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MADERA COUNTY GOVERNMENT CENTER  
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DATE: September 30, 2008  
TO: Board of Supervisors  
FROM: Supervisor Tom Wheeler *TW*  
RE: Adoption of Madera County Community Wildfire Protection Plan

### Recommendation:

That the Board hear a 15 minute presentation on the Madera County Community Wildfire Protection Plan and approve the proposed plan.

### Background:

Community Wildfire Protection Plans (CWPP) are authorized and defined in Title I of the Healthy Forests Restoration Act (HFRA) and are necessary in order for Madera County to receive National Fire Plan dollars for wildfire mitigation projects. Title I of the HFRA authorizes the development and implementation of hazardous fuel reduction projects on federal and adjacent private lands managed by the U.S. Forest Service and Bureau of Land Management when they meet certain conditions. The wildland/urban interface is one of the identified priorities. The Madera County CWPP can also be used as a guide to develop fuel reduction projects and community outreach programs pertaining to wildfire awareness in other parts of Madera County not affiliated with a Federal land boundary.

The Madera County CWPP was developed by Charles M. Heinbach, a retired local fire official, under the direction of the Madera County Board of Supervisors and assisted by local, state and federal agencies, other stakeholders and interested partners. The CWPP addresses the planning process used in the development of the plan, a profile of the planning area, wildfire history and existing fuel conditions specific to the area, existing wildfire mitigation laws, ordinances, codes and recommendations, a community wildfire risk assessment, a prioritized mitigation action plan and an education and outreach plan. In order to achieve the necessary collaboration, a Core Committee consisting of county, state and federal government representatives as well as members from some key partnerships was formed. Public input was collected through town hall meetings, service club presentations, and stakeholders' meetings at Supervisor Tom Wheeler's office. A draft copy of the CWPP was also made available for public review on the County's website under the Planning Department's Information Guides.

The goals of the Madera County CWPP are as follows:

- Identify and convene a Core Committee to develop a preliminary MCCWPP, take input from stakeholders and make recommendations to the Board of Supervisors

the plan

- Establish a community base (project area) map and other pertinent data to assist in the development of the plan
- Develop a community risk assessment and prioritize communities at risk
- Develop a realistic plan of action utilizing the established priorities to mitigate the wildfire threat
- Identify potential federal, state and other grant dollars
- Identify an assessment strategy that monitors project progress and results
- Develop a community outreach program that will increase public awareness to the wildfire problem within their community

Upon approval by the Madera County Board of Supervisors, in order to meet the requirements for acceptance into the Federal system, three entities must mutually agree to the final contents of the Madera County CWPP: (1) the Madera County Board of Supervisors, (2) the Madera County Fire Chief and (3) the local administrator of the California Department of Forestry and Fire Protection.

Fiscal Impact:

None, unless the County would choose to fund some projects at the local level.



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File No: 08276

Date: September 30, 2008

In the Matter of PRESENTATION BY CHARLES HEINBACH, ON THE MADERA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN (CWWP) AND CONSIDERATION OF APPROVAL OF THE PROPOSED PLAN, BOARD OF SUPERVISORS DEPARTMENT.

Presentation given by Charles Heinbach.

Upon motion of Supervisor Bigelow, seconded by Supervisor Wheeler, it is ordered to approve the proposed Community Wildfire Protection Plan (CWPP) as submitted.

I hereby certify that the above order was adopted by the following vote, to wit:

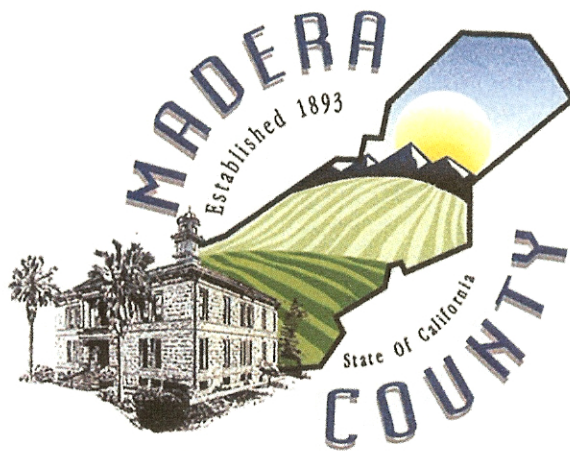
AYES: Supervisors Bigelow, Moss, Dominici, Rodriguez and Wheeler.  
NOES: None.  
ABSTAIN: None.  
ABSENT: None.

Distribution: CAO  
Fire  
Resource Management Agency  
California Department of Forestry and Fire Protection  
Granicus

ATTEST: TANNA G. BOYD, CLERK  
BOARD OF SUPERVISORS

By Deputy Clerk

# MADERA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN



SEPTEMBER 2008

# MADERA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN

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# **MADERA COUNTY COMMUNITY WILDFIRE**

## **PROTECTION PLAN**

### **EXECUTIVE SUMMARY**

#### **PROBLEM OVERVIEW**

News headlines would indicate that large destructive wildfires seem to be ever on the increase in California and other areas of the United States. The fact is that more people than ever before are exposed to the threat of loss of life and property from uncontrolled fires in grass, brush, or timber covered environments. The increasing population trend of movement to “rural America” is the largest factor in putting people and property in harms way from the ravages of wildfire. Fires that once burned in areas as part of a natural process are no longer permitted to do so because of the human presence that now exists. Elimination of natural fires and controlled burns along with a decrease of timber harvest in many areas has led to an unhealthy buildup of forest fuels. The interaction of people and structures surrounded by an over accumulation of dead or dying forest litter when combined with hot, dry, windy weather conditions leads to a condition ripe for disaster.

Over the last 100 years, Madera County has been spared the destructive damage from wildfire in comparison to other areas of California, however, it has not been exempt. The Harlow Fire in 1961, the North Fork Fire in 2001, and the Quartz Mountain Fire in 2005 are a subtle reminder that Madera County can experience the devastating consequences of a fire in the wildlands. The same population increase, fuels buildup, and weather conditions in the

foothills and mountains of Eastern Madera County provide the same potential that has produced large, damaging wildfires in other area.

## **PROCESS OVERVIEW**

Madera County officials fully recognize the potential disaster from wildfire that exists in Eastern Madera County and in conjunction with wildland firefighting agencies within Madera County (United States Forest Service and California Department of Forestry and Fire Protection) are seeking ways to alleviate the wildfire problem and make the people, property, cultural and natural resources, more fire safe. In order to address the catastrophic fire potential it was determined that a Community Wildfire Protection Plan (CWPP) was needed for Madera County. A CWPP provides communities with an opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional funds may be distributed for projects on nonfederal lands. The minimum requirements of a CWPP are: (1) there must be collaboration between federal, state, and local officials as well as other interested parties in the development of the plan; (2) fuel reduction programs must identified and prioritized and (3) a CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures. The Madera County Community Wildfire Protection Plan (MCCWPP) is designed to help the county identify hazardous fire areas and implement some mitigation strategies to lessen the impact should a wildfire occur.

The goals of the Madera County Community Wildfire Protection Plan (MCCWPP) are as follows:

- Identify and convene a Core Committee to develop a preliminary MCCWPP, take input from stakeholders and make recommendations to the Board of Supervisors.

- Establish a community base (project area) map and other pertinent data to assist in the development of the plan
- Develop a community risk assessment and prioritize communities at risk
- Develop a realistic plan of action utilizing the established priorities to mitigate the wildfire threat
- Identify potential federal, state, and other grant dollars
- Develop an assessment strategy that monitors project progress and results
- Develop a community outreach program that will increase public awareness to the wildfire problem within their community

## **METHODOLOGY**

The first step was to establish a Core Committee that would oversee the formulation of the MCCWPP and, in consultation with the Stakeholders, make recommendations to the Board of Supervisors regarding approval and implementation. The composition of the Core Committee is set forth in Table 2.1 of the MCCWPP. The Core Committee will develop a Mission statement and Goals of the MCCWPP and submit them to the Board of Supervisors for approval.

The next step is the identification of stakeholders or partners at risk. These are agencies, businesses, special interest groups, and concerned individual citizens that have a vested interest in establishing and maintaining firesafe communities. These stakeholders should be conferred with and have input into the planning process. It is important that the MCCWPP does not conflict with or provide competition for projects or grants of stakeholders that are already in progress or being planned. Good communication is essential for all involved parties in order to achieve a common goal.

In order to determine the vulnerability from wildfire, a community assessment must be made. A community is identified in this document as not only a town but also a subdivision or group of homes within a given area with a common bond and an identifiable name. Thirty-five communities were assessed in the development of this plan. The assessment analyzed factors such as fuels hazard, ignition risk, fire history, catastrophic fire potential, community values, and protection capability. Upon completion of the data entry, the evaluation process rated the communities as being at high, moderate or low risk and prioritized them in order from highest to lowest risk.

## **PRIORITY PROJECTS SUMMARY**

Upon completion of the assessment process, a plan for mitigating the hazards associated with wildfire is formulated for those communities classified as having a high-risk rating. Fuel reduction projects are considered for in and around these communities as well education and outreach programs to inform residents of the potential projects and other firewise activities that will make themselves and communities more fire safe.

It is essential that the projects generated by this plan be continuously monitored and the MCCWPP be periodically reviewed. The Fire Marshal of Madera County with input from the Core Committee will review the plan every 3 to 5 years to re-evaluate the project priorities.

## **RECOMMENDATIONS**

Upon completion of this document, specific fuel reduction projects can be identified based upon need. Education and outreach programs can be implemented and presented to target audiences. Several other items were brought to light that need to be presented and clarified as action items to be considered for implementation. They are as follows:

General Plan/County Ordinances

1. Madera County's increasing population and expansion of development into previously undeveloped areas is creating more "Wildland/Urban Interface" issues with associated risk of potential loss of life and property caused by wildland fire. The wildfire hazard is often underplayed in the General Plan and wildfire mitigation policies should be incorporated into the General Plan and regularly reviewed. This insures every community is operating under the most effective policies based on development patterns, geography, and other local conditions.
2. Title 18 Section 98.019 should reflect the new requirements under PRC 4291 which mandate a 100' clearance.
3. Title 17 ST-27 Note 1 - Even though a parcel may have existed prior to the implementation of PRC 4290 regulations into County Code, if no grading or construction permits were recorded at that time, they should have to comply with current fire safe standards.
4. Title 17 ST-27 – A 10' clearance of hazardous vegetation should be addressed for both sides of a driveway as well as a vertical clearance.
5. PRC 4290 requires a minimum of 2,500 gallons of residential water storage under certain conditions. Madera County is enforcing this requirement if a structure is built north and east of the Madera Canal but allows an exemption to this requirement if a structure is built within 5 driving miles of a fire station with a water tender. Because the water tender provides a substantial savings to the builder by not having to install a home water storage system, a mitigation fee should be considered for the exclusive use of replacing water tenders.

6. PRC 4290 intended for all flammable waste to be disposed of by legal burning, chipping, mulching, burying or removing from site and proper defensible space regulations to be in place prior to the final inspection being approved for new construction. This regulation should be incorporated into county code.
7. The naming of County Roads with the use of numbers in Eastern Madera County is confusing at best. As there is no logical sequence to the numbering system, the use of a proper name based on a geographic landmark or historical significance would seem more beneficial. At present this problem is being addressed for certain roads but eventual elimination of road names by number and replace them with a proper name should be considered.
8. PRC 4291 provides for the elimination or reduction of dried weeds, brush, and trees within 100 feet of a structure but outside that area adjacent to the structure there is nothing that requires a person to remove hazardous natural vegetation. A weed abatement ordinance in more densely populated areas of Eastern Madera County should be considered as it can be a great deterrent to the spread of a wildland fire in a residential area.

## **GENERAL RECOMMENDATIONS**

9. Does animal control have an identified plan in place to deal with animals in the event of a natural disaster? If not, one should be implemented that addresses the evacuation, sheltering, and caring for all animals.
10. Establish a Website through the Madera County Fire Department to provide an on-line learning center that can help citizens on firesafe preparedness, fire prevention,

and self-mitigation measures. In order to provide this service, staff must be available with knowledge of both Fire Department operations and web site management.

11. Establish an organization of non-suppression volunteers within the Madera County Fire Department to assist with educational fire prevention and public outreach programs.

## **CHAPTER 1: INTRODUCTION**

The threat of loss of life and property due to a wildland fire is becoming alarmingly more common in the United States. Seldom does a fire season go by that news headlines do not proclaim the catastrophic results of some large and damaging wildfire. It may be the loss of life (civilian or firefighter), homes and businesses, timber stands, rangeland, recreation areas, watersheds or cultural and archeological values and in most cases the combination of more than one of these assets. These damaging wildland fires have not only a large personal impact on those involved but long term economic, emotional, and aesthetic consequences for entire communities.

California certainly has had its share of publicity from disastrous wildfires. In the fall of 2003 Southern California was devastated by a series of conflagrations that caused the loss of 26 lives, including one firefighter, 3,600 homes, thousands of vehicles and outbuildings and 750,000 acres of grass, brush, and timber. The financial impact of these fires was well over two billion dollars. Again in the fall of 2007 the Santa Ana winds produced devastating fires in Southern California which resulted in the loss of several lives, the destruction of thousands of homes, hundreds of thousand acres burned and hundreds of thousand people displaced in the largest evacuation process in California history. The economic losses from these fires are still being accessed. Some of these fires burned over the same lands that were involved in the fires of 2003. Even though Southern California, with its large concentrations of chaparral type brush and Santa Ana winds, has a large portion of the large and damaging fires, the rest of California certainly is not exempt. The western slopes and foothills of the Sierra Nevada, including Madera County, have experienced its share of devastation from fire over the last 50 years.



The residents living in the foothills and mountains of Eastern Madera County unfortunately are no strangers to being exposed to wildland fire. Even though the population in 1961 was a fraction of what it is today, people are constantly reminded of the devastating results of the Harlow Fire that started in Mariposa County and burned through all of Nipinnawasee, Ahwahnee and a good portion of the Oakhurst basin. In just three days, July 10<sup>th</sup> thru July 12<sup>th</sup>, the fire burned 41,200 acres of grass, brush and timber, destroyed 106 structures and claimed the lives of two people who were trapped while driving through the flames. More recently, residents of Eastern Madera County experienced the reality of the consequences of residing in a wildland fire environment. The North Fork fire started between the communities of North Fork and Bass Lake at approximately 12:25 pm on August 20<sup>th</sup>, 2001. The fire resulted in the loss of two homes and burned 4,132 acres of brush and timber. Many people suffered property damage and endured the inconvenience of evacuation, road closures, poor air quality and the disruption of routine living for several days. The most recent wildland fire event of significance for residence of Madera County was in August of 2005. The fire occurred on Quartz Mountain in the area of Indian Lakes Estates, burned several hundred acres of grass and heavy brush, threatened numerous structures and caused the evacuation of numerous families. The fire started in the late morning and burned through the hot part of the day but because of an aggressive initial attack, fuel reduction projects, and “defensible space” provided by homeowners the fire caused minimal damage. Although small on a scale of large and damaging fires, it still brought home to the residents of a community in Eastern Madera County the fear that an uncontrolled wildland fire can create.

History tells us that fire has been a part of the wildland environment for as long as can be recorded but recent history tells us that the devastation from fire to those living, working, and recreating in the wildlands is only getting worse. The question must be asked “**Are the people of Eastern Madera County as vulnerable to wildland fire today as they have been in the past?**” and the answer to that question is “**YES**”. They are just as vulnerable today, if not more so.

Madera County Administrators recognize the need to address the impacts on public health and safety resulting from wildland fires. As a result Madera County initiated a contract to develop a Community Wildfire Protection Plan (CWPP) in order to aid in the protection of the people and communities of Eastern Madera County. A CWPP provides communities with an opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal funds may be distributed for projects on nonfederal lands. Local wildfire protection plans can take on a variety of forms and they can be as simple or complex as the local communities’ desire, however, they must meet the following minimum requirements:

1. **Collaboration:** local and state government representatives, in consultation with federal agencies and other interested parties, must collaboratively develop a CWPP.
2. **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 communities at risk.

**3. Treatment of Structure 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.

This CWPP will provide the basis to identify assets at risk and the mitigation measures needed to reduce or eliminate the risk. It is also required that three entities must mutually agree to the final contents of a CWPP:

- The applicable local government (i.e., counties or cities);
- The local fire department(s);
- The state entity responsible for forest management.

#### **MISSION STATEMENT:**

The mission of the Madera County Community Wildfire Protection Plan (MCCWPP) is to protect natural and human-made resources from the effects of wildfire as cost-effectively as possible by mobilizing all who govern, live, work, and visit Eastern Madera County to make their homes, businesses, neighborhoods, communities, and recreational areas fire safe.

#### **PLAN ORGANIZATION:**

The MCCWPP identifies the risk of wildfire throughout Eastern Madera County. The plan also provides information on cooperating stakeholders, wildfire hazardous areas, and actions that will help in reducing potential loss of life, property and natural resources. The organization of this plan is as follows:

- Introduction
- Planning Process
- Planning Area Profile

- Fuel Conditions and Wildfire in Madera County
- Existing Wildfire Mitigation Standards
- Community Wildfire Risk Assessment
- Hazardous Fuels Reduction
- Education and Community Outreach

## **PLANNING AREA BOUNDARY**

The Madera County CWPP encompasses the areas of Madera County, north and east of the Madera Canal. The canal begins at the dam of Millerton Lake and flows in a northwesterly direction to the Chowchilla River. It is a man-made structure that for the purpose of this plan separates the valley floor, which is primarily residential, commercial and agricultural from the rangelands and mountains. This is the same geographic landmark that the California Department of Forestry and Fire Protection use as a boundary to establish the wildfire protection area that it is responsible for. The planning area is multi-jurisdictional in that it addresses wildfire risk and mitigation measures that include privately owned property, tribal lands, and Federal lands administered by the United States Forest Service, Bureau of Land Management, and Army Corps of Engineers. (See Boundary Map on the following page)

**BOUNDARY**

**AREA**

**MAP**

## **EXISTING FIRE POLICIES AND PROGRAMS**

There are various federal, state and local programs and policies that relate to community fire planning that are presently available. In the process of developing the Madera County Community Wildfire Protection Plan, technical data, fire resource needs, and possible funding sources available through these programs will be explored. The following list of policies and laws give an overview as to how a cooperative effort between different levels of government can provide more effective and less costly ways to address the wildland fire problem.

## **HEALTHY FORESTS RESTORATION ACT**

The Healthy Forests Restoration Act (HFRA) was enacted by Congress in November of 2003 and contains a variety of provisions to expedite hazardous fuel reduction and forest restoration projects on Federal lands that are at risk to wildland fire or insect and disease epidemics. The act can help rural communities, states, tribes, and landowners restore healthy forests and rangeland conditions on state, tribal, and private lands.

Title 1 of the act provides authorities for expedited vegetation treatments on certain types of Federal land that are at risk of wildland fire by:

- Providing expedited environmental analysis of HFRA projects
- Providing administrative review before decisions are issued on proposed HFRA projects
- Containing requirements governing the maintenance and restoration of old-growth forest stands when the Forest Service and BLM carry out HFRA projects in such stands

- Requiring HFRA projects on Federal land to maximize retention of larger trees in areas other than old-growth, stands consistent with the objective of restoring fire-resilient stands and protecting at-risk communities and other Federal lands.
- Requiring collaboration between Federal agencies and local communities when CWPPs are prepared.
- Requiring using 50% of the dollars allocated to HFRA projects to protect communities at risk of wildland fire.
- Requiring performance to be monitored when agencies conduct hazardous-fuel reduction projects and encourages multi-party monitoring that includes communities and other stakeholders.
- Encouraging courts to expedite judicial review of legal challenges to HFRA projects.
- Directing courts that consider a request for an injunction on a HFRA- Authorized project to balance the short and long-term environmental effects of undertaking the project against the effects of taking no action.

## **HEALTHY FORESTS INITIATIVE**

The Healthy Forest Initiative (HFI) was established on August 22, 2002 by President Bush with the intent of improving the regulatory processes to ensure more timely decisions, greater efficiency and better results in reducing the risk of catastrophic wildland fire. As a result of this Initiative, the Departments of Agriculture and Interior adopted two new categorical exclusions from documentation in an Environmental Assessment or an Environmental Impact Statement: exclusion for hazardous fuel

reduction and another for rehabilitation of resources and infrastructure damaged by wildfire.

## **NATIONAL FIRE PLAN and 10-YEAR COMPREHENSIVE STRATEGY**

The National Fire Plan (NFP) was developed in August of 2000, following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impacts to communities, while ensuring sufficient firefighting capacity for the future. The NFP was designed to provide invaluable technical, financial and resource guidance and support for wildland fire management across the United States. The NFP addresses five key points: Firefighting, Hazardous Fuel Reduction, Rehabilitation, Community Assistance, and Accountability. The Forest Service and the Department of Interior are working to implement the key points by taking the following steps:

- Assuring that necessary firefighting resources and personnel are available to respond to wildland fires that threaten lives and property.
- Conducting emergency stabilization and rehabilitation activities on landscapes and communities affected by wildfire.
- Reducing hazardous fuels in forests and rangelands.
- Providing assistance to communities that have been or may be threatened by wildland fire.
- Committing to the Wildland Fire Leadership Council, an interagency team created to set and maintain high standards for wildland fire management on public lands.



To support the NFP, federal wildland fire management agencies collaborated with state and local government officials, tribe and other interested parties to develop a 10-year comprehensive strategy. The Strategy outlines a cooperative approach to the management of wildland fire, hazardous fuels, and ecosystem restoration and rehabilitation on Federal and adjacent State, tribal and private forest and rangeland. The Strategy emphasizes measures to reduce the risk of wildland fire to firefighters, property owners, communities, and natural resources and build collaboration at all levels of government.

The primary goals of the 10-year Comprehensive Strategy are:

1. Improve Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restore Fire Adapted Ecosystems
4. Promote Community Assistance

The NFP calls for the development of CWPPs to aid in the implementation NFP goals.

## **CALIFORNIA FIRE PLAN**

The State Board of Forestry and Fire Protection and the California Department of Forestry and Fire Protection (Cal Fire) have composed a fire plan for wildland fire protection in California. The overall goal is to reduce total losses and costs from wildland fire in California by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. Five major components will form the basis of an on going fire planning process to monitor and assess California's wildland fire environment.

The five components are as follows:

- Develop wildfire protection zones to reduce citizen and firefighter risks from large wildfires.
- Define an assessment process for measuring the level of service provided by the fire protection system for wildland fires.
- Define assets protected and their degree of risk from wildland fire. The assets addressed in the plan are citizen and firefighter safety, watershed and water, timber, wildlife habitat unique areas (scenic, cultural, and historical), recreation, rangeland, structures, and air quality. Stakeholders are identified for each asset at risk.
- Develop a system that assesses alternatives to protect assets from unacceptable risk of wildfire damage. Projects include a combination of fuels reduction, ignition management, fire-safe engineering activities, and improvement of forest health.
- Develop a fiscal framework for assessing and monitoring annual and long-term changes in California's wildland fire protection system.

Each Administrative Unit of Cal Fire will assemble a plan for their local unit and Madera County is within the Madera-Mariposa-Merced Unit. The Pre-fire Engineer of each Cal Fire Administrative Unit will assemble the Unit Plan with input from fire control officers, fire safe councils, and other stakeholders. The Unit Plan will assess hazardous fuels, assets at risk, ignition work load analysis, weather and frequency of severe fires. The Plan will include a five year list of prioritized projects and will be updated yearly. It will include all ownerships; federal, state and private.

## **CHAPTER 2: THE PLANNING PROCESS**

### **GOALS**

The goals of the Madera County Community Wildfire Protection Plan (MCCWPP) are as follows:

- Identify and convene a Core Committee to develop a preliminary MCCWPP, take input from stakeholders and make recommendations to the Board of Supervisors
- Establish a community base (project area) map and other pertinent data to assist in the development of the plan
- Develop a community risk assessment and prioritize communities at risk
- Develop a realistic plan of action utilizing the established priorities to mitigate the wildfire threat
- Identify potential federal, state, and other grant dollars
- Develop an assessment strategy that monitors project progress and results
- Develop a community outreach program that will increase public awareness to the wildfire problem within their community

### **OBJECTIVES**

In order to meet the goals of the Plan, a set of objectives must be established, evaluated and then implemented. Objectives should be identified for the Core Committee, risk assessment, fuels reduction and education and outreach.

The objectives of the CORE COMMITTEE are to:

- provide oversight to all activities related to the MCCWPP

- provide coordination of all MCCWPP activities by ensuring representation of appropriate county departments and local, state and federal agencies
- develop and review the goals of the Plan. It will be the responsibility of the Madera County Fire Marshal's office to review and update the MCCWPP every 3 to 5 years or sooner if needed.

The objectives for the Risk Assessment are to:

- identify high risk areas of fire ignition
- locate geographical features associated with high probability of rapid fire spread
- identify Communities-at-Risk within the planning area
- conduct a wildfire risk assessment
- prioritize communities at risk

The objectives of Fuels Reduction are to:

- identify and prioritize fuels reduction projects
- identify a means to coordinate efforts by all agencies on all fuels treatment projects
- administer grants and fuel reduction projects equitably across agencies and communities based upon assets at risk priorities
- provide an opportunity for citizens and communities to participate in projects and fire safety programs

The objectives for Education and Outreach are to:

- develop programs for increasing public awareness
- reach out to as many residents and visitors of Madera County as possible

- identify community events and gatherings where fire safe material and information can be disseminated

To address the complex range of issues within the MCCWPP, it is essential to have broad and diverse participation from various governmental departments, agencies, stakeholders, and citizen groups. Through public meetings and invitations to organizations, input on the implementation of the objectives can be generated from willing participants.

### **CORE COMMITTEE**

The development of the MCCWPP relies upon the coordination of multiple agencies working together to achieve a more fire safe environment for those living and visiting in the wildlands of Madera County. The CORE COMMITTEE is composed of members from various county departments and other government agencies all of which have a responsibility and desire to minimize the loss of life, property, and natural resources from the devastating effects of wildland fire. The Core Committee will provide overview and guidance to the development and implementation of the MCCWPP, as well as solicit input on the needs and concerns of the stakeholders of Madera County.

The following chart identifies the members of the MCCWPP CORE COMMITTEE.

**TABLE 2-1: CORE COMMITTEE MEMBERS**

<b>AGENCY</b>	<b>TITLE</b>	<b>PHONE</b>
MADERA COUNTY	SUPERVISOR	559-775-7700
MADERA COUNTY	ASSISTANT COUNTY ADMINISTRATIVE OFFICER	559-675-7703
MADERA COUNTY	FIRE CHIEF	209-966-3622
MADERA COUNTY	PLANNING DIRECTOR	559-675-7821
MADERA COUNTY	COUNTY COUNSEL	559-675-7717
MADERA COUNTY	FIRE MARSHAL	559-661-5191
MADERA COUNTY	EMERGENCY SERVICES COORDINATOR	559-675-7770
CAL FIRE	UNIT CHIEF	209-966-3622
CAL FIRE	PRE-FIRE ENGINEER	209-966-3622
USFS	DISTRICT RANGER	559-877-2218
USFS	FUELS OFFICER	559-877-2218
COARSEGOLD RESOURCE CONSERVATION DIST.	MEMBER AT LARGE	559-877-2973
CENTRAL SIERRA WATERSHED COMMITTEE	COORDINATOR	559-642-3263
MADERA COUNTY FIRE SAFE COUNCIL	CHAIRMAN	559-877-3772

## **STAKEHOLDERS**

The primary intent of the Madera County Community Wildfire Protection Plan is to safeguard the wide range of assets found across all wildland areas. These assets include life and public safety, structures, recreation areas, rangeland, timber, water quality and quantity, air quality, cultural and historic resources, scenic areas and vistas, wildlife, plants, and ecosystem health. It is essential that stakeholders have an integral role in the preparation of the MCCWPP. A stakeholder is any person, agency or organization with a particular interest – a stake – in fire safety and protection of assets at risk from wildland fires.

The following is an extensive but not complete list of stakeholders for Madera County:

- Bureau of Land Management

- Natural Resource Conservation Service
- California Department of Fish and Game
- U.S. Army Corps of Engineers
- Madera County Road Department
- Cal Trans
- Madera County Sheriff's Department
- California Highway Patrol
- P.G. & E.
- Sierra Telephone Company
- Ponderosa Telephone Company
- California State Parks and Beaches
- San Joaquin Valley Air Pollution Control District
- North Fork Community Development Council
- Eastern Madera County Emergency Preparedness Committee
- North Fork Rancheria
- Picayune Rancheria
- Yosemite Gateway Board of Realtors
- Homeowner Associations and Groups
- American Red Cross

## **CITIZEN INVOLVEMENT**

As the MCCWPP was being developed, it became more apparent that the key ingredient for success is the citizens themselves. It is a well known fact that over the last 25 years, populations in the more rural areas has increased several fold and people now occupy

areas where fire once burned with little human impact. The intermingling of individual homes and outbuildings, subdivisions, or entire communities with forests, chaparral-type brush or grasslands is commonly referred to as the “Wildland/Urban Interface” (WUI). Within this interface area, structures and vegetation are sufficiently close that a wildland fire could spread to structures and a structure fire could ignite wildland fuels. The WUI zone poses tremendous risks to life, property and infrastructure in associated communities and is one of the most dangerous and complicated situation firefighters face. People often build houses and other structures in high fire hazard areas, with little knowledge of the dangers involved. It is imperative that people residing in the wildfire prone areas develop awareness that they too have a responsibility in preventing fires as well as defending themselves and protecting their structures and other improvements by providing an adequate defensible space. Property owners need to invest time and sweat in making their homes and property survivable. The Quartz Mountain Fire in July of 2005 exemplifies success that can be achieved because of the proper clearance of vegetation around structures. The fire burned through moderate to heavy brush during the hottest time of day. The fire encroached upon several residential structures totally surrounded by brush but because of adequate clearance creating a “defensible space” the fire burned around the structures. The only losses were outbuildings and other improvements that had no clearance.

Citizen involvement can be accomplished in three ways: (1) develop awareness to fire ignition sources and learn and use preventive measures when and where appropriate, (2) become involved in community wildfire defense planning and, by far, the most important, (3) take personal responsibility in providing “defensible space” which



includes an ignition resistive home with non-combustible roof and the removal of flammable vegetation at least 100 feet from any structure or improvements. In order to expect this type of homeowner participation, an educational outreach program is essential. Information can be disseminated in several ways to include newspaper articles, radio and television public service announcements, written brochures homeowner group meetings, town hall meetings, service club meetings, and community social events .

### **EXISTING STUDIES, PLANNING DOCUMENTS AND PROJECTS**

Even though Madera County has not had a formal written wildfire mitigation plan; there is a long history of partnerships between government agencies and private citizen organizations within the county that have been and continue to be actively involved in community fire protection planning and hazard reduction projects.

The U.S. Forest Service is involved in wildfire planning with communities within and adjacent to the Sierra National Forest. Their planning activities have included the collection of technical data which includes fuel modeling, GIS mapping systems, weather and fire history and forest health. They are also actively engaged in fuels reduction projects that are designed to reduce the potential of loss due to wildland fire.

These projects include prescribed burns, mechanical thinning, and fuel-break construction. They also are actively involved in public education programs with the intent of increasing fire awareness to residents as well as visitors to the national forests.

The California Department of Forestry and Fire Protection provides assistance with community wildfire planning through the implementation of the California Fire Plan.

The Madera-Mariposa-Merced Unit's Fire Management Plan provides technical information used for planning purposes such as local assets at risk, fire ignition locations

and causes, levels of service, fuel types and conditions, and fire and weather history. Utilizing this data, along with input from the Eastern Madera County Fire Safe Council and other stakeholders and cooperators, projects and programs are identified to assist with wildland fire protection. Some of these projects and programs are public education programs, identifying target areas for defensible space inspections, roadside fuel maintenance projects, fuel break construction projects, prescribe burn projects and in conjunction with P.G. & E, fuel reduction projects under power lines.

The Eastern Madera County Fire Safe Council is composed of a group of volunteer private citizens dedicated to fulfilling the mission of preserving California's natural and manmade resources. Since its inception in 1997, the dedicated volunteers of this organization have been devoted to developing programs and projects to protect area residents and property from wildfire. Because of their partnering with government agencies and other organizations and the ability to obtain grant money, many of these projects and programs have come to fruition. Some of these projects include:

- Fire safe awareness programs including visual displays
- Fuel break construction in cooperation with USFS, Cal Fire and CRCDC
- Fuel break maintenance in cooperation with USFS, Cal Fire and CRCDC
- Roadside hazardous fuel reduction in cooperation with Madera County Road Department and Cal Fire
- The neighborhood fuel reduction and chipping project
- Implementation of the CORE (Conservation Occupational Resource Education) Program which is sponsored by the CRCDC in partnership

with Mountain Oaks High School and King's View Ready School and is designed to provide employment and job skills to youth at risk.

- Green Waste Collection which provides a collection point for yard waste and clippings
- The Air Quality Improvement and Fuel Reduction Project which is designed to improve air quality while reducing hazardous fuels in strategic locations

The Coarsegold Resource Conservation District (CRCD) is a unit of local government organized by local residents with an interest in promoting, protecting, and improving the diverse natural resources of Eastern Madera County. The governing board of the CRCD is appointed by the Madera County Board of Supervisors and is responsible for planning and carrying out long-range conservation programs within their area of influence. To fulfill their mission, the following goals have been promoted; (1) demonstrate conservation practices with cooperative land users, (2) provide information and assistance, (3) educate the public in resource conservation and enhancement methods, and (4) provide technical, scientific, legal and professional advice to agencies of the social, cultural, and economic impact of land use on the environs of all life forms, ownerships and natural resources.

In cooperation with other governmental agencies and citizen organizations, the CRCD has been instrumental in planning and completing numerous projects that have resulted in increased fire safety for residents and visitors of Eastern Madera County. These projects include hazardous fuels reduction, fuels modification, fuel-break construction, prescribed burns, and public education and outreach programs. The CRCD is also

involved in community based projects involving the eradication of noxious weeds and the improvement of water quality and quantity.

The CRCDD is responsible for producing a document titled “Voluntary Water Quality, Grazing Land, Oak-Woodland Conservation Management Guidelines”. These guidelines were adopted by the Madera County Board of Supervisors on February 11, 1997 and included in the county General Plan.

The following table identifies a list of fuels reduction projects completed in Madera County over the past 30 years.

**TABLE 2.2: FUEL REDUCTION PROJECTS**

<b>TYPE OF PROJECT</b>	<b>PROJECT NAME</b>	<b>AGENCIES INVOLVED</b>	<b>DATE</b>
Prescribed Burn	McDougald/ Shaubach Range Improvement	Private, Brushburners Assn*., Cal Fire	1982
Prescribed Burn	Ellis/Maybry Range Improvement	Private, Cal Fire, Brushburners Assn.	1983
Prescribed Burn	Bohna/Freitas VMP	Private, Cal Fire	1984
Prescribed Burn	Wyle Ranch VMP	Private, Cal Fire, Brushburners Assn.	1984
Prescribed Burn	Van Allen (Tabletop)	Private, Brushburners Assn., Cal Fire	1986
Prescribed Burn	Wyle Ranch VMP	Private, Cal Fire	1988
Prescribed Burn	Wyle Ranch VMP	Private, Cal Fire	1997
Prescribed Burn	Shaubach Range Improvement	Private, Brushburners Assn., Cal Fire	1984
Prescribed Burn	Ryan Range Improvement	Private, Brushburners Assn., Cal Fire	198?
Prescribed Burn	Rososco VMP	Private, Cal Fire	1995
Prescribed Burn	Flying O/Overstreet VMP	Private, Cal Fire	2000
Prescribed Burn	Kinsman Flat	USFS	1987
Prescribed Burn	Castle Peak	USFS	1990
Prescribed Burn	Ellis/Wyle VMP	Private, Cal Fire	1995
Prescribed Burn	Clearwater	USFS	1991
Prescribed Burn	Double Gate	USFS	1996
Brush Clearing (90 acres)	Asador	NRCS EQIP Project***	2000 to 2004
Brush Clearing (147 acres)	Rosasco	NRCS EQIP Project	2002 to 2005
Brush Clearing (93 acres)	Howard	NRCS EQIP Project	2002 to 2005
Brush Clearing (100 acres)	Massetti	NRCS EQIP Project	2002 to 2006
Brush Clearing (40 acres)	Hargrove	NRCS EQIP Project	2002 to 2006
Brush Clearing (72 acres)	Hillerman	NRCS EQIP Project	2002 to 2006

Brush Clearing (320 acres)	Massetti	NRCS EQIP Project	2003 to 2008
Brush Clearing (150 acres)	Rososco	NRCS EQIP Project	2004 to 2007
Brush Clearing (15 acres)	Alexander	NRCS EQIP Project	2004 to 2006
Brush Clearing (450 acres)	Veater	NRCS EQIP Project	2006 to 2011
Brush Clearing (115 acres)	Rososco	NRCS EQIP Project	2007 to 2008
Prescribed Burn	Rock Creek	USFS	2003
Prescribed Burn	Massetti Range Improvement	Private, Cal Fire	2003, 2004
Fuel Break/ Fire Road	Cedar Valley	USFS, Cal Fire	1995?
Fuel Break/Fire Road	Thornberry Mountain	USFS, Cal Fire	Continuous
Fuel Break/Fire Road	Goat Mountain	USFS, Cal Fire	Continuous
Fuel Break/ Fire Road	Cascadel Road	CRCD, Firesafe Council, USFS	2002-2004
Roadside Maintenance	John West RD.	Homeowners, Cal Fire, County Road Department	1995?
Roadside Maintenance/ Fuel Break	Ponderosa Acres	Homeowners, CRCD**, Cal Fire	2001-2002
Roadside Maintenance	Road 601	Homeowners, Cal Fire, PG&E County Road Department	2000
Roadside Maintenance/ Fuel Break	Road 274	Cal Fire, Firesafe Council, County Road Department	1999-2001
Roadside Maintenance	Mudge Ranch	Cal Fire, Firesafe Council, County Road Department	2001
Roadside Maintenance	Cedar Valley	Homeowners, Cal Fire, County Road Department	2003
Roadside Maintenance	Road 222	Cal Fire, County Road Department	
Roadside Maintenance	Road 426	Cal Fire, County Road Department	
Timber Harvest/Fuel Reduction Project	Teaford Saddle	USFS	2005
Fuel Break	Castle Peak to Italian Bar Rd. (6 miles)	Fire Safe Council	
Fuel Break	Quartz Mtn. 9.7 (miles)	Fire Safe Council	In Progress
Fuel Break	Goat Mountain L.O. to Road 274 (2.2 miles)	Fire Safe Council	In Progress
Fuel Break	Crooks Mountain (11.9 miles)	Fire Safe Council	2007
Fuel Break	Road 628/620/Worman (6.5 miles)	Fire Safe Council	2008
Fuel Break	Deadwood L.O. to Mudge Ranch (4.2 mi)	Fire Safe Council	2008
Roadside Maintenance	Road 200	Cal Fire, County Road Department	2005
Timber Harvest/Mastication Project	Cedar Valley	U.S.F.S.	In Progress

\*Madera County Control Brushburners Association

\*\*Coarsegold Resource Conservation District

\*\*\*National Resource Conservation Service

## **CHAPTER 3: PLANNING AREA PROFILE**

### **INTRODUCTION**

Madera County is found in the exact center of California with a portion of the county located in the agriculturally fertile Central Valley and the remainder located on the western slopes of the Central Sierra Nevada Mountains. Madera County is bordered by Fresno County to the south and west, Mariposa County to the north, Merced County to the north and west, and Mono County to the east. The county encompasses an area of 2,147 square miles which equates to 1,374,160 acres.

Other than the Native Americans, the first wave of people to come to what is now Madera County were explorers, trappers, soldiers, and Spanish speaking settlers with Mexican land grants. Few of these early visitors stayed longer than a few months. Even though the immigrants separated politically from Mariposa County in 1855 and 1856, Madera was not officially recognized as a County of the State of California until May 16, 1893.

Natural resources have always played a large role in the development of Madera County. In the late 1840's the discovery of gold brought the first big wave of immigrants to the county. As gold, silver and copper mines flourished settlements and small towns began developing along the creeks and rivers of the Sierra foothills. To support the development of the mines and communities, lumber became an essential commodity. The heavily forested mountains provided an instant supply of trees and before long, logging became the leading industry in the area. By the 1870's lumber was being transported out of the mountains to the valley floor where it met the railroads for distribution throughout the state. Lumber mills sprang up along the railroad and some of

these mills evolved into towns. Madera City, which means “lumber” in Spanish, was established in 1876 and was economically bound to the timber industry for over 50 years until in 1931 a nationwide depression destroyed the market for lumber. A strong farming and ranching community soon emerged as the leading economic contributors to Madera Valley but the logging industry still played a vital role in the mountain communities until the late 1970’s and early 1980’s.

The valley floor is primarily composed of agricultural land and residential developments and does not contain the natural vegetation fuels that are generally associated with wildland fires. The MCCWPP will focus on the grasslands, foothills and mountains of Eastern Madera County and is identified by boundaries in Chapter 1. This will be the primary target area in the establishment of this plan.

## **GENERAL ENVIRONMENTAL CONDITIONS**

- **TOPOGRAPHY, SLOPE, ELEVATION:** The planning area consists of elevations ranging from 350 feet above sea level at the western end of the Madera Canal to 13,157 feet at the crest of the Sierra Nevada Mountains. Major river drainages and their tributaries traverse the county and sharply divide terrain in foothill and mountainous portions of the county into valleys with steep canyon walls. Slopes are greater than 100% over a large portion of the area and slopes of 35% to 50% are common over the remainder. The rivers drain to the gently rolling lower foothills until they reach the flat valley floor.
- **METEOROLOGY, CLIMATE, PRECIPITATION:** The climate in Madera County brings hot dry weather to almost all elevations in the summer. The

valley and the lower foothill temperatures average close to 100 degrees in the daytime and 62 degrees at night in July with the humidity averaging between 17 to 22%. The temperature lowers and the humidity slightly increases as the elevation increases. At 4000 feet, average summer daytime temperatures are in the mid 90's with the humidity averaging between 25 to 35%.

Temperatures at night can cool off to a comfortable mid 50's and humidity ranging from 50 to 80%. Rainfall is generally non-existent from May until mid October except for an occasional thunderstorm. These thunderstorms are more prominent over the higher elevations of the Sierra's. Winter months bring the rainy season with the majority of rainfall occurring in the months of December, January, and February. An average yearly rainfall is 12 inches for the valley and between 20 and 45 inches in the mountains. Snowfall around 3000 feet averages about seven inches and above 5000 feet winters can be severe with year round snow at the higher mountain ranges. Winds throughout the study area are generally predictable. During the fire season the diurnal surface winds are up canyon by day and down canyon by night. Prevailing upper level winds are out of the west to northwest. These winds are more intense and when they surface at the higher elevations can have a negative impact on fire behavior. The most dangerous winds for firefighters are associated with thunderstorms. Winds within the vicinity of a storm cell are extremely gusty, erratic and unpredictable.

- **FUELS:** Fuel types begin with annual grasses in the lower elevations and at about 1000' elevation change to oak-woodlands. At about 2000' elevation



the brush fields start intermixing with the oak-woodlands and brush becomes the more prominent natural vegetation as you approach 3000' elevation.

From 3000' to 4500', brush and timber become mixed. Above 4500', the predominant fuel is mixed conifer timber. Fuel loading varies from about 2 tons per acre in grass to over 100 tons per acre in timber fuels.

- **HYDROLOGY:** Madera County has three major river drainages with their origins in the Sierra Nevada Mountains and flow westerly to the valley floor. The headwaters of the San Joaquin River is the boundary line between much of Fresno and Madera Counties and starts at the Pacific Crest. Some of the major tributaries that feed the San Joaquin River from Madera County are Granite Creek, Chiquito Creek, Rock Creek, Fish Creek, and Willow Creek. The river is dammed at four places and creates Mammoth Pool Reservoir, Redinger Lake, Kerchoff Lake, and Millerton Lake. Willow Creek is also dammed and creates Bass Lake. There are several Pacific Gas and Electric Company hydroelectric power plants located along the river. Lewis Creek and Nelder Creek merge to form the Fresno River just north of Oakhurst. The river flows in a southwesterly direction to the valley floor and is fed by several other tributaries including Miami Creek and Coarsegold Creek. There is one dam on the river and that creates Hensley Lake. The Chowchilla River flows on the north side of the county. The headwaters for this river, which flows south, are in Mariposa County and empties into Eastman Lake east of the city of Chowchilla. The lakes that are established on these three rivers

contribute to irrigation, flood control, hydroelectric power, and recreational activities such as fishing, boating and camping.

➤ **THREATENED AND ENDANGERED HABITAT:**

Madera County is home to approximately 84 plant or animal species that are categorized as endangered, threatened or a candidate for threatened or endangered. These species can be readily identified by type and location through U.S. Fish and Wildlife Service and California Department of Fish and Game web sites. When a plant or animal's habitat is exposed to fire, it is important to understand the short and long term effects especially as it relates to the survival of the species. An excellent reference source for obtaining information on plant and animal species as it relates to fire exposure is **FEIS**, Fire Effects Information System. FEIS was developed by the U.S Forest Service and provides up-to-date information about fire effects on plants and animals. The categories of information available through this program are as follows.

- Introduction of the species
- Distribution and occurrence of the species
- Management considerations
- Biological, botanical, and ecological characteristics
- Habitat Requirements
- Fire ecology
- Fire effects
- Case studies

- References

Whenever doing any fuels reduction project, especially involving the use of fire, it is essential to understand the complete environmental impacts of the project.

## **POPULATION**

Madera County, percentage wise, is one of the fastest growing counties in the State of California. As of the year 2000 census, 123,109 people live in the county. The growth rate for the county between 1990 and 2000 was 39.8%. Using the same percentage of growth, the estimated population in 2005 is around 140,000 people. Approximately 30% of the people reside within the study area of Eastern Madera County or about 42,000 people. The majority of the people have established residences within or close to the unincorporated communities of Ahwahnee, Bass Lake, Coarsegold, Oakhurst, North Fork, Raymond, O'Neals, and Yosemite Lakes Park. In addition to the permanent residents, the numerous recreational opportunities bring an additional 1.5 million people annually to Eastern Madera County. Yosemite National Park accounts for a large percentage of these travelers but the lakes and streams, trails, campgrounds, wildlife, and scenic vistas attract many visitors to the mountains and foothills of the county. On any given day from May until September, the population can be more than double because of these visitations.

## **INFRASTRUCTURE**

### **ROADS**

There are three state highways located within the MCCWP planning area, Highway 145, Highway 41 and Highway 49. Highway 145 is a two-lane east west road that

links Madera City to the recreation areas of Millerton Lake and Eastern Fresno County. Only several miles of the highway at the extreme south end are within the planning area boundary. Highway 41 is the major north-south highway that connects the Fresno Metropolitan area with communities of Eastern Madera County, Yosemite National Park and a large portion of the Sierra National Forest. It is a two-lane highway with few turnouts and passing lanes that serves thousands of commuters daily and millions of yearly visitors to Yosemite National Park and the mountains of Eastern Madera County. Highway 49 begins in Oakhurst and runs in a northwesterly direction along the Sierra foothills. The two-lane highway yearly accommodates tens of thousands of tourists visiting the historic gold country.

Madera County Road Department maintains, repairs, and constructs roads and bridges on the official County system, in maintenance districts, and in county service areas within the unincorporated area except for state highways. The Road Department maintains several hundred miles of roads in eastern Madera County. Most of these are two-lane, narrow, curvy roads that, because of the escalating population, serve more vehicles than they were originally designed. A majority of the roads are paved but some are gravel or dirt and become impassable in wet weather. In the event of a large wildland fire, these roads must safely serve as evacuation routes for residents and access routes for emergency response resources. Sierra National Forest has numerous roads that provide access to a host of recreational opportunities. Most of these narrow, winding roads are seasonal and inaccessible in the winter months. The most popular road in the Sierra National Forest is the Sierra Vista Scenic Byway, a member of the National Scenic Byway

System. The entire route meanders along National Forest roads beginning in North Fork and ending at Highway 41 several miles north of Oakhurst. It is a seasonal route that is generally open from June to October and is a very popular tourist attraction.

## **DRIVEWAYS**

A large percentage of the residential properties located in Eastern Madera County are parcels of one acre or larger and require a driveway to access the house. Many of these homes are built away from a roadway and require driveways that extend several hundred feet or longer. In the early 1990's Fire Safe laws were introduced in the State of California and adopted by the County of Madera that put some minimum standards on the construction of driveways with the intent of providing a safe access for emergency response crews in the event of an emergency such as a fire apparatus or ambulance. These standards identified things such as steepness, length and width of driveways, road surface, turnouts and turn arounds, and vertical clearance.

Because many parcels were developed prior to the enactment of the existing fire safe regulations, many driveways are inaccessible under certain conditions or cause undue safety risks for responding emergency crews.

## **UTILITIES**

Pacific Gas and Electric Company is the sole provider of electricity to the entire County of Madera. Sierra Telephone and Ponderosa Telephone Company serve Eastern Madera County with telephone service. County maintenance districts provide sewer in Oakhurst, Bass Lake and North Fork but a large portion of residents in the planning area have private septic systems. Propane gas is available from

several local commercial vendors and individual residential propane tanks are the norm for the area.

## **COMMUNICATION**

As mentioned before Sierra Telephone and Ponderosa Telephone Company are the primary providers of telephone service. Cellular phone service is becoming more and more prevalent and as result, to improve and expand cellular service, cell towers are being erected in more places in the mountains and foothills. Many of the prominent mountain-tops house communications equipment such as mobile radio transmission sites, commercial radio transmission sites, microwave sites, and radio repeater installations. These facilities provide communications systems for government agencies as well as private enterprise.

## **WATER SUPPLY**

County Maintenance Districts and Mutual Water Company's provide water to some of the mountain communities and subdivisions. Some of these systems provide water for domestic and commercial use and provide required fire flows for commercial occupancies. Fire hydrants are available with some of the water systems but not all. The long seasonal drought-like conditions often compromise many of these water systems and by summer's end, are taxed to the point of requiring water use restrictions.

Many of these systems are marginal because they are old and serving more people than they were originally designed. Most of the rural residents have private wells and depending on their proximity to the nearest fire facility are post 1991 required to have on site water storage for fire defense. There are many lakes and farm ponds

that depending on the location of a wildland fire can be utilized by fire crews, however, by late summer because of hot and dry weather, many of these water sources go dry and are no longer usable.

## **SCHOOLS**

Within the planning area there is one community college satellite campus, one high school campus in Oakhurst with a second campus in the process of being built in the O'Neals area, one intermediate school, and eight elementary schools. In addition, there are several special needs schools in Eastern Madera County as well as two home school facilities. There is also one private school in the Oakhurst area. Most of the schools are located within or close to the major mountain communities of Bass Lake, Ahwahnee, Oakhurst, North Fork, Coarsegold, Yosemite Lakes Park, Raymond and O'Neals.

## **HOSPITALS**

The closest full service hospital facility available for residents and visitors to eastern Madera County is in the Fresno or in the Madera City area. Community Medical Center- Oakhurst offers an emergency medical center but it has limited operating hours and is closed at night.

## **EMERGENCY SERVICES**

Fire suppression service is provided by three different agencies in Eastern Madera County: The United States Forest Service, Cal Fire, and the Madera County Fire Department. The USFS is responsible for fire suppression activities within the Sierra National Forest. Within Madera County, the Forest Service staffs five fire stations with one engine each and two hot shot crews and one water tender during the fire

season. Each engine is staffed with a minimum of four personnel and the Hotshot crews are twenty person crews.

Cal Fire, a state agency, is an all risk fire fighting organization responsible for wildland fire suppression in the non-Federal lands of Eastern Madera County. Their area of protection coincides with the planning area boundary which are lands north and east of the Madera Canal. There are five Cal Fire fire stations located in Eastern Madera County and they provide eight fire engines and one bulldozer unit. Each engine is staffed with a minimum of three persons during the declared fire season.

Cal Fire and the USFS provide aircraft, both fixed wing and rotary wing, on an “as needed” basis from strategically located air bases. The Madera County Fire Department is a full service fire department providing emergency services to all unincorporated areas of Madera County through a network of fire stations, personnel and equipment. This network within the planning area is comprised of 10 fire stations, 11 fire engines, one aerial truck, one light engine, five water tenders, five rescue squads, and one breathing support unit. Stations #8 (Chukchansi Indian Casino) and #12 (Oakhurst) are staffed with career personnel and are augmented by paid call firefighters. Stations #10 (Yosemite Lakes Park), #11 (North Fork), #13 (Coarsegold), #14 (Bass Lake), #15 (Raymond), #16 (Ahwahnee), #17 (O’Neals) and #18 (Cedar Valley) are staffed exclusively by paid call firefighters.

The County Fire Department and Cal Fire have a unique relationship in that the administration and career staff of the county fire department are provided by Cal Fire through a cooperative agreement. Through a similar agreement, Cal Fire staffs one engine twenty-four hours a day with two career firefighters at four of the five



stations in the non-fire season. All three agencies have cooperative agreements and mutual aid is exercised almost daily during the fire season.

The Madera County Sheriff's Office and the California Highway Patrol (CHP) are the two law enforcement agencies with jurisdiction in the unincorporated areas of Madera County. The Sheriff's Office has a substation at Bass Lake and Oakhurst and has deputies on patrol 24 hours a day. The CHP has an office in Coarsegold and has officers on duty 24 hours a day. In the event of a large wildland fire, both agencies play an integral part with evacuations and traffic control.

Sierra Ambulance Service is the primary medical transportation agency for eastern Madera County. They provide 24 hour a day, seven days a week Paramedic and EMT services from ambulances that are located in Oakhurst, Coarsegold, and Bass Lake. Pistoresi Ambulance Service serves the extreme southern portion of the planning area with Paramedic and EMT capabilities. The Madera County Fire Department and Cal Fire assist the ambulance personnel by dispatching medical first responders to medical emergencies and traffic collisions. Air Ambulance services from Fresno and Modesto are also available upon request.

## **INSURANCE RATINGS**

The insurance industry primarily relies on Insurance Services Organization (ISO) to provide them with information identifying property risks and hazards that an insurance company has a financial stake. ISO's Public Protection Classification measures the capacity of local fire protection agencies. ISO collects information on a public fire agency, and analyzes the data using their Fire Suppression Rating Schedule. ISO then assigns a Public Protection Classification from 1 to 10. Class 1

represents the best public protection and Class 10 indicates no recognized protection. Some areas of eastern Madera County based upon ISO criteria have a Class 6 rating. These are within communities that have recognized water systems. The more rural areas that are within a certain distance of fire department water tenders have a rural Class 9 or 10.

## **LAND USE/DEVELOPMENT TRENDS**

Madera County's growth is projected to increase at a rapid pace. The population increased by 39,209 from 1990 to 2000 and the projected increase by the year 2020 is for an additional 101,491 people. Continued population growth will drive the housing market with new residents requiring additional housing units. Eastern Madera County is experiencing a proportional share of the increased growth. With the steady increase of growth there has been an increased demand for services and goods such as water, sewer, roads and police and fire protection. In the areas where these services are already compromised because of overuse, restrictions on building are already in place until the problems are resolved.

## **CHAPTER 4: FUEL CONDITIONS & WILDFIRE IN MADERA CO.**

### **HISTORICAL USE OF FIRE & EFFECTS ON FUELS**

Fire is as much a natural event as wind, rain, ice, and snow and has been part of earth's environment for 400 million years. Large pre-historic wildfires have been recorded in tree scars and rings as well as ash sediments in the ocean and lakes. Charcoal deposits found in Sierra Nevada soil samples indicate fire having a routine presence for more than 10,000 years. Lightning strikes, which occur between 200 and 1,700 times annually within the state or volcanic activity, were the most likely cause of these natural wildland fire events.

History now tells us that for at least the last 9,000 years Native Americans had a large influence on fire frequency in the foothills and mountains of the western side of the Sierra Nevada Mountains. More than 20,000 Indians lived in the drainages of the Chowchilla, Fresno, and Merced Rivers in the 1600's and these tribes used fire to open up lands for hunting and travel, to elude or fight enemies and to promote regrowth of native vegetation that was used in their daily life. These early inhabitants were responsible land managers who used fire in clever ways to modify their natural surroundings. Even though there was wide use of fire by the Indians, there is no indication that uncontrolled fire was ever a threat to their villages or way of life. It is thought that because of the frequency of wildfires, human or natural caused, they were not of an intensity to cause the amount of damage we have become familiar with today. In the middle to late 1800's European descendants began infiltrating the forests of the American West. These immigrants used fire to clear land for the development of towns, mines, mills, and farms. Shepherders and cattlemen learned that the use of open

burning minimized brush and recycled nutrients into the soil that benefited the reproduction of annual grasses. Fires that were set repetitively in the same area over years were slower moving and burned with less intensity for shorter periods of time. These fires were actually considered healthy for the forests as they provided a means of selective thinning and regrowth. Early pioneers and explorers visiting the Central Sierra Nevada Mountains found the resulting forest conditions to be open and easy to navigate. John Muir quoted as saying, “The inviting openness of the Sierra woods is one of their most distinguishing characteristics. The trees of all species stand more or less apart in groves, or small irregular groupings, enabling one to find a way nearly everywhere, along sunny colonnades and through openings that have a smooth park like surface.”

## **FIRE EXCLUSION POLICIES**

Several things occurred at the beginning of the twentieth century that had long term affects on natural vegetation that are the very cause of the wildland fire problems we are experiencing today. As more people migrated to the mountains and foothills and the exposure to fire became greater, it was no longer considered a tool but a destructive force. Several catastrophic fires occurred that heightened peoples awareness and fears concerning wildland fires and the following are two examples. In October of 1871 a human caused fire started near the small town of Peshtigo, Wisconsin and soon became an inferno that destroyed 12 small communities, 1.5 million acres of forest land and killed in excess of 1200 people. The Great Idaho Fire of 1910, which became known as “The Big Blowup”, overran several communities, burned over 3,000,000 acres of timber and killed 85 people. Most of this happened within a period of two days. Most of these catastrophic fires had several common factors; (1) large accumulations of fuel, (2)

weather conditions with high winds and low relative humidity, and (3) prolonged periods of drought. In the late 1800's and early 1900's people began seeing wildfire as a threat and began a trend that eliminated fire whenever possible.

In the late 1800's, through a series of Congressional Acts, millions of acres of public lands were placed in forest preserves. After years of poor management, at best, in 1905 President Roosevelt had these forest preserves transferred to the Department of Agriculture; thus creating the Forest Service as we know it today. Because of the public's concern of the recent series of wildfire disasters and a sense of responsibility to preserve natural resources, Gifford Pinchot, the newly appointed Chief of the Forest Service, was convinced that wildfires had to be controlled. By 1910, the Forest Service had a fire exclusion policy in place that called for all fires to be suppressed by 10 a.m. the morning following its discovery. In 1924, Board of Forestry of the State of California followed the Federal Government by implementing its own policy of extinguishing all fires as quickly as possible. These exclusion policies effectively interrupted the natural burn cycle which contributed to the massive fuels buildup we have today.

## **EMERGENCE OF WILDLAND FIRE PREVENTION**

As fire suppression placed more responsibility on fire agencies, public demand for their services also increased. The population growth in the wildland areas created a proportional increase in human caused fire starts. The increase in unwanted fires created the need for fire prevention as well as fire suppression. In 1944, Smokey Bear was created by the U.S. Forest Service as an educational tool designed to encourage the

American public to help in preventing forest fires. Smokey has had a presence for over 60 years and has been the most successful advertising campaign in history.

## **FIRE EXCLUSION POLICY EFFECTS ON PRESCRIBED BURNING**

Prescribed fire or “control burns” became victim to the fire exclusion policies. The public perception was that any fire in the wildland was a potential threat to them and the surrounding natural resources, therefore, even fires used for land management purposes, were discouraged. Some special interest groups such as ranchers and timber men still saw the need to use fire in their land management practices and lobbied heavily to ease some of the burning restrictions. Slowly the attitudes against controlled burning softened and “brush burning” associations working through the Range Improvement Program were allowed to conduct management burns. In the 1950’s and 60’s range improvement burning was common in the foothills of Madera County with over 137,000 acres burned under this program.

Even though prescribed burning is recognized as a fuel mitigation tool by land management officials, it is difficult to complete a burn project. Many areas that are in need of a fuels treatment program are laced with homes and businesses or other improvements and make the use of fire impractical. Homeowners constantly express concerns about fire escapes and complain about smoke impacts. Fire officials responsible for a burn are concerned about resource availability, budget restrictions, Air Pollution Control District restrictions, and fear of litigation should something go wrong. A great deal of input, planning, commitment, and public education is required to conduct a successful burn.

## **EFFECTS OF LOGGING**

The middle to late 1800's saw the emergence of the logging industry in Eastern Madera County. As communities developed to support the numerous mines, wood became an essential commodity. Lumber was needed to construct buildings, timbers were needed in the mines, and wood was needed for cooking, heating and fuel for steam engines. There seemed to be an endless supply of trees to meet the demand right there in the Sierra Nevada Mountains and future needs were never considered. Clear cutting became common practice and large spans of forest were decimated. Before moving on to the next timber stand, the loggers burned the limb wood, slash, and other forest litter, leaving behind large open areas that had once been a thriving conifer forest ecosystem. Seeds soon began to sprout and countless saplings began to grow. With the exclusion of fire, there was no mechanism to discourage the growth of every seedling and the natural thinning process was removed from the cycle. As these trees matured, the regrowth density went from an average of 50 trees per acre to several hundred trees per acre. What were once strong healthy stands of pure Ponderosa Pine were now being replaced with mixed conifer stands. The dominating species, being firs, are less tolerant to drought and more susceptible to fire. As the trees continued to grow there was a constant competition for sunlight, water, and soil nutrients. The less hardy trees were more prone to insect infestation and other diseases. These weakened trees eventually died off at different time intervals and created a forest condition with crowded trees with no spacing and were intertwined with large concentrations of dead ground litter, ladder, and aerial fuels. The last twenty years because of environmental pressures, we have seen a drastic reduction in the harvesting of commercial timber especially on the Federal lands. Even

though logging practices have changed over the years, restricting the cutting of trees has limited an opportunity to eliminate much of this unwanted fuel that is cluttering our forests.

## **DISASTROUS FIRE TRENDS IN CALIFORNIA**

The combination of fire suppression, fire prevention, reduction of timber harvesting, and the decline of management burning has led to an unhealthy accumulation of forest litter and dense under story fuels. Throw into this mix a population influx and an extremely volatile wildland fire situation has been created. California experienced the first wildland urban interface fire in 1923 when 584 structures were destroyed in the Berkely Hills. A progressive increase in the number of large and damaging wildfires have been brought to the state during each decade since the 1920's.

The following two tables identify the 20 largest California wildland fires - one by total acres and the other by number of structures lost. There are some interesting observations presented in these two charts that illustrate the trend for large and damaging wildfires in California is continually getting worse. Of the 20 largest fires by acreage 25% were naturally (lightning) caused and all were associated with extreme wind conditions or prolonged drought and in many cases combination of the two. Of the 20 largest fires by structure loss, 4 of them occurred within the last five years and 13 of the 20 have occurred within the last 15 years. None of the largest structure loss fires were the result of lightning but were all human caused; some accidental and some intentionally set.



**TABLE 4.1****20 Largest California Wildland Fires (By ACREAGE BURNED)**

<b>FIRE NAME/CAUSE</b>	<b>DATE</b>	<b>COUNTY</b>	<b>ACRES</b>	<b>STRUCTURES</b>	<b>DEATHS</b>
1 CEDAR (HUMAN CAUSED)	OCT. 2003	SAN DIEGO	273,246	4,847	15
2 ZACA (HUMAN CAUSED)	JULY 2007	SANTA BARBARA	240,207	0	0
3 MATILJA (UNDETERMINED)	SEPT. 1932	VENTURA	220,000	0	0
4 WITCH (POWERLINES)	OCT. 2007	SAN DIEGO	197,990	1,650	2
5 MARBLE CONE (LIGHTNING)	JULY 1977	MONTEREY	177,866	0	0
6 LAGUNA (POWERLINES)	SEPT. 1970	SAN DIEGO	175,425	382	5
7 DAY (HUMAN CAUSED)	SEPT. 2006	VENTURA	162,702	11	0
8 MCNALLY (HUMAN CAUSED)	JULY 2002	TULARE	150,696	17	0
9 STANISLAUS COMPLEX(LIGHTNING)	AUG. 1987	TUOLUMNE	145,980	28	1
10 BIG BAR COMPLEX (LIGHTNING)	AUG. 1999	TRINITY	140,948	0	0
11 CAMPBELL COMPLEX(POWERLINES)	AUG. 1990	TEHAMA	125,892	27	0
12 WHEELER (ARSON)	JULY 1985	VENTURA	118,000	26	0
13 SIMI (UNDETERMINED)	OCT. 2003	VENTURA	108,204	300	0
14 HWY. 58 (VEHICLE)	AUG. 2003	SAN LUIS OBISPO	106,668	13	0
15 CLAMPITT (POWERLINES)	SEPT. 1970	LOS ANGELES	105,212	86	4
16 BAR COMPLEX (LIGHTNING)	JULY 2006	TRINITY	100,414	0	0
17 WELLMAN (EQUIPMENT USE)	JUNE 1966	SANTA BARBARA	93,600	0	0
18 OLD (HUMAN CAUSED)	OCT. 2003	SAN BERNARDINO	91,281	1,003	6
19 HARRIS (UNDETERMINED)	OCT. 2003	SAN DIEGO	90,440	459	5
20 KIRK (LIGHTNING)	SEPT. 2003	MONTEREY	86,770	0	0
<ul style="list-style-type: none"> <li>• <b>These are the Top 20 within California, regardless of whether they were state, federal or local responsibility from 1932 and after.</b></li> </ul>					

**TABLE 4.2**

**20 Largest California Wildland Fires (By Structures Destroyed)**

FIRE NAME/CAUSE	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 CEDAR (HUMAN CAUSED)	OCT. 2003	SAN DIEGO	273,246	4,847	15
2 TUNNEL (REKINDLE)	OCT. 1991	ALAMEDA	1600	2,900	25
3 WITCH (POWERLINES)	OCT. 2007	SAN DIEGO	197,990	1,650	2
4 OLD (HUMAN CAUSED)	OCT. 2003	SAN BERNARDINO	91,281	1,003	6
5 JONES (UNDETERMINED)	OCT. 1999	SHASTA	26,200	954	1
6 PAINT (ARSON)	JUNE 1990	SANTA BARBARA	4,900	641	1
7 FOUNTAIN (ARSON)	AUG. 1992	SHASTA	63,960	636	0
8 BERKELEY CITY (POWERLINES)	SEPT. 1923	ALAMEDA	130	584	0
9 BELAIR (UNDETERMINED)	NOV. 1961	LOS ANGELES	6,090	484	0
10 HARRIS (UNDETERMINED)	OCT. 2007	SAN DIEGO	90,440	459	5
11 LAGUNA (ARSON)	OCT. 1993	ORANGE	14,437	441	0
12 LAGUNA (POWERLINES)	SEPT. 1970	SAN DIEGO	175,425	382	5
13 PANORAMA (ARSON)	NOV. 1980	SAN BERNARDINO	23,600	325	4
14 TOPANGA (ARSON)	NOV. 1993	LOS ANGELES	18,000	323	3
15 49ER (BURNING DEBRIS)	SEPT. 1988	NEVADA	33,700	312	0
16 ANGORA (HUMAN CAUSED)	JUNE 2007	EL DORADO	3,100	309	0
17 SIMI (UNDETERMINED)	OCT. 2003	VENTURA	108,204	300	0
18 RICE (HUMAN CAUSED)	OCT. 2007	SAN DIEGO	9,472	248	0
19 SYCAMORE (MISC. – KITE)	JULY 1977	SANTA BARBARA	805	234	0
20 CANYON (VEHICLE)	SEPT. 1999	SHASTA	2,580	230	0
<ul style="list-style-type: none"> <li>• <b>These are the Top 20 within California, regardless of whether they were state, federal or local responsibility.</b></li> <li>• <b>“Structures” is meant to include all loss – home, commercial, outbuildings, etc.</b></li> </ul>					

## **MADERA COUNTY'S FIRE RISK**

In the last 60 plus years Madera County has been faced with only two large damaging wildland fires: the Harlow Fire and the North Fork Fire. That number does not indicate that the county is historically inundated with wildland fire disasters. Even though a large number of disastrous wildfires have not occurred in the county does not mean the potential does not exist. The same hazardous fuel conditions that plague California and the other western states are also present in Madera County and for the same reasons. As the number of residents and visitors increases every year, so does the threat of fire. Eastern Madera County has an average of over 150 wildland fire starts every year that potentially could lead to conflagration of disastrous proportions. People and hazardous fuel conditions combined with steep terrain features, severe weather conditions that include wind, temperature and humidity, insufficient resources and inadequate defensible space are all key ingredients that can produce the next wildland disaster for Madera County.

## **CHAPTER 5: EXISTING WILDFIRE MITIGATION STANDARDS**

### **WILDLAND URBAN INTERFACE (WUI)**

The term “Wildland Urban Interface (WUI)” was first introduced in Chapter 2 and describes the point where two systems - natural vegetation and residential – meet and affect each other. Wildlands are defined as any mountains, hillsides, valleys or plains covered with any combination of annual grasses, chaparral, brush, and conifer and/or hardwood trees. The urban part of the interface term describes single family dwellings on several rural acres, subdivisions or entire communities as well as other man-made structures that support these residents such as barns, storage sheds, commercial buildings, schools, churches, and recreational facilities. Charles W. Philpot of the U.S. Forest Service classifies three different interface types: classic interface, mixed interface, and occluded interface. A classic interface is where homes are crowded onto smaller lots in subdivisions and are exposed to wildland vegetation along a broad front. A wildfire on these adjacent lands can produce a massive flame front that threatens numerous structures from a single fire. A mixed interface is isolated homes scattered throughout a rural area and surrounded by natural vegetation. Individual homes may be hard to protect in a large fire area but there may be relatively few homes threatened. An occluded interface is when isolated areas of natural vegetation such as parks or wildlife sanctuaries exist within an urban community. Some homes or buildings may be at risk to fire but generally the wildland areas are small enough that massive flame fronts would not be produced.

A mixed wildland urban interface is common to most of Eastern Madera County. A not uncommon sight would be a wood frame home with wood exterior siding or roof with an

attached wooden deck, a propane tank close to the house, dried fire wood split and stacked next to the house, and the property littered with dried weeds, pine needles or leaves. This situation often creates a fuel loading greater than the natural vegetation and only adds to the spread of a wildfire. People frequently build homes in areas with no understanding of the fire hazard potential that surrounds them or with a belief that should a fire occur; the fire department will protect them.

It is a given that wildfire will occur and move through residential areas but it is a reasonable expectation that an environment can be developed that allows a wildfire to pass through such areas with minimal impact on the people, structures, and other improvements. The residents themselves must shoulder the largest part of the responsibility of developing a more fire safe environment by using appropriate construction and engineering techniques and maintaining an adequate “defensible space” around their property.

Fire, building, and planning officials at all levels of government recognize the need to develop communities that are more protected from the perils of wildland fire. Officials must take a deliberate and forceful approach, even though unpopular at times, as to when, where and how homes are to be built in the interface. Codes, laws, ordinances, regulations and recommendations have been created to assist building officials and home owners to provide the most fire safe environment possible. Although not fool proof and no guarantee that fire losses will not occur, the probabilities of surviving a wildfire disaster are greatly increased by adhering to these guidelines.

The following is a list of established mandates and policies that are currently being used in Madera County to provide better protection in the event of a wildland fire.

## **PUBLIC RESOURCES CODE**

The non-Federal lands located within the study area of the Madera County Community Wildfire Protection Plan are designated as “State Responsibility Areas” (SRA) and means the State of California has the legislative authority and financial responsibility of preventing and suppressing any unwanted wildland fire within that area. The State of California *Public Resources Code* defines this responsibility but it also provides legal statutes to assist fire officials and the public in providing “defensible space” around structures in the event of a wildland fire. The intent of these regulations is to provide homeowners living in wildland/urban interface areas with a more fire safe environment. It is the responsibility of the property owners to implement the standards identified in the *Public Resources Code* but failure to do so will give fire officials the ability to utilize legal actions.

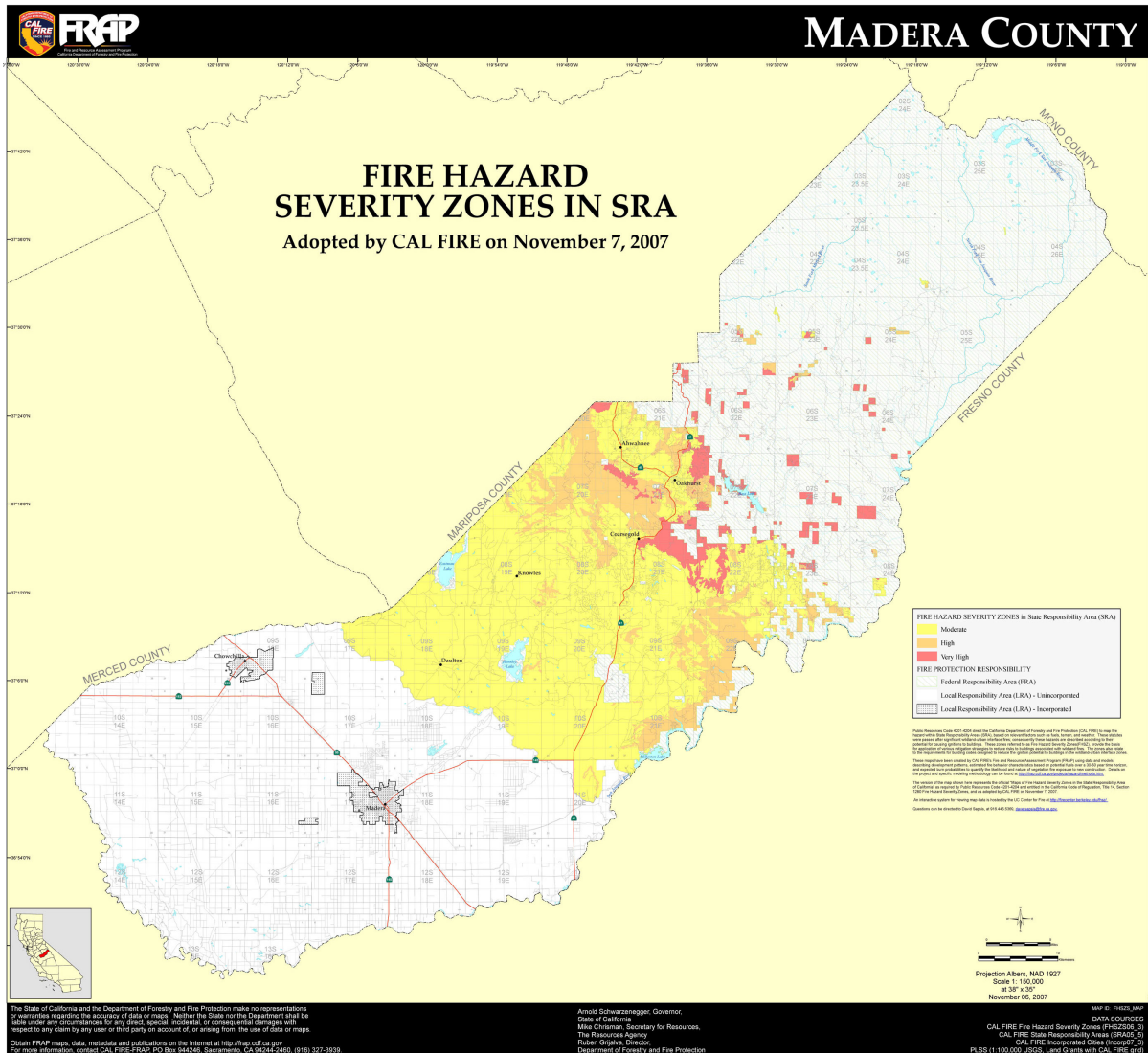
The following are sections within the *Public Resources Code* that may apply to wildland fire mitigation.

PRC 4201. The purpose of this article is to provide for the classification of lands within state responsibility areas in accordance with the severity of fire hazard present for the purpose of identifying measures to be taken to retard the rate of spreading and to reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property.

PRC 4202. The director shall classify lands within state responsibility areas into fire hazard severity zones. Each zone shall embrace relatively homogeneous lands and shall be based on fuel loading, slope, fire weather, and other relevant factors.

PRC 4203. (a) The director shall, by regulation, designate fire hazard severity zones and assign to each zone a rating reflecting the degree of severity of fire hazard that is expected to prevail in the Zone. (See TABLE 5.1)

**TABLE 5.1**



(b) No designation of a zone and assignment of a rating shall be adopted by the director until the proposed regulation has been transmitted to the board of supervisors of the county in which the zone is located at least 45 days prior to the adoption of the proposed regulation and a public hearing has been held in that county in that 45-day period.

PRC 4290. (a) The board shall adopt regulations implementing minimum fire safety standards related to defensible space which are applicable to state responsibility area lands under the authority of the department. These regulations apply to the perimeters and access to all residential, commercial and industrial building construction within the state responsibility areas approved after January 1, 1991. The board may not adopt building standards, as defined in Section 18909 of the Health and Safety Code, under the authority of this section. As an integral part of fire safety standards, the State Fire Marshal has the authority to adopt regulations for roof coverings and openings into attic areas of buildings specified in Section 13108.5 of the Health and Safety Code. The regulations apply to the placement of mobile homes as defined by the National Fire Protection Association standards. These regulations do not apply where an application for a building permit was filed prior to January 1, 1991, or to a parcel or tentative map or other developments approved prior to January 1, 1991, if the final map for the tentative map is approved within the time prescribed by the local ordinance. The regulations shall include all of the following:

- (1) Road standards for fire equipment access.
- (2) Standards for signs identifying streets, roads, and buildings.
- (3) Minimum private water supply reserves for emergency use.
- (4) Fuel breaks and green belts.

(b) These regulations do not supercede local regulations which equal or exceed minimum regulations.

*PRC 4290 has been implemented by Madera County under County Ordinance 542 and will be discussed in more detail later in this Chapter.*



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

- (a) Maintain around and adjacent to the building or structure a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side of the building or structure or to the property line, whichever is nearer, all flammable vegetation or other combustible growth. This subdivision does not apply to single specimens of trees, ornamental shrubbery, or similar plants that are used as ground cover, if they do not form a means of rapidly transmitting fire from the native growth to any building or structure.
- (b) Maintain around and adjacent to the building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet from the building or structure or the property line or at a greater distance if required by state law, or local ordinance, rule, or regulation. This section does not prevent an insurance company that insures a building or structure from requiring the owner of the building or structure to maintain a firebreak of more than 100 feet around the building or structure. Grass and other vegetation located more than 30 feet from the building or structure and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion.
- (c) Remove that portion of any tree that extends within 10 feet of the outlet of any chimney or stovepipe.

- (d) Maintain any tree adjacent to or overhanging a building free of dead or dying wood.
- (e) Maintain the roof of a structure free of leaves, needles, or other dead vegetative growth.
- (f) Provide and maintain at all times a screen over the outlet of every chimney or stovepipe that is attached to a fireplace, stove, or other device that burns solid or liquid fuel. The screen shall be constructed of nonflammable material with openings of not more than one-half inch in size.
- (g) Prior to constructing a new building or structure or rebuilding a building or structure damaged by a fire in such an area, the construction or rebuilding of which requires a permit, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the certification, upon request, to the insurer providing course of construction insurance coverage for the building or structure. Upon completion of the construction or rebuilding, the owner shall obtain from the local building official, a copy of the final inspection report that demonstrates the dwelling or structure was constructed in compliance with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the report, upon request to the property insurance carrier that insures the dwelling or structure.
- (h) Except as provided in the Health and Safety Code, the director may adopt regulations exempting structures with exteriors constructed entirely of nonflammable materials,

or conditioned upon the contents and composition of same, he or she may vary the requirements respecting the removing or clearing away of flammable vegetation or other combustible growth with respect to the area surrounding those structures. No exemption or variance shall apply unless and until the occupant thereof, or if there is not an occupant, the owner thereof, files with the department, in a form as the director shall describe, a written consent to the inspection of the interior and contents of the structure to ascertain whether this section and the regulations adopted under this section are complied with at all times.

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

As of January 1, 2008 new WUI building standards go into effect in all State Responsibility Areas. New buildings located in any Fire Hazard Severity Zone within SRA, for which an application for a building permit is submitted after January 1, 2008 shall comply with all sections of Chapter 7A, Section 701A of the California Building Code. The objective of the WUI Fire Area Building Standard is to establish minimum standards for materials and material assemblies which will provide a reasonable level of exterior wildfire exposure protection for buildings in WUI Fire Areas. The use of ignition resistant materials and design to resist the intrusion of flame or burning embers projected by a wildland fire is the most prudent effort made to try and mitigate the losses resulting from the repeated cycle of WUI fire disasters. The California Building

Commission adopted the WUI Codes in late 2005 with the majority of the new requirements taking effect in 2008. The new standards address materials, systems and methods of construction for roofing, attic ventilation, exterior walls and decking.

## **MADERA COUNTY GENERAL PLAN**

A general plan is a document that serves as the county's legal guide for land use and development. The plan must be a broad but extensive document that details the physical development of the county at present as well as in the future. The law specifically requires the plan to address seven elements; (1) land use, (2) circulation, (3) housing, (4) conservation, (5) open space, (6) noise, and (7) public safety. There are many purposes that the general plan fulfills but there are four that relate specifically to preparing a Wildland Community Fire Protection Plan. They are:

1. To expand the capacity of local government to analyze local and regional conditions and needs in order to respond effectively to the problems and opportunities facing the county.
2. To record local government's policies and standards for the maintenance and improvement of existing development and the location and characteristics of future development.
3. To foster the coordination of community development and environmental protection activities among local, regional, state and federal agencies.
4. To guide and coordinate the many actions and day-to-day decisions of local government necessary to develop and protect the communities of the county.

The land use section of the Madera County General Plan provides standards of population density and building intensity. The land use designations include standards of

building intensity for residential and non-residential uses and include standards of population density for residential uses. The General Plan includes 21 residential, commercial, industrial, agricultural, and other land use designations that depict the types of land uses that are allowed in the different geographic areas of the unincorporated portion of the county (See Table I-1). In order to address local planning service, and public facility issues surrounding existing communities, the county has established planning areas. The planning areas that have been identified within Eastern Madera County are Oakhurst – Ahwahnee Area, Coarsegold Area, North Fork Area, O’Neals Area and Raymond Area. The following are policies within the land use section that may apply to wildland fire mitigation.

1. A.1 The County shall promote the efficient use of land and natural resources.

1. A.4 The County shall encourage infill development and development contiguous to existing cities and unincorporated communities to minimize premature conversion of agricultural land and other open space lands.

1. A.5 The county will permit only low-intensity forms of development in areas with sensitive environmental resources or where natural or human-caused hazards are likely to pose a significant threat to health, safety, or property.

1. A.6 The County shall promote patterns of development that facilitate the efficient and timely provision of infrastructure and services.

**TABLE 5.1**

TABLE I-1 SUMMARY OF DEVELOPMENT STANDARDS by Land Use Designation			
Land Use Designation	DEVELOPMENT STANDARDS		
	Minimum Lot Area	Range/Maximum DUs per Gross Acre or Maximum DUs per Parcel	Maximum Non-residential FAR
Agriculture Exclusive (AE)	36 to 640 acres (as determined by zoning)	Maximum 2 DUs per parcel*	0.10 except agricultural services where maximum is 0.25 and poultry ranches, greenhouses where maximum is 0.50
Agriculture (A)	18 acres or as determined by zoning	Maximum 2 DUs per parcel*	0.10 except agricultural service uses where maximum is 0.25 and poultry ranches, greenhouses where maximum is 0.50
Open Space (OS)	None	Maximum 0.05 DUs per gross acre	0.10
Agricultural Residential (AR)	10 acres	Maximum 2 DUs per parcel*	0.10
Rural Estate Residential (RER)	5 acres	Maximum 2 DUs per parcel	0.10
Rural Residential (RR)	As determined by zoning	Maximum 0.5 DUs per gross acre	0.30
Very Low Density Residential (VLDR)	As determined by zoning	Maximum 2 DUs per gross acre	0.30
Low Density Residential (LDR)	As determined by zoning	1 to 7.5 DUs per gross acre	0.30
Medium Density Residential (MDR)	As determined by zoning	5 to 12 DUs per gross acre	0.30
High Density Residential (HDR)	As determined by zoning	12 to 25 DUs per gross acre	0.40
Neighborhood Commercial (NC)	As determined by zoning	n/a	0.40
Community Commercial (CC)	As determined by zoning	n/a	0.60 except in downtown areas where maximum is 1.00
Highway Service Commercial (HSC)	As determined by zoning	n/a	0.40
Heavy Commercial (HC)	As determined by zoning	n/a	0.40
Professional Office (PO)	As determined by zoning	12 to 25 DUs per gross acre	0.75
Transit-Oriented Commercial (TOC)	2 to 10 acres	12 to 30 DUs per gross acre	1.00
Mixed Use Core (MUC)	Community core-- 60 to 75 acres; Village core--30 to 40 acres	12 to 30 DUs per gross acre	1.00
Light Industrial/Business Park (LI)	As determined by zoning	n/a	0.50
Heavy Industrial (HI)	As determined by zoning	n/a	0.50
Public Institutional (PI)	As determined by zoning	n/a	0.90
New Growth Area (NGA)	Will be based on adopted State Center Community College area plan not to exceed maximums in Table I-2		

\*Not including secondary residential units, caretaker/employee housing, or farmworker housing

1. A.9 New residential development in the North Fork and O'Neals Areas shall be limited to three-acre-lot minimums unless served by community water or sewer systems.

1. C.8 The County shall require residential subdivisions to provide well-connected internal and external streets, bikeways, and pedestrian systems.

1. D.4 The County shall promote new commercial development in rural communities that provide immediate needs of the local residents and services to tourists and travelers.

1. H.3. The County shall require that new development on hillsides employ design, construction, and maintenance techniques that:

- a. Preserve and enhance the hillsides.
- b. Ensure the development near or on portions of hillsides do not cause or worsen natural hazards such as erosion, sedimentation, fire or water quality concerns.

1. H.4. The County shall work with federal and state agencies to conserve forest wilderness and recreation areas.

1. I.2. The County shall encourage the provision of public access to significant natural and cultural resources and scenic vistas through scenic routes, scenic highways, and scenic byways.

The circulation section of the Madera County General Plan provides a roadway system that supports the land use plan for unincorporated Madera County. Roadways have two functions: to provide mobility and to provide property access. High and constant speeds are desirable for mobility, while low speeds are more desirable for

property access. Roadways in Madera County are classified as freeways, highways, expressways, arterials, collectors and local. Local streets provide property access; highways, freeways, and arterials emphasize high mobility; and collectors balance the other two functions. An adequate, well maintained roadway system is extremely important in the event of a major wildland fire because these roads may be designated as evacuation routes for the public and ingress routes for emergency equipment.

The following are policies within the circulation section that may apply to wildland fire mitigation.

2. A.3 The County shall continue to develop and implement the latest technology in road construction.

2. A.4 The County shall ensure the installation of signals, signs, lighting, and other traffic safety and operation improvements necessary for the safe and efficient movement of all types of traffic.

Section 3 of the Madera County General Plan provides for the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development. The following are policies within the public facilities and services section that effect wildland fire mitigation.

3. A.1 The County shall ensure through the development review process that adequate public facilities and services are available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).



3. A.2. The County shall ensure that public facilities and services are developed and operational as they are needed to serve new development.

3. A.4. The County shall discourage expansion of rural communities unless necessary services can be provided.

3. C.1. The County shall approve new development only if an adequate water supply to serve such development is demonstrated.

3. G.1. The County shall ensure the provision of effective law enforcement, fire, and emergency medical services to unincorporated areas.

3. G.2. The County shall reserve adequate sites for sheriff, fire, and emergency medical facilities in unincorporated locations in Madera County.

3. G.4. The County shall require that new development is designed to maximize safety and security and to minimize fire hazard risks to life and property.

3. G.5. The County shall limit development to very low densities in areas where emergency response times will average more than 20 minutes.

3. H.1. The County shall encourage local fire protection agencies in Madera County to maintain the following as minimum fire protection standards (expressed as Insurance Service Organization ratings):

- a. ISO 4 in urban areas
- b. ISO 6 in suburban areas
- c. ISO 8 in rural areas

3. H.2. The County shall encourage local fire protection agencies in the county to maintain the following as minimum standards (expressed as average first alarm response times to emergency calls):

- a. 10 minutes in urban areas
- b. 15 minutes in suburban areas
- c. 20 minutes in rural areas

3. H.3. The County shall require that new fire stations be located to achieve a service level capability consistent with existing and planned land uses.

3. H.5. The County shall ensure that all proposed developments are reviewed for compliance with fire protection standards by responsible local fire agencies per the *Uniform Fire Code* and other state and local ordinances.

Section 6 is designed to minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires. The following are policies within the health and safety section that effect wildland fire mitigation.

6. C.1. The County shall ensure that development in high-fire-hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable state and county fire standards. In areas with high or extreme wildfire hazards, the County shall limit parcel sizes to 2 ½ acres or larger or encourage clustered or planned residential development with on-site fire suppression measures.

6. C.2. The County shall require that discretionary permits for new development in fire hazard areas be conditioned to include requirements for fire-resistive vegetation, cleared fire breaks, or a long-term comprehensive fuel management program. Fire reduction measures shall be incorporated into the design of development projects in fire hazard areas.

6. C.3. New development shall be required to have water systems that meet County fire flow requirements. Where minimum fire flow is not available to meet County standards,

alternate fire protection measures, including sprinkler systems, shall be incorporated into development if approved by the appropriate fire protection agency.

6. C.4. The County shall review project proposals to identify fire hazards and prevent or mitigate such hazards to acceptable levels of risk.

6. C.5. The County shall require development to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have two points of ingress and egress.

6. C.6. The County shall ensure that existing and new buildings of public assembly incorporate adequate fire protection measures to reduce the potential loss of life and property in accordance with state and local codes and ordinances.

6. C.7. The County shall encourage fire protection agencies to continue education programs in schools, service clubs, organized groups, industry, utility companies, government agencies, press, radio, and television in order to increase public awareness of fire hazards within the county.

6. C.8. The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression.

6. C.10. The County shall continue to work cooperatively with the California Department of Forestry and Fire Protection and local fire protection agencies in managing wildland fire hazards.

6. E.1. The County shall continue to maintain, periodically update and test the effectiveness of the *Emergency Response Plan*.

6. E.2. The County shall coordinate emergency response preparedness, response, recovery, and mitigation activities with special districts, service agencies, and volunteer organizations, cities within the county, surrounding cities and counties, and state and federal agencies.

6. E.3. The County shall ensure that the siting of critical emergency facilities such as hospitals, fire stations, sheriff's offices and substations, dispatch centers, emergency operations centers and other emergency service facilities and have minimal exposure to flooding, seismic and geological effects, fire, and explosions.

6. F.1. The County shall seek to locate new public facilities necessary for emergency response, health care, and other critical functions outside areas subject to natural hazards.

## **COUNTY ORDINANCE 542**

As mentioned previously in this chapter, elements of Section 4290 of the Public Resources Code, has been adopted by the County of Madera. By adopting County Ordinance #542, the elements of PRC 4290 have been codified into the appropriate set of County ordinances; Title 11, Title 13, and Title 17. In some cases the standards that have been adopted exceed the minimum requirements set forth in PRC 4290. The following is a list of county ordinances that were adopted because of public safety concerns.

### Road Standards

*Title 17: ST-3* Minimum of 20 foot road width (two, 10-foot traffic lanes) with all weather surfaces.

*Title 17: ST-3* Road surface must be capable of supporting a 40,000 pound total vehicle weight under all weather conditions.

*Title 17: ST-8* MAXIMUM GRADE: With the exception of areas with an elevation of 3,000 feet above sea level or higher, the maximum grade for any local road is 16%.

Grades will not exceed 10% for a distance greater than 660 feet and 16% for a distance greater than 330 feet. Areas with an elevation of 3,000 feet above sea level or higher, except for agricultural designated properties, will have a maximum grade of 12%.

Grades will not exceed 10% for a distance greater than 660 feet and will not exceed 12% for a distance greater than 330 feet.

*Title 17: ST-8* TURN AROUND ON DEAD-END: All dead-end roads will include an offer of dedication for a turn around at its terminus. The offered right-of-way must include a minimum 50' radius. A larger radius will be required if road improvements and their appurtenances necessitate additional right-of-way. For those areas zoned 5 acres or more, a turn around will be offered at least every 1,320 feet. In all cases, road construction will include an approved turn around.

*Title 17: ST-3* For one-way roads and driveways, which are a minimum of 10' wide, turnouts shall be a minimum of 10 feet wide and 30 feet long, with a minimum 25 foot taper on each end. Two-way roads and driveways that are 20 feet wide are not required to have turnouts.

*Title 17: ST-8* DEAD-END ROADS OR CUL-DE-SACS: The maximum length of a dead-end road is listed below. The length is measured from the nearest through-road to the dead-end. Where a dead-end road traverses more than one zoning designation, the most restrictive zone shall control allowable maximum road length.

- Parcels zoned for less than 1 acre 800 feet
- Parcels zoned for 1 to 4.99 acres 1,320 feet
- Parcels zoned for 5 to 19.99 acres 2,640 feet
- Parcels zoned for 20 or more acres 5,280 feet

Driveway Standards

*Title 17: ST-27* Maximum driveway grade shall be 12% for parcels east of the 3,000 foot contour line and 16% for parcels west of the 3,000 foot contour line. 16% grades are allowed for all existing parcels approved prior to the effective date of this requirement and all agricultural designated properties.

*Title 17: ST-27* Driveways in length of 150'-799' must have approved turnout at midpoint and constructed of same material as driveway. Driveways in length greater than 799' must have approved turnouts no more than 400' apart and constructed of the same material as the driveway.

*Title 17: ST-27* Driveways in length greater than 300' must have an approved 40' radius turnaround or hammerhead (20 x 60) at the end within 50' of building and constructed of same material as driveway.

*Title 17: ST-27* Minimum driveway width shall be 10' for residential and 20' for commercial developments.

*Title 17: ST-27* Driveways shall be all-weather surface capable of supporting a 40,000 pound fire apparatus vehicle load.

*Title 17: ST-27* Minimum turning radius of 50' for all curves along driveway.

*Title 17: ST-27* Minimum vertical height clearance of 15' throughout length of driveway.

## Gate Standards

*Title 17: ST-27* Gated entrances shall be set back a minimum of 30' from edge of traveled roadway but in no circumstances on county road right-of-way. Minimum width of gate shall be 2' wider than travel lane at gate.

## Signage

*Title 11 Section 04.200* Every person owning, controlling, occupying or using any house, store, or any other addressable structure in the County shall install and maintain permanently on such structure the number issued, subject to the following provisions:

- A. The number shall be made of a durable material, three inches minimum height, ½ inch stroke, contrasting with background colors.
- B. All such numbers shall be of such type and so placed as to be easily visible and legible from road, avenue, drive, boulevard, or other way or place upon which said premises front. If the structure is not visible from the road, avenue, drive, boulevard or other way or place upon which the premises front, then the house number shall be permanently posted at the driveway access, visible from both directions of travel. House numbers posted at driveway accesses on one-way roads shall be visible from the direction of travel and the opposite direction. Additional posting along the driveway shall be made wherever they are necessary, for clear direction to the structure. Where multiple addresses are required at a single driveway, they shall be mounted on a single post.

*Title 11 Section 04.220* It shall be the duty of the County Road Commissioner to place signs for identifying roads, avenues, streets and thoroughfares as designated by this chapter and to install such signs in conformity with the minimum standards as follows:

- A. Size of letters, numbers, and symbols for street and road signs shall be a minimum of three (3”) inch letter height, one-half (1/2”) inch stroke, reflectorized, contrasting with the background color of the sign.
- B. Street and road signs shall be visible and legible from both directions of vehicle travel for a distance of at least one hundred (100’) feet.
- C. Height of street and road signs shall be uniform County-wide, meet the visibility and legibility standards of this chapter.
- D. All street and road signs shall be mounted and oriented in a uniform manner.

#### Emergency Water Supply Standards

*Title 13 Section 12.070* The water system shall meet the requirements set forth in appendix III-A of the Uniform Fire Code. Fire flow duration shall be a minimum of two hours unless otherwise specified.

*Title 13 Section 24.010* Size: Each fire hydrant shall have a capacity equivalent to the minimum fire flow required in Appendix III-A of the Uniform Fire Code. Friction loss shall not exceed American Waterworks Association (AWWA) standards.

*Title 13 Section 24.020* Type: Fire hydrants shall meet the requirements of AWWA Standards Specifications and shall be of the dry barrel and compression type valve design. They shall be designed for a working pressure of one hundred and fifty pounds per square inch. Design shall be such that in the event of a traffic accident the barrel sections will not be damaged nor the operating stem bent or broken by providing a safety flange and safe stem coupling. “O” ring seals shall be provided and the operating mechanism shall not be in contact with the water. Barrel drains shall be provided. Hydrants shall have 1 ½” pentagon operating nuts, 2 ½” hose outlets and where



Applicable, 4 ½” pumper outlets (both National Standard Fire Hose Threads). The fire hydrant type shall be approved by the County Engineer. The hydrant head shall be brass with 2 ½” National Hose male thread cap for pressure and gravity flow systems and 4 ½” draft systems. Such hydrants shall be wet or dry barrel as required by the delivery system.

*Title 13 Section 24.030* Location: Each hydrant shall be served by a circulating system so it may obtain water from two directions in a grid, except those hydrants which are on a cul-de-sac may have a single supply main not over 500’ in length. Fire hydrants shall be placed with the centerline of the hydrant not less than 24” behind the face of the curb or edge of the pavement nearest the main. In general, hydrants shall be located at street intersections with additional hydrants located at sufficient intervals along the street to comply with the spacing requirements as specified in Appendix III-B of the Uniform Fire Code. Outlets shall be between 18” and 24” above finished grade to the center of the outlet; 8’ from flammable vegetation; and in a location where fire apparatus using it will not block the roadway. The hydrant serving any building shall not be less than 50’ nor more than ½ mile by road from the building it is to serve; and be located at a turnout or turn around, along the driveway to that building or along the road that intersects with that driveway.

*Title 13 Section 24.050* Paint: The exterior surfaces of the hydrant above the finished ground line shall be thoroughly cleaned and thereafter painted with two coats of primer and a finish water proof coat, the color of which will be in accordance with the following capacity-indicating color schemes:

A. Public Hydrants. All barrels are to be painted chrome yellow. The tops shall be painted as follows:

1. Green – Hydrants with a flow capacity of 1000 gpm or greater
2. Orange – Hydrants with a flow capacity of 500 gpm to 1000 gpm
3. Red – Hydrants with a flow capacity of less than 500 gpm

Capacities are to be rated by flow measurements of individual hydrants at a period of ordinary demand.

B. Private Hydrants. Within private enclosures, the marking is left to the discretion of the owners. When in public streets, they should be painted to distinguish them from public hydrants.

*Title 13 Section 24.060* Signing: Each hydrant, fire valve or access to water shall be identified as follows:

A. If located along a driveway, a reflectorized blue marker, with a minimum dimension 3” shall be located on the driveway address sign and mounted on a fire retardant post.

B. If located along a street or road:

1. Reflectorized blue marker, with a minimum dimension of 3”, shall be mounted on a fire retardant post. The sign post shall be within 3’ of said hydrant/fire valve, with the sign no less than 3’ nor greater than 5’ above the ground, in a horizontal position and be visible from the driveway.
2. As specified in the State Fire Marshall’s Guidelines for Fire Hydrant Markings along State Highways and Freeways; May 1988.

## Defensible Space

*Title 17 Section 28.020* Subdivisions and other developments, which propose greenbelt as part of the development plan, shall locate said greenbelt strategically, as a separation between wildland fuels and structures. The location shall be approved by the inspection authority.

*Title 18 Section 04.132* Defensible Space: Defensible space means the area within the perimeter of a parcel, development, lot, condominium project, or planned community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from approaching wildfire or defense against encroaching wildfires or escaping structure fires. The perimeter is the area encompassing the parcel or parcels proposed for construction and/or development.

*Title 18 Section 94.150* Defensible Space Measures: Developments regulated by Chapter 18.94 of this code and within the State Responsibility Area are required to provide annual maintenance of the defensible space area. Annual maintenance is intended to ensure continued availability, access, and utilization of the defensible space during a wildland fire.

*Title 18 Section 98.010 C* Setbacks Established: All parcels 1 acre or larger, located in the State Responsibility Area (SRA), shall require a minimum 30 foot setback for buildings and accessory structures from all property lines and/or the center of the road. Parcels that are less than one acre shall provide the same practical effect.

## **FIRE PROTECTION CAPABILITIES**

In Chapter 3 the fire suppression resources normally available in Eastern Madera County have been identified; but because of the complexities of WUI fires other things besides

equipment and personnel must be considered. Training, dispatching and coordination of resources, fire ground management, communications and cooperative agreements are other elements that must be addressed. All firefighters in Madera County, whether they are Federal, State or County; career, paid-call or volunteer, must meet minimum training standards before responding to fires. The criteria, especially in wildland fire training, places heavy emphasis on firefighter safety. The nationally recognized standards: such as “10 Standard Firefighting Orders”, “13 Situations That Shout Watchout” and “L.C.E.S.” (Lookouts, Communications, Escape Routes, and Safety Zones) have been incorporated into the training curriculum. Firefighters, especially Company Officers and Crew Leaders are also trained in locating water sources, identifying access and evacuation routes, determining safe zones for firefighters and the public, and recognizing “defensible space” opportunities.

The 9-1-1 emergency reporting system for Madera County routes all fire calls to Cal Fire’s Emergency Command Center located in Mariposa. (Medical emergencies are dispatched through Fresno EMS) This arrangement is part of the fire protection contractual agreements between Madera County and Cal Fire. At that location calls are received, evaluated, jurisdiction determined and then appropriate types and numbers of emergency resources are dispatched. A dispatch standard is in place for reported wildland fires or fires with potential threat to the wildlands which based primarily upon weather conditions determines the amount of equipment and personnel dispatched in non-federal jurisdiction. These standards classify levels of dispatch – high, medium, and low. A hot and dry mid-summer afternoon with a dispatch level of high would typically see two chief officers, 10 fire engines, two bulldozers, two hand crews, one air

tactical airplane, two air-tankers and two helicopters initially dispatched to any reported wildland fire. Fires reported within the boundaries of the Sierra National Forest are dispatched from their dispatch center in Fresno. They also use dispatch standards to determine the amount of equipment to send, which is based upon weather, location, and time of day. The basic dispatching philosophy for any of the agencies is that the closest appropriate resource will be dispatched regardless of the jurisdiction.

In Madera County all fire agencies utilize a nationally recognized fire ground management tool called the Incident Command System (ICS). This system is very flexible in that it can grow as the incident becomes more complex and shrink as the incident winds down. The system provides management principles such as organization, unity of control, span of control and communications. As specific needs are identified on an incident, trained and qualified personnel and resources are assigned to fill that need.

In Madera County the ICS is activated immediately on all fire dispatches regardless of how simple or complex the incident appears. Upon dispatch all responding resources are identified and fire ground communications are established which include command and tactical frequencies. The first responding unit to arrive at the scene of the emergency will automatically assume the command responsibility for the incident until formally relieved by a more qualified person. The ICS, by utilizing common organizational principles and terminology, will facilitate the successful outcome of most all emergency situations.

As previously mentioned in Chapter 3, the three fire agencies in Madera County have some form of cooperative agreements in place that automatically allow the appropriate resources to assist and support each other. Madera County also has working relationships with surrounding counties that allow them to assist each other when the

need arises. This is often utilized when there is an immediate need for structure protection in wildland fires. In the event a large wildland conflagration should occur with many structures being threatened, the State of California Master Mutual Aid system can be activated. This system which is coordinated by the state Office of Emergency Services (OES) can bring fire resources from all over the state. Generally resources are organized into ICS recognized groups called strike teams which have leadership, common communications and the training and ability to do the job requested of them. The most common resources organized into strike team configuration are fire engines, bulldozers, and hand crews.

California's Master Mutual Aid system is one of the most sophisticated in the world and in a matter of hours hundreds of strike teams can be activated. During the recent North Fork Incident a total of 23 strike teams of engines, crews, and dozers were activated at the peak of the fire.

## **EVACUATION PLANS**

It is virtually impossible to produce a comprehensively written predetermined escape plan in the event evacuation is necessary because of a wildfire. The location, rate of spread and direction of travel of the fire will determine the safest route to direct people away from harms way. In Madera County disaster preparedness, which includes evacuation protocols and procedures, is the responsibility of the county Office of Emergency Services which is a component of the Sheriff's Office. In the event fire officials declare evacuation a necessity, the actual process will be carried out by members of the Sheriff's Department with the assistance of available fire department personnel and other law enforcement agencies. One of the tools available in the

evacuation process is the “reverse 911” phone system. This system has proven successful in recent wildland fire large scale evacuations. The system provides a large number of people in a short period of time information and instructions via a phone call in the event of a natural disaster.

### **PRE-EVACUATION PREPARATIONS**

A homeowner living in a WUI area has made a conscientious decision to be there and therefore must accept some of the risks. A person can greatly increase their homes chance of survivability by providing adequate “defensible space” and utilizing fire resistive construction methods even if they are required to leave. Thought should be given in advance as to where to go and what important documents and essentials should be taken. Last minute home preparations should be considered such as closing all doors and windows, removing all flammables that are near windows, and turning off the propane at the tank.

### **IMMEDIATE EVACUATION**

If an immediate evacuation situation should occur, time is of the essence. This situation usually occurs in the early stages of a fire or in the unanticipated blowup of an existing fire. Law enforcement or fire officials, usually door to door, should notify citizens, that evacuation is necessary and instructions should be given as to where to go and what route of travel is safest. Initially the instructed place to go may be a “place of safety” and later a more permanent evacuation center will be established. (If pre-designated “places of safety” have been identified for communities it is important for the homeowners to know where they are and how to get there prior to the emergency.) In order to provide a

safe and orderly evacuation, it is imperative that the public cooperate and accept the evacuation orders.

### **PLANNED EVACUATION**

A planned evacuation may be mandatory or voluntary. It may be the residents are in imminent danger or it may be strictly precautionary to evacuate; however, either way it is advisable that people adhere to the evacuation request as soon as possible. The more advance warning people receive, the less chaotic the evacuation process will be. In this type of situation, the evacuation planning process is more developed and people will be instructed to go to centers where food, shelter, and personal care needs will be provided usually under the direction of the American Red Cross.

### **TRAVEL ROUTES**

When evacuation orders are issued, it is imperative that people have a thorough understanding as to where to go and what route to travel. If a fire situation should occur in eastern Madera County, normally the most logical direction to route people would be away from the mountains and down toward the valley. This would be a “rule of thumb” as again the location and speed of the fire will dictate the safest route to direct people being evacuated. As people leave local and collector roads that provide access to their parcels, they should be directed to roads and highways that can safely handle larger volumes of traffic. It is important to remember that roads that are used to move people away from danger must also be used to move emergency personnel and equipment into the area.

Roads that are identified as probable evacuation routes should be well maintained and have adequate site clearance. Hazardous roadside brush and trees should be removed to



allow safe passage should a fire encroach the road. Listed below are the population centers for Eastern Madera County and the most likely roads that would be used as evacuation routes.

OAKHURST: Highway 41, Highway 49, Road 426, and Road 222

NORTH FORK: Road 200, Road 274, Road 222, Road 233, Road 225, Road 225, Road 221 and Road 223

BASS LAKE: Road 274, Road 222, and Road 426

AHWAHNEE: Highway 49 and Road 600

COARSEGOLD: Highway 41, Road 415, and Road 400

RAYMOND: Road 600, Road 415, and Road 603

O'NEALS: Road 200 and Road 211

### **SHELTER IN PLACE**

Evacuating people from the dangers of a wildfire is by far the safest and most prudent course of action however there are some circumstances that dictate otherwise. If the only evacuation route requires people to travel through an active fire area, a safer alternative may be to shelter in place. This simply means to find a location within the community that is void of volatile fuels and would provide a temporary refuge until the fire front passes through or is suppressed. If adequate defensible space has been provided, this temporary refuge could be a person's home. Some other possibilities within a community are public assembly or commercial buildings with large parking lots, outdoor sports complexes, golf courses, green belts or large open meadows. People living within communities that have known egress problems should as a homeowners' group identify safe refuge areas and prior to each fire season prepare them for possible use. The local

fire agency can provide advice and other assistance in the establishing of these safety areas.

Madera County fire personnel do not advise homeowners in lieu of evacuation to stand and fight for all too often these people underestimate the fury of fire and become victims in need of rescue. Nor does it endorse the use of neighborhood self-appointed fire brigades or groups. Too often these good intentioned people are insufficiently trained and equipped and do nothing but provide a false security. Also independent firefighting can interfere with overall incident strategy and tactics and could actually place the public and emergency personnel in greater jeopardy.

### **COMMUNICATIONS TO EVACUATED CITIZENS**

When formal evacuation centers are set up and functioning by the American Red Cross, it is advised that all evacuated people contact the evacuation center to provide information about your status so that family or friends can be informed. At the evacuation center or in strategically and well identified areas information centers should be provided. It is imperative that people who have been displaced from their homes, have access to frequent status updates. The local print, radio, and television media can assist with the dissemination of some of this information. However public information personnel directly associated with the incident management team should provide frequent updates in person as well as updates on bulletin boards and web sites if established.

### **SECURITY**

Even after the main fire front passes, the evacuated area may not immediately be safe enough for people to return and neighborhood security must be provided. This is usually

provided by local law enforcement agencies through the use of road blocks and routine patrols.

### **RE-ENTRY TO EVACUATED AREAS**

It will be the decision of the Incident Commander as to when an area is declared safe enough to allow people to return to their homes. The Incident Information Officer will coordinate with the people a timely and safe return to their neighborhoods. It is imperative that emergency service personnel that may still be working in these areas are also informed of the return of the residents.

### **PETS AND LIVESTOCK CONSIDERATIONS**

When a neighborhood is threatened by wildfire and evacuation is essential, consideration must also be given to pets and livestock. Small pets such as dogs and cats can often be evacuated with the owners in their personal vehicles but larger animals are more challenging. Animals such as horses and cows require trailering and more preparation and time is required if not thought out in advance. Also, if it is necessary to go to an evacuation center, the facilities there may not be able to adequately support pets and livestock. If there is an immediate threat from fire and no advance warning is possible, it is advisable to open gates to pens and corrals and allow the animals to fend for themselves. Usually their own instincts will lead them to safety.

The County Animal Control should develop an Emergency Animal Evacuation Plan Office and advice to animal owners should be available in advance of a possible evacuation event. Because of limited staffing, the Animal Control Office should utilize non-governmental organizations and volunteer groups such as the Equine Evacuation Committee and the Eastern Madera County SPCA, which have taken on emergency,

disaster, and sheltering responsibilities in the rural parts of the county. The Emergency Animal Evacuation Plan should address the following components:

- State and federal requirements
- Absent animal owners
- Rescue of disoriented animals
- Animal owners with too many pets to evacuate by themselves
- Animal owner disabled or injured
- Housing, care, and identification tracking of evacuated animals
- Veterinary care and animal isolation to prevent disease
- Reintroduction and release of sheltered animals
- Identification and publication of shelter locations

## **CHAPTER 6: COMMUNITY WILDFIRE RISK ASSESSMENT**

The primary component of a community wildfire protection plan can help county officials and citizens to develop an understanding of the risk of potential losses of life, property and natural resources associated with a damaging wildfire. In order to minimize damage from a wildfire, it is imperative that the most vulnerable communities be identified and that is accomplished by performing a community risk assessment.

### **RISK ASSESSMENT OBJECTIVES**

Chapter 2 identified the goals of a community risk assessment and they are as follows:

- To identify high risk areas of ignition
- To locate geographical features associated with high probability of rapid fire spread
- To identify communities-at-risk within the planning area
- To conduct a wildfire risk assessment of these communities
- To prioritize communities-at-risk based on the assessment results

### **COMMUNITIES-AT-RISK**

The first step in identifying a community-at-risk is to determine what a community is. Eastern Madera County has no incorporated towns or communities therefore there are no specific boundaries to separate one community from another. As all the non-Federal land in Eastern Madera County is unincorporated, it is governed by the Madera County Board of Supervisors. The more commonly identified “communities” have a common bond such as a post office, government facility, community center, grocery store, library, restaurant, or some other public assembly facility. Some “communities” are nothing more than sub-divisions or groups of houses that have flourished because of a

geographical convenience, a recreational opportunity or a planned development. The MCCWPP has assessed thirty-five “communities” which range from the valley grasslands around Millerton Lake to the high country clusters of cabins within the Sierra National Forest.

The following is a list of the identified communities at risk.

**TABLE 6.1: COMMUNITIES-AT-RISK**

Ahwahnee	Indian Lakes	Raymond
Arnold Meadow	John West Road	Road 620
Bass Lake	Leisure Acres	Sierra Highlands
Bass Lake Annex	Marina View	Sierra lakes
Bass Lake Heights	Meadow Springs Ranch	Sky Acres
Beasore Meadows	Miami Highlands	Sugar Pine
Cascadel Woods	Mudge Ranch	Teaford Meadows
Cedar Valley	Nipinnawasee	Wells/Trabuco
Central Camp	North Fork	Wishon
Coarsegold	Oakhurst	Yosemite Forks
Goldside	O’Neals	Yosemite Lakes Park
Hidden Valley Estates	Quartz Mountain	

**RISK ASSESSMENT METHODOLOGY**

The program chosen to do the community risk assessment is a federal government owned software program called Risk Assessment & Mitigation Strategies (R.A.M.S.). The program was developed and maintained by the U.S. Forest Service. The objective of the program is to develop effective and consistent Wildland Fire Prevention, Mitigation, and Fuels Management Planning. The program consists of three major elements: the Assessment, The Wildland Fire Prevention Plan, and the Fuels Management Plan. All or part of this process can be completed independently. The MCCWPP will utilize the Assessment and Fuels Management portion of the program. The program requires in the

set-up phase to identify a Planning Unit, Fire Management Zones (FMZ), Compartments, and Communities. The Planning Unit for this project is titled Madera County. Two Fire Management Zones were then identified as sub-units of the Planning Unit – Eastern Madera County and Western Madera County. Since there is no wildland in Western Madera County, the only data input was for Eastern Madera County. The Eastern Madera County Fire Management Zone is then broken down into 10 compartments which describe specific geographic areas and contain one or more of the 35 communities listed in Table 6.1.

The following table lists the 10 compartments.

**TABLE 6.2: COMPARTMENTS**

1. Oakhurst Area (Basin)	6. O’Neals Area
2. North Fork Area	7. Millerton Lake Area
3. Ahwahnee Area	8. Raymond Area
4. Coarsegold Area	9. Highway 41 Corridor
5. Bass Lake Area	10. Sierra National Forest

The following communities are represented in their respective compartments

1. Oakhurst Area (Basin) – Oakhurst, Mudge Ranch, Sierra Lakes, John West Road
2. North Fork Area – North Fork, Teaford Meadows, Sierra Highlands, Bass Lake Annex, Cascadel Woods, Leisure Acres
3. Ahwahnee – Ahwahnee, Goldside (includes Pike Ranch and Hillview Estates), Miami Highlands, Nipinnawasee
4. Coarsegold Area – Coarsegold, Indian Lakes, Quartz Mountain, Yosemite Lakes Park, Wells/Trabuco, Meadow Springs Ranch
5. Bass Lake Area – Bass Lake, Wishon, Marina View

6. O'Neals Area – O'Neals (includes The Flying "O" Subdivision)
7. Millerton Lake Area – Hidden View Estates (includes the recreation areas around the Lake)
8. Raymond Area – Raymond (includes the recreation area around Eastman and Hensley Lakes)
9. Highway 41 Corridor (North of Road 222 turnoff) – Sugar Pine, Cedar Valley, Yosemite Forks, Sky Acres
10. Sierra National Forest – Arnold Meadow, Central Camp, Beasore Meadows

It is within the compartment and community component that data is entered in order to compile the assessment element of the R.A.M.S. program. The assessment evaluates:

- Hazard definitions
- Initial attack considerations
- Suppression complexity
- Unit objectives
- Fuels hazard
- Ignition risk
- Fire history
- Catastrophic fire potential
- Values
- Protection capability



# COMPARTMENT

## MAP

The following charts and information identify in more detail some of the criteria that are entered into the program in order to establish a priority listing of compartments and communities at risk.

Fuel Hazard Criteria: The assessment of FUEL HAZARD deals with identifying areas of like fire behavior based on fuel and topography.

**TABLE 6.3: FUEL HAZARD FACTORS AND RATINGS**

<b>Vulnerability Factors</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
<b>FUEL</b> (flame length produced)	12+ Feet	5-11 Feet	0-4 Feet
<b>CROWNING POTENTIAL</b>	6+	3-5	0-2
<b>SLOPE</b> (Average)	36+%	21-35%	0-20%
<b>ASPECT</b> (dominant on site)	South, West	East	North
<b>ELEVATION</b>	2501-5000 Feet	0-2500 Feet	5001+ Feet

Ignition Risk: Ignition risk evaluation will be completed for each compartment and community. Ignition risks are defined as those uses, human activities or natural events which have potential to result in ignition. Wherever there are concentrations of people or activity, the potential for a human-caused ignition exists. The objective of this effort is to determine the degree of risk within given compartments or communities. For the purpose of the R.A.M.S. assessment process, the following categories of human activities were identified as potential ignition risks.

**TABLE 6.4: IGNITION RISKS**

1. Population density	15. State/ Federal hwys.	29. Camps/resorts
2. Service Contracts	16. County roads	30. Businesses
3. Maintenance Projects	17. Public access roads	31. Schools
4. Construction Projects	18. Fireworks	32. Dumps
5. Power lines, substations	19. Shooting areas	33. Dispersed recreation
6. Power lines, transmission	20. Children with matches	34. Fuel wood cutting
7. Power lines, distribution	21. Incendiary	35. Electronic installations
8. Mining	22. Debris burning	36. Cultural activities
9. Agriculture/ranching	23. Slash burning	37. Government operations
10. Railroads	24. Timber operations	38. Gas or oil wells
11. Power equipment	25. OHV- motorized	39. Gas pumps or storage
12. Water-based recreation	26. Hunters	40. Powder magazines
13. Campgrounds-developed	27. Party Areas	
14. Transportation corridors	28. Trails - hikers	

Catastrophic Fire Potential: Evaluation of large fire history will reflect what the potential for an historical event to occur. The choices of “Unlikely,” “Possible,” or “Likely” are given to represent the odds of a catastrophic fire in a particular compartment or community.

Values: A value assessment will be conducted for each compartment and community. Values are defined as natural or developed areas where loss or destruction by fire would be unacceptable. The assessment process looks at the natural resources and human-made improvements on the site and is used to reflect the potential physical and economic changes, which may occur.

The following chart depicts the “Value” vulnerability factors and ratings:

**TABLE 6.5: VALUE RATINGS**

<b>Vulnerability Factors</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
<b>RECREATION</b>	Developed recreation site within or adjacent to area	Undeveloped <u>high</u> recreation use	Undeveloped <u>average</u> recreation use
<b>ADMINISTRATIVE (improvements)</b>	Administrative site is <u>adjacent</u> to or within area with high resource or special use values	Average or normal resource or special use values	Minimal resource or special use values
<b>WILDLIFE</b>	Highly significant. Suitable habitat present for reproduction/feeding	Moderately significant. Habitat capability low.	Relatively insignificant. Suitable habitat not present nor will be.
<b>RANGE USE</b>	Range allotment within area, significant use	Range allotment within area, average use	Little or no range use
<b>WATERSHED</b>	Stream class PI, I. Important water use. Domestic water use.	Stream Class I, II. Rocky, little riparian vegetation. No perennial flow.	Stream class III, IV, VI. Little or no riparian vegetation or suitable habitat. No mass movement potential.
<b>TIMBER</b>	Standing timber / woodland on 51+% of area	Standing timber / woodland on 26-50% of area	Standing timber / woodland on 25% or less of area
<b>PLANTATIONS</b>	31% of area in plantations	16-30% of area in plantations	15% or less of area in plantations
<b>PRIVATE PROPERTY (WUI)</b>	High loss and threat potential due to number and placement	Threat to structures and property	Little or no threat or loss potential
<b>CULTURAL RESOURCES (significance)</b>	Archeological/historical findings of high significance	Minimal archeological / historical findings, potential for Native American gathering / ceremonial use	No archeological / historical findings, little potential for Native American use
<b>SPECIAL INTEREST AREAS (public concern)</b>	A majority of the area is classified as Special Interest Area	Area is adjacent to a Special Interest Area	No Special Interest Area within or adjacent to the area
<b>VISUAL RESOURCE</b>	Preserve and retain existing character	Partially retain existing character	Maximum modification dominates
<b>T &amp; E SPECIES</b>	Species present	Species present. No confirmed use for reproduction	Species not present
<b>SOILS</b>	Highly erodible	Moderately erodible	Low significance
<b>AIR SHED</b>	High receptor sensitivity	Moderate sensitivity	Low sensitivity
<b>VEGETATION</b>	Plant occurrences of significance	Potential for sensitive plants	No sightings, little potential, minimal significance
<b>OTHER</b>			

Protection Capability: Determining fire protection capability for the purpose of the compartment and community assessment involves estimating the actual response times for initial attack forces and how complex the actual suppression action may be once they arrive. Conditions that are considered are access, fuel profile, existence of natural or man-made barriers to spread fire, presence of structures and predicted fire behavior.

**TABLE 6.6: PROTECTION RATING**

<b>Vulnerability Factors</b>	<b>High</b>	<b>Moderate</b>	<b>Low</b>
<b>Initial Attack</b> (first suppression forces to center of unit)	21+ Minutes	11-20 Minutes	0-10 Minutes
<b>Suppression Complexity</b> (access, fuel conditions, fire barriers, structure problems)	Complex Limited to poor access, medium fuel, minimally effective barriers, numerous structures	Average Reasonable access, some fuel problems, some barriers, some structures	Simple Good Access, light fuel, good barriers to fire spread, few structures
<b>Firewise Compliance</b> (risk because of homeowner provided defensible space)	Poor Lack of compliance by majority of homeowners	Fair 50% to 75% of homeowners are in compliance	Good Over 75% of homeowners are in compliance

## **FINAL COMPARTMENT ASSESSMENT**

Upon completion of entering the appropriate data into the “RAMS” program, a report is generated listing the compartments in order of priority. The compartments represent a broader geographic base than the communities and can be treated as such when mitigation measures are considered. The following table identifies the compartment assessment summary.

**TABLE 6.7**

RAMS									
Eastern Madera County									
Compartment Assessment Summary									
Priorities Based On Assessment									
Comp	Name	Total	Hazard	Ign Risk	Values	Protectn	Cat	Potnl	Fire Hist
--									
9	Highway 41	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	LOW
5	Bass Lake A	HIGH	HIGH	HIGH	HIGH	MODERATE	HIGH	HIGH	MODER
1	Oakhurst Ba	HIGH	MODERATE	HIGH	HIGH	MODERATE	HIGH	HIGH	MODER
2	North Fork	HIGH	MODERATE	MODERATE	MODERATE	MODERATE	HIGH	HIGH	HIGH
10	Sierra N.F.	MODERATE	HIGH	LOW	HIGH	HIGH	MODERATE	HIGH	LOW
4	Coarsegold	MODERATE	MODERATE	HIGH	MODERATE	LOW	MODERATE	HIGH	HIGH
3	Ahwahnee Ar	MODERATE	MODERATE	MODERATE	MODERATE	MODERATE	HIGH	HIGH	MODER
8	Raymond Are	LOW	LOW	MODERATE	MODERATE	LOW	LOW	LOW	HIGH
7	Millerton L	LOW	LOW	LOW	MODERATE	HIGH	MODERATE	HIGH	LOW
6	O'Neals Ar	LOW	LOW	LOW	LOW	MODERATE	LOW	LOW	HIGH

**FINAL COMMUNITY ASSESSMENT**

The same data will also produce a report identifying the communities at risk in a prioritized format. This listing can help in establishing projects in areas that are most in need. The following table identifies the community assessment summary.

**TABLE 6.8****Eastern Madera County  
Community Assessment Summary**

<b>Pri</b>	<b>Name</b>	<b>Total</b>	<b>Hazard</b>	<b>Ign Risk</b>	<b>Values</b>	<b>Protecn</b>	<b>CatPtl</b>	<b>Fire</b>
1	Cascadel Woods	HIGH	HIGH	MOD	HIGH	HIGH	HIGH	HIGH
2	Cedar Valley	HIGH	HIGH	MOD	HIGH	HIGH	HIGH	MOD
3	Road 620	HIGH	HIGH	LOW	MOD	HIGH	HIGH	HIGH
4	Nipinnawasee	HIGH	MOD	HIGH	MOD	MOD	HIGH	HIGH
5	John West Rd.	HIGH	HIGH	LOW	MOD	HIGH	HIGH	HIGH
6	Sugar Pine	HIGH	HIGH	MOD	HIGH	HIGH	HIGH	LOW
7	North Fork	HIGH	MOD	HIGH	MOD	MOD	MOD	HIGH
8	Oakhurst	HIGH	MOD	HIGH	MOD	MOD	MOD	HIGH
9	Bass Lake Annex	HIGH	MOD	LOW	HIGH	MOD	HIGH	HIGH
10	Bass Lake	HIGH	MOD	HIGH	HIGH	MOD	HIGH	LOW
11	Sky Acres	HIGH	HIGH	MOD	MOD	MOD	HIGH	MOD
12	Marina View	MOD	HIGH	MOD	HIGH	LOW	MOD	MOD
13	Bass Lake Heights	MOD	MOD	MOD	MOD	MOD	HIGH	MOD
14	Yosemite Lakes Park	MOD	LOW	HIGH	MOD	HIGH	MOD	MOD
15	Quartz Mtn	MOD	MOD	HIGH	MOD	MOD	MOD	MOD
16	Sierra Lakes	MOD	MOD	MOD	MOD	MOD	MOD	HIGH
17	Ahwahnee	MOD	LOW	HIGH	MOD	MOD	MOD	HIGH
18	Beasore Mead	MOD	MOD	LOW	HIGH	HIGH	MOD	MOD
19	Teaford Meadows	MOD	MOD	LOW	MOD	MOD	HIGH	HIGH
20	Mudge Ranch	MOD	MOD	HIGH	HIGH	LOW	HIGH	LOW
21	Arnold Mead	MOD	MOD	LOW	MOD	HIGH	MOD	MOD
22	Wells/Trabuco	MOD	MOD	MOD	MOD	MOD	MOD	MOD
23	Central Camp	MOD	MOD	LOW	MOD	HIGH	MOD	MOD
24	Wishon	MOD	MOD	MOD	HIGH	LOW	HIGH	LOW
25	Miami Highlands	MOD	MOD	LOW	MOD	MOD	MOD	HIGH
26	Coarsegold	LOW	LOW	HIGH	MOD	MOD	MOD	LOW
27	Hidden View	LOW	LOW	MOD	MOD	HIGH	MOD	LOW
28	Yosemite Forks	LOW	MOD	MOD	LOW	MOD	MOD	MOD
29	Sierra Highlands	LOW	MOD	LOW	MOD	MOD	MOD	LOW
30	Goldside	LOW	LOW	MOD	LOW	LOW	LOW	MOD
31	Raymond	LOW	LOW	HIGH	LOW	LOW	LOW	MOD
32	Meadow Springs	LOW	MOD	LOW	LOW	MOD	MOD	LOW
33	Indian Lakes	LOW	LOW	HIGH	MOD	LOW	LOW	LOW
34	O'Neals	LOW	LOW	HIGH	LOW	MOD	LOW	LOW
35	Leisure Acres	LOW	LOW	LOW	LOW	LOW	LOW	MOD

**COMMUNITIES**

**AT**

**RISK**

**MAP**



## **CHAPTER 7: MITIGATION ACTIONS FOR “COMMUNITIES AT RISK”**

### **WUI MITIGATION FACTORS CONSIDERED IN MCCWPP**

The information provided in the previous chapters of this document identifies the need for an “Action Plan” to mitigate the negative impacts from a wildland fire for the recognized “communities at risk”. The entire intent of a CWPP is to provide a means to make WUI communities less vulnerable to the destructive forces of an uncontrolled wildland fire. The CWPP places emphasis on fuel treatment projects in and adjacent to “communities at risk” but it is not the only element as part of the mitigation plan. The mitigation factors that must be considered in the CWPP are as follows:

- Education programs must be provided to citizens designed to inform them of the risks of living in a wildland fire environment. They should be informed of the actions that can be taken to minimize the risks as well as the role they can and should play in these actions. They should be part of the planning process.
- Fuels treatment and reduction projects should be identified and prioritized.
- Adequate construction and building standards must be adopted by local building officials and a strict enforcement policy adhered to.
- Property owners must accept the responsibility of removing hazardous fuels from around their homes and outbuildings in accordance with Public Resources Code 4291.

### **OBJECTIVES FOR HAZARDOUS FUEL REDUCTION**

The objectives for mitigating hazardous fuels in and surrounding communities at risk are as follows:

- To identify and prioritize fuel reduction projects
- To identify a means to coordinate efforts by all agencies on all fuels treatment projects
- To administer grants and fuel reduction projects equitably across agencies and communities, based upon assets-at-risk priorities
- To provide an opportunity for citizens and communities to participate in projects and fire safety programs.

## **DESIRED FUTURE CONDITIONS**

When communities have been determined to be at risk from wildfire, it usually is associated with a build up of natural fuels in and adjacent to the community. In order to make the community more fire safe, these hazardous fuels must be identified and assessed. A plan must then be formulated to reduce or eliminate the fuels that are within or adjacent to the community or at strategically located geographic features such as ridge tops that are in close proximity to the community. When planning for a fuels reduction project, the use of roads and natural barriers such as lakes, ponds, rock outcroppings, etc. should also be considered.

The desired effect of a fuels reduction project should stop or drastically slow down the lateral and horizontal spread of a wildfire. To accomplish this, large accumulations of ground litter such as pine needles and cones, leaves, broken branches and fallen trees must be reduced or eliminated. In conjunction with this, “ladder fuels” such as young trees, brush and low hanging branches of mature trees should also be eliminated. The intent of this type of fuels treatment is to reduce the propagation of fire from the ground to the tops of trees. If the upper portions of mature trees are touching or in close

proximity to one another, the potential for a running crown fire exists. The selective removal of some trees therefore reducing the crown spacing is imperative to mitigating this type of fire condition. It is extremely important to understand that a wildfire confined to surface fuels is much more manageable than one that is racing through the tops of trees or brush. Ground level fires generally burn with low intensity and can be handled by direct means whereas crown fires burn with so much intensity that the only safe strategies for combating the fire must incorporate indirect methods. Another desired condition is to have property owners provide adequate defensible space. All home and business owners should take the initiative to protect their buildings and surrounding property by reducing hazardous fuels. It is imperative, in order to provide a fire safe community; that all property owners comply with state and local fire regulations. This also includes the use of appropriate construction techniques that would lessen the ignitability of a structure. A good rule to remember is: “highly ignitable homes and buildings can be destroyed during low intensity fires, whereas homes with low ignitability can survive high intensity fires.”

## **POSSIBLE ACTIONS**

The reduction or elimination of hazardous fuels prior to a wildfire occurrence is essential in order to increase the odds of survivability of a community. The reduction or elimination of fuels can be accomplished in several different ways. The most common treatment strategies are as follows:

- Prescribed Fire – This is a method used to eliminate fuels, usually over larger areas, by the use of controlled fire.

- Wildland Fire Use – Control lines from past fires can be maintained to provide a fuel break or access for future fires.
- Fire Defense Systems – Fuel breaks, fire access roads, and green belts can help a fire starting within a community from spreading into the surrounding wildlands or stop a fire coming from the surrounding wildlands from coming into the community.
- Mechanical Treatment – This mechanized method can include the removal of fuels by harvesting, thinning, mowing, chipping, cutting and piling.
- Handwork – This method of fuels reduction is labor intensive but effective in areas where mechanized treatment is not practical because of the size of the project, topographic limitations, or environmental sensitivities.
- Roadside Hazard Reduction – Fuel reduction on roads within and accessing a community can serve as a fuel break and provide a safe travel route for the general population as well as emergency service personnel.
- Chemical Treatment – Chemical application to plant species must be done where appropriate and consistent with State and Federal regulations
- Biological Treatment – The use of grazing animals such as cattle, sheep or goats is encouraged where the use would be beneficial to agriculture as well as fuel reduction projects.

Another action in conjunction with fuel reduction projects is an aggressive inspection program conducted by fire officials or authorized representatives. Communities with a high hazard rating should be routinely inspected for compliance to “defensible space” requirements (PRC 4291). This inspection process should be positive in nature and used

as an educational tool to encourage property owners to maintain a proper clearance around their homes. In the event of neglect on the part of the property owner to adhere to the items identified in the inspection process, legal actions that could lead to fines should be initiated.

## **PRIORITY FUEL TREATMENT PROJECTS**

The Final Community Assessment list established in Chapter 6 and identified on TABLE 6.8 will be used to prioritize fuel reduction projects for communities at risk. Eleven out of the thirty-five communities assessed were classified as having a “high” rating. The communities with “high” ratings will be prioritized by their rankings and projects identified to alleviate the most severe problems associated with each community. The communities with ratings in the “moderate” or “low” classifications have fire preparedness needs as well, but with limited dollars and resources the emphasis must be on the communities identified most at risk.

When analyzing fire mitigation projects, a collaborative approach must be utilized. All Federal, State, and Local fire agencies as well as citizen groups and homeowners, should have input into developing the fire mitigation strategies. A plan should be formulated that is understood and agreeable to all parties affected by the outcome.

The following is a prioritized list of communities at risk and some potential actions that could reduce the fire risk.

### **PRIORITY #1**

*Community:* **Cascadel Woods**

*Location:* Section 16, T8S, R23E

*Population:* 106 dwelling units plus numerous outbuildings

*Specific problems:*

- (1) A large amount of timber fuels interspersed with heavy volumes of brush within and surrounding the community
- (2) An approximate 3 mile narrow, windy two-lane road (Cascadel Road/Road 233) with contiguous trees and brush serves as the only reliable road in and out of the community
- (3) Steep brush covered slopes south and east of the community
- (4) Narrow roads with a bridge incapable of handling heavy equipment within the community
- (5) Many older homes and cabins in close proximity to one another, some with wood shake roofs and combustible exterior construction
- (6) A larger percentage of retired and absentee homeowners

*Evacuation routes:*

West on Cascadel Road(Road 233), then east or west on Road 225

*Past actions:*

- (1) Roadside fuel reduction and fuel-break construction along Cascadel Road by USFS
- (2) Fuel reduction projects conducted by joint efforts of USFS, Fire Safe Council and Coarsegold Resource Conservation District in areas near the community
- (3) Intermittent compliance inspections for PRC 4291 regulations by fire officials

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability

- (2) Identify and construct safety zones that can be used as temporary shelter-in-place areas for residents as well as fire personnel
- (3) A 200' to 300' wide shaded fuel-break surrounding the community
- (4) Continued construction and maintenance of the fuel-break along Cascadel Road
- (5) Fuel reduction on Sierra National Forest land adjacent to community assets by the use of harvesting or thinning projects
- (6) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

## **PRIORITY #2**

*Community:* **Cedar Valley**

*Location:* Sections 13 & 24, T6S, R21E

*Population:* 97 dwelling units plus numerous outbuildings

*Specific problems:*

- (1) A large amount of timber fuels interspersed with heavy volumes of brush within and surrounding the community
- (2) A 1-1/2 mile narrow, windy two-lane road (Cedar Valley Drive) with contiguous forest fuel on both sides that serves as the only road in and out of the community

- (3) Narrow roads within the community
- (4) Older homes and cabins in close proximity to one another, some with wood shake roofs and combustible exterior construction
- (5) A large percentage of retired and absentee homeowners

*Evacuation routes:*

Southwest on Cedar Valley Drive to Highway 41

*Past actions:*

- (1) Roadside fuel reduction and fuel-break construction along Cedar Valley drive by USFS and Cal Fire
- (2) Roadside fuel reduction by Cal Fire and Madera County Road Department on roads within the community
- (3) Intermittent compliance inspections for PRC 4291 regulations by fire officials

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Identify and construct safety zones that can be used as temporary shelter-in-place areas for residents as well as fire personnel
- (3) A 200' to 300' wide shaded fuel-break surrounding the community
- (4) The elimination or reduction of fuels 100' on both sides of Cedar Valley Drive from Highway 41 to Cedar Brook Rd.
- (5) Fuel reduction on Sierra National Forest land down canyon in the Lewis Creek drainage between Sky Ranch and Cedar Valley (possible timber harvesting or plantation thinning)



(6) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

### **PRIORITY #3**

*Community:* **Road 620 (BISSETT STATION ROAD)**

*Location:* Sections 20, 21, 27, 28, 29, 34, 35, 36, T6S, R21E

*Population:* 41 dwelling units with numerous outbuildings

*Specific problems:*

- (1) Road 620 is a mid-slope road with large concentrations of heavy brush on steep slopes immediately below it to the south
- (2) Homes are built along and adjacent to Road 620, a five mile long narrow, winding road with heavy volumes of trees and brush on both sides

*Evacuation routes:*

- (1) East on Road 620 (Bissett Station Road) to Highway 41
- (2) West on Road 620 (Bissett Station Road) to Road 628 (Round House Road)
- (3) South on Road 628 to Highway 49

*Past actions:*

- (1) Intermittent compliance inspections for PRC 4291 regulations by fire officials
- (2) Fuel reduction by timber harvest, mechanical treatment and prescribed fire by the USFS in the general area but not immediately adjacent to the populated area

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (3) The reduction or elimination of fuel for 150' on both sides Road 620 (Bissett Station Road) from Highway 41 to Road 628
- (4) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

**PRIORITY #4**

*Community:* Nipinnawasee

*Location:* Sections 13, 24, R20E, T6S

*Population:* 112 dwelling units with numerous outbuildings

*Specific problems:*

- (1) Large areas of heavy concentrations of grass and brush mingled amongst structures
- (2) Narrow winding roads with hazardous fuels encroaching one or both sides of the road

*Evacuation routes:*

- (1) Highway 49 north towards Mariposa
- (2) Highway 49 south towards Oakhurst

*Past actions:*

- (1) Roadside fuel reduction by Cal Fire, P. G. & E. and Madera County Road Department on roads within the community
- (2) Intermittent compliance inspections for PRC 4291 regulations by fire officials

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Continued roadside fuel elimination or reduction along roads within the community
- (3) Fuel reduction on Sierra National Forest land adjacent to the community on the east side by the use of harvesting or thinning projects
- (4) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

**PRIORITY #5**

*Community:* **John West Road**

*Location:* Section 7, 18, R22E, T7S

*Population:* 44 dwelling units with numerous outbuildings

*Specific problems:*

- (1) A 2 mile narrow, winding two-lane road (John West Road) with contiguous forest fuels on both sides that serve as the only road in and out of the community
- (2) A large amount of timber fuels interspersed with heavy volumes of brush within and surrounding the community
- (3) Narrow roads within the community

*Evacuation routes:*

South on John West Road to Road 426, then west on 426 towards Oakhurst or east towards North Fork

*Past actions:*

- (1) Roadside fuel reduction by Cal Fire and Madera County Road Department on roads within the community
- (2) Intermittent compliance inspections for PRC 4291 regulations by fire officials

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Identify and construct safety zones that can be used as temporary shelter-in-place areas for residents as well as fire personnel
- (3) Continued roadside fuel elimination or reduction along roads within the community
- (4) Fuel reduction on Sierra National Forest land adjacent to the community on the east side by the use of harvesting or thinning projects

(5) Completion of Emergency Access route from Taylor Mountain Road to Indian Springs Road, therefore providing an alternate escape route

(6) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

## **PRIORITY #6**

*Community:* **Sugar Pine**

*Location:* Section 1, R21E, T6S

*Population:* 54 dwelling units with numerous outbuildings, a large private camp complex; many of the structures within the community are old with historical value.

*Specific problems:*

(1) A large amount of timber fuels interspersed with heavy volumes of brush within and surrounding the community

(2) A 1 mile narrow two-lane road (Road 630/Sugar Pine Road) with contiguous forest fuels on both sides that serves as the only road in and out of the community

(3) Narrow roads within the community

(4) Older homes and cabins in close proximity to one another, some with wood shake roofs and combustible exterior construction

(5) A large percentage of retired and absentee homeowners

*Evacuation routes:*

South on Road 630 (Sugar Pine Road) to Highway 41

*Past actions:*

- (1) Roadside fuel reduction and fuel-break construction along Road 630/Sugar Pine Road by USFS
- (2) Intermittent compliance inspections for PRC 4291 regulations by fire officials
- (3) Fuel reduction projects including timber harvesting, prescribed burns, and mechanical and hand treatment near the community

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Identify and construct safety zones that can be used as temporary shelter-in-place areas for residents as well as fire personnel
- (3) A 200' to 300' wide shaded fuel-break surrounding the community
- (4) Continued construction and maintenance of the fuel-break along Road 630/Sugar Pine Road
- (5) Continued fuel reduction on Sierra National Forest land within one mile of the community by the use of harvesting, thinning projects, and prescribed burns
- (6) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community

on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

## **PRIORITY #7**

*Community:* **North Fork**

*Location:* Sections 13, 24 R22E, T8S; Sections 17, 18, 19, 20 R23E, T8S

*Population:* 76 dwelling units plus numerous outbuildings; commercial and light industrial buildings; governmental facilities; churches and schools

*Specific problems:*

- (1) Large areas of heavy concentrations of grass and brush mingled amongst structures
- (2) Many narrow roads with hazardous fuels encroaching one or both sides of the road within the community

*Evacuation routes:*

- (1) West on Road 225 to Road 200 then southwest on Road 200 towards Highway 41
- (2) West on Road 225 to Road 274 then north on Road 274 towards Bass Lake

*Past actions:*

- (1) Roadside fuel reduction by, Cal Fire and Madera County Road Department with support from the Madera County Fire Safe Council and the Coarsegold Resource Conservation District on roads within and accessing the community
- (2) Intermittent compliance inspections for PRC 4291 regulations by fire officials

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Identify and construct safety zones that can be used as temporary shelter-in-place areas for residents as well as fire personnel
- (3) Continued roadside fuel elimination or reduction along roads within the community
- (4) Construction of a fuel-break around the community utilizing past fuels reduction programs, prescribed burns, and parts of past fuel-breaks
- (5) Implementation of a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

**PRIORITY #8**

*Community:* **Oakhurst**

*Location:* Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, R21E, T7S

Sections 18, 19, 30, R22E, T7S

*Population:* 1071 dwelling units plus numerous outbuildings; commercial and light industrial buildings; governmental, utility and medical facilities; churches and schools



*Specific problems:*

- (1) Large areas of heavy concentrations of grass and brush mingled amongst structures
- (2) Many narrow winding roads with hazardous fuels encroaching one or both sides of the road
- (3) Inadequate water supply to support fire fighting operations in many areas of the community

*Evacuation routes:*

- (1) East on Road 426 (Crane Valley Road) to Road 223 towards North Fork
- (2) West on Road 426 to Highway 41
- (3) Highway 49 south towards Oakhurst or north towards Mariposa

*Past actions:*

- (1) Roadside fuel reduction by Cal Fire and Madera County Road Department of some roads within the community
- (2) Fuel reduction projects including fuel-breaks, prescribed burns, and mechanical and hand treatment adjacent to the community; primarily concentrated on ridge tops around the Oakhurst Basin
- (3) Intermittent compliance inspections for PRC 4291 regulations by fire officials
- (4) In 2007 a Fire Safe Council fuel-break project was completed around the Oakhurst Basin along the ridge tops of Miami Mountain, Crooks Mountain, and Potter Ridge

***Priority mitigation needs:***

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Roadside fuel elimination or reduction along county roads
- (3) Completion and maintenance of a fuel break system surrounding the community
- (4) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

**PRIORITY #9**

*Community:* **Bass Lake Annex**

*Location:* Section 35, R22E, T7S; Section 2 R22E T8S

*Population:* 89 dwelling units with numerous outbuildings

*Specific problems:*

- (1) A large amount of timber fuels interspersed with heavy volumes of brush within and surrounding the community
- (2) Narrow roads within the community
- (3) Older homes and cabins in close proximity to one another

*Evacuation routes:*

North on Road 222/Crane Valley Road towards Bass Lake or south on Road 222/Crane Valley Road towards North Fork

*Past actions:*

- (1) Proposed roadside fuel reduction and fuel-break construction along Road 222/Crane Valley Road
- (2) Intermittent compliance inspections for PRC 4291 regulations by fire officials

***Priority mitigation needs:***

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) A 200' to 300' wide shaded fuel-break surrounding the community
- (3) The elimination or reduction of fuels 100' on both sides of Road 222/Crane Valley Road from Bass Lake to North Fork
- (4) Continued fuel reduction on Sierra National Forest land adjacent to the community by the use of harvesting and thinning projects
- (5) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

**PRIORITY #10**

*Community:* **Bass Lake**

*Location:* Sections 8, 9, 14, 15, 16, R22E, T7S

*Population:* 775 dwelling units plus numerous outbuildings; commercial and light industrial buildings; governmental facilities; churches, schools and camps and other recreational facilities

*Specific problems:*

- (1) A large amount of timber fuels interspersed with heavy volumes of brush within and surrounding the community
- (2) Narrow, winding roads within the community
- (3) Older homes and cabins in close proximity to one another, some with wood shake roofs and combustible exterior construction
- (4) A large percentage of retired and absentee homeowners
- (5) A large number of summertime visitors, campers and recreationalists

*Evacuation routes:*

- (1) Northwest on Road 274 (Malum Ridge Road) or Road 432 (North Shore Road) to Road 222, then northwest on Road 222 to Highway 41
- (2) Southeast on Road 274 (Malum Ridge Road) toward North Fork

*Past actions:*

- (1) Intermittent compliance inspections for PRC 4291 regulations by fire Officials

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability

(2) Identify and construct safety zones that can be used as temporary shelter-in-place areas for residents as well as fire personnel

(3) A 300' wide shaded fuel-break on the south side of Road 274 (Malum Ridge Road) from the intersection of Road 274 and Road 222 to Central Camp Road

(4) Fuel reduction on Sierra National Forest land adjacent to the community by the use of harvesting or thinning projects

(5) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

## **PRIORITY #11**

*Community:* **Sky Acres**

*Location:* Section 30, 31, T6S, R22E

*Population:* 62 dwelling units with numerous outbuildings

*Specific problems:*

(1) A large amount of timber fuels interspersed with heavy volumes of brush within and surrounding the community

(2) Narrow roads within the community

(3) Older homes and cabins in close proximity to one another, some with wood shake roofs and combustible exterior construction

*Evacuation routes:*

West on Road 632 (Sky Ranch Road) to Highway 41

*Past actions:*

- (1) Intermittent compliance inspections for PRC 4291 regulations by fire officials
- (2) Some roadside fuel reduction by Madera County Road Department on roads within the community

*Priority mitigation needs:*

- (1) Citizen involvement to reduce fuels on their property and to utilize fire-wise construction techniques to improve structure survivability
- (2) Roadside fuel elimination or reduction along county roads within the community
- (3) Fuel reduction on Sierra National Forest land adjacent to the community by the use of harvesting or thinning projects
- (4) Completion and maintenance of a fuel break system surrounding the community
- (5) Implement a PRC 4291 compliance inspection program within the community

*Education:* Through homeowner association or town hall type meetings, develop and promote community specific programs designed to inform and involve the community on wildfire mitigation plans, escape routes, potential shelter-in-place locations, and activities that could reduce the risk to citizens, property and community assets.

## **CHAPTER 8: EDUCATION AND OUTREACH**

### **Education and Outreach Objectives**

The objectives for Education and Outreach are:

- To develop programs for public awareness
- To reach out to as many residents and visitors as possible of Madera County
- To identify community events and gatherings where fire safe material and information can be disseminated

### **The Need for Education and Outreach**

A fire-wise community is more than a group of fire-resistive homes with defensible space. An attitude must also be developed and shared by the people who live, work and recreate in hazardous fire areas to make fire safety an integral part of their daily lifestyle.

The citizens of a community must understand the risks of living in a community with wildland fire potential but must also be responsible for being part of a solution to the problem. In order to incorporate forest health and fire safety into community planning, a collaborative partnership between business, government, fire agencies, local associations and individual citizens is essential. When a positive fire-safe attitude is cultivated, a community can work towards maximizing fire protection with minimum impact on the surrounding environment while respecting property owner's rights and values.

Education is the key to developing the proper fire-safe attitude. By raising awareness and promoting learning, individuals and groups can be persuaded to take action to promote fire safety and forest health. The educational process has a good chance of working if the information provided will (1) produce a more desirable outcome than

what presently exists and (2) the new action is achievable within the skills, finances and resources available.

Education and Outreach should be one of the primary focuses of the Madera County Community Wildfire Protection Plan.

### **Potential Education and Outreach Opportunities**

Many ways of providing appropriate fire safe information to the public is available today. Some methods are utilized in Madera County but others should be considered.

The following is a list of ways of disseminating information to residents and visitors of Madera County.

Homeowner's Association/Community Meetings – When a community is identified as being at risk from wildfire, it is imperative that fire officials of all agencies convene as many residents of the community to explain the hazards and possible mitigations to lessen the risks. Discussion items should include homeowner responsibility to providing defensible space, using fire-wise building techniques, evacuation routes, temporary places of safety and sheltering-in-place possibilities. If fuel reduction projects are possible within or adjacent to the community, the property owners should be part of the process of devising a plan that will mitigate the risks.

Website – A website could be established through the Madera County Fire Department and provide a venue for educational opportunities to people of all ages. The site could be an interactive online learning center providing information on fire planning, fire preparedness, fire prevention, evacuation procedures, and fuels reduction. As data becomes available, other related fire information could be added or linked.



Video – Many professionally produced videos on wildfire safety, planning, preparedness, and mitigation are available through organizations like FIREWISE that can be used as an educational tool. If funding were available, the possibility exists of developing a video specifically for Madera County. By utilizing local communities and people in producing the video, it personalizes the educational aspects of the message. The video could then be used in public service spots on local television stations or incorporated into the educational website mentioned above. The video could also be used at public presentations.

Television – The local television market is centered in Fresno but the viewing area encompasses all the surrounding counties including Madera County. Possibly through a collaborative effort involving Fire Departments within the viewing area, fire prevention and fire preparedness messages could be produced and shown as public service announcements.

Radio – Local radio stations that have broadcast capabilities within Madera County could transmit periodic fire safety and prevention messages especially during the fire season. Radio stations that have “talk radio” shows could occasionally host fire department officials to discuss local fire conditions and situations. Many of these shows have public call-in formats that provide immediate feed back through questions and answers. Radio stations should also be prepared in advance to provide information in the event of an emergency, especially evacuation procedures and road conditions.

Print Media – Local newspapers, specifically *the Sierra Star*, *the Madera Tribune*, *The YELP*, and *The Fresno Bee* should be encouraged to provide weekly or periodic fire safety tips as public service announcements. *The Sierra Star* publishes a wildland

multiple page fire safety insert every year at the beginning of fire season. This publication is extremely educational and helpful in informing on how to prepare themselves and their property for fire season. However, since *the Sierra Star* has a limited circulation, the insert should be added to *the Madera Tribune*, *The YELP*, and *The Fresno Bee* as well.

School Programs – The United States Forest Service and the California Department of Forestry and Fire Protection team up annually to provide fire prevention and education school programs to children at the elementary school level. Since many young adults live, work, and play within the community and the surrounding wildland environment, programs on fire safety should also be presented at the Junior High School and High School level. Personnel from Madera County Fire Department should also partner-up with the other fire agencies with these programs.

Public Gatherings – Many entertainment, cultural and educational gatherings occur in Madera County that provide an opportunity to distribute information to citizens that live or visit in eastern Madera County. Informational booths with representatives of the fire agencies present could disseminate information on fire prevention, fire preparedness, fire-wise construction techniques, evacuation procedures and routes, and potential fuels reduction projects. Flyers, booklets, and other informational handouts that depict fire-safe living could be available for distribution to the public. Some of the events that provide opportunities for information booths are listed below.

- Oakhurst Mountain Peddlers Fair (Memorial Day Weekend)
- Coarsegold Peddlers Fair ( Memorial Day and Labor Day Weekend)
- Bass Lake Fishing derby

- Coarsegold Rodeo
- American Cancer Society Relay for Life
- North Fork Loggers Jamboree
- Bass Lake 4<sup>th</sup> of July Celebration
- North Fork Annual Indian Fair Days and Pow Wow
- Mountain Heritage Days Parade
- Smokey Bear 10K and 2Mi. Fun Run
- Madera District Fair
- Chowchilla Fair
- Home and Garden Show
- Raymond Parade

## **CITIZEN VOLUNTEER INVOLVEMENT**

The present financial status of most governmental agencies often does not provide funding and personnel to adequately support all of the services that ideally should be provided. The fire service certainly is no exception. When budget shortfalls put a strain on operational requirements, support functions such as education and outreach programs often are compromised. The use of citizen volunteers can greatly enhance fire prevention and education programs by providing personnel at a minimum cost to the taxpayers.

Usually a small cost in training and materials is all that is required to allow volunteers to assist in non-emergency activities. These people can assist with “defensible space” inspection programs, staffing fire prevention booths at public events, school programs, and similar activities.

Madera County Fire Department should look at implementing a program that utilizes citizen volunteers to assist with fire service education and outreach programs.

A State of California program under the California Service Corps called Fire Corps is something for Madera County to look at to assist in utilizing citizen volunteers.

Launched in 2004, Fire Corps is designed to encourage active citizen support of volunteer and career fire departments. It was designed to use community volunteers to handle non-emergency functions, thereby enabling fire service personnel to focus on more critical emergency tasks.

David Paulison, U.S. Fire Administrator, Department of Homeland Security has stated, “When firefighters can stand side by side with citizens in promoting fire prevention and general safety efforts, and are able to invite citizens to assist with non-emergency responsibilities, the overall security and safety of their community is greatly enhanced.”

Non-emergency roles for volunteers include assisting with administrative duties, conducting education and outreach activities to encourage safety and prevention, support training in emergency preparedness and other non-suppression activities unique to California urban and rural areas. More information on Fire Corps is available at [www.firecorps.org](http://www.firecorps.org) .

## **POSSIBLE GRANT OPPORTUNITIES**

In order to provide adequate educational and fuel reduction programs as well as suppression resources within a fire agency, funding must be available. When budget money does not exist to support such programs, grant opportunities must be explored as an alternative funding source.

Some potential grant opportunities that exist are:

1. National Fire Plan - Madera County should apply for funding from the National Fire Plan to develop and implement fire protection education and outreach programs as well as fuel reduction projects in support of the Madera County Community Wildfire Protection Plan.
2. Forest Service- Madera County Resource Advisory Committee (RAC) Title II Grants - Madera County Fire Department or Madera County Fire Safe Council should apply for funding from the RAC to develop and implement fire protection education and outreach programs as well as fuel reduction projects in support of the Madera County Community Wildfire Protection Plan.
3. Bureau of Land Management Community Assistance – Funds are available to assist with hazardous fuels treatment, community wildfire protection planning and education addressing wildfire safety and hazard risk reduction within the WUI. Treatments should be focused on both Federal and non-Federal lands and aimed toward protecting communities at risk within a Community Wildfire Protection Plan.
4. State Fire Assistance (SFA) – USFS grants to Cal Fire under the authority of Cooperative Forestry Assistance Act and may be shared with local government for fire protection purposes. The grant money can be used to maintain and improve fire protection efficiency and effectiveness on non-Federal Lands and includes training, equipment, preparedness, prevention and education.
5. Sierra Nevada Conservancy (SNC); Proposition 84 Grants Program - Eligible projects must demonstrate a contribution to the protection of rivers, lakes, streams, their watersheds, and associated land, water, and other natural resources

within the boundaries of the SNC service area. Funds are available to assist with watershed and water quality protection through vegetative management projects, community wildfire protection planning and outreach education addressing watershed protection through proper fuels management techniques, hazard risk reduction within the WUI, associated research and publication projects and maintenance of existing fuel projects.

6. Federal Excess Personal Property (FEPP) – A USFS equipment loan program to Cal Fire and their cooperators that provides assistance to state and local governments by providing excess federal property to be used for wildland and rural community fire protection.
7. Assistance to Firefighters – A FEMA and U.S. Fire Administration program designed to improve firefighting operations, services and equipment to fire departments at all levels.

## GLOSSARY

**Aspect** – The direction toward which a slope faces (*e.g. south facing or north facing*)

**Chaparral** – Is a drought resistant (*fire-type---adapted to fire ravaged conditions over tens of thousands of years*) mixture of brush and shrubs that usually contain species of Manzanita.

**Chimneys** – Canyons and draws can act like chimneys or stove pipes by funneling heated air up to the canyon and creating strong upslope drafts. This accelerates the rate that a fire spreads up the canyon.

**Conflagration** – A large disastrous fire or catastrophic wildfire.

**Conifers** (softwoods) – Sugar pine, ponderosa pine, and digger pine, Douglas fir, and incense cedar.

**Conservation** – Planned management of a natural resource to prevent exploitation, destruction or neglect.

**Decadent** – In regards to vegetation, it refers to plants of declining vigor and deteriorating health.

**Defensible Space** – That area which lies between a house and an oncoming wildfire where the vegetation has been modified to reduce the wildfire threat, and in which firefighters can safely establish themselves to defend a structure.

**Federal Lands** – National forests, national parks, Indian reservations, military reservations, wildlife refuges and other public lands under federal management

**Firebrand** – Any burning material such as leaves, wood, glowing charcoal or sparks that could start a forest fire.

**Firebreak** – An existing barrier, or one constructed before a fire occurs, from which all (*or most*) of the flammable materials have been removed; designed to stop or check creeping or running but not spotting fires.

**Fire Environment** – The surrounding conditions, influences and modifying forces of topography, fuel and weather that determine fire behavior.

**Fire Hazard Mitigation** – Measures that are prescribed by a panel of experts to reduce potential for the repeat of a large fire

**Fire Season** – The period of mid-May through October when vegetation cures, dries out and is most flammable.

**Flash Fuels** – Small size fuels (*1/2 inch in diameter or smaller*) loosely arranged such as grass, pine needles, etc.

**Fuel** – Any combustible material. In regards to wildfire, fuel typically refers to living and dead vegetation.

**Fuel Break** – A strategically located wide block, or strip, on which a cover of dense, heavy or flammable vegetation has been permanently changed to one or lower fuel volume or reduced flammability, allowing for safe access by firefighters. A *fuel break* is usually constructed on a ridge and the *fuel break* width varies with the height of the heavy fuels. A *shaded fuel break* is a fuel break located in forest or woodlands, where the trees are pruned up to 20', and the intermediate shrubs, brush and dead fuels are removed and replaced with grasses and forbs.

**Fuel Treatment** – The rearrangement or removed of fuels to reduce fire hazard or to accomplish other resource management objectives.

**Hardwoods** – Oak- blue oak, black oak, live oak; alder, willow, madrone and cottonwood.

**Horizontal Continuity** – The degree at which fuels form a continuous layer on a particular horizontal plane (*e.g. a brush field, contiguous tree crowns, a grassy field or bed of leaves*)

**Infrastructure** – Basic facilities such as roads, power plants, waterways, and transportation and communication systems.

**Initial Attack** – The wildfire control efforts taken by resources that are first to arrive at a wildfire.

**Interface or Wildland Interface** – The geographical meeting point of two diverse systems, wildland and structures. At this *interface*, structures and vegetation are sufficiently close that a wildland fire could spread to structures or a structure fire could ignite vegetation. See *intermix*.

**Intermix or Wildland Intermix** - Interspersion of developed land with wildland, where there are no easily discernible boundaries between the two systems. An example would be what real estate brochures describe as “ranchettes” or “weekend farmer” homes. This poses more problems in wildland fire management than *interface*.

**Ladder Fuel** – Fuels which provide vertical continuity between strata. Fire is able to move from the surface fuels into shrubs and into brush and tree crowns with relative ease.

**Litter** – A surface layer of loose organic debris in forests, consisting of freshly fallen or slightly decomposed organic materials such as leaves, pine needles and twigs.



**Local Responsibility Areas (LRAs)** – The rural fire districts, incorporated areas and other land classifications outside the jurisdiction of Cal Fire and of federal land managers (Cal Fire may provide protection under contract.)

**Natural Fuels** – Fuels that have built up through natural growth, mortality and fire suppression (e.g. brush, thickets of young trees, ground cover: dead plant material).

**Overstory** – That portion of the trees in a forest stand forming the upper tree crown cover.

**Prescribed Burning** – The planned use of fire for killing and removing vegetation, in place, in a specified area; also know as “controlled burning”

**Slash** – Debris such as branches, leaves and bark generated from tree cutting or other vegetation manipulation practices.

**Spotting** – Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the main fire. Spotting usually occurs with low humidity.

**Stakeholder** – Any person, agency or organization with a particular interest - a stake - in fire safety and protection of assets from wildland fires.

**State Responsibility Areas (SRA)** – Areas of the state in which the financial responsibility for preventing and suppressing fires has been determined by the state Board of Forestry to be primarily the responsibility of the state.

**Tree Canopy** – The crown cover of green leaves and branches formed by all of the tree crowns in a forest.

**Tree Crown** – The branches and foliage of a tree; the upper portion of a tree.

**Uncontrolled Fire** – Any fire that threatens to destroy life, property or natural resources and either is not burning within confines of firebreaks or is burning with such intensity that it could not be readily extinguished with ordinary tools commonly available. See *wildfire*.

**Wildland Fire** – Any fire occurring on undeveloped land. See *wildfire*.

**Wildfire** – A fire occurring on wildland that is not meeting management objectives and thus requires a suppression response.

**Wildland/Rural Intermix** – Where many structures are present on a random or matrix pattern throughout large areas that are covered with contiguous brush and trees.

## **LIST OF ACRONYMS and ABBREVIATIONS**

BIA – Bureau of Indian Affairs

BLM - Bureau of Land Management

Cal Fire - California Department of Forestry and Fire Protection

CFP – California Fire Plan

CEQA – California Environmental Quality Act

CWPP - Community Wildfire Protection Plan

CRCO – Coarsegold Resource Conservation District

DFG – Department of Fish & Game

FEMA – Federal Emergency Management Agency

FEPP – Federal Excess Personal Property

FMAZ – Fire Management Analysis Zone

FRA – Federal Responsibility Area

FSC – Fire Safe Council

HFI – Healthy Forest Initiative

HFRA – Healthy Forests Restoration Act

ICS – Incident Command System

ISO – Insurance Services Organization

LAFCO – Local Agency Formation Commission

LRA – Local Responsibility Area

MCCWPP – Madera County Community Wildfire Protection Plan

OES – Office of Emergency Services

NFP – National Fire Plan

PRC – Public Resources Code

RAMS – Risk Assessment & Mitigation Strategy

RCD – Resource Conservation District

SFA – State Fire Assistance

SRA – State Responsibility Area

SNC – Sierra Nevada Conservancy

USFS - United States Forest Service

WUI – Wildland Urban Interface

## WEBSITE RESOURCES

- <http://www.blm.gov> Bureau of Land Management
- <http://www.cafirealliance.org/> California Fire Alliance
- <http://www.crcd.org/> Coarsegold Resource Conservation District
- <http://www.fire.ca.gov/> Cal Fire
- <http://www.fire.org/> Public Domain Software for the Wildland Fire Community
- <http://www.firesafecouncil.org/> Fire Safe Council
- <http://firewise.org/> Firewise
- <http://www.dfg.ca.gov/> Department of Fish and Game
- <http://www.fs.fed.us/> United States Forest Service
- <http://www.fs.fed.us/database/feis/> Fire Effects Information System
- [http://imaps.dfg.ca.gov/CNDDDB\\_QuickViewer/list\\_county\\_species.asp](http://imaps.dfg.ca.gov/CNDDDB_QuickViewer/list_county_species.asp) Threatened and endangered species
- <http://www.nfpa.org/codes/> National Fire Prevention Association
- <http://www.north-fork-chamber.com> North Fork Chamber of Commerce
- <http://www.oakhurstchamber.com/> Oakhurst Area Chamber of Commerce
- <http://www.oes.ca.gov/> Office of Emergency Services
- <http://www.osfm.fire.ca.gov/> Office of State Fire Marshall
- <http://www.redcross.org/services/disaster/> American Red Cross
- <http://www.Madera-County.com> Madera County
- <http://www.sierranevadaalliance.org/> Sierra Nevada Alliance