuel Break (Acres to be determined).

Project 7: Brush the roads on the WUI for emergency access by the fire service (Acres to be determined).

Project 8: Develop a water storage plan with the Central Calaveras Fire District that sets standards for homeowner water systems. The plan should consider the installation of 25,000 gallon water tanks and 30,000 gallon cisterns with standpipes in areas without fire hydrants:

- ) A tank on BLM land just west of Three Cent Flat Road north of Hwy 26
- ) A cistern on Deardorff Road north of Hwy 26 and at the Glencoe Fire Station.

Project 9: Develop a JUA between CPUD and the Central Calaveras Fire District on the operation, maintenance and repair of fire hydrants.

Project 10: Encourage Cal Fire to inspect all homes in Glencoe/Rich Gulch for driveway signage, driveway clearance and defensible space around structures.

Project 11: Explore and map historic roads and ditches south of Hwy 26 and Wet Gulch to determine if the WUI should be modified.

Project 12: Support the Fire Safe Counsel to create a homeowner incentive program to maintain private fuel breaks rather than letting them return to their pretreatment, hazardous fuel load.

### **FUNDING**

Fuel reduction projects can be divided into three funding phases: pre-construction, construction and long-term maintenance. The **pre-construction phase** requires a scope of work, stakeholder approvals and environmental studies that can only be conducted during the flower season, March to June. It must be emphasized that Botanists and Archeologists are in short supply during the spring and that environmental studies are expensive. We in Glencoe have been fortunate as BLM has used its own personnel and funding to complete the environmental studies for the 2010 fuel reduction project.

This **construction phase** for the 2010 project in Glencoe was funded from a variety of sources including BLM, Foothill Fire Safe Council, California Indian Manpower Coalition, Calaveras-Mariposa Community Action Agency, Mother Lode Job Training and Cal Works. This project stopped on at least three occasions as the funds from one source were expended, and then restarted as funds from other sources appeared. Two funding fundamentals emerged from this project:

1. Always have NEPA/CEQA approved, shovel-ready projects on file that qualify for new funding the moment it appears, and
2. Pool funding from a variety of sources to augment the traditional sources of funding from BLM, Fire Safe Council and Cal Fire.

Funding for the **maintenance phase** is a problem as it must continue forever, else the original investment in pre-construction and construction are lost. One would hope that maintenance costs could be minimized with time as plant succession proceeds towards a climax forest that shades out the prolific growth of underbrush. This point underscores the need for research to accelerate the creation of a climax forest or shaded fuel breaks in the Mokelumne watershed.

Traditionally, BLM, Cal Fire and the Fire Safe Council have maintained fuel breaks in the wildland, but this arrangement is inequitable in our watersheds where EBMUD, Stockton Ease Water District, PG&E and the Community reap the greatest benefits. Both of these utilities employ professional rangers who maintain their watershed lands (i.e. EBMUD's Comanche & Pardee Reservoirs) and one wonders if these utilities would partner with BLM, Cal Fire and the Community to do the same in the Mokelumne Watershed. It is recommended that Amador/Calaveras Consensus Group invite EBMUD and PG&E to collaborate with BLM and Cal Fire to write the detailed plan for the Outer Line of Defense in the current CWPP.

While the Foothill Fire Safe Counsel, Cal Fire and BLM are the traditional source of funding for wildfire prevention other sources should be sought like the 'State and Private Forestry' organization that funds projects on private property. In addition, AmeriCorps and other sources of 'free labor' should be identified.

#### **PLAN CERTIFICATION & MODIFICATION**

The Healthy Forest Restoration Act of 2003 requires that the CWPP be certified by the Central Calaveras Fire District, Cal Fire, the Community and the Calaveras Board of Supervisors.

1. **Central Fire:** Since the GRG-CWPP makes many recommendations for action by Central Fire, it is imperative that its Board approve of the plan and authorize its Chief to sign;
2. **Cal Fire:** Likewise, this plan advances many recommendations to Cal Fire for action and it is imperative that the Battalion 3 Chief endorse the CWPP;
3. **Community Consensus:** After the chiefs have endorsed the CWPP , it must be presented to the Community in a public meeting for approval. The County Supervisor representing Glencoe and Rich Gulch will be authorized to sign on behalf of the Community after consensus is reached. Finally, the minutes for the consensus meeting will be included in the CWPP as an appendix (Appendix 6).
4. **Calaveras Foothill Fire Safe Council:** After the above certifications are obtained, the GRG-CWPP will be submitted to the Calaveras Foothill Fire Safe Council for attachment to the Calaveras-CWPP.
5. **Calaveras Board of Supervisors:** The Council will obtain BOS approval for the county wide CWPP, including this Community Plan as an attachment. The certification page for the GRG-CWPP follows:

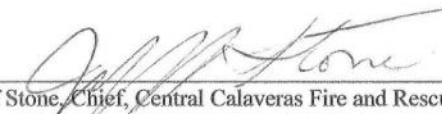
The GRG-CWPP will be reviewed annually in a Community consensus meeting when major modifications can be made and certified according to the above process. Minor modifications to the GRG-CWPP can be made at any time with approval by Central Fire, Cal Fire and the local Supervisor.

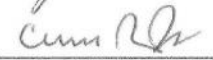
**Glencoe/Rich Gulch-Wildfire Protection Plan  
Community Consensus Page**

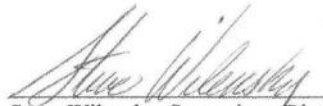
The Glencoe/Rich Gulch-Wildfire Protection Plan developed by the communities of Glencoe and Rich Gulch:

- The plan was developed as a collaborative effort between the citizens, Central Fire, Cal Fire and BLM;
- The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment needed protect Glencoe and Rich Gulch from catastrophic fire.
- The plan recommends measures to improve emergency access, defensible space and the availability of water for fire suppression.

The Glencoe/Rich Gulch-Community Wildfire Protection Plan has been reviewed and endorsed by the following agencies:

  
\_\_\_\_\_  
Jeff Stone, Chief, Central Calaveras Fire and Rescue District 6/17/11  
(Date)

  
\_\_\_\_\_  
Chris Post, Battalion Chief, Battalion 3, Tuolumne-Calaveras Unit 6/15/11  
(Date)  
California Department of Forestry and Fire Protection

  
\_\_\_\_\_  
Steve Wilensky, Supervisor, District 2, County of Calaveras 6/15/11  
(Date)  
Representing the Communities of Glencoe and Rich Gulch



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Foothill Conservancy

(<http://www.foothillconservancy.org/>)

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[http://www.thewatershedcenter.com/index.php?option=com\\_frontpage&Itemid=1](http://www.thewatershedcenter.com/index.php?option=com_frontpage&Itemid=1)

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**Appendix 1. GRG-CWPP Collaborators**

The GRG-CWPP was initiated by the

, a partnership of citizens, private companies and public agencies that focus on the creation of a sustainable forest economy in the Central Sierra Nevada between the Mokelumne and Stanislaus Watersheds (<http://www.acconsensus.wordpress.com>). This effort strives to employ a hundred people to remove hazardous fire fuel and convert it into fuel for a local Co-Gen plant and other products like animal bedding, stove pellets, lumber, fence posts and poles. Amador-Calaveras Consensus has secured funds, trained and equipped local crews, and provided strong support for the upgrade of the Co-Gen plant owned by [Buena Vista Biomass Power](#) in Lone, CA. This plant is scheduled to open in 2011, and will generate 18 megawatts of clean electricity for 16,000 homes using 210,000 tons of woody biomass fuel every year which translates into one 40' truck load of chips every hour of every day. The biomass will be derived within a 50 mile radius of Buena Vista using urban wood diverted from landfills, agricultural byproducts from orchards, and woody biomass from foot hill forest management programs to reduce fire fuels, restore forest health and thin derelict pine plantations. Whenever possible, the GRG-CWPP will finance its projects by the sale of woody biomass.

**Table 1. Agencies that have contributed and/or reviewed the GRG-CWPP.**

<b>Agency</b>	<b>Contributor</b>
<b>Calaveras County</b>	
GRG-CWPP Coordinator	Pat McGreevy*
Calaveras County District II Supervisor	Steve Wilensky*
Central Calaveras Fire and Rescue Protection District	Chief Jeff Stone*
West Point Fire District	Chief Jim Carroll*
Calaveras Foothills Fire Safe Council	Bill Fullerton*
North Calaveras Emergency Preparedness Group	Dennis Lewis*
Mi-Wuk Tribal Council	Briana Creekmore*
Three Cent Flat Road Community Service District	Walter Wiseman
Calaveras County Park & Recreation Commission	Pat McGreevy*
Mokelumne Coast to Crest Trail Council	Steve Diers

**Regional**

Buena Vista Power Biomass, Lone, CA Jesus Arredondo\*

**State**

California Department of Forestry  
& Fire Protection Chris Post\*

California Department of Fish and Game Kent Smith\*

**Federal**

Bureau of Land Management, Mother Lode Office Bill Haigh\*

USFS Stanislaus, Calaveras District Teresa McClung\*

Central Sierra Resource Conservation & Development District Dick McCleery\*

**Environmental Organizations**

Upper Mokelumne Watershed Council

Foothill Conservancy Katherine Evatt\*

Sierra Club, Calaveras Steve Elias

**Water Districts**

Calaveras Public Utility District Director Bob Dean\*

East Bay Municipal Water District Ranger Steve Diers

\*Member of Amador-Calaveras Consensus Group

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**Appendix 2. Legislation and Guidance on Community Wildfire Protection Plans.**

**Healthy Restoration Act of 2003**

- ) Defines minimum requirements for the Community Wildfire Protection Plan.
- ) Detailed guidance is provided in “Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities, March 2003 (Handbook).
- ) Clearly supports the role of communities in federal land management planning.
- ) Specifies that relevant local government, fire districts, and Cal Fire must collaborate to create the CWPP and mutually agree on its content.

**The CWPP Benefits the Community**

- ) Define and set the boundaries of the Communities’ WUI.
- ) Identify and prioritize areas for hazardous fuel-reduction treatments on USFS and BLM lands in the WUI.
- ) Recommend the types and methods of treatment to be used.
- ) Influence how federal funds for projects on non-federal WUI lands may be obtained.
- ) National Fire Plan prioritizes funding for projects identified in a CWPP.
- ) USFS and BLM can expedite the implementation of fuel treatments identified in a CWPP, through alternative environmental compliance options offered under the Healthy Forest Restoration Act.

**National Fire Plan (Add synopsis in Edition 2 of CWPP)**

**Firewise Communities/USA program**

- ) Motivates and supports voluntary citizen efforts in neighborhoods or small communities to reduce fuels and prepare homes for wildfire

**Appendix 3. Partners.**

Bureau of Land Management

Bill Haigh, Field Office Manager & Brian Mulhollen, Fuels Management Specialist

Bureau of Land Management

Mother Lode Field Office

5152 Hillsdale Circle

El Dorado Hills, CA 95762

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California Department of Forestry and Fire Protection

Battalion Chief Chris Post

West Point Battalion

Tuolumne-Calaveras Unit

P.O. Box 343

22670 Hwy 26

West Point, CA 95255

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Calaveras Foothills Fire Safe Council

Bill Fullerton,

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Murphys, CA 95247

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calaverasfiresafe@sbcglobal.net

Central Calaveras Fire and Rescue Protection District:

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West Point Fire District

Chief Jim Carroll

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GRG-CWPP Coordinators

Pat McGreevy, (209)293.2191, [mcgreevp@volcano.net](mailto:mcgreevp@volcano.net)

Steve Wilensky, District 2 Supervisor

Donnie Ames, Historian

Steve Diers, Ranger/Naturalist, Mokelumne Watershed Unit, EBMUD

**Appendix 4. 2010 Perimeter Fuel Break.**

## Groups work together to cut fire danger

Written by [Michael Kay, The Union Democrat](#) November 02, 2010 09:10 am



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There was a time when the forests of northeastern Calaveras County fed communities. Now they threaten to destroy them.

Decades without thinning and wrongheaded national anti-fire policies have left a tinderbox of thickly grown trees and heavy brush, according to many experts.

It is so bad in some areas that fire officials say if a fire started within the forest it would be too dangerous to leave the road to fight it.

“Our forests, once our friends, have become the most scary thing out here,” said Calaveras County Supervisor Steve Wilensky, who represents the area in question.

The situation has spurred a massive coalition of public, private and nonprofit groups to form a partnership several fire industry veterans call “unique” and “unprecedented.” The goal is to make the forests safe again.

So far, crews have cleared some 70 acres in the West Point area.

Fire breaks — areas where fire will be at least delayed, if not stopped — are in place for the first time in decades.

Sunshine is now plentiful in groves once so closely planted they were called “dog-hair thickets.” There is now ample room for once crowded trees to grow to their full potential.

And it was all done with attention to environmental impacts. Bug-rich snags, elderberry bushes and other biological diversity was carefully marked off and left untouched. Lightweight equipment was used.

The work has its genesis in discussions of the Amador-Calaveras Consensus Project, a community group whose triple aim of preventing fires, protecting the forest and boosting the economy found a one-stop outlet in clearing overcrowded forests.

The project brought together a disparate assortment, from environmentalists and loggers to firefighters and politicians. But they and similar groups did find common ground.

“The one thing that we all agreed on is that what we have does not work,” said Jim Carroll, West Point Fire Chief.

The project has been channeled in large part through Calaveras Healthy Impact Product Solutions. The group aims to train locals to clean up unhealthy forests and use the trimmings to create woodchips that can be sold for a variety of purposes.

Some 24 crew members have been trained to date. Like every aspect of the project, it was a group effort.

Funding and support came from the California Indian Manpower Coalition, Calaveras-Mariposa Community Action Agency, Mother Lode Job Training and Cal Works.

But the multi-agency involvement doesn't stop there. To train the crews, experts came from the El Dorado National Forest, Stanislaus National Forest, West Point Cal Fire, West Point Fire and University of California, Davis. Local historian Julia Costello also helped.

"It's dizzying, isn't it?" said Wilensky.

It's also beneficial. Fire personnel typically know each other and frequently jump from one agency to another. But they don't often collaborate. That is changing in Calaveras County.

"We don't recognize our boundaries anymore," said Joe Piccinini, a fire chief with Mokelumne Hill-based Central Calaveras Fire.

Tallying funding for the clearance work just adds to the list of participants: The Calaveras Foothills Fire Safe Council, Bureau of Land Management, CHIPS, Mountain Ranch land-clearance company Smith Grinding and private money.

Wilensky figures it took "a kind of twisted genius" to create such a convoluted funding picture.

"Nobody could have created this within the boxes they were in," Wilensky said.

Certainly not BLM. One office manages fire protection for some 300,000 acres stretching from Yuba City to Mariposa. And it is staffed by two people.

"You're looking at 100 percent of the fire management for 14 counties," said Jerry Martinez, fire management officer, glancing at his partner, Battalion Chief Brian Mulhollen.

The bureau only recently created a permit process to allow others to go on their land to do clearance. And if they want to clear the many disconnected parcels under their control, scrambling together funding will be required.

The goal is to increase the return on the clippings themselves. During the most recent project, one 4-acre portion produced 18 truckloads that were taken to California Wood Shaving, outside Chinese Camp, to create chips for animal bedding. Running a truck all the way there, however, ate up any margin.

"There was no profit," said Mulhollen. "We can't look at it as an economic machine. But it is a product, if you do it right."

With a biomass plant scheduled to open in May 2011 in Lone — a town close enough for feasible trips — Wilensky has much higher hopes.

He envisions the work as serving as a form of replacement for the area's past and present mainstays of timber and construction. Those industries' boom-and-bust cycles must be left behind, he said.

"Nobody is going to stay in business if they have two good years and three bad years and that goes on for decades," Wilensky said.

Contact Michael Kay at [mkay@uniondemocrat.com](mailto:mkay@uniondemocrat.com) or 890-7477.



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**Appendix 5. CCWD Operation, Maintenance & Repairs of Fire Hydrants.**

ARTICLE XVII  
FIRE HYDRANTS

Section 171. Installation. Installation of fire hydrants shall be included in all distribution systems constructed for acceptance by the District for maintenance and operation. Hydrants being specifically requested by a fire district must necessarily be paid for by the fire district. In any event, the cost of fire hydrants and installation thereof, including necessary valves, pipe and other appurtenances thereto, shall be borne by the applicant.

Section 172. Maintenance and Operations. The following policy sets forth the Responsibilities of participating Fire Protection Agencies and CCWD with respect to operation, maintenance, repair and replacement of public fire hydrants within CCWD's service areas.

A. Definitions of Terms

1, CCWD -Calaveras County Water District

2. Agencies -The fire protection providers are collectively referred to as the "Agencies". It is the intent of this policy to address only those Agencies within CCWD water service areas.

3. Public Fire Hydrant -Any fire hydrant that is not exclusively used as a private fire hydrant and is accessible to the public. This shall include wharf hydrants and standpipes.

4. Private Fire Hydrant -Any fire hydrant which is not available or not accessible for public use on a continuous basis and is exclusively for use of specific property and is located on that property.

5. Operation -The operation of the fire hydrant shall be the physical operating of the hydrant including flushing, flow testing and firefighting.

6. Maintenance -Maintenance of the fire hydrant is defined as inspection and minor repairs including but not limited to replacing cap and chain, lubricating cap, repainting, remarking, staking, safety barriers, clearing of surrounding area etc. Maintenance shall be performed in accordance with standard practices and procedures.

7, Repair and Replacement -Repair is defined as including replacement of any parts and/or any work which includes dismantling of hydrant. Replacement is defined to include a complete removal and replacement of an existing hydrant. The repair and replacement definition shall include the lateral pipeline and any other appurtenance serving the hydrant.

**B. Operation and Maintenance Responsibilities**

1. It is the intent of this section that all public fire hydrants shall be inspected by the Agencies on an annual basis. It is understood that due to the number of hydrants in some areas, this may not always be possible. Inspections shall include the following elements per Insurance Service Offices and American Water Works Association recommendations:

a. Physical examination of the area surrounding the hydrant, correction of any obstructions associated with visibility (brush/weeds/dirt, etc.) and snow stake if needed.

b. Physical examination of the hydrant. Check operation and perform maintenance as defined above. CCWD shall supply the Agencies with replacement caps and chains as required.

c. Flow test of hydrant capacity.

d. Lubrication and paint if necessary.

e. Mark (placard) out-of-service and high pressure hydrants.

f. Document inspection and flow test results.

2. The Agencies shall provide all labor insurance, tools, vehicles and fuel needed to perform maintenance. CCWD shall pay for the paint, snow stakes and lubricant. Additionally, CCWD will provide replacement caps and chains, and loan flow test metering devices to the Agencies.

3. CCWD is responsible for the repair and/or replacement of defective hydrants identified by the Agencies.

4. For each fully completed inspection (Items la-1f above), the agencies shall be reimbursed by CCWD at the rate of 20 dollars per hydrant per year. Payment shall be made on an annual basis within 30 days of CCWD receiving both an invoice and the inspection documentation from the Agencies. Invoice and inspection documentation shall be submitted to the Operations Superintendent for approval no later than December 31 of each year. CCWD shall not compensate the Agencies for inspection of private fire hydrants.

5. Water may be drawn from any hydrant by the Agencies or third parties for fire suppression.

6. The CCWD Operations Superintendent shall be notified by fax of water to be drawn from any hydrant for training or hydrant testing.

7. The Agencies shall submit reports every three months stating approximate volume of water used for testing, training, etc., for those hydrants flowed over 5,000 gallons. Volume of water used shall be roughly estimated using the determined capacity of the hydrant over the duration of the test or training event.

C. Indemnification and Liability

CCWD does not make any guarantee to any Agencies as to operating pressures or flows.

To the fullest extent permitted by law, the participating Fire Protection Agencies shall indemnify, hold harmless and defend CCWD, its directors, officers, employees or authorized volunteers, and each of them, from and against any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, including attorney's fees, in law or in equity, of every kind and nature whatsoever for, but not limited to injury to or death of any person, and damages to or destruction of property of any person arising out of or in any manner directly or indirectly connected with the work to be performed under this agreement, however caused, except arising out of the sole negligence or willful misconduct or active negligence of CCWD, or its directors, officers, employees or authorized volunteers.

D. Conditions of Participation

1. To participate in the hydrant maintenance program and to receive the reimbursement defined under this policy, the Board of an individual Agency must enter into an agreement with CCWD accepting the terms and conditions under Section 172.

2. The Agencies or CCWD may cancel their participation in this program after giving 120 day's notice to the other party.

[Hydrant Policy adopted by Resolution 98-19, March 11, 1998]

[Amended by Resolution 98-39, June 10, 1998; and Resolution 99-2, April 14, 1999]

Part of the CCWD's Rules & Regulations Governing the Furnishing of Water and Sewer Service to Consumers

poll.R&.Rhydpl.doc

## Appendix 6. Private Parcels Eligible for BLM Hazardous Fuel Reduction Variance Permits in 2011.

BLM Variance Program: 41 Eligible Parcels Inside the Glencoe/Rich Gulch WUI.  
Pat McGreevy [6-Nov-10]

Parcel ID	BLM APN Neighbor	Private APN	BLM Defensible Space Issue	BLM Fuel Hazard	Private APN Acres	Physical Address	Name
1	12002023	12006007	NO	AVE	44.2 17425	HWY 26	WILENSKY STEVEN D TRUSTEE ETAL
2	12006021	12005032	NO	UNK	4.3		SCHEK LLC, C/O BASEMAN
3	"	12006014	NO	AVE	16.7 210 3	CENT FLAT RD	MC GREEVY PATRICK B
4	"	12006031	NO	AVE	6.8 2553	UPPER DORRAY RD	MUSZAR LEONARD R & HILDA A TRUSTEE
5	"	12006028	NO	AVE	25.6 2298	DORRAY RD	SCHOETTGEN JEFF ETAL
6	"	12006033	NO	UNK	12.6 67	DEARDORFF RD	VEIRA DOROTHY F ETAL
7	12010047	12010081	YES	UNK	10.5 780	WOLVARINE MINE RD	HOEKSTRA MARGUERITE AND WALTER C
8	"	1.2E+07	YES	UNK	7.0 1046	WOLVARINE MINE RD	MITCHELL DENNIS
9	"	12010023	NO	UNK	19.9 17566	HWY 26	SWANSON DELMAR T TRUSTEE
10	"	12010064	NO	UNK	8.8 2754	APRIL LN	HIEBERT (formerly Johnstone)
11	"	12010035	NO	UNK	39.3 1001	WOLVARINE MINE RD	FREDERICK STEVEN T ETAL (Santa Rosa-Bud has tel #)
12	"	12010021	NO	UNK	34.4 17706	HWY 26	RYAN MICHAEL E ETAL
13	"	12010083	NO	UNK	9.3 719	DEARDORFF RD	FRATES FRANK M JR & INGRID G
14	"	1.2E+07	NO	UNK	9.0 1044	WOLVARINE MINE RD	DESMIT PAULA
14A	"	12010078	?	UNK	14.6 2863	APRIL LN	DOMINY, ROBERT & CAROL (carol@dominy.com))
15	12060021	12007001	NO	UNK	31.2 16585	HWY 26	CORNWALL DIANE ELINOR SUCC TTEE
16	14002023	14002027	YES	CRITICAL	6.5 545	DIAMOND LANE	LINK DEAN ALAN TRUSTEE ETAL
17	"	14002024	NO	CRITICAL	7.0 541	DIAMOND LN	STREAMFELLOW JULIET
18	"	14002004	NO	UNK	229.9 754	DORRAY RD	CUPLER NORMAN M AND SHIRLEY L REV FAMILY TRUST
19	14002025	14003018	NO	CRITICAL	28.5 13641	HWY 26	RESE HARLEN D TRUSTEE
20	14003024	14003019	NO	UNK	14.8 13605	HWY 26	GRANT GORDON W AND DEBORAH M

21	14004032	14004042	NO	CRITICAL	10.8	12777	HWY 26	ROBINSON EDWARD G AND MARIAN TR
22	"	14001021	NO	CRITICAL	40.0	12625	HWY 26	ROBINSON EDWARD G AND MARIAN K TR
23	14005007	14021004	YES	UNK	2.6	14890	SKY HIGH DR	ZELLERS SCOTT R AND JANICE L
24	"	14005001	NO	UNK	36.3	301	FULL MOON WY	ZELLERS DARYL T AND TRACY L
25	14006040	1.4E+07	YES	CRITICAL	2.0	15069	Hwy 26	REINICKE, LYNN
26	"	14006061	NO	UNK	7.6	15251	STORMY LN	EBERT BRIDGET MARIE AND CLYDE
27	14006041	1.4E+07	NO	CRITICAL	1.7	14785	HWY 26	GOETTE BERNHARD
28	14006042	14006027	NO	UNK	6.0	233	FULL MOON WY	EDWARDS ELIZABETH
29	14006045	14009035	NO	UNK	9.9	2776	RAINBOW MT RANCH RD	IRONS EMMETT A AND DEBORAH L
30	"	14006015	NO	UNK	24.3	3345	RIDGE RD	ZEMAN ELLA MAE TRUSTEE
31	14007040	14006003	YES	CRITICAL	1.6	15240	STORMY LN	AHO CALVIN R
32	"	14006051	YES	CRITICAL	11.1	15250	STORMY LN	STODDARD DANIEL L ETAL
33	"	14007038	YES	AVE	6.4	265	BLACKBERRY DRAW RD	FRITSON KEVIN D AND EILEEN
34	"	14007025	YES	UNK	3.2	2538	NORWICH MINE RD	CACCIOLA MICHAEL C
35	"	14006036	NO	UNK	6.9	15272	STORMY LN	MALLORY ELLA L TRUSTEE ETAL
36	"	14007036	NO	AVE	15.2	2404	NORWICH MINE RD	ELIAS STEVEN F TRUSTEE ETAL
37	"	14002005	NO	AVE	77.0	1346	DORRAY RD	RADER JACK E AND WILBURTA C
38	"	14007033	NO	AVE	4.9	2424	NORWICH MINE RD	ELIAS STEVEN F TRUSTEE ETAL
39	14007041	14007003	YES	CRITICAL	1.6	2575	NORWICH MINE RD	DIERS STEVE P AND STEPHANIE L
40	"	14007006	YES	AVE	2.7	2444	NORWICH MINE RD	ELIAS STEVEN F TRUSTEE ETAL
41	16027053	16027061	NO	UNK	24.5	486	RICH GULCH RD	MATHRE LOIS LEE ESTATE OF TRUSTEE ETAL

Appendix 7. Glencoe/Rich Gulch Consensus Meeting.

The meeting was announced in the West Point News:

Page 2

West Point News

January 2011

# Glencoe, RRF, Rich Gulch meeting is January 31

A meeting for the residents of Rich Gulch, Glencoe and Rail Road Flat will be held at 5:30 p.m. on Monday, January 31, at the Veterans' Hall on Upper Dornay Road, Glencoe, to discuss and endorse two community plans.

The Glencoe/Rail Road Flat Community Plan has been reformatted by the County Department of Planning, integrated into the Calaveras Master Plan, and submitted to County Council for legal review.

The County has requested a final endorsement by the community to approve the latest revisions.

The Glencoe/Rich Gulch-Community Wildfire Protection Plan (CWPP) was written by Glencoe resident

Pat McGinney in collaboration with Central Fire, Cal Fire, Foothill Fire Safe Council and BLM.

The community Plan will be reviewed from 5:30 - 6:30 p.m. The CWPP will be reviewed from 6:40 - 7:40 p.m.

This plan includes upgrades to the emergency water system, road improvements for the transportation of emergency equipment and personnel, and the construction of major fuel breaks to protect both the community and the Mokelumne Watershed from catastrophic fire.

This is the first CWPP in Calaveras County and it must be certified by the community before government resources can be

applied towards its implementation.

By attending this meeting you will have the opportunity to discuss fire protection with officers from the fire service, voice your opin-

ions and endorse the CWPP.

Snacks will be provided during the break. Both plans will be available after January 15 for review.

For information and a copy of the Community

plan, contact Holly Mines at 209-4253 or by email at hmines@yahoo.com.

For a copy of the CWPP, visit [www.centralcalaveras-fire.org](http://www.centralcalaveras-fire.org) or call Pat McGinney at 209-2191.

This and similar announcements over the District 2 email list on the following dates:

01-Jan-2011

20-Jan-2011

Finally, announcement signs were posted at four different locations in the Glencoe/Rich Gulch area.

Fifty-six people attended the consensus meeting on 31-Jan-2011 in Glencoe. There were lively discussions on a variety of topics addressed in the CWPP. The meeting was attended by Cal Fire Battalion Chief Chris Post who fielded a number of questions from the public. His conversations with the landowners south of Hwy 26 resulted in mapping of their road network and a proposal to build the Ponderosa Fuel Break- Calaveras River Segment. Opposition to the plan was solicited, but the public offered none. The public was pleased with the recent installation of BLM fuel breaks and looks forward to the additional fuel breaks proposed in the CWPP. The Community is also eager to participate in the BLM Variance Permit program in 2011. The bottom line is that the GRG-CWPP has Community Consensus!

Fig 1. Glencoe/Rich Gulch Location Map.

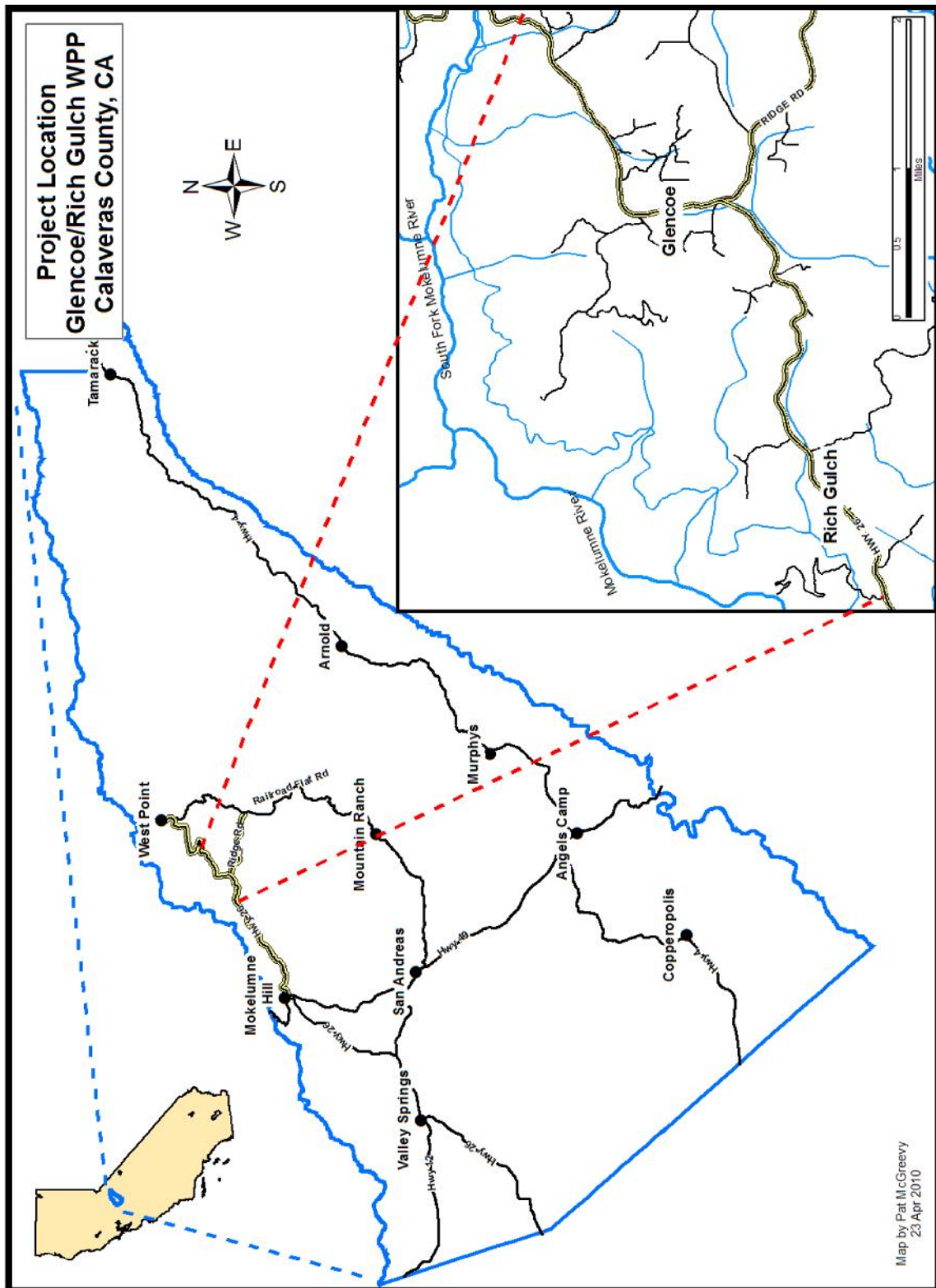


Fig 2. Glencoe/Rich Gulch Watersheds.

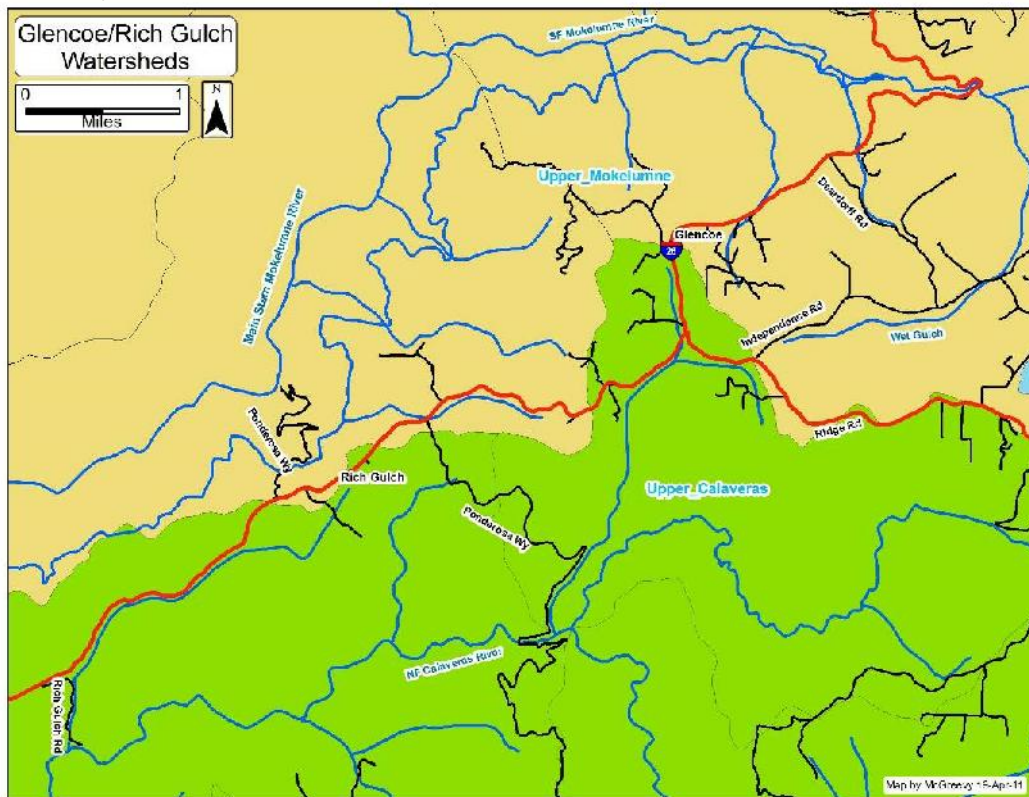


Fig 3. Glencoe/Rich Gulch Elevations.

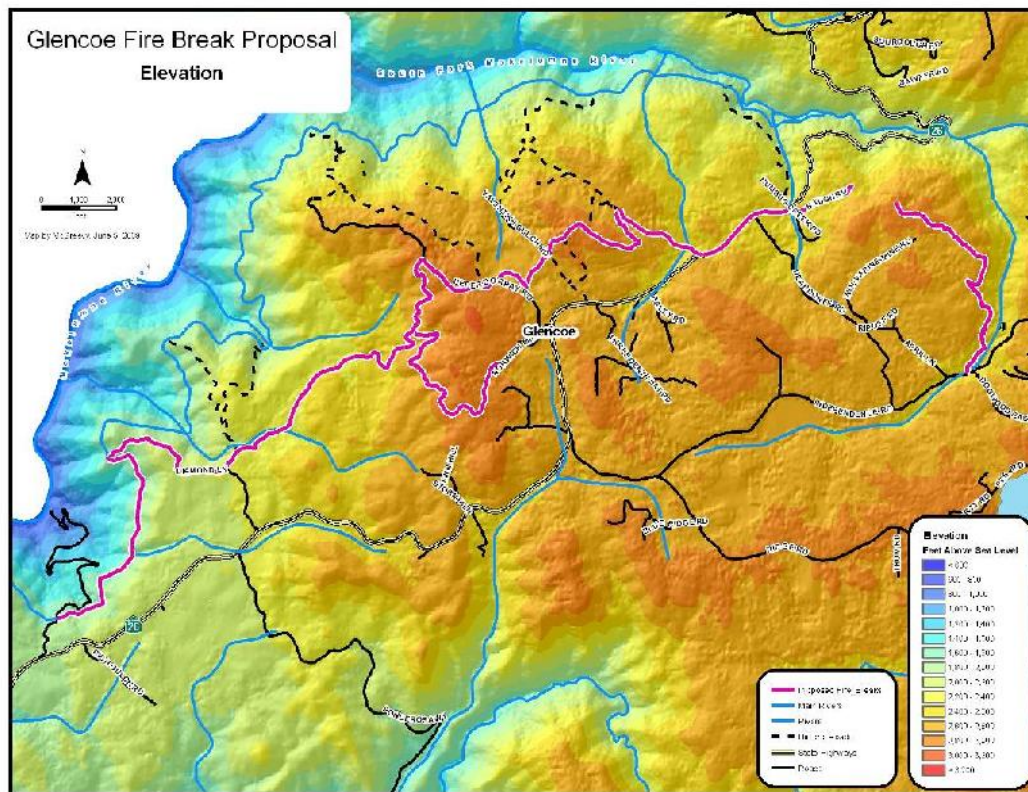


Fig 4. Service Area for the GRG-CWPP which is inside the Central Calaveras Fire and Rescue Protection District area.

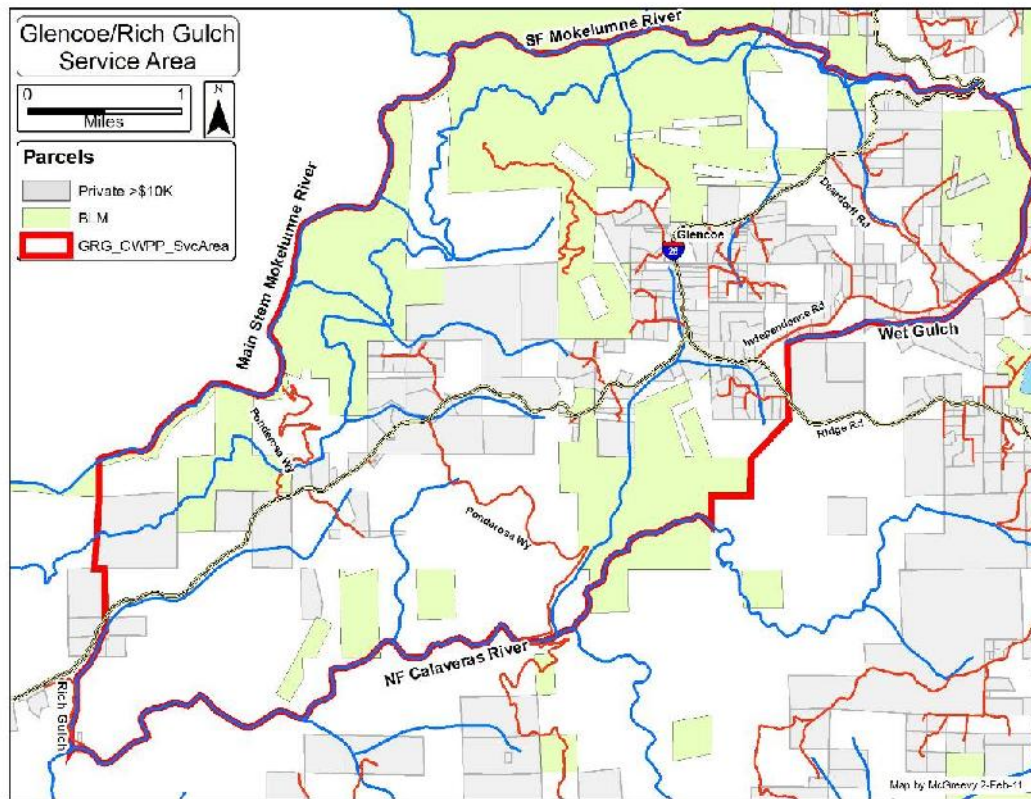


Fig 5. Glencoe/Rich Gulch Parcel Map showing WUI around assets greater than \$10,000.

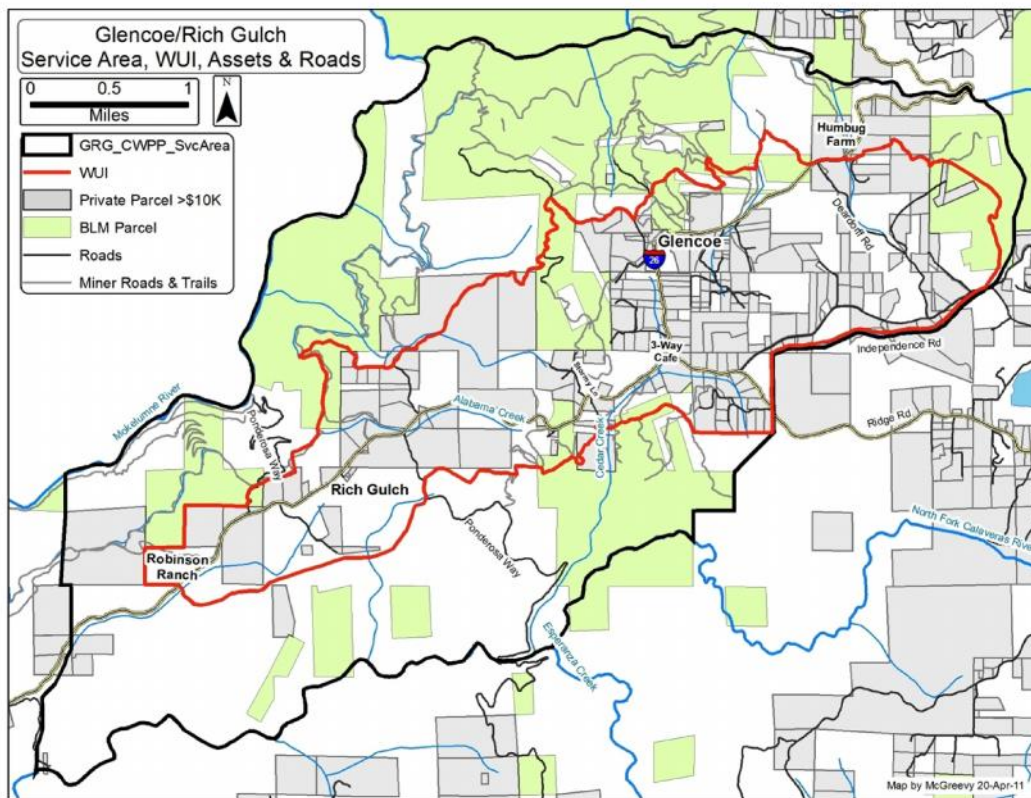


Fig 6. Glencoe/Rich Gulch contour map showing WUI on rim of river canyon walls.

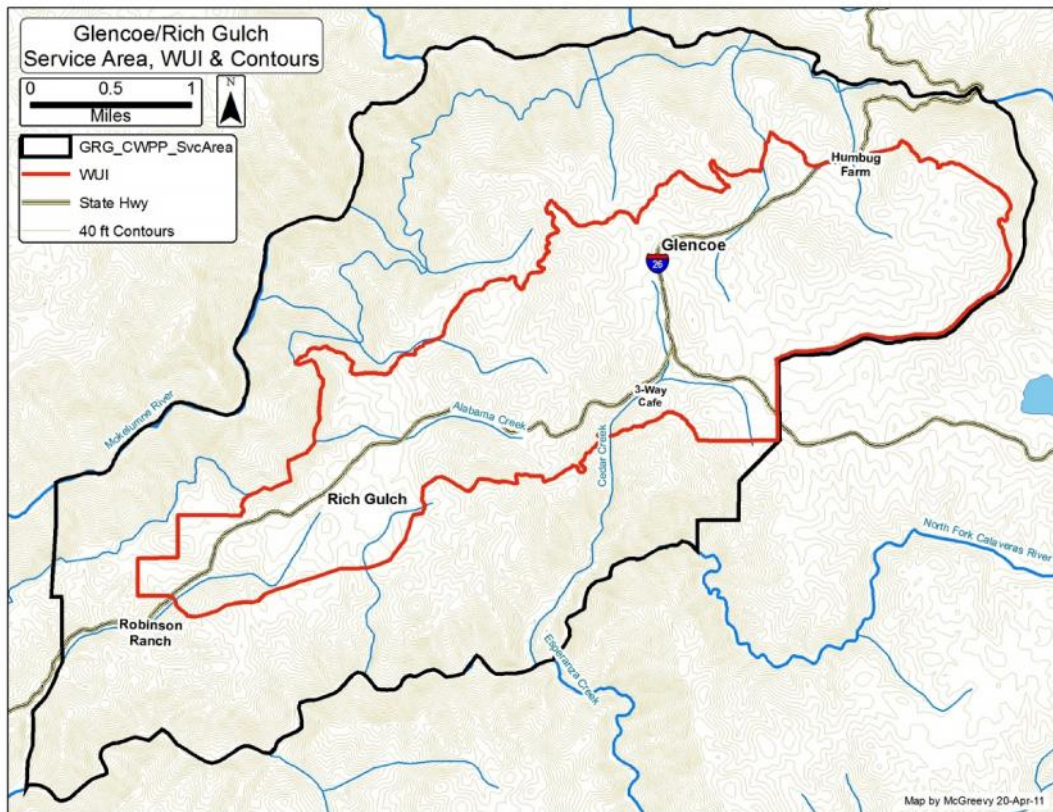


Fig 7. Glencoe/Rich Gulch Slopes.

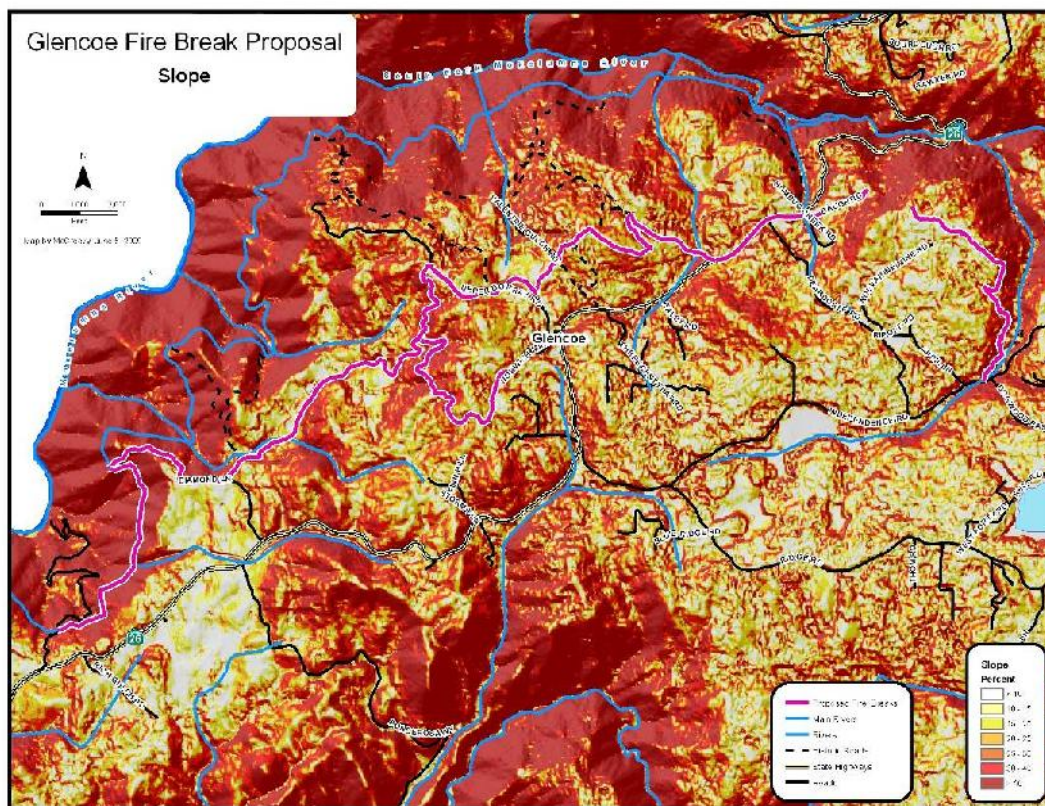


Fig 8. Glencoe/Rich Gulch Aspects.

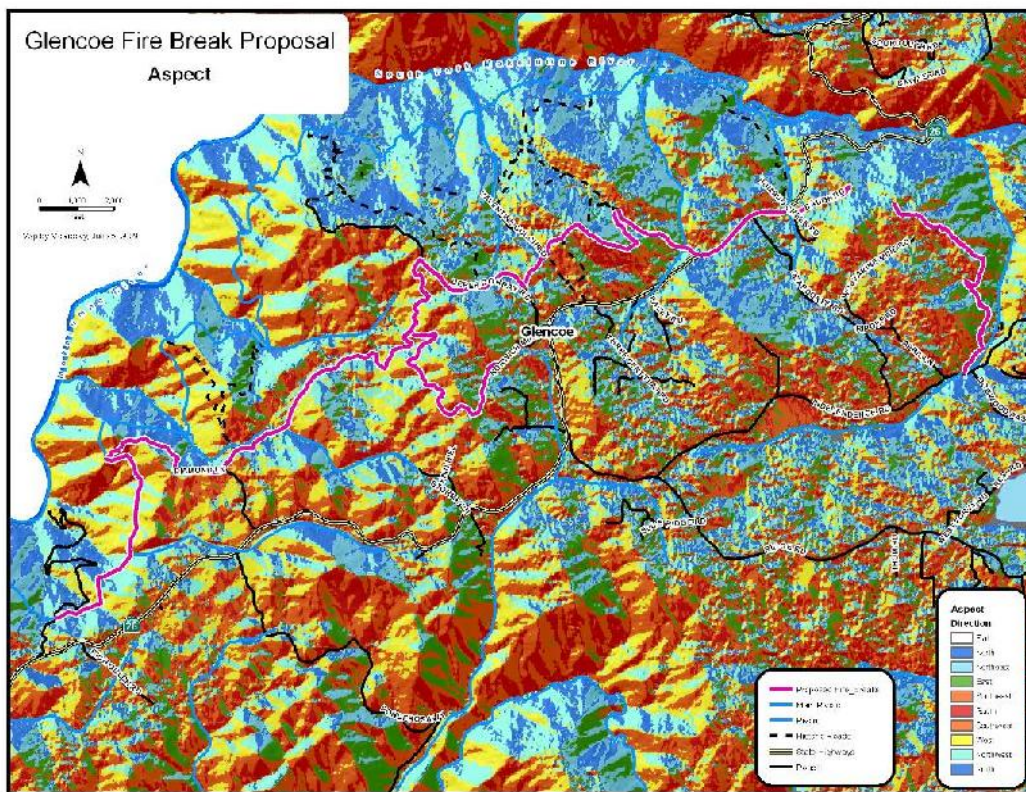


Fig 9 Glencoe/Rich Gulch Fire Break Vegetation Types.

(Edition 2: Change figure to show vegetation types in Service Area, not just along the WUI)

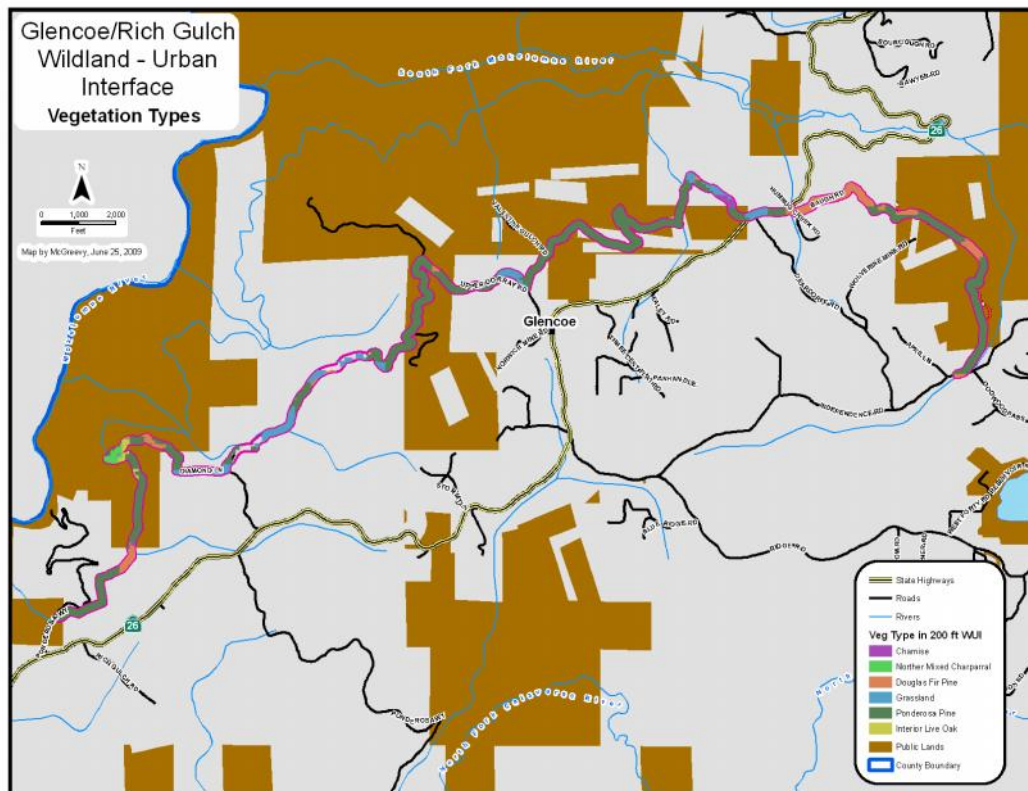


Fig 10. California Fire Threat Zones.

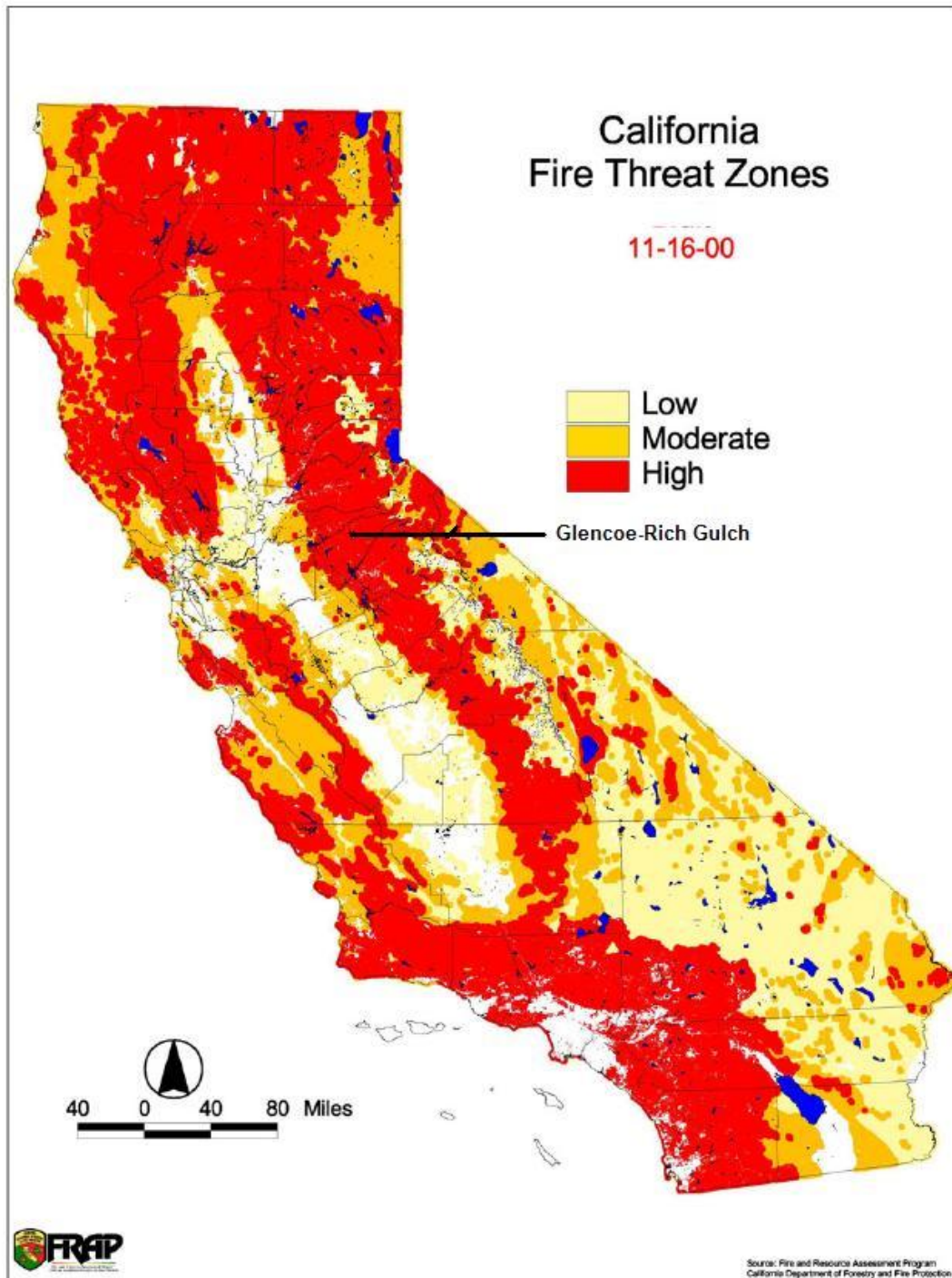


Fig 11. Glencoe, Rich Gulch and Rail Road Flat fire hydrants and water storage.

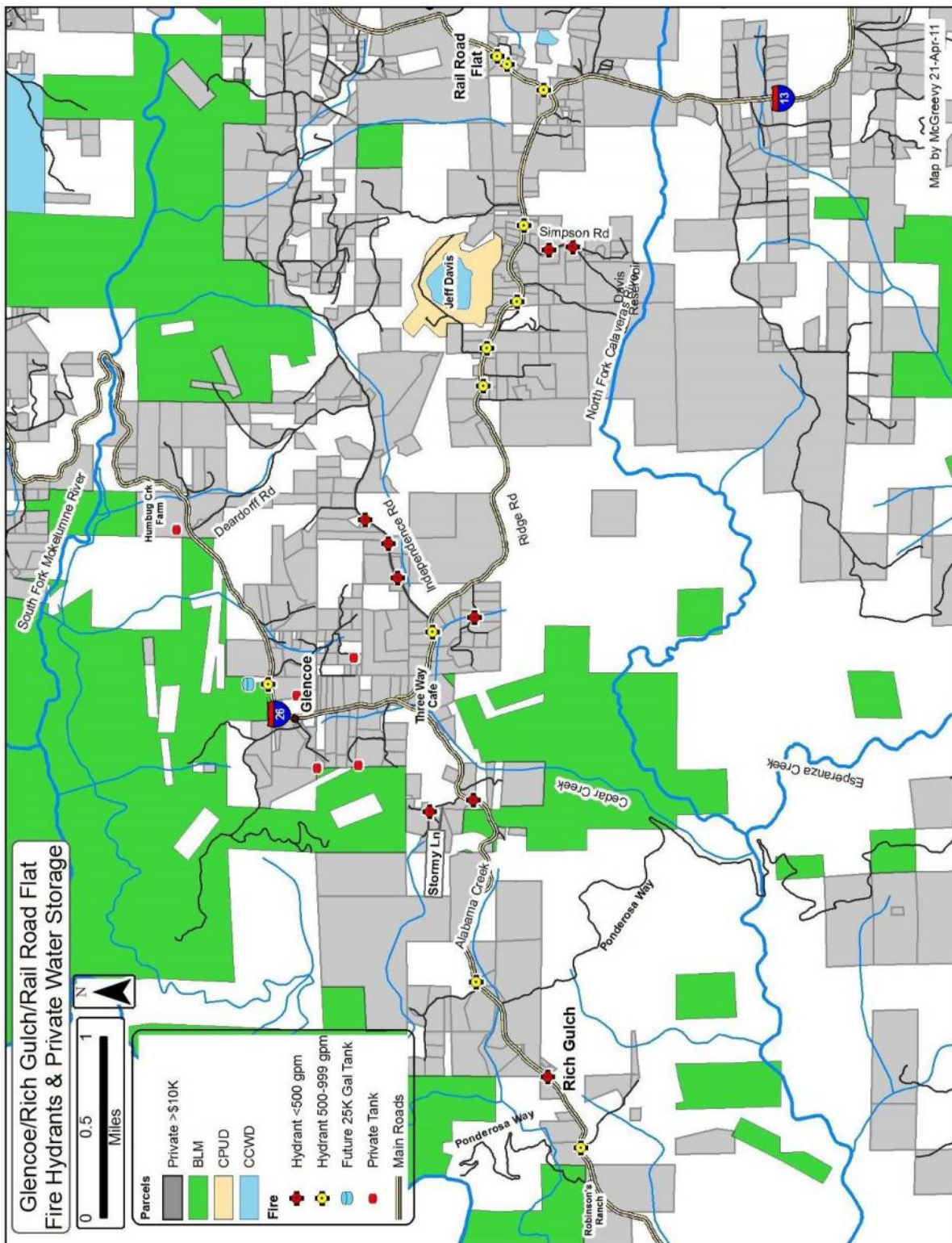


Fig 12. Glencoe/Rich Gulch contour map showing assets and projected fuel breaks.

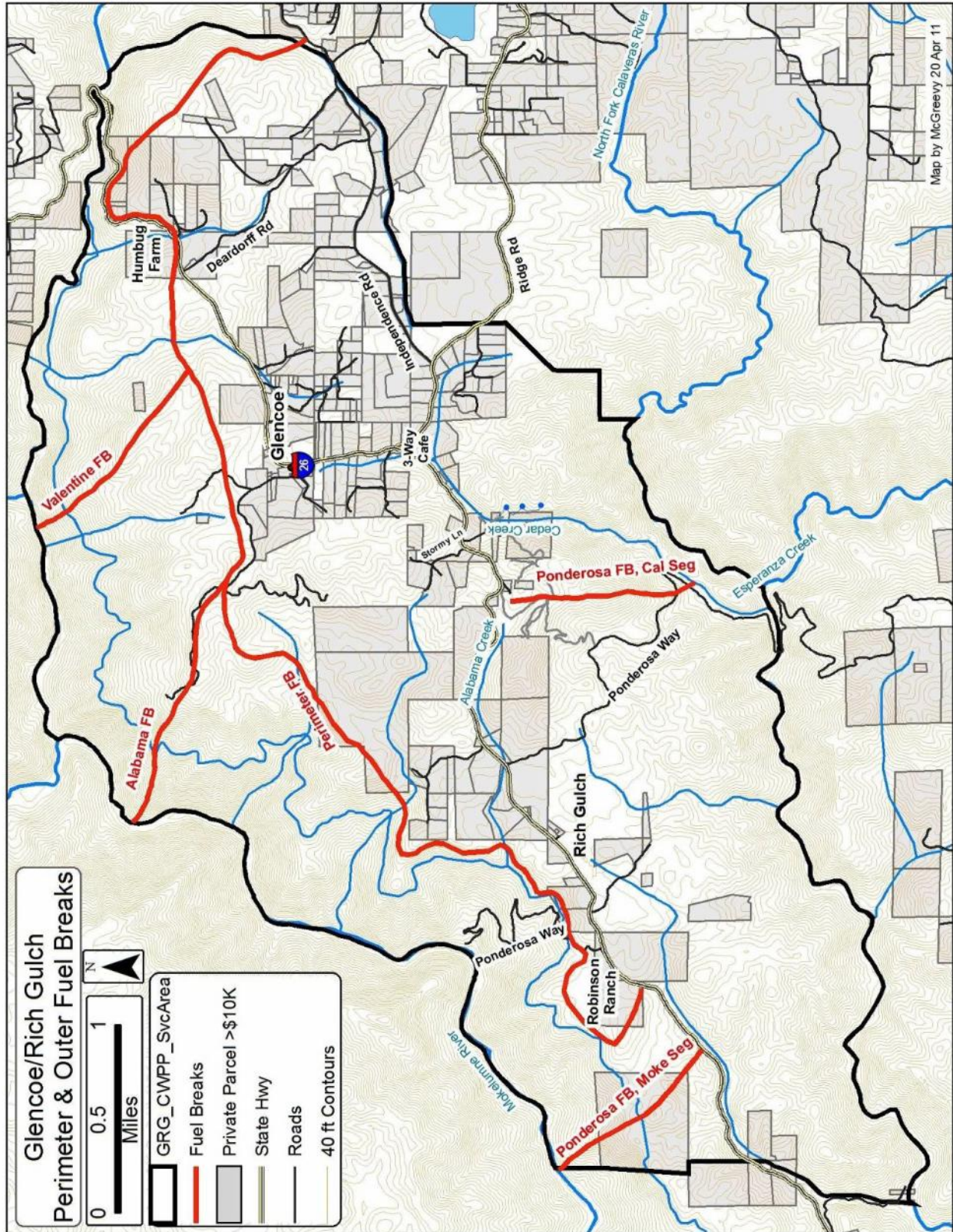


Fig 13. Glencoe/Rich Gulch aerial map showing proposed fuel breaks.

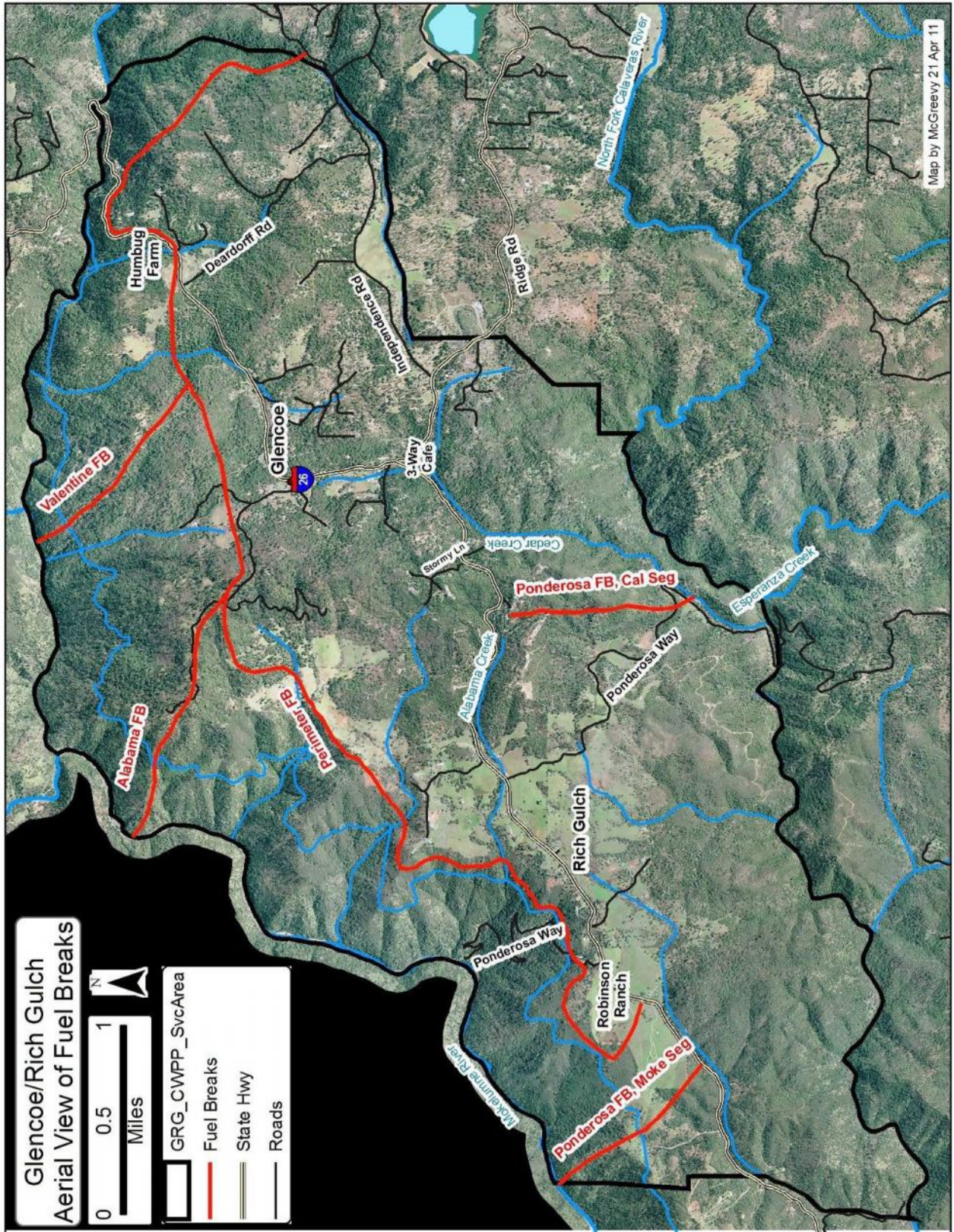


Fig 14. Glencoe staging area with 25k gallon water tank & hydrant.

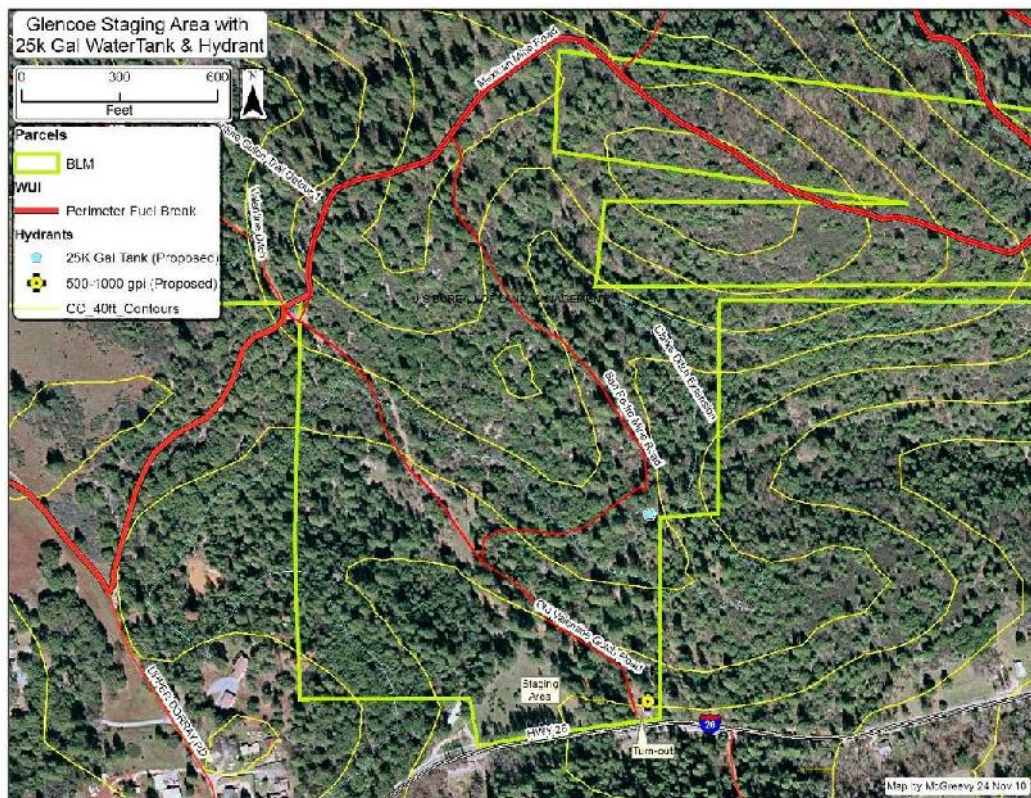


Fig 15. Long-Term Fuel Break Maintenance. In 2005 this private parcel near the WUI was covered with dense Manzanita that was treated with a dozer at the homeowner's expense. After five years, the Manzanita is returning in full force. Financial incentives are needed to encourage this absentee owner to implement a maintenance program.



Fig 16. Mokelumne River Bridge on Ponderosa Way over the Main Stem Mokelumne River. Calaveras County is right, Amador is left and PG&E land is middle.



Fig 17 Manzanita Stand before (back) & after (front) treatment by hand crews.



Fig 18. Manzanita Stand before (left) & after (right) Mastication.



Fig 19 Pine Plantation before Treatment by hand crews.



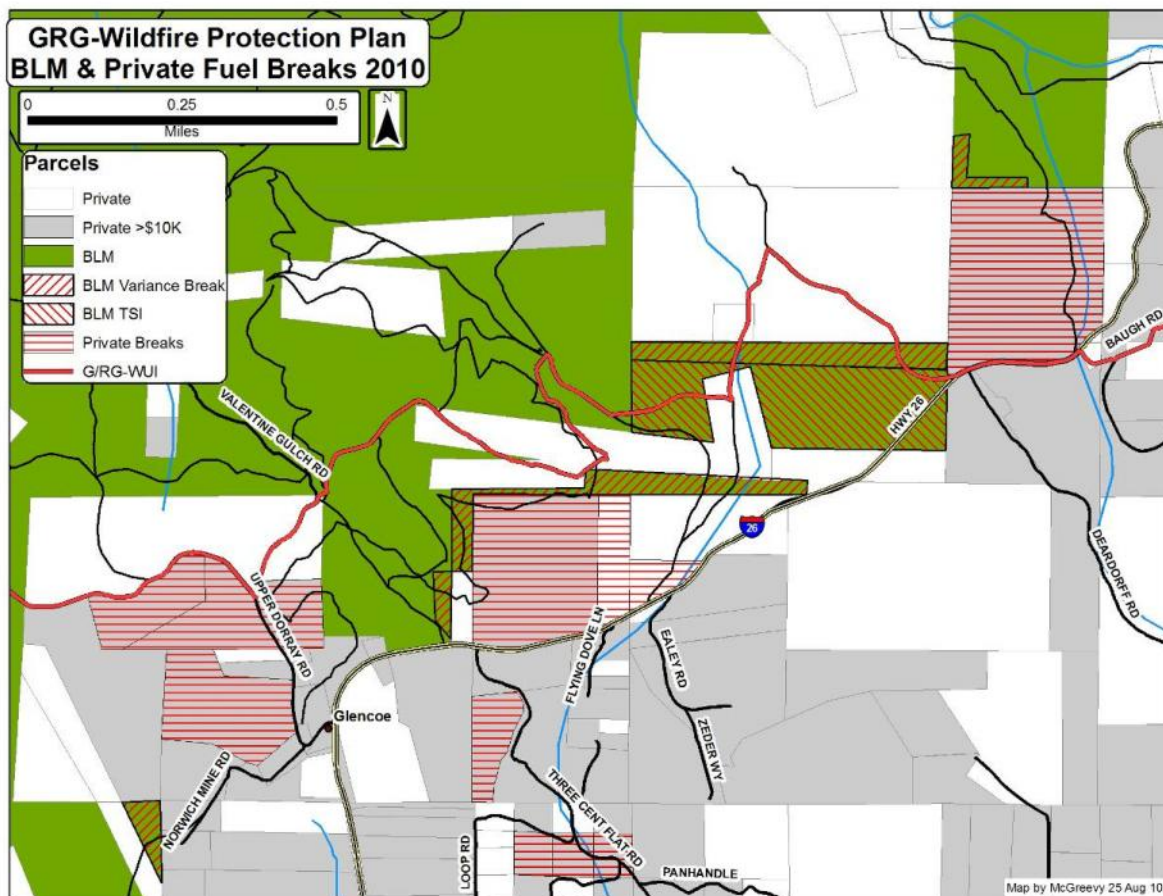
Fig 20. Pine Plantation after Treatment by hand crews.



Fig 21. Privately maintained segment of the perimeter fuel break on Upper Dorrday Road.



Fig 22. Distribution of the Perimeter and Inner Area Fuel Breaks in 2010 maintained by BLM and private land owners at the end of 2010.



➤ *General Environmental Conditions*

The Bear Valley neighborhoods lie on south facing slopes above a large meadow near the headwaters of the Stanislaus River. The Stanislaus National Forest surrounds the Planning Area and exhibits the well-timbered characteristics of the upper elevations of the west slope of the Sierras. Wildland fuels are present throughout the neighborhoods.

The neighborhoods in the Bear Valley Planning Area are:

- ï Old Subdivision
- ï New Subdivision
- ï Sherman Acres

ï *Elevation*

Figure 28 shows the location of the subdivisions, north of Highway 4. The communities sit near 7,000 feet on south facing slopes and drainages below Bloods Ridge and Bear Top. The terrain along the Highway 4 corridor is steep to the north and relatively flat to the south.

ï *Meteorology, Climate, Precipitation*

Bear Valley receives heavy winter snows. Record amounts totaling over 70 feet have been documented for the area. Most of the precipitation occurs during the winter months. Summer high temperatures reach the mid-eighties, with relative humidities as low as the single digits.

ï *Hydrology*

Alpine County is the headwaters for five different watersheds draining both sides of the Sierra Nevada. The Bear Valley Planning Area lies within the Stanislaus River watershed with three main creeks meeting in the Bear Valley meadow.

ï *Threatened and Endangered Habitat Type*

There are a number of ecologically sensitive areas and wildlife habitat. After considering the threat to life and property, projects should be considered in how they address these areas. California Department of Fish and Game and the U.S. Fish and Wildlife Service have information on Threatened and Endangered Species in the Bear Valley Planning Area. Bald eagles and mountain yellow-legged frogs are some of the threatened or endangered species that inhabit the forest and lakes within the Planning Area. The USFS has found no threatened or endangered species within their projects. Surveys or mitigation measures for threatened or endangered species should be implemented prior to project initiation.

➤ *Population and Demographics*

The year round population in the Bear Valley Planning Area is fairly small, typically around 150 people. Primarily a “second home community,” seasonal attractions bring a

significantly higher number of people to the area. During the summer months, large numbers of visitors use the campgrounds, lakes and trails in the area. The Bear Valley Music Festival brings 6,000 visitors to the area during a two week period in late July/early August. During the winter, vehicle traffic is high with visitors arriving in the area for winter sports at the Bear Valley Mountain Resort, Cross Country Ski Center, and the snow parks at Lake Alpine and Spicer Reservoir.

➤ *Infrastructure*

As a rural, sparsely populated area, Bear Valley has relatively little infrastructure at risk from wildfire. But the loss of only a few key facilities can have a big impact.

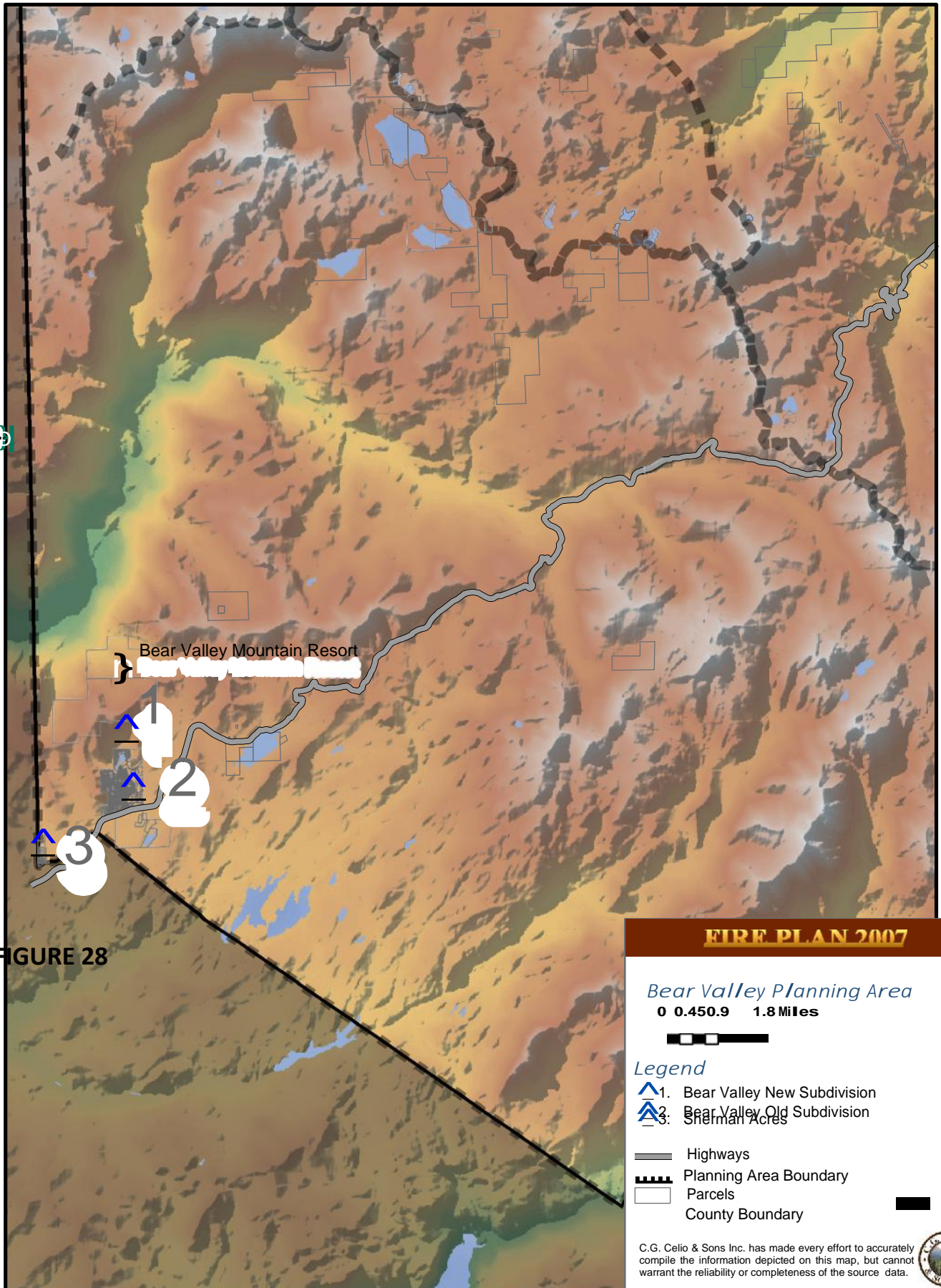
Key facilities found in the Bear Valley area include: The Library (Health and Community Services Center), the Bear Valley School, the Perry Walther Community Center, Bear Valley Mountain Resort, the P.G. & E. substation, the sewage treatment plant, the water treatment plant, the A.T. & T. phone switching station and the Bear Valley Public Safety Department. Some of these facilities will be critical to an effective local response to a wildland incident. The key facilities are shown on individual neighborhood maps.



Bear Valley

Fire fighting water supply comes from hydrants (New subdivision,) standpipes (Old subdivision,) and draft sites (Bear Lake, Lake Alpine, and the pool at Bear Valley Lodge). Sherman Acres subdivision has no hydrants; water for fire suppression is drawn from a few standpipes and directly from the water tanks.

Development potential has significantly increased in recent years. In a county with only a few new buildings a year, a single subdivision can be a significant impact. Recent land purchases by development interests ensure this trend will continue at an even faster pace. A planned ski lift from the Village to the Bear Valley Resort will likely increase tourist visits and parking within the Village.



➤ *Business*

The tourism industry dominates the economy of the Bear Valley Planning Area. A general store in the village provides year-round food, recreation supplies and sundry items to visitors. Popular local rentals include: mountain bikes, kayaks, ski and snowboard gear, snowshoes, and snowmobiles. Local guides and adventure classes are also available.

➤ *Recreation*

Recreation creates a number of concerns for wildfire planning. Areas of dispersed camping, with campfires and barbecues are likely sources of ignitions for wildfires. A wildfire in heavily used recreation areas poses problems for evacuations. Wildfire that destroys key recreation resources would have a significant impact on the tourist industry in Alpine County.

Camping: The Bear Valley Planning Area hosts several popular USFS campgrounds at Lake Alpine, Highland Lakes, Mosquito Lake, and Hermit and Pacific Valleys. Utica, Union, and Spicer reservoirs also have popular campgrounds.

Fishing: Reservoirs nearby include Utica, Union and Spicer. Lake Alpine, Mosquito Lake, Highland Lakes and the Stanislaus and Mokelumne rivers all attract fishermen to the Planning Area.

Other popular recreational opportunities:

Bicycling, backpacking, hiking, cross country skiing, snowmobiling, rock climbing, skiing, snowshoeing, hunting and boating.

➤ *Cultural Resources*

Prehistoric and historic cultural resources exist within the project areas. The area was used by Native Americans, sites have been found within the planning area.

➤ *Emergency Services*

Fire suppression for wildland fire incidents is provided by the Bear Valley Public Safety Department, Ebbetts Pass Fire Department, CALFIRE and the USFS. The USFS guard station in Dorrington staffs one engine and a ten person wildland fire use crew in the summer to provide wildland fire response.

Response distances are primarily within 5 miles from the Bear Valley Fire Station. Mutual aid response from Ebbetts Pass F.D., CALFIRE and USFS is a minimum of 30 minutes away.

➤ *Insurance Ratings*

ISO ratings for Bear Valley are split: 5 for the New Subdivision, and 9 for the Old Subdivision and Sherman Acres.

➤ *Land Use Development Trends*

Development has significantly increased in recent years. Major changes are proposed for the Village area which could potentially triple the population during the summer months. These projects are slated to start in 2009 with completion expected in 2015 or as market conditions allow.

## 6C. Current Fire Environment- Bear Valley

### 1.4 Wildland Fire History

Devastating wildfires have occurred in Alpine County communities in the past. The largest interface fire was the Acorn Fire in 1987 destroying 26 homes. This fire occurred in the Woodfords Planning Area.

### 1.5 Local Fire Ecology and Forest Health

(This section inserted from *Bear Valley Community Plan to Reduce Wildfire Risk and Improve Forest Health* by Don Stickers 2004. Portions of it have been edited.)

Background: Bear Valley's New Subdivision was developed in the mid-1960s. The Old Subdivision dates back earlier. The Old Subdivision consists of 61 lots on the north side of Highway 4 west of the main entrance to Bear Valley Village. 42 of these lots are developed. The New Subdivision consists of 426 lots plus six lots in the Granite Vista area. 304 of these lots are developed plus several commercial, condominium, and county government parcels in Bear Valley Village. Overall, this number represents 79% of the lots as developed. In addition, there are about 110 acres of common ownership and several commercial and residential parcels undeveloped. The common areas that support forest cover are about 75 acres.

Current Conditions: When the New Subdivision was initially developed, road right-of-way trees and trees needing removal for initial commercial facilities were removed along with dead and dying trees that represented a hazard to public safety. A couple of timber harvest operations occurred over the years to remove high risk and dying trees as well as tree removal for homesites and other commercial and public facilities. The remainder of the stands have been allowed to develop with little interference and a restrictive tree removal policy. Disturbed ground from initial development created favorable conditions for regeneration of Red Fir and Lodgepole Pine and to a lesser degree, Jeffrey Pine. This reproduction, including young trees originally present, has grown over the last 40 years into a very dense stand of timber. These areas occur throughout the subdivisions but are concentrated in the Old Subdivision, the south half of the New Subdivision, along Bear Creek above the Bear Valley Lodge, west of Creekside Drive, and around Bear Lake. Dense horizontal crown continuity exists through the lower third of the New Subdivision and up Bear Valley Road and the Orvis and Schimke Road loops. There are also dense areas of understory sapling and pole size trees that provide fuel ladders to accelerate fire into the crown layer. Under the right fire weather conditions this situation could support a difficult to control crown fire and threaten most homes in this area where a majority of lots are developed.

The most likely direction of a fire would be from the southwest with afternoon winds coming up the Stanislaus River canyon. Under extreme burning conditions such as occurred in the 1987 Stanislaus Complex, the main fire could combine with multiple starts from lightning. Blowup conditions can then occur which throw burning material miles ahead of the main fire front and rapidly spread the fire perimeter. Fire columns can reach 60,000 feet in height. Under these conditions, firefighter safety is a primary concern and fires can only be fought in lighter fuel

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areas. Red Fir stands similar in elevation to Bear Valley were totally consumed in Yosemite Park areas in the 1987 fire and in the Donner Ridge Fire of 1960 in the Donner Pass area. There are extensive stands

of dense timber west of Bear Valley between the Alpine County line and Cottage Springs. Forest cover is fairly continuous between the Stanislaus River and Summit Level Ridge. This area could support a large fire, which in addition to moving toward Bear Valley on the ground, would throw burning firebrands into the community from the fire column. Under current conditions, these firebrands would rapidly ignite spot fires which would quickly develop into a size and intensity that would be difficult to control. It would not be safe for firefighters to operate in much of the subdivisions and many structures would be lost. Current fuel loading in the subdivisions would burn with high intensity and put intense radiant heat on exposed wood siding and decks. If the forest is thinned and treated, these spot fires could be quickly contained and efforts to save the subdivisions would have a much higher probability of success.

While the right fire start under the right conditions that could seriously threaten Bear Valley may occur only every 40 years, it is too often for sustainable community. Bear Valley represents a substantial economic investment. Although insurance can replace a lot of lost structures, the forest environment will be lost for generations along with property value loss. In addition, insurance companies are looking closely at wildland-urban interface risks and homes adjacent to hazardous fuel conditions can be expected to pay increasingly higher insurance rates.

Some other considerations regarding risk are not only a fire threatening the community from the outside but that a structure fire within the subdivisions is a much greater threat to nearby homes and forest under the present conditions. Also if there were a major fire in the area requiring protection of structures, the firefighters would, by necessity, concentrate their efforts where they can operate with reasonable safety and have a reasonable chance of saving a structure. During a major fire event, resources are always short and will be deployed where they can be used most effectively and safely. It is called triage, similar to the treatment of casualties in war or disasters.

Forest Health: There is a second threat to the Bear Valley forests which is more insidious and definitely probable if no action is taken. Stand densities along upper Bear Creek west of Creekside Drive and along Fremont, Quaking Aspen, and Monty Wolf Roads approach and exceed 500 square feet of basal area per acre. These stands consist of trees about 40 years old with a scattered larger tree over story. A stand of 100 square feet of basal area per acre can fully utilize a site. This means trees are in intense competition for soil moisture, nutrients, and sunlight. In Bear Valley, the moisture stored in the soil at the end of the winter must sustain the trees through the long dry summer. Too many trees will result in all of the trees being weaker with the weakest ones susceptible to death from insect attack or drought. A drought year or several in a row can be expected to accelerate tree mortality. Mortality is currently scattered through the subdivisions and can be expected to accelerate in the future, even without a dry year. Extensive mortality happened to areas in the Tahoe Basin during the drought years of the 1980's. The fewer trees, the more vigorous the trees in the stand will be, and the more resistant they will be to insect attack and drought. It is better to select the trees you want in the stand than to let Mother Nature do it. A lot of desirable trees will be lost if these stands are not thinned.

Secondly, these younger trees left after thinning will reach a large size much

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sooner with more available sunlight and soil moisture. They will also have more live crown and higher green moisture in the foliage and be more resistant to fire. Many trees are slow growing under present conditions and will gradually be lost rather than reach maturity. A

stand of large, well-spaced trees will also be much more resistant to fire loss in the future. Most of the area above Creekside Drive is fairly open with interspersed granite outcrops and does not need treatment except near the school. Understory brush, while scattered through the subdivisions, does not occur in dense, extensive areas needing attention.

Summary: The forest in Bear Valley is like anywhere else, a product of its history. It has suffered from a well-intentioned policy of benign neglect. This works for a while but the forest is dynamic and as new trees are recruited into the stand, overcrowding, stagnation in growth, and loss of tree vigor occurs. Mother Nature’s response prior to European settlement was for fire of light intensity to pass through the stand, killing and thinning younger trees. Ignition was provided by lightning and Native Americans using fire to keep stands open for hunting and to drive game. Studies of Red Fir stands in the Sierra indicate a history of a 25-30 year return rate of light intensity fires. In Bear Valley, fire suppression since early in the 20<sup>th</sup> century and accelerated regeneration due to development soil disturbance, has resulted in a stand condition that needs attention. Once the desirable future sustainable stand condition is decided, treatments need to be scheduled to bring that about. After treatment, the stands need maintenance once a decade or so to retain the desired condition and stand development.

6.2.1 Fire Frequency

CALFIRE developed fire rotation or frequency measures for the entire state. Data is stratified into three classes of frequency. These classes represent the amount of time necessary for fires to have burned an entire area, based on historic fires. For example, in an area classified as < 100 years, the entire area would have burned over at least once in < 100 years. This could be by a single fire, though is more commonly the culmination of many fires in that area.

ii Fire Weather

Lightning causes most wildland fire ignitions in the Bear Valley area. Summer thunderstorms bring erratic winds and lightning to the area. Fire behavior is most extreme after long period of hot, dry weather with no precipitation. It is common to have a southwesterly wind coming over the Sierra’s in the afternoons during the summer. Most catastrophic fires on the west slope of the Sierras have occurred during these conditions.

ii Fuels Map

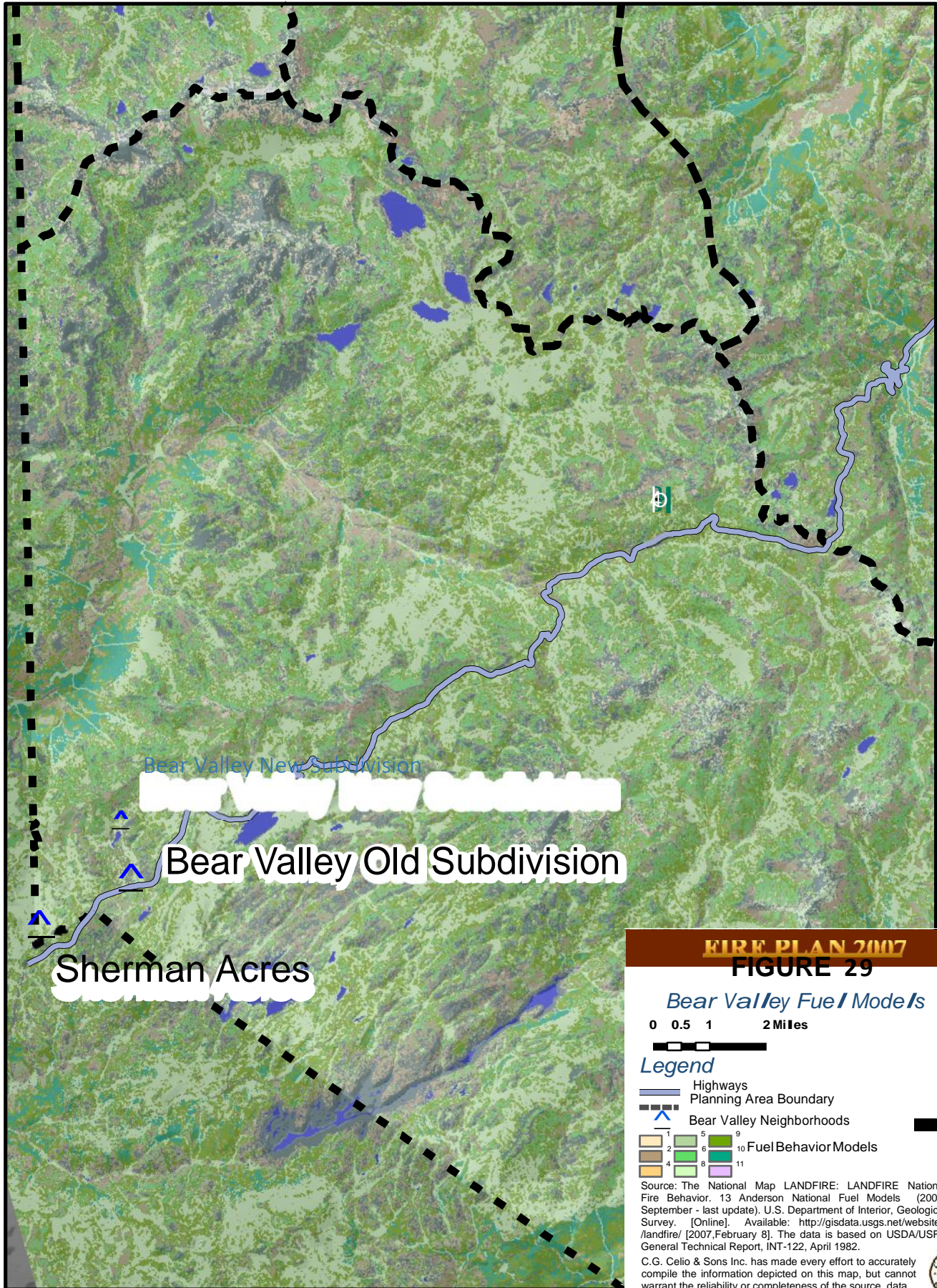
Fire fuels have been mapped by CALFIRE for the Bear Valley Planning Area. CALFIRE classifies fuels based on the 13 standard fuel models developed by Rothermel. Assignment of fuel models and hazards were based on vegetation data collected from satellite imagery.

Figure 29 shows the fuel models in the Bear Valley Planning Area from CALFIRE data. The table below briefly describes the models.

<i>Fuel Model</i>	<i>Fuel Model Category</i>	<i>Description</i>
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**Alpine County Community Fire****BEAR**

2	Grass Fuel Model	Low Intensity, Fast Rate of Spread
10	Timber Fuel Model	High Intensity, typically a crown fire, direct suppression ineffective



*ii Hazard Maps*

Combining the wildfire fuels data with other information that would affect fire behavior, such as slope, fire agencies compile wildfire hazard maps. These maps show areas that, given the specific fuel and slope conditions, would have extreme to moderate fire behavior. These hazard maps can help prioritize wildfire mitigation projects.

Figure 30 is a more detailed look at the hazards in neighborhoods in the Bear Valley Planning Area. The data is from 2007 CALFIRE Fire Hazard Severity maps.

*ii Condition Class*

The National Fire Plan and Healthy Forest Act dictate that the federal agencies use Condition Class as criteria for planning projects. The Condition Class represents a relative measure of how much an area differs from its historical fire regime. As dictated by the national fire plan, areas of Condition Class 3 have a higher priority for treatment than those of lower condition class. CALFIRE has calculated condition class across the state. Figure 31 shows Condition Class for the Bear Valley Planning Area.

*ii Natural Fire Breaks*

There are few natural fire breaks in the Bear Valley Area. The sparsely vegetated granite ridge east of the New Subdivision is the only significant fire break. Bear Lake serves as a smaller, man-made fuel break.

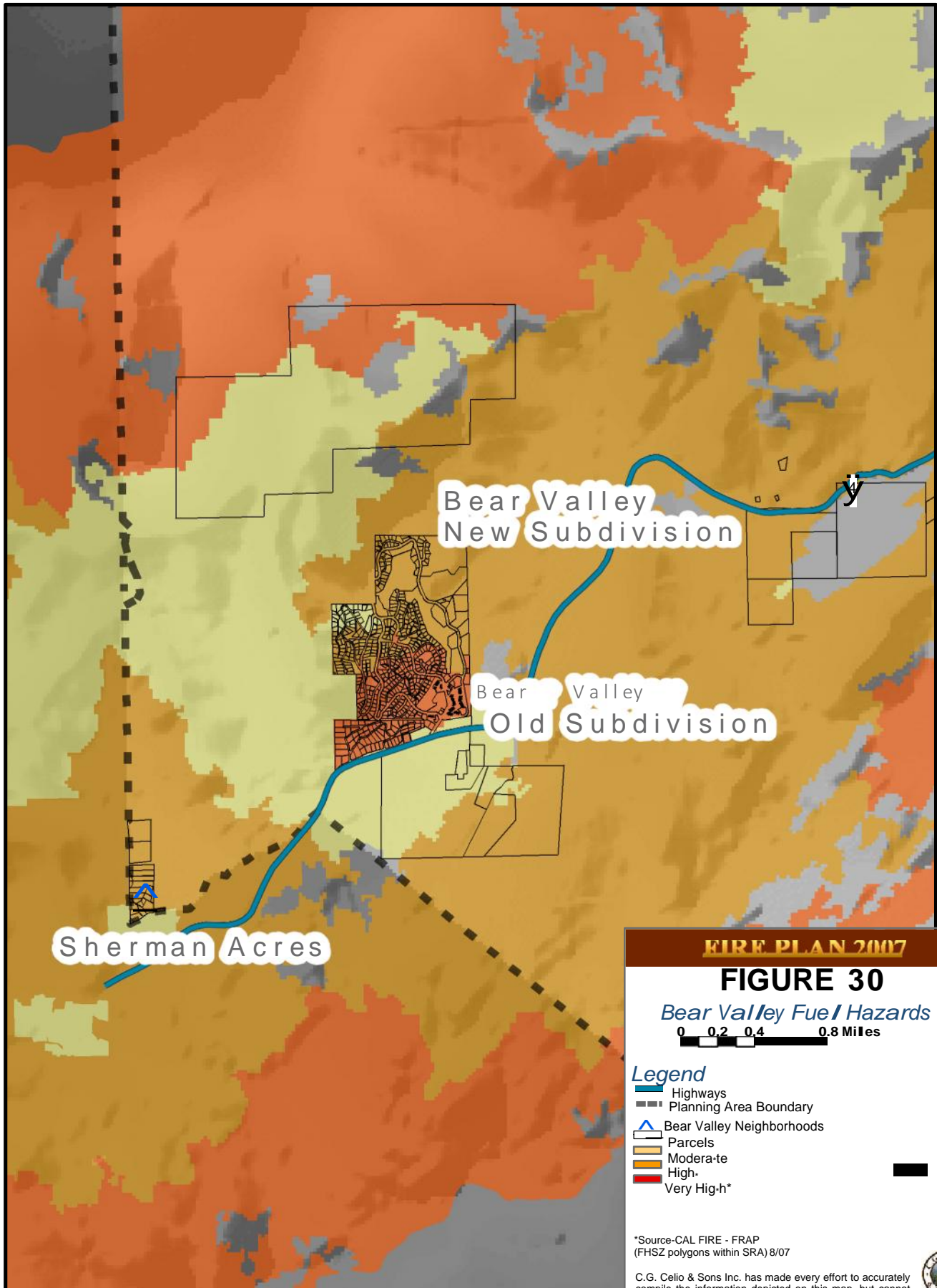
*ii Fire History*

Figure 32 shows previous fires in the vicinity of the Bear Valley. Wildfire is an infrequent event in the Bear Valley Planning Area. However, there have been two large fires within five miles of the Planning Area in the last eight years. The “Mud Fire”(4,340 acres), and the “Hiram Fire”(2,753 acres) burned at similar elevations and aspects as the Bear Valley subdivisions. Four large fires have burned in the neighboring watershed of the North Fork of the Mokelumne River. Two large fires have burned in the North Fork of the Stanislaus River drainage on the south side. All of these fires have burned from the southwest to the northeast, following terrain and prevailing winds. It is reasonable to expect that an ignition on the north side of the North Fork Stanislaus drainage, (west of Bear Valley), would follow a similar path toward the Bear Valley neighborhoods.

*ii Expected Fire Behavior*

Fire behavior is expected to be extreme and uncontrollable during the worst case conditions. Slopes are steep, wind commonly increases in the afternoon, and fuel loadings are high. While a wide range of fire behavior can be expected in the various fuel types and weather conditions, extreme fire behavior is likely during severe fire weather conditions.

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**FIRE PLAN 2007**  
**FIGURE 30**  
*Bear Valley Fuel Hazards*  
0 0.2 0.4 0.8 Miles

**Legend**  
Highways  
Planning Area Boundary  
Bear Valley Neighborhoods  
Parcels  
Moderate  
High  
Very High\*

\*Source-CAL FIRE - FRAP (FHSZ polygons within SRA) 8/07

C.G. Celio & Sons Inc. has made every effort to accurately compile the information depicted on this map, but cannot warrant the reliability or completeness of the source data.



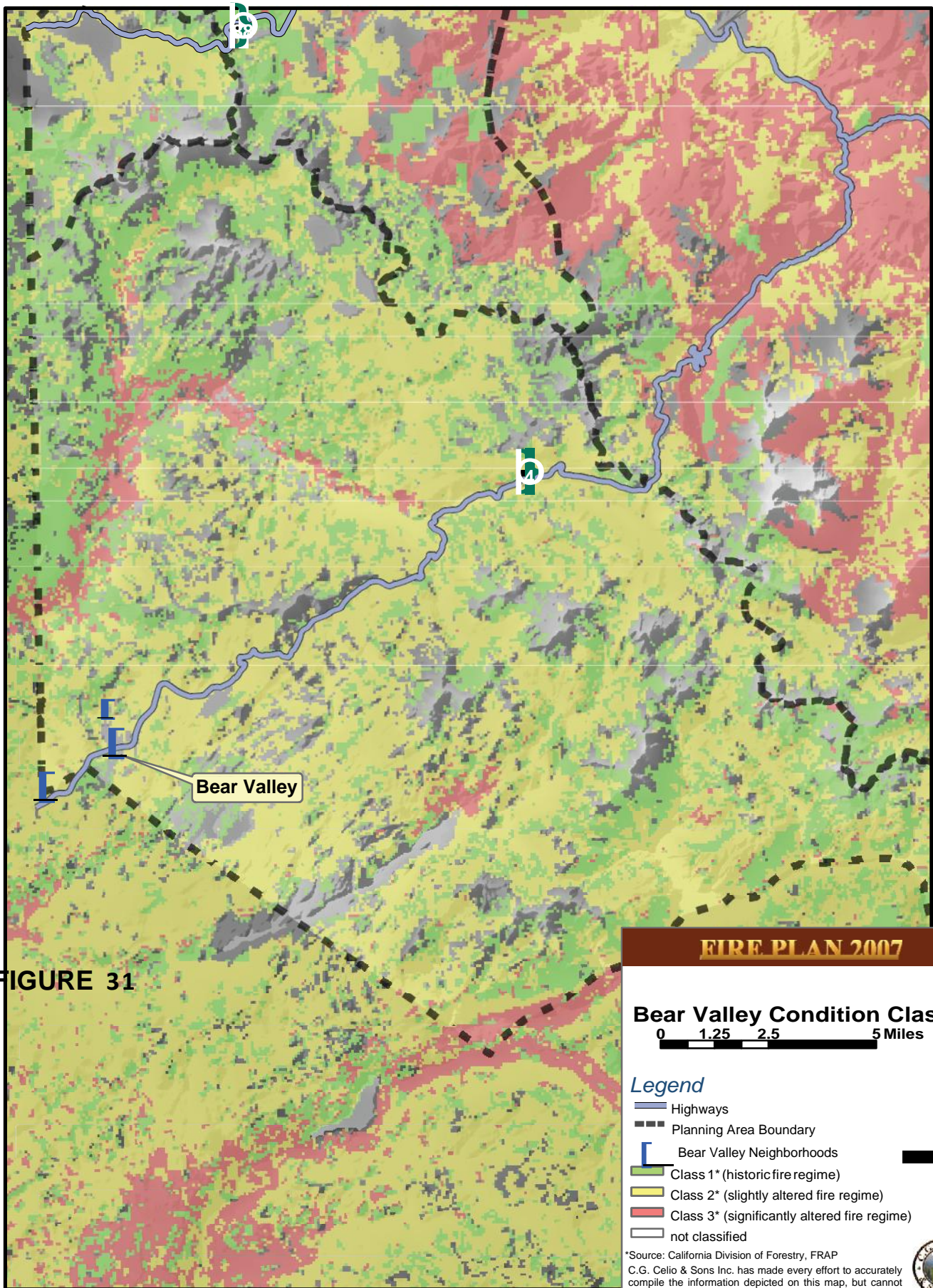
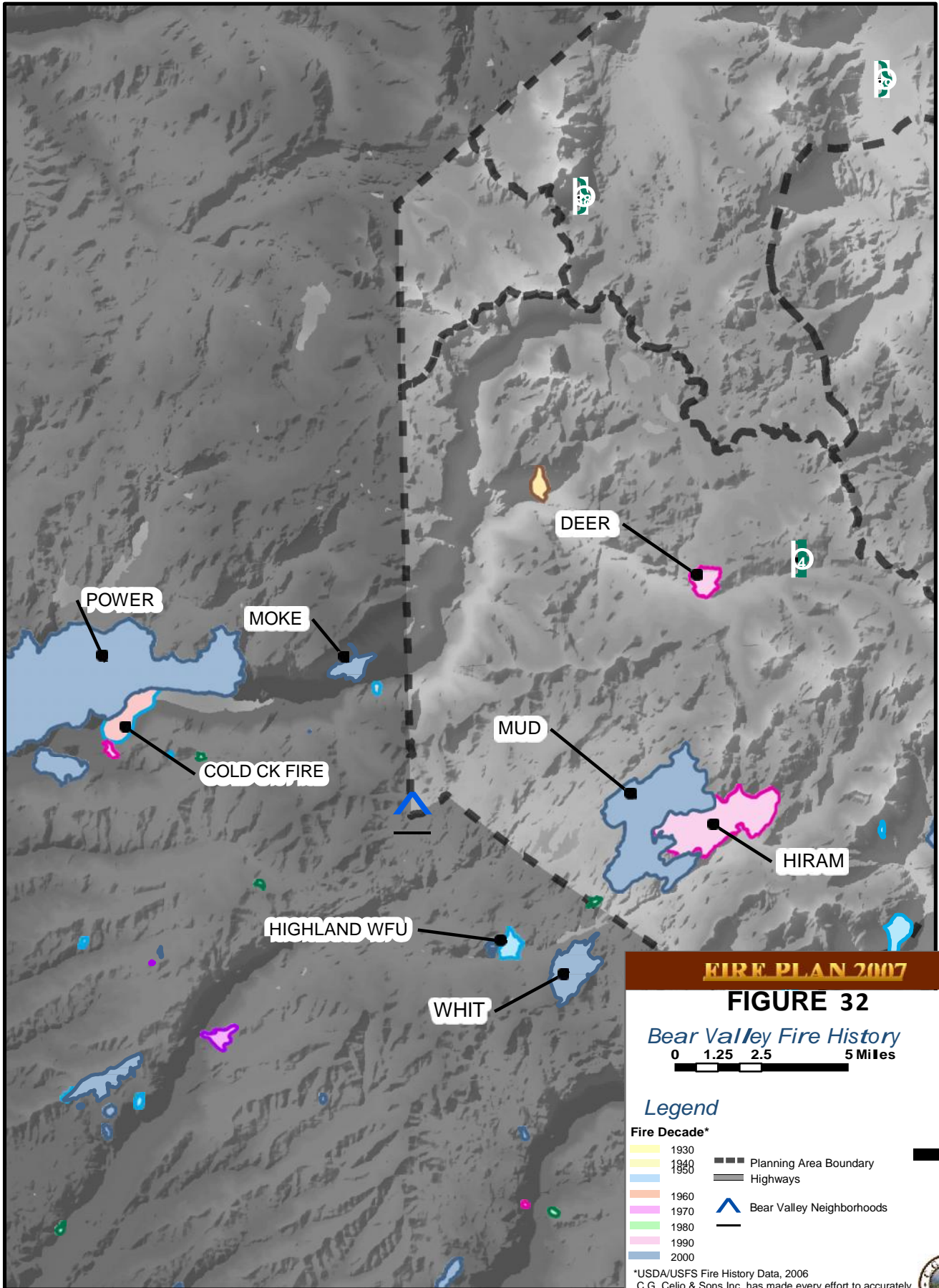


FIGURE 31



**FIRE PLAN 2007**

**FIGURE 32**

*Bear Valley Fire History*

0 1.25 2.5 5 Miles

*Legend*

**Fire Decade\***

- 1930
- 1940
- 1950
- 1960
- 1970
- 1980
- 1990
- 2000
- Planning Area Boundary
- Highways
- ▲ Bear Valley Neighborhoods

\*USDA/USFS Fire History Data, 2006  
 C.G. Celio & Sons Inc. has made every effort to accurately compile the information depicted on this map, but cannot warrant the reliability or completeness of the source data.



## 7C. Risk Evaluation – Bear Valley

### i Risk Evaluation

The neighborhoods within the Bear Valley Planning Area are at medium to high risk for catastrophic wildfire. Fuels surrounding the neighborhoods are continuous, overstocked forest types. Slopes are moderate to steep and the wind blows upslope from the southwest during hot summer and early fall afternoons.

Natural and human ignitions are likely. The ignition risk is highest from the tourist and recreational user groups who are unfamiliar with the area and commonly use outside BBQ’s and campfires. The increased amount of tourist traffic on the road also increases the risk of ignition from vehicles.

Fire protection is provided by the Bear Valley Public Safety Department (a combination department consisting of paid sheriff/firefighters and volunteer firefighters.) There is one structure engine and one wildland engine at their firehouse. Water sources include: standpipes in the Old Subdivision, hydrants in the New Subdivision, Bear Lake (for drafting), and standpipes or a direct tank hookup in Sherman Acres.



Alpine County recently completed its Field Operations Guide complete with evacuation maps for neighborhoods in Bear Valley. Except for Sherman Acres, egress from the communities is good. Once on a state highway or county road, the risk of entrapment is low. Many roads are looped and there are no designated safety zones.

Neighborhoods are most at risk from a wind driven fire burning through the forest to the southwest. Wind driven flame fronts in these fuels will be difficult to stop.

### i Risk Evaluation Summary

Asset	Rating
<b>Structures</b>	
1. Old Subdivision	Medium to High
2. New Subdivision	Medium to High
3. Sherman Acres	High

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<b>Business</b>	
1. Bear Valley Village	Medium to High
<b>Infrastructure</b>	
1. Bear Valley Village	Medium to High
2. Old Subdivision	Medium to High
3. New Subdivision	Medium to High
4. Power Lines	High
5. Evacuation Routes	Medium
6. Airport	Low
<b>Recreation</b>	
1. Bear Lake	Medium
2. Tennis courts/ball field	Medium to High
3. USFS Campgrounds	Medium to High
<b>Fishing</b>	
1. Stanislaus River	Medium
<b>Wildlife Habitat</b>	Medium
<b>Endangered Species</b>	Medium
<b>Watersheds</b>	Medium to High
<b>Historical Resources</b>	Medium
<b>Cultural Resources</b>	Medium to High

i Fire Hazard Assessment by Location

**1. Old Subdivision**

**Rating: Medium to High**

Fuels: The Old Subdivision is surrounded by Fuel Models 2 (grasses), and 10 (closed timber) with fuel loadings of moderate to high density. Red Fir, Lodgepole Pine, and grasses are the primary vegetation types. The residents have been working to reduce fuels along roads and around structures but much remains to be done. In many areas, fuels are continuous and would easily carry a wildfire.



Weather: Summer weather is typical for the west slope of the Sierras with afternoon winds from the southwest. Temperatures rarely exceed 85 degrees but humidities can drop as low as 10%.

Topography: Slopes are low to moderate in the neighborhood, which sits on a south facing aspect.



Human Sources of Ignition:

A number of sources of human ignitions exist in and near the Old Subdivision. Many residences use wood heating, leading to a potential for chimney fires and burning embers. Structure fires can easily spread to the wildland if they occur during wildland season. Power is supplied through overhead lines adjacent to roads. Lines have been knocked down during storm events and traffic accidents. The large

influx of tourists during the summer, particularly on weekends, increases the number of potential ignition sources, from recreation fire use and from vehicle accidents.

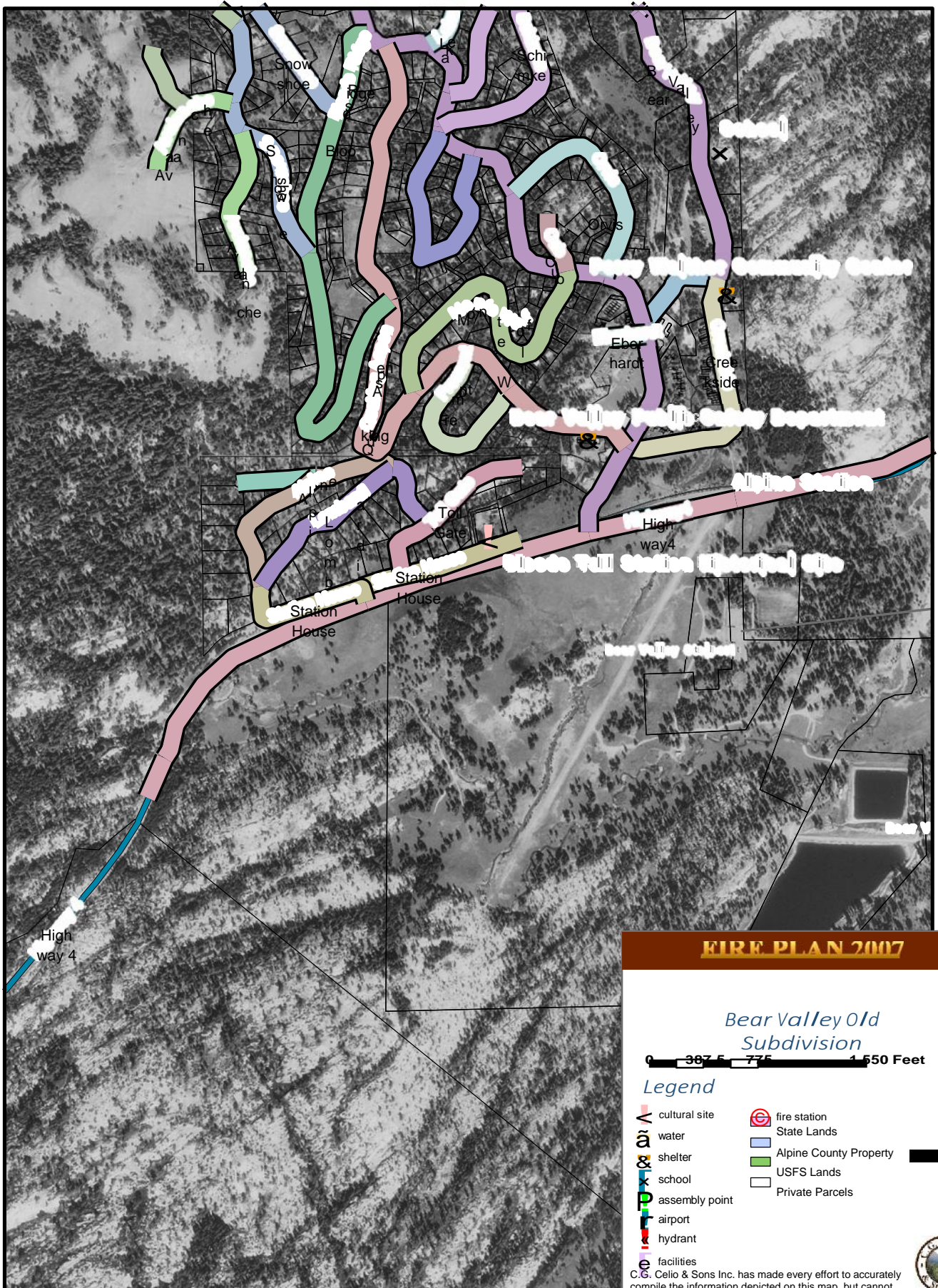
Community Preparedness: The neighborhood is moderately prepared for a

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wildfire event. Building construction is improving. Some residents are replacing shake roofs and using fire resistant decking. However, a significant number of existing structures have flammable siding and roofing material. Many structures have adequate defensible space. Most of the homes are on unpaved, narrow access roads or right off State Highway 4, making ingress and egress possible but challenging during a fire event. Fuels along these access ways vary in density. Power lines follow the roads. Entrapment

could be an issue in a worst case scenario. The Perry Walther Community Center and the Public Safety Department serve as local shelters. The Bear Valley Mountain Resort has also been used as a larger shelter when needed.

Fire Protection Resources: The Bear Valley Public Safety Department is located within ¼ mile of the neighborhood and can respond engines in less than 10 minutes. Water supply comes from the standpipe system or from a hose lay to the New Subdivision hydrants. Mutual aid fire resources come from Ebbetts Pass Fire Department, CALFIRE, and USFS with a 30 minute response time.



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2. New Subdivision*Rating: Medium to High*

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Fuels: The New Subdivision lies in Fuel Models 2 (grasses) and 10 (closed timber), with moderate fuel densities. Buildings and landscaping break up wildland fuels, but tree density is high and ladder fuels are present. Lodgepole Pine and Red Fir predominate with a grass understory.

Weather: Summer weather is the primary concern with afternoon winds from the southwest and low humidities.

Topography: Slopes are moderate to steep in the neighborhood, which sits at the mouth of the Bear Creek drainage. The subdivision is primarily south facing.



Human Sources of Ignition: A number of sources of human ignitions exist in and adjacent to the neighborhood of the New Subdivision. Some of the residences use wood heating, leading to potential for chimney fires and burning embers. Structure fires can easily spread to the wildland if they occur during wildland season. The Bear Valley Village lies within this neighborhood. A large summer influx of tourists in the Village increases possible ignitions from barbeques, vehicles, cigarette butts etc.

Community Preparedness: The neighborhood is moderately prepared for a wildland fire. Building materials vary with combustible siding, decks and roofing

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material present throughout the community. Many structures have adequate defensible

space. Structure density and landscaping preclude most wildland fuels in the understory, but pine needles on the ground and tree density remain as hazards. Access and egress on wide, paved roads eliminates entrapment concerns. Bear Valley Residents Inc (the homeowners association) has taken an active role in identifying and mitigating some fuel hazards within the subdivision utilizing the Volunteers in Prevention program and a vacant lot fuels abatement ordinance. The Perry Walther Community Center and Public Safety Department serve as local shelters. The Bear Valley Mountain Resort has also been used as a larger shelter when needed.

Fire Protection Resources: The Bear Valley Public Safety Department is located at the entrance to the neighborhood and can respond engines in less than 5 minutes. A hydrant system fed by Bear Lake provides sufficient water supply. Mutual aid comes from Ebbetts Pass Fire Department, CALFIRE, and USFS with a 30 minute response time.

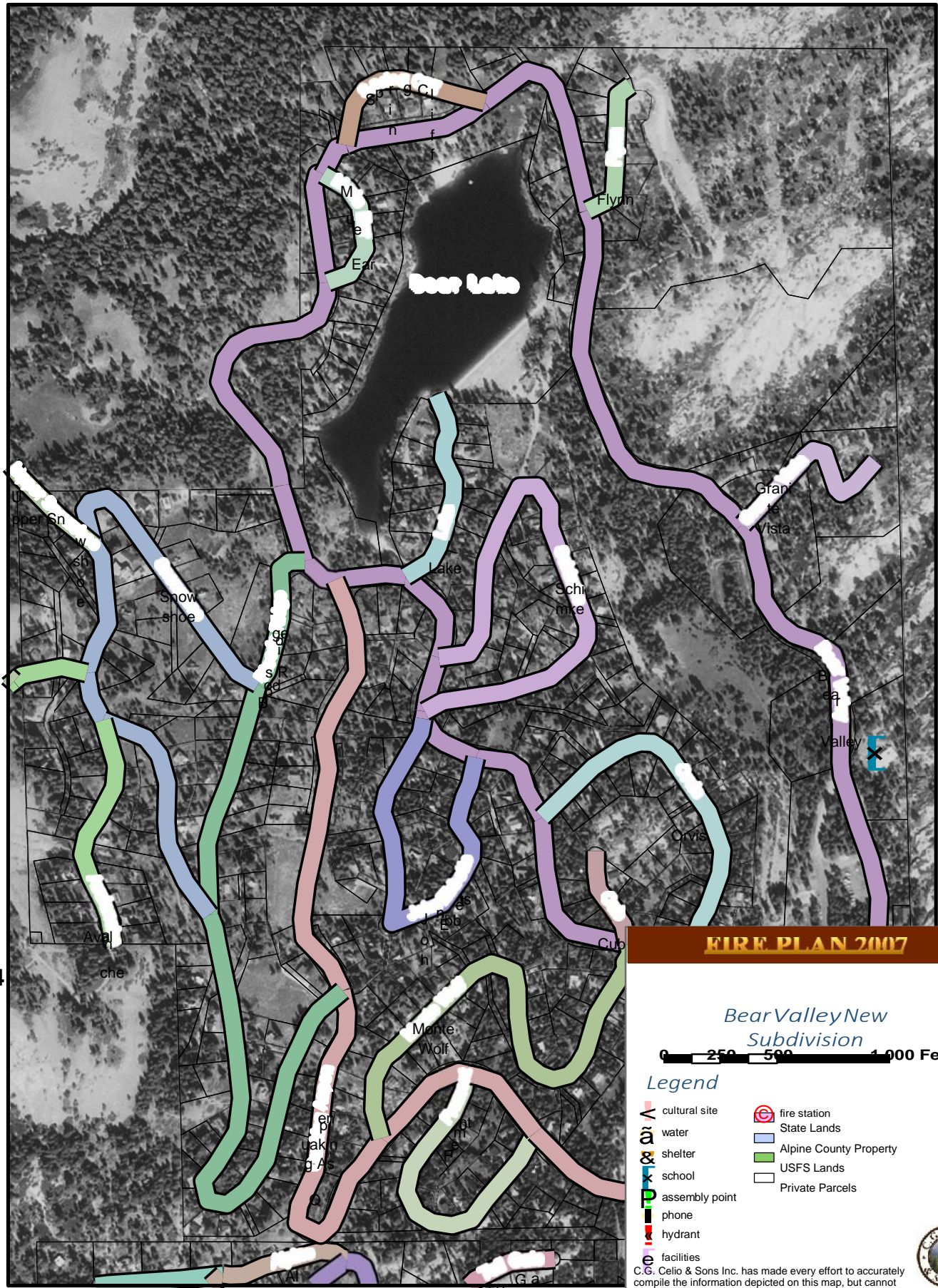


FIGURE 34

3. Sherman Acres

Rating: High

Fuels: Sherman Acres homes sit in a heavily forested area composed primarily of Fuel Model 10 (closed timber).

Weather: The weather mirrors that of the Old and New Subdivisions with afternoon southwest winds during the summer months. Humidities can drop as low as 10%.

Topography: Slopes range from gentle to moderate with south to southeast aspects.



Human Sources of Ignition: A number of sources of human ignitions exist in the neighborhood of Sherman Acres. Many residences use wood heating, leading to potential chimney fires and burning embers. Structure fires can easily spread to the wildland if they occur during wildland season. Power is supplied through overhead lines adjacent to roads.

Community Preparedness:

Building construction is improving; some residents are replacing shake roofs and using fire resistant decking. However, a significant number of existing structures have flammable siding and roofing material. Many structures have inadequate defensible space. Roads are narrow and unpaved making ingress and egress difficult during a fire event. Fuels crowd the road margins making entrapment a major concern in the subdivision.

Fire Protection Resources: The Bear Valley Public Safety Department is located within two miles from most of the neighborhood and can respond engines in less than 10 minutes. Two water tanks near the center of the subdivision are the only sources of water in the neighborhood. There are several standpipes in the neighborhood but no hydrants. The nearest draft source is Bear Lake, at least a 15 minute turnaround time. Mutual aid arrives from Ebbetts Pass Fire Department, CALFIRE, and USFS with a 30 minute response time. While the subdivision straddles the Alpine/Calaveras County line, the Bear Valley Public Safety Department provides first response fire and medical services.



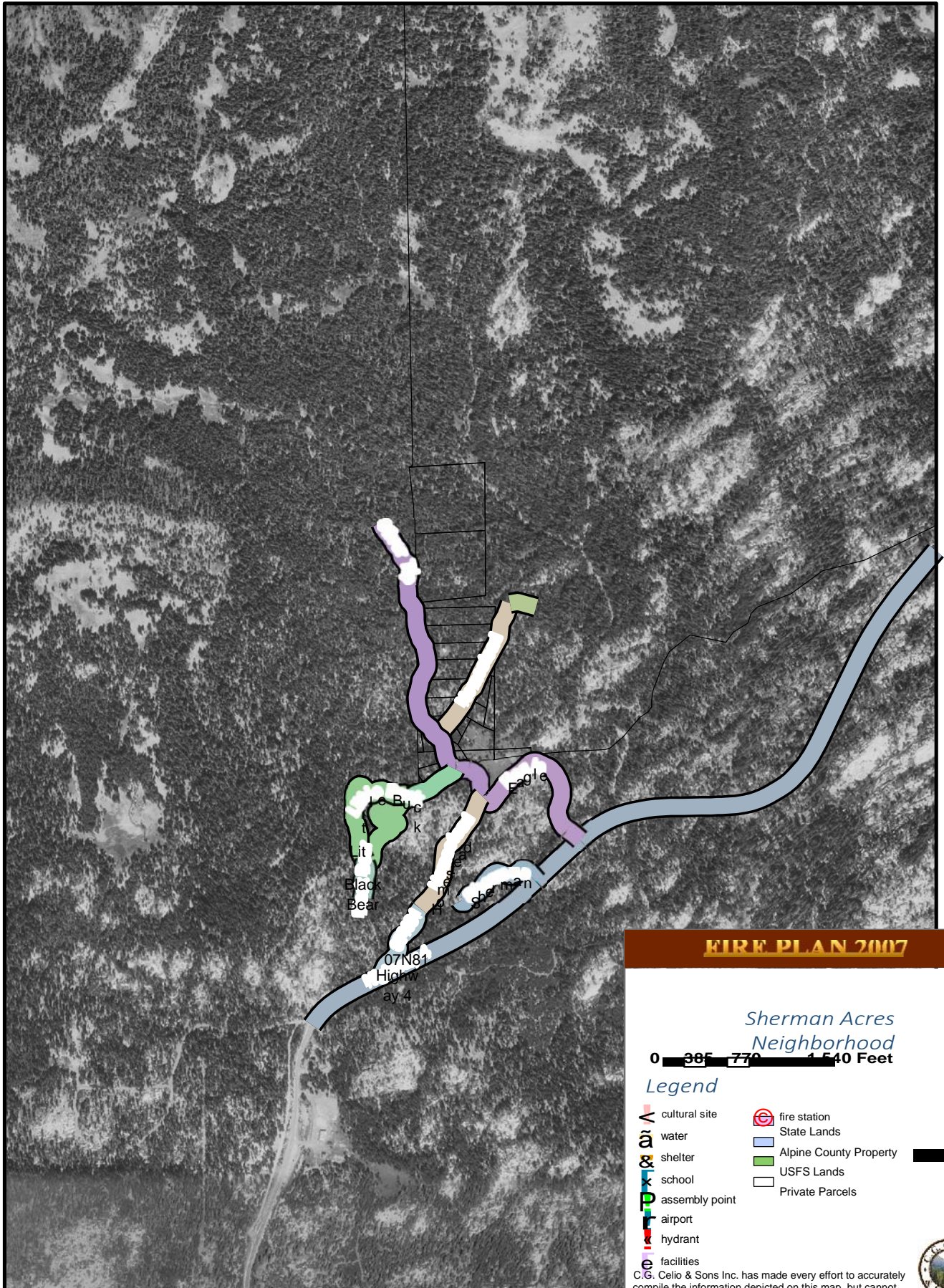


FIGURE 35

**FIRE PLAN 2007**

*Sherman Acres  
Neighborhood*

0 385 770 1540 Feet

*Legend*

	cultural site		fire station
	water		State Lands
	shelter		Alpine County Property
	school		USFS Lands
	assembly point		Private Parcels
	airport		
	hydrant		
	facilities		

C.G. Cello & Sons Inc. has made every effort to accurately compile the information depicted on this map, but cannot warrant the reliability or completeness of the source data.



## 8C. Action Plan- Bear Valley

### 8.1 *Desired Future Conditions*

1. Reduced threat to residents and their property from wildfires.
2. Increased community preparedness for wildfire.
3. Increased fire suppression capabilities.
4. Improved forest health with lower tree mortality.

### 8.2 *Mitigation Goals and Responsibilities*

#### Goals:

Initiate long term planning for vegetation: species types, density and maximum height for the Bear Valley Planning Area.

#### Objectives:

Determine strategies for vegetation management, prescriptions, fuels reduction, and maintenance.

#### Responsibilities:

##### Homeowners

For the entire Bear Valley Planning Area:

1. Replace flammable roofing and decking materials with fire-resistant materials.
2. Provide a minimum 100' defensible space around all structures.
3. Support the Bear Valley Public Safety Department in the actions listed below.

For the Old Subdivision neighborhood:

1. Thin overstory and clear road right of ways.
2. Widen roads and provide turnouts and turnarounds for fire apparatus.

For the New Subdivision neighborhood:

1. Continue efforts to thin forests and remove ladder fuels outside the 150' homeowner exemption zones.
2. Continue fuels treatment along the road right of ways.

For the Sherman Acres neighborhood:

1. Thin overstory and clear road right of ways.
2. Widen roads and provide turnouts and turnarounds for fire apparatus.
3. Provide more options for access to the water supply.

##### Bear Valley Public Safety Department

1. Develop a community evacuation plan and conduct an evacuation drill with the community, Alpine County Sheriff's Office and the USFS.
2. Participate in a pre-fire season tabletop exercise with the Alpine County Sheriff's Office, CALFIRE, and USFS to develop a coordinated agency response to a wildfire incident.

3. Increase the number of trained volunteers.
4. Continue to purchase wildland firefighting equipment and train volunteers to the “red card” certification system.
5. Pursue upgrading wildland apparatus.

#### Alpine County Sheriff's Office

1. Develop a community evacuation plan and conduct an evacuation drill with the community. Include relevant partner agencies that might be involved in a major wildfire event.
1. Participate in a pre-fire season tabletop exercise with the Bear Valley Public Safety Department, CALFIRE, and USFS to develop a coordinated agency response to a wildfire incident.

#### Alpine County Board of Supervisors

1. Ensure the emergency services agencies are addressing the public safety issues outlined in this plan.
2. Enforce legislation, ordinances, or other codes to eliminate wildland fuel hazards within the communities.
3. Lobby federal agencies to implement fuels reduction projects on public lands surrounding communities.
4. Continue fuels treatments on County owned land within communities.
5. Explore cost effective biomass disposal solutions and collection options in the Bear Valley Area.

#### Alpine County Public Works

1. Continue to provide defensible space around County Buildings, (Library, Perry Walther Building, School.)
2. Continue the annual brush treatment along roadways to reduce the ignition risk and to make the road passable during a fire event.

#### Alpine Fire Safe Council

1. Collaborate with Calaveras Foothill Fire Safe Council as needed to secure funding and support for Bear Valley projects.
2. Continue to provide public education information on defensible space at County buildings, and through mailings.
3. Assist the Alpine County Board of Supervisors as requested with development of fuels reduction solutions.
4. Actively support the efforts of the local fire department and other emergency services in mitigating wildfire risk.

#### Utilities (power and water)

1. Reduce or clear fuels from underneath power lines and power poles.

### 8.3 Mitigation Projects

Several mitigation projects have been initiated in the Bear Valley Planning Area. The projects have been sponsored by the residents, the Calaveras Fire Safe Council, CALFIRE (Proposition 40 funds), and the Alpine County Resource Advisory Committee (RAC).

Figure 36 identifies the project areas, including USFS projects on adjacent lands.



Thinning project near Bear Valley Village

2004: Bear Valley Residents Inc. Common Area Treatments (10 acres)

Bear Valley Public Safety Dept/Alpine County Road Right-of-Way (5 acres)

Calaveras Fire Safe Council Chipper Program (30 lots)

2005: Bear Valley Residents Inc. Common Area Treatments continued (7 acres) RAC-Bear Valley Public Safety Dept/Alpine County Road Right-of-Way (5 acres)

RAC Curbside Chipping Program ( 36 lots)

2006: RAC-Bear Valley Public Safety Dept/Alpine County Curbside Chipping Program continued (43 lots)

Prop. 40 Alpine County Road Right-of Way and Common Areas Project (10 Acres)

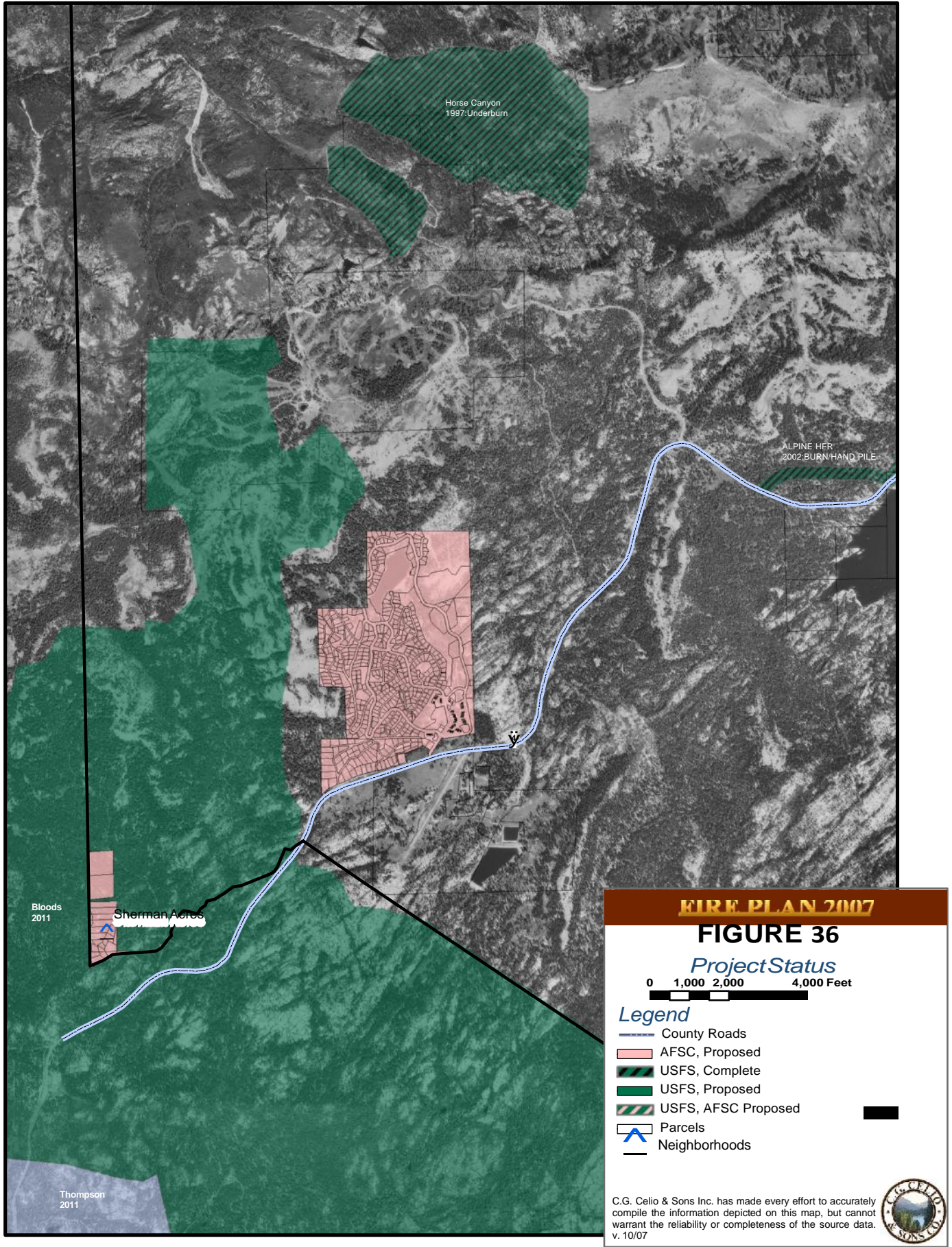
2007: RAC-Bear Valley Public Safety Dept/Alpine County Road Right-of-Way (10 acres)

Calaveras Fire Safe Council Chipper Program (60 lots)

### 8.4 Actions

The following summary of projects has been developed for the Bear Valley Planning area. The project worksheets are intended to provide the background information necessary for grant application development and funding.

<i>Priority</i>	<i>Name</i>	<i>Acreage</i>	<i>Estimated Cost</i>
1	Defensible Space Creation on Residential Lots	n/a	\$50,000-\$200,000
2	Fuels Treatment in Common Areas and outside the Homeowner Exemption Zones	50	\$50,000-\$100,000
3	Road Right-of-Way Fuels Program	30	\$30,000-\$50,000



*PROJECT 1: Defensible Space Creation on Residential Lots*

**Goals:**

**Short range-**Help residents create defensible space on their lots. Help residents comply with the updated state public resources code.

**Long range-**Improve forest health, protect the watershed, and develop an ongoing defensible space fuels treatment and removal program for the Bear Valley Subdivisions.

**Objective:** Reduce: fire intensity, potential spot fire ignitions, rate of fire spread, and fuel continuity.

**Community Situation:** Fuel densities and types vary to some degree between the three neighborhoods. Dense timber stands characterize Sherman Acres, while a mix of continuous grasses and younger timber can be found in the Old and New Subdivisions.

**Estimated Cost:** Costs will vary with the choice of treatment methods. Options for treatment include:

1. Hand crew removal of ground fuels and smaller trees: \$1,200/day  
(approximately 2-3 lots per day)
2. Hand crew chipping of fuels: \$1,200/day  
(approximately 10 -15 lots per day)
3. Mastication: \$4,000/day  
(approximately 5-8 acres per day)
4. Tree removal services: \$1,200/day  
(approximately 1-2 lots per day)

Project manager: \$5,000

Approximate total cost: \$50,000 to \$200,000

**Expected completion time:** Dependent on the number of participants. Initial work to bring lots into compliance may take several years.

*PROJECT 2: Fuels Treatment in Common Areas and outside the Homeowner Exemption Zones*

**Goal:** Reduce fuel density and continuity on commonly owned property and on private property outside the Homeowner Exemption Zone (HEZ).

**Objective:** Reduce fire intensity, rate of fire spread, and potential spot fire ignitions. Improve forest health.

**Vegetative condition and topography:** Fuels in the common areas and outside the HEZ are discussed earlier in this plan and consist mainly of grasses and timber types.

**Prescription for treatment:** Fuels treatment in these areas should focus on breaking the horizontal and vertical continuity of the fuels. Timber should have a minimum crown spacing of ten feet. Ground fuels should be thinned or mowed to allow firefighters access around these areas. Detailed project prescriptions will need to be developed with the assistance of a Registered Professional Forester.

**Estimated Cost:** Approximate average cost per acre:  
\$1,000-2,000 Approximate number of acres  
to treat: 50 Approximate total cost: \$50,000-  
100,000

**Expected completion time:** The field work portion of this project could be completed in one summer season.

**Ownership and partners:** Approval of the common ownership component may take some time depending on the neighborhood. Participation of the property owners on land outside the HEZ may increase with a cooperative approach. A vacant lot fuels abatement ordinance may also come into play in this project.

*PROJECT 3: Road Right-of-Way Fuels Program*

**Goal:** Safeguard access along road right-of-ways for evacuations and emergency response.

**Objectives:** Reduce: fire intensity, rate of fire spread, direct flame impingement on vehicles. Improve long term health of the young trees.

**Community Situation:** Young Lodgepole pines and Red Firs crowd the road right-of- ways within the subdivisions as well as along Highway 4. A result, primarily, of subdivision development, these trees form continuous fuel belts which could help move fire from the roadside to the subdivisions. A fire traveling through these fuels will also threaten residents and emergency vehicles trying to make access or egress. Power poles near these stands of young trees will be threatened as well and could pose access problems if they fall across the roads.

**Prescription for Treatment:** Working with a Registered Professional Forester, thin younger trees to a basal area consistent with reduced fire behavior and forest health.

**Estimated Cost:** Costs will vary with the choice of treatment methods. Options for treatment include:

1. Hand crew removal of ground fuels and smaller trees: \$1,200/day
2. Hand crew chipping of fuels: \$1,200/day
3. Mastication: \$4,000/day
4. Tree removal services: \$1,200/day

Project manager: \$5,000

Approximate total cost: \$30,000 to \$50,000

**Estimated Time to Complete:** The field work component of this project could be completed in one summer season. Planning and approvals could require one to two years time prior to the field work.

**Ownership and Partners:** Project approval from the state, county, and private property owners will require coordination by a project manager.

# G I O S S a r y

**Broadcast Burning:** A controlled burn, where the fire is intentionally ignited and allowed to proceed over a designated area within well-defined boundaries for the reduction of fuel hazard after logging, for site preparation before planting and/or for ecosystem restoration.

**Canopy:** The top layer of a forest, tree, or lower-growing stand of shrubs, which is formed by leaves, needles, and branches creating a continuous cover.

**Chimney:** A vertical cleft in topography, which may increase the intensity and/or speed of a fire.

**Chip:** To cut up slash materials into small pieces, or chips.

**Chipping Program:** A program where several individuals or communities share the resources associated with processing debris from fuel-reduction activities, including the chipper (the machine that creates the chips), staff, insurance, etc.

**Chunk:** To complete the pile-burning process by turning in or placing the unburned woody material ends into the fire ring.

**Closed Canopy:** Occurs when the tops of trees or shrubs touch and blend together sufficiently to prevent direct sunlight from reaching the ground in most or all places.

**Collaborative:** An open, inclusive process that assumes all participants have valuable knowledge and opinions.

**Compact:** To pack closely or tightly together, as in the fragments of soil being compacted by heavy equipment, thereby limiting the ability of oxygen or water to pass through freely.

**Composite Decking:** Deck boards manufactured from wood fiber and plastic to form

a profile that requires less maintenance and generally has a longer lifespan than natural wood.

**Composition:** The percentage of each species that together comprise the life present in a given area.

**Condition Class:** This landscape designation is based on a relative measure describing the degree of departure (low, moderate, or high) from the historical natural fire regime.

**Containment:** The process of completely surrounding a fire with natural or man-made fuel breaks.

**Contour Falling:** Cutting and placing trees along the slope contour. This is a treatment that utilizes positioned logs to help control erosion from water flow. Logs are offset on the slope contour to slow water by creating a meandering travel path.

**Control:** The act of managing a fire, which generally entails a completed control line around the fire.

**Controlled Burning (or Prescribed Fire):** A vegetation management practice that uses fire to improve habitat and/or reduce hazardous fuels. A plan for the prescribed burn must be written out and approved by fire department authorities, and specific requirements must be met before commencing burning.

**Convection Column:** Heat generated from a fire rises in a column to varying heights above the flames, depending on the size of the burn.

**Cover:** Any plants or organic matter that holds soil in place and/or grow over and create shade that provides wildlife with an area to reproduce and find protection from predators and weather.

**Crop:** The amount of fruits or seeds that a group of plants of one species yields in one growing season.

**Crown Density:** A measurement of the thickness or density of the foliage of the treetops (crown) in a stand.

**Crown Fire:** A fire that spreads through the top of the vegetative canopy and is characteristic of hot fires and dry conditions. Crown fires are generally more complex to control than surface fires.

**Crown Scorch:** When a fire or a convection column burns a portion or the entire crown of a tree or shrub.

**Crown Structure:** The arrangement of the uppermost branches and foliage of a tree or shrub.

**Dappled Light:** When the vegetative canopy has small openings, filtered sunrays project through the treetops onto the ground.

**DBH:** Diameter at Breast Height, a measurement of a tree's diameter at the level of an adult chest (approximately)

**Decay Classes:** Rotting wood is categorized based on the level of decomposition, broken into five classes. For example, decay class 1 is structurally intact (with bark attached) ranging to decay class 5, which is very soft, disintegrated wood.

**Defensible Space:** An area around a home/structure where flammable materials have been reduced to act as a barrier between wildfires and property, thereby decreasing the risk of damage or loss. This space is currently defined as 100 feet around a structure in California.

**Defensible Space Zone:** The 100-foot zone around the home or other structure.

**Disturbance:** Various activities that disrupt the normal state of the soil, such as digging, erosion, compaction by heavy equipment, etc.

**Diurnal:** Belonging to or active during the day (opposite of nocturnal).

**Doghair:** An excessively dense stand of trees. An example is an acre with 35,000 trees, all smaller than 7 inches DBH.

**Dominant:** The species or individual that is the most abundant or influential in an ecosystem. For example, a dominant tree is one that stands taller than the rest and receives full sun, or the shrub species most abundant in the local understory.

**Downed Woody Debris:** The remains of dead trees, branches, and various woody brush that sit on the ground; generally refers to trunks of downed trees.

**Draft:** Using the forces of suction to draw water from ponds, swimming pools, or other bodies of water. This technique utilizes a partial vacuum formed by a suction pump and atmospheric pressure. The water is then moved where it is needed.

**Draw:** A topographic channel that is generally shallower than a ravine.

**Drip Torch:** A hand-held device used to ignite fires by dripping flaming liquid fuel on the materials to be burned.

**Drip Line:** The boundary of a tree's canopy, generally estimated by the extent of the tree's outermost limbs and the circular moisture line formed when rainfall drips from the limb tips.

**Drip-Line Thinning:** Clearing ladder fuels under the drip-line circumference of a leave-tree.

**Duff:** A layer on top of the soil made up of mostly fine (small) decomposing organic matter such as leaves, needles, and small branches.

**Ecosystem:** A community of organisms (including plants, animals, and fungi and the non-living aspects of the physical environment) that makes up a specific area. Examples of ecosystem types include a pond or a forest.

**Ecosystem Functions:** The processes and interactions that occur between organisms and the physical environment.

**Ember Attack:** Sparks and small flaming bits blown by the wind during a firestorm. These can accumulate at intersections between horizontal and vertical members on the outside of a house, igniting debris and combustible materials. Embers can also enter into openings (e.g. attic vents and other wall openings), igniting debris on the inside of the home.

**Ember Interceptors:** An ignition-resistant object or plant, such as coast live oak, that interrupts the flight of embers during a firestorm, often slowing their descent long enough for them to burn out before reaching surface fuels below. In some wildfires this process appears to have resulted in reduced frequency of ignitions of urban fuels (homes) beneath ember interceptors (mature oaks that had been cleared of dead wood).

**Embers:** Small glowing or smoldering pieces of wood or other organic debris, often dispersed ahead of a fire (also known as firebrands).

**Endemic:** A plant or animal that is native to a certain limited area and found nowhere else.

**Endangered Species:** A population of organisms classified as such by the state or federal government as being at risk of becoming extinct because it is few in number and/or threatened by changing environmental or predation parameters.

**Engine Strike Team:** A specified number and type of fire engine assembled for a

tactical assignment on an emergency.

**Environmental Compliance:** To meet the environmental regulations, laws, standards, and requirements enacted.

**Environmentally Sensitive Habitat Area (ESHA):** An area protected from human activities or development due to the existence of rare or especially valuable and/or vulnerable plants, animals, and habitats.

**Ephemeral:** Meaning short duration or life, as in an ephemeral stream that only flows after a rainstorm or during the rainy season.

**Epicormic Branching:** Branches of a plant that shoot sporadically from the main stem rather than from the top. May be caused by disturbance.

**Erosion:** The removal of soil over time by weather, wind and/or water, such as rain or water runoff from roads.

**Escape Route:** A path or road that has been preplanned for getting out of harm's way in a fire situation. The route should be well understood in advance of crisis by all participants. If there is any unclear direction, the path should be marked.

**Escapes:** Wildfires that cannot be contained with the first attempts at suppression.

**Excessive Stems:** Stems (tree or shrub main trunks) in high density.

**Extinction Moisture:** The moisture level in fuels at which fires tend to stop burning.

**Feather or Feathering:** A process that reduces the appearance of change between treated and untreated sites by gradually softening the transition (gradually doing less and less manual work on an area as one moves away from the primary treatment site).

**Federal Responsibility Area (FRA):** An area where fire protection responsibility and liability is federal.

**Firebrand:** A piece of wood or a coal that is hot and glowing from fire activity, often dispersed by wind ahead of a fire. Also called *embers*.

**Firebreak:** A strip of land that has been cleared of vegetation to help slow or stop the spread of wildfire. It may be a road, trail, or path cleared of vegetation or other burnable materials. A stream could also serve as a

firebreak. See *Fuelbreak* for the difference between the two.

**Fireline Intensity:** The heat energy released by the fire at the forefront of the fire.

**Fireshed:** An area or areas with similar fire management, fire history, and risk of wildland fire issues.

**Fire-Adapted:** The ability of organisms or ecosystems to make long-term genetic change for the most advantageous response to fire-prone environments.

**Fire-Adapted Ecosystem:** A local mix of mature natural vegetation (ideally native species but often found in combination with exotic species) that maintains its ability to survive and regenerate, and perhaps even to thrive, with regular disturbance from wildfire. Opportunistic species benefit from fire and the openings it can create in a woodland; this is part of their adaptation.

**Fire-Adapted Vegetation:** Vegetation that has adapted to fire as a disturbance factor and can generally survive wildfire. In the case of chaparral vegetation, survival depends on fires occurring only every 25 years or more, and it is not adapted to more frequent fire.

**Fire Behavior:** The combination of fire spread, heat output, flame length, intensity, etc., as a fire responds to weather, topography, types of fuels, etc.

**Fire Climax:** The stage of vegetation that is sustained with frequent fire.

**Fire-Dependent:** Plant communities and specific habitat types that have evolved to rely on fire in order to exist and/or thrive.

**Fire-Dependent Vegetation:** Vegetation that depends on some fire for its long-term survival.

**Fire Ecology:** The study of fire and its relationship to the physical, chemical, and biological components of an ecosystem.

**Fire Flow:** The flow rate of a water supply, measured at 20 pounds per square inch (PSI) (137.9kPa) residual pressure that is available for firefighting. When water supply tanks are approved for use, the flow rate of a water supply may be at draft.

**Fire Followers:** Plants that flourish after a fire; seeds from long-lived seedbanks typically germinate abundantly in ashy soils.

**Fire-Free Zone:** A 5-foot minimum zone around the home that is free of all fuels.

**Fire Hazard:** The amount, condition, and structure of fuels that will burn if a fire enters an area.

**Fire Ignition:** The act of setting on fire or igniting a fire.

**Fire Intensity:** A measurement of the heat released in an area during a specific amount of time (BTU/ft/sec). Intensity has a large influence on an ecosystem's recovery from fire.

**Fire Prevention:** Actions taken by homeowners and community members to lessen wildfires and damage caused by wildfires. Includes education, enforcement, and land management practices.

**Fire Protection (a.k.a. Fire Suppression):** Fire-fighting tactics used to suppress wildfires. Fire-fighting efforts in wildland areas require different techniques, equipment, and training from the more familiar structure fire- fighting found in populated areas.

**Fire Regime:** The characteristic patterns of fire in a given ecosystem. May include fire behavior, distribution, frequency, size, and season.

**Fire Resiliency:** The ability of an ecosystem to maintain its native biodiversity, ecological integrity, and natural recovery processes following a wildland fire disturbance.

**Fire-Resilient Landscape:** A natural landscape featuring plants that have adapted to local wildfire conditions, or a domestic outdoor space where appropriate actions have been taken to make it less vulnerable to wildfire and certainly less prone to causing one.

**Fire-Resistant:** A material, substance, or structure that is difficult to ignite by fire and burn.

**Fire-Resistant Building Materials:** Construction materials that are resistant to ignition when exposed to radiant heat or flames. Examples include clay tile roofs, metal roofing, and stucco siding.

**Fire-Return Interval:** A period of time between fires in a specific region or area.

**Fire Risk:** The combination of vegetation, topography, weather, ignition sources, and fire history that leads to fire potential and danger in a given area.

**Fire Safe Council:** Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs,

implementing fuel-reduction projects, and more. [www.firesafecouncil.org](http://www.firesafecouncil.org).

**Fire-Safe Practices:** Activities such as creating defensible space, firebreaks, access, fire-resistant landscapes, changes to a home in terms of material and design, etc., that make the home/property safer in wildfire situations.

**Fire Safe or Fire Safety:** The act of preparing something—a home, neighborhood, or community—to survive a wildfire; the ability of an object to survive fire.

**Fire-Sensitive:** A species of tree that is more susceptible to fire damage. Sensitivity may be due to thin bark or easily ignitable foliage.

**Fire Severity:** A qualitative indicator of the effects of fire on an ecosystem. Fire severity reflects the amount of heat released by a fire, and therefore it is also dependent on fuels and fire behavior.

**Fire Weather:** The various types of weather that affect how a fire ignites, behaves, and is controlled.

**Flame Length:** The span of the flame from the tip to the base, irrespective of tilt.

**Flammable:** A quality of a substance that makes it likely to catch fire, be easily ignited, burn quickly and/or have a fast rate of spreading flames.

**Flanks:** Slope areas on both sides below a ridgetop.

**Flashy:** An adjective that when applied to fuel means that it ignites readily and is consumed rapidly when dry.

**Flashy Fuels:** Fine fuels, such as grass, leaves, pine needles, ferns, moss, and some kinds of slash, which ignite readily and are consumed rapidly when dry.

**Foehn Events:** A wind that blows warm, dry, and generally strong, creating extremely dry fuel and dangerous fire potential.

**Fuel:** All burnable materials including but not limited to living or dead vegetation, structures, and chemicals that feed a fire.

**Fuelbreak:** A strategic area where fuel volumes have been intentionally reduced to slow down a fire and reduce its flame length and intensity; as distinguished from a *firebreak*, where all fuels are removed to bare mineral soil for fire suppression.

**Fuel Bed Height:** A measurement of the height of fuel composition on the ground.

**Fuel Complex:** The volume, type, condition, arrangement, and location of fuels.

**Fuel Continuity:** The amount of continuous fuel materials in a fire's path that allows the fire to extend vertically toward the crowns of trees or horizontally into other fuels.

**Fuel Ladder:** A ladder of vegetation from the ground into the canopy (or upper branches) of the trees that allows fire to climb upward.

**Fuel Levels:** Amount of all burnable materials including but not limited to living or dead vegetation, structures, and chemicals that feed a fire.

**Fuel Model:** A standardized description of fuels available to a fire based on the amount, distribution, and continuity of vegetation and wood. Fuel models distinguish among vegetation (such as tall and short chaparral, or timber with and without an understory), as well as describe the arrangement and amount of vegetative fuels. Fire managers use fuel models within the Fire Behavior Prediction System to analyze the wildfire environment.

**Fuel Management:** The management of fuels for fire safety or ecosystem health. Examples include prescribed burns and creation of firebreaks.

**Fuel Moisture:** The amount of water in vegetation, typically expressed as a percentage, and having a large effect on the rate of spread of fires.

**Fuel Reduction/Treatment:** The act of removing burnable materials to lower the risk of fires igniting and to lessen the likelihood of damage to property and communities. Treatments may include creating a defensible space, developing fuelbreaks, initiating prescribed burns, and thinning vegetation.

**GIS (Geographic Information System):** A program for storing and manipulating geographical information on a computer; very useful for landscape-level planning efforts.

**GPS (Global Positioning System):** A hand-held navigational device that uses satellites to determine positions on the Earth.

**Green Islands:** Patches of live tree and plant communities retained within a mosaic thinning prescription.

**Ground-Disturbing Activities:** Actions that interrupt the natural condition of the ground, such as digging and compaction from heavy equipment.

**Ground Fuels:** The layer of combustible materials that exists below the layer of

surface litter. This layer includes plant roots, duff, etc. These materials can combust and burn without direct contact with a flame when embers drop from above.

**Growth or Vigor:** The ability of plants to exhibit healthy natural growth and survival.

**Habitat:** An ecological or environmental area that is inhabited by a particular species of animal(s), plant(s), or other type of organisms.

**Habitat Conditions:** The conditions needed by local wildlife to survive, including food, water, cover, and nesting sites.

**Hand Pile Burning:** Hazardous fuels are piled by hand for burning in a manner that will not damage surrounding trees or soil.

**Hardening/Harden Homes:** This term refers to improving a building's resistance to fire, such as updating a roof with noncombustible roofing material; the goal is to make the structure survivable in fire.

**Hazardous Fuels:** All burnable materials including but not limited to living or dead vegetation, structures, and chemicals that feed a fire.

**Headwall:** Steep upper sides of a drainage where fire can move quickly.

**Heat Output:** The total amount of heat that a fire releases in a specific area during the passing of the flaming front.

**Heat Per Unit Area:** The amount of heat produced by burning fuels in a given unit area through the entire duration of a fire.

**High Pruning:** Cutting of both dead and live branches 10 to 15 feet up from the base of the tree. This is done on larger trees to separate the fuel connectivity from the ground to the crown of a tree.

**Historic Natural Condition:** The climax environmental condition of a property/area that occurred in the past, before fire suppression and industrial activities. Old photos, settlers' journals, elders' oral history, and clues on the property (such as old stumps) may be helpful in identifying the historical natural condition of an area.

**Home Ignition Zone:** The home and the area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.

**Home-to-Home Ignitions:** The event of combustion initiation that creates fire as embers pass from one home to another. The action of one home igniting adjacent homes.

**Ignitions:** The event of combustion initiation that creates fire.

**Ignition Specialist:** A trained professional whose expertise is ignition and prescribed-fire techniques and management. Ignition specialists are certified through the National Wildfire Coordinating Group and have years of experience in wildland fire suppression and prescribed fire use. They have met all necessary requirements to perform firing applications.

**Ignition Zone:** The place where combustion is initiated.

**Ingress-Egress:** Roads and other avenues to enter and leave a property. Also refers to the act or right to come in or go through, as in entering a property (ingress), and the act or right to depart or go out, as in exiting a property (egress).

**Initial Entry:** The first stage of vegetation and tree thinning performed in a fuel-reduction treatment.

**Initial Site Assessment:** The preliminary steps of an evaluation of a piece of property to determine fuel hazards and health conditions. Information is gathered to help plan a fuel hazard-reduction treatment.

**Invasive Weeds:** Undesirable plants that are not native and have been introduced to an area by humans. These plants generally have no natural enemies and are able to spread rapidly throughout the new location. Some examples include Himalayan blackberries, English ivy, arundo, tamarisk, and Scotch broom.

**Jackpots:** Generally, small pockets of dense fuels, which could allow a fire to flare up and burn more intensely.

**Knox-Box:** A small safe typically mounted on a wall or post that holds the keys to a building or gate for firefighter or EMT use in emergency situations.

**Ladder Fuel Continuity:** The presence of connected or adjacent fuel materials in a fire's path that allow the fire on the ground to extend in a vertical direction toward the crowns of trees.

**Ladder Fuels:** Materials such as shrubs, low branches, or small trees connecting the ground to the tree canopy or uppermost vegetation layer. In forests, this allows fire to climb upward into trees.

**Landscape:** The visible features of an area of land, including topography, water

bodies, vegetation, human elements such as land uses and structures, and transitory elements such as lighting and weather conditions.

**Landing:** In logging or fuel-reduction work, a place where logs and branches are taken in order to be processed by a chipper.

**Layout:** In this case, defining and designating forest operations for a specific location.

**Leading Edge:** The foremost part of a fire that is guiding the fire in the direction of travel.

**Leave-Trees:** Trees that have been selected to remain standing in an area of thinning or harvesting.

**Leave-Patches:** Swaths or clusters of trees or other vegetation that have been selected to remain standing in an area of fuel treatment.

**Limb Up:** To remove the lower branches from a woody plant to create a defined space between the forest floor and the canopy.

**Limbing:** Removing selected branches of a standing or fallen tree or shrub.

**Live Crown Percentages:** The proportion of the height of the tree or shrub on which live branches and foliage are present.

**Local Responsibility Areas (LRA):** An area where fire protection is provided by local sources such as city fire departments, fire protection districts, and counties. Legal responsibility is at a local level, not at the state or federal level.

**Lop and Scatter:** The act of cutting and evenly spreading branches over the ground to reduce fire hazard and erosion potential, while promoting the decomposition of branches via their close proximity to the ground.

**Mastication:** The grinding, shredding, chunking, or chopping of vegetation by heavy machinery.

**Meadows and Seeps:** Areas of more or less dense grasses, sedges, and herbs that thrive, at least seasonally, under moist or saturated conditions. They occur from sea level to treeline and on many different substrates. They may be surrounded by grasslands, forests, or shrublands. A seep is an area where water rises from an underground source to the surface and creates a wet area.

**Merchantable:** Timber that is viable for sale under the current economic situation. This is generally determined by the part of the stem (trunk) that is

suitable for timber products.

**Modify Fire Behavior:** Using fire-safe practices such as fuel treatments, thinning, creating firebreaks, etc., to change the way a fire will behave, with a goal of slowing it down and/or suppressing it more easily.

**Moisture Content:** The dry weight of a material, such as wood or soil, compared to the wet weight of the same material. It is not unusual for live material to have moisture content greater than 100% because it could contain more water than solid material by weight.

**Monitor:** To watch, keep track of, or check regularly for changes—in this case, to the environment.

**Montane:** A mountainous region of moist, cool, upland slopes that occurs below the treeline and is predominantly composed of evergreen trees. It is also described as the lower vegetation belt on mountains that is composed of montane plants and animals.

**Mosaic Thinning:** A style of vegetative thinning that creates openings and patches of vegetation to reduce fuel connectivity and increase the potential variety of habitat types.

**Mosaic Thinning Regime:** A system of thinning to create patches and openings that emulate the structural composition created by a wildfire.

**Mulch:** A material (such as decaying leaves, bark, or compost) spread around or over a plant to keep invasive weeds down, to reduce moisture loss and/or to enrich and insulate the soil; as a verb, the application of such material. In the Santa Monica Mountains, only native vegetation should be used as mulch.

**Mutual Aid:** An agreement among emergency responders to lend assistance across jurisdictional boundaries. This may occur due to an emergency response that exceeds local resources, such as a disaster or a multiple- alarm fire.

**Natural Disturbance:** Disruptions, like fire and floods, which occur in the environment without the intervention of humans.

**Natural Place Community:** A simple term describing a specific type of ecosystem.

**Natural Range of Conditions:** The normal assortment of circumstances under which an organism or group can survive.

**Niche:** A species or population's role and/or function within an ecosystem. Includes resource use, interactions, etc.

**Nurse Log:** A tree that has fallen, died, and started to decompose. The decaying log is rich in moisture and nutrients and provides a germination spot for plants, as well as habitat for insects.

**Offshore Flow:** The flow of wind blowing from the land to the water, or in other words, wind blowing offshore.

**One-Way Transport Route:** A hauling trail used during tree extraction activities where one entry pass is made.

**Overstory:** The topmost trees in a forest that compose the upper canopy layer; compared to the understory, which is the lower woody or herbaceous layer underneath treetops.

**Overstory Trees:** Trees that form the uppermost layer of the canopy in a forest.

**Permeability:** In this case, a condition whereby fire can spread through a community with minimal negative impact.

**Photo-Point Monitoring:** By utilizing a specific, identifiable point on a property from where photos are taken over time, it's possible to use the same view to compare and monitor changes.

**Pilot Ignition Piles:** Small piles of primarily small fine fuels such as branches, dead materials, and organic matter.

**Pole-Sized:** Generally younger trees with a trunk diameter between 4 and 8 inches.

**Pre-Fire Plan:** A plan to address fire issues before ignition, including fire prevention actions such as hazardous fuel reduction. Occasionally these plans may extend into the suppression phase of fire protection and detail such items as evacuation routes, fuelbreaks, and fire-fighting strategies.

**Prescribed Fire (or Controlled Burn):** A management practice that uses fire to improve habitat or reduce hazardous fuels. A plan for the prescribed burn must be written out and approved by the local fire department, or CAL FIRE, depending on the location, and specific requirements must be met before commencing burning.

**Present Condition:** The environmental conditions that occur on a property/area at the present time.

**Productive:** A term used for land or forests that are growing efficiently and in a vigorous manner.

**Pruning:** The act of cutting back the unwanted portions of a plant, or cutting for the purpose of enhancing growth.

**Rate of Spread:** The speed of an advancing fire. May be measured by the growth in area or by the speed of the leading edge of the fire.

**Regeneration:** The renewal of trees or forests by planting seedlings, or direct seeding by humans, wind, birds, or animals after large disturbances like fire. "Regeneration" also refers to young trees that were naturally seeded or planted.

**Registered Professional Forester (RPF):** A person licensed in California to manage state or private forestlands and advise landowners on management of their forests.

**Relative Humidity:** A measure of moisture in the air. If the humidity is 100%, the air is completely saturated with moisture. If the humidity is less than 20%, the air is very dry. When the air is dry, it absorbs moisture from the fuels in the forest, making them more flammable.

**Release:** Using thinning techniques to free a tree or group of trees from competition for nutrients, sunlight, and water by removing the competing small trees and shrubs.

**Residence Time:** How long the flaming front of a fire burns in any one location.

**Resilient/Resiliency:** The ability of an ecosystem to return to its balanced state after a disturbance.

**Riparian:** A strip of land along the bank of a natural freshwater stream, river, creek, or lake that provides vast diversity and productivity of plants and animals.

**Risk Assessment:** The process of identifying and evaluating assets at risk.

**Salvage Logging:** Logging and removing merchantable trees after a fire to capture economic potential. This is a very controversial subject.

**Saturated:** The broad meaning is "full." Saturated soil refers to the point at which the soil is so full of water that no more water can get into (be absorbed by) the soil, and therefore must run off.

**Scalping:** The act of removing the surface layer to expose the bare mineral soil.

**Scratch Line:** An incomplete control line in the beginning stages of fire suppression that is constructed as an emergency backup for spreading fires.

**Sediment:** Particles of topsoil, sand, and minerals that come from soil erosion or decomposing plants and animals. Wind, water, and ice carry these particles; when excessive sediment collects in waterways it can destroy fish and wildlife habitat.

**Sensitive Species:** A plant or animal species that can tolerate a small range of resources and environmental situations, or habitat. These species raise concerns about population numbers and may be recognized locally as rare, or listed as Threatened or Endangered by the state or federal Endangered Species Act.

**Sequential Entries:** Working in a given area several times over the course of years to spread out the impacts of treatments.

**Shade-Tolerant:** Attribute of a species that is able to grow and mature normally in and/or prefers shaded areas.

**Shaded:** Blocked from light.

**Shaded Fuelbreaks:** A fire-suppression technique using fuelbreaks in forested areas. Vegetation is reduced and/or modified to reduce fire risk, but an adequate amount of crown canopy remains intact, thus inhibiting weedy undergrowth.

**Shape:** The act of pruning a tree to a desired form or appearance.

**Sheltered Connectivity:** Contiguous areas within a thinning treatment that are retained for wildlife cover and to support wildlife movement.

**Silvicultural:** The practice of caring for forest trees in a way that meets management objectives. For example, foresters may control the composition and quality of a forest stand for goods such as timber and/or benefits to an ecosystem.

**Site-Specific:** Applicable to a specific piece of land and its associated attributes and conditions (e.g. microclimate, soils, vegetation).

**Size Class:** The division of trees by the size of their diameter, sometimes split into three categories— seedlings, pole, and saw timber—or by diameter in inches.

**Slash:** The wood debris left on the ground after pruning, thinning, or vegetative clearing—may include branches, bark, chips, or logs.

**Slash Paper:** Paper used to cover slash piles before ignition with the intention of keeping the slash dry or allowing it to dry. Paper is more environmentally appropriate than plastic.

**Slope:** A percentage or degree change in elevation over a defined distance that measures the steepness of a landscape.

**Slope Stability:** The degree to which a slope is susceptible to erosion and slides, or the measure of its overall stability.

**Snag:** A standing dead tree that has usually lost most of its branches. Snags offer essential food and cover for a host of wildlife species.

**Soil Crust:** A hard crust forming on exposed soils, usually found in semiarid and arid environments.

**Soil Type:** Refers to the different combinations of soil particles and soil composition. Soil can vary greatly within short distances.

**Spatial Distribution:** The manner in which plants are arranged throughout an area.

**Species Composition:** The combination of species found in a particular site.

**Spot Fire:** A smaller fire outside the boundary of the main fire (usually ahead of the direction the fire is traveling), started by airborne sparks or embers.

**Spur:** A road branching off the main road to provide access to a designated area.

**Stacking Functions:** The act of accomplishing several goals with one activity.

**Stand:** A group of trees or shrubs with similar species composition, age, and condition that makes the group distinguishable from other trees in the area.

**Stand-Replacing Fires:** A fire that kills the majority of the dominant aboveground vegetation in an ecosystem and encourages the start of regrowth.

**Stand Structure Model:** The spatial arrangement of the forest stand, describing the density and connectivity of the understory, mid-story, and overstory vegetation.

**State Responsibility Area (SRA):** An area that has fire protection provided at the state level. Incorporated cities and federal land do not fall in this area. Legal responsibility is at a state level.

**Stem and Poles:** The trunk of a tree or a piece of wood that is long and slender.

**Stemwood:** The wood of the main stem or trunk of a plant.

**Stocking Levels:** The density and calculation of tree seedlings, saplings, and poles in a given area.

**Strip Patch:** In prescribed burning, a narrow section or area where the fuel is burnt while the surrounding area is left untreated.

**Stroke Size:** In this case, the minimum required inch width ( $3/8$ ) of the brush used for letters, numbers, and symbols for street and road signs.

**Structural Ignitability:** The ease with which a home or other structure ignites.

**Structural Protection Zone:** Immediate 30-foot buffer zone around the home.

**Structure:** The composition of a forest or vegetation, specifically looking at the density, cover, size or diameter, and arrangement.

**Stump Sprout:** The ability of a tree to resprout from its cut stump.

**Submerchantable:** Trees that cannot be sold for timber products due to disease, deformities and/or size.

**Subsidence:** Settling of the Earth's surface downward, creating a sinking motion.

**Surface Fire:** A fire at the ground level that consumes debris and smaller plants.

**Surface Fuels:** Materials on the ground like needles or low-growing shrubs that provide the fuel for fires to spread on the ground. Surface fuels are generally considered all fuels within 6 feet of the ground.

**Surface or Crown:** The distinguished location that a fire burns. "Surface" refers to the forest floor, while "crown" refers to fires in the top of trees.

**Suspended Dead Material:** Typically composed of pine needles that are draped on living brush. Made up of dead fuels not in direct contact with the ground, consisting mainly of dead needles, foliage, twigs, branches, stems, bark, vines, moss, and high brush. In general these fuels easily dry out and can carry surface fires into the canopy.

**Swamper Burning:** A method of prescribed fire where fuel is added gradually and continually to a burning pile over the course of a day.

**Thermal Cover:** Vegetation cover that modifies unfavorable effects of weather for animals. For example, deer may move into riparian areas with 70% canopy to avoid very hot weather.

**Thicket:** A dense area of brush containing close-growing plants. Provides habitat to wildlife but may be difficult for humans to pass through.

**Thinning:** The act of removing a percentage of vegetation to encourage an open space and healthy growth for the remaining vegetation.

**Thinning Away Contiguous Fuels:** The practice of cutting back fuel loads from the edge of a desired leave- tree or patch in an effort to separate fuel connectivity.

**Thinning From Below:** Silvicultural practice where smaller understory trees are selectively removed below overstory trees. This method is also called “low thinning.”

**Threatened Species:** Any species including animals, plants, fungi, etc., that is vulnerable to extinction in the near future, and is so classified by the state or federal government.

**Tillering:** The process by which new aerial shoots emerge from the base of the plant. To send forth shoots from the base of grass, for example.

**Tip-Sprout:** The ability of a shrub to resprout from a cut limb.

**Torching:** A rapid and intense burning of a single or small group of trees/shrubs, causing the upward movement of fire; a.k.a. crown fire initiation or flare-up.

**Touch-Off:** A controlled burning (or prescribed fire) operation performed by a forestry or fire crew, where large quantities of forest treatment slash are arranged in hand piles and ignited with drip torches simultaneously by multiple crew members.

**Treatment:** An action or controlled technique that is applied in a specific process. Refer to “Fuel Treatment” for a more specific definition.

**Type Conversion:** The unintended replacement of native plant communities due to various disturbances such as more frequent and unnatural fires. Typically replacement is by invasive or non-native plants.

**Underburn:** A prescribed-fire method where burning is conducted in the understory of the forest, below the dominant trees.

**Understory:** Generally herbaceous or shrubby vegetation that makes up the plant layer under the tree canopy layer.

**Uneven-Aged Treatment:** A treatment that deals with three or more age-classes of trees.

**Unstable:** Land that is lacking stability, or liable to change with activity, such as in the case of steep slopes or crumbly soils.

**Untreated:** Not altered from a natural or original state; unprocessed, e.g. no fuel-reduction or defensible-space activities.

**Urban Fuels:** Any flammable materials within a landscape as a result of urban development. Examples include urban structures, landscaping, and urban debris such as wood piles, trash dumps along roadsides, and die-back from weedy invaders.

**Variable-Density Thinning:** Thinning or selectively cutting trees or shrubs in a manner to restore repeating variability or redundancy in an ecosystem. This technique ensures diversity in stand density and canopy cover.

**Variable Density Treatment:** Silvicultural thinning practice where some portions of a stand are left lightly or completely un-thinned (“skips”), providing areas with high stem density, heavy shade, and freedom from disturbance; while other parts of the stand are heavily cut (“gaps”), including removal of some dominant trees to provide more light for subdominant trees and understory plants. Intermediate levels of thinning are similarly applied in a typical variable-density prescription. This practice is also known as “free thinning.”

**Vernal Pool:** Seasonal amphibious environments dominated by annual herbs and grasses adapted to germination and early growth under water. Spring desiccation triggers flowering and fruit set, resulting in colorful concentric bands around the drying pools.

**Vertical and Horizontal Structure Diversity:** Describes the configuration of trees within a forest stand that create a variation of structure where trees stand straight up and down (vertical) or grow at an angle (horizontal).

**Vertical Fuels:** Those fuels (brush, small trees, decks, etc.) that provide a continuous layer of fuels from the ground up into the top fuel layers (i.e., tree canopy).

**Viewscape:** The line-of-sight from one location to another in its entirety or a portion of it.

**Viewshed:** The landscape or topography visible from a geographic point, especially that having aesthetic value.

**Watershed:** All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.

**Weed-Eater:** A hand-held tool that utilizes a gas or electric motor and a rotating nylon string or metal blade to cut down vegetation. Using this tool is called “weed-eating,” “weed-whacking,” or “weed-whipping.” **Wick:** A combustible material that allows fire to travel along a confined path to larger fuel sources. An example would be a wooden fence connected to your home.

**Wildfire/Fire Risk:** The combination of vegetation, topography, weather, ignition sources, and fire history that leads to the probability that something will ignite and/or burn.

**Wildland-Urban Interface (W.U.I.):** The area where wildlands and communities converge, often assumed to be at high risk of wildfire, which can be due to increased sources of human-caused ignitions.

**Wildlands:** An area of land that is uncultivated and relatively free of human interference. Plants and animals exist in a natural state, thus wildlands help to maintain biodiversity and to preserve other natural values.

**Winds Aloft:** Upper winds that occur in the atmosphere above the surface level, generally 2,000 feet and higher.

**Windthrow:** Trees that are uprooted by wind events. Formerly protected stands whose edges are opened up become vulnerable to this effect.

**Yarding:** A technique for moving felled trees, limbs, and brush by hauling them to the road or landing with a cable and tractor.

