

MADLINE

Community Fire Safe Plan

Lassen County



January 2004

COUNTY OF LASSEN
BOARD OF SUPERVISORS

Robert Pyle, District 1
Jim Chapman, District 2
Lloyd Keefer, District 3
Brian Dahle, District 4
Jack Hanson, District 5

Prepared by

Lassen County Department of Community Development

in cooperation with

California Department of Forestry and Fire Protection
Lassen County Fire Safe Council

with assistance under contract from

Shasta Land Management Consultants
W. M. Beaty & Associates, Inc.

funded in part by

USDA Forest Service; National Fire Plan Federal Assistance Grant

January 2004

TABLE OF CONTENTS

Madeline Community Fire Safe Plan

COMMUNITY DESCRIPTION.....	1
POPULATION.....	1
VALUES AT RISK.....	1
NATURAL RESOURCES AT RISK.....	1
TRANSPORTATION.....	1
LEVEL OF SERVICE PROVIDED TO COMMUNITY.....	2
RESTRICTING COVENANTS AND/OR ORDINANCES.....	2
COMMUNITY LEGAL STRUCTURE.....	4
MEDIA.....	4
SCHOOLS.....	5
PHYSICAL DESCRIPTION.....	5
<i>Access/Roads.....</i>	<i>5</i>
<i>Structures.....</i>	<i>5</i>
<i>Utilities.....</i>	<i>5</i>
<i>Obstacles to Emergency Response Vehicles.....</i>	<i>5</i>
VEGETATION CONDITIONS WITHIN AND SURROUNDING COMMUNITY.....	5
VEGETATION FUEL TYPES, CONDITION, & FUEL MODELS.....	5
WILDFIRE THREAT EVALUATION.....	7
AREA FIRE HISTORY.....	7
EXPECTED FIRE BEHAVIOR.....	8
CURRENT RESOURCE MANAGEMENT WILDFIRE MITIGATION MEASURES.....	8
RECOMMENDATIONS.....	9
COMMUNITY PRESCRIPTIONS.....	9
<i>Community Fuelbreak.....</i>	<i>9</i>
<i>Infrastructure Improvements.....</i>	<i>9</i>
<i>Defensible Space.....</i>	<i>10</i>
<i>Monitoring, Evaluation, and Maintenance.....</i>	<i>10</i>
PROPOSED PROJECTS.....	11
COMMUNITY EDUCATION, OUTREACH, AND INVOLVEMENT RECOMMENDATIONS.....	11
APPENDICES.....	13
APPENDIX A - VICINITY MAP.....	15
APPENDIX B - VEGETATION TYPE MAP.....	17
APPENDIX C - FIRE HISTORY MAP.....	19
APPENDIX D – DEFENSIBLE SPACE.....	21
<i>Residence Protection Measures.....</i>	<i>21</i>
<i>Burning.....</i>	<i>23</i>
<i>Public Resources Code Section 4291 – Reduction of Fire Hazards around Buildings; Requirements; Exemptions.....</i>	<i>23</i>
<i>Supplemental Defensible Space Clearances.....</i>	<i>25</i>
<i>Defensible Space Illustrations.....</i>	<i>26</i>
<i>Homeowner’s Checklist.....</i>	<i>29</i>
REFERENCES.....	35

COMMUNITY DESCRIPTION

Population

The estimated population within and immediately surrounding the community of Madeline is 60 people. Most of the inhabitants reside on scattered ranches and farms rather than residing within the town itself. Approximately 20 people live within a mile of the Madeline Post Office and fire station.

Values at Risk

The Madeline Community Fire Safe Plan Area is defined as the Madeline Fire Protection District (Madeline FPD) which includes the community of Madeline. Within and surrounding the community of Madeline, physical features that are potentially at risk from encroaching wildfires consist of existing residences and other structures, infrastructure, and most importantly the residents themselves. There are fewer than thirty buildings within the community proper, including a Post Office and Fire Station. There is one medium sized commercial building along US 395 that is currently vacant. Other values at risk include visual impacts, aesthetics, security, wildlife habitat, and air quality. A loss of any number of these values may also impact employment, cost-of-living, insurability and rates, health, and community stability.

Natural Resources at Risk

The community of Madeline is geographically situated at the north end of the Madeline Plains, a large relatively flat expanse dominated by sagebrush. The surrounding foothills are also dominated by sagebrush with an increasing component of western juniper occupying the mid-elevations. The land use is predominantly open grass/brush rangeland with some alfalfa and hay fields on the valley floor. Ranching and farming is the predominant occupation in the community. The Federal Government, managed by the Department of Interior - Bureau of Land Management (BLM), is a major landowner in the area. The BLM lands are also predominantly used for open grass/brush rangeland.

In addition to livestock grazing, these natural resources also provide wildlife habitat and recreational hunting opportunities as well. The natural vegetative cover in this semi-arid climate plays an important role in protecting soils from windblown erosion. These natural resources are all at risk from potentially devastating loss from wildland fire which in turn can impact, either directly or indirectly, other assets and values within the community.

Transportation

The primary transportation system in the community consists of US 395, which passes north-south through the center of the town, and two paved roads, Lassen County Road 510 (Clarks Valley Road) extending east and Lassen County Road 527 (Ash Valley Road) west from town. The Southern Pacific Railroad parallels US 395 to the east as it passes through the community, although the rail line is scheduled for removal.

Level of Service Provided to Community

The California Department of Forestry and Fire Protection (CDF) bears the primary responsibility for suppression of wildfires on State Responsibility Area (SRA). However, through inter-agency agreements the CDF and Federal fire agencies transfer operational responsibilities for strategic and logistical reasons. As a result the Bureau of Land Management (BLM) is responsible for providing wildland fire protection within and around the community of Madeline.

The Ravendale BLM Fire Station is located approximately 21 miles south of Madeline on US 395. The West Valley BLM Station is located in Likely, approximately 13 miles north of Madeline. The BLM Fire Stations are not staffed during the winter period.

The community is also serviced by the Madeline FPD Fire Department located in Madeline (see maps in "Appendix B" and "C" for FPD boundaries). The Madeline FPD is responsible for responding to structure fires and medical assistance calls. In recent years, the Madeline FPD has been able to acquire radios, wildland personal protective equipment (PPE), float pumps, and other equipment with grant funds received through the BLM Rural Fire Assistance Program, a 90-10 cost share program, as well as from other agency sources. This equipment has allowed the Madeline FPD to respond and assist in wildland fire suppression. However the grant funds cannot be allocated towards acquiring fire engines which are needed to upgrade and replace their existing engines. The FPD currently has eight volunteer firefighters and receives periodic training from both State and Federal agencies including BLM, CDF, and Forest Service. (*Reference #15 & 17*)

There is no central water system in the community of Madeline. However, the community purchased the old Southern Pacific Railroad water tower, once used for steam engines, which provides a readily available water supply for fire equipment. In addition, recently acquired portable pumps allow the FPD to draft from local lakes, ponds, irrigation canals, and ditches for fire suppression needs. Also, newly constructed modular structures in the community were required to install an underground water storage tank for fire suppression purposes.

The following is a list of equipment available at the Madeline Volunteer Fire Department as reported by the Fire Chief:

<u>Equipment</u>	<u>Type</u>	<u>Gallons</u>	<u>GPM</u>	<u>Drive</u>	<u>Other</u>
Engine	N/A	500		4x2	
Engine	N/A	500		4X2	
Engine	N/A	700		4X2	
Engine	N/A	N/A		4x2	
Water Tender		3000+		4x2	

Restricting Covenants and/or Ordinances

The community of Madeline is unincorporated. As such, no specific restricting covenants and/or ordinances relating to wildland fire, other than those required by

the State and policies adopted by the County and listed below, were identified that apply to this community.

Enforcement of vegetation clearing around buildings is the responsibility of the BLM. The CDF serves as the permitting agency for State law governing commercial tree harvesting on private land.

The BLM manages vegetation on the Federal lands adjacent to the community.

Lassen County recognizes the problems associated with wildfire and has adopted appropriate policies. Specific implementation measures include the following:

1. Implement a study to locate and identify areas of existing and potential fire, geologic, and health hazards.
2. Require all structures and developments to strictly adhere to Public Resources Code 4291 (clearing for defensible space).
3. Subdivision and minor land division ordinances should require that roads constructed be of sufficient width and that there be multiple ingress and egress options for evacuation routes.
4. Population centers should be encouraged to improve or install water systems with adequate storage capacities.
5. Communities should be protected by fuelbreaks together with fire suppression equipment backed up with an adequate water supply.
6. For the purposes of faster response time of fire suppression equipment, all major and minor roads should have signs identifying their names.

These measures were included in Resolution No. 2552, adopted by the Board of Supervisors on September 3, 1974. This resolution is included as the *Safety and Seismic Safety Element* of the Lassen County General Plan 2000.

Resolution No. 88-117, adopted by the Lassen County Board of Supervisors on November 29, 1988 established "goals, policies and programs for residential development in areas of the unincorporated territory of Lassen County which are not located within the boundaries of any fire protection district or other agency which provides structural fire protection". This resolution specifically outlines actions, facilitated by the County, that may be taken by existing or newly formed fire protection districts to establish capital development revenue sources in order to provide adequate fire protection in designated County growth areas.

In addition, Ordinance No. 427-C was adopted by the Lassen County Board of Supervisors on June 13, 1989 and amended to Chapter 12.08 of the Lassen County Code. This section prohibits the use of wood shakes or shingles for new construction (roofing or siding) in the unincorporated territory of the County. The provision also applies to existing buildings when fifty percent (50%) or more of the roof or siding is to be replaced.

The Fire Safety Standards Ordinance No. 502 was adopted by the Lassen County Board of Supervisors on June 12, 1990, adding Chapter 9.16 to Title 9 of the Lassen County Code. A summary of the ordinance was published in compliance with the provisions of the California Government Code Section 25124(b) and reads as follows:

"Effective July 12, 1990, the Lassen County Fire Safety Standards Ordinance will establish the policy that all new development within the unincorporated area of the County will be required to meet minimum standards for the adequate fire protection for the particular type of development. These standards will not be applicable within the City of Susanville nor affect State or Federal agencies. Any law, regulation or ordinance involving fire safety which is more restrictive will control over the provisions of Ordinance."

The fire safety standards imposed by the proposed ordinance will apply to new development such as parcel map applications, subdivisions and other development, including commercial, industrial, residential and other development requiring a County permit, to ensure that firefighting equipment will be able to reach and effectively operate at all locations of the new development.

The regulations are broken down into three areas of development classification: Subdivision Standards, Building Standards and Recreational Vehicle/Mobilehome Park Standards. Each of these three classifications are further defined as to access requirements, identification standards, water requirements and construction standards."

This ordinance was immediately adopted in response to what was at the time "...an unprecedented rate of building development in its unincorporated forest and watershed areas" combined with "one of the driest summers in several decades and the hazard of forest and brush fires...at an unparalleled high level". Chapters 9.16, 12.20, and 12.24 of the Lassen County Code were subsequently amended, under Ordinance 502A, on September 24, 1991. This amendment delegated enforcement authority to the County Fire Warden and inspection, certification, and reporting requirements and procedures by the County Fire Warden to the County Building Inspector prior to issuance of a certificate of occupancy.

Community Legal Structure

The community of Madeline is unincorporated. There is no formal legal or political structure beyond those provided by State and County governing bodies and the Madeline FPD.

Media

Several newspaper publications are commonly available to the community of Madeline. The Modoc County Record is a weekly (Thursday) "newspaper of general circulation", published in Alturas. They may be contacted at (530) 233-2632, e-mail to record1@modocrecord.com. The Lassen County Times is also a weekly (Tuesday) newspaper published in Susanville. As noted in the publication, it is "adjudicated a legal newspaper and qualified for publication of all matters required by law to be published in a newspaper". They may be contacted at (530) 257-5321, e-mail to LCTime@AOL.com.

Due to the surrounding mountains, radio reception and television reception is limited, without satellite dishes. However, KCNO (AM 570, FM 94.5), a radio station based in Alturas, and KLAD (AM 960, FM 92.5), a radio station broadcast from

Klamath Falls, are generally well received in the area. Community information is also regularly posted at the Madeline Post Office.

Schools

There are no schools located in Madeline. The nearest school, Southfork Elementary, is located in Likely and Modoc High School is located in Alturas. Both are part of the Modoc Joint Unified School District. Juniper Ridge Elementary School, of the Ravendale Elementary School District, is located in Termo, 14 miles south.

Physical Description

Access/Roads

US 395, County Road 510 (Clarks Valley Road), and County Road 527 (Ash Valley Road) are all paved roads. The remaining roads/streets within the community are native surface and/or gravel and are in relatively good condition in terms of access. The roads outside the community but within the FPD are more variable, and include less maintained dirt roads and private access roads without proper road signs.

Structures

Most of the buildings in the community are of normal wood frame construction, although there are a number of mobile homes as well, with metal and composition shingle roofs which help protect against embers from a wildfire or chimney. There are several vacant or abandoned buildings and some abandoned fuel storage tanks as well.

Utilities

There is no community water system in Madeline. Individual residences are on wells. Power and telephone utilities are generally above ground. The new Tuscarora natural gas pipeline passes through the community on the east side of town.

Obstacles to Emergency Response Vehicles

There are currently no major obstacles to emergency response vehicles in the community. Roads are generally wide and clear of overgrowth and debris.

VEGETATION CONDITIONS WITHIN AND SURROUNDING COMMUNITY

Vegetation Fuel Types, Condition, & Fuel Models

Within and surrounding the community of Madeline, vegetation types include a combination of agricultural lands, primarily rangeland, and natural fuels consisting of juniper trees, brush and grass (see "Appendix B – Vegetation Type Map").

Sagebrush/Grass: The predominant vegetation type found in the area is best described as sagebrush/grass. As the predominant vegetation type in the area, the burning characteristics of this type pose a significant wildfire threat to assets. Depicted in yellow on the "Vegetation Type Map" and described as pine/grass in the legend, the vegetation in this community is primarily comprised of sagebrush, bitterbrush, juniper, and grass as illustrated in the photos below.

This fuel type most closely approximates Fire Behavior Fuel Model 2 and has the following characteristics important for estimating fire behavior (*Reference #12*)

Total fuel load, < 3-inch, dead and live	4.0	tons per acre
Dead fuel load, 1/4 inch	2.0	tons per acre
Live fuel load, foliage,	0.5	tons per acre
Fuel bed depth	1.0	feet



Fuel Model #2: Pine/Grass (Madeline Photo #1)



Fuel Model #2: Pine/Grass (Madeline Photo #2)

This fuel type ignites easily and once ignited, can spread rapidly under normal summer burning conditions. Under a 5-mile per hour wind and a fuel moisture content of 8%, fires in this fuel type can spread at the rate of 0.4 miles per hour with flame heights of 6 feet. High winds and extremely low humidity will increase the rate of spread. While creating and maintaining adequate clearing and defensible space around buildings can reduce the threat to life and property loss from wildfires occurring in this fuel type, secondary defenses such as firebreaks and fuelbreaks are necessary to fully mitigate the threat.

Wildfire Threat Evaluation

Area Fire History

Large (300+ acre) fires are a common occurrence on the mountainous slopes surrounding Madeline (see "Appendix C – Fire History Map"). The ignition rate of smaller fires is a relatively infrequent event, primarily due to the small number of individuals residing or traveling through the community.

The community of Madeline has been listed in the Federal Register (August 17, 2001) as an *Urban Wildland Interface Community in the Vicinity of Federal Lands that are at High Risk from Wildfire*.

Expected Fire Behavior

The community of Madeline is situated at the north edge of the Madeline Plains at an elevation of 5,360 feet above sea level. The climate is the semi-arid Great Basin high desert regime with warm, dry summers and cold, dry winters. Thunderstorms are frequent over the surrounding mountains in the summer months, and dry lightning is common. Foehn wind (warm, dry wind that occurs on the leeward slopes of a ridge of mountains) events can be expected in the fall. The normal afternoon wind in the summer is S-SW at 5-15 mph.

The average summer maximum temperature for July and August is approximately 91° F. Average annual precipitation is approximately 11 inches, with most occurring in the late fall and winter as rain and snow. The remaining moisture is contributed by regional spring rains and localized summer storm cells.

The vegetative type is Great Basin grass/brush land on the valley floor, with juniper trees at the mid elevations in the surrounding foothills. Primary brush species are sagebrush and bitterbrush.

The normal fire season is from May through October, although wildfires can occur at any time of the year in this high desert, due to infrequent rainfall and persistent drought conditions. Peak fire season generally runs from July through September.

Existing fire hazards within and surrounding the community consist of the contiguous grass/brush rangelands, particularly on the north side of town. Additional fire hazards are associated with traffic on the , the railroad (though it is scheduled to be removed in the future), and the above ground facilities of the gas pipeline. Currently, few fire hazard mitigation measures, such as defensible space, have been undertaken within the community with the exception of periodic spraying of weeds along the railroad right-of way. In addition to lightning, other primary fire risks, or potential sources of fire, consist of normal residential activities and causes associated with traffic such as accidents and smoking.

The most significant threat to dwellings and other buildings is from fires originating on or spreading to adjacent undeveloped property containing natural fuels. The second most significant threat comes from fires originating on the slopes north of Ash Valley Road and west of US 395. A strategically placed fuelbreak would serve to mitigate this threat.

Current Resource Management Wildfire Mitigation Measures

Caltrans has conducted "mowing" projects to reduce brush and grass fuel loading north and south of Madeline along US 395 on the flats. They also contract with CDF to use inmate crews for tree removal to increase visibility and reduce fuels within the right-of way corridor as well. These projects are intended to reduce the risk of fire from vehicular traffic along US 395. (*Reference #16*)

The BLM manages a major portion of the land around the community of Madeline, particularly to the north and east. The multiple use management concept and other management projects conducted on these lands can play an important role in reducing the risk to the community from wildfire. The primary use for these lands is livestock grazing. This management use is beneficial from a wildfire perspective by reducing the light fuel loading, particularly the annual grasses, which often allow wildfires to spread through non-contiguous fuel types. Currently, the BLM has no

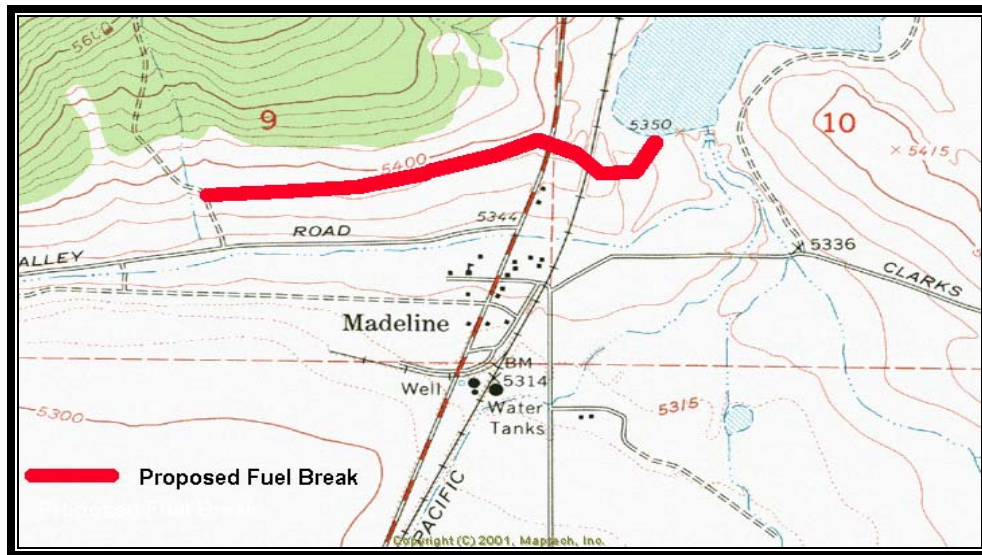
management projects underway or planned to treat the larger fuel types immediately surrounding the community, though they do have an ongoing juniper management (reduction) strategy currently being implemented in a number of areas on the District. (Reference #17)

Recommendations

Community Prescriptions

Community Fuelbreak

The current threat to the community from encroaching wildfires can be mitigated by constructing and maintaining a fire fuelbreak around the north side of town. The fuelbreak should be a minimum of 100 feet wide. Once established, periodic maintenance would be necessary to keep seeding, sprouting, and encroaching vegetation from reoccupying the fuelbreak. This maintenance could be accomplished with prescribed fire. The conceptual location for this fuelbreak is indicated on the map below.



Conceptual Fuelbreak

Additional investigation, beyond the scope of this report, is required to identify the specific location, width, and clearing specifications for the proposed fuelbreak. In addition, agreements must be obtained from both public and private landowners involved and appropriate permits acquired prior to actual construction.

Infrastructure Improvements

As part of the defensible space clearing measures, all propane and other fuel tanks should have all vegetation, including dry grass, removed from within a ten foot radius. In addition, the following specific measures, appropriate to individuals and residences within and around the Madeline community, are recommended to reduce the threat of wildfire:

1. Mail out appropriate informational packets developed for this purpose such as *Homeowners "Watch Outs!"* developed by the Fire Safe Council to all parcel owners. Use the Lassen County Assessor's roll to identify owners.
2. Improve compliance with PRC 4291 provisions for removal of flammable vegetation, overhanging tree limbs, etc. from around buildings. Follow up law enforcement action should be taken as necessary to achieve compliance.
3. Encourage landowner/homeowner to comply with additional defensible space recommendations in Appendix D.

Defensible Space

In order to protect structures from wildland fire it is recommended that a defensible space be constructed around all structures, particularly residences, with vegetation encroachment within the community of Madeline. The threat to dwellings and other buildings within the community can be reduced by implementing the basic clearing requirements of PRC 4291 and creating additional defensible space.

Defensible space refers to *"that area which lies between a residence and an oncoming wildfire where the vegetation has been modified to reduce the risk of wildfire threat and which provides an opportunity for firefighters (and the homeowner) to safely defend the residence"*. All fuel types can be modified to create defensible space. Fuel modifications include thinning and pruning to break up fuel continuity and reduce or eliminate crown fires. Creating a defensible space around a residence involves the cutting, removing, and/or thinning of grass, brush, trees, or any other vegetation type to within a minimum specified distance, or farther, from structures. The amount of thinning and pruning needed to provide sufficient defensible space in and around the community is dependent upon characteristics such as fuel type, topography, and seasonal wind and weather patterns. The concept of "defensible space" also applies to roads, driveways and other access or escape routes that individuals, firefighters, or other emergency personnel may use to protect life or property.

The "Appendix D – Defensible Space" provides detailed information, including specific measures and illustrations, that can be applied to protect structures from the risk of wildland fire. In addition, the Lassen County Fire Safe Council and CDF have excellent publications that address the creation of defensible space.

Monitoring, Evaluation, and Maintenance

As part of the ongoing efforts to ensure that the community of Madeline continues to be protected or reduce the risk from wildland fires, efforts should be made to monitor and evaluate the implementation and effectiveness of community fire safe projects. Those projects designed to create defensible space around community structures and individual residences should be monitored on an annual basis to reinforce implementation and to ensure that they are properly and effectively carried out.

Other more long-term projects such as the community fuelbreak, if constructed, will require periodic inspections to evaluate vegetation re-growth and to plan for maintenance needs. A three to five year minimum re-inspection interval is recommended depending upon vegetation type, sprouting and seeding characteristics, growth rates, and litter buildup. Other factors that influence

monitoring and maintenance needs and frequency may include equipment and manpower availability, access considerations, topography, past and current fire activity, storm events, and funding.

A monitoring program may simply require periodic or cursory spot checks or drive-by inspections. The monitoring process should include an inspection form to track inspection dates, condition, compliance, and to document maintenance needs. This process will also identify specific areas or properties with recurring compliance and/or maintenance needs for future reference when time, budget, or manpower is limited in order to better focus and utilize available resources.

Proposed Projects

Proposed Project	Responsible Party
Work with BLM to encourage action on fuel modification projects.	Madeline FPD/ Lassen County Fire Safe Council(LCFSC)
Mail out fire safe information to all landowners within the community and FPD.	Madeline FPD/LCFSC
Inventory for specific problem properties.	Madeline FPD
Recruit cooperators for assistance in fuel reduction/removal.	Madeline FPD
Recruit cooperators for assistance in fuel reduction/removal.	Madeline FPD
Inventory for additional FPD equipment & facility needs and seek appropriate funding sources.	Madeline FPD
Encourage landowner/homeowner to comply with additional defensible space recommended in Appendix D	Madeline FPD/BLM

Community Education, Outreach, and Involvement Recommendations

Wildfires constitute a significant threat to portions of the Madeline community. This Community Fire Safe Plan is prepared to assist the community in achieving a greater level of protection from wildfires. When fires erupt, most people rely on the fire department for their protection. This approach to safety is perilous in the urban/wildland interface. The individual property owner cannot rely solely on fire-fighting agencies to protect his or her property. The primary and initial burden for protection rests with the property owner. Residents and local officials must take the necessary measures to prepare themselves and their communities in the event of fire and make it easier for firefighters to successfully do their jobs. Effective community education and outreach can mitigate the risk of wildfires to the Madeline

community if initiated and maintained by citizens within the community. (*Reference #13*)

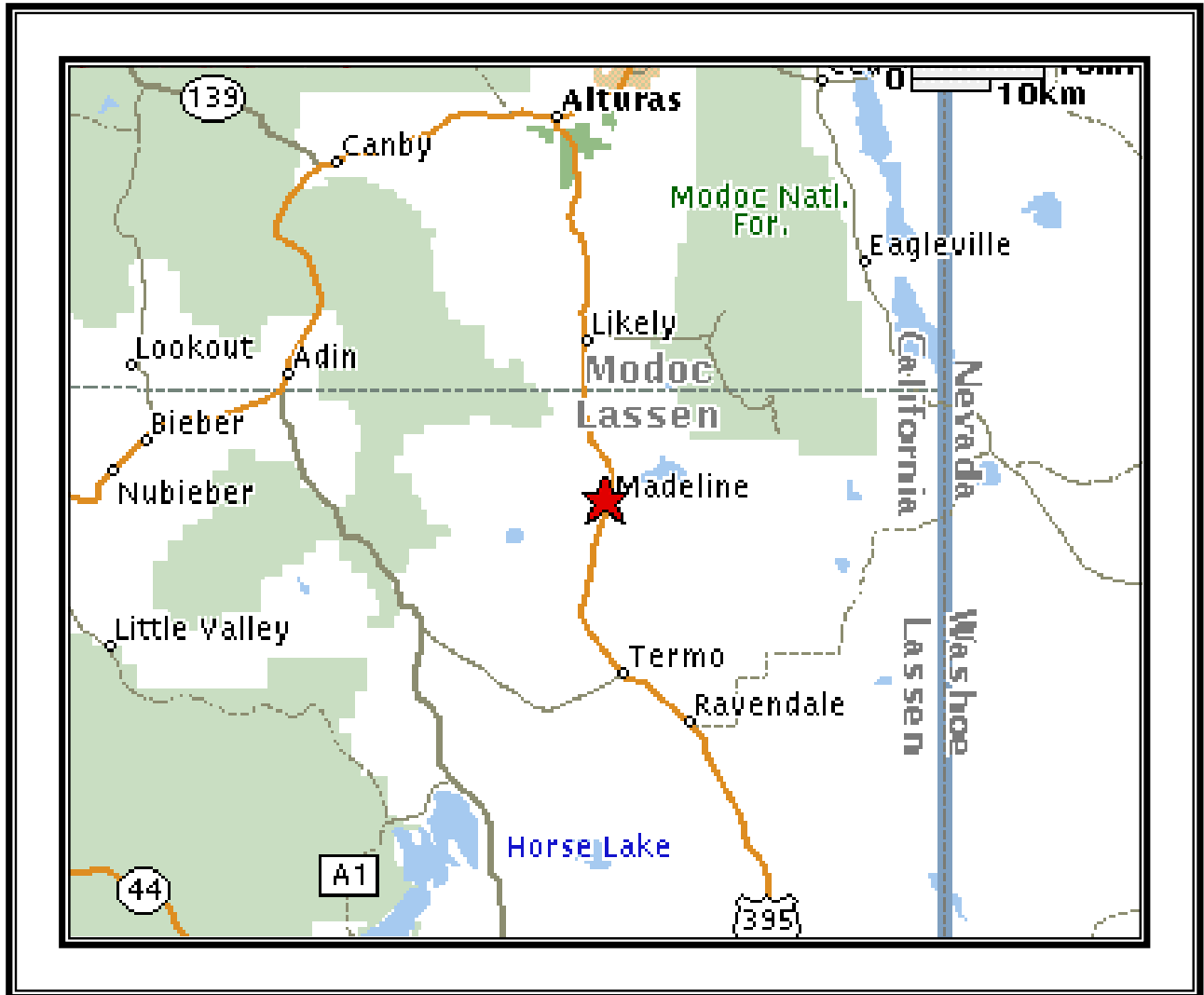
The Fire Safe Council was formed at the State level in 1993 to educate and encourage Californians to prepare for wildfires before they happen to reduce the risk to their communities, their homes, and their property. Since then, many local Fire Safe Councils have been established. Utilizing the combined expertise, resources, and distribution channels of its members, the Fire Safe Council fulfills its mission to preserve California's natural and manmade resources by mobilizing all Californians to make their homes, neighborhoods and communities fire safe. (*Reference #13*)

This Plan is specifically prepared assuming that the community of Madeline, Madeline Fire Protection District, and Lassen County Fire Safe Council will provide the leadership role for acting on recommendations included in the plan. The Council has already been instrumental in gaining cost-share assistance to execute fuel reduction projects in Lassen County.

Appendices

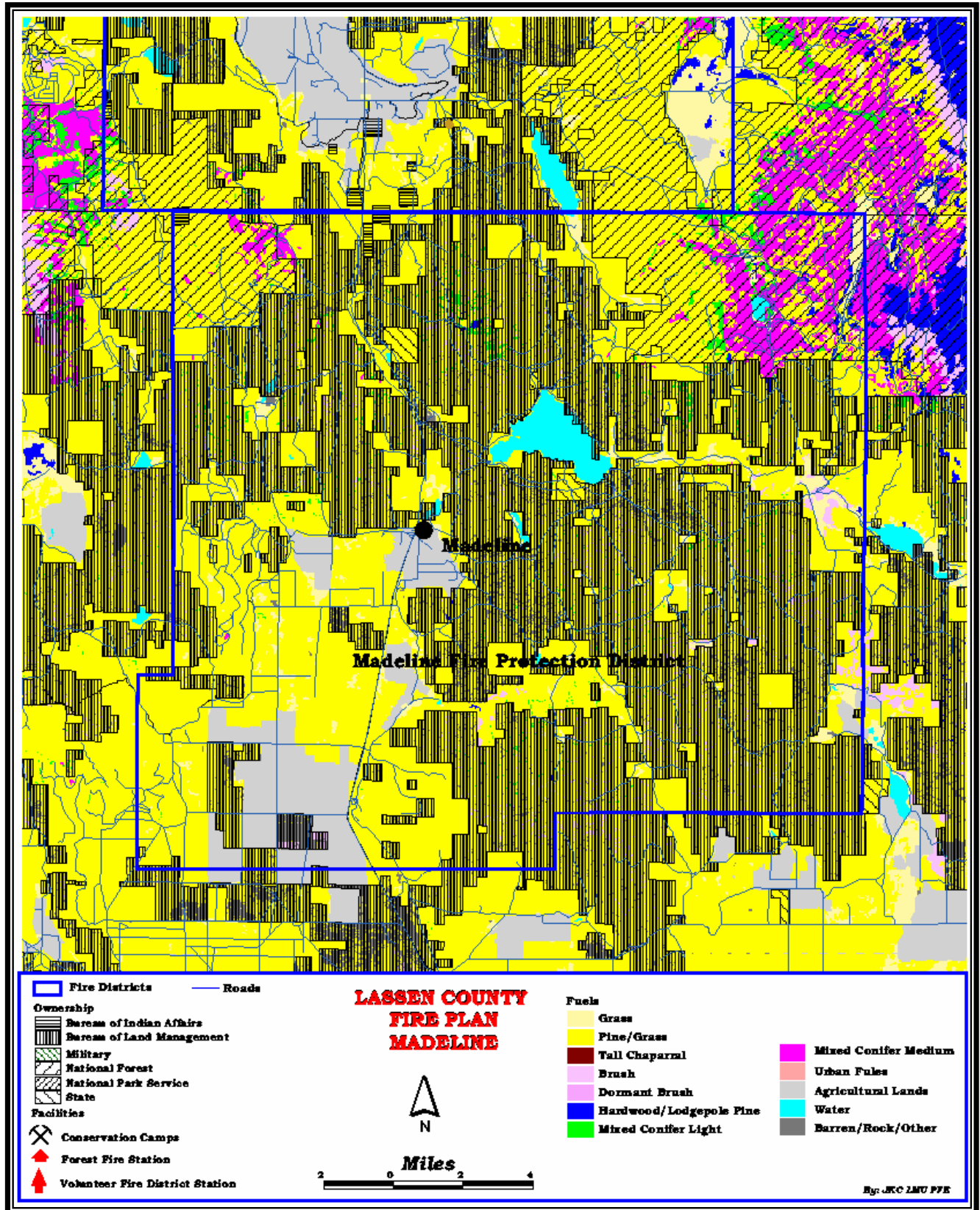
THIS PAGE IS INTENTIONALLY LEFT BLANK

Appendix A - Vicinity Map



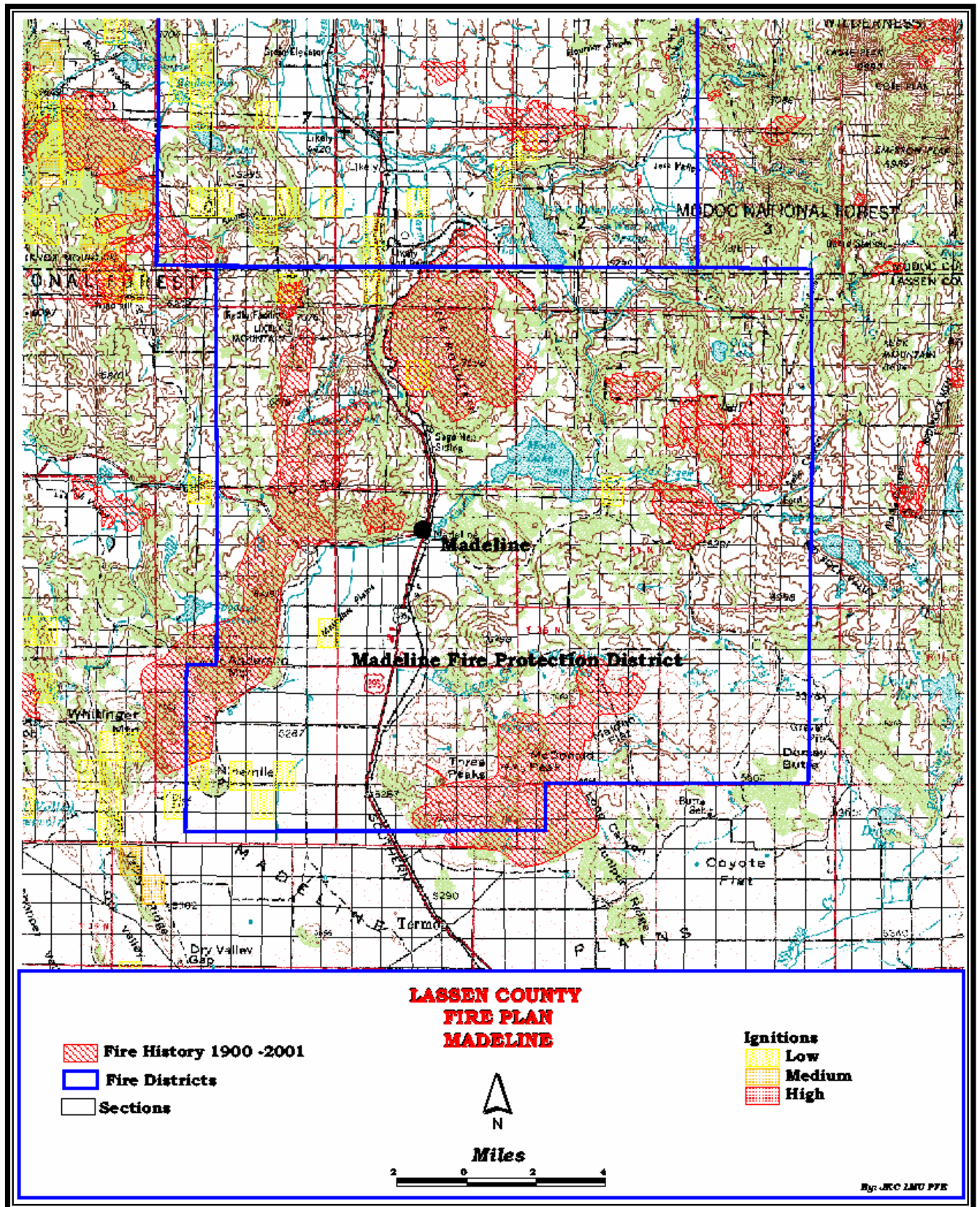
THIS PAGE IS INTENTIONALLY LEFT BLANK

Appendix B - Vegetation Type Map



THIS PAGE IS INTENTIONALLY LEFT BLANK

Appendix C - Fire History Map



THIS PAGE IS INTENTIONALLY LEFT BLANK

Appendix D – Defensible Space

Defensible space is the area between a house and an oncoming wildfire where the vegetation has been modified to reduce the wildfire threat and to provide an opportunity for firefighters to effectively defend the house.

The clearing for defensible space is entirely under the control of the individual citizen. It is one of the easiest and most important pre-fire management activities, and one that could make the difference between a residence surviving a wildfire or being destroyed.

The State of California has mandatory defensible space requirements of “any person that owns, leases, controls, operates, or maintains any building or structure” within the rural and wildland interface zone. These requirements are spelled out in Public Resources Code (PRC) 4291, which is included at the end of this section.

In brief, PRC 4291 requires the clearing of accumulated flammable vegetation from within 30 feet of buildings, and within 100 feet of buildings if directed by CDF because of “extra hazardous conditions”. The statute also provides for the removal or maintenance of trees near chimneys, stovepipes, and roofs, the removal of flammable debris from roofs, and the maintenance of chimney or stovepipe screens.

The requirements specified in PRC 4291 are minimum requirements. Individual citizens are encouraged to voluntarily comply with the supplemental recommendations included within this section. In addition, both the CDF website (<http://www.fire.ca.gov/Education/IndoorFireSafety.asp>) and the Janesville Fire Safe Plan (pages 38-48) have excellent discussions of defensible space.

Residence Protection Measures

The Home Zone 0'-10'

Purpose: To prevent the spread of fire from vegetation to structure.

Actions: Remove all flammable fuel sources from this zone. Conifer trees, brush, dry grass, leaves, needles, woodpiles, and flammable ornamentals are examples.

- Remember to remove leaves and needles from roofs, rain gutters, and under decks.

This zone can be landscaped with gravel, rock, concrete or left to bare mineral soil. Replace vegetation with less flammable plants: green lawns, and/or flower beds are good choices, if well watered. Keep flammable mulches away from base of house.

The Yard Zone 10'-30'

Purpose: To provide an area where fuels have been substantially modified to reduce wildfire intensity and reduce potential exposure problems. (This fuel zone should be sufficient for grasslands, and is integrated into fuel reduction for brush and timberlands.)

Actions:

- 1) Thin trees so that spacing between crowns equals crown width.
- 2) Prune branches of trees to at least 10' above ground (trim not more than 1/3 of height for small trees).
- 3) Eliminate ladder fuels.
- 4) Limit litter layer to 1" to 2".
- 5) Remove any bitterbrush.
- 6) Remove snags and logs.
- 7) Break up horizontal continuity of fuels by use of low flammability plants, flower beds, green lawns, and gravel or concrete. Watering reduces flammability.
- 8) Propane tanks located 10' from structure or property line.
- 9) Oil tanks located 5' from home; 10' from property line.

(Check with County Building Department with questions concerning *Actions 8 and 9*)

The Screen Zone 30' to 100'

Purpose: To keep wildfire on the ground, and to use vegetation to screen for privacy. This is the primary zone for fire suppression. Even though 100' of fuel reduction appears adequate for brush covered lands, further effort is necessary in timberlands.

Actions:

- 1) Thin trees so that spacing between crowns equals crown width.
- 2) Prune branches of trees to at least 10' above ground (trim not more than 1/3 of height for small trees)
- 3) Eliminate ladder fuels.
- 4) Remove snags and logs.
- 5) Thin bitterbrush and other species so that spacing equals plant height. Remove dead branches.
- 6) Separate patches and clumps of understory so they are spaced horizontally and vertically apart from the overstory.
- 7) Use vegetation to screen for privacy.

The Forest Zone 100' to 150'

Purpose: To provide a space in which a wildfire will “cool down, slow down, and stay on the ground.” This zone can provide cover for wildlife. Views within this zone can be enhanced to be more aesthetically pleasing.

Actions:

- 1) Apply all recommendations for improving forest health.
 - 2) Thin trees so that spacing between crowns equals 1/3 of crown width.
 - 3) Prune branches of trees to at least 10' above ground (trim not more than 1/3 of height for small trees).
 - 4) Eliminate ladder fuels.
 - 5) Thin bitterbrush and other species so that spacing equals plant height. Small patches and strips can be left.
- Convert combustible roofing materials such as wood shakes or shingles to materials such as comp, metal, or tile.
 - Maintain the roof and gutters free of leaves, needles, or other dead vegetation.
 - Cover all exterior vents at the eaves or to the attic or under the floor and under any wood decks with wire screen with ½-inch or less mesh size.
 - Do not store combustible materials or trash near the house.
 - During the fire season, keep stacks of firewood and lumber at least 30 feet from the house, and keep loose leaves and other material 10 feet away from firewood or lumber stacks.
 - Locate all LPG (butane and propane) tanks at least 30 feet from the house and keep loose leaves, dead vegetation, and other material 10 feet away from the tanks.

Burning

- Contact local fire department to see if open burning is allowed in your area; if so obtain a burning permit. Clear at least 10 feet around burn piles prior to burning.

Public Resources Code Section 4291 – Reduction of Fire Hazards around Buildings; Requirements; Exemptions

4291. Any person that owns, leases, controls, operates, or maintains any building or structure in, upon, or adjoining any mountainous area or forest-covered lands, brush-covered lands, or grass-covered lands, or any land

which is covered with flammable material, shall at all times do all of the following:

- (a) Maintain around and adjacent to such building or structure a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side thereof 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 which 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 any such building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth which is located from 30 feet to 100 feet from such building or structure or to the property line, whichever is nearer, as may be required by the director if he finds that, because of extra hazardous conditions, a firebreak of only 30 feet around such building or structure is not sufficient to provide reasonable fire safety. Grass and other vegetation located more than 30 feet from such 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 which extends within 10 feet of the outlet of any chimney or stovepipe.
- (d) Maintain any tree adjacent to or overhanging any building free of dead or dying wood.
- (e) Maintain the roof of any 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 any fireplace, stove, or other device that burns any solid or liquid fuel. The screen shall be constructed of nonflammable material with openings of not more than one-half inch in size.
- (g) Except as provided in Section 18930 of 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 may vary the requirements respecting the removing or clearing away of flammable vegetation or other combustible growth with respect to the area surrounding said structures. No such exemption or variance shall apply unless and until the occupant thereof, or if there be no occupant, then the owner thereof, files with the department, in such form as the director shall prescribe, a written consent to the inspection of the interior and contents of such structure to ascertain whether the provisions hereof and the regulations adopted hereunder are complied with at all times.

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

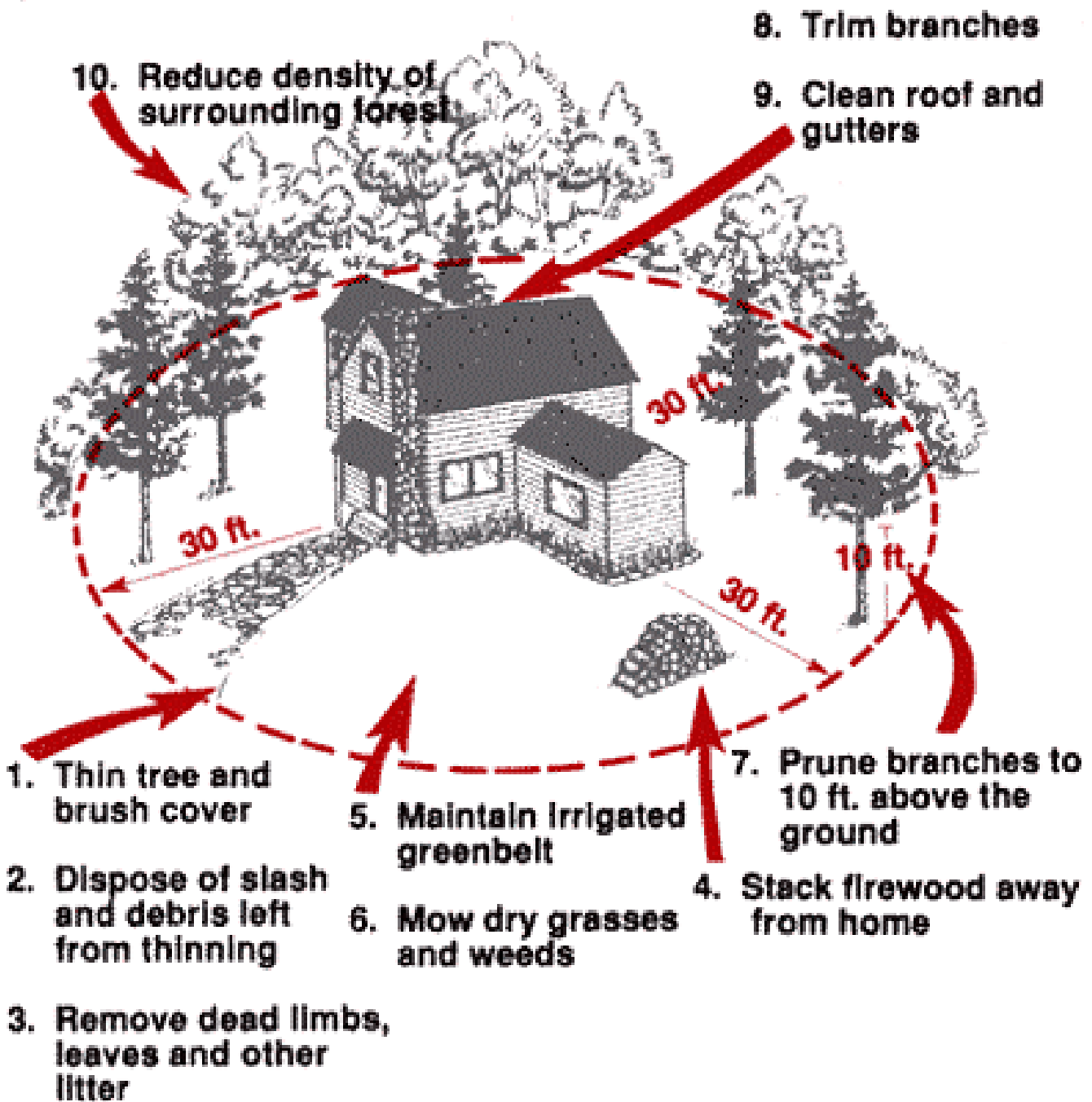
(b) If a person convicted of a violation of Section 4291 produces in court verification prior to imposition of a fine by the court, that the condition resulting in the citation no longer exists, the court may reduce the fine imposed for the violation of Section 4291 to fifty dollars (\$50).

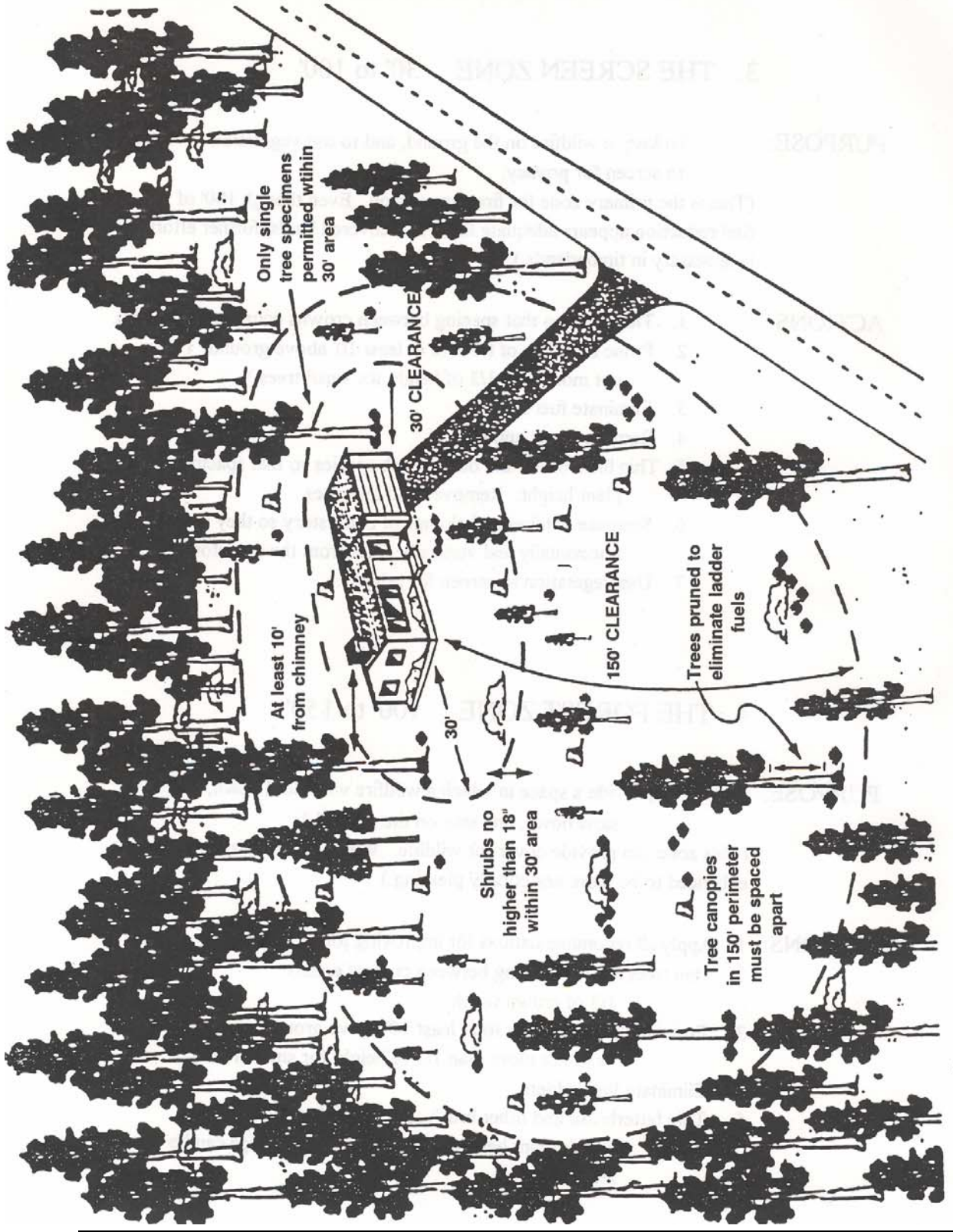
Supplemental Defensible Space Clearances

The following supplemental defensible space clearances, beyond the required minimum distance of 30 feet, are recommended by CDF in the following fuel types:

Fuel Model #	Fuel Model Type	Recommended Clearance
1	Grass	30 feet
2	Pine/Sagebrush/Grass	100 feet
4	Tall Chaparral	100 feet
5	Brush/Dominant Brush	100 feet
6	Brush	100 Feet
9	Second Growth Pine	150 feet
10	Mixed Conifer	150 feet

FOLLOW THESE GUIDELINES

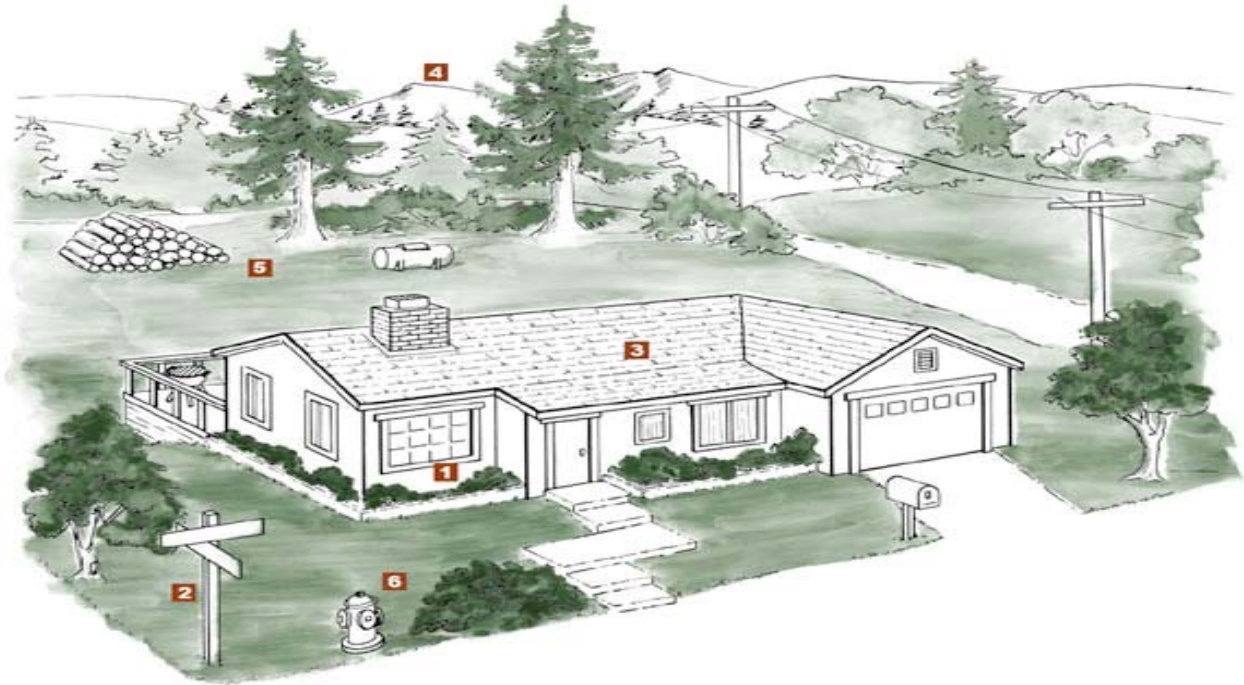




THIS PAGE IS INTENTIONALLY LEFT BLANK

Homeowner's Checklist

OUTSIDE



1 Design/Construction

- Consider installing residential sprinklers
- Build your home away from ridge tops, canyons and areas between high points on a ridge
- Build your home at least 30-100 feet from your property line
- Use fire resistant materials
- Enclose the underside of eaves, balconies and above ground decks with fire resistant materials
- Try to limit the size and number of windows in your home that face large areas of vegetation
- Install only dual-paned or triple-paned windows
- Make sure that electric service lines, fuse boxes and circuit breaker panels are installed and maintained as prescribed by code
- Contact qualified individuals to perform electrical maintenance and repairs

2 Access

- Identify at least two exit routes from your neighborhood
- Construct roads that allow two-way traffic
- Design road width, grade and curves to allow access for large emergency vehicles
- Construct driveways to allow large emergency equipment to reach your house
- Design bridges to carry heavy emergency vehicles, including bulldozers carried on large trucks
- Post clear road signs to show traffic restrictions such as dead-end roads, and weight and height limitations

- Make sure dead-end roads, and long driveways have turn-around areas wide enough for emergency vehicles
- Construct turnouts along one-way roads
- Clear flammable vegetation at least 10 feet from roads and five feet from driveways
- Cut back overhanging tree branches above roads
- Construct fire barriers such as greenbelts
- Make sure that your street is named or numbered, and a sign is visibly posted at each street intersection
- Make sure that your street name and house number are not duplicated elsewhere in the county
- Post your house address at the beginning of your driveway, or on your house if it is easily visible from the road

3 Roof

- Remove branches within 10 feet of your chimney and dead branches overhanging your roof
- Remove dead leaves and needles from your roof and gutters
- Install a fire resistant roof. Contact your local fire department for current roofing requirements
- Cover your chimney outlet and stovepipe with a nonflammable screen of 1/2 inch or smaller mesh

4 Landscape

- Create a "defensible space" by removing all flammable vegetation at least 30 feet from all structures
- Never prune near power lines. Call your local utility company first
- Landscape with fire resistant plants
- On slopes or in high fire hazard areas remove flammable vegetation out to 100 feet or more
- Space native trees and shrubs at least 10 feet apart
- For trees taller than 18 feet, remove lower branches within six feet of the ground
- Maintain all plants by regularly watering, and by removing dead branches, leaves and needles
- Before planting trees close to any power line contact your local utility company to confirm the maximum tree height allowable for that location

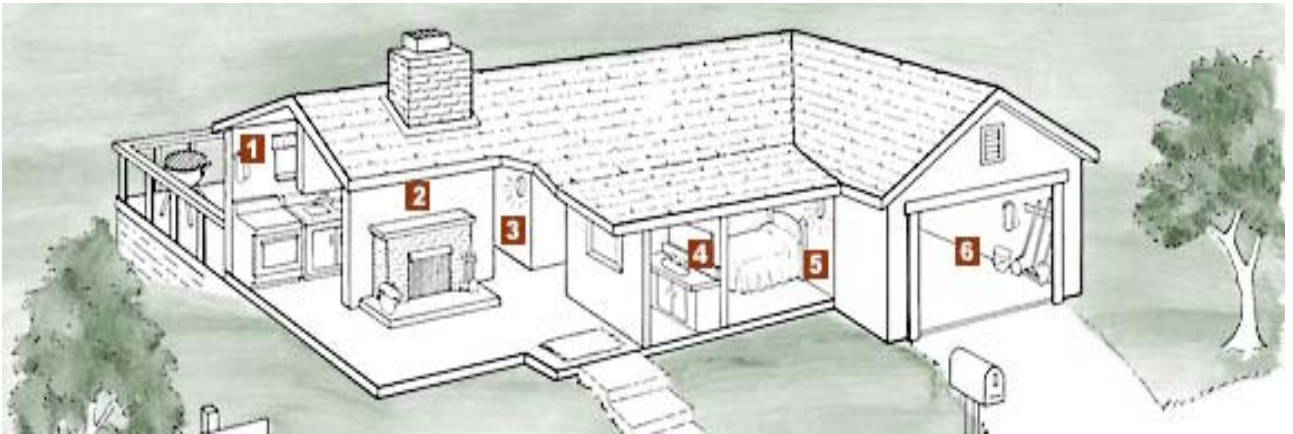
5 Yard

- Stack woodpiles at least 30 feet from all structures and remove vegetation within 10 feet of woodpiles
- Locate LPG tanks (butane and propane) at least 30 feet from any structure and maintain 10 feet of clearance
- Remove all stacks of construction materials, pine needles, leaves and other debris from your yard
- Contact your local fire department to see if open burning is allowed in your area; if so, obtain a burning permit
- Where burn barrels are allowed, clear flammable materials at least 10 feet around the barrel; cover the open top with a non-flammable screen with mesh no larger than 1/4 inch

6 Emergency Water Supply

- Maintain an emergency water supply that meets fire department standards through one of the following:
 - a community water/hydrant system
 - a cooperative emergency storage tank with neighbors
 - a minimum storage supply of 2,500 gallons on your property
- Clearly mark all emergency water sources
- Create easy firefighter access to your closest emergency water source
- If your water comes from a well, consider an emergency generator to operate the pump during a power failure

INSIDE



1 Kitchen

- Keep a working fire extinguisher in the kitchen
- Maintain electric and gas stoves in good operating condition
- Keep baking soda on hand to extinguish stove-top grease fires
- Turn the handles of pots and pans containing hot liquids away from the front of the stove
- Install curtains and towel holders away from burners on the stove
- Store matches and lighters out of the reach of children
- Make sure that electrical outlets are designed to handle appliance loads

2 Living Room

- Install a screen in front of fireplace or wood stove
- Store the ashes from your fireplace (and barbecue) in a metal container and dispose of only when cold
- Clean fireplace chimneys and flues at least once a year

3 Hallway

- Install smoke detectors between living and sleeping areas
- Test smoke detectors monthly and replace batteries twice a year, when clocks are changed in the spring and fall
- Install child safety plugs (caps) on all electrical outlets
- Replace electrical cords that do not work properly, have loose connections, or are frayed

4 Bedroom

- ___ If you sleep with the door closed, install a smoke detector in the bedroom
- ___ Turn off electric blankets and other electrical appliances when not in use
- ___ Do not smoke in bed
- ___ If you have security bars on your windows or doors, be sure they have an approved quick-release mechanism so you and your family can get out in the event of a fire

5 Bathroom

- ___ Disconnect appliances such as curling irons and hair dryers when done; store in a safe location until cool
- ___ Keep items such as towels away from wall and floor heaters

6 Garage

- ___ Mount a working fire extinguisher in the garage
- ___ Have tools such as a shovel, hoe, rake and bucket available for use in a wildfire emergency
- ___ Install a solid door with self-closing hinges between living areas and the garage
- ___ Dispose of oily rags in (Underwriters Laboratories) approved metal containers
- ___ Store all combustibles away from ignition sources such as water heaters
- ___ Disconnect electrical tools and appliances when not in use
- ___ Allow hot tools such as glue guns and soldering irons to cool before storing
- ___ Properly store flammable liquids in approved containers and away from ignition sources such as pilot lights

Disaster Preparedness

- ___ Maintain at least a three-day supply of drinking water, and food that does not require refrigeration and generally does not need cooking
- ___ Maintain a portable radio, flashlight, emergency cooking equipment, portable lanterns and batteries
- ___ Maintain first aid supplies to treat the injured until help arrives
- ___ Keep a list of valuables to take with you in an emergency; if possible, store these valuables together
- ___ Make sure that all family members are ready to protect themselves with STOP, DROP AND ROLL
- ___ For safety, securely attach all water heaters and furniture such as cabinets and bookshelves to walls
- ___ Have a contingency plan to enable family members to contact each other. Establish a family/friend phone tree
- ___ Designate an emergency meeting place outside your home
- ___ Practice emergency exit drills in the house (EDITH) regularly
- ___ Outdoor cooking appliances such as barbecues should never be taken indoors for use as heaters

THIS PAGE IS INTENTIONALLY LEFT BLANK

References

1. Lassen County General Plan 2000, September 1999.
2. John K. Crites, Fire Captain Specialist Pre-Fire Management, California Department of Forestry and Fire Protection, Lassen-Modoc Unit, (530) 257-7360.
3. Dave Peak, Assistant Fire Chief, Madeline Fire Protection District, (530) 234-1114.
4. John Hughs, CDF Battalion Chief, Alturas, (530) 233-2723.
5. Steve Hawks, CDF Fire Captain, Grasshopper Station, (530) 825-3144.
6. Jerry Wheeler, Acting Fire Management Officer, Bureau of Land Management, Alturas, 233-7910.
7. Pat Stone, BLM Fire Captain, Ravendale Station, (530) 234-2044.
8. Karl Todd, Fire Management, Bureau of Land Management, Susanville, (530) 257-0456.
9. Bob Beare, Dispatcher, Susanville Interagency Command Center, Susanville, (530) 257-5575.
10. http://www.fireplan.gov/communities_at_risk.cfm
11. http://www.fireplan.gov/community_2002.cfm
12. Aids to Determining Fuel Models for Estimating Fire Behavior, Hal E. Anderson, General Technical Report INT-122, April 1982.
13. Fire Safe Council Web Site: www.firesafecouncil.org
14. Tom Gauthier, Lassen Fire Safe Council, (530) 253-3627.
15. Stan Ratcliff, Fire Chief, Madeline Fire Protection District, (530) 234-1054.
16. Jim White, Caltrans, Alturas, (530) 233-4263.
17. Richard Server, Fire Management, Bureau of Land Management, Alturas, (530)233-4666.