California Department of
Forestry and Fire Protection
Fresno-Kings Unit
&
Fresno County Fire Protection District
&
Fig Garden Fire Protection District

Prefire Management Plan

2005

California Department of
Forestry and Fire Protection

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I. Executive Summary

The California Fire Plan

The State Board of Forestry and Fire Protection (Board) and the California Department of Forestry and Fire Protection (CDF) have drafted a comprehensive update of the Fire Plan for Wildland Fire Protection in California. The planning process defines a level of service measurement, considers assets at risk, incorporates the cooperative interdependent relationships of wildland fire protection providers, provides for public stakeholder involvement, and creates a fiscal framework for policy analysis.

Goal and Objectives

The overall goal is to reduce total costs and losses from wildland fire in California by protecting assets at risk through focused prefire management prescriptions and increased initial attack success.

The California Fire Plan has five strategic objectives:

- To create wildfire protection zones that reduce the risks to citizens and firefighters.

- To assess all wildlands, not just the state responsibility areas. Analysis will include all wildland fire service providers – federal, state, local government and private. The analysis will identify high risk, high value areas, and develop information on and determine who is responsible, who is responding and who is paying for wildland fire emergencies.

- To identify and analyze key policy issues and develop recommendations for changes in public policy. Analysis will include alternatives to reduce total costs and losses by increasing fire protection system effectiveness.

- To have a strong fiscal policy focus and monitor the wildland fire protection system in fiscal terms. This will include all public and private expenditures and economic losses.

- To translate the analysis into public policies.

Fire Plan Framework

Five major components will form the basis of an ongoing fire planning process to monitor and assess California's wildland fire environment.

- Wildfire protection zones. A key product of this Fire Plan is the development of wildfire safety zones to reduce citizen and firefighter risks from future large wildfires.

- Initial attack success. The fire plan defines an assessment protection system for wildland fire. This measure can be used to assess the department's ability to provide an equal level of protection to lands of similar type, as required by Public Resources Code 4130. This measurement is the percentage of fires that are successfully controlled before unacceptable costs are incurred.

Knowledge of the level of service will help define the risk to wildfire damage faced by public and private assets in the wildlands.

- Assets protected. The plan will establish a methodology for defining assets protected and their degree of risk from wildfire. The assets addressed in the plan are citizen and firefighter safety, watersheds and water, timber, wildlife and habitat (including rare and endangered species), unique areas (scenic, cultural, and historic), recreation, range, structures and air quality. Stakeholders-national, state, local agencies and private interest groups, etc. will be identified for each asset at risk. The assessment will define the areas where assets are at risk from wildfire, enabling fire service managers and stakeholders to set priorities for prefire management project work.

- Prefire management. This aspect focuses on system analysis methods that assess alternatives to protect assets from unacceptable risk of wildland fire damage. Projects include a combination of fuels reduction, ignition management, fire-safe engineering activities, and forest health to protect public and private assets. The priority for projects will be based on asset owners and other stakeholders' input and support. Prefire management prescriptions designed to protect these assets will also identify who benefits and who should share in the project costs.

- Fiscal framework. The Board and CDF are developing a fiscal framework for assessing and monitoring annual and long-term changes in California's wildland fire protection systems. State, local and federal wildland fire protection agencies, along with the private sector, have evolved into an interdependent system of prefire management and suppression forces. As a result, changes to budgeted levels of service of any of the entities directly affects the others and the services delivered to the public. Monitoring system changes through this fiscal framework will allow the Board and CDF to address public policy issues that maximize the efficiency of local, state and federal firefighting resources.

These are Fire Plan framework applications:

- Identify for state, federal and local officials and for the public those areas of concentrated assets and high risk.

- Allow CDF to create a more efficient fire protection system focused on meaningful solutions for identified problem areas.

- Give citizens an opportunity to identify public and private assets to design and carry out projects to protect those assets.

- Identify, before fires start, where cost-effective prefire management investments can be made to reduce taxpayer costs and citizen losses from wildfire.

- Encourage an integrated intergovernmental approach to reducing costs and losses.

- Enable policy makers and the public to focus on what can be done to reduce future costs and losses from wildfires.

II. Introduction

Unit Description

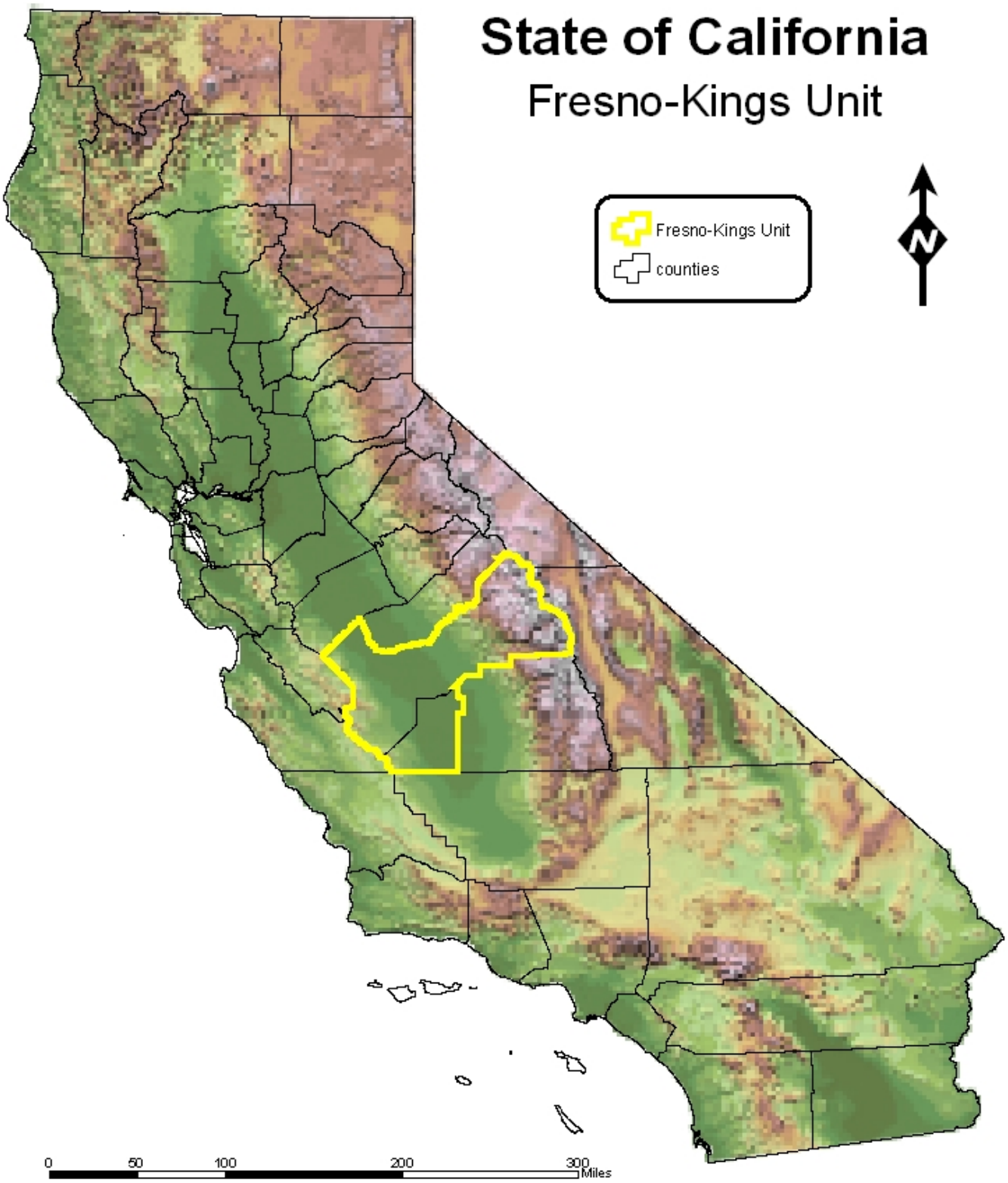
The Fresno-Kings Unit of the California Department of Forestry and Fire Protection (CDF) has primary responsibility for over 923,000 acres of Direct Protection Area (DPA) lands. CDF DPA lands are State Responsibility Area (SRA) and intermingled federal lands protected by CDF. Federal lands in state DPA are protected by CDF under agreement with federal forest agencies through the Cooperative Fire Protection Agreement (4-party agreement). There are over 795,000 acres of SRA lands in the Fresno-Kings Unit. SRA lands are the areas designated by the State Board of Forestry on which the state assumes financial responsibility for protecting natural resources from damage by fire.

The Unit is divided nearly in half by the San Joaquin Valley. This 70 mile span presents some specific logistical and administrative challenges for the development of a Prefire Management Plan. The fuel and topographic conditions, along with the human activity, risk and ignition history of the Unit add to the diversity of the Unit. To facilitate operations two divisions have been created.

The Eastern Division expands from the floor of the San Joaquin Valley to an elevation of 7,000 feet along the Western slopes of the Sierra Nevada and incorporates two of Central California's major watersheds, the Kings and San Joaquin Rivers. This Division is primarily vegetated at the lower and mid elevations by seasonal grasses, deciduous and evergreen oaks and brush, while the higher elevations consist of conifers. The Eastern Division contains three lake recreation areas, Shaver Lake, Millerton Lake and Pine Flat Lake. The recreational use in these areas is moderate to high. The Eastern Division also contains two population centers, the Shaver Lake – Prather area and the Squaw Valley - Dunlap area. Both population centers have a steadily increasing permanent residential growth pattern. The wildland urban intermix is a real and current concern in these areas.

The Western Division is made up of the eastern slope of the Coastal Mountain Range. Primary vegetation types consist of seasonal grasses, deciduous oaks and heavy brush. There is a high seasonal recreational use of Bureau of Land Management (BLM) holdings, within the Division. Residential impact in the area is light, with little indication of growth. Industrial use is heavy in some areas, depending on the economic situation in the petroleum industry.

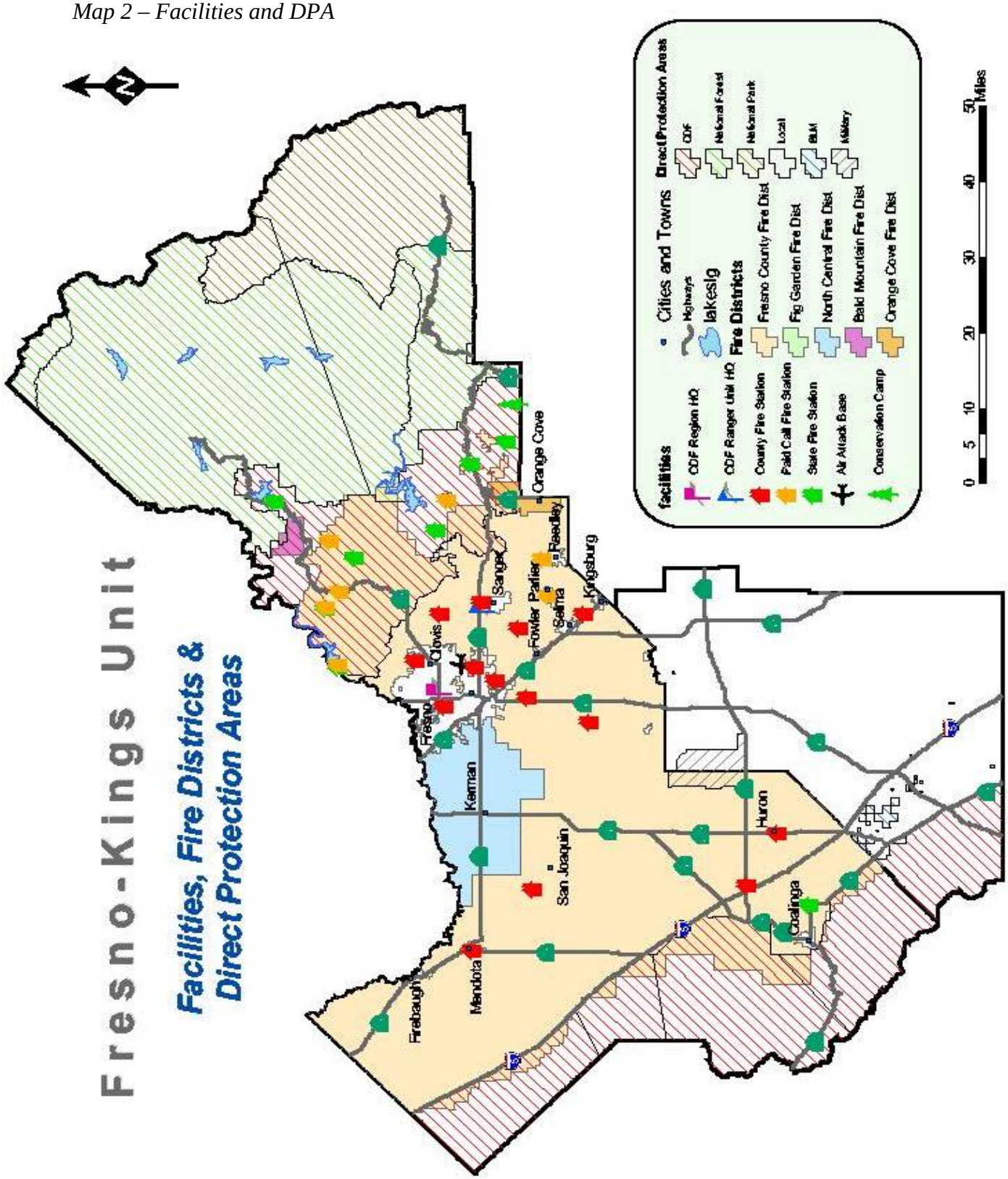
Map 1 – State of California / Fresno-Kings Unit



CDF Facilities and Resources

The Fresno-Kings Unit manages eight (8) CDF fire stations, thirteen (13) staffed fire stations and seven (7) Paid Call Firefighter (PCF) staffed fire stations for the Fresno County Fire Protection District, one (1) fire station for the Fig Garden Fire Protection District, Miramonte Conservation Camp, the Fresno Air Attack Base, a Fire Prevention/Protection/Planning Bureau and a Training Bureau. During peak fire season, CDF staffs twelve (12) Schedule "B" engines, fifteen (15) Schedule "A" engines, seventeen (17) PCF engines, two (2) CDF bulldozers, one (1) air attack, one (1) air tanker and supervises four (4) inmate hand crews. In addition to dispatching CDF resources, Fresno-Kings' Emergency Command Center (ECC) dispatches emergency calls for: Fresno County Fire Protection District, the Fig Garden Fire Protection District, Shaver Lake Volunteer Fire Department, Huntington Lake Volunteer Fire Department, Big Creek Volunteer Fire Department, Bald Mountain Volunteer Fire Department, Auberry Volunteer Fire Department, Mountain Valley Volunteer Fire Department, Fowler City Fire Department, Parlier City Fire Department, Orange Cove Fire District, Laton Fire District, and Pleasant Valley Prison Fire Department.

Map 2 – Facilities and DPA



III. Wildland Fire Protection Assessment in the Fresno-Kings Unit

Assessment Process

The Fire Plan process for assessing wildland fire protection involves collecting data, validating the data with input from stakeholders and then assembling the data into an easy to use format. The four components to the Fire Plan assessment process are Level of Service, Assets at Risk, Fuels and Weather. The data for the four components is obtained from CDF's Fire and Resource Assessment Program (FRAP), computer databases and Unit level archives. Once the data has been reviewed and validated it is assembled and assigned to a land area. To arrive at a common land area unit to assemble the assessment data, U.S. geological Survey 7.5 minute quadrangle maps are divided by a 9 by 9 grid, forming 81 equal area blocks of land. Each block of land contains approximately 450 acres and is referred to as a quad 81st. The entire data for the Unit has been compiled down to the quad 81st. When the data is viewed in the form of a map, problem areas are easily identified and can be addressed by prioritizing the areas for prefire projects. The prefire projects can range from on the ground fuel load reduction to public awareness campaigns.

Even though the Fire Plan assessment process has not been completed for the Fresno-Kings Unit, the Unit is pressing forward with the information that is available since it is an immediate priority to implement projects that address the threat of wildfire in our communities. The use of "on the ground" knowledge, Geographic Information Systems (GIS) information, FRAP data, local data and input from the Highway 168 Fire Safe Council has allowed the Unit to begin making well-grounded decisions in prefire management. The Fire Plan assessment process will continue and as data is reviewed and validated it will be incorporated into the Unit Prefire Management Plan. When the Fire Plan assessment is completed it is anticipated that the data will validate the decisions that have been made in the Unit in regards to Prefire Management up to that time.

Stakeholders

Stakeholders are defined as any person, agency or organization with a particular interest – a stake – in fire safety and protection of assets from wildfires. The process of identifying and involving stakeholders in the Fresno-Kings Unit is an ongoing effort. Early in the Fire Plan implementation process the Fresno-Kings Unit determined the need for a forum to meet and involve stakeholders in the Fire Plan process. Local Fire Safe Councils act as a forum for stakeholders to share and validate fire safety and fire planning information.

The Fresno-Kings Unit initiated a local Fire Safe Council in 1998. The Fire Safe Council called the Highway 168 Fire Safe Council has become an outstanding forum for stakeholders in Northeastern Fresno County to meet and share their thoughts and concerns related to fire management. The Highway 168 Fire Safe Council has empowered local citizens and encouraged interagency cooperation and teamwork. The Highway 168 Fire Safe Council hired a coordinator and has established an office in Prather. Overall the Highway 168 Fire Safe Council has been popular and a true success story. *See Appendix B for a list of the current stakeholders represented in the Highway 168 Fire Safe Council*.

A side benefit to the Highway 168 Fire Safe council has been the opportunity to meet and work with CDF's cooperators such as the U.S. Forest Service. The Fresno-Kings Unit has been able to develop a cooperative working relationship with the Sierra National Forest. This relationship has lead to shared information and area planning for prefire projects. This cooperative working relationship will help the Highway 168 Fire Safe Council in future federal grant funding opportunities.

Some of the key issues that are being addressed by the stakeholders in the Highway 168 Fire Safe council are public awareness/education and funding sources for prefire projects. The Council has been actively working with CDF and the US Forest Service to develop public awareness and education projects. Currently the Council is working on a second mailer insert that will be mailed to all foothill and mountain residents addressing fire safety and fire hazard reduction. The Council is currently working with CDF, and Sierra National Forest on grant funding for several new projects related to fire hazard reduction.

In March of 2005 the Fresno-Kings Unit initiated an additional local Fire Safe Council in the Southeastern portion of Fresno County. This new Fire Safe Council is called the Oak to Timberline Fire Safe Council and has rapidly developed into an energetic group of varied stakeholders. The Oak to Timberline Fire Safe Council has been meeting with representatives from other local Fire Safe Councils in both Fresno and Tulare Counties to gleam information and develop ideas for getting organized and developing projects.

Ignition Workload Assessment (Level of Service)

Fire Protection in the Fresno-Kings Unit is a cooperative effort. Interagency and Master Mutual Aid Agreements allow the various fire protection agencies to work together and accomplish the goal of providing fire protection in the most efficient manner. Keeping this in mind, the Level of Service Assessment is really an assessment of fire protection in the SRA of Fresno and Kings Counties and not an actual assessment of the fire protection provided by just CDF alone.

Public Resources Code Section 4130, directs the Board and CDF to "classify all lands within SRA into types of land based on cover, beneficial use of water from watersheds, probable damage from erosion and fire risks and hazards; to determine the intensity of protection to be given each such type of land. A plan for adequate statewide fire

protection of state responsibility areas shall be prepared by the board in which all land of each type shall be assigned the same intensity of protection and the estimated cost of such intensity of protection shall be determined." The Board's approach was to develop the California Fire Plan. The Level of service looks at the initial attack success and major fire failure rates.

Success Rate =

$$\frac{\text{Annual number of small fires that were extinguished by initial Attack}}{\text{Total number of fires}} * 100 = \text{Success rate in percent}$$

The Emergency Activity Reporting System (EARS) database has been validated back to 1981 for SRA fires. While calculating the Level of Service for the Unit, it has been determined that all fires, not just the SRA fires need validation. The LOS validation will be completed by mid to late 2004. An in depth explanation of the level of service rating and process can be found in the California Fire Plan. *The California Fire Plan can be downloaded at the CDF FRAP website*: http://frap.cdf.ca.gov/fire_plan/

Assets at Risk

The primary purpose of wildland fire protection in the Fresno-Kings Unit is to protect the wide range of assets found in the Unit from the effects of wildfire. Table 1 lists the identified assets at risk that are found throughout the State of California as well as their asset value basis, level of disaggregation and level of value. All of the assets at risk in Table 1 are also found throughout the Unit. The California Fire Plan recommends that the limited fire protection resources should be allocated, at least in part, based on the value of the assets at risk. A detailed explanation of the quantification and valuation approaches for each asset may be found in the California Fire Plan.

Currently the Fresno-Kings Unit is reviewing and validating the base Assets at Risk data. Maps are going to be created to show the current preliminary value of the assets as high, medium or low. Stakeholder input is critical to determining which assets at risk are present and what value they have. The maps created will be presented to various forums, such as the Highway 168 Fire Safe Council, to help validate the data. If representatives of the various assets at risk such as Southern California Edison, Pacific Gas & Electric Company (PG&E), Army Corps of Engineers, Bureau of Reclamation and the Department of Fish and Game are not present at the Highway 168 Forum, attempts will be made to meet with them individually in order to get their input in the validation process. Involving the various stakeholders in the validation process has the additional benefit of educating them about the problem and issues at hand. In the case of the Highway 168 Fire Safe Council, they will then be aware of the problem and will be more likely to help seek grant funding to address the problem.

Table 1. Assets at Risk Framework Summary

Resource	Asset Value Basis	Level of Disaggregation	Levels of Value*
Life and safety	Non-economic values are not quantified	By population density	National, state and local
Air quality	Average dollar impact from particulate matter (PM10) emitted per acre burned; non-commodity assets also exist	Air quality basins (13) and basic fuel types (2)	National, state and local
Range	Dollar cost of replacement feed per acre of rangeland burned	Values by regions (8), cover types (9) and ownership classes (5)	State and local
Recreation on public wildlands	Average dollar loss per acre burned; non-commodity assets also exist	Statewide average by public ownership categories (5)	National, state and local
Structures	Average dollar loss per home burned; non-commodity assets also exist	Statewide average	State and local
Timber	Average dollar loss per acre burned	Values by regions (6) and ownership categories (4)	National, state and local
Water and watersheds	Range of economic impacts per acre for value of increased water yields; cost of sediment removal; loss of reservoir capacity; effects on hydroelectric generation; costs of watershed rehabilitation; non-commodity assets also exist	Statewide ranges of economic impacts	National, state and local
Wildlife, habitat, plants and ecosystem health	Qualitative discussion of the tradeoffs in fire impacts	Statewide	State and local
Other resource assets, cultural and historic resources, unique scenic areas	These non-commodity assets cannot be quantified adequately; descriptive enumeration only	Statewide (generically) or place-specific	National, state and local

*May or may not be cumulative.

Communities at Risk

During the spring of 2001 a field validation process was conducted in the Fresno-Kings Unit to identify and validate communities at risk. This process was conducted based on a request from Congress, through the FY 2001 Appropriation Bill, that called for a list of "…all urban wildland interface communities, as defined by the Secretaries, within the vicinity of Federal lands that are at high risk from wildfire, as defined by the Secretaries". The following criteria were provided to help identify communities at risk:

- The *Interface* exists where humans and their development meet or intermix with wildland fuels.
- A *community* is a defined area where residents live and are provided services such as fire protection, water, law enforcement, etc.
- *Vicinity* of Federal lands is defined as within the range in which fires can travel.
- *High-risk* exists where there is land condition that is characterized by high-risk fire regimes.

After receiving input from the USDA Forest Service and National Park Service the following communities in Fresno and Kings Counties were identified as *Communities at Risk* and were placed on the National list in the Federal Register.

Auberry	**Friant**	**Pinehurst**
Avenal **	**Hume ***	**Prather**
Big Creek *	**Lakeshore ***	**Shaver Lake**
Dinkey Creek *	**Meadow Lakes**	**Squaw Valley**
Dunalp	**Piedra**	**Tollhouse**

* located in Federal Direct Protection Area

** Located in Local Responsibility Area

The significance of a Community at Risk designation has become apparent recently with most Federal grant proposals for wildfire protection requesting information about Communities at Risk in the area of the proposed grant project to help rank the proposal.

Fuels

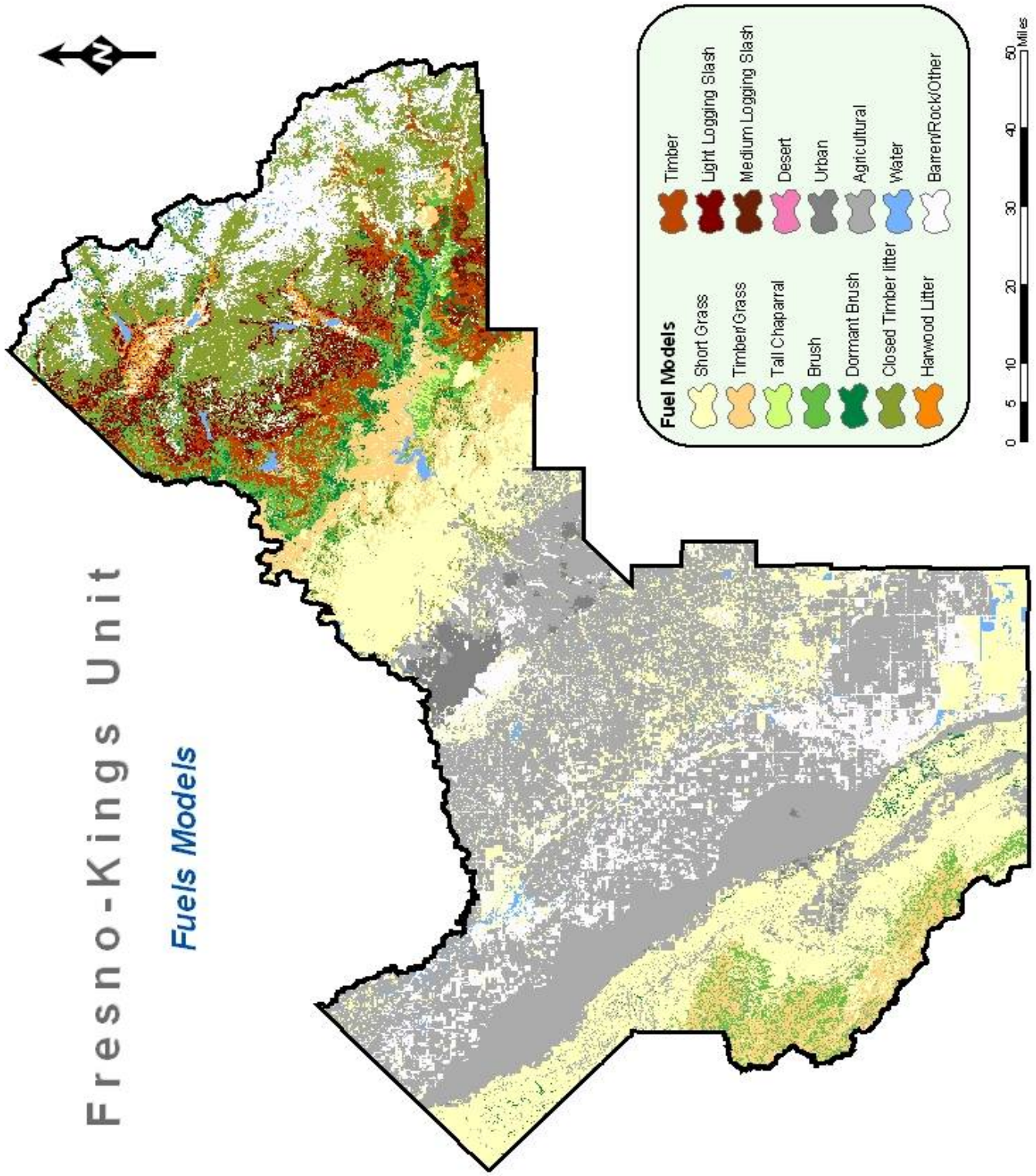
The term “fuels” refers to the vegetative cover on the landscape. We are concerned with fuels because of their significant influence on wildland fire behavior. The more extreme the wildland fire behavior the greater the threat to the assets at risk.

Fuels are commonly classified based on their expected influence on fire behavior. Factors such as fuel moisture, fuel loading (the mass of fuel per unit area), fuel depth, heat content of fuel, and the fuel particle density all affect the behavior of fire and therefore the classification of the fuels. The fuels validation process used by CDF classifies fuels into thirteen (13) fuel models that were initially established by the Fire Behavior Prediction System (FBPS). In addition to the standard thirteen (13) FBPS fuel models, six (6) custom fuel models are used to describe special circumstances. Table 2 lists fuel model classes (FBPS) and a general description of the vegetation types that typically fall into each class. These fuel models are based Hal Anderson's "Aids to Determining Fuel Models for Estimating Fire Behavior" (April 1982) published by the National Wildfire Coordinating Group.

Table 2 - Fuel model classes (FBPS)

Fuel Model Classes (FBPS)	
FBPS	**Description**
1	Short Grass
2	Timber/Grass
3	Tall Grass
4	Tall Chaparral
5	Brush
6	Dormant Brush
7	Rough
8	Closed Timber Litter
9	Hardwood Litter
10	Timber
11	Light Logging Slash
12	Medium Logging Slash
13	Heavy Logging Slash
14	Plantation/Burned last 15 years
15	Desert
28	Urban
97	Agricultural Lands
98	Water
99	Barren/Rock/Other

Map 3 – Fuel Models

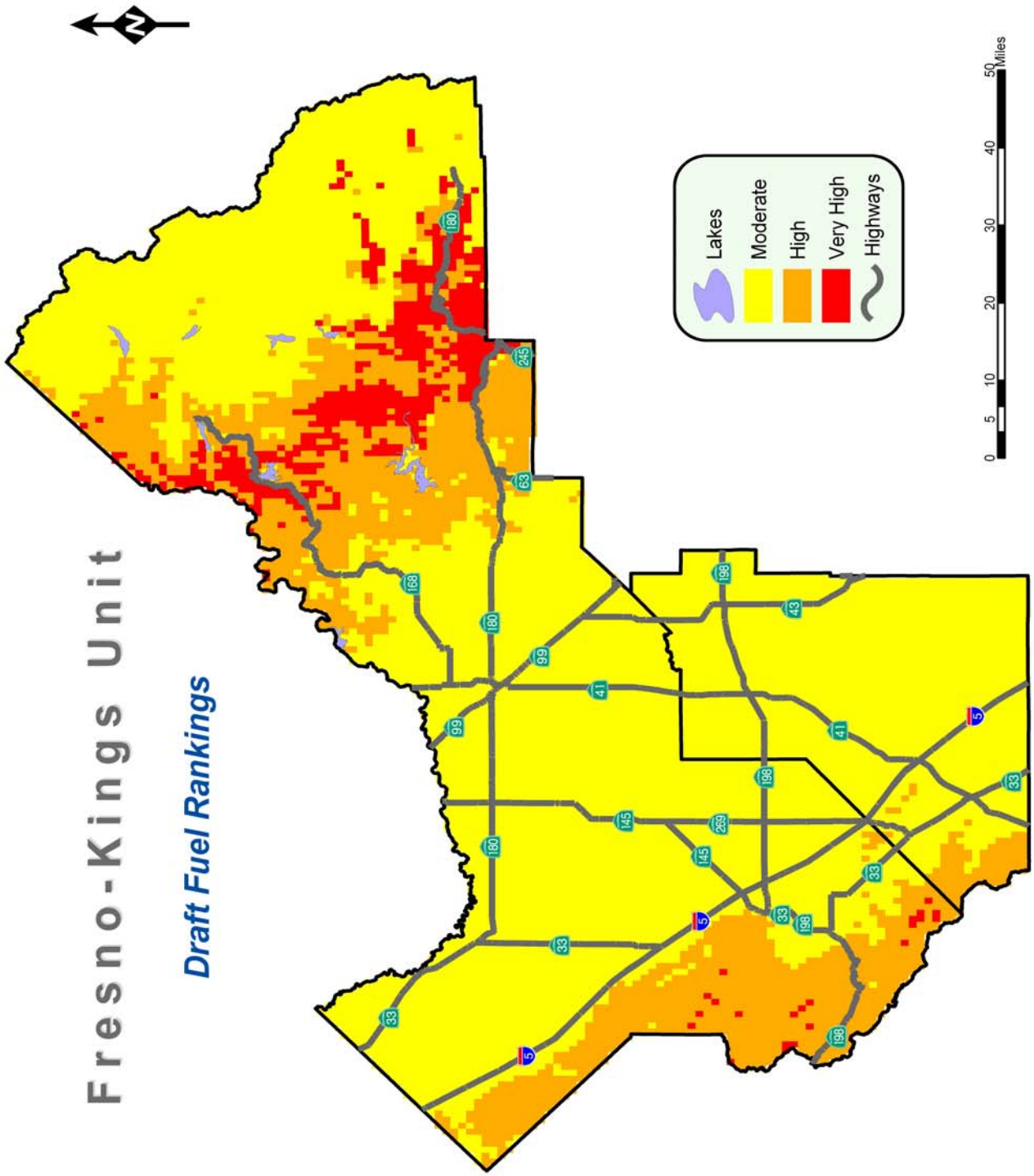


Fire history plays an important role in modifying fuel model assignments in recently burned areas. Once an area burns during a wildfire the fuels are at least initially partially consumed and/or changed. Over time the vegetation re-grows and eventually returns to its state prior to the fire. Some fuel types return more quickly than others to their prior state before the fire. After a wildfire and while the fuels are regenerating their flammability characteristics are significantly different than when they are fully mature. These characteristics affect the fire behavior if a fire was to return to the area. This variation in the way fuels affect fire behavior is accounted for in the validation process by assigning a different fuel model to some fuels as they re-grow. The process for accounting for this change in fire behavior is called the "Fuel Dynamics Pathways". The fuels can then be updated annually based on the fire history and the Fuels Dynamics Pathway. *Additional information about this process can be found on the CDF Fire and Resource Assessment Program website at:*
http://frap.cdf.ca.gov/data/fire_data/fuels/fuelsfr.html.

Once the fuel types have been determined and validated by the local Unit, a fuel ranking process is started. CDF has developed a Fuel Rank assessment methodology that considers the current fuel model, slope class, ladder fuel, crown closure component, and difficulty of control rating to derive the fuel hazard rank for each quad 81st. The fuel rank process produces a map of the Unit that indicates areas of moderate, high and very high fuel ranking. CDF has determined that there are realistically no low hazard fuels in California. *Additional information about the fuel rank assessment methodology can be found at the CDF Fire and Resource Assessment Program website at:*
http://frap.cdf.ca.gov/data/fire_data/fuel_rank/index.html.

Currently, the Fresno-Kings Unit has completed the fuels assessment and validation and is in the process of validating the fuel ranking process. The next page is a map of the draft fuel ranking for the Fresno-Kings Unit.

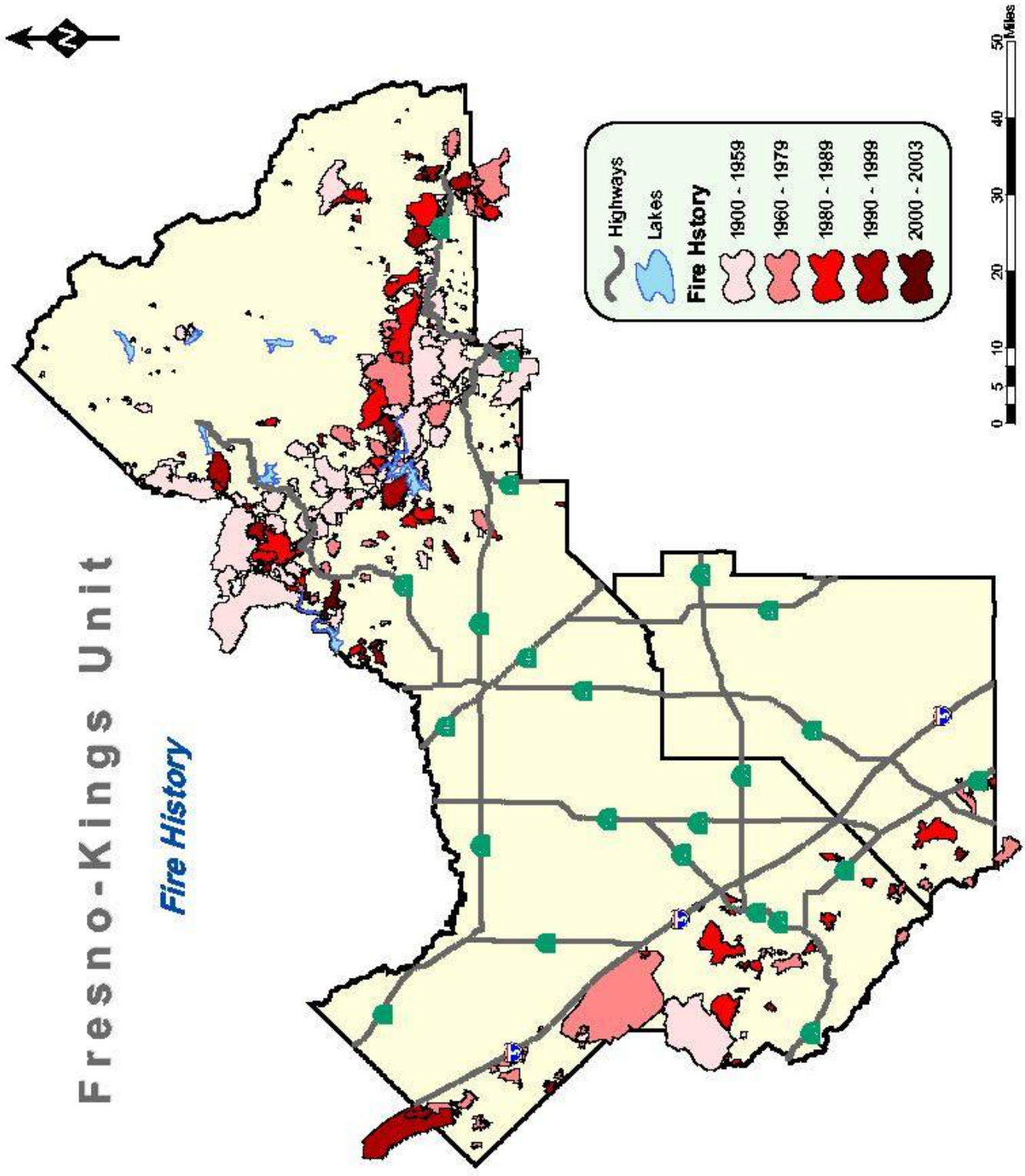
Map 4 –Fuel Rankings



Fire History

As described above, fire history is an important part of assessing the fuels and ultimately the fuels ranking in the Unit Fire Plan Assessment. The fire history for the Fresno-Kings Unit has been validated in the field with the cooperation of the Sierra National Forest. The Unit has developed fire history collection criteria similar to Sierra National Forest's criteria. The Unit now collects fire perimeters for all fires 10 acres and larger. For fires less than 10 acres, a point of origin location is collected using latitude and longitude coordinates. This criteria will allow the Unit to easily share and analyze fire ignition and perimeter data with Sierra National Forest. To facilitate the collection of fire history in the field the Unit has purchased handheld Global Positioning System (GPS) receivers and mapping software for all of the State Fire Engines and Battalion Chiefs. This equipment and software has allowed the field personnel to collect fire perimeters and/or points of origin. These perimeters and points are then forwarded to the Prefire Engineer for inclusion in the annual fire history layer. The collection of the fire history by field personnel has allowed them to maintain their fire history for local planning purposes. The plan for collecting, storing and analyzing the fire history data has been completed and adopted as a Standard Operating Procedure for the Fresno-Kings Unit. *For additional information about the fire history data collection process see Appendix C - the Fresno-Kings Administrative Procedures Manual, revision #100, 7100-01, Fire Protection Plan "Fire Plan", May 1998.*

Map 5 – Fire History



Frequency of Severe Fire Weather

Weather has a significant influence on fire behavior. It is a very dynamic variable and it can be very hard to assign a weather value to a land unit. In the Fire Plan analysis past weather data is used to calculate and assign a severe fire weather ranking to each quad 81st. The past weather data is obtained from Remote Automated Weather Stations (RAWS). Each quad 81st is assigned a RAWS to represent the local weather. There are several problems with this process. The first problem is the distribution of RAWS throughout the State. Some areas have a good distribution and others do not. The other problem is that many of the RAWS have incomplete historic weather data. In order to obtain useful data often times the quad 81st is assigned a RAWS that is a significant distance away and may not provide representative data for the quad 81st location.

The Fire Plan analysis of the frequency of severe fire weather has not been completed for the Fresno-Kings Unit. The Unit is anticipating a new methodology that is being developed by CDF to assist in the Fire Plan assessment. No time frame for completion can be provided at this time. Recently the Panoche RAWS in western Fresno County was relocated. This RAWS has been out of service for several years and the new site will provide a more accurate reading of weather in an area of the Unit that experiences a high frequency of severe fire weather.

IV. Vegetation Management Program

Program Framework

The current Vegetation Management Program (VMP) is the continuation of the Range Improvement Program that existed in California from the 1950's to the 1970's. The Range Improvement Program was carried out by cooperative groups of ranchers who would band together to conduct prescribed burns primarily for range improvement objectives. These cooperatives had the equipment and expertise to conduct burn projects with limited to no assistance from fire agencies. These groups continued until the mid to late 1970's. At this time, liability issues, available cooperators and air quality restrictions all came together to essentially stop all non-governmental range improvement burning. This led to the passage of Senate Bill 1704, which was signed by Governor Brown Jr. on July 16, 1980. This bill authorized CDF to assume the liability and project implementation for prescribed burns on private property and thus created the Vegetation Management Program that is utilized by CDF today. The program became operational with the adoption of the Final Environmental Impact Report for the Chaparral Management Program on May 18, 1981.

The Vegetation Management Program provides CDF the authority to cooperatively treat vegetation and fuels on private lands. While a vegetation management project obviously improves private property values through reducing accumulated vegetation and increasing land management options, it also has benefits to the general public. The benefits to the general public include wildlife habitat improvement, increased water yield, air quality benefits of controlled releases of smoke during a prescribed project versus the uncontrolled release of smoke during a wildfire and most importantly the potential savings of significant taxpayers funds through increased success of fire suppression in areas treated with vegetation management projects versus areas not treated. *For additional information, see the "California Department of Forestry Chaparral Management Program Final Environmental Impact Report", May 18, 1981.*

A specific example of the public benefit of VMP from the Fresno-Kings Unit is the Beal Fuel Break. The Beal Fuel break is located in the Pine Ridge area of Fresno County along Highway 168. The Beal Fuel Break is a segment of the historic 650 mile long Ponderosa Way Fuel Break that was constructed by the Civilian Conservation Corps in the 1930's. It was last treated in 1995, through the Vegetation Management Program. The treatment utilized hand and mechanical methods to pile and burn vegetation. The maintenance cost $163 per acre total or $87 per acre in State operating funds. The arson caused Highway Fire, which burned from August 13-18, 2000, was ignited down-slope of the Beal and eventually burned into the fuel break. The fire was controlled at the fuel break. The cost to suppress the Highway Fire was $1,304 per acre. Thus in this example, the cost of fuels treatment spent $1,217 less of taxpayers funds, per acre, than fire suppression cost. *For additional information see Appendix C, Interaction Report for The*

Highway Fire (00FKU008628) and The Beal Fuel break (Rx 4-FKU-007) August 13-18, 2000.

Under the Vegetation Management Program, CDF utilizes a standardized program to address vegetation and fuels projects. Prior to project implementation a standardized formula is utilized to determine the private benefit versus the public benefit of a given project. Based on the formula, CDF may pay up to a maximum of ninety percent of a project's costs if it has a high public benefit. The participating landowner(s) and/or other cooperator(s) pay the remainder of the project's cost. The following categories are evaluated in determining private versus public benefits: Fire Hazard Reduction; Water Yields; Watershed Stabilization; Wildlife Habitat Improvement; Fisheries Habitat Improvement; Air Quality Improvement; and Range Forage Improvement. *For additional information on specific VMP implementation, see the "Vegetation Management Program Handbook and Field Guide", California Department of Forestry and Fire Protection, June 2001.*

The Environmental Impact Report for the Chaparral Management Program, which was adopted in 1981, provides the statewide California Environmental Quality Act (CEQA) clearance for VMP projects. This environmental clearance means that project that comply with the techniques and mitigations found in the Environmental Impact Report will not have a significant impact on the environment. The environmental analysis for the Chaparral Management Program was specific to lands containing "shrub formations" of all types. The term "Chaparral Management" was used because it was felt that a majority of the public understands that term as meaning "brush lands." Due to the fact that the environmental analysis for the Chaparral Management Program was specific to "lands containing shrub formations", the Vegetation Management Program can not be utilized on tree dominated landscapes. In the mid 1990's, CDF recognizing the need to expand the Vegetation Management Program to other than lands containing "shrub formations" under took development of a Program Environmental Impact Report (PEIR) to expand the use of Vegetation Management Program. This new PEIR was approved in June 2000. In January of 2002 the newly adopted PEIR was enjoined by the Superior Court of San Francisco County based on a lawsuit by Californians for Alternatives to Toxics and the Environmental Protection Information Center (EPIC). At this time, for vegetation and fuels projects on lands other than those containing "shrub formations" CEQA must be met on an individual project basis. *For additional information on the PEIR see "Environmental Impact Report Handbook for Vegetation Management Program, California Department of Forestry and Fire Protection", Prepared by Jones and Stokes, Sacramento, CA, July 2000.*

Fiscal Framework

The state funding support of the Vegetation Management Program recognizes the fact that many of the needed CDF resources to carry out a vegetation management project are in place and funded for fire suppression activities. Thus there are minimal added

expenses to CDF to carry out projects. The Fresno-Kings Unit is provided $5 per acre, in augmented funding, to complete vegetation projects. This funding is intended to cover project expenses over and beyond normal operating expenses. This funding process was established when most VMP projects where large scale (several hundred to several thousand acre) range improvement projects. Due to the minimal amount of fire control line work needed versus the amount of acres that could be treated in a single prescribed fire project, the augmented funding was appropriate. In response to the urban intermix issue and the high assets at risk, CDF's Vegetation Management Program is now focusing more on small scale, intensive treatment projects adjacent to homes. These types of projects require intensive use of personnel and/or mechanical equipment. The result is small areas treated at high expenses compared to large scale range improvement projects. The $5 per acre augmented funding is insufficient to cover these types of projects. Within the Fresno-Kings Unit, as well as the Madera-Mariposa-Merced Unit, Tulare Unit and the Contract County Kern, the San Joaquin Valley Unified Air Pollution Control District is now charging a $5 per acre smoke mitigation fee for all non-hazard reduction (PRC 4291) burn projects. This fee eliminates all augmented funding for vegetation management projects. Additional funding sources are needed to implement urban intermix vegetation management projects, or individual Units will need to choose to fund projects with operational dollars.

Program Setting

The Fresno-Kings Unit covers a very diverse geographic area. It extends from approximately the 4,000 foot elevation in the Coastal Range on the western side of the Unit then drops to near sea level through the San Joaquin Valley and then climes again to approximately the 7,000 foot elevation in the Sierra Nevada Range, on the eastern side of the Unit. The vegetation complexes and corresponding fuel types change as one travels across this diverse topography.

Within the Unit, all Fire Behavior Fuel Models can be found. The grass models can be found on the valley floor and the eastern and western foothills. The brush models can be found at the mid to upper elevations on the western side of the Unit and between the oak woodlands and conifer forests on the eastern side of the Unit. The timber models can be found at the highest elevations in the Coastal Range and in the upper elevations on the eastern side of the Unit. The slash models can be found primarily in the northeastern portion of the Unit. This is where the majority of the commercial timber harvesting occurs within the CDF DPA. However, limited harvesting does occur within the Coastal Range and the southeastern portions of the Unit.

As well as topography and fuels, land ownership patterns vary greatly across the Unit. Within the Coastal Range portion of the Unit, ownerships are primarily large single owners. These ownerships range from several hundred acres to many thousands of acres. The owners are generally long term owners who are very knowledgeable of their lands and alternatives for land management. A large percentage of the CDF DPA in this area consists of public lands managed by BLM. As you descend out of the Coastal Range and

onto the valley floor the ownership pattern changes to a mixture of smaller rural residential ownerships (less than an acre to several hundred acres) and agricultural production lands. Within the eastern portion of the Unit, as you leave the valley floor there is a mixture of smaller dispersed rural residential ownerships (two (2) to five (5) acre parcels), several hundred to several thousand acre rangeland ownerships and now new subdivisions with lot sizes under two (2) acres. At the mid elevations, on the eastern side, there is a mixture of dispersed rural residential ownerships and mid sized parcels up to approximately several hundred acres. At the upper portions of the DPA, there is a mixture of small residential parcels (less than an acre), mid sized parcels up to approximately several hundred acres and the largest parcels are industrial timberlands up to several thousand acres. The following communities are all located within the DPA in the eastern portion of the Unit: Friant, Prather, Auberry, Tollhouse, Meadow Lakes, Shaver Lake, Piedra, Squaw Valley, Dunlap, Miramonte and Pinehurst. These communities all have high population concentrations and very small parcel sizes. Most of the smaller landowners on the eastern side of the Unit are new residents to the wildlands and are unfamiliar with wildfire and fuels management issues. Within the DPA in the eastern portion of the Unit are public lands managed by the California Department of Parks and Recreation, USDA Forest Service (Sierra and Sequoia National Forests) and the BLM.

Program History in the Unit

The combination of diverse topography, fuels and ownerships results in a diverse Vegetation Management Program for the Fresno-Kings Unit. Within the Unit, most VMP projects have focused on the western portion of the Unit. These projects were a mixture of range improvement and fuels reduction. The eastern portion of the Unit, has had limited VMP projects. Many that did occur were cooperative with the National Forests. The history of VMP in Fresno-Kings Unit is fragmented and scattered. The Unit did not have VMP Coordinator until 1999.

Future Program Direction

With the continuing development of the Unit's Prefire Management Plan, the Unit's Vegetation Management Program will be evolving also. Vegetation Management Projects will be responsive to the integrated planning approach of Prefire, Prevention and Vegetation Management. Projects will be developed and implemented to coordinate with Prefire objectives. It is anticipated new projects will focus on urban intermix areas. This will result in an increase in projects within the eastern portion of the Unit. However, as CDF vegetation management projects occur on private property unexpected interest in the program by landowners may alter immediate priorities.

V. Fire Prevention/Protection/Planning in Prefire Management

Fire Prevention Statement

Ignition Analysis, State Responsibility Areas (SRA) and Local Responsibility Areas (LRA)

The Fresno Kings Unit is not unique to California Fire History or activity. The unit spans from lowlands at 300ft.on the west side to elevations at 8000ft in the east. The vegetation transitions from light flashy annual grass fuels to heavy timber. The ignitions too are not out of the ordinary for the population density and geographic make up of the unit.

The ignition analysis for the year 2004 is very similar to that of years past. The four primary ignition sources continue to be in the same order of ranking;

Other and Undermined	535 Fires
Arson	311 Fires
Equipment Use	315 Fires
Debris Burning	158 Fires

These 4 ignitions make up the units major categories of the total ignitions. The remaining causes are almost insignificant in numbers. They are split between lightning, campfires, smoking, vehicles, elec. power, and playing w/fire.

These statistics slightly vary each year, but remain the same top classes of fire ignition in the unit. The unit ranges from 120 to 200 fires a year in the SRA and 1400 to 1600 fires in the LRA. The unit does have some shortfalls relative to preliminary fire investigation as the miscellaneous category indicates. These issues will be addressed as part of our goals of the fire prevention bureau.

The California Fire Plan in the Fresno Kings Unit combines SRA and LRA as one in order to address the concerns of the county's fire mitigation efforts and integrate the fire plan. The LRA's are heavily integrated in the SRA and the potential for large damaging fires is a threat to The Fresno County Fire Protection District its shareholders, stakeholders and the county's economy.

Chart 1 – SRA Fire Causes, 2003

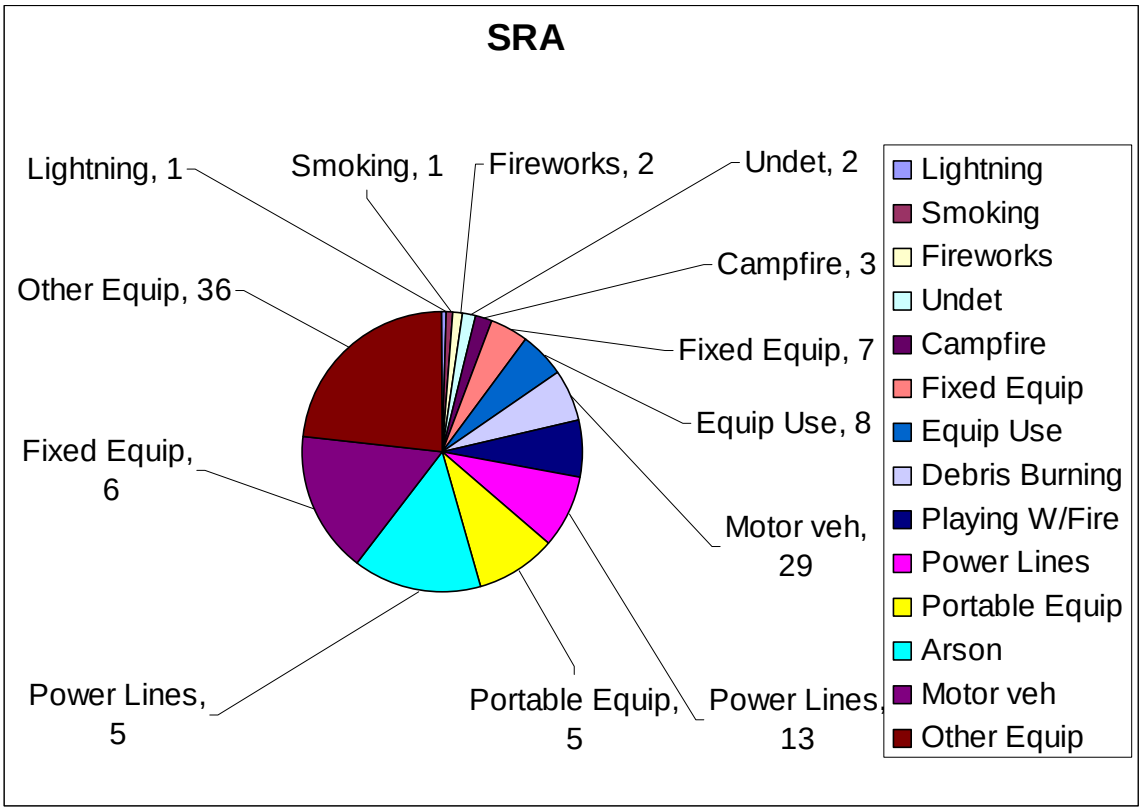


Chart 2 – LRA Fire Causes, 2003

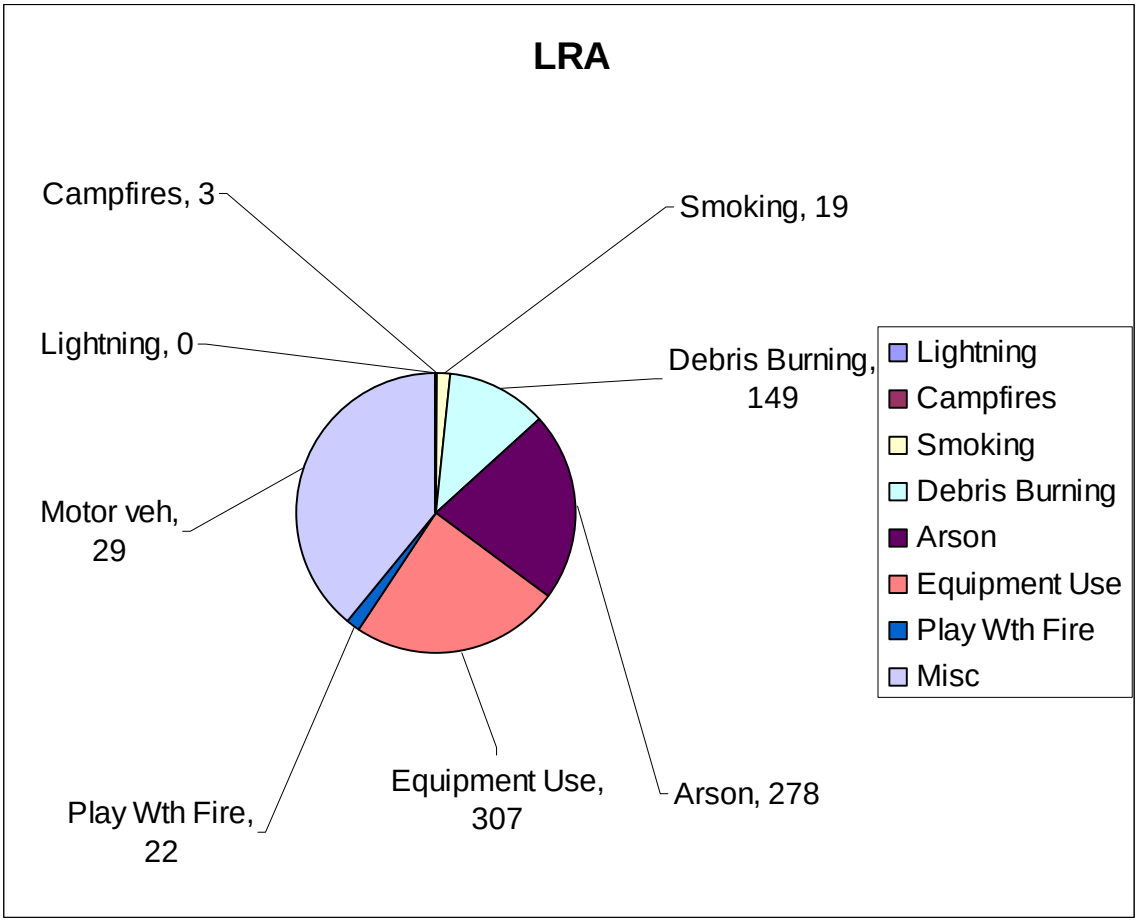
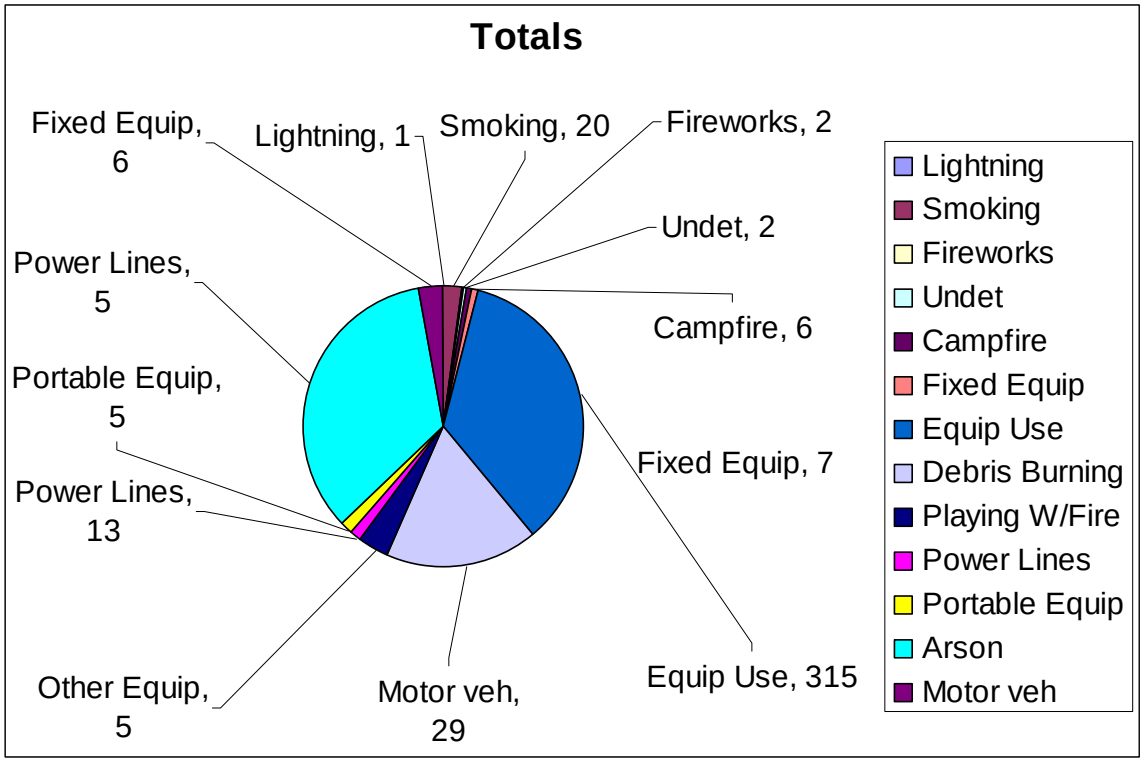


Chart 3 – Total Fire Causes, 2003



Fire Prevention Bureau Goals

Based on the previous identified information the fire prevention bureau has adopted the following actions to provide efforts of ignition mitigation to protect property, natural resource loss, and loss of life or injuries.

Protection and Planning:

The protection and planning section will continue efforts of plans checking in accordance with National Fire Code Requirements to provide for public safety. School programs and care facilities inspection will continue to be a high priority.

The Public Resource Code 4290 plans check and inspections program will continue to provide homes with a defensible space and construction. This program is essential with the rapid expansion of homeowners into the wildland environment throughout primarily the east side of the unit

Public Information and Education:

The information and education section has shown in previous pages of its ability to touch the lives of many people of all ages. The fire and personal safety message presented is invaluable.
These efforts will continue to be proactive in providing the public with information on how home owners will interface in the wildland. The program will also present home owners with how they too may participate in fire mitigation as a shareholder in the County of Fresno.

Law Enforcement:

The enforcement of forest and fire laws will continue to be proactive in efforts to pursue and prosecute violators of statute. Efforts to reduce the miscellaneous category on the ignition statistics is a two pronged approach. First, fires must be investigated in more detail. This may require some additional education for our line firefighters to assist them in cause and origin investigation. Secondly, our investigation staff must be more proactive in investigation efforts. The next effort to be identified is the ability of the department to collect suppression cost on fires of negligent or criminal nature. Emergency incidents are costly and the ability to collect suppression cost and punitive damages will be aggressively pursued.

Lastly, the law enforcement staff is given the authority and responsibility to identify, investigate and arrest subjects involved in criminal related acts. These incidents will be investigated and documented through proper case management. The management of these cases will be conducted with detail of documentation and proper evidence security.

Finally, given the correct legal circumstances the cases will be actively pursued and prosecuted.

Fire Protection/Planning Statement

1) Mission Statement – The mission of the fire protection/planning bureau is to reduce losses and cost from fire within the Fresno-Kings Unit in both the SRA and LRA by enforcement of applicable fire and public resource code. It is additionally the mission of the bureau to be proactive in its approach to preventing ignition, loss and cost of all types of fires.

2) Priorities – The priority areas for both SRA and LRA are any area, within the unit, with substantial residential and industrial development that has the potential to impact the unit's resources. Although Millerton New Town has the potential to impact the unit's resources, covenant agreements have been recorded for tracts 4968 and 4870 to mitigate the impact.

3) Existing Fire Plan Projects

    1. LRA Water Source Identification: Identification of all available water sources within the LRA for both residential and industrial applications. The project has been in existence for approximately one year. Response from fire station personnel for the requested data has been slow. In addition, the level of importance for this particular project has been low.
    2. Sub Division Fire Protection System Maintenance: Maintain and repair of all fire protection systems, which the fire district required as condition of approval. This project has been in existence for approximately eighteen months and is ongoing. The project has been successful in that the time required to repair systems has been significantly reduced. The project could be improved if a regular schedule for maintenance of the systems is established.
    3. Pressurized Fire Protection System Requirement: Require all fire protection systems in sub divisions to be pressurized rather than a draft system. The project has been in existence for approximately two months. The success of this project will be determined after January 01 when developers are informed that the requirement exists.

4) Potential Fire Plan Opportunities, Needs & Problems – The current planning commission had demonstrated support to improve and make more efficient fire protection systems within the county. Moreover, the commission seems to be open to new and innovative ideas to improve the more traditional mitigation measures in both the SRA and LRA The unit's employees, who are responsible for this program will, therefore, need to make them self available to the

commission as an advisor to these issues. This can be accomplished by regularly attending the planning commission meetings.

5) Prioritization Of Existing And Potential Projects/Opportunities –

    1. LRA Water Source Identification
    2. Pressurized Fire Protection System Requirement
    3. Sub Division Fire Protection System Maintenance

6) Objectives

    Objective #1 – Develop a working relationship with the current planning commission.

    Objective #2 – Begin, on January 01, 2003, requiring pressurized fire protection systems for all subdivisions within the county.

7) The predominant commercial construction in the LRA is industrial warehouses, south of the city of Fresno. This area is centrally located within the state and facilitates commerce both to southern and northern California. Most of the residential construction occurs within the incorporated cities. While residential construction does occur in the county area, the rate at which it occurs is not significant. Construction within the SRA is consistent but not significant.

VI. Action Plan

Unit Goal Statement

The Fresno-Kings Unit goal is to identify and address prefire issues in the CDF DPA, within the boundaries of the Fresno County Fire Protection District and within the boundaries of Fig Garden Fire Protection District, by fully integrating Prefire, Prevention and Vegetation Management.

Unit Action Plan

The Fresno-Kings Unit will apply a three pronged integrated approach to prefire management in the Unit. This approach involves integrating Prefire Engineering, Fire Prevention, and Vegetation Management. Each of these programs has tools that can be utilized to help address prefire issues. By integrating these programs the best tools for the job can be utilized while eliminating duplication of efforts and assigning the limited resources to the highest priority projects. All proposed projects from any of the three programs will be entered into the CDF Prefire Workload Analysis (PWA) Program in order to predict and track costs associated with the project. All proposed projects will also be reviewed by all three (3) programs to determine which resources and tools can be used from the programs to make a complete project.

The Unit Prefire Engineer will collect and analyze data, then with stakeholder input, identify areas of the lowest level of service, highest values of assets at risk in high fuel hazard rankings. The Prefire Engineer will plan and develop projects to address the issues so that they can be considered during the overall Unit priority rankings.

The Unit Fire Prevention Battalion Chief will collect and analyze fire cause data to determine trends and areas of concern. The Unit Fire Prevention Battalion Chief will also provide public information, education, engineering and enforcement resources as needed for various prefire projects. Opportunities to apply Public Resource Code 4290 and 4291 in prefire projects will be identified by the Unit Fire Prevention Battalion Chief. The Unit Fire Prevention Battalion Chief will provide priority areas and plan and develop projects to be considered in the overall Unit priority rankings.

The Unit VMP Coordinator will look at opportunities for vegetation management via prescribed fire, mechanical/hand treatment and forest practice rule application. The Unit VMP Coordinator will also provide environmental review and documentation for prefire projects as well as assist the Unit Prefire Engineer in designing prefire projects. The Unit VMP Coordinator will also be responsible for providing a prioritization of VMP projects to be considered during the overall Unit priority rankings.

The Unit Prefire Engineer will be responsible for collecting the prioritized projects and areas from Fire Prevention, VMP and Prefire Engineering. The Unit Prefire Engineer

will then lead a Unit level review of the submitted priorities and then develop a prioritized list of prefire projects that the Unit administration will consider implementing. The factors that will be considered during the review will be whether or not an individual project or area of concern is being identified as a priority in more than one program and the availability of funding and resources. Since funding of some of the projects will depend on grants, their prioritization will change based on funding availability.

This three-prong approach will also address prefire issues within the boundaries of the Fresno County Fire Protection District and Fig Garden Fire Protection District. The Fresno County Fire Protection District and Fig Garden Fire Protection District has contracted with the California Department of Forestry to provide personnel and management services for the District. Even though the funding sources for the potential prefire projects are different, the resource base is the same and needs to be coordinated so that the highest priority projects receive the limited resources available.

Battalion Fire Management Plans

Battalion level Fire Management Plans are included in Appendix D

Interagency Planning

The Unit Prefire Engineer, VMP Coordinator and appropriate field Battalion Chiefs have been meeting with fuels management personnel of the Sierra National Forest to cooperatively identify and plan for potential prefire projects in the wildland urban interface. During these interagency meetings the participants exchange information about current projects such as GIS data and types of treatments. This information is then used to identify areas that current or proposed projects can be modified to improve the overall protection to the communities at risk in the wildland urban interface.

These meetings have lead to the identification of several areas that cooperative projects could be designed and initiated by CDF and Sierra National Forest.

In the past, meetings have been scheduled with personnel from the Sequoia National Forest, but they have been cancelled for various reasons. Additional effort has been made to establish the same type of working and planning relationship with personnel from the Sequoia National Forest. The formation of the Oak to Timberline Fire Safe Council will help develop the necessary contacts with Sequoia National Forest.

Prefire Priority Areas

The Fire Plan Assessment utilizes Geographic Information System (GIS) data to help determine priority areas for prefire projects. Since the Unit is in the process of the Fire Plan Assessment, only a partial analysis of GIS data has been used to help determine priority areas. For the most part the priority areas have been determined by experience, knowledge and fire history records. The following priority areas were determined through input from Unit personnel and stakeholders. The priorities were determined by reviewing the fire history, the assets at risk, the fuel ranking, potential for a large damaging wildfire and the potential for Prefire projects to address the issues.

- Meadow Lakes Area

The Meadow Lakes area is located along the Auberry Road corridor between the communities of Auberry and Shaver Lake. The area is bound by National Forest land to the north, Highway 168 to the south and east, and the community of Auberry to the west. The area's elevation ranges from approximately 2,000 feet to approximately 4,800 feet. The vegetation ranges from oak woodland and mixed chaparral to mixed conifer. This area includes several residential developments located along Auberry Road. The residential developments consist of approximately 150 dwellings of a mix of seasonal and year-round use. The developments are located along or close to the ridge top of Bald Mountain. This area has a significant fire history and has been threatened by wildfire several times within the last decade. Meadow Lakes has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. This area is identified as a priority area due to its high fuel hazard ranking, high assets at risk and extensive fire history. This area includes the Beal Fuel Break VMP project and Linson Lane VMP project that were conducted in cooperation with the Sierra National Forest. This area has potential for additional cooperative projects with the Sierra National Forest.

- Pineridge Area

The Pineridge area is located just off Highway 168 between the communities of Shaver Lake and Tollhouse. The area is bound by National Forest lands to the east, Highway 168 to the west, Pineridge Subdivision to the north, and Sycamore Creek to the south. The area's elevation ranges from approximately 2,000 feet to approximately 5,600 feet. The vegetation ranges from mixed tall chaparral to mixed conifer. This area includes Cressman Roads and Peterson Mill Road. The area contains four residential developments. The first is the Pineridge subdivision on Cressman Road. This

subdivision consists of approximately 75 residences on 113 parcels. The dwellings are a mix of seasonal and year-round use. The second residential development is along Peterson Mill Road below the Pineridge subdivision. It also contains a mix of approximately 75 seasonal and year-round use dwellings. Both developments are located mid–slope on a south facing aspect. The third subdivision is Shaver Springs. The fourth development is in the Linson Lane area. The Pineridge area is in close proximity to the community of Meadow Lakes, which has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. This area is identified as a priority area due to its high to very high fuel hazard ranking, high assets at risk and stakeholder participation. This area has potential for cooperative projects conducted by both Fresno-Kings Unit and Sierra National Forest.

- Powerhouse Road Area

The Powerhouse Road area is located north of the community of Auberry. The area consists of the Powerhouse road corridor from the San Joaquin River to Auberry. The elevation varies from approximately 700 feet to approximately 2700 feet. The vegetation consists of a mix of tall chaparral and oak woodland. The area is a mix of Federal and private ownerships. This area is moderately developed and has an extensive fire history. Many fires originating from this area spread rapidly and threaten some of the other priority areas such as Meadow Lakes and Shaver Lake Basin. Auberry, which is located in the Powerhouse Road area, has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. This area is identified as a priority area due to its high fuel hazard ranking, high assets at risk and extensive fire history.

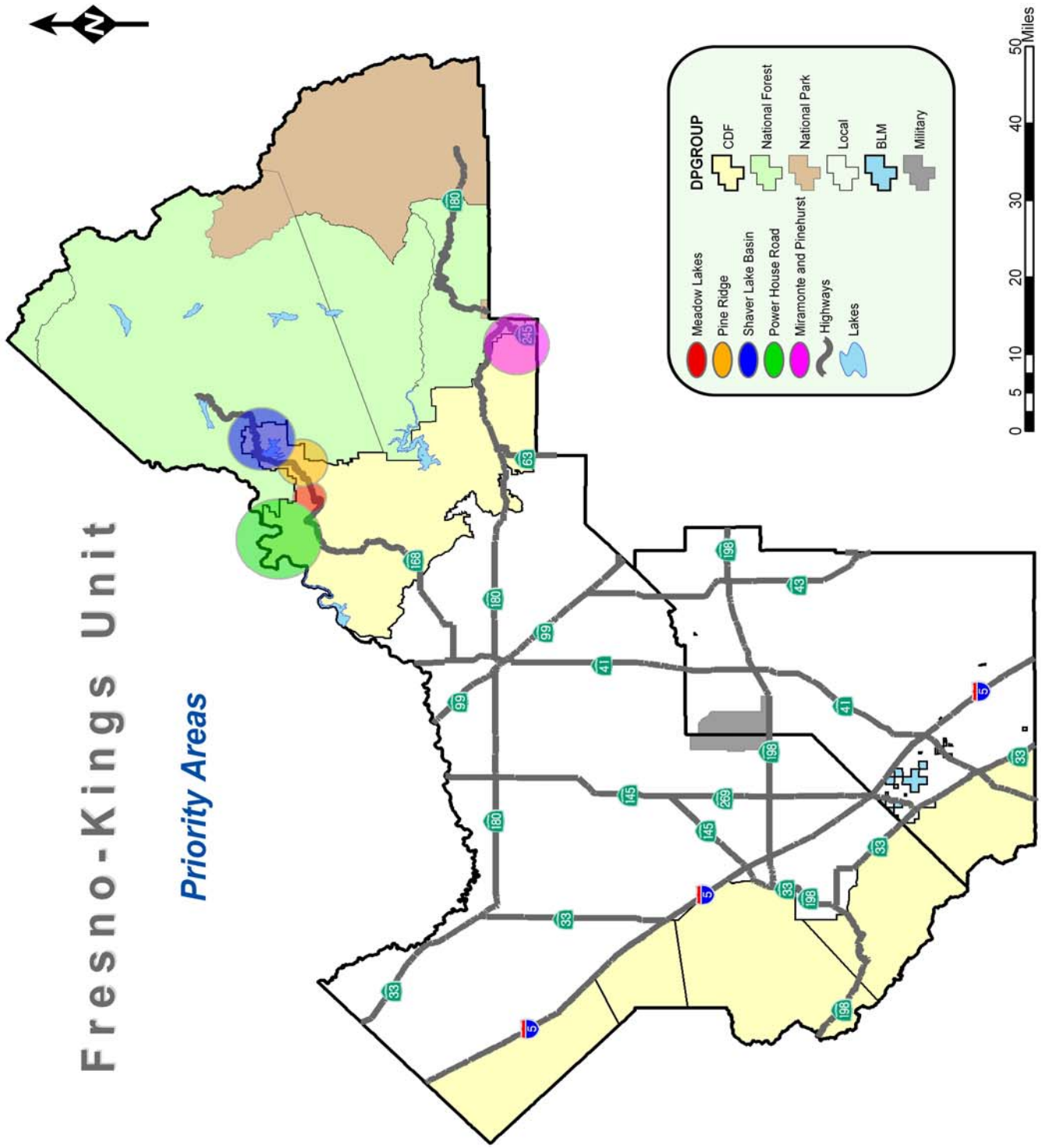
- Shaver Lake Basin Area

The Shaver Lake Basin Area is located along the Highway 168 corridor between the areas of Huntington Lake and Pine Ridge. The area is adjacent to National Forest land and consists of the community of Shaver Lake and the surrounding numerous residential subdivisions. A large percentage of the land is owned and managed by the Southern California Edison Company (SCE). SCE manages their land for timber, water and recreation. One of the management tools that they use extensively is prescribed fire. Hence, the designation of much of the SCE land as fire safe areas for the community of Shaver Lake. The area's elevation ranges from approximately 5,300 feet to approximately 6,600 feet. The vegetation is predominately mixed conifer. This area is experiencing rapid development of subdivisions. A majority of the dwellings are seasonally used and of high value. The area experiences very high recreational use year-round. This area is threatened by wildfires originating from lower elevations such as Pineridge, Jose Basin and Blue Canyon. Shaver Lake has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. This area has potential for cooperative projects between CDF, Sierra National Forest and SCE. This area is identified as a priority area due to its very high fuel hazard ranking and very high assets at risk.

- Miramonte, Pinehurst and Dunlap Area

The Miramonte and Pinehurst area is located in the southeast portion of the Unit. The area includes the communities of Pinehurst and Miramonte. The area is bound by National Forest lands to the east, Sans Baker Road to the west, Tulare Unit to the south, and State Highway 180 to the north. The area's elevation ranges from approximately 1,900 feet to approximately 3,800 feet. The vegetation consists of mixed tall chaparral and mixed conifer. The area is moderately developed. This area has potential for cooperative projects between CDF and Sequoia National Forest. Pinehurst has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. This area is identified as a priority area due to its high fuel hazard ranking and high assets at risk.

Map 6 – Priority Areas



Fire Prevention Priority Areas

Target Area # 1
(Priority 1)

PURPOSE STATEMENT

Target area number one is in Battalion's 11, 12, and 13, which involves the lower elevations of these Battalions. The influencing factors involved are light flashy fuels, housing density, and fire history. Over the last several years fire ignitions have increased due to stakeholders mowing dry weeds and grass when temperatures were high with low relative humidity, in attempt to comply with PRC 4291. Although there were a higher number of ignitions, all were contained within the first burning period. Public education will be the emphasis of efforts to mitigate the ignitions.

OBJECTIVES

1. Solicit stakeholder and community involvement in wildfire mitigation through public education and awareness projects.

2. Encourage fuel reduction to start prior to the hot summer season.

3. Escalate the LE-38 inspection program.

PRESCRIPTIONS

1. Educate stakeholders within their communities through fire safe councils and other social groups.

2. Utilize public education materials provided by the Department through the year.

3. Begin LE-38 inspections prior to the opening of fire season.

Target Area # 2
(Priority 2)

PURPOSE STATEMENT

Target area number two is in LRA Battalion's 17 and 18. Various locations through out these Battalions are experiencing a high number of vehicle fires caused by arson. These

vehicles are stolen, striped and taken to remote areas within this target area and set on fire. These historical ignitions are difficult to manage therefore; the emphasis of efforts must involve other law enforcement agencies.

OBJECTIVES

1. Decrease number of ignitions.

2. Establish contacts with other law enforcement agencies.

3. First in engine companies increase preliminary fire investigation.

PRESCRIPTIONS

1. Post reward posters in communities that the vehicles are being stolen from.

2. Work with allied agencies in developing a multi-agency deterrent plan.

3. Conduct a refresher course on preliminary fire investigation for engine companies. It is the opinion of Fire Prevention investigators, that evidence is being inadvertently damaged during suppression.

Target Area # 3
(Priority #3)

PURPOSE STATEMENT

Target area number three is in Battalion 18 and a small portion of Battalion 17. Intentional ignitions to sheds and out buildings have increased significantly this past year. These building are used by local farmers for the sale of produce and storage.

OBJECTIVES

1. Investigate and arrest the person(s) responsible for igniting these fires.

PRESCRIPTIONS

1. Working with local law enforcement agencies agriculture crime task force, to develop a plan that could be used to investigate these crimes as a joint effort, time and resources will play a vital part in mitigating these ignitions.

Target Area #4

(Priority #4)

PURPOSE STATMENT

Target number four is the current LE-38 program within the unit.

OBJECTIVES

1. Intensify the LE-38 program with the intent to complete all first inspections within the first two months of fire season.

PRESCRIPTIONS

1. In order to accomplish the objective the unit would need to hire inspectors as soon as the season will allow. Inspectors should form a team in lieu of working as individuals. The team concept would ensure that a battalion is completed before moving on to the next battalion. It has been past practice within the unit to pull the inspectors off of the LE-38 program and use them for engine coverage, when this occurs the inspection program is extremely delayed.

Fire Prevention Priority Areas:

Priority #1 - Continue Public Education and awareness by increasing the use of mass media and public programs on a year round bases.

Priority #2 - Provide and assist field battalions with any needs they may have in implementing education and prevention programs.

Priority #3 – Law Enforcement must be allowed to continue the mission of fire investigation, cost collection, issuance of citations, monitor fires causes, and take appropriate action to reduce or eliminate ignitions.

VMP Priority Areas

Priorities for vegetation management projects are based on several issues including; vegetation type, specific ecosystem needs and treatment opportunities. These priorities may change several times a year in response to new projects opportunities or Prefire management needs.

In general, vegetation management priorities will be based on the vegetation type/fuel type involved. Projects involving grass models have a low priority. Projects within the brush models have a medium to high priority based on specific project location. Brush projects located within and/or adjacent to an urban intermix area will have a higher priority than projects located away from intermix areas. Projects within the timber models have a medium to high priority based on specific project location. Timber projects located within and/or adjacent to an urban intermix area will have a higher priority than projects located away from intermix areas.

Specific ecosystem management projects have a floating priority based on the specific project objectives and the vegetation involved. An example of this would be noxious weed treatment. Certain species have a very specific treatment windows and the project's priority would be dependent on treatment window needs, i.e. prescribed burn Medusahead after the curing of the native grasses but prior to the curing of the Medusahead.

Unexpected opportunities can alter vegetation management priorities. As the majority of VMP projects are located on private lands with the cooperation of private landowners, an unexpected request for a project may alter priorities. If a landowner in an area designated for fuels reduction efforts expresses interest in a project, it may move a project in an area not designated for fuels reduction efforts to a lower priority.

Prefire Management Activities

Existing Prefire Projects/Activities

The following projects have been identified as Unit level Prefire Projects/Activities. These projects will require input or assistance from Fire Prevention, Prefire, Vegetation Management or Miramonte Conservation Camp personnel. Additional Prefire Projects/Activities are being implemented by battalion level personnel without further assistance from Unit staff. *Additional information on these projects can be found within Appendix D -Battalion Level Fire Management Plans.*

Roadside Fire Breaks

The Fresno-Kings Unit utilizes and maintains pre-existing fire breaks in several locations in the Unit that have a continuing ignition problem. These locations are primarily in the grass fuel model. Prior to the grasses curing at the start of the fire season, the Miramonte crews install fire breaks. These fire breaks now have a history of not allowing fires to spread beyond the road right-a-ways. The general location of these Prefire structures is listed below:

Sky Harbour Road – Battalion 11
Highway 168 – Battalion 12
Highway 180 – Battalion 13
Sunnyslope on Trimmer Springs Road – Battalion 13

Fire Road Maintenance

The Fresno-Kings Unit has an on-going maintenance program for the existing fire control roads that have been established in the Unit. Unit HFEOs maintain the erosion control structures and grade these roads during the spring months. Several of these roads will require vegetation removal in the near future to maintain the right-a-way and also allow their use as Prefire structures. The roads currently being maintained are listed below:

Beal – Battalion 12
Black Mtn. – Battalion 12
Baker – Battalion 13
Greeley – Battalion 13
White Deer – Battalion 13
Fish Creek – Battalion 13
Hog Mountain – Battalion 13
Hughes Creek – Battalion 13
Hughes Mountain – Battalion 13
Elwood-Kincade – Battalion 13
Badger-Miramonte – Battalion 13
Miramonte Access Road – Battalion 13
Tar Canyon – Battalion 14
Juniper Ridge – Battalion 14
Mud Run – Battalion 14

Currently the Prefire Division is mapping all the fire roads and prioritizing the maintenance of these roads. While prioritizing the fire roads, information from the Unit HFEOs's will be used to determine an appropriate return interval for road maintenance.

Millerton Lake Fire Safe Cabin/Landscape Display

The Fresno-Kings Unit Prevention Bureau in cooperation with the Department of the Interior-Bureau of Reclamation, the State of California Department of Parks and Recreation, California State University Fresno, and a few private companies, have established an educational visitor center at Millerton State Park. At this center there are permanent, living displays of native/drought tolerant vegetation, vegetation utilized by Native Americans, wildflowers, types of irrigation systems, ground covers, and fire safe landscaping. In addition there is a ten by ten-foot structure located within the fire safe

landscaping display to show clearance and safety issues around structures. The Department of Parks and Recreation provides tours through the center for school field trips and other interested groups. The public will have access for self-guided tours of the center after completion. The Bureau of Reclamation, Department of Parks and Recreation, and California Department of Forestry and Fire Protection will provide maintenance for the center. The following fire prevention education will be available at the center:

Fire Resistant Plant Guides
Defensible Space Guidelines
Hazard Reduction Burning Safety
Rural House Addressing
Power Equipment Safety
Spark Arrestor Guidelines
Match and Lighter Safety
Juvenile Firesetter
Seasonal Fire Prevention Messages

Additional funding, through grants, is still being sought to complete descriptive signs, seasonal educational displays, handout materials, fire prevention education materials for teacher packets and materials for completion of the structure.

Tollhouse Roadside Brushing – Battalion 12

This is a joint project between the Fresno-Kings Unit and the Sierra National Forest. The Sierra National Forest brushes Tollhouse road from Mountain Rest Forest Fire Station down to 33702 Tollhouse Road. Miramonte crews brush Tollhouse Road from 33702 Tollhouse Road down to Linson Lane. The project involves clearing brush within 100' of Tollhouse Road then stacking and burning it. CDF has a Burn Boss from the Mountain Rest Station in attendance when burning is to occur. This project is located in the Unit's Pine Ridge priority area.

Greeley Fire Road Brushing – Battalion 13

This project involves the brushing of the Greeley Fire Control Road as a routine maintenance item. At the time the project was initiated, vegetation would rub both sides of an engine as it traveled on parts of the road. Greeley Fire Control Road runs north from the community of Miramonte. This fire control road is located within the Miramonte and Pinehurst Priority Area. There have been two (2) significant fires in the area in the last two (2) years (Millwood Fire 2000 and Highway Fire 2001). The project encompasses approximately nine (9) acres over 2.4 miles of fire road. This project was started in the spring of 2001 with the objective of utilizing the Unit's new chipper rather than piling and burning the cut material. The use of alternatives to burning will become the norm within the Fresno-Kings Unit due to air quality issues within the San Joaquin

Valley Unified APCD. At this time, approximately ¾ of a mile has been completed due to logistical problems of utilizing the Unit's chipper. The primary issue has been difficulty in obtaining personnel to move, operate and supervise the chippers use.

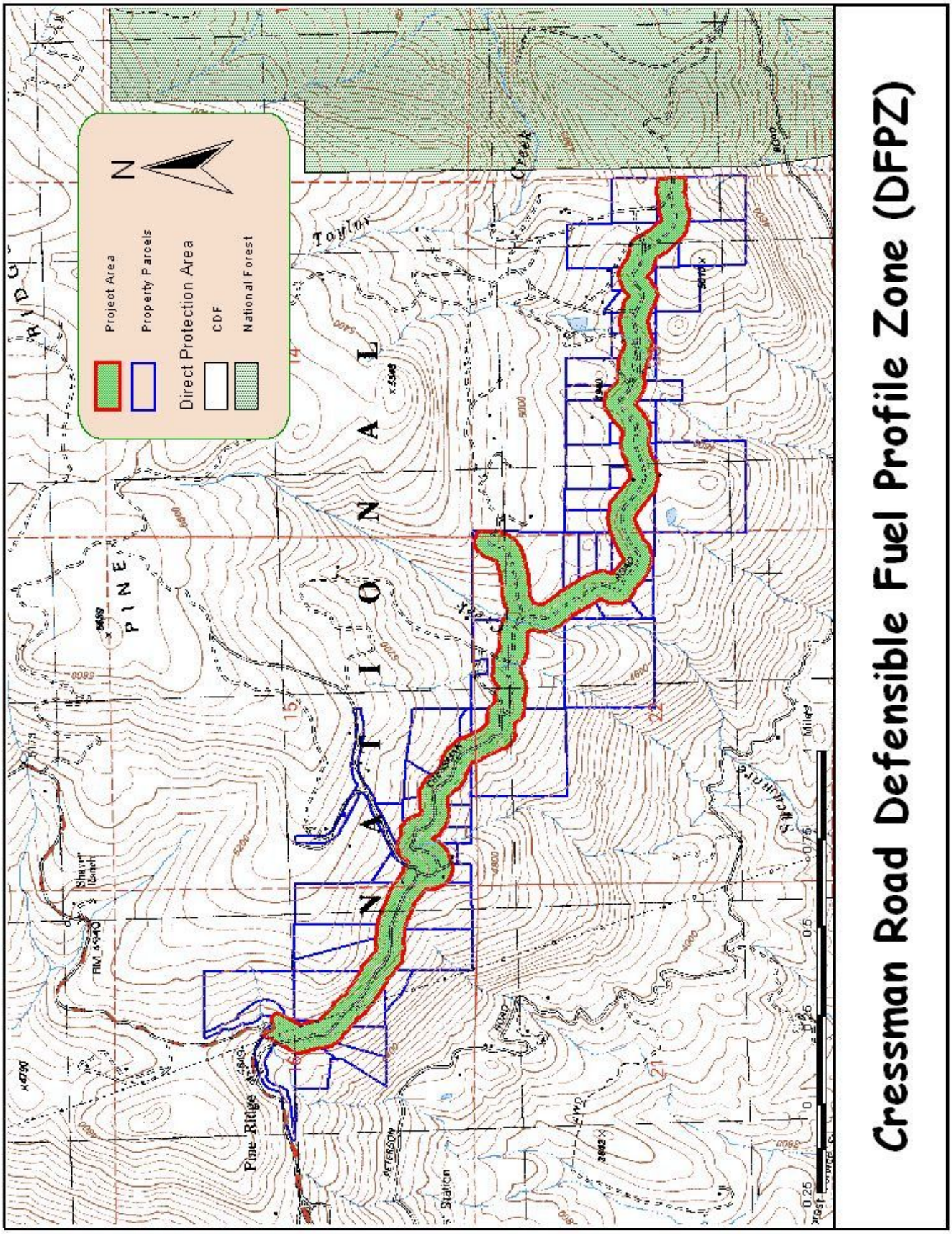
Cressman Road Defensible Fuels Profile Zone – Battalion 12

This project consists of the initial construction of a Defensible Fuels Profile Zone (DFPZ) within 200 feet of either side of Cressman Road from Highway 168 to the Sierra National Forest Boundary, in the Pine Ridge area of Fresno County. The project is located within the Pine Ridge Priority Area for the Unit. This project was developed with input from the Highway 168 Fire Safe Council. The project is designed to improve firefighter and resident safety traveling along a mid-slope, south facing aspect, single lane road that accesses approximately 75 residences on 113 parcels. At project completion, the vertical and horizontal continuity of ground fuels should be broken along approximately 3.4 miles of roadway encompassing 165 acres. Due to the project area being within a conifer vegetation type, it is outside of the VMP process. The CEQA review was completed and approved in March of 2000. Fieldwork on the project began with $3,000 in Fiscal Year 99/00 augmented fuel reduction funding from the State Legislature. It was also funded with a 2001 USDA Wildland Urban Interface grant of $67,786. This grant expired on June 30, 2003. The project also received a 2002 USDA Wildland Urban Interface grant in the amount of $60,930. This grant expired June 30, 2004. Approximately 100+ acres were completed. Work on this project was delayed several months due to limitations on the use of funds to reimbursement Miramonte Conservation Camp for their work on the project. Interpretations and decisions made at the Sacramento level limited the Unit's ability to reimburse crews for work done on grant funded CDF projects. Therefore, approximately $30,000 of the $60,930 received from the 2002 USDA Wildland Urban Interface grant was returned to Sacramento. This project is now considered complete by the Unit. The Unit Prefire Coordinator is now working with landowners to keep the project maintained.

To complement this project a focused PRC 4291 inspection program will be utilized within the Pine Ridge subdivision. This focused inspection program will emphasize personal contact, education and enforcement by local station personnel.

In July of 2004 the Cressman Road Defensible Fuels Profile Zone was tested by fire during the Peterson fire. Details of the incident and the fires interaction with the project are described in the Interaction Report located in Appendix F – Success Stories.

Map 6 – Cressman DFPZ Project



Dogwood Subdivision Fuels Reduction – Battalion 12

Interagency meetings with the Sierra National Forest have identified the Dogwood Subdivision area as a potential project area. The Dogwood Subdivision is located north of Highway 168 between the Pine Ridge area and the Shaver Lake basin, in northeastern Fresno County. This area is in close proximity to the communities of Shaver Lake and Meadow Lakes. Both Shaver Lake and Meadow Lakes have been identified and listed on the National List in the Federal Register as communities at risk from wildfire. Vegetation management projects have been discussed ranging from fuel break construction to general fuels reduction.

The Dogwood Subdivision is located within the Shaver Lake Basin Priority Area. The Subdivision is located mid-slope above the Jose Basin area. There are only two (2) access points into and out of the subdivision. The Jose Basin area is considered a high hazard area due to its high recreation use, fuel complexes and rapid elevation change from 1,500 feet to 6,000 feet. The Sierra National Forest is nearing completion of their environmental review that will allow them to initiate fuels reduction projects within Jose Basin. Larger private landowners in the area have also recently expressed interest in fuels reduction options.

There is an additional opportunity to utilize a focused PRC 4291 inspection program in conjunction with any vegetation management programs developed for this area. This type of focused inspection program would emphasize personal contact, education and enforcement by local station personnel. It is believed that this combination of activities can further heighten the knowledge of area residents not only to fuels reduction, but also to general wildfire safety.

During the spring of 2004, Unit personnel and the Highway 168 Fire Safe Council met with Dogwood subdivision representatives and provided them with an assessment of the wildfire danger in their subdivision. The Dogwood subdivision property owners are becoming aware and concerned with the wildfire danger in their subdivision. All of the parties involved have become engaged in active prefire planning for this project.

Recently a portion of the Dogwood subdivision in cooperation with the Highway 168 Fire Safe Council and the Fresno-Kings Unit applied for and received Proposition 40 Community grant funding to complete fuel load reduction work below the Dogwood subdivision. Currently the Highway 168 Fire Safe Council has a signed agreement with CDF and is working with CDF to complete the Categorical Exemption so work can begin within the next several months.

Peterson Mill Road Fuel Break– Battalion 12

During the Spring and early summer of 2005 the Fresno-Kings Unit conducted a small demonstration project along Peterson Mill Road below Shaver Lake. The Purpose of the

project was to demonstrate to the local landowners what could be done along Peterson Road to help with the local fire issue. The demonstration project could then be used by the landowners to help them visualize a much larger project for the entire road length. The Peterson Mill Road landowners have now successfully obtained a Proposition 40, CDF Community Protection Grant, to treat a section of the road. The project can now be used to help orient the project contractors to what the desired outcome should look like. The catalyst of the Peterson Mill Road Project was the Peterson Fire in July of 2004. *See the Peterson Fire Interaction Report in Appendix F – Success Stories*

RedZone Pilot Project

During the fall of 2004 the Fresno-Kings Unit conducted a pilot project to test the feasibility of utilizing Redzone Software during LE-38 inspections. The Dogwood subdivision in Shaver Lake was selected as the test site. Redzone Software loaned several small handheld computers and provided technical support to the project. The Unit in cooperation with Redzone Software developed a custom questionnaire for the project. Several two person teams were formed and assigned to canvas the subdivision. 90% of the subdivision was covered the first day. One additional day by a single team completed the data collection for the subdivision. At this time the data has been collected but not formally analyzed or discussed in a report. The initial observations indicated that the Redzone Software was easily adapted to the LE-38 inspection process and provided very useful data for Prefire planning as well as for CAD in the Emergency Command Center. As time allows a final report will be created to demonstrate some of the capabilities of the Redzone Software.

Proposed Prefire Projects/Activities

Initiation of Additional Fire Safe Council – Battalions 14

It is felt that a traditional Council may not work in the western portion of the Unit. Within this area, there are not the community centers that exist in the eastern portion of the Unit. This area primarily contains large ranches and lands managed by BLM. This portion of the Unit contains several existing watershed and recourse conservation groups such as Stewards of the Arroyo Pasajero Coordinated Resource Management Planning (CRMP) group, Panoche/Silver Creek CRMP and the Westside Resource Conservation District. It is felt that these groups already have the participation of most major landowners in this portion of the Unit. With an increased CDF participation in these existing stakeholder groups, they may function as quasi Fire Safe Councils.

Mower Caused Fires – Unit Wide

Battalion Chief Jim Smith identified a problem with mower caused ignitions within his Battalion. Chief Smith proposed the following program which is applicable Unit wide. Within the last several fire seasons homeowners attempting to meet 4291 clearances have caused multiple fires with mowers. The mower caused fires have been caused by the lack of functioning spark arrestors and the mower blades striking rocks.

In order to address this problem the Battalion has come up with an action plan. The Battalion will ask for assistance from the Prevention Bureau in developing a public education program that will include:

Press releases
Roadside signs
Information flyers to repair and mower shops
Bi-lingual flyers to be provided to all landscaping companies and companies doing lot clearing work.

The public education program will address the need for the 4291 clearance yet at the same time provide guidelines and information about how to prevent the ignition of fires while creating the hazard clearance.

The Battalion will also create and distribute an informational flyer that can be provided to vendors and repair shops informing them of the requirements of Public Resource Codes 4442, 4442.5 and 4443.

Working with the Fire Prevention Bureau, the Battalion would like to see an increased enforcement response to address the problem such as:

Focused LE-38 Inspections on equipment
Citations for mower caused fires
Cost Collection for mower caused fires

Home Addressing Project – Unit Wide

An ongoing problem with the location and display of home addressing has been identified within the DPA of the Fresno-Kings Unit, the Fresno County Fire Protection District and the Fig Garden Fire Protection District. Several individual Battalions are designing and attempting to implement programs to address this issue. In order to reduce duplication of effort and produce a consistent message, a Unit level project is proposed to address poor or nonexistent home addressing which is a contributing factor to delays in response times. Several possible techniques to address the issue have been identified, they include:

Local station personnel providing presentations to homeowner associations on the importance of proper addressing.

Mailing and/or delivering fliers explaining the importance of posting legible addresses.

Insert fliers into billings from local public utilities districts serving areas.

Enlisting the help from schools, either as a school project or after school activity.

Providing reflective home addresses as a fundraiser for Paid Call Firefighter Companies within Fresno County Fire Protection District and the Fig Garden Fire Protection District.

Ensuring Fresno County Building Inspectors are checking home addressing prior to signing the final on new construction.

Roadside Vegetation Control in Cooperation with Caltrans, Fresno and Kings Counties

Both the California Department of Transportation and county road departments modify vegetation along roads for safety and maintenance reasons. This vegetation modification can act as a Prefire structure such that it prevents ignition or limits fire spread. A project is proposed to establish a closer link with Fresno and Kings counties' road departments as well as Caltrans to determine their priorities for roadside vegetation modification and how they can be integrated into our needs for Prefire management. An anticipated outgrowth of this project would be to establish a closer relationship that could assist all agencies during wildland fire control operations.

Fire Road Land Use Agreements – Unit wide

Previous Prefire Management Plans have identified that some landowner agreements for historically maintained Unit fire roads could not be located. A project is proposed to locate and up date, as needed, landowner agreements for Unit fire roads. As part of this project, Battalion Chiefs would evaluate the need for new fire roads and/or the retirement of existing fire roads.

Beal Fuel Break Maintenance – Battalion 12

The Beal Fuel Break is located in the Pine Ridge area of Fresno County. It follows the Beal Fire Road between Auberry Road and Highway 168. The fuel break is a segment of the historic 650 mile long Ponderosa Way Fuel Break that was constructed by the Civilian Conservation Corps in the 1930's. Today the fuel break is an interagency

structure that is maintained jointly by the Fresno-Kings Unit and the Sierra National Forest. The approximately 500 acres of private land on 88 parcels were last maintained under a VMP contract in 1995. It is in need of maintenance again to maintain its effectiveness.

The Beal Fuel Break is located within the Meadow Lakes Priority Area. It provides protection to the intermix area along Beal Fire Road and the Meadow Lakes and Bald Mountain subdivisions located further up slope. This project helps provide protection to the community of Meadow Lakes, which has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. The fuel break has been successfully used in the past during suppression efforts and will be needed again. It was last utilized in suppressing the Highway Fire of 2000. *For additional information see Appendix C - Interaction Report for The Highway Fire (00FKU008628) and The Beal Fuel Break (Rx 4-FKU-007) August 13-18, 2000.* The Unit's fire history shows at least 25 major fires in the general area of the fuel break since 1917.

In conjunction with maintenance on the fuel break, a focused PRC 4291 inspection program will be utilized in the area. This focused inspection program will emphasize personal contact, education and enforcement by local station personnel. It is believed that this will further heighten the knowledge of area residents not only to fuels reduction, but also to general wildfire safety.

Due to availability and travel time issues for use of Miramonte Conservation Camp crews, alternative methods of treatment and funding are presently being researched for the needed maintenance. During the fall of 2003 the Highway 168 Fire Safe Council took interest in this project and submitted a proposal for Federal grant funding. The proposal wasn't successful but will most likely be resubmitted as additional funding sources are identified.

Meadow Lakes Fuel Break – Battalion 12

This is a new fuel break proposed in the Pine Ridge area of Fresno County. The fuel break would stretch approximately two (2) miles from Auberry Road southeast, down slope of Meadow Lakes subdivision, to Snow Lane in Mile High subdivision. This location is upslope of the Beal Fuel Break and extends further north than the Beal.

The Meadow Lakes Fuel Break would be located within the Meadow Lakes Priority Area. It would provide specific protection to both the Meadow Lakes and Bald Mountain subdivisions from fire approaching from the west. Meadow Lakes has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. This project would provide a much needed secondary line of defense after the Beal Fuel Break. The Unit's fire history shows at least 25 major fires in the general area of the proposed fuel break since 1917.

In conjunction with the construction of this fuel break, a focused PRC 4291 inspection program would be utilized in the area. This focused inspection program would emphasize personal contact, education and enforcement by local station personnel. It is

believed that this would further heighten the knowledge of area residents not only to fuels reduction, but also to general wildfire safety.

Due to availability and travel time issues for use of Miramonte Conservation Camp crews, alternative methods of treatment and funding are presently being researched for this project. This is another project that the Highway 168 Fire Safe Council has interest in. The Unit will pursue planning and developing this project while the Highway 168 Fire Safe Council identifies potential funding sources.

Meadow Lakes North Extension (Sugarloaf) Fuel Break – Battalion 12

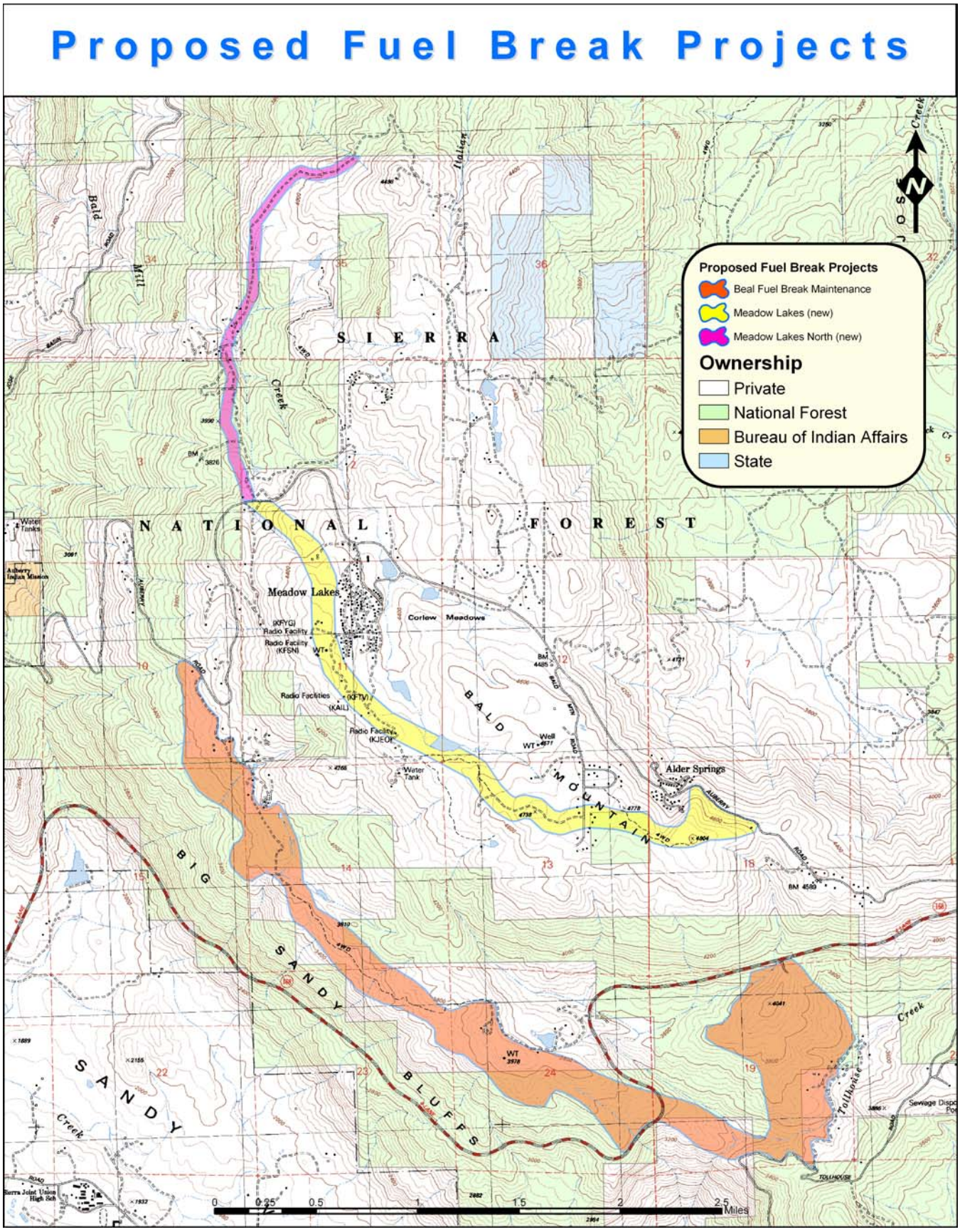
This is a new fuel break proposed in the Pine Ridge area of Fresno County. This project would be a logical extension of the proposed Meadow Lakes Fuel Break. The fuel break would stretch approximately 1 ½ miles from Auberry Road north to the Sierra National Forest DPA boundary. This project would be an interagency project with the Sierra National Forest as a large portion of the project area is on National Forest lands.

The Meadow Lakes North Extension (Sugarloaf) Fuel Break would be located within the Meadow Lakes Priority Area. It would provide specific protection to intermix homes located along the rim of the San Joaquin River Canyon on Ponderosa Way (Sugarloaf), Sweets Mill and Acorn Way. It would also provide additional protection to the Meadow Lakes and Bald Mountain subdivisions from fire approaching out of the San Joaquin River Canyon. Meadow Lakes has been identified and listed on the National List in the Federal Register as a community at risk from wildfire. Portions of the final control lines for the 1989 Powerhouse Fire are located along the route of this proposed project. In addition, the Unit's fire history shows at least 25 major fires in the general area of the proposed fuel break since 1917.

In conjunction with the construction of this fuel break, a focused PRC 4291 inspection program would be utilized in the area. This focused inspection program would emphasize personal contact, education and enforcement by local station personnel. It is believed that this would further heighten the knowledge of area residents not only to fuels reduction, but also to general wildfire safety.

Due to availability and travel time issues for use of Miramonte Conservation Camp crews, alternative methods of treatment and funding are presently being researched for this project. This is another project that the Highway 168 Fire Safe Council has interest in. The Unit will pursue planning and developing this project while the Highway 168 Fire Safe Council identifies potential funding sources.

Map 7 – Proposed Fuel Break Projects



Potential Prefire Projects/Activities

Development Conditioning Project

This would be a Unit wide project, within the SRA. At this time, it would primarily apply to Battalion 4311 and Battalion 4312. The Shaver Lake Basin of Battalion 4312 will be used as an example.

Since the early 1980s, the Shaver Lake Basin has seen and continues to see subdivision development. These developments are all located within the SRA. The County of Fresno has conditioned many of these developments with emergency access and/or fuel modification requirements. These emergency access roads and fuel modification requirements have been required over a space of approximately 20 years and many separate and distinct subdivision tract maps. There is no master document or map that references conditioned fire protection requirements within the Shaver Lake Basin.

The lack of a master fire protection document for the Shaver Lake Basin produces two (2) primary issues. The first is that it is difficult to condition new developments for wildland fire protection issues i.e. access and fuel modifications, because no one has a clear picture of cohesive access or fuel modification goals for the Shaver Lake Basin. The second issue is that many of the conditioned access roads and fuel modification zones have not been constructed and/or are not being maintained. Due to a lack of information on locations and requirements, CDF has insufficient information to inspect these conditioned requirements and to achieve usability of the conditioned structures.

A project is proposed to coordinate with the County of Fresno to better address wildland fire protection issues, as they relate to development conditioning, within the SRA. Historic subdivision conditioning requirements would be identified and consolidated into a master document. A mechanism would be identified to ensure the master document is up-dated as new developments are approved. Existing conditioned requirements would be inspected and deficiencies identified. The responsible party would be required to correct deficient structures.

Existing Vegetation Management Projects

Currently there are no existing traditional Vegetation Management Projects in the Unit. The following project is stand alone project related to vegetation management. While it may have Prefire management benefits, i.e. fuels reduction, it is not an integrated Prefire project.

Noxious Weed Management – Battalion 11

During the summer of 2001, a large landowner in the Millerton area contacted the Fresno-Kings Unit requesting assistance with control of the noxious weed (grass) Medusahead. One of the preferred control methods is late spring burning of the species. Medusahead dries latter in the season than other range grasses. After further examination of the landowner's property, it was determined that the infestation had already spread to multiple other landowners including: private individuals, Millerton State Recreation Area, Brighten Crest subdivision. In cooperation with the Natural Resources Conservation Service (NRCS) and the Sierra Resource Conservation District (Sierra RCD), a public meeting was held on September 11, 2001 to discuss the issue and other control methods. As one would expect, turnout that day was very low and a second meeting was held on Feb. 7, 2002. At this time, University of California Cooperative Extension (UC Extension) has under taken a three (3) year research project evaluating treatment options for the weed (prescribed fire, mechanical treatment and chemical treatment).

The Fresno-Kings Unit is providing assistance to UC Extension during their research project. Over the three year research project, the estimated cost of CDF assistance to UC Extension is $1,718.25 or $572.75 per year. At this time additional prescribed burning needs related to individual landowner treatment needs is anticipated to be handled through project burn permit issuance.

Fiscal Framework

The objective of the California Fire Plan is to reduce the total costs and losses from wildfire in California. The idea proposed by the California Fire Plan was to allocate some resources to this objective and fund "additional front-end investments". The resources have been allocated but the CDF funding for the investments has disappeared. Due to the current economic situation of the State, CDF funding probably won't be reappearing for a long time. Fortunately, funding opportunities from the Federal Government have recently been available via grants.

Most of these federal grant funds come with many requirements. CDF also has their own set of requirements and the requirements change over time. Within CDF, the biggest problem with obtaining any type of grant funding for prefire types of projects is the lack of a streamlined process for distributing the funds to the Unit from Sacramento.

The Fresno-Kings Unit is changing the structure of the current fiscal framework in order to streamline the process of obtaining grants and funding projects on the ground in a timely matter. This change involves the use of the Highway 168 Fire Safe Council as the grant administer instead of CDF. Since the Highway 168 Fire Safe Council has obtained its non-profit status and has hired a coordinator they can now obtain and administer grants to fund prefire types of projects. This has helped eliminate the "red-tape" and

associated delays with administering grants through CDF. The Unit has provided support and "soft" match as a partner with the Highway 168 Fire Safe Council in obtaining the grants. The Unit is using this prefire management plan to help the Council identify priority areas and design prefire projects to address the situation at hand. This creates a win-win situation in which we have the tools to identify projects and design project proposals and the Council has the means of efficiently administering the grant funding for the project. We have created this type of partnership in order to be successful at completing prefire projects and improving the fire protecting in the local communities. The Fresno-Kings Unit is partnering with the Council and has successfully pursued and received grant funding for several prefire projects in the Unit as outlined in the existing prefire projects section of this plan.

Prioritization of Unit Prefire Projects

The prioritization of the Unit level prefire projects will occur at the administrative level. The criteria for prioritizing the projects are:

- The project is within an area that has been identified as a priority area in more than one of the programs (Prefire, Prevention & Vegetation Management). A project that is within an area that has been identified as a priority area in all three programs will have receive a higher prioritization than a project that is only within two program priority areas.

- The project provides at least part of the solution to an identified problem or issue.

- The project is a cooperative project with Sierra National Forest, Sequoia National Forest or any other agency or stakeholder group such as the Highway 168 Fire Safe Council.

- The project funding is budgeted or grant funding is available. Prioritization based on funding has to be flexible and allow the Unit to take advantage of funding as it becomes available.

- The project is achievable.

A review of the Unit level prioritization will occur anytime a new project is proposed or new funding becomes available.

Appendix A - Fresno-Kings Unit Facts and Figures

Fresno County

California Department of Forestry and Fire Protection (CDF)
Fresno County Fire Protection District under contract with CDF
Fig Garden Fire Protection District under contract with CDF

General Information
Area (County):3.85 million acres
Population (County): N/A
Population Growth (County): N/A
Assessed valuation (Unincorporated): N/A
Land ownership: Private – N/A Public – N/A

California Department of Forestry and Fire
State Responsibility Area (SRA): 795,650 acres
Population: 14,413
Housing Units: 7152
ISO Ratings: 9
CDF Direct Protection Area (DPA): 923,619 acres
USFS(DPA): 988,697 acres
Population: 14,113
Housing Units: 6765
ISO Ratings: 9

Fresno County Fire Protection District
Area served: 1.64 million acres
Population: N/A
ISO Ratings: 5 or 9

Fig Garden FPD
Area served: 443 acres
Population: N/A
ISO Ratings: 5

FY 02/03 Budget
Fresno County FPD: $11 million
Fig Garden FPD: $655,000
CDF: $5.5 million

Personnel
149 Permanent
111 Seasonal and Limited Term
275 Paid-Call Firefighters (PCF)
50 Volunteers in Prevention

CDF (State) Fire Protection
1 Emergency Command Center
1 Conservation Camp (CDC) w/ 4 crews
4 Field Battalions
8 Fire Stations
12 Engines (plus one reserve)
2 Bulldozer/Transport Units
1 Airbase w/ 2 Air Tankers and 2 Air Attacks
1 Mobile Kitchen Unit
1 Mobile Communications Unit

Fresno County FPD
21 Fire Stations (13 full time staffed, 7 PCF Staffed)
21 Engines (plus 8 reserve engines)
1 OES Engine
7 Water Tenders
1 Rescue
5 Patrols

Fig Garden FPD
1 Fire Station
1 Engine (plus 1 reserve engine)

2001 Emergency Activities Combined
Fire Responses: N/A
EMS Responses: N/A
Other:
Total Calls: N/A
Five Year Average: N/A

2001 Conservation Camp
Emergency & Project Activities
1,442 Project & Firefighting Hours

Five Year Average: N/A

Appendix B - Highway 168 Fire Safe Council Stakeholder List

Residents of Northeast Fresno County
Pine Ridge Property Owners Association
Ridge Top Property Owners Association
Music Creek Property Owners Association
Dogwood Property Owners Association
California Dept. of Forestry and Fire Protection
United States Forest Service, Sierra National Forest
Fresno County Fire Protection District
Huntington Lake Volunteer Fire Department
Big Creek Volunteer Fire Department
Shaver Lake Volunteer Fire Department
Bald Mountain Volunteer Fire Department
Auberry Volunteer Fire Department
Southern California Edison Company
Pacific Gas and Electric Company
Fresno County Office of Emergency Services
Fresno County Red Cross
Yosemite/Sequoia RC&D
Millerton Area Watershed Coalition

Appendix C – Fire Plan Data Collection Procedure

7100 - FIRE PROTECTION PLAN "FIRE PLAN"
- General

To meet the objectives of the California Fire Plan, fire incident locations and fire perimeters must be collected in a format that is compatible with Geographic Information System (GIS) based software. The following procedures will apply for the collection of all SRA vegetation fire data.

The Incident Commander is responsible for the following documentation:

1. For all SRA vegetation fires less than ten (10) acres, provide the latitude and Longitude of the fire origin.

    A. Utilizing a handheld GPS unit, determine the Latitude and Longitude of the origin and E-mail it to the Prefire Engineer at Sanger Headquarters. Include the incident name, incident number, fire number, date, cause and report maker for each fire.

    OR

    B. If unable to utilize the GPS unit for determining the Latitude and Longitude, draw the origin on a topographic map. Submit a photocopy of the topographic map showing the fire origin to the Prefire Engineer. Label the map with the quadrangle map title, incident number, fire number, date, cause and report maker for each fire. It is acceptable to include more than one fire on each map as long as they are clearly identified.

2. For all SRA vegetation fires ten (10) acres or larger, provide a fire perimeter and fire origin location in latitude and Longitude.

    A. Utilizing a handheld GPS unit, determine the Latitude and Longitude of the origin and fire perimeter, and E-mail it to the

Prefire Engineer at Sanger Headquarters. Include the incident name, incident number, fire number, date, cause and report maker for each fire.

OR

B. If unable to utilize the GPS unit for determining the Latitude and Longitude of the origin and perimeter, draw them on a topographic map. Submit a photocopy of the topographic map showing the fire origin and perimeter to the Prefire Engineer. Label the map with the quadrangle map title, incident number, fire number, date, cause and report maker for each fire. It is acceptable to include more than one fire on each map as long as they are clearly identified.

Utilizing the handheld GPS unit is the desired method for collecting all SRA vegetation fire data. Fire data is to be collected year-round irregardless of fire season dates.

For additional information or training on how to collect fire data with the GPS unit and mapping software contact the Prefire Engineer at Sanger Headquarters.

Appendix D - Interaction Report for The Highway Fire and The Beal Fuel Break

INTERACTION REPORT

THE HIGHWAY FIRE (00FKU008628)

AND

THE BEAL FUEL BREAK (Rx 4-FKU-007)

AUGUST 13 - 18, 2000

BACKGROUND

The present day Beal Fuel Break is a segment of the historic 650 mile long Ponderosa Way Fuel Break that was constructed by the Civilian Conservation Corps in the 1930's.

Today, the Beal Fuel Break is cooperatively maintained by individual landowners, the U.S.D.A. Forest Service and the California Department of Forestry and Fire Protection.

The Beal Fuel Break ranges in size from 100 to 300 feet in width and is located on both private property and National Forest lands. Within this area, selected vegetation is removed in such a way as to break the horizontal and vertical continuity of wildland fuels. The maintained portion of the Beal encompasses 3,000 acres, with 2,500 acres on National Forest lands and 500 acres on 88 private parcels.

The last organized maintenance activities on the Beal occurred in 1995. This maintenance was enthusiastically accepted by private landowners due to the 1994 Four-Lane Fire, which burned 204 acres down slope of the Beal. On private lands, maintenance consisted of inmate crews hand cutting and piling vegetation, followed by burning of the piles. On the National Forest lands, a combination of inmate crews and mechanical equipment was used to pile the vegetation which was later burned.

PROJECT COSTS

Based on the VMP contracts the 1995 maintenance of the Beal cost the following:

	CDF	LAND OWNERS	USFS	Total
PERSONNEL	18,033	18,052		36,085
EQUIPMENT	43,149*	1,940		45,089
SUPPLIES	230**			230
TOTAL	$ 61,412	$ 19,992	$149,000	$ 230,404***

* These funds cover use charges for crew carrying vehicles, chainsaws and replacement chains.

** These charges cover consumable supplies, i.e. vehicle fuel, saw fuel, saw oil, burn fuel, hand tools, gloves and other miscellaneous items.

*** If the cost of budgeted personnel time is removed from the total, it is estimated that this project cost the State $43,379 in operations and expense dollars.

COST EFFECTIVENESS

The estimated total cost of the 1995 Beal maintenance was $230,404. This includes costs to individual landowners, the U.S.D.A. Forest Service and the Department of Forestry and Fire Protection. Based on a 3,000 acre project size, the maintenance cost $77 per acre. Looking only at the privately held 500 acres, the maintenance cost $163 per acre total or $87 per acre in State operations and expense dollars.

The cost estimates for the recently suppressed Highway Fire 00FKU008628 (08/13/00-08/18/00) are $913,000. Based on a fire size of 700 acres, this fire had a per acre suppression cost of $1,304.

The Four-Lane Fire 94FKU007660 (07/30/94-08/02/94) cost $1,224,376 to suppress. Using a three percent interest rate compounded annually, this cost inflates to $1,461,969 in year 2000 dollars. Based on a fire size of 204 acres, this fire had a present day per acre suppression cost of $7,167.

OTHER CONSIDERATIONS

Based on available fire history information, there have been 25 major fires that have burned in the vicinity of the Beal Fuel Break since 1917. Most of these fires burned before significant numbers of homes were constructed in the area. The dates these fires burned and their approximate acreage are as follows:

Fire Date	Acreage
1917	918
1917	99
1927	6,271
1927	95
1928	2,264
1928	160
1929	9,024
1930	2,308
1931	7,166
1936	107
1949	125
1950	106
1955	251
August 23, 1955	317
1964	179
1968	15
June 10, 1985	242
July 15, 1985	37
July 23, 1988	176
July 28, 1989	11,802
November 6, 1990	20
October 2, 1992	22
June 26, 1993	113
July 30, 1994	204
August 13, 2000	700

The increasing number of homes located within the wildland intermix cause fire suppression costs to increase significantly. The increased cost is a factor of firefighting resources being diverted to protect homes rather than suppressing the fire. As a result, fires grow larger in size and additional equipment is needed to suppress the wildfire.

As described below, due to the increasing number of homes within the wildlands, budgetary constraints and crew availability, fuel reduction projects are becoming increasingly difficult to conduct.

1) It is extremely difficult and time consuming to convince formally urban residents that vegetation removal is needed to reduce the threat of catastrophic fire.

2) It is extremely difficult and time consuming to get neighbors to reach a consensus on the best way to conduct fuel reduction projects.

3) With the reduction in facilities able to take biomass material and the tightening air quality regulations, it is extremely difficult to find ways to dispose of unwanted vegetation.

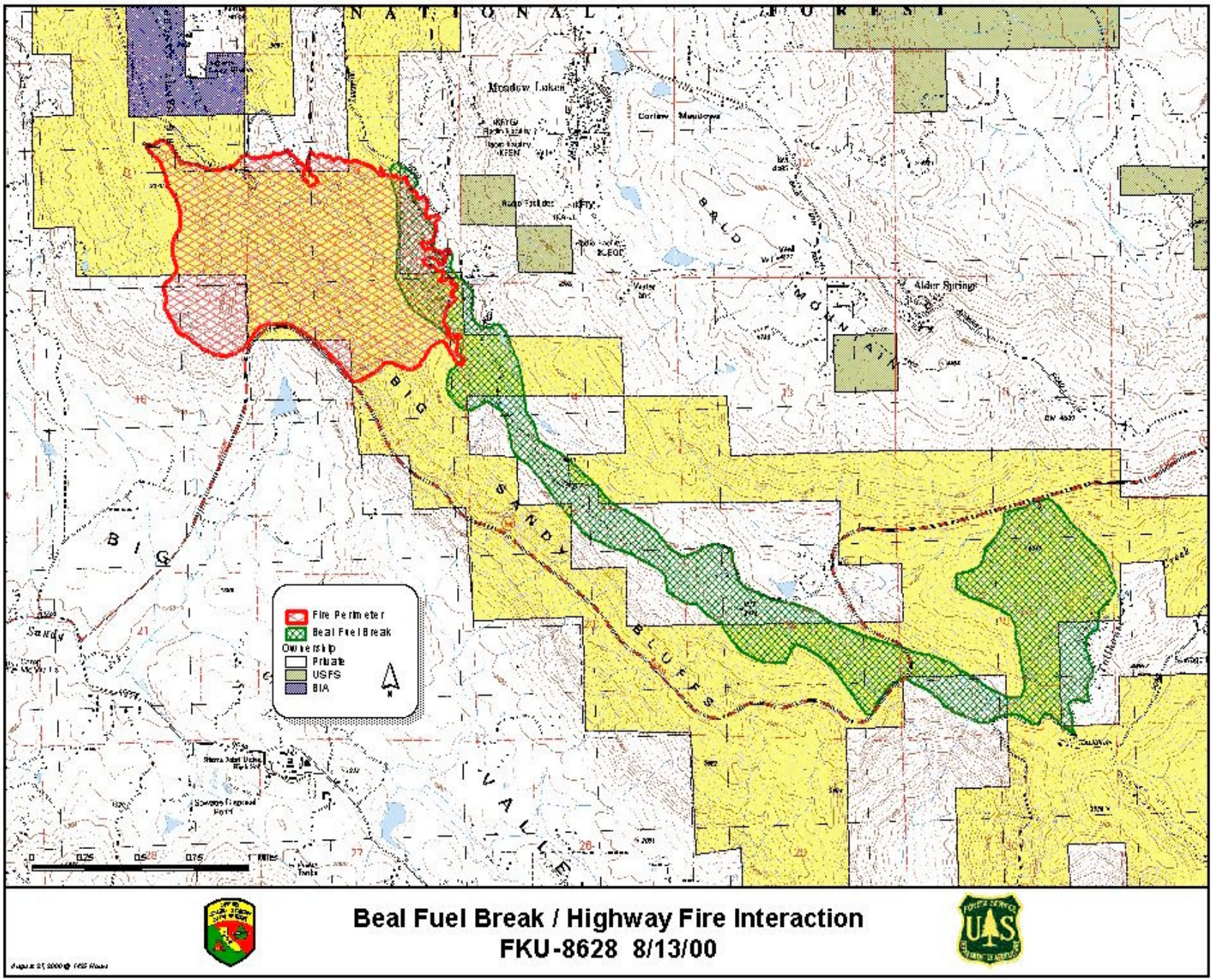
4) Additional costs are frequently encountered that impact fuel reduction projects. An example is the proposed Prescribed Burning Fee that the San Joaquin Valley Unified Air Quality Air Pollution Control District is set to adopt in September. The fee applies a charge of $7.92 per acre of area treated through prescribed burning. This applies to both broadcast and pile burning. If this fee had been in place in 1995, when the Beal was last maintained through piling material and burning it, the fee payable to the Air Pollution Control District would have been $23,760.

5) Through the Vegetation Management Program (VMP) CDF Units are reimbursed $5 per acre for projects like fuel break construction. This reimbursement is intended to cover unusual expenses of the Vegetation Management Program beyond normal personnel time and equipment use. Using the Beal example above, the air quality fee alone would impact the Unit's budget by $8,760, *after* the $5 per acre reimbursement.

6) Maintenance on the Beal is generally done by inmate fire crews. The closest crews to the Beal are from Fresno-Kings Miramonte Conservation Camp. Due to the Camp's location, these crews are only able to provide three to four hours of fieldwork due to travel time. This greatly increases the time it takes to complete a project. Contract crews that do fuel reduction projects are available. However, without funding outside of the normal budgetary process, i.e. fuel reduction grant money, CDF Units can not afford their cost. A California Conservation Crew would cost CDF approximately $1,200 a day on a fuel reduction project.

CONCLUSION

On a per acre basis, fuel reduction projects are significantly more cost effective than extended attack fire suppression activities. However, fuel reduction projects are becoming increasingly difficult to conduct.



Beal Fuel Break / Highway Fire Interaction
FKU-8628 8/13/00

Appendix E - Battalion Level Fire Management Plans

Fresno-Kings Unit

Battalion 4311 Fire Management Plan
Year 2005

I. Mission Statement:

The Battalion's fire Prefire Management Program uses the systematic application of risk assessment, fire safety, fire prevention and fire hazard reduction to reduce wildland fires and costs of suppressing fires.

The overall goal is to reduce total costs and losses from wildland fires in Battalion 11 by protecting assets at risk through focused prefire management prescriptions for hazards and risks by blend fire prevention engineering, education and law enforcement programs that ultimately result in increasing initial attack success.

II. Priority Areas:

- Powerhouse Road Area

  The Powerhouse Road area is located north of the community of Auberry. The area consists of the Powerhouse road corridor from the San Joaquin River to Auberry. The elevation varies from 700 to 2700 feet. The vegetation consists of a mix of predominately tall chaparral and oak woodland. The area is a mix of US Forest Service and SRA lands. This area is moderately developed and has an extensive fire history. Many fires originating from this area spread rapidly and threaten some of the other priority areas such as Meadow Lakes and Shaver Lake Basin.

- Millerton Lake Recreation Area

  The Millerton Lake Recreation Area is located north of Millerton Road from the Millerton Dam to Wellbarn Road along the San Joaquin River. The elevation varies from 500 feet to 2300 feet. The vegetation consists of a mix of grassland, live-oak woodland, and Blue Oak-foothill pine woodlands. The area is moderately developed and has an extensive fire history. Combined with earlier developments that do not meet current SRA fire safe standards the area is designed for disaster. Compounding effective fire control is the need to be sensitive to alternative management practices that emphasize light hand on the land fire control practices due to the numerous rare, endangered, and threatened plant species in the

area. In addition the need to meet State Park and Foothill Nature Conservancy fire management objectives could lead to the rapid spread of fires within the area.

III. Existing Fire Plan Projects:

1) Mandated Programs:

Burning Permit Issuance/LE-38 Inspection Program/Chainsaw Spark Arresters Program

Inspection priority for this season will be to inspect those properties that were not in compliance last season and seek resolution to bring them in to conformance.

Targeted inspection area will be Sky Harbour, Valerie Meadows, and Morgan Canyon.

A targeted 4290 inspection program to advise property owners of improper water tank installation will be implemented.

2) Indirect Programs:

Community Affairs

This project involves the distribution of fire prevention information and educational material to the Friant, Table Mountain, Auberry, Prather, and Morgan Canyon communities through business contacts and public displays and events.

This project has been ongoing since 1995 and is a significant contributor to loss reduction through the prevention of wildland fires.

Interagency Meeting

This project involves the annual fire safety meeting and review of fire prevention programs for the current year with State, County, and Federal Cooperators. The meeting, held in early May, reviews fire management plans, campfire permits, fire prevention material distribution, targeted risks, and availability of fire suppression resources for the season.

This has been an annual event since 1970 and has contributed to the success of interagency interaction during wildland fires.

Prevention Signs

For many years there have been roadside fire prevention signs located along key roadways within the Battalion. These signs provide fire safety and fire prevention messages to the general public. The sign messages are changed throughout the year to reflect seasonal messages. The roadside fire prevention signs could be improved by adding updated messages that address specific fire problems in the Battalion. The program could also be expanded to include new signs that would be targeted to inform the residents living in new subdivisions of local fire safety and fire prevention issues. The location of all the existing signs is listed below:

State Park Entrance:	N 36º 59.184' W 119º 41.107'
South of Friant:	N 36º 58.347' W 119º 43.514'
Auberry Rd./ Foothill	N 36º 54.832' W 119º 42.885'

3) Maintenance Programs:

Power line Inspection

This project involves the annual inspection of powerline hazard abatements within the battalion. Powerline fires still contribute to annual fire causes and this program has decreased the number of fires each year.

Weed Abatement Program

The program is designed to decrease the potential fire hazards, within target areas, that threaten adjoining properties while keeping the Fire District's financial involvement to a minimum. The Battalion performs hazard abatement inspections within designated target areas every year within a specified time.

Fuel break - Sky Harbour Road

A fuel break is established along Sky Harbour Road to slow the spread of fires running easterly from roadside ignitions. This program is critical to reducing the potential for large fires as there are no substantial fuel breaks east of Sky Harbour Road to Wellbarn Road.

IV. Potential Fire Plan Opportunities:

1) Targeted Programs:

Mower Caused Fires

Within the last several fire seasons homeowners attempting to meet 4291 clearances have caused multiple fires with mowers. The mower caused fires have been caused by the lack of functioning spark arrestors and the mower blades striking rocks.

In order to address this problem the Battalion has come up with an action plan. The Battalion will ask for assistance from the Prevention Bureau in developing a public education program that will include:

1) Press releases
2) Roadside signs
3) Information flyers to repair and mower shops
4) Bi-lingual flyers to be provided to all landscaping companies and companies doing lot clearing work.

The public education program will address the need for the 4291 clearance yet at the same time provide guidelines and information about how to prevent the ignition of fires while creating the hazard clearance.

The Battalion will also create and distribute an informational flyer that can be provided to vendors and repair shops informing them of the requirements of Public Resource Codes 4442, 4442.5 and 4443.

V. PRIORITIZATION OF EXISTING AND POTENTIAL PROJECTS/OPPORTUNITIES:

Battalion Priority	Project Name
1	Mower Caused
2	SRA Fire Safe Regulations
3	Prevention Signs
4	Fuel break - Sky Harbour Road
5	Community Affairs
6	Interagency Meeting
7	Weed Abatement Program
8	Nature Conservancy Ecosystem Management Project
9	Power line Inspection
10	Burning Permit Issuance/LE-38 Inspection Program/Chainsaw Spark Arresters Program

Objectives 2005:

Objective #1: Distribute mower safety to homeowners, repair shops, landscaping companies.

Objective #2: Complete Sky Harbor fuel break by July 1.

Objectives 2005 - 2007:

Objectives #1. Implement an inspection program to maintain compliance with 4290 regulations on homes that have been inspected during the 2004-05 year.

Objectives #2. Develop a Fire Plan for the State Parks that covers the Central Valley Region of DPR.

Fresno/Kings Unit
Battalion 4312 Fire Management Plan
2005

Battalion 12 Mission Statement

As authorized by the California Department of Forestry and Fire Protection and the Fresno/Kings Unit Chief, the mission of Battalion 12 is to maximize the economic, environmental, and social benefits of range, forest and watershed resources within the Battalion by fully incorporating community involvement, fuel reduction and protection planning. The Battalion personnel will also provide comprehensive fire protection and other related emergency services, including protection of life and property.

Geographic Priority Areas

Priority Area #1

Bald Mt. Subdivision area contains approximately 350 homes. They are located at the ridge top of a south/west –facing slope. It is up slope of a Fuel Model 4. The ridge top is mainly Fuel Model 4 with 8 and 9 mixed. CDF response times are a minimum of 15 minutes. There is a high fire history in the area.

Priority Area #2

Linson Lane and Shaver Springs subdivisions have approximately 75 homes between them. They are both located at or near the top of a drainage. Drainage fuels consist mainly of Fuel Model 4 type. CDF response time to the area is approximately 15 minutes. Fire history has been moderate in the area but has high potential.

Priority Area #3

Sugarloaf/Meadow Lake North fuel break extension. There are about 25 homes within this area but this fuel break would reduce fire traveling into another 100 homes within the North Bald Mt. Area. This project is located top of drainage with west facing slope. The fuels consist of Fuel Model 4 with 8 and 9 mixed. CDF response times are a minimum of 15 minutes. There is a high fire history in this area.

Priority Area #4

The community of Cressman's contains approximately 78 homes. It is located mid-slope on a south facing slope. Peterson Mill Road is located below the community of Cressman's. Wildflower subdivision is located above Cressman's. The fuel in the community itself is mainly Fuel Model 8. Fuels below would fall into Fuel Model 4. CDF response time is 15 minutes. Fire damage potential is extreme.

Existing Fire Plan Projects

The Beal Fire Road

The Beal Fire Road has been in place for many years. It is a joint venture with the CDF, local homeowners and the HWY 168 Fire Safe Council. The road extends from Tollhouse Road near Burrough Mountain Road across Highway 168 at the 4 Lanes, below Meadow Lakes, to Auberry Road. The purpose of the project is to reduce fuel accumulations and to decrease the potential of a wildfire that would cause damage to natural resources including wildlife habitat in the Beal Fire Road area. The last VMP done on the Beal Fire Road was begun in 1994. It was a three year project. Road grading occurs on as needed basis on parts of the Beal Fire Road. The project was proven successful when put to the test in 1998. A fire burned from the bottom of the 4 Lanes near the bottom of Backbone Mountain, uphill toward Meadow Lakes. Brushing had been completed at the west end of Beal Fire Road that spring and summer. That action allowed fire equipment to enter on the Beal Fire Road and perform successful structure protection. The forward progression of the fire was stopped just beyond the Fire Road. Future needs for the Beal Fire Road include placement of cement water tanks at strategic points along the Fire Road for fire suppression use, and brushing of all the Fire Road.

Cressman's Road Project

This is a grant project administered by the Unit Forester and the Fire Plan Coordinator. It was begun in 2000. The premise of the program is to reduce fuel loading along the main roads in the Cressman's subdivision. This will enhance emergency exit for civilians and make access easier for emergency equipment responding to the area. It will also help slow the spread of a wildfire approaching from below. This project was completed in 2004.

Peterson Mill Road Project

This is an additional grant project for the Unit that was ultimately started due to the success of the Cressman Road Project. The demonstration project began in the Spring of 2005. This project, which is to reduce fuel loading, is dependent upon "Prop 40" funding, the cooperation of the Fire Safe Council, and that of the stakeholders in the area involved.

As with the Cressman project, this project will also aid in the emergency access of civilians and emergency equipment and will help slow the spread of a wildfire.

4 Lane Rat Trail

Construction of a Rat Trail near the bottom of the 4 Lane on Highway 168 at Backbone Mountain is a cooperative project in conjunction with the U.S. Forest Service. The purpose of the trail is to prevent the spread of fires started from material dislodged from hot brake shoes. The project has been ongoing for a number of years.

Tollhouse Roadside Brushing

Tollhouse Road is involved in an ongoing roadside brush clearing project. This is a joint project with the CDF and the U. S. Forest Service. The U. S. Forest Service brushes the road from the Mountain Rest Station down to 33702 Tollhouse Road. CDF crews brush Tollhouse Road from 33702 Tollhouse Road down to Linson Lane. The project involves clearing brush in 100' stacking and burning. CDF has a Burn Boss from the Mountain Rest Station in attendance when burning is to occur.

Fuel Moisture Sampling

Shaver Lake personnel began a fuel moisture sampling project during the summer of 2001. Fuel samples are taken from the 4000' level at Buckeye Heliport on Highway 168. The fuel moisture record is sent periodically to various personnel in the Unit, the Emergency Command Center, the Schedule B stations and the U.S. Forest Service. The information may be used to predict burning indices as well as to alert personnel of the status of the area vegetation. Reaction to this project has been positive from both Unit personnel and U.S. Forest Service personnel.

Roadside Fire Prevention Signs

The Battalion has a total of eight Fire Prevention signs. Two are in Blasingame's first in area and six are in Shaver Lake's first in area. Shaver Lake Station has an annual fire prevention sign plan which includes Shaver Lake and Bald Mountain regions. This project is done in cooperation with the U.S. Forest Service. The signs are placed along Highway 168 and Auberry Road. Throughout the Battalion the signs are changed regularly to indicate seasonal messages. Sign examples include: "It's flu season – clean your chimney", "Burn permits required", "Clear brush 30 feet around your house", "No Burning" and fire danger indicators. Ongoing projects include replacing and or repainting existing signs that are in poor repair.

Locations of Fire Prevention Signs in Battalion 12

1. Auberry Road at the Beal Fire Road
   N37°04.463'

   W119.26.608'
2. Bald Mountain Road south of Auberry Road
   N37°04.324'

   W119°24.594'
3. Auberry Road at Alder Springs (bulletin board)
   N37°03.911'

   W119°24.087'
4. Highway 168 at Vista Point (bulletin board)
   N37°03.541'

   W119°22.042'
5. Ridge Road in Ridge Top Subdivision
   N37°04.563'

   W119°20.449'
6. Highway 168 below Bretz Mill Road

   N37°05.550'

   W119°19.028'
7. Sample Road and Pittman Hill Road
   N36°54.540'

   W119°28.009'
8. Highway 168 ½ mile west of 17043 Highway 168
   N36°55.372'

   W119°30.922'

Potential Fire Plan Opportunities

Meadow Lake

The Bald Mountain ridge top is a significant fire hazard area. There is great potential in the area for large dollar losses due to fire activity. Currently, the Beal Fire Road stands as the only defense against large fires rising from the slopes below the Meadow Lakes area. A secondary line should be constructed at the top of the ridge between Meadow

Lakes and the Beal Fire Road. The proposed line would extend from Auberry Road, at the north end of Meadow Lakes, past the radio and TV towers to Bald Mountain Road. Once property owner permission is granted construction of the line can be carried out in three phases over three years. The first phase would encompass the north end of Meadow Lakes at Auberry Road and extend down to the water tank or near the radio towers. The second phase would include the radio towers. The third phase would follow a dirt road and end at Bald Mountain Road. Bull Dozers and Hand Crews could be utilized to complete the project. Once completed, maintenance should be ongoing.

Sugarloaf North (meadow lake extension)

This project would be a joint venture between CDF and the USFS. The existing Sugarloaf road would be reduced of fuels along both sides of the road for approximately 4 miles. The purpose of the fuel reduction is to prevent the spread of wildfires which traditionally come out of the Jose' Basin or San Joaquin drainage into the upslope populated area of Bald Mt.

Prioritization of existing and potential projects/opportunities

Battalion Priority Project Name

1. Peterson Mill Road Project – Existing
2. Beal Fire Road – Existing
3. Cressman's Project – Completed
4. Meadow Lakes Fuel Break-**New**
5. Sugarloaf North-**New**
6. Tollhouse Roadside Brushing - Existing
7. 4 Lane Rat Trail – Existing
8. Dinkey Mountain VMP – Existing
9. Fuel Moisture Sampling - Existing

Year to Year Objectives

- Objective #1 -- Complete fuel reduction along Peterson Mill Road in the year 2005. Monitor progress of "Prop 40" grant.
- Objective #2 -- Complete the Tollhouse roadside brushing by June 1, 2004.
- Objective #3 – Complete Beal VMP contract by 12/31/02 Project completed by 6/04.
- Objective #4 – Develop a plan and have agreements from property owners in the Meadow lakes Fuel Break area signed by December 31, 2006. Project completed by 12/08.

- Objective #5— Sugarloaf North paper work done by CDF & USFS by December 31, 2006. Project completed by 12/10.

Submitted by: **Battalion Chief Eric Sargent**

Fresno-Kings Unit

Battalion 4313 Fire Management Plan
Year 2005

Battalion 13 is integrating the fire plan into the Battalion Fire Management Plan. By identifying problems and target areas, we will strategically implement the plan into our battalion goals.

Mission Statement:

The battalion's mission is to educate and involve the communities we serve regarding pre-fire suppression activities that will hopefully minimize the number of wildfires in the area therefore, reducing the costs and losses associated with same.

Priority Areas:

Recreational areas along River and Lakes.

These areas experience a huge increase in population during the summer months, resulting in increased call volume for water rescues, over the side rescues, and vehicle/ vegetation fires.

Area 1:

Sunnyslope Subdivision – This community is in a high recreational use area { Pine Flat Lake}. Previous fire history dictated we concentrate on structure protection vs. wildland fire control.

Area 2:

Highway 180 corridor between Cove and the Sequoia National Forest boundary. This is a heavy traveled highway during the summer months for vacationers traveling to and from the National

Forest and Park. Typical fire history for the area is roadside starts. Most fires were contained during initial attack. However, there have been a few large/ major fires.

Area 3:

Communities of Pinehurst, Miramonte, Dunlap, Squaw Valley, Sand Creek and Wonder Valley. These areas represent the wildland urban interface problems of the battalion. Our best fire prevention effort here is a strong LE-38 program.

Area 4:

Trimmer Springs Road between Belmont Avenue and the Island Park Camp Ground. Again, this is a heavy traveled road for recreational use of the adjacent Pine Flat Lake. Topography is mainly south aspect and uphill slope.

Existing Fire Plan Projects in priority order:

1. LE – 38 Fire Inspection program

2. Rat Trailing:

Rat trailing by Miramonte Fire Crews have been successful in slowing down or containing fire spread. It is more noticeable during years of heavy arson activity. Target areas include:

- Hwy 180
- Hills Valley RD
- Sunnyslope RD
- Sand Creek RD

3. Sunnyslope Fuel Break:

Fire activity in 1996 resulted in the creation of this fuel break. The community to which it protects conveys their thanks and appreciation for what we did extra to help them with fire protection measures.

4. Public Awareness Campaign:

Continue to educate the public on the fire safety in recreational areas of the battalion {i.e. campfire safety, cooking and warming fires}. Cooperate with the Corps of Engineers personnel to arrange educational events at campgrounds.

5. Pre-Plans

Update existing pre-plans and pre-plan any new business in the battalion. These contacts allow station personnel to be proactive, meeting business owners, Ranchers, and school district personnel and create positive public relations.

6. Fire Control Road Maintenance:

HFEO's grade the fire roads every spring to assure emergency access during fire season. These roads have been successful in assisting fire control.

7. Addresses:

Company 77 makes and sells address signs for Piedra's response area, which assists in locating the public in emergency situations.

Potential Projects:

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1. Fire Safe Council

Initial meeting has been scheduled for March 8, 2005 at 1900 hrs. at the library in Squaw Valley. This is the first step towards formulation and implementation of a Fire Safe Council in battalion 13.

2. Update map books

Utilize information gathered from burn permits, LE-38 program, and GPS data to update and improve battalion 13 map books. This can be accomplished by using the Delorme Topo USA 5.0 program. Copies available through Piedra station.

FC Tracey Nutter
Feb. 2005

Fresno-Kings Unit

Battalion 4314 Fire Management Plan
Year 2005

Understanding the need to reduce the costs related to large and destructive fires, Battalion 4314 is committed to the implementation of The Unit's Fire Plan. Recognizing the need to improve on its participation in the Unit's fire plan, the following is a list of existing and potential problems and projects for the Battalion.

Mission Statement

Battalion 4314 will actively engage in reducing costs and losses from fires by involving local residents, businesses and cooperative agencies in ignition prevention.

Priority Areas

PRC 4291

This years rain fall is well above normal amounts (13 + inches), vegetation growth is three time the nomal length (16" to 18"). In conjunction with the Units Fire Prevention Staff a very aggressive program will be implemented in the State Responsibility Areas.

Priority Area # 1 Los Gatos Canyon

Los Gatos Canyon is a sparsely inhabited area of the Los Gatos Creek drainage on Los Gatos Road west of Derrick Avenue to the County line. It is populated mostly by long time residents of the area which have a better than average knowledge of fire safe regulations and practices. It is this knowledge which makes them unique in that they are very low maintenance is regards to fire prevention, allowing battalion crews to concentrate on the newer residents to the area. The fuel models consist of mostly 1 and 4 with the biggest challenge in the off road areas, being access. Although fire history does not support a tremendous problem there has been some activity usually related to ranch activities or lightning.

Priority Area #2 Warthan Canyon

This area lies up the Warthan Creek drainage along Highway 198, south the City of Coalinga to the County line and south on Parkfield Road to the County line. Its characteristics are not so different from those of the Los Gatos Canyon area with its problems and solutions being very much the same. Fuel Models are 1 and 4 and fire history has been very limited with most causes being equipment oriented mostly off the highway.

Priority Area # 3 Kings County SRA

The Kings County SRA lies along the Highway 33 corridor to the west from Coalinga to the Kern County line. Since the closing of the Cottonwood FFS the response times have become considerable with the first in initial attack equipment now coming from either CDF/SLU, Kern County Fire or the Kings County Fire Department. The primary fuel model is 1 and 4. The longer response times can make this an interesting problem regarding suppression if IA doesn't have a positive effect in regards to suppression. Fire causes are generally a result of coming off of the Highway 33, and statistics tells us of an arson problem which occurred in 1996 and 1997 but which has since resolved itself to the point of now being practically non existence. Support and interface with the cooperative agencies tends to keep a handle on this area's problems. Additionally there are two 230 KV electrical transmission lines. The Diablo–Gates and the Templeton-Gates are located in the south, in and around the junction of the Kings, Fresno, and Monterey County lines.

Priority Area # 4 Oil fields

The Oil fields lay in both the SRA and the LRA and although crisscrossed with roads are a definite threat to the wild land to the west should a fire escape from this area. Its fuel model is a 1 and the primary cause for fires in this area has been power line related. These are not the normal utility lines in that they are owned privately by the oil companies and are maintained by them. We have an on going process of keeping the oil companies educated regarding their responsibilities in regard to maintenance and the liability, if their lines are responsible for causing a fire. Through this process, along with our enforcement and cost collection procedures, the statistics for power line caused fires in this area have decreased over 80% since 1996.

Existing Fire Plan Projects

Fire Control Roads — Tar Canyon & Juniper Ridge

Although these roads are located in entirely different locals, they are both important to the philosophy of keeping costs to a minimum. For a minimum investment in the late

spring we can provide ourselves with not only an access to some very inaccessible country but also create a secondary defense to stop a wild land fire if it should be needed. Juniper Ridge Fire Road is in that area West of the City Coalinga running from Highway 198 north to Los Gatos Road. Its most apparent use would be for controlling a fire that originates in the oil fields or the foothills west of Coalinga, which may not be controlled by IA forces. The Tar Canyon Fire Road is in Kings County, beginning just south of Avenal on Highway 33 going west through the hills towards Picacho Rock. It provides access to some very rough country in and around the Black Hole Quadrant. The maintenance of these fire roads is imperative to the mission of controlling fires at the earliest possible moment.

Power Line Ignitions within Oil Fields

Over the years the oil fields in and around Battalion 4314 have provided numerous vegetation fires which were predominantly caused due to power lines. Although the numbers have decreased significantly in the past five years this is an on going project, keeping the oil companies which control these power lines, aware of their responsibility and liability. Contact by the Battalion Chief as well as the engine companies in the summer on a regular basis assists in the relationship with those companies so that proper maintenance is done to keep those ignitions to as few as possible.

Roadside Fire Prevention Signs

The roadside fire prevention sign are located throughout the battalion on the main arteries. These signs are used to provide the public information that will make them a friendlier user of the wild lands, both private and public. As conditions changed and situations arise they are updated to provide the public with the most current information. The inventory of signs in battalion 4314 needs to be updated with the most current and applicable messages available, and additional locations need to be obtained.

Existing Locations:

Sign #1	36° 05.800' N	120º 31.521' W
Sign #2	36º 11.674' N	120º 24.901' W
Sign #3	36º 13.783' N	120º 34.280' W
Sign #4	36º 17.344' N	120º 16.751' W

Proposed Locations:

Sign #5	36° 05.689' N	120º 27.456' W
Sign #6	36º 17.605' N	120º 40.885' W

ID water sources in Westland Water District

The Westland Water District has a water distribution system throughout many areas of Battalion 4314. This system provides a 24 to 36 inch water line that has various connections, many of which are fire department compatible. The battalion is in the process of identifying these and getting the GPS location for each so they can be mapped. Completed 2004.

Fire Prevention Display Horn Toad Derby and Coalinga Fest

Each year the City of Coalinga has two major events, the Horned Toad Derby, and Coalinga Fest. Both of these are considerable in size and attended by a great majority of the local residents, as well as visitors to the area. The parade provides a venue to display Smokey and entice the public to a Fire Prevention booth where we can reach out to the youth of the area and also to put forth any fire prevention message that is pertinent at the time.

Potential Fire Plan Opportunities

Vegetation Management Program Burns

The Van Boxtel and Varian VMP burns will provide Battalion 4314 with the opportunity of taking a positive step towards supporting the Unit's fire plan. The Van Boxtel burn is approximately 1000 acres, providing for a fuel modification that will increase the productivity of the land in regards to increased value for grazing and wildlife habitat. Additionally this burn would provide a fuel modification which could decrease the intensity of wild fire exposure to the 230 KV electrical lines of the Diablo-Gates and the Templeton-Gates transmission lines. The Varian burn, approximately 500 acres, would provide fuel modification that would decrease fire intensity and improve grazing and wildlife habitat. Van Boxtel Completed, fall 2003.

New water Sources

The development of new commercial and agricultural businesses in and around the battalion has resulted in draft water sources that may or may not be properly identified. The location of these and their GPS location will be obtained. Ongoing.

Fire Road Location

Although the Tar Canyon and Juniper Ridge Fire Roads are on our standard Unit maps the GPS location of them will be accomplished for the purpose of providing their location to the Pre Fire Planning Officer.

Battalion House Numbering System

Personnel of Battalion 4314 will make a conscience effort to evaluate the quality of the house numbering of existing residents and monitor for new construction so that new people to the area can be made aware of our standards, thus maintaining the integrity of the house numbering of the battalion.

Prioritization of existing and potential projects/opportunities

Battalion Priority	Project Name
1	Fire Control Roads - Existing
2	New Water Sources – In progress
3	Vegetation Management Program Burns – Van Boxtel / completed 2003. Varian, in progress.
4	Fire Road Locations – New
5	ID Water Sources in Westland Water Dist. – Completed
6	Power Line Ignitions within Oil Fields – Existing
7	Horned Toad Derby / Coalinga Fest – Existing
8	Battalion House Numbering System – Existing
9	Roadside Fire Prevention Signs - Existing

Objectives:

Objective #1	Meet with Cooperative Agencies by April 2005
Objective #2	Meet with Oil Companies by April 2005
Objective #3	Complete Fire Road Maintenance by May 15, 2005
Objective #4	Horned Toad Derby, May 2005
Objective #5	GPS Fire Roads by August 2005

Objective #6	Coalinga Fest
Objective #7	Map and GPS Westland Water Dist. Sources by Jan. 2004 / Completed
Objective #8	Locate and map Draft Water Source by January 2004 / in porgress.

Fresno-Kings Unit
Battalion 4317 Fire Management Plan
Year 2004

Mission Statement:

The mission of Battalion 4317 is to continue to improve the PCF program within the Battalion. Also to stay involved with the Fig Garden Fire Protection District Board of Directors. Our involvement keeps the residents thinking about fire safety. The above will reduce costs and losses from fire within the Battalion by staying actively involved with the local residents.

Priority Areas:

Priority Area #1 – Fig Garden Fire Protection District Station # 80

Station # 80 first in area of Circle Drive North and the Santa Fe RR right of way. There are some residential structures heavily forested that butt up against the right of way. This is a walkway for pedestrians and the fire hazard becomes an attractive nuisance for playing with fire.

Priority Area #2

Fig Garden Fire Protection District Address signage.
Some addresses within the district are difficult to see especially at night and/or in the fog. We will attempt to notify residents through the Fig Garden Homeowner's Association Newsletter and the Station #80 annual open house.

Existing Fire Plan Projects:

See Priority # 1 above.

a) Have initiated correction to the Railroad. This will be a yearly project because of the annual vegetation growth.
b) Success will be noticed in the summer.

Continuation of recruitment and training of Paid Call Firefighters (PCF) including Category II & IV classes within the battalion.

Potential Fire Plan Opportunities:

Installation of "VISITORS WELCOME" signs on all stations.

Our Customers and/or Stake Holders need to know who we are. We must let them know that we are open to their visits.

Prioritization of existing and potential projects/opportunities:

Battalion Priority	Project Name
1	Fig Garden RR right of way
2	Fig Garden address signage
3	PCF Training

Objectives:

Objective #1 – Finish fire hazard problem on RR right of way by June 30th of every year.

Objective #2 – Fig Garden address signage. Notify residents through Fig Garden newsletter and annual open house.

Objective #3 – Continue PCF Recruitment and Training – no time frame, this is on going. 2003 to 2007 and beyond.

Fresno-Kings Unit

BATTALION 4318 FIRE MANAGEMENT PLAN

YEAR 2005

Battalion 18 is integrating the fire plan into the Battalion Fire Management Plan.
By identifying problems and target areas, we will strategically implement the plan into our battalion goals

Mission Statement:

The mission of Battalion 18 is to provide the highest level of customer service while reducing the costs and losses from fire through education of the public, active involvement in school programs and communities and maintaining a positive and professional relationship with allied agencies.

Priority Area

Kings River

The section of Kings River between Adams Avenue and Dinuba Avenue contain a high fuel loading both on the riverbanks and islands. Due to increased usage of the river water ways and urban interface, fires and rescues have become more frequent. These types of incidents require a large number of resources and extended commitment times. Firebrands from resultant fires have a potential for ignition of roof fires in the City of Reedley and adjacent urban residences

Existing Fire Plan Projects:

Identify Draft Hydrants in the Battalion

The onset of new subdivisions in the outlying areas of the county has brought a need for water sources. Draft hydrants are being utilized in certain areas to provide the necessary water for these high value homes. Currently there is not a set standard to visibly identify these draft hydrants. The potential for an engine company to come and cover our area that is completely unfamiliar with draft hydrants is great. Clearly identifying these hydrants with visible markings and knowing their locations would lessen the chance of error thus lessening the fire loss to homeowners.

This project would cover the following areas:

1. Work with Protection and Planning in developing a standard for draft hydrants throughout the unit.

2. GPS the location of all the hydrants within our Battalion and map them

3. Mark all draft hydrants once a standard has been developed.

4. Map and indicate water tank size and pump capacities that are attached to a draft hydrant.

5. Establish a service record for these draft hydrants.

6. Have the Training Bureau establish a quarterly drill for draft hydrant operations.

Preplans

Update existing preplans and preplan any new businesses in the battalion. This contact allows the station personnel to be proactive, meet business owners, school district personnel in their area and create positive public relations. There are numerous industrial complexes in the battalion which can be identified and updating contact numbers or special circumstances pertaining to that business or school.

Potential Projects:

Addresses

A common problem found throughout our county is the lack of addresses posted or they are posted but unreadable. This not only increases response times but creates a safety problem as we are trying to search for addresses in the dark or fog. Some possible solutions would be to :

1. Send out fliers explaining the importance of posting legible addresses.

2. Enlisting the help from schools, either as a school project or after school activity.

3. Using the PCF Companies to fund raise for their companies. If the Unit and County can adopt a standard for posting addresses, such as having a sign with their numbers, maybe the PCF Companies can make these to sell. This one is open for discussion.

School Program Plan

Be more involved with the schools in our response areas. We do participate in some activities, but more intervention would go a long way in developing a strong relationship with the communities. Programs such as Career Days, Fire Safety, Fire Prevention Day or Station Tours are some ways we can interact with the children.

Kings River Plan

Currently all Battalion 18 stations have a Kings River Plan. It was created in 1995 for the purpose of engine companies responding to an emergency in the area, would have access points identified on a map. The map covers from the Fresno-Tulare County line all the way to Trimmer Springs Rd. We would like to update the map utilizing GIS and if practical, include addresses and parcel numbers to it. We will also improve the plan by contacting and educating the landowners in fire prevention and develop ways to reduce the fuel along the river.

Prioritization of existing and potential projects/opportunities.

Battalion Priority	**Project**
1.	Draft Hydrants
2.	PrePlans
3.	Addresses
4.	Schools
5.	Kings River Plan

OBJECTIVES:

Objective # 1 - Identify and map all draft hydrants in the battalion by March 15, 2002.

Done.

Objective # 2 - Complete these preplans in order as identified by importance:

1. Schools(concurrent with inspections)
2. Care or Foster facilities (rest homes)
3. Any Industrial complexes creating mass evacuations i.e; cold storage, bulk hazardous material storage etc.
4. Industrial businesses with large work forces.

Station 86 has their area almost complete of pre-plans.
Station 83 has conducted tours with Sun Maid within the last month.
All others are still continuing.

Objective # 3- Create an informational flier, public spots, and newspaper advertisements stressing the importance of posting addresses.

This project is still in the planning stages, due to lack of funds.

Objective # 4 - Contact schools and Fire Prevention to coordinate programs. This will be in conjunction with the annual school programs.

All stations are involved with school programs and local area prevention programs.

Objective # 5 - The Kings River Plan has been started. Mapping was done on the East side of the river. We are also using a GPS to mark staging areas and possible landing zones.

No further progress on this project.

Appendix F – Success Stories

INTERACTION REPORT

THE PETERSON FIRE
(CAFKU 008548)

and

THE CRESSMAN FUEL MODIFICATION ZONE

July 12 – 15, 2004

Intro

The Peterson Fire was a wildland fire reported at 1205 hours on July 12, 2004 in Eastern Fresno County. As the initial attack Incident Commander, Battalion Chief Jim Smith, arrived at the scene, he found the fire rapidly spreading uphill threatening structures above and on each flank. The fire was burning in a mix of chaparral and timber mid-slope on a south aspect. Fuel moistures from surrounding counties indicate that the current fuel moistures were at least one month ahead of normal and were at or near critical levels. The 1200 hour weather reported at the Mountain Rest RAWS Station approximately 2 miles northwest of the incident at roughly the same elevation was as follows: Temperature 89 degrees Fahrenheit, wind southwest at 5 – 11 mph, relative humidity 17% and fuel moisture 4.7%. The fire was rapidly spreading towards the recently completed Cressman Road Fuel Modification Zone (FMZ).

Battalion Chief Jim Smith had these words to help explain how he considered and incorporated the Cressman Road FMZ into his incident strategy and tactics:

As Incident Commander on the Peterson Fire, the Cressman Fuel Modification Project provided me with:

1. *The confidence that the head of the fire would be stopped or slowed when it reached the FMZ;*
2. *That it would serve as a safe point of attack for firefighters even at the head of the fire;*
3. *That firefighters could "anchor-in" at the FMZ and safely make a downhill hoselay along the flank of the fire;*
4. *It significantly reduced the number of firefighting resources ordered for the incident;*
5. *Fire intensities and subsequent resource damage was significantly reduced in the FMZ compared to the non-treated areas in the fire perimeter.*

Background

CRESSMAN ROAD FUEL MODIFICATION ZONE

The California Department of Forestry and Fire Protection (CDF), in cooperation with the Pine Ridge Property Owners Association, the Highway 168 Fire Safe Council and the California Department of Corrections developed the Cressman Road FMZ. A FMZ is also commonly referred to as a shaded fuel break. A FMZ is an area where selected vegetation has been removed in such a way as to break the horizontal and vertical continuity of forest fuels.

The Cressman FMZ project is located along the Cressman Road in the Pine Ridge Area of eastern Fresno County below Shaver Lake. The project elevation ranges from 4,600 to 5,000 feet and is located mid-slope on a mostly southern aspect. The subdivision consists of approximately 75 residences on 113 parcels. The dwellings are a mix of seasonal and year-round use. The Cressman Road FMZ involved 60 parcels and 57 different landowners.

The purpose of this project was to try and increase the level of safety for both residents and firefighters that may be entering and/or leaving the Cressman Road area under wildfire conditions. This increased level of safety has been achieved through the selective removal of vegetation along Cressman Road. The Cressman Road area was selected for this project because of several reasons:

1) The Fresno/Kings Unit of the California Department of Forestry and Fire Protection has identified the Pine Ridge area as a priority area for fuel reduction projects. This area was selected as a priority because of its high fuel loading, its potential for a large damaging fire and its high population density intermixed within the wildland.

2) The Highway 168 Fire Safe Council has identified the Pine Ridge area as a priority area for fuel reduction projects for similar reasons.

3) Cressman Road is a single lane road, open to the public, which accesses approximately 113 parcels and 75 residences.

4) At the initial discussion stages of this project, the Pine Ridge Property Owners Association expressed interest in and support of the proposed project.

This project was paid for by funding from the California Department of Forestry and Fire Protection as well as grant funding from the US Forest Service through the National Fire Plan. The Fresno/Kings Unit of the California Department of Forestry and Fire Protection was awarded the funding to complete the multi-year project.

Participation in this project was completely voluntary on the part of landowners. Landowners participating in the project needed to sign an agreement with CDF prior to any work being done on their property. There was no cost to landowners that participated.

Inmate firefighting crews, under the supervision of CDF personnel were utilized to develop the FMZ. These crews utilized chainsaws and hand tools to selectively remove vegetation within the project area. The vegetation that was removed was either piled and burned during safe conditions or chipped by the crews.

The FMZ extends along Cressman Road and Lower Cressman Road from Highway 168 to the National Forest boundary. In addition, it includes approximately the first quarter mile of Upper Cressman Road. Within the FMZ, vegetation was selectively removed within approximately 200 feet of either side of the roadway. This zone width varied based on topographic features and

vegetation conditions. Consideration was given to screening of homes located within and/or adjacent to the zone.

Treatment Prescription

As stated above, this project selectively removed un-merchantable vegetation in order to break the horizontal and vertical continuity of forest fuels. The following specifications applied to vegetation removal:

1) Trees removed did not exceed a nine (9) inch diameter at breast height (DBH) i.e. 4.5 feet above the ground.

2) Trees were removed in order to eliminate fuel ladders and achieve crown separation.

3) Trees saved were selected based on the following criteria:
   Straight trunk with no defects, generally healthy and free of insects or disease.
   Save trees were selected in the following order of preference: black oak, ponderosa pine, sugar pine, Douglas-fir, white fir, incense cedar.

4) Remaining trees were pruned as follows:
   Trees under a six (6) inch DBH retained a minimum of a 50% live crown.
   Trees over a six (6) inch DBH were pruned to ten (10) feet above the ground.

5) The majority of brush was removed so as to achieve a separation of horizontal fuels.

6) Down trees and logs on the ground were removed when feasible.

Removed vegetation was piled and burned and/or chipped. Burn piles were located away from watercourses and residual trees. All pile burning was conducted in accordance with Air Pollution Control District regulations.

Future project maintenance will involve removal of vegetative re-growth, additional thinning and additional pruning. It is anticipated that individual landowners will be able to do the bulk of the project maintenance now that the initial development phase is over.

Cressman Road FMZ Project Costs

Various funding sources were used to complete the project. The first source of funds was from Fuel Load Reduction funding provided to CDF by the California State Legislature in Fiscal Year 1999. The next source of funds were from two Wildland Urban Interface Grants provided by the National Fire Plan and administered by the U.S. Forest Service.

1999 CDF funds:	$ 3,000.00
2001 WUI funds:	$53,548.61
2002 WUI funds:	$36,660.67
Total:	$93,209.28

$93,209.28 / 151 acres treated = $617.28 per acre treatment costs

These funds do not include budgeted personnel time.

Cost Effectiveness

Peterson Fire Suppression costs: $1.4 million
$1.4 million / 73 acres = **$19,178 per acre fire suppression cost**
Cressman FMZ Costs: $93,209.28
$93,209 / 151 acres = **$617 per acre FMZ treatment cost**
Estimated Potential Loss w/o Cressman Road FMZ: $65 million*

The cost effectiveness of fuel load reduction projects is often questioned. When the cost of a project is compared to the cost of an extended attack wildfire, the initial up-front costs of a project become justifiable.

*Estimated potential fire size of 1,500 acres. Estimated 200 homes within the 1,500 acres. Conservative average home value of $325,000. Does not include watershed or infrastructure values.

Fire Behavior

US Forest Service Battalion Chief, David Cooper observed the fire behavior as the fire approached the FMZ. He stated that the fire was torching in single trees with short crown runs as it approached the FMZ. Once the fire reached the FMZ the fire dropped to the surface and ground fuels and slowly spread through the FMZ until it reached Cressman Road. Battalion Chief David Cooper also stated that there were in excess of 20 spot fires at the head of the fire. Most of the spot fires occurred in the FMZ and were easily observed and extinguished. One of

the spot fires occurred along the left shoulder of the fire, outside of the FMZ. This spot fire grew to approximately one acre in size before it was noticed and extinguished.

The attached photos help document and validate the observed fire behavior. The most noticeable indicator is the lack of torched trees in the FMZ. In the untreated area, single trees and groups of trees torched with short crown runs consuming all of the available fuels. In the FMZ, the surface fuels, primarily bear clover, were consumed and the trees were only scorched.

Other Considerations

The ultimate credit for the success of the Cressman Road FMZ project belongs to citizens of the Pine Ridge Property Owners Association (PRPOA), the Pine Ridge Volunteer Fire Dept. and the Highway 168 Fire Safe Council.

The PRPOA listened to CDF's concern for their area and was receptive of Battalion Chief, Bill Johnson's proposal to create the FMZ. With encouragement from the Highway 168 Fire Safe Council, the PRPOA signed up for the FMZ project and implemented several other Pre-fire actions in their community. The PRPOA made road signs that identified addresses, escape routes and water sources. The PRPOA created an emergency manual that contained plans and information for emergencies in their community. The PRPOA also formed the Pine Ridge Volunteer Fire Department. In 2003 the PRPOA was awarded the National Bronze Smokey Bear Award for their accomplishments in Pre-fire planning and fire prevention.

Battalion Chief David Cooper also added that he observed incredible teamwork by the newly formed Pine Ridge Volunteer Fire Department personnel and the various paid and volunteer fire departments that responded to the fire. He felt that the close working relationship and preparedness training that the Pine Ridge Volunteer fire Department has conducted with CDF and US Forest Service through the Highway 168 Fire Safe Council paid off.

Conclusion

The Cressman Road FMZ has now been tested and was a success. The project was designed to provide safe ingress of fire suppression personnel and equipment while allowing for the safe egress of residents. The project was not designed to stop a fast moving high intensity fire but to provide for the opportunity to stop a low to moderate intensity fire. Many have asked if the Cressman Road FMZ stopped the Peterson Fire. The answer is that it did exactly what it was designed to do and that is allow for the opportunity to stop the fire by providing a relatively safe area to work from. The Cressman Road FMZ did not stop the Peterson Fire by itself, but became a tool that the Incident Commander was able to utilize to help stop the fire.

Questions and/or Further Information

For further information on the Peterson Incident, the Cressman FMZ Project or to clarify information, please contact:

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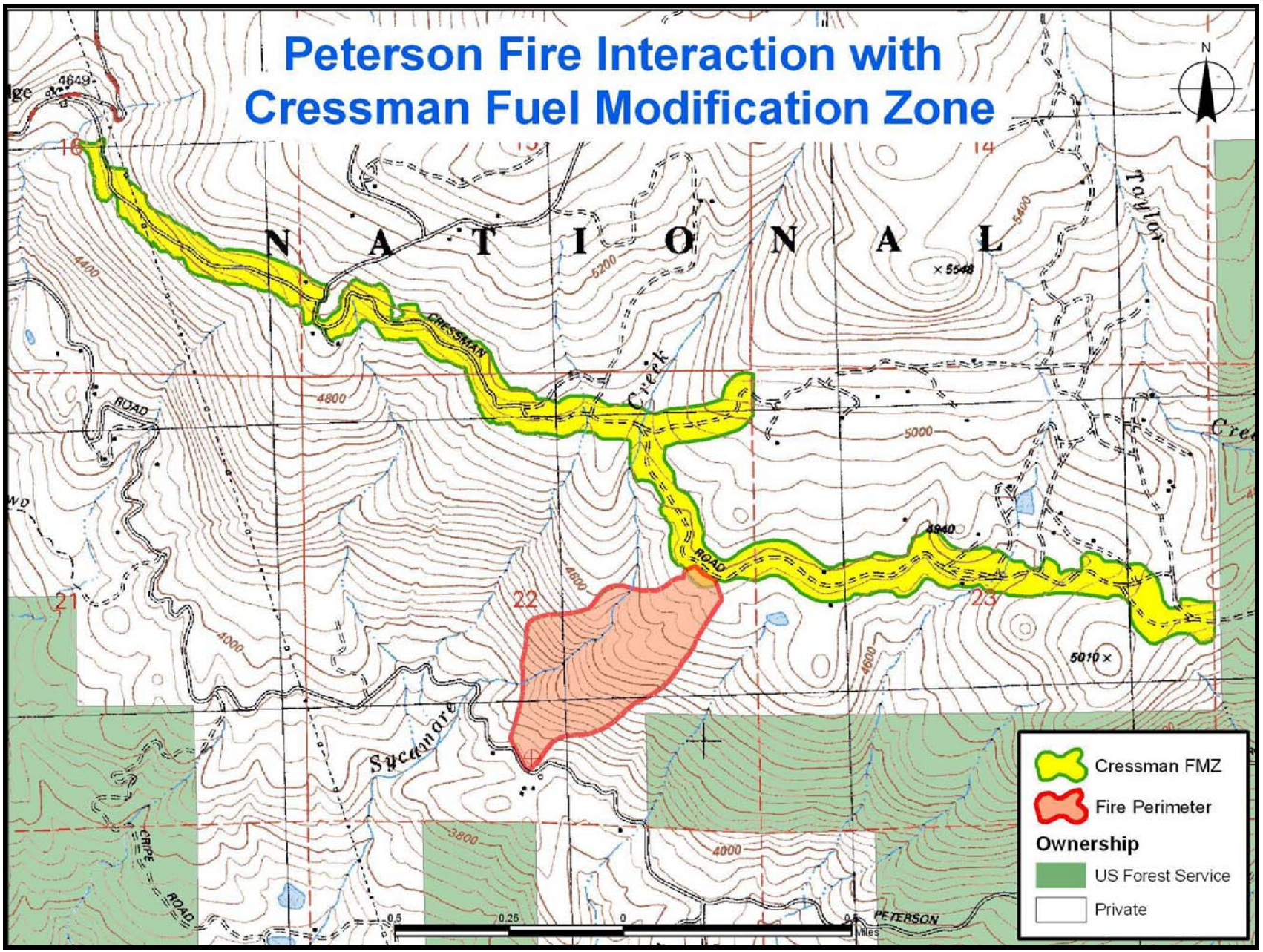
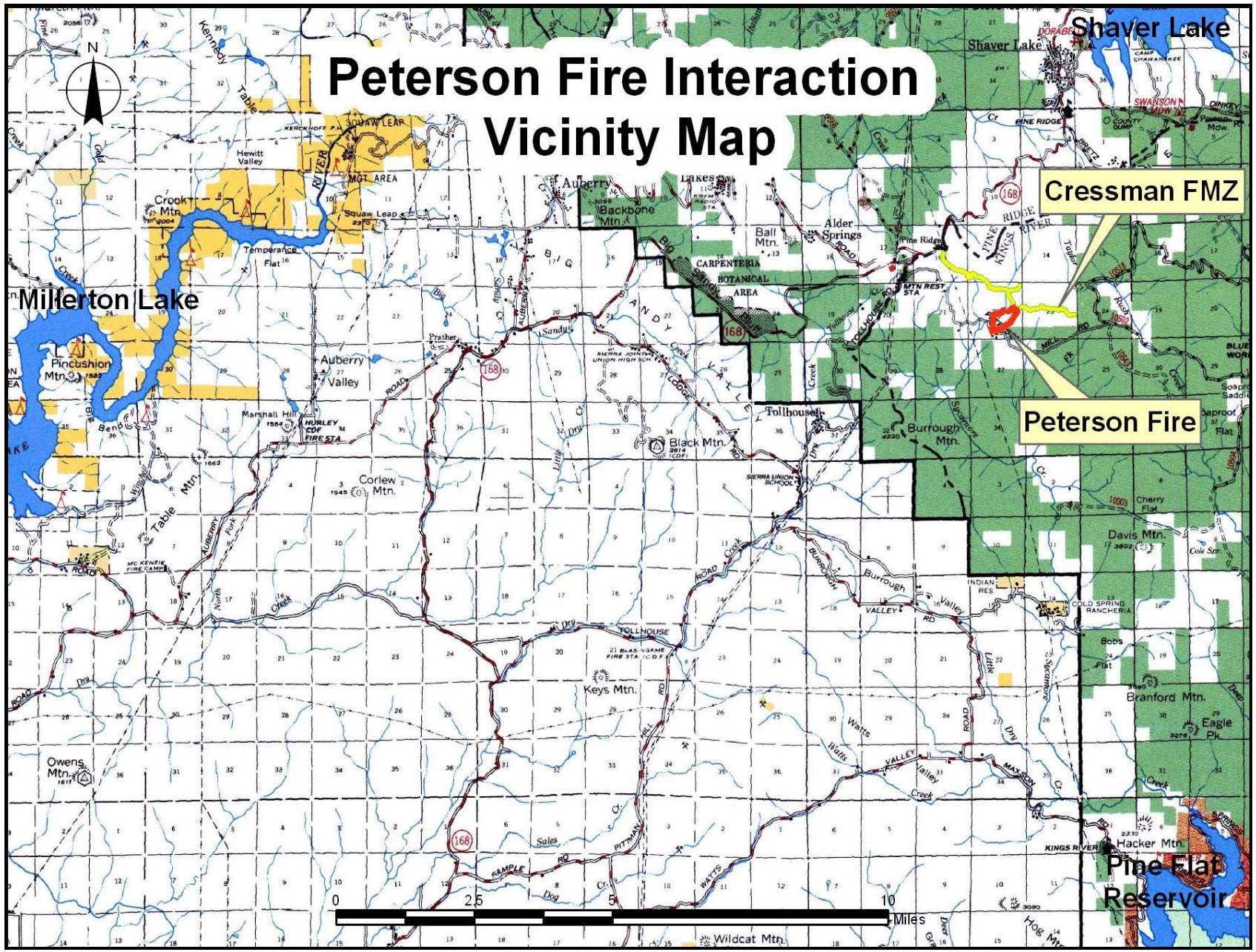

Peterson Fire Interaction with
Cressman Fuel Modification Zone
N
N A T I O N A L
CRESSMAN
Creek
ROAD
Sycamore
CRIPE
ROAD
PETERSON
Taylor
Cressman FMZ
Fire Perimeter
Ownership
US Forest Service
Private

Fire Area looking North



Unburned fuels next to fire line

Burned fuels next to fire perimeter

Burned fuels next to fire perimeter

Untreated fuels (torched trees) in foreground. FMZ in background. Divided by visible dirt road.

Example of burned ladder fuels in untreated area.

Scorch height in FMZ. No trees torched in FMZ

Scorch height in untreated area. Many trees torched in untreated area, a contributing factor to over 20 spot fires at the head of the fire.

Before FMZ treatment

After FMZ treatment

Before FMZ treatment

After FMZ treatment

Before FMZ treatment

After FMZ treatment

Before FMZ treatment

After FMZ treatment