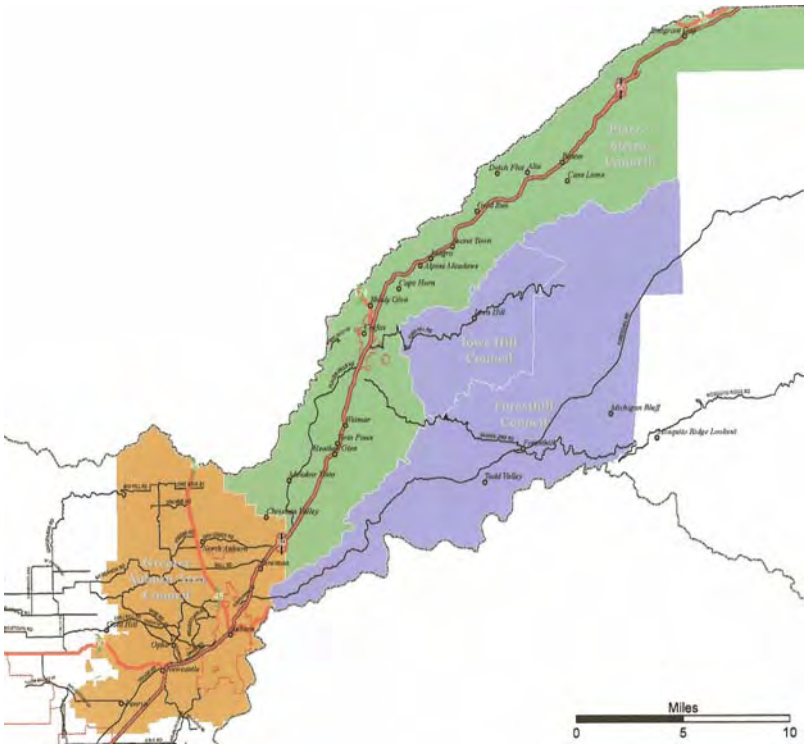
Community Wildfire Protection Plan for the West Slope of the Sierra Nevada in Placer County



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TABLES

FIGURES

Listed below are acronyms used in the Community Wildfire Protection Plan for the West Slope of the Sierra Nevada in Placer County:

ARWI - American River Watershed Institute

BLM - Bureau of Land Management

BOR - Bureau of Reclamation

CAL FIRE -California Department of Forestry and Fire Protection (formerly CDF)

CEQA – California Environmental Protection Act

CWPP - Community Wildfire Protection Plan

DBH - Diameter at breast height

FRAP – Fire and Resource Assessment Program

FRI - Fire return interval

FRCC – Fire regime condition class

FSC -Fire safe council

HFRA - Healthy Forest Restoration Act

NEPA – National Environmental Policy Act

PRC – Public Resource Code (State of California)

PTEIR – Program Timber Environmental Impact Report

RCD - Resource Conservation District

SPLATs - Strategically placed area treatments

THP – Timber harvest plan

TNF - Tahoe National Forest

USDA – United States Department of Agriculture

W.A.F.L. - Weather, Assets at risk, Fuels, and Level of Service

WUI - Wildland urban interface

The consequences of a large wildfire in Placer County are a significant concern to its residents and decision-makers. Private citizens and representatives from local, state, and federal agencies have implemented various programs to reduce the threat of a large fire; however, the threat remains that a conflagration could destroy valuable natural, historic, and private assets. This Community Wildfire Protection Plan (CWPP), as identified in the Healthy Forest Restoration Act, for the west slope of the Sierra Nevada in Placer County:

- consolidates existing plans describing fuel hazards, fire behavior, and fuel reduction projects;
- identifies and prioritizes additional projects to reduce fuel hazards that threaten communities;
- provides local, state, and federal representatives with guidance to implement fuel reduction projects over the next five years; and
- includes a monitoring program to adapt the plan to changing conditions during the planning period.

The west slope of the Sierra Nevada in Placer County has a Mediterranean climate, where cool moist winters and hot dry summers are conducive to fire. Prior to European settlement frequent fires, mostly ignited by Native Americans, burned with low intensity because fuels had little time to accumulate. As a result of effective fire suppression since the 1930's, vegetation has continued to grow and hazardous fuels have increased. There is now a 63% chance of a large fire occurring in any year on the west slope of the Sierra Nevada in Placer County and those fires will average 3,200 acres. Unlike the historic low intensity fires, today's fires will burn with a substantially higher intensity, increasing the risk of destroying valuable assets.

It is the responsibility of individual property owners and fire and public agencies to reduce the threat of a wildfire. The state's Public Resource Code (PRC 4291) requires homeowners to create defensible space around their structures. Homeowners that do not comply with the law may be fined. In a sample of approximately 2,700 residences near Todd Valley, 22% had not cleared vegetation within 30 feet of their home and 43% had not cleared vegetation between 30 and 100 feet of their home. Placer County has a free chipper program and expanding biomass removal program to assist landowners remove vegetation from their residences.

The Placer County Fire Safe Alliance (www.placerfirealliance.org) is an umbrella organization of local, state, and federal representatives and private citizens whose mission is to minimize catastrophic wildfire losses to values at risk, such as life, property, and natural resources. On the west slope of the Sierra Nevada, three fire safe councils (FSC): Foresthill/Iowa Hill, Greater Auburn, and Placer Sierra mobilize local residents and implement fuel reduction projects to reduce the risk of a catastrophic wildfire.

Large fire history, dwelling densities, incidence of ignitions, and fuel hazards were evaluated to identify and prioritize fuel reduction treatments that should be implemented by fire safe councils during the 5-year planning horizon. Dwelling densities of at least one unit per acre were mapped to identify aggregations of residences which were then surrounded by a 0.25-mile wide wildland urban interface (WUI). Ignition densities and fuel hazards were integrated to identify five classes of fire susceptibility, which ranged from high ignitions and high hazards to low ignitions and low hazards. Using these analyses, most projects were located within the

residential aggregations or the WUI and further prioritized based on fire susceptibility and local knowledge.

Thirty six (36) individual projects, treating 3,245 acres, and totaling $4.66 million dollars were identified for this initial planning period (Table E-1). Project costs include planning, which on average, equal approximately 11% of the total cost of each project. Additional projects in the Foresthill/Iowa Hill FSC were identified; however, they have not been mapped and therefore, those costs could not be estimated.

Table E-1. Summary of fuel reduction projects for the three FSCs on the west slope of the Sierra Nevada in Placer County.

Fire Safe Council	*Number of Projects*	*Acres Treated*	*Estimated Cost*
Foresthill/Iowa Hill	5	775	$1,124,100
Greater Auburn	13	1,000	$1,421,355
Placer Sierra	17	1,470	$2,121,865
Total	35	3,245	$4,667,320

County-wide projects such as the chipper program, biomass program, fuel reduction along Interstate 80, public awareness, maintenance of a GIS database, and monitoring program should be maintained and expanded, where possible.

INTRODUCTION

The consequences of a major wildland fire in Placer County are a significant concern to its residents and decision-makers (Placer County 2005). The Place County Office of Emergency Services, fire protection districts and departments, Tahoe National Forest (TNF), Bureau of Land Management (BLM), Bureau of Reclamation (BOR), CAL FIRE (formerly California Department of Forestry and Fire Protection (CDF), Placer County Resource Conservation District (RCD), and American River Watershed Institute (ARWI) have implemented various programs to reduce the threat of a large wildland fire; however, the threat remains that a conflagration could destroy valuable natural, historic, and private assets. The goal of this Community Wildfire Protection Plan (CWPP) is to reduce the risk of wildfires near communities on the west slope of the Sierra Nevada in Placer County by identifying and prioritizing projects that will reduce hazardous fuels in and adjacent to communities.

PURPOSE AND NEED

Weather, vegetation, topography, and human activities contribute to the potential for a catastrophic fire. The hot dry summers, characteristic of California's Mediterranean climate, reduce moisture in living and dead vegetation. Prior to European settlement, western Placer County's oak woodlands and ponderosa pine stands (*Pinus ponderosa*) burned every 10-30 years. As a result, foothill and forest vegetation evolved with and developed various adaptations to cope with the periodic wildfires. For instance the seeds of some shrubs require fire to germinate, other shrubs resprout from the root base following a fire, and trees, such as ponderosa pine, have thick bark to protect them from frequent low intensity fires. The effectiveness of fire suppression has reduced the frequency of burning to once every 65-70 years; as a result, live and dead vegetation has continued to accumulate, creating unnaturally excessive fuel hazards. CAL FIRE has mapped vegetation and ranked fuel hazards throughout the State and in Placer County the most severe rankings occur from east of the city of Auburn to approximately Emigrant Canyon in the north and Michigan Bluff in the south (CAL FIRE 2004, Placer County 2005). Fire history supports this ranking as some areas in western Placer County have experienced up to four large wildland fires since 1900 (Placer County 2005). The steep canyons along the American and Bear Rivers affect local wind patterns and can accelerate the rate of spread of a wildfire adding to the hazards established by the weather, topography, and vegetation. As the population continues to grow so do the number of ignitions from errant matches, sparks from equipment, and embers from backyard burning. Thus, high fuel hazards coupled with a large number of ignitions increases the susceptibility of a catastrophic fire.

In addition to the loss of vegetation and significant air pollution, large wildfires can also destroy homes and critical infrastructure (power lines, canals, roads) and result in the loss of lives. After large fires, winter rains increase soil erosion and sedimentation in streams often affecting domestic water supplies and hydroelectric facilities. Repair, replacement, and restoration of resources and facilities damaged by large wildfires add to the costs of fire suppression.

Following the disastrous 2000 fire season the National Fire Plan was created to protect communities and restore ecological health to federal lands. As a result of that planning effort,

communities at risk to wildfires were identified throughout the United States. In western Placer County, 26 at-risk communities were identified: Alpine Meadows subdivision (Rampart), Alta, Auburn, Baxter, Bowman, Cape Horn, Casa Loma, Christian Valley (Nielsburg), Colfax, Dutch Flat, Emigrant Gap, Foresthill, Gold Hill, Gold Run, Heather Glen-Applegate, Iowa Hill, Magra, Meadow Vista, Michigan Bluff, Newcastle, North Auburn, Ophir, Penryn, Secret Town, Shady Glen, and Twin Pines-Wiemar (www.cafirealliance.org).

Previous assessments and planning efforts have identified and evaluated the threat of wildfire in Placer County:

- Strategic Fire Safe Plan for Greater Auburn Area (Citygate Associates 2002);
- Nevada-Yuba-Placer Fire Management Plan (CAL FIRE 2004);
- DMA 2000, Multi-Hazard Mitigation Plan for Placer County (Placer County 2005); and
- Draft Risk Assessment and Mitigation Strategies Plan for Foresthill-Iowa Hill Fire Safe Council (ERT 2005).

Faced with these concerns about fires, Placer County officials and local stakeholder organizations agreed that ongoing vegetation management is the most important factor in reducing the wildfire hazard in Placer County. The Placer County Hazard Mitigation Planning Committee determined a single comprehensive plan should be prepared that met recent federal requirements described in the Healthy Forest Restoration Act ([HFRA] H.R. 1904) (Placer County 2005).

One of the primary purposes of the HFRA was to reduce wildfire risks to communities, municipal water supplies, and other at-risk federal lands (HFRA section 2[1]). CWPPs were described in the HFRA as collaborative agreements between local government, local fire agencies, and the State agency responsible for forest management, in this case, CAL FIRE. CWPPs identify and prioritize areas of hazardous fuels and recommend treatments to reduce those fuel hazards on federal and non-federal lands and recommend measures to reduce structural ignitability (HFRA section 101[3]). In addition, the approving agencies should also have meaningful consultations with local representatives of the USDA Forest Service and BLM (Western Governors Association 2004).

The HFRA provides communities with an opportunity to influence where federal agencies implement projects on federal lands (in western Placer County, lands administered by the TNF or BLM) and how federal funds are distributed on nonfederal lands. The BOR however, is not required to comply with the HFRA (Western Governors Association 2004). The HFRA directs the TNF and BLM to give priority to projects that provide for the protection of at-risk communities or that implement CWPPs (HFRA section 103[a]). Additionally, the Secretary of the Interior should give priority to communities that have developed a CWPP when allocating funding under the HFRA (HFRA section 103[d][2]).

This CWPP for the west slope of the Sierra Nevada in Placer County consolidates existing plans describing fuel hazards, fire behavior, and mitigation projects; identifies and prioritizes additional mitigation projects focused on communities; and is consistent with the federal CWPP requirements. This CWPP is designed to provide guidance to federal, state, and local officials for

the next five years. Accomplishments will be monitored and adjustments will be made to this plan to reduce the threat of a large wildfire and loss of valuable assets in western Placer County.

Planning Area

The area included in this CWPP includes that portion of western Placer County from Penryn and Newcastle in the southwest to Emigrant Gap in the northeast and Michigan Bluff in the southeast and the Bear and American Rivers in the north and south, respectively (Figure 1-1). The planning area for the Place Sierra Fire Safe Council (FSC) includes the entire FSC area approved by the Placer County Board of Supervisors in 2006 and that area east of Emigrant Gap that is the responsibility of the Dutch Flat Fire Protection District. Communities in Lake Tahoe were not included because they have already approved a CWPP (Celio et al. 2004). Communities in the far western portion of Placer County were not included because fuel hazards are lower in that portion of the County (CAL FIRE 2004) and numerous golf courses and irrigated pastures maintain green vegetation that will help to confine the spread of a large wildland fire.

Responsible Organizations

The Placer County Fire Safe Alliance will act as an umbrella organization to coordinate the activities of three FSCs (Greater Auburn FSC, Foresthill/Iowa Hill FSC, and Placer Sierra FSC). The three FSCs are comprised of federal, state, and local officials and individual stakeholders that identify and prioritize projects. CAL FIRE will be responsible for approving all projects on state and private land. The TNF, BLM, or BOR will be responsible for approving all projects on federal lands.

ORGANIZATION OF THIS PLAN

Section 1, Introduction, describes the purpose and need of the plan, the planning area, and responsible organizations.

Section 2, Overview, describes changes in fire regimes and fuel hazards, ignitions (risks), and assets at risk throughout the planning area.

Section 3, Responsibilities and Treatments, describes the responsibility of individual and agencies, specific treatments, prescriptions that have been developed, and cost estimates of those treatments.

Section 4, Foresthill-Iowa Hill FSC, identifies that risks, hazards, and assets at risk in that FSC and proposed projects, costs, and priorities.

Section 5, Greater Auburn FSC, identifies that risks, hazards, and assets at risk in that FSC and proposed projects, costs, and priorities.

Section 6, Placer Sierra FSC, identifies that risks, hazards, and assets at risk in that FSC and proposed projects, costs, and priorities.

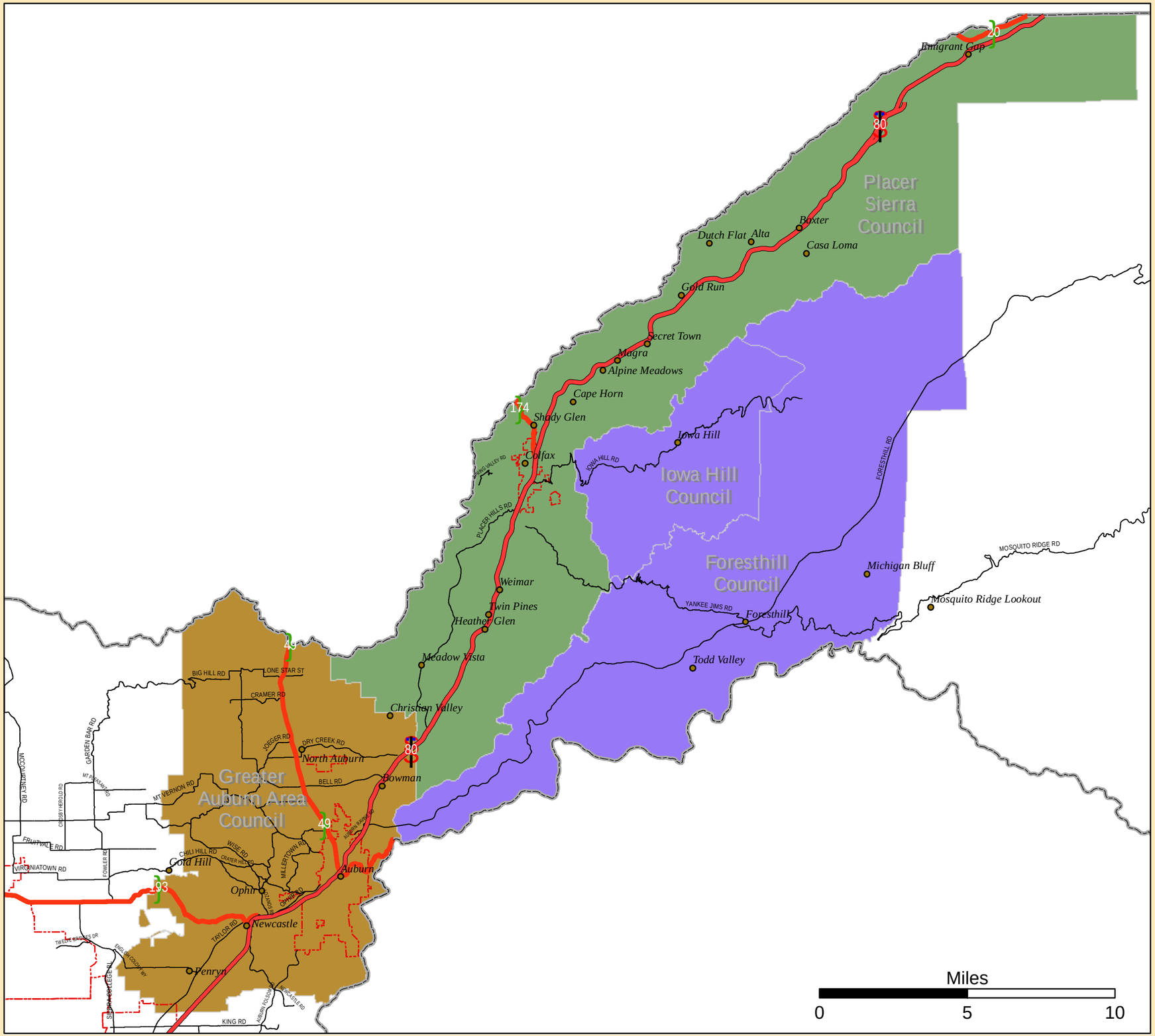
Section 7, County-wide Programs, identifies projects that affect more than one FSC, including monitoring.

Section 8, References, identifies the references in this CWPP.

FIGURE 1-1

West Slope Sierra Nevada
Placer County

Community Wildfire Protection Plan



Legend

- Foresthill / Iowa Hill FSC
- Greater Auburn Area FSC
- Placer Sierra FSC
- County Boundary
- City Limits

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OVERVIEW

This section provides an overview of the need to reduce fuel hazards; it discusses changes in fire regimes, ignitions (risks), fuel hazards, assets at risk, and structural assessments on the west slope of the Sierra Nevada in Placer County. Most of the information in this section was developed by CAL FIRE and presented in several earlier reports describing fires and fuels in Placer County (ERT 2005, Placer County 2005, CAL FIRE 2004, Citygate Associates 2002) and the ARWI (www.ARWI.us) and, therefore, it is only summarized. More detailed information for each FSC area is provided in Sections 4, 5, and 6.

CHANGES IN WESTERN PLACER COUNTY'S FIRE REGIMES

Prior to the discovery of gold, California's landscape was forged and maintained by natural forces; however, since that event the landscape has undergone significant changes. Settlement, statehood, identification and acquisition of public lands, public attitudes affecting land use, and environmental laws and policies influenced the factors that historically governed the landscape.

Frequent fires ignited by Native Americans resulted in oak woodlands with scattered mature trees and low growing shrubs and abundant grasses at lower elevations and large widely spaced conifer trees with a poorly developed understory at the higher elevations. Settlement, changes in public policies and attitudes since the 1930's, and the increased effectiveness of fire suppression have eliminated the frequent fires, allowing vegetation to grow undisturbed and for fuel hazards to accumulate. On steeper slopes with shallower soils, dominated by chaparral, fires were less frequent; however, when they did occur the accumulated fuels resulted in high intensity fires.

Fire Regimes

Fire regimes are described by fire return intervals (FRI), measuring the number of years between fires, and fire intensity, which describes the energy of the fire. Fire severity can be defined as:

- Low severity: light surface fires; some small trees may be killed.
- Moderate severity: most small trees killed; some subcanopy trees killed or heavily damaged. Overstory trees may occasionally be killed.
- High severity: small and subcanopy trees killed; many to most overstory trees killed (Skinner and Chang 1996).

As a result of effective fire suppression and vegetation growth, fire regimes on the west slope of the Sierra Nevada have changed since the Gold Rush (Table 2-1). With the exception of chaparral and blue oak-foothill pine vegetation types, fire suppression has increased the FRI in all other vegetation types. The FRI in blue oak-foothill pine has been reduced because of more fires associated with the increased development that has occurred in the foothills. The longer FRI in other vegetation types allows vegetation to

grow and fuels to accumulate, resulting in increased fire severity. Where low intensity fires were once common in the Sierra Nevada foothills, they have been replaced by moderate to high intensity fires.

Table 2-1. Changes in fire regimes on the west slope of the Sierra Nevada.

Vegetation Type[1/]	*Pre-1850 Median FRI*[2/]	*Severity*	*Current Median FRI*	*Severity*
Chaparral	67 years	High	67 years	High
Blue oak–foothill pine woodlands	29 years	Low	8 years	Low
Montane hardwood woodlands	13 years	Low	67 years	Low to Moderate
Ponderosa pine	10 years	Low	67 years	Moderate to High
Douglas-Fir	15 years	Low	67 years	Moderate to High
Sierra Mixed Conifer	13 years	Low	67 years	Moderate to High

[1/] Mayer and Laudenslayer 1988

[2/] Skinner and Chang 1996, USDA, Forest Service 2001

Paired, historical and recent photographs of areas in Placer County provide additional evidence that changes have occurred to the local fire regime. The photographs in Figure 2-1a (below) were taken above the North Fork of the American River facing north toward the Cape Horn railroad cut (T.15N, R. 9E, Sec 35) at an elevation of 1,700 feet. In the 1867 photograph, grasses dominate the foreground and middle ground with widely scattered foothill pine (*Pinus sabiniana*), oaks (*Quercus* spp.), and ponderosa pine. The widely scattered trees with a poorly developed shrub cover indicate frequent fires. In the more recent photograph the young stands of dense ponderosa pine in the foreground and middle ground and the dense chaparral indicates the lack of fire.

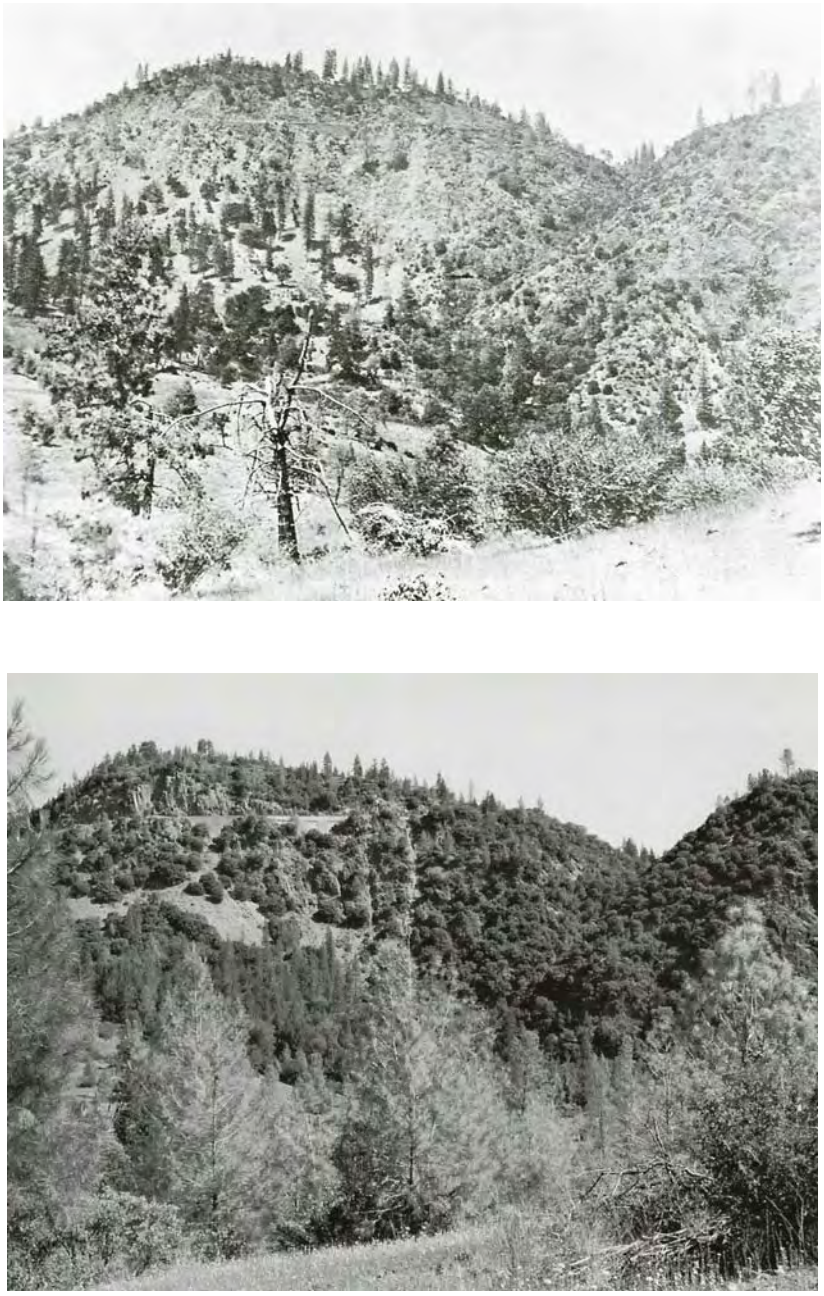


Figure 2-1a. Above North Fork American River, elevation 1,700 feet, in 1867 and 1993, western Placer County (source: Gruell 2001).

The photographs in Figure 2-1b (below) were taken from the top of Cape Horn (T.15N, R.9E, Sec 26) at an elevation of 2,900 feet. In the 1867 photograph large widely scattered ponderosa pine with a poorly developed understory resulted from the frequent low intensity fires. In the more recent photograph a dense stand of manzanita (*Arctostaphylos* spp.) is in the foreground and dense ponderosa pines are in the middle ground.

Figure 2-1b. Top of Cape Horn, elevation 2,900 feet, in 1867 and 1993, western Placer County (source: Gruell 2001).

CURRENT FACTORS AFFECTING FIRE SUSCEPTIBILITY

Although most fires are quickly suppressed, some escape initial attack and may adversely affect personal property and natural and historic resources. One way to identify areas that are more or less susceptible to a potentially large fire is to evaluate ignition patterns (risks), fuel hazards, and historic fires. Thus, an area that has a high frequency of ignitions and high fuel hazards has high fire susceptibility; likewise, areas with a low frequency of ignitions and low fuel hazards have low fire susceptibility. Ignition patterns and fuel hazards have been categorized and mapped for the west slope of the Sierra Nevada in Placer County and are described below.

Ignition Sources

Historically, Native Americans were the most likely source of ignitions for most fires in Placer County. That pattern has not changed; the majority of ignitions in Placer County are still human-caused (85.1%); 10.4% are of unknown origins and 4.5% are caused by lightning (CAL FIRE 2004). The majority of human-caused ignitions (76%) are from vehicles, equipment, or arson (CAL FIRE 2004). Ignition sources may vary by area, for instance, lightning caused a higher proportion of fires (14%) in the Foresthill/Iowa Hill FSC area (ERT 2005); however, humans are still the primary source of ignitions on the west slope of the Sierra Nevada in Placer County.

CAL FIRE has mapped ignitions during 1996-2005, at a scale of one square mile. The highest densities (5.5-6.0 ignitions/mile^2) occur in Newcastle, near Bowman, and along the Foresthill Road. High-moderate densities of ignitions occur along developed areas along Interstate 80 (I-80) (Figure 2-2). East of I-80, ignition densities steadily decline as human population densities decrease. Thus, ignition densities generally correspond to development and traffic patterns.

Fuel Hazards

CAL FIRE has mapped fuel hazards based on vegetation, fire history, and slope; with the hazards ranked as medium, high or very high hazard (Figure 2-3). Fuel hazards are generally high throughout the Greater Auburn FSC and generally high or very high in the Foresthill-Iowa Hill and Placer Sierra FSC. The highest fuel hazards occur along the Middle and North Forks of the American River; from the American River to Michigan Bluff in the south, from the American River to Sugar Pine and Big Reservoirs east of Iowa Hill, and along I-80 from Gold Run to Nyack in the north.

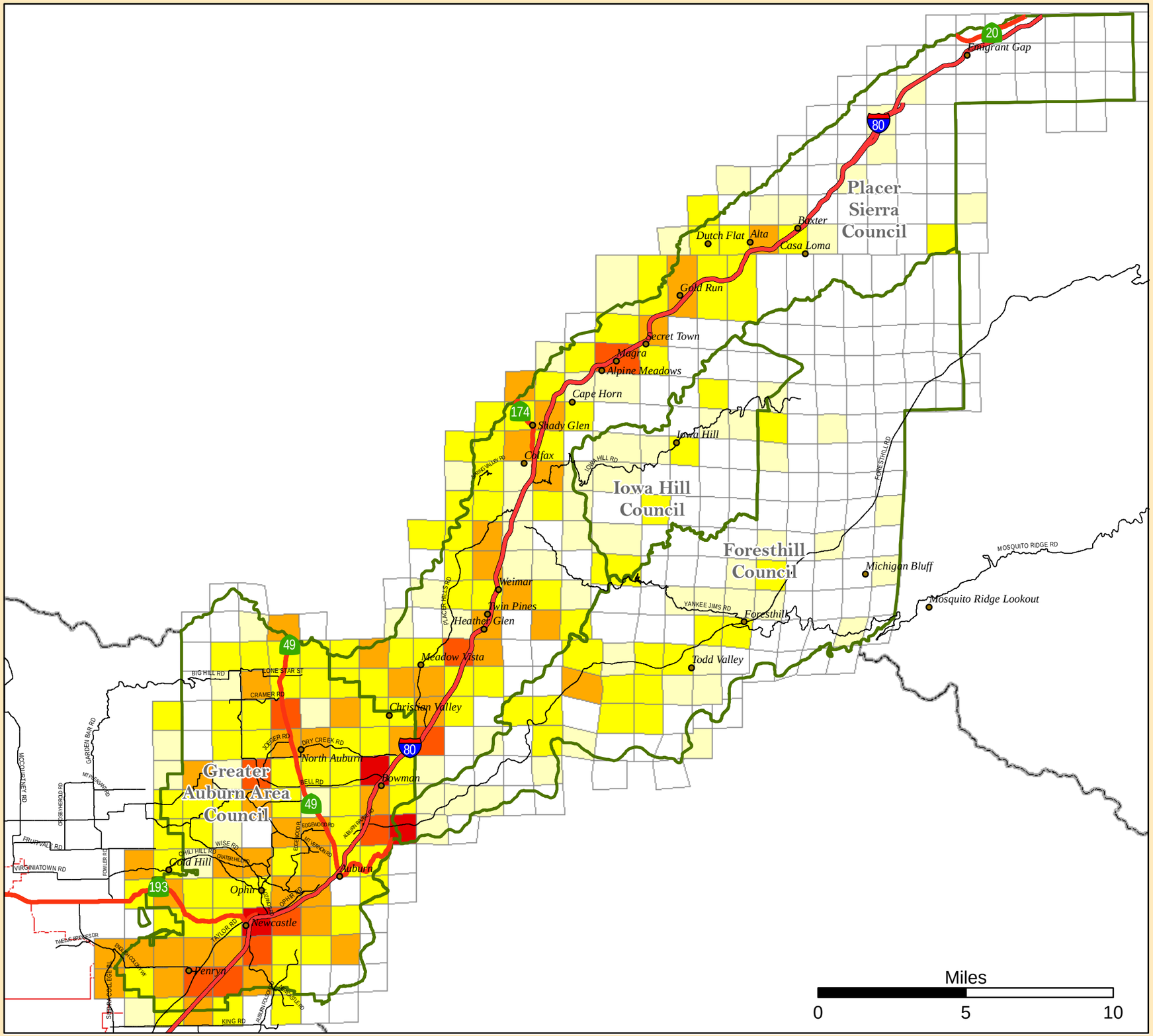
Simulated Fire Behavior

The ARWI and TNF simulated fire behavior near Colfax (Figure 2-4) using FlamMap, a fire modeling tool that relies on fuel hazards, topography, and weather to develop spatial maps of simulated fire behavior. Within a 2.5 mile radius of Colfax, flame lengths varied from less than four feet to greater than 11 feet; however within the

FIGURE 2-2

West Slope Sierra Nevada
Placer County

Ignition Densities



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Ignition Densites (1996-2005)

- 0 Ignitions
- 1 Ignition
- 2-5 Ignitions
- 6-10 Ignitions
- 11-20 Ignitions
- 21-45 Ignitions

- Fire Safe Councils
- County Boundary
- City Limits

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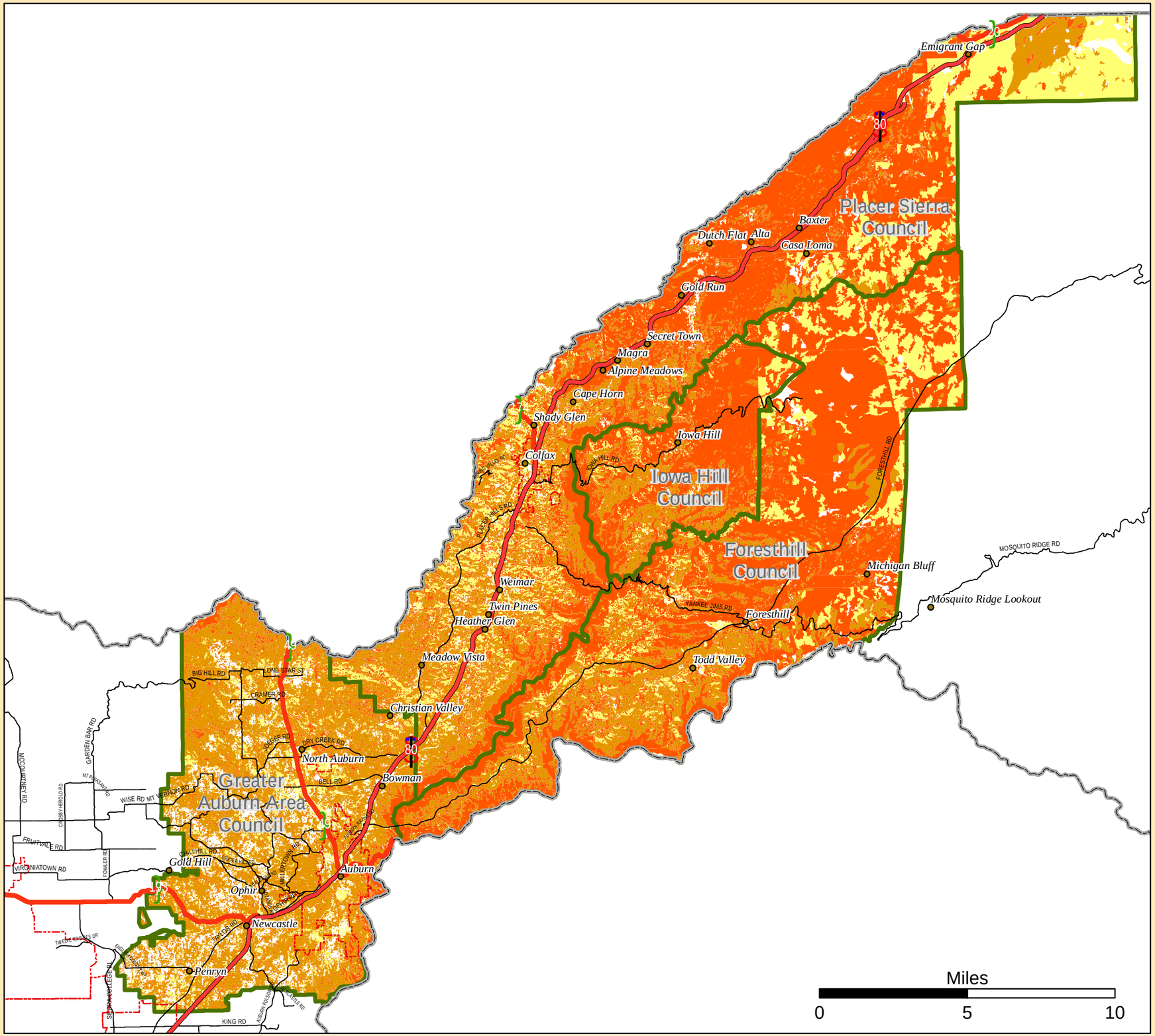
FIGURE 2-3

West Slope Sierra Nevada
Placer County

Fuel Hazard Rankings



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Fuel Hazard Rank

- Medium
- High
- Very High

- Fire Safe Councils
- County Boundary
- City Limits

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North Fork of the American River canyon, simulated flame lengths consistently exceeded 11 feet; and within that 2.5 mile radius, the majority of the area would support passive crown fires (fires that burn on the ground and in individual or in small groups of trees). The more intensive fire behavior in the canyons in this example should be similar throughout the west slope Sierra Nevada planning area, where slope and local wind patterns exacerbate fire behavior. These estimates of fire behavior are also important because they identify areas where the heat generated by flame lengths exceeding four feet limit the use of traditional hand crews using direct attack suppression tactics. Thus, suppression efforts must rely on indirect methods or aerial tactics which are more expensive and may not be as efficient or effective.

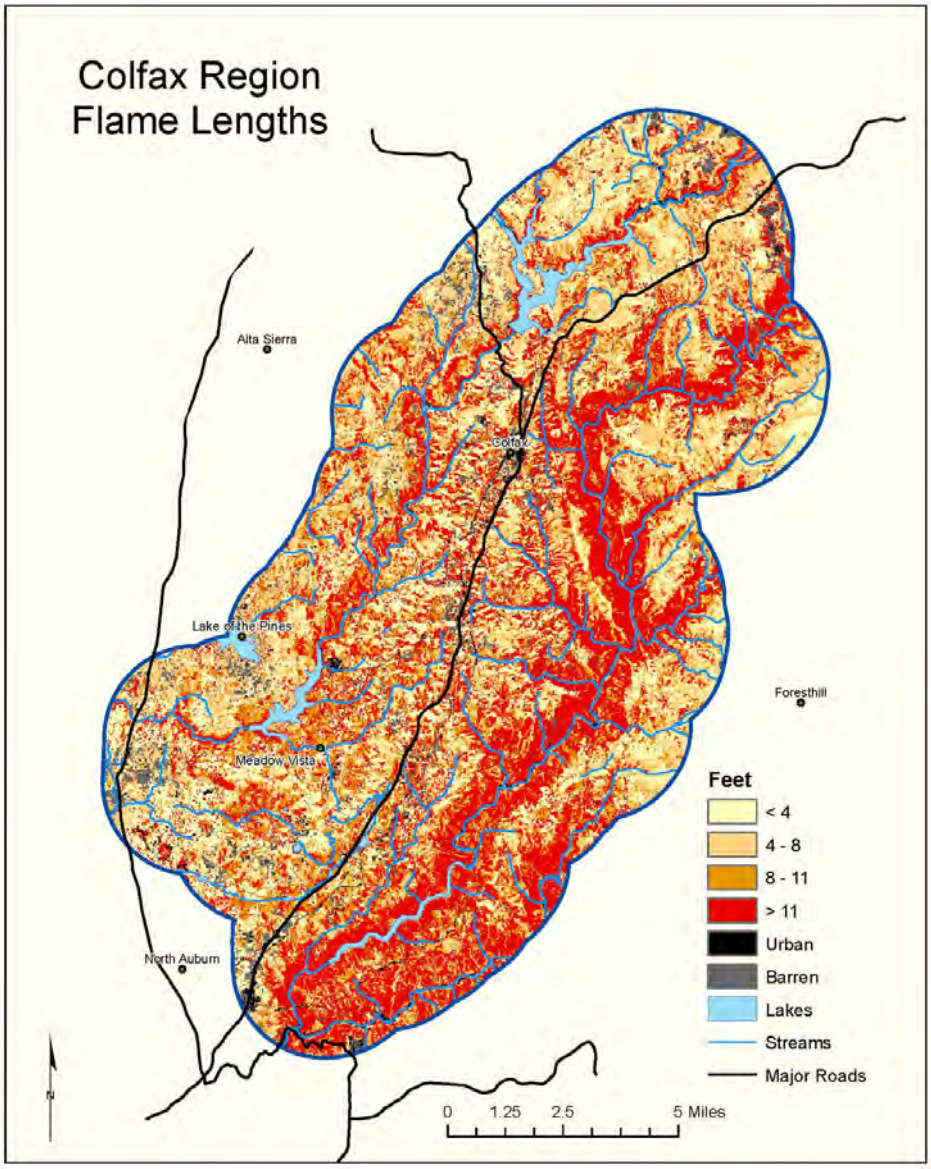


Figure 2-4. Simulated flame lengths near Colfax, CA (source: http://arwi.us/fire/PFSC_behavior/appl.php)

Using FARSITE, another modeling tool, the area burned by a fire without suppression could also be simulated. Assuming a fire was ignited on the north side of Yankee Jims Road in late August, it would take less than two days to travel approximately four miles toward Colfax.

Large Fire History

Between 1908 and 1998, 135 large wildfires occurred on the west slope of the Sierra Nevada in Placer County. The probability of a wildfire occurring in any given year is 63%, with an average of 3,200 acres burned annually. Notable exceptions were 1924, 1936, and 1960 when 33,500, 21,300, and 42,300 acres burned, respectively. All large wildfires during 1908-1998 have been mapped (Figure 2-5). The highest frequency of large fires has occurred in the TNF, generally east of Michigan Bluff and Baxter, where some areas have had four large fires (e.g. near Humbug Ridge). Not coincidently, this area generally corresponds to those areas where the highest fuel hazards have also been mapped. Large fires are not a past phenomenon; in 2001, the Ponderosa and Gap fires burned over 5,200 acres in western Placer County and most recently, the Ralston fire burned over 8,400 acres east of Foresthill in September 2006. Given the high density of ignitions and the unnatural build-up of fuel hazards, as a result of effective fire suppression, it is not unreasonable to predict that a large wildfire (>8,000 acres) could occur in this project area.

ASSETS AT RISK

The west slope of the Sierra Nevada in Placer County has numerous assets that are susceptible to a large wildfire. CAL FIRE has identified and mapped 16 assets at risk and mapped them in western Placer County (CAL FIRE 2004). The assets include natural and historic resources, recreation areas, private residences, and key infrastructure (Appendix A). The overall ranking within the west slope of the Sierra Nevada in Placer County was based on a map of weather, assets at risk, fuels, and the level of service (W.A.F.L.) identifying the sum of these variables in each square mile (Figure 2-6). The highest ranked sections are scattered throughout Placer County from Auburn east along the I-80 corridor, to Emigrant Gap and around Foresthill and Iowa Hill.

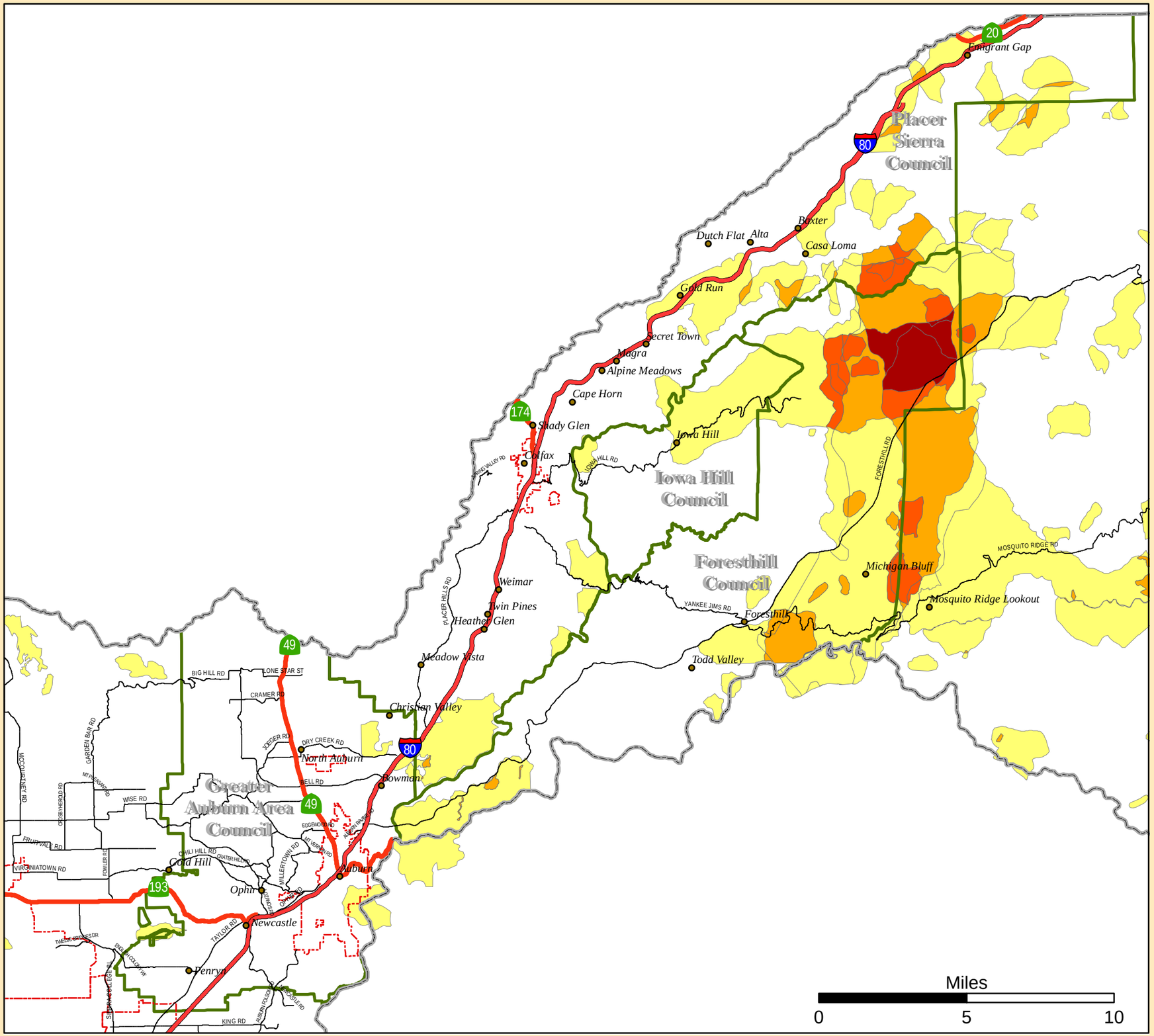
Wildland Urban Interface

While the west slope of the Sierra Nevada in Placer County has numerous assets at risk, this CWPP emphasizes the protection of communities because the HFRA directs that at least 50% of the appropriated federal funding be for projects that occur in the wildland urban interface (WUI) (Western Governors Association 2004). The WUI is that area where communities and wildland vegetation meet (HFRA section 101 [16]) and designation of the WUI is a fundamental step in preparing a CWPP (HFRA section 101 [16], Western Governors Association 2004).

FIGURE 2-5

West Slope Sierra Nevada
Placer County

Fire Frequency



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Fire Frequency 1908-1998

- 1 Fire
- 2 Fires
- 3 Fires
- 4 Fires

- Fire Safe Councils
- County Boundary
- City Limits

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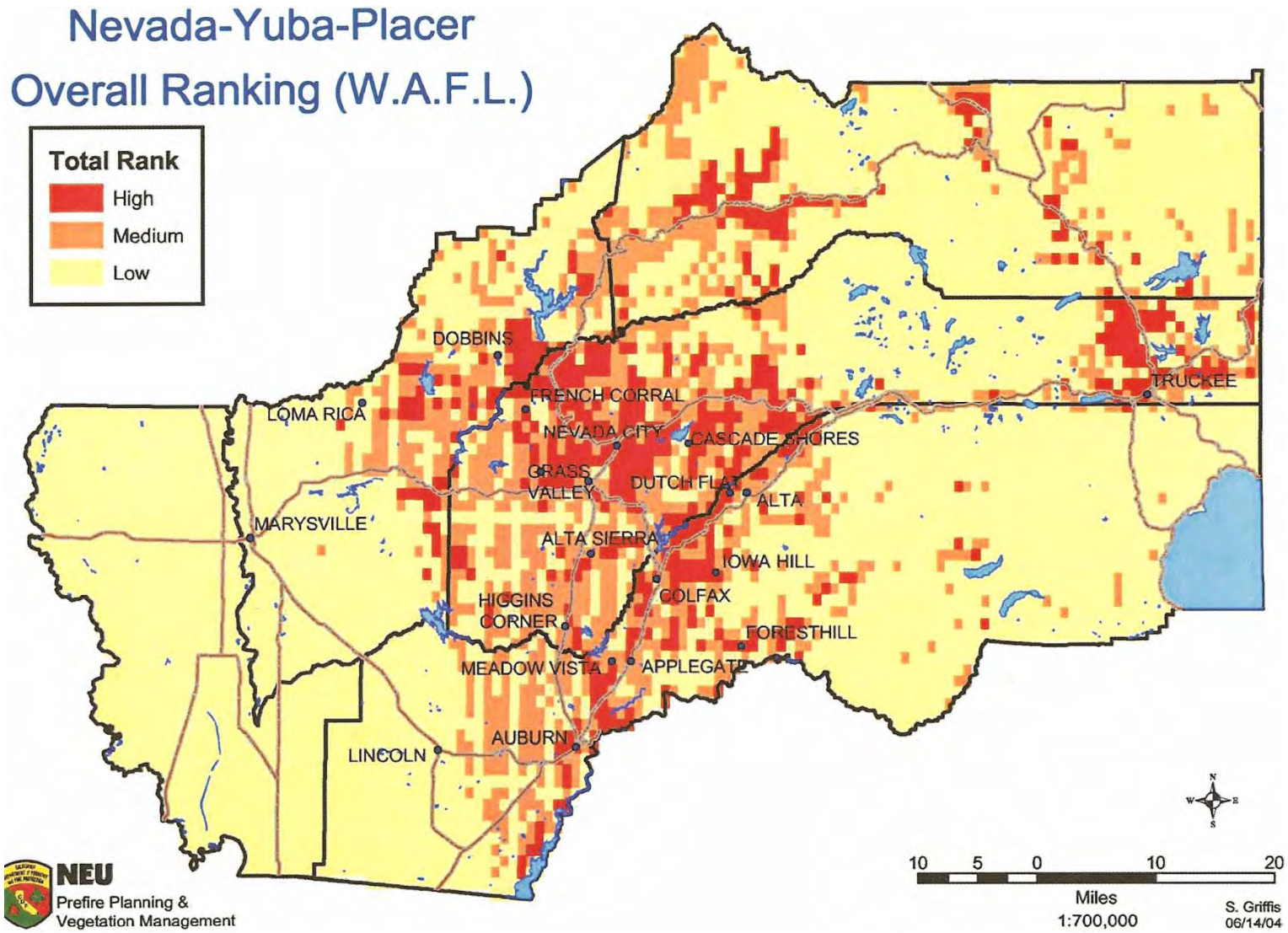


Figure 2-6. Integrated map of weather, assets at risk, fuel, and level of service for Placer, Yuba, and Nevada Counties (source CAL FIRE 2004).

In this CWPP, communities were initially defined as aggregations of dwellings having densities greater than one dwelling per acre. The boundary of the WUI was defined as a 1,320 foot-wide buffer adjacent to the communities (Figure 2-7). The WUI boundary was then modified to smooth the exterior perimeter or include additional areas. This definition included all of the communities-at-risk (See Section 1), except Casa Loma, Iowa Hill, and Secret Town, where dwelling densities are generally less than one per acre. These communities, however, are included in project planning as are other individual communities that have not been formally identified at this time.

Structural Assessment

A limited amount of information is available to evaluate structural hazards on the west slope of the Sierra Nevada in Placer County. CAL FIRE (unpublished data) collected information from 1,214 structures in Todd Valley in 2006. Ninety-three percent of the structures had combustible wood siding, while approximately 9% had noncombustible siding (stucco, concrete, or metal); manufactured homes made up the remaining sample. Only two homes had wood shake roofs; however, it is probable that other communities have much higher proportions of homes with wood shake roofs. Approximately 81% of the structures had unenclosed decks that would readily ignite in a wildfire. Combustible roofs, siding, and unenclosed decks contribute to fuel hazards in developed areas.

Defensible Space

All private citizens in California are required to maintain defensible space around occupied buildings (see Section 3 for a full explanation). CAL FIRE has conducted defensible space inspections in various areas of Placer County. In 2006, Battalions 1, 3, 7, and 8 (Table 2-2) inspected 2,735 properties and followed up on 694 properties for second and third inspections.

Table 2-2. General location of CAL FIRE battalions in Placer County.

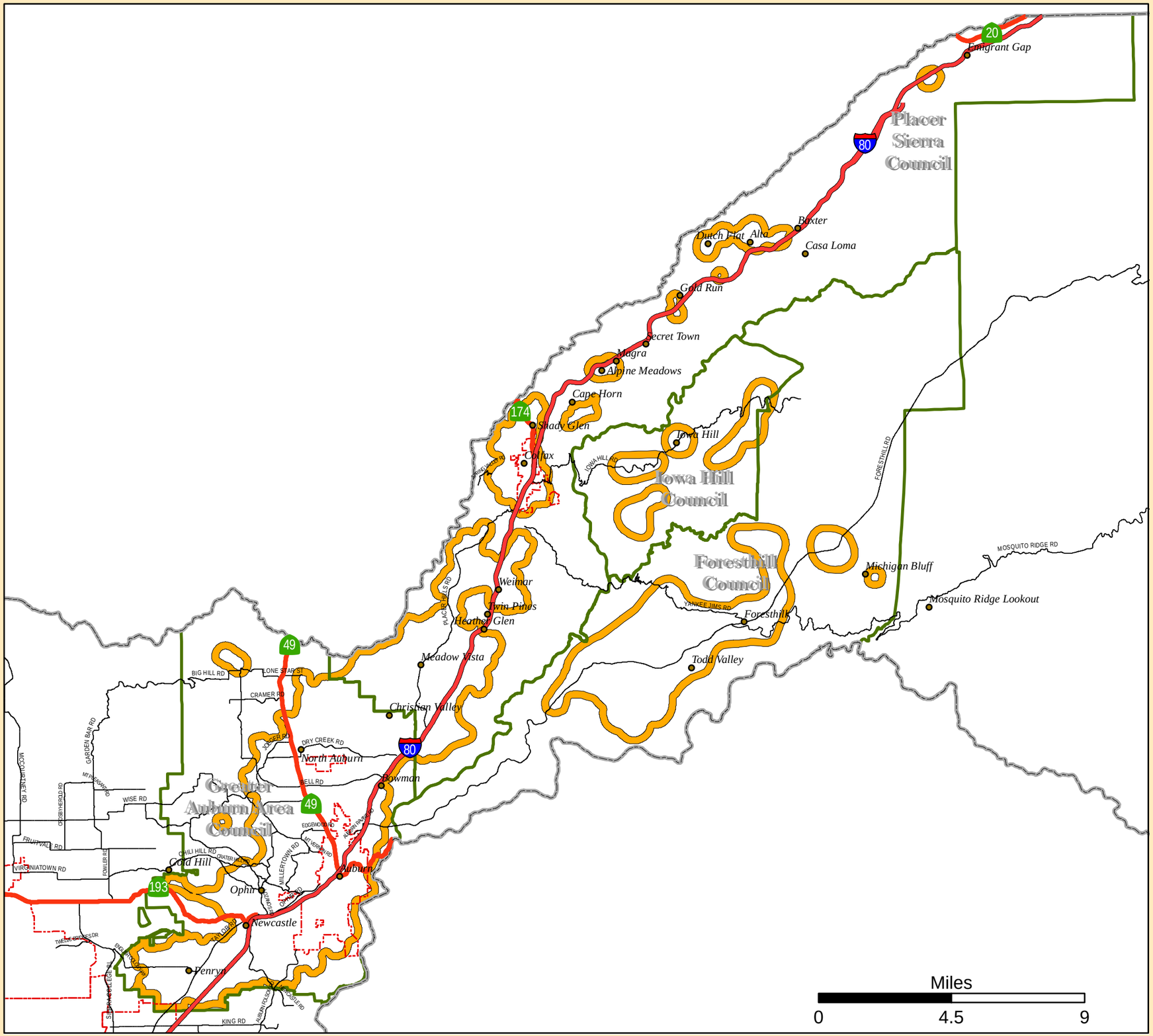
Battalion	*Fire Safe Council*	*General Location*
1	Greater Auburn and Foresthill	Christian Valley and Auburn-Folsom Road east to Foresthill
3	Placer Sierra and Iowa Hill	Meadow Vista east to Yuba Gap and Iowa Hill
7	Greater Auburn	North of Highway 193
8	Greater Auburn	Highway 49 and North Auburn

The results were generally similar between the geographic areas sampled, with most violations being insufficient clearance between 30 and 100 feet from building (Figure 2-8). This frequent violation probably occurred because the Public Resources Code governing defensible space was recently changed to include a larger area of clearance. These results may or may not be similar to other areas in Placer County.

FIGURE 2-7

West Slope Sierra Nevada
Placer County

Wildland Urban Interface



Legend

- Wildland Urban Interface (WUI)
- County Boundary
- City Limits
- Fire Safe Councils

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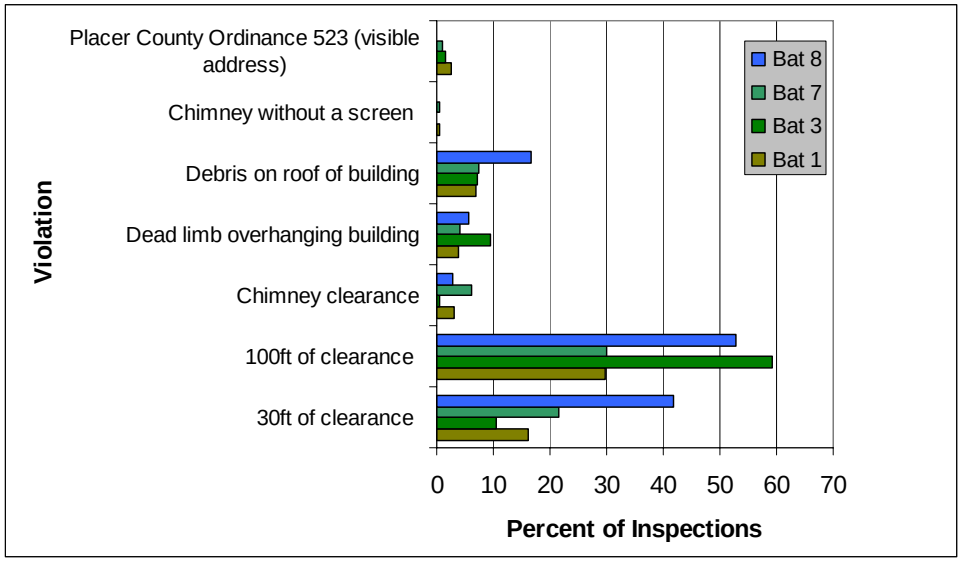


Figure 2-8. Percent of residences that did not comply with defensible space inspections in Placer County, 2006 (source: CAL FIRE, unpublished data).

Section 3 describes responsibilities of individuals, organizations, and public agencies to treat hazardous fuels and reduce the threat of a devastating wildland fire, the desired fire behavior and treatments to reduce those fuel hazards, and cost estimates to achieve those prescriptions.

RESPONSIBILITIES

Individuals

"Most of the houses I've examined very likely ignited from small spot ignitions on or adjacent to the home not from the big crown fire flames. That means a homeowner can easily do fuel reductions that can potentially save their home." *Jack Cohen, Research Physical Scientist, Fire Sciences Lab, Rocky Mountain Research Station, USDA Forest Service, Fort Collins, CO.*

Jack Cohen is a research scientist who has studied fire behavior, structural flammability, and property losses resulting from wildfires. Through his research he has concluded that structures are lost during wildfires because of structural flammability (such as shake roofs, wood siding, and unenclosed decks) and the presence of flammable vegetation within 200 feet of the structure. He also believes that the primary and ultimate responsibility for home protection lies with each homeowner and not with public land management agencies. California's Public Resources Code (PRC), section 4291 also recognizes the ability and responsibility of individual homeowners to protect their assets by having visible address signs and creating defensible space around all occupied buildings.

PRC 4291

PRC 4291 applies to everyone that owns or maintains a structure on non-federal lands covered with flammable vegetation. It requires homeowners to create defensible space around their structures where firefighters can provide protection during a wildfire. The California Board of Forestry recently adopted new regulations increasing the size of defensible space from 30 feet to 100 feet around occupied structures (CAL FIRE 2006). PRC requires all homeowners to rearrange fuels (hazardous vegetation) and substantially modify fire behavior around homes up to 100 feet from the home or to their property line, if that is less. Homeowners that do not comply with PRC 4291 may be fined $100-$500 for an initial violation. For repeat offenders a minimum fine of $500 may be imposed or CAL FIRE may contract with another individual or a firm to perform the work necessary to comply with PRC 4291 and bill that homeowner for the expenses.

Fire Safe Councils

FSCs are local organizations of fire personnel, agency representatives, and concerned citizens who assist local property owners mobilize to protect their personal property from a catastrophic fire. They develop projects and obtain state or federal grants to reduce fuel hazards in strategic locations in a community. FSCs also develop public education information, such as the defensible space brochure developed by the Greater Auburn FSC, to assist homeowners

design fire safe environments. Three active FSCs provided the leadership for this planning effort in Placer County: Greater Auburn, Foresthill/Iowa Hill, and Placer Sierra.

Placer County Fire Safe Alliance

The Placer County Fire Safe Alliance (www.placerfirealliance.org) is an umbrella organization of local, state, and federal representatives, and private citizens whose mission is to minimize catastrophic wildfire loses to values at risk such as life, property, and natural resources by:

- informing and educating the public on fire safe communities, fire risk, and fire hazard mitigation;
- aiding, assisting, and participating in fire mitigation planning efforts;
- prioritizing and securing funding for coordinated fire safe projects and activities; and
- monitoring and reviewing fire safe activities to ensure alliance goals are met.

Public Agencies

CAL FIRE

CAL FIRE enforces the Forest Practice Rules that regulate forest management on private and state lands. Removal of trees that are sold as commercial products generally requires a timber harvest plan (PRC 4527) and THPs must be prepared by a registered professional forester (PRC 4581). CAL FIRE is also responsible for enforcing PRC 4291 which requires all homeowners to create defensible space around their homes. The creation of defensible space should not require preparation of a THP. Activities that are exempt from filing a THP (PRC 4584 and Forest Practice Rules (2008) 1038.c); include projects that:

- cut and remove trees along rights-of way for utility lines;
- remove dead, dying, or diseased trees of any size in amounts less than 10% of the average volume per acre, when defined conditions are met;
- remove trees within 150 feet of a legally permitted building to comply with PRC 4291;
- removal of woody debris and slash that results from normal timber operations, is reachable from an existing road or landing, and is delivered as combustion fuel for the production of energy; and
- remove trees to modify the vertical and/or horizontal continuity of fuels for the purpose of modifying fire behavior on lands less than 300 acres in size, when defined conditions are met (note: this exemption is currently only approved until January 1, 2013).

Land Management Agencies

The TNF, BLM, and BOR (responsible for land management decisions in the Auburn State Recreation Area) are responsible for managing fuel hazards on federal lands in this CWPP planning area. Under the HFRA, the TNF and BLM are required to collaborate on planning, prioritizing, and implementing hazardous fuel reduction projects (section 2 [1]); however, the BOR is not required to comply with the HFRA. The HFRA also placed priority on implementing

fuel reduction projects on federal lands in the WUI and in proximity to municipal water supply systems or streams feeding those systems within a municipal watershed where a significant risk exists that fire would have adverse effects on the water quality of that supply (Section 102 [a] [1][2]. All projects implemented on TNF lands must comply with the Sierra Nevada Framework (USDA Forest Service 2001, amended 2004).

DESIRED FIRE BEHAVIOR

The desired fire behavior in treated areas should be a surface fire with flame lengths less than four feet long and preferably less than two feet long, under high fire severity weather conditions. A maximum four-foot flame length was selected because fire fighters can still use direct attack suppression tactics to contain these fires.

TREATMENTS

In addition to individual treatments to reduce fuel hazards around dwellings larger treatments designed for the landscape level are described below. Construction and maintenance of fuel breaks may require detailed site-specific prescriptions to remove the proper amount of vegetation to achieve the desired fire behavior and comply with all other environmental requirements. Registered professional foresters or fuel specialists should design and review these treatments. All projects other than defensible space treatments are subject to evaluation under the National Environmental Policy Act (NEPA) or California Environmental Quality Act (CEQA), or its functional equivalent, such as a timber harvest plan.

Individual Defensible Space

The following description summarizes detailed guidelines recently published by CAL FIRE and the Board of Forestry (2006) to comply with PRC 4291 and 14 CCR 1299. These guidelines are available for review at www.bof.fire.ca.gov/pdfs/Copyof4291finalguidelines92906.pdf and should be reviewed by each homeowner in the CWPP planning area.

- Within 30 feet of the structure or up to the property line, maintain a firebreak by removing and clearing away all flammable vegetation and other combustible growth. Single specimens of trees or other vegetation may be retained provided they are well spaced, well-pruned, and create a condition that avoids the spread of fire to other vegetation or to a building or structure.

- From 30 to 100 feet beyond the structure or up to the property line (Reduced Fuel Zone) remove dead and dying woody surface fuels and aerial fuels. Loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, is appropriate as long as the depth of that material is not greater than three inches.

- Downed logs or stumps anywhere within 100 feet from the building or structure, when embedded in the soil, may be retained when isolated from other vegetation. Occasional (approximately one per acre) standing dead trees (snags) that are well-spaced from other

vegetation and which will not fall on buildings or structures or on roadways/driveways may be retained.

- Within the Reduced Fuel Zone, either: thin vegetation so it is 4 to 40 feet apart, dependent on vegetation and slope; or, if there is continuous tree canopy remove all surface fuels greater than four feet high and remove lower limbs of trees to at least six feet above the ground.

Figure 3-1. Example of defensible space treatments for individual homeowners (source: CAL FIRE 2006).

Community Defense

Community defense treatments are designed to treat vegetation beyond individual dwellings and provide additional threat reduction for a community. These treatments link individual defensible space clearings by treating beyond the 100 foot clearance required in PRC 4291. Community defense treatments will require community organization and commitment to implement and maintain them. Community defense treatments would function as landscape-level treatments to contain and easily suppress fires within communities and to reduce the threat of fires entering from unmanaged adjacent wildlands. These treatments would be important for those communities that are not adjacent to public lands where fuel breaks may be constructed to modify fire behavior at a landscape level or where suppression resources are not immediately available.

Roadside Hazard Reduction

Roadside hazard reduction is designed to reduce the rate of spread of fires ignited along roads, maintain emergency ingress and egress during fires, and provide evacuation routes for residents. Small trees and shrubs should be substantially reduced up to 30 feet on either side of key roads. Trees and shrubs should be removed and the spacing of residual trees and shrubs

should be sufficient to allow for mechanical mowing of grasses along the roadsides. Residual trees should be pruned to reduce the threat of a crown fire.

Fuel Breaks

Fuel breaks are strategically placed linear treatments around or adjacent to communities to substantially modify fire behavior at a landscape-level. Fuel breaks are designed to provide fire fighters with a safe place to contain a fire. The most effective fuel breaks are at least 300-foot wide clearings of grasses and annual plants along ridgetops. Shaded fuel breaks retain scattered trees and/or shrubs for aesthetics and cover for wildlife; however, tree spacing and ground cover are designed to significantly modify fire behavior under less than high or extreme fire weather conditions. Less effective fuel breaks are narrower and placed mid-slope. No fuel break will guarantee protection from a wildfire during high or extreme weather that result in an active crown fire.

Strategically Placed Area Treatments

Strategically placed area treatments (SPLATs) are a relatively new type of fuel treatment used by the Forest Service in wildland situations. SPLATs are generally 50-1,000 acres where fuels have been substantially modified and that are located so that a fire does not have a clear path of untreated fuels to facilitate its spread (USDA, Forest Service 2001). To be effective in modifying fire behavior, a minimum of 20% of an area needs to be treated with SPLATs. SPLATs are intended to enhance the effectiveness of fuel breaks that are placed adjacent to communities (USDA Forest Service 2001).

TECHNIQUES AND COST ESIMATES

Numerous techniques are available to reduce fuel hazards and to implement the treatments described above. This section provides a brief summary of those techniques and cost estimates using one or more of those techniques to achieve the treatments described above. Mechanical and hand thinning are used to remove trees and shrubs; small trees and shrubs can also be masticated; mowing and grazing may be used to remove grasses.

Mechanical and Hand Thinning

Machines and hand tools (chainsaws) are generally used to cut and remove trees and shrubs. Mechanical cutting can remove trees up to approximately 24 inches diameter at breast height (dbh) and skidders and delimbers can move the cut material from the project sites and remove the limbs and tops from entire trees. Chainsaws can be used to cut larger diameter trees; however hand removal from the project area is limited to sections of trees less than 10 inches dbh.

Mastication

Masticators chip small trees (less than 10 inches dbh) and shrubs with a mechanical head placed on an articulated arm. The material is cut into different sized chips and generally left on the ground as ground cover. Mastication is an effective tool to rearrange fuel hazards; however, the fuels are not removed from the project area and mastication cannot be used in rocky areas. Many shrubs have adapted to disturbance by resprouting from the base of the shrub; therefore, frequent maintenance treatments may be necessary.

Mowing and Grazing

Mowing relies on mechanical tools to effectively reduce the height of grasses and some shrubs along roadsides and around buildings. Grazing (horses, cattle, sheep, goats, and llamas) is effective in reducing the height of grasses on larger areas. Grasses produce large amounts of seeds and vigorously resprout the following year. Therefore, mowing must be an annual maintenance task and proper stocking levels of livestock are required to manage oak woodlands and grasslands. Grazing should be encouraged as a fuel management tool in the oak woodlands and grasslands in the Greater Auburn FSC area and areas west of that FSC.

Cost Estimates

Cost estimates to treat hazardous fuels includes project planning and the actual treatments. Cost estimates vary widely among geographic areas and jurisdictions because of different reporting requirements, the availability of suitable labor sources, and some efforts are completed by volunteers. Therefore, accurate comparisons among projects and communities are cautioned because of the myriad of factors affecting costs. Planning costs described below assume no volunteers are used during planning or implementation.

Planning Costs

Planning costs include rough project design, regulatory compliance and permitting, and final project layout.

Regulatory Compliance and Permitting. All projects on federal lands will require compliance with NEPA. A recent ruling in the 9th Circuit Court of Appeals (December 2007) prohibits the Forest Service from using categorical exclusions for fuel reduction projects. As a result, projects will now require an environmental assessment, which will increase planning costs. Many projects on private or state lands will require compliance with CEQA or the Forest Practice Rules. All defensible space projects are categorically exempt from CEQA (CEQA Guidelines 15304[i]) and are exempt from preparation of a THP, Forest Practice Rules (1038.c). Other fuel treatments (e.g. community defense projects, roadside clearance, or hand treatments) may also be categorically exempt if:

- they do not affect a designated and mapped sensitive resource;
- they are not cumulatively significant;
- there is not a reasonable possibility that the project will affect an unusual circumstance (e.g. and listed threatened or endangered species);
- they do not affect resources along a state scenic highway; or
- they do not affect an historic resource (CEQA Guidelines 15002.3).

The construction of fuelbreaks or SPLATs or projects requiring machines or burning will probably require an initial study/negative declaration to comply with CEQA or a THP, which is functionally equivalent to CEQA. CEQA compliance for projects near Meadow Vista may be conducted under the approved Program Timber Environmental Impact Report (PTEIR). The PTEIR, approved in 2000, covers approximately 6,000 acres and fuel reduction projects can be approved as long as completion of a checklist does not conclude there will be a significant impact. Additional PTEIRs in other geographic areas should be considered to standardize mitigation requirements and reduce permitting costs in the future. All prescribed burning must also comply with the allowable burn days identified by the Placer County Air Pollution Control District.

Planning costs are inversely dependent on project size; therefore, the larger the project the lower the planning costs. The Foresthill/Iowa Hill FSC estimates its planning costs range from approximately $110/acre for small projects (< 10 acres) to approximately $3/acre for larger projects (approximately 75 acres). In El Dorado County preparation of an initial study/negative declaration for a 125 acre fuelbreak was approximately $8,000 (B. Callenberger, pers. comm.). Preparation of THPs prepared under the California Forest Practice Rules including final layout range from $175- $1,250 for 40-4 acre projects, respectively (D. Ferrier, pers. com). Based on estimates from the Lake Tahoe Basin, planning costs for public agencies may be higher, ranging from $1,500-$2,000 per acre.

Because of the wide differences in estimating planning costs, several assumptions were used as guidelines to develop cost estimates for fuel reduction projects. Categorical exemptions would require contracting landowners, flagging the final layout, conducting an archaeological reconnaissance, and preparing the categorical exemption for an estimated cost of $3,500. For projects requiring an initial study/negative declaration, two project sizes were considered, a 40 or 150 acre project (Table 3-1). The assumptions, based on minimal efforts, for each project were:

- archaeological and biological database searches would be completed;
- a reconnaissance survey of biological resources and an archaeological survey that flagged and avoided impacts would completed;
- an initial study/negative declaration would be used to comply with CEQA;
- all landowners were contacted to obtain permission to implement projects; and
- final project layout did not require design of new roads or extensive skid trails.

Table 3-1. Assumed planning costs for fuel reduction projects on the west slope of the Sierra Nevada in Placer County.

Project Size (ac)	*Planning Cost*	*Cost/ac*	*% of Implementation Cost**
40	$10,000	$250	16.6
150	$27,000	$180	12

*assumes project implementation costs of $1,500/ac.

Implementation Costs

Implementation costs include contract solicitation, selection, and administration and contractor costs. Contractor costs will vary dependent on the move in and move out distances, treatment requirements, and types of machinery used. Recent estimates of treatment costs from areas similar to the west slope of the Sierra Nevada in Placer County are described in Table 3-2.

Reported treatment costs vary across treatments and areas. Mechanical thinning costs vary because of the type of tree removal system that is used: whole tree removal versus cut-to-length. Whole tree removal systems are generally more efficient than cut-to-length; however, they require larger landings (openings) where the trees are processed. Cut-to-length systems remove limbs and tops (slash) when the tree is cut, requiring smaller landings, and the machinery travels on the slash reducing soil disturbance.

In some cases, hand thinning may be more cost effective than machine thinning; however, the silvicultural prescription may not always be achieved. Hand thinning is appropriate in forest stands where material to be removed is limited to approximately 10 inches dbh.

In most cases, machine or hand thinning will also require a subsequent treatment to remove surface fuels that accumulate as a result of the thinning treatment. Thus, mastication, chipping, pile burning, or broadcast burning will usually be required in addition to thinning. In shrub fields chipping, mastication, or broadcast burning may be the only treatment.

Table 3-2. Treatment technique costs in and near the west slope Sierra Nevada Placer County CWPP area.

Technique	*Foresthill/Iowa Hill FSC*	*Lake Tahoe Basin*	*Amador County FSC*	*El Dorado County FSC*	*Plumas County FSC*	*Truckee*	*Average*
			Cost/acre in different Sierra Nevada communities				
Mechanical thinning	$1,950	$1,000-3,500			$600-2,300	$500	$1,640
Hand thinning	$1,300*	$650-3,500	$1,500-3,000	$1,425	$750-900*		$1,630
Chipping	$1,100	$200-700					$660
Mastication	$1,600	$700-1,500	$900-1,800		$700-1,300	$700-1,400	$1,175
Pile burning		$300-700					$500
Broadcast burning		$400-1500					$950

* hand thinning and pile burning

OVERVIEW

Vegetation and Fuels

The Foresthill/Iowa Hill FSC includes approximately 96,600 acres between the North Fork of the American River and the Middle Fork of the American River and Rubicon River, from the Foresthill Bridge in the west to approximately nine miles east of Michigan Bluff in the east. Foresthill Road is the primary transportation corridor in the FSC. Elevations range from approximately 600 feet above sea level along the American River near the Foresthill Bridge to 5,000-5,500 feet elevation along the eastern boundary. Vegetation types are diverse; however, a majority of the area is covered by hardwood and conifer forests (Table 4-1). The southern and western portions of the area are dominated by chaparral, montane hardwood conifer (Pacific madrone [*Arbutus menziesii*], black oak [*Quercus kelloggii*], incense cedar [*Calocedrus decurrens*], ponderosa pine, and Douglas-fir [*Pseudotsuga menziessii*]), Douglas-fir, and ponderosa pine forests; while the remainder of the area is dominated by ponderosa pine, Douglas-fir, and white fir forests (Figure 4-1).

Table 4-1. Distribution of vegetation types in the Foresthill/Iowa Hill FSC.

Vegetation Type	*Acres*
Agriculture	202
Annual Grassland	694
Barren	656
Blue Oak-Foothill Pine Woodland	1,045
Chaparral	6,809
Closed-Cone Pine-Cypress	488
Douglas-Fir	17,627
Montane Hardwood-Conifer	40,698
Ponderosa Pine	21,392
Sierran Mixed Conifer	5,006
Urban	1,133
Water	413
Total	96,163

Given the vegetation types in the Foresthill/Iowa Hill FSC and the historic FRIs, approximately 7,000 acres burned annually. Thus, every year that fire is effectively suppressed the fuel hazards will continue to accumulate.

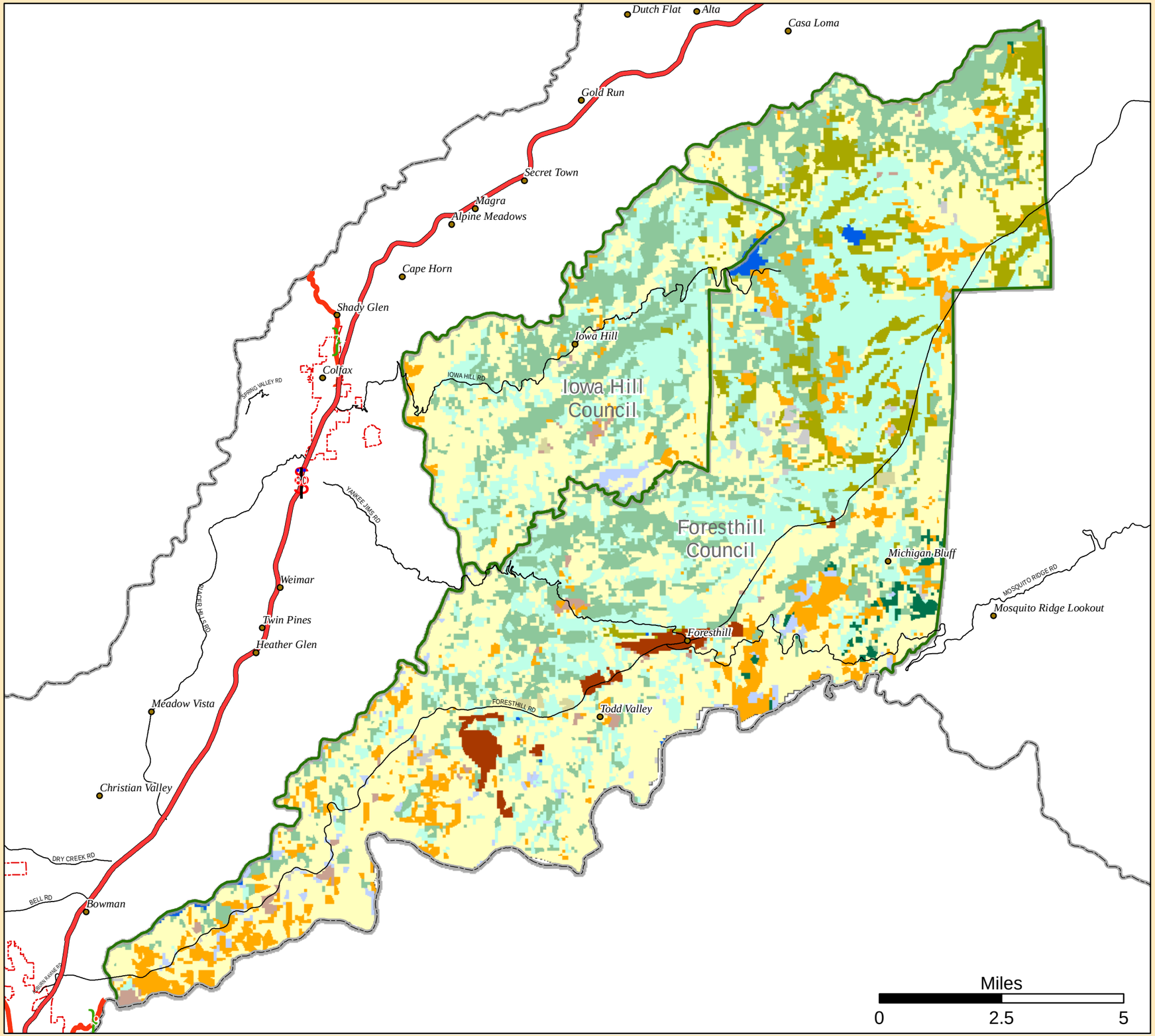
Land Ownership

Land ownership in the Foresthill/Iowa Hill FSC is complex. While a large portion of the ownership is private land (39,960 acres), the federal government owns the majority of the area (41,600 acres). Federal lands are administered by the TNF (27,000 acres), BLM (16,000 acres), or BOR (13,200 acres). Fire suppression responsibilities are shared between CAL FIRE, TNF, Placer County, and the Foresthill Fire Protection District.

FIGURE 4-1

Foresthill / Iowa Hill Council

Vegetation Map



Legend

Vegetation Types

- Agriculture
- Annual Grassland
- Barren
- Blue Oak-Foothill Pine Woodland
- Chaparral
- Closed-Cone Pine-Cypress
- Douglas-Fir
- Montane Hardwood-Conifer
- Montane Riparian
- Ponderosa Pine
- Red Fir
- Sierran Mixed Conifer
- Urban
- Water
- Wet Meadow
- White Fir

- Foresthill / Iowa Council
- County Boundary
- City Limits

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FIRE SUSCEPTIBILITY

Fire susceptibility includes ignition risks and fuel hazards. An area with high fire susceptibility has high risks and high hazards, whereas an area with low susceptibility has fewer risks and lower hazards (Appendix A). Therefore, fire susceptibility can be used as one criterion to locate and prioritize projects. In the Foresthill/Iowa Hill FSC the areas with highest fire susceptibility were the Foresthill Bridge and along the Foresthill Divide, near Gas Canyon. Areas with moderate-high fire susceptibility included: the remainder of the Foresthill Divide into Foresthill, Kings Hill-Shirttail Canyon, Iowa Hill, Iowa Hill Divide, and near Big Reservoir. There were approximately 1,265 acres ranked high, 11,250 acres of moderate-high, 18,800 acres ranked moderate, and the remaining 65,300 acres are low-moderate and low fire susceptibility (Figure 4-2).

FUEL REDUCTION PROJECTS

The Foresthill/Iowa Hill FSC has been actively planning and completing fuel reduction projects since 1998. Approximately 3,200 acres of treatments have been completed (Figure 4-3); 335 acres of treatments have been planned and funded, but not yet completed; 775 acres of treatments are proposed and mapped; and additional acres have been proposed, but not yet mapped (Table 4-2). The Mosquito Fuel Hazard Reduction project, which has not been mapped, will be immediately south of Foresthill above the Mosquito Road. Fire regime condition class is a national ranking system that describes how far the current fire regime has departed from the historic regime and it is required on federal grant applications.

- FRCC 1 describes fire regimes and vegetation-fuel conditions that are within the reference condition range of variability;
- FRCC 2 describes fire regimes and vegetation-fuel conditions that are a moderate departure from the reference conditions[1] range of variability; and
- FRCC 3 describes fire regimes and vegetation-fuel conditions that are a high departure from the reference range of condition range of variability.

Priorities were established by the Foresthill Fire Protection District, TNF, BLM, CAL FIRE, and Placer County after reviewing the urban area and WUI, wildland fire susceptibility ratings, and the location of completed projects.

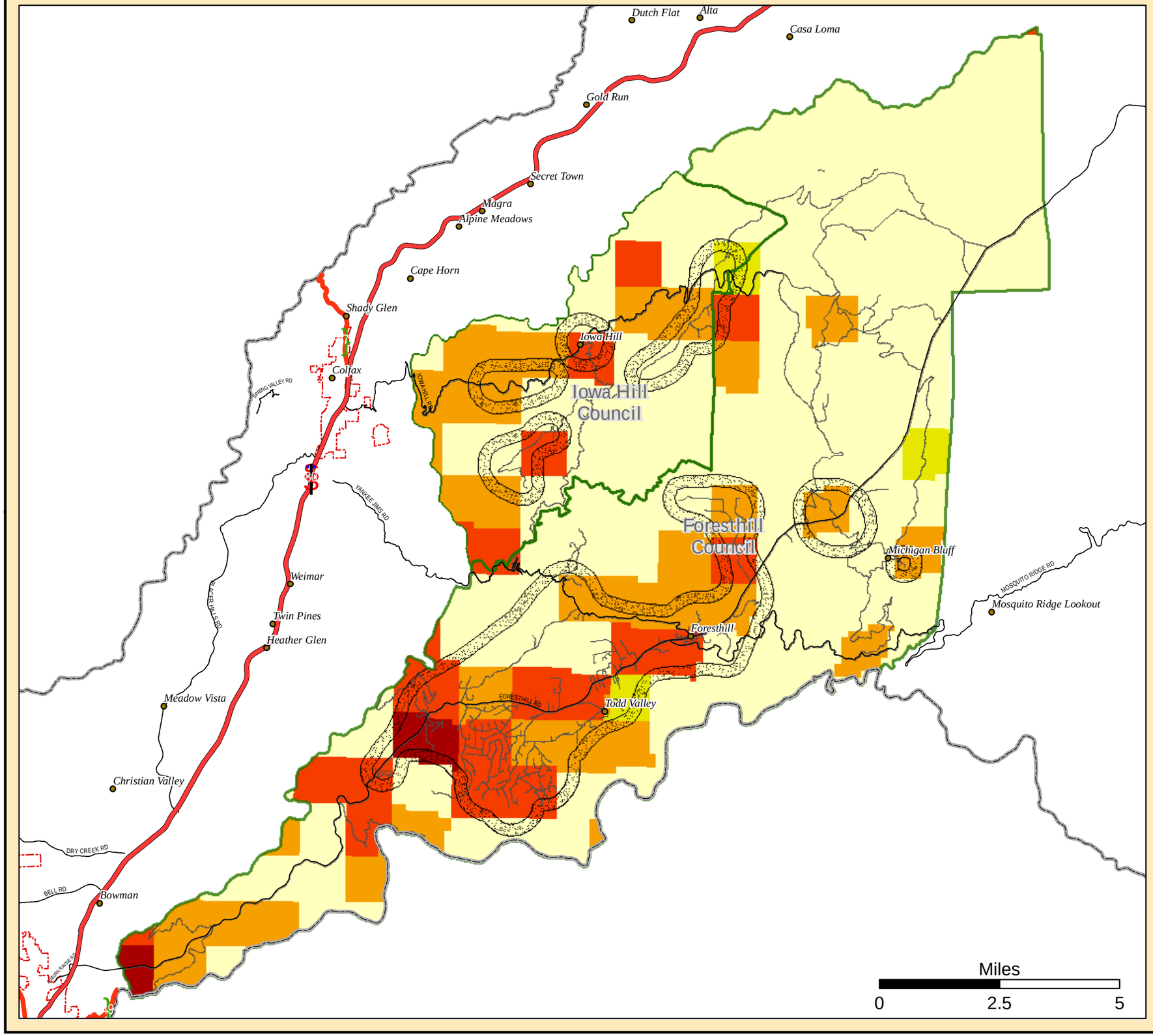
Cost estimates were based on estimated planning costs for categorical exemptions and 40 and 150 acre projects (see Table 3-2) and the number of project acres times average costs Foresthill/Iowa Hill for various techniques (Foresthill Fire Protection District, unpublished data). The total estimated cost for planning proposed and mapped projects is $140,000 and implementation of those projects is $984,600, for a total cost of $1,124,100. Cost estimates for other proposed projects not yet mapped will be determined when those projects are mapped.

[1] Reference conditions describe historic vegetation-fuel types, fire regime, and fire severity.

FIGURE 4-2

Foresthill / Iowa Hill Council

Fire Susceptibility



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Fire Susceptibility

- Low
- Low-Moderate
- Moderate
- Moderate-High
- High

- Wildland Urban Interface (WUI)
- Foresthill / Iowa Council
- County Boundary
- City Limits

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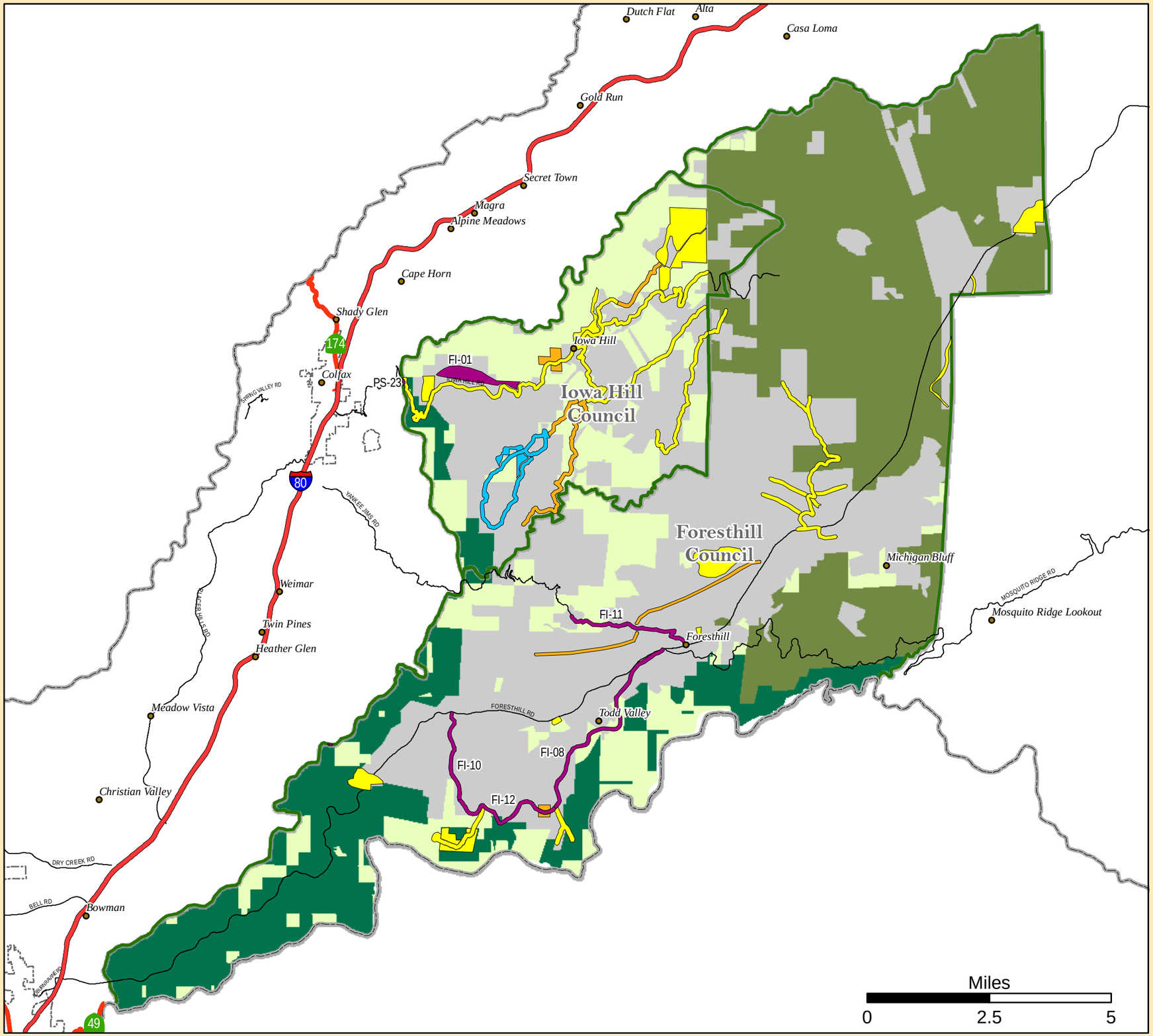
FIGURE 4-3

Foresthill / Iowa Hill Council

Fuel Reduction Projects



Legend

Project Status

- Completed
- Funded
- Future Proposed
- Proposed

Land Ownership by Agency

- Bureau of Land Management
- Bureau of Reclamation
- United States Forest Service
- State of California
- Private

- County Boundary
- City Limits
- Foresthill / Iowa Council

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Table 4-2. Fuel reduction treatments proposed in the Foresthill/Iowa Hill FSC.

Project Name	*Project number*	*Fire Regime Condition Class**	*Treatment*	*Technique*	*Acres*	*Priority*	*Plan Cost*	*Implement Cost*
Proposed and Mapped Fuel Reduction Projects								
Rooster Ridge Fuelbreak	FI-01	3	0.25-0.5 mile wide fuelbreak	Hand thin, pile and burn	192	4	$34,500	$240,000
Todd Valley Hazard Reduction	FI-08	2	≥300 foot wide fuelbreak	Masticate	222	1	$40,000	$310,800
McKeon Fuel Reduction	FI-10	2	Roadside hazard reduction (150 feet either side of the road)	Mechanical thin	93	1	$16,700	$130,200
Yankee Jims Fuel Reduction	FI-11	3	Roadside hazard reduction (150 feet either side of the road)	Prescribed burn	138	5	$25,000	$131,100
Todd Valley Fuelbreak	FI-12	2	≥300 foot wide fuelbreak	Prescribed burn	130	1	$23,500	$123,500
Proposed but Not Mapped Fuel Reduction Projects								
Mosquito Hazard Reduction 1	FI-03	2	≥300 foot wide fuelbreak	Masticate		2		
Mosquito Hazard Reduction 2	FI-04	2	≥300 foot wide fuelbreak	Hand thin and remove		2		
Mosquito Hazard Reduction 3	FI-05	2	≥300 foot wide fuelbreak	Hand thin and remove		3		
Mosquito Hazard Reduction 4	FI-06	2	Roadside hazard reduction (150 feet either side of the road)	Mechanical thin		2		
Mosquito Hazard Reduction 5	FI-07	2	Roadside hazard reduction (150 feet either side of the road)	Mechanical thin		3		
Mosquito Hazard Reduction 6	FI-09	2	Roadside hazard reduction (150 feet either side of the road)	Mechanical thin		3		
Total					775		$139,500	$984,600

*Source: CAL FIRE

OVERVIEW

Vegetation and Fuels

The Greater Auburn FSC includes approximately 58,000 acres between the Bear River in the north, Christian Valley and the American River in east, Penryn in the south, and Bell Road in the west. Interstate 80 and Highway 49 are the primary transportation corridors. Elevations range from approximately 600 feet above sea level near Penryn, to 1,700 feet at Bald Rock Mountain in the north, to 1,900 feet just south of Christian Valley. The majority of the area is dominated by blue oak-foothill pine woodlands and annual grasslands (Table 5-1) with montane hardwood-conifer woodlands (Pacific madrone, black oak, incense cedar, ponderosa pine, and Douglas-fir) along the eastern boundary (Figure 5-1).

Table 5-1. Distribution of vegetation types in the Greater Auburn FSC.

Vegetation Type	*Acres*
Agriculture	1,996
Annual Grassland	11,351
Barren	173
Blue Oak-Foothill Pine Woodland	26,149
Chaparral	749
Douglas-Fir	166
Montane Hardwood-Conifer	7,785
Ponderosa Pine	62
Urban	9,269
Water	255
Wet Meadow	22
Total	57,977

Given the vegetation types in the Greater Auburn FSC and the historic FRIs, approximately 1,800 acres of woody vegetation burned annually. Thus, every year that fire is effectively suppressed the fuel hazards will continue to accumulate.

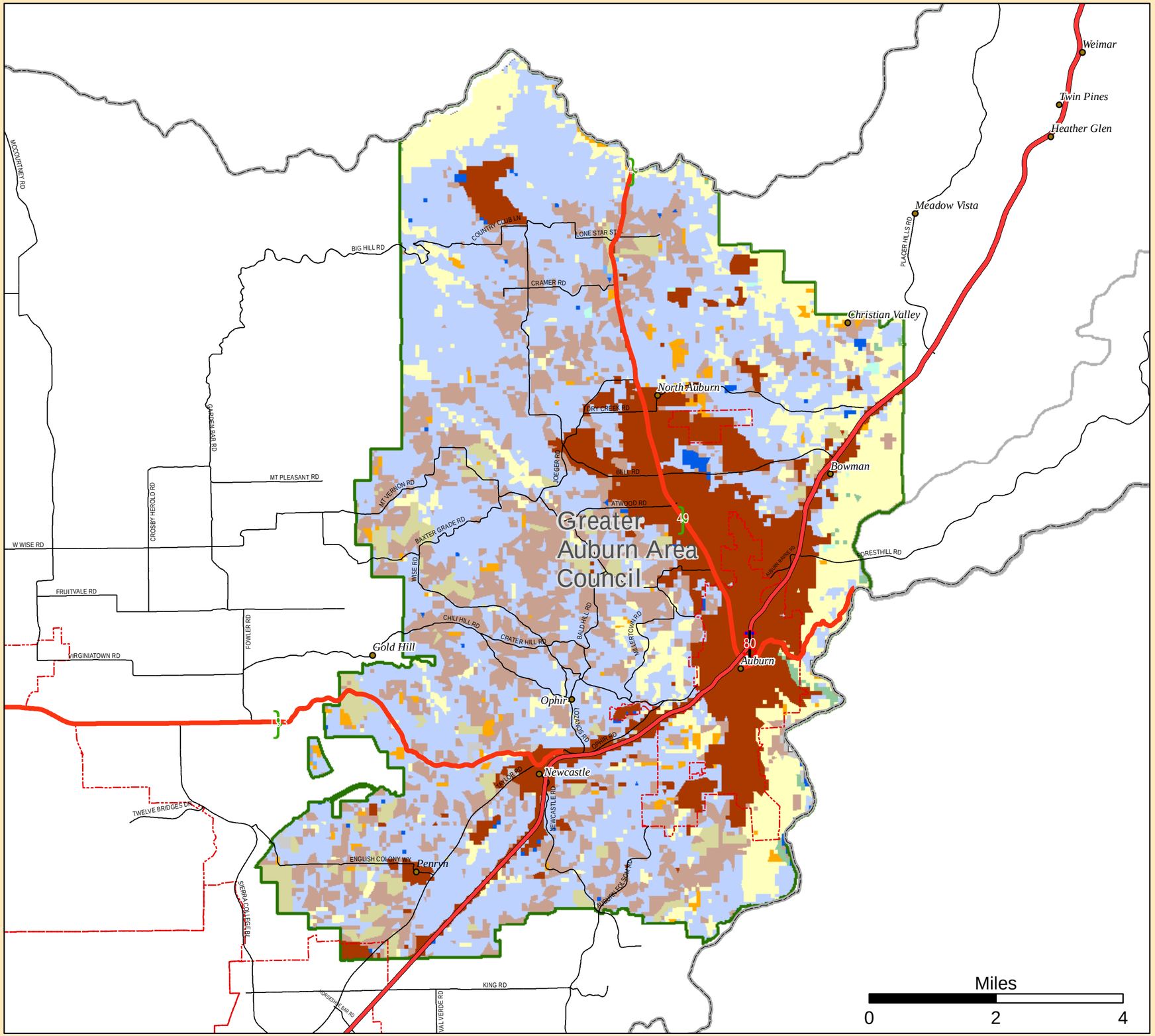
Land Ownership

Most of the FSC area is privately owned (55,400 acres), except for federal lands administered by the BOR (2,300 acres) and State of California (115 acres) in the American River State Recreation Area, and scattered parcels administered by BLM (190 acres) along the southeastern boundary. Fire suppression responsibilities are shared between Placer County and the Auburn City Fire Department.

FIGURE 5-1

Greater Auburn Council

Vegetation Map



Legend

Vegetation Types

- Agriculture
- Annual Grassland
- Barren
- Blue Oak-Foothill Pine Woodland
- Chaparral
- Closed-Cone Pine-Cypress
- Douglas-Fir
- Montane Hardwood-Conifer
- Montane Riparian
- Ponderosa Pine
- Red Fir
- Sierran Mixed Conifer
- Urban
- Water
- Wet Meadow
- White Fir

- Greater Auburn Area Council
- County Boundary
- City Limits

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Produced by Placer County CDRA
Print date: September 25, 2007

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FIRE SUSCEPTIBILITY

Fire susceptibility includes ignition risks and fuel hazards. An area with high fire susceptibility has high risks and high hazards; whereas, an area with low susceptibility has fewer risks and lower hazards (Appendix B). Therefore, fire susceptibility can be used as one criterion to locate and prioritize projects. In the Greater Auburn FSC the areas with highest fire susceptibility were southwest of Auburn, along the I-80 corridor, the Foresthill Bridge, northwest of Bowman, and North Auburn (Figure 5-2). Areas with moderate-high fire susceptibility include: the remainder of the I-80 corridor, along the American River, and south of the Bear River. There were approximately 2,100 acres ranked high, 11,925 acres of moderate-high, 21,960 acres ranked moderate, and the remaining 22,140 acres are low-moderate and low fire susceptibility (Figure 5-2).

FUEL REDUCTION PROJECTS

The Greater Auburn FSC has been planning and completing fuel reduction projects since 2001; primarily focusing on the Foresthill Bridge and the Auburn Fuelbreak above the American River. Thirteen projects, totaling approximately 1,000 acres (Table 5-2) in the Greater Auburn FSC have been proposed and mapped (Figure 5-3). All projects were identified on 1:24,000 topographic maps and those are available in GIS format. These projects were identified after reviewing existing plans, fire behavior rankings (CAL FIRE), and the WUI boundaries. Fire regime condition class is a national ranking system that describes how far the current fire regime has departed from the historic regime and it is required on federal grant applications.

- FRCC 1 describes fire regimes and vegetation-fuel conditions that are within the reference condition range of variability;
- FRCC 2 describes fire regimes and vegetation-fuel conditions that are a moderate departure from the reference conditions[1] range of variability; and
- FRCC 3 describes fire regimes and vegetation-fuel conditions that are a high departure from the reference range of condition range of variability.

Priorities were established by the City of Auburn Fire Department and CAL FIRE after reviewing fire susceptibility ratings and the location of completed projects.

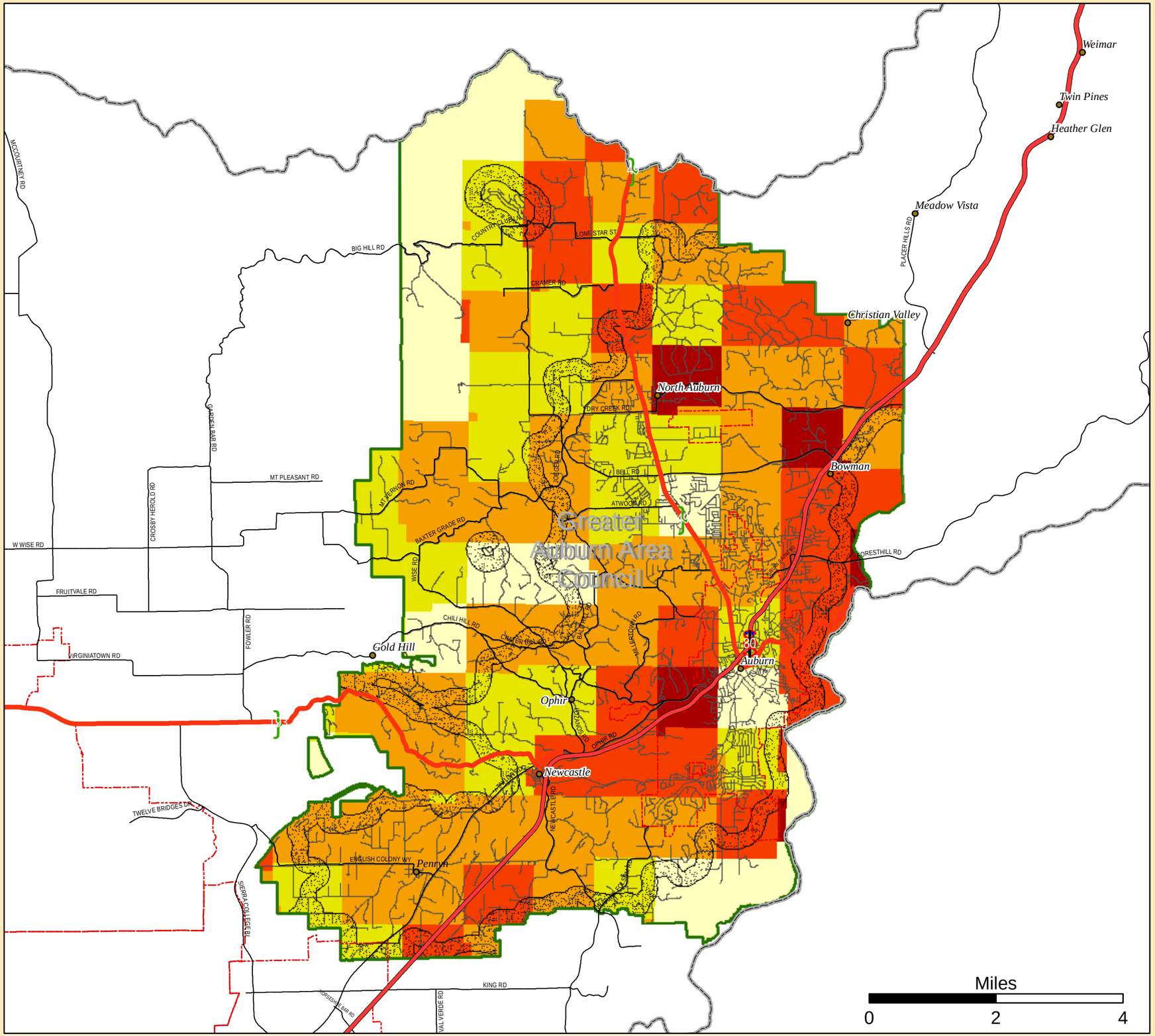
Cost estimates were based on estimated planning costs for categorical exemptions and 40 and 150 acre projects (see Table 3-2) and the number of project acres times average costs for various techniques, or $2,100 per acre for hand thin, pile and burn or chip, as recommended by the Auburn City Fire Department (Table 3-3). Only half of the acres shown in Table 5-2 were assumed to be treated for community defense projects. The total estimated cost for planning proposed and mapped projects is $87,400 and implementation of those projects is $1,333,975, for a total cost of $1,421,355.

[1] Reference conditions describe historic vegetation-fuel types, fire regime, and fire severity.

FIGURE 5-2

Greater Auburn Council

Fire Susceptibility



Legend

Fire Susceptibility

- Low
- Low-Moderate
- Moderate
- Moderate-High
- High

- Wildland Urban Interface (WUI)
- Greater Auburn Area Council
- County Boundary
- City Limits

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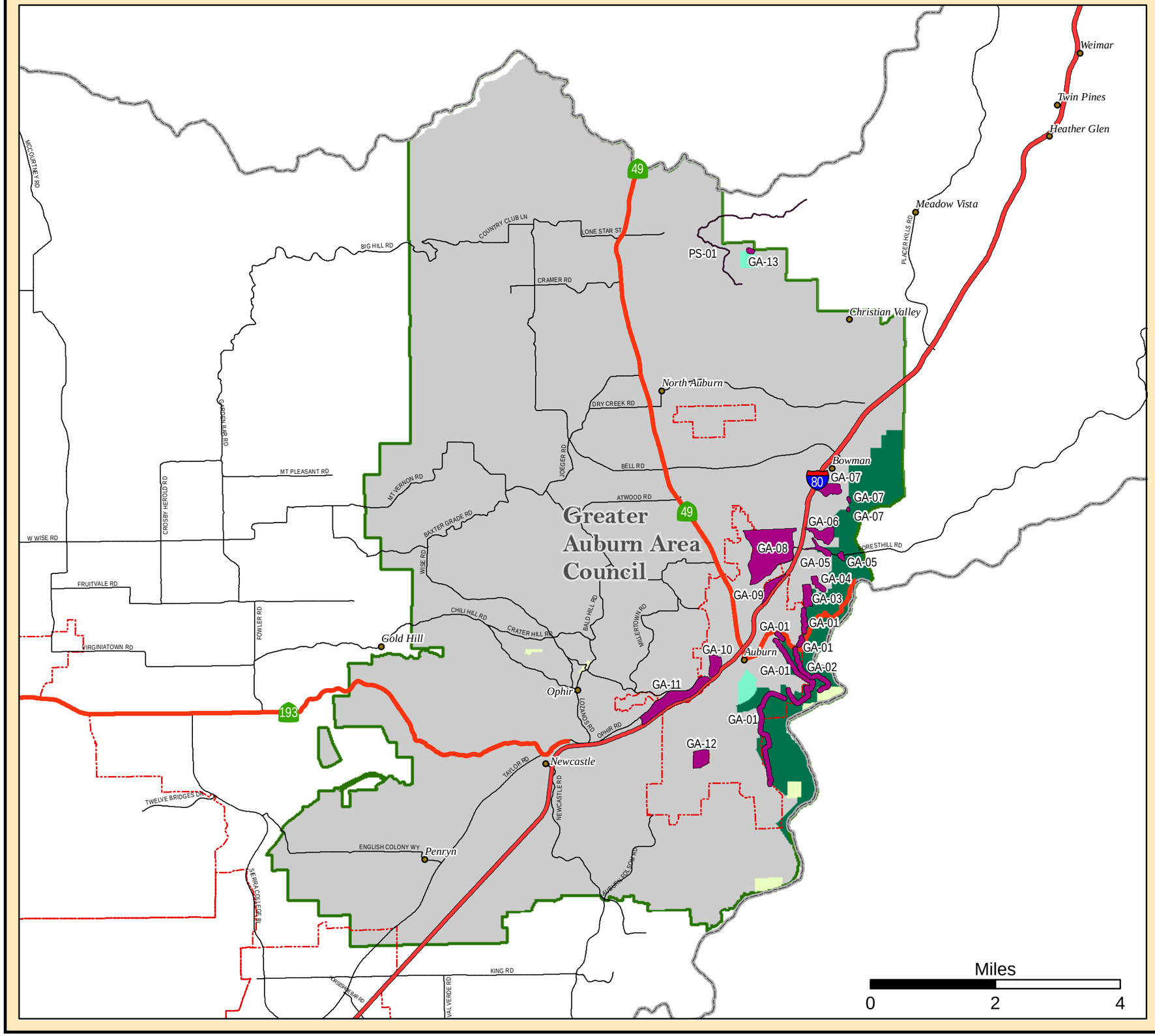
FIGURE 5-3

Greater Auburn Council

Fuel Reduction Projects



Legend

Project Status

- Completed
- Funded
- Future Proposed
- Proposed

Land Ownership by Agency

- Bureau of Land Management
- Bureau of Reclamation
- United States Forest Service
- State of California
- Private

- County Boundary
- City Limits
- Greater Auburn Area Council

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Print date: October 4, 2007

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Table 5-2. Fuel reduction treatments proposed in the Greater Auburn FSC.

Proposed and Mapped Fuel Reduction Projects								
Project Name	*Project number*	*Fire Regime Condition Class***	*Treatment*	*Technique*	*Acres*	*Priority*	*Plan Cost*	*Implement Cost*
Upper Auburn Fuelbreak	GA-1	2	200-300 foot wide fuelbreak on private and federal lands from approximately Maidu Drive in the south to Canyon Drive in the north--	Hand thin, pile and burn or chip	233		$42,000	$489,300
Lower Auburn Fuelbreak	GA-2	2	100-150 feet on either side of an unimproved road from approximately Robbs Point to Highway 49.	Hand thin, pile and burn or chip	58		$10,440	$121,800
Russell Road Community Defense	GA-3	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Masticate	32*		$3,500	$18,800
Kilham Road Community Defense	GA-4	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Masticate	18*		$3,500	$10,575
Foresthill East Fuelbreak	GA-5	2	Maintain treatments along eastern portion of Foresthill Road and under the Foresthill Bridge	Hand thin and burn	29		$3,500	$60,900
Sylvan Vista-Hammond Roads Community Defense	GA-6	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Hand thin, pile and burn or chip	45*		$3,500	$47,250
Covey-Krueger Roads Community Defense	GA-7	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Hand thin, pile and burn or chip	46*		$3,500	$48,300
Luther-Dairy Roads-Auburn Ravine Community Defense	GA-8	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Hand thin, pile and burn or chip	308*		$3,500	$323,400

Proposed and Mapped Fuel Reduction Projects							
I-80 Hilltop Community Defense	GA-9	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Hand thin, pile and burn or chip	32*	$3,500	$33,600
Welty Lane-Hidden Creek Community Defense	GA-10	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Hand thin, pile and burn or chip	36*	$3,500	$37,800
I-80-Ophir Road Community Defense	GA-11	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Hand thin, pile and burn or chip	121*	$3,500	$127,050
Auburn Rancheria Community Defense	GA-12	2	Treat vegetation more than 100 feet from residences to create a community defense buffer.	Mow	41*		$500
Placer County Demonstration Area	GA-13	2	Construct a demonstration area showing fire safe vegetation structures at the Placer County Nature Center and Placer County CCC camp.	Hand thin, pile and burn or chip	7	$3,500	$11,700
Total					1,006	$87,380	$1,333,975

***** Acreages for Community Defense projects are exaggerated because defensible space treatments around residences were not subtracted. Therefore, cost estimates are half of calculated cost using the exaggerated acreage.

** Source: CAL FIRE

OVERVIEW

Vegetation and Fuels

The Placer Sierra FSC includes approximately 93,100 acres between the Bear River in the north, North Fork of the American River in the south, Christian Valley in the west, and Emigrant Gap in the east (Figure 6-1). The planning area for the Placer Sierra FSC includes the entire FSC are approved by the Placer County Board of Supervisors in 2006 and that area east of Emigrant Gap that is the responsibility of the Dutch Flat Fire Protection District. Interstate 80 is the primary transportation corridor. Elevations range from approximately 1,700 feet above sea level near Christian Valley to 5,500 feet at Emigrant Gap. Vegetation in the Placer Sierra FSC is the most diverse of the three FSC because of the change in elevation (Table 6-1). The lower elevations are dominated by montane hardwood conifers (Pacific madrone, black oak, incense cedar, ponderosa pine, and Douglas-fir) and blue oak-foothill pine woodlands; with Douglas-fir and ponderosa pine forests in the intermediate elevations; and Sierra Mixed Conifer in the higher elevations.

Table 6-1. Distribution of vegetation types in the Placer Sierra FSC.

Vegetation Type	*Acres*
Agriculture	56
Annual Grassland	1,898
Barren	860
Blue Oak-Foothill Pine Woodland	2,621
Chaparral	4,437
Closed-Cone Pine-Cypress	35
Douglas-Fir	13,923
Montane Hardwood-Conifer	42,247
Montane Riparian	42
Ponderosa Pine	6,141
Red Fir	391
Sierran Mixed Conifer	4,159
Urban	1,133
Water	1,243
Wet Meadow	109
White fir	1,685
Unknown	12
Total	93,086

Given the vegetation types in the Placer Sierra FSC and the historic FRIs, approximately 5,400 acres burned annually. Thus, every year that fire is effectively suppressed the fuel hazards will continue to accumulate.

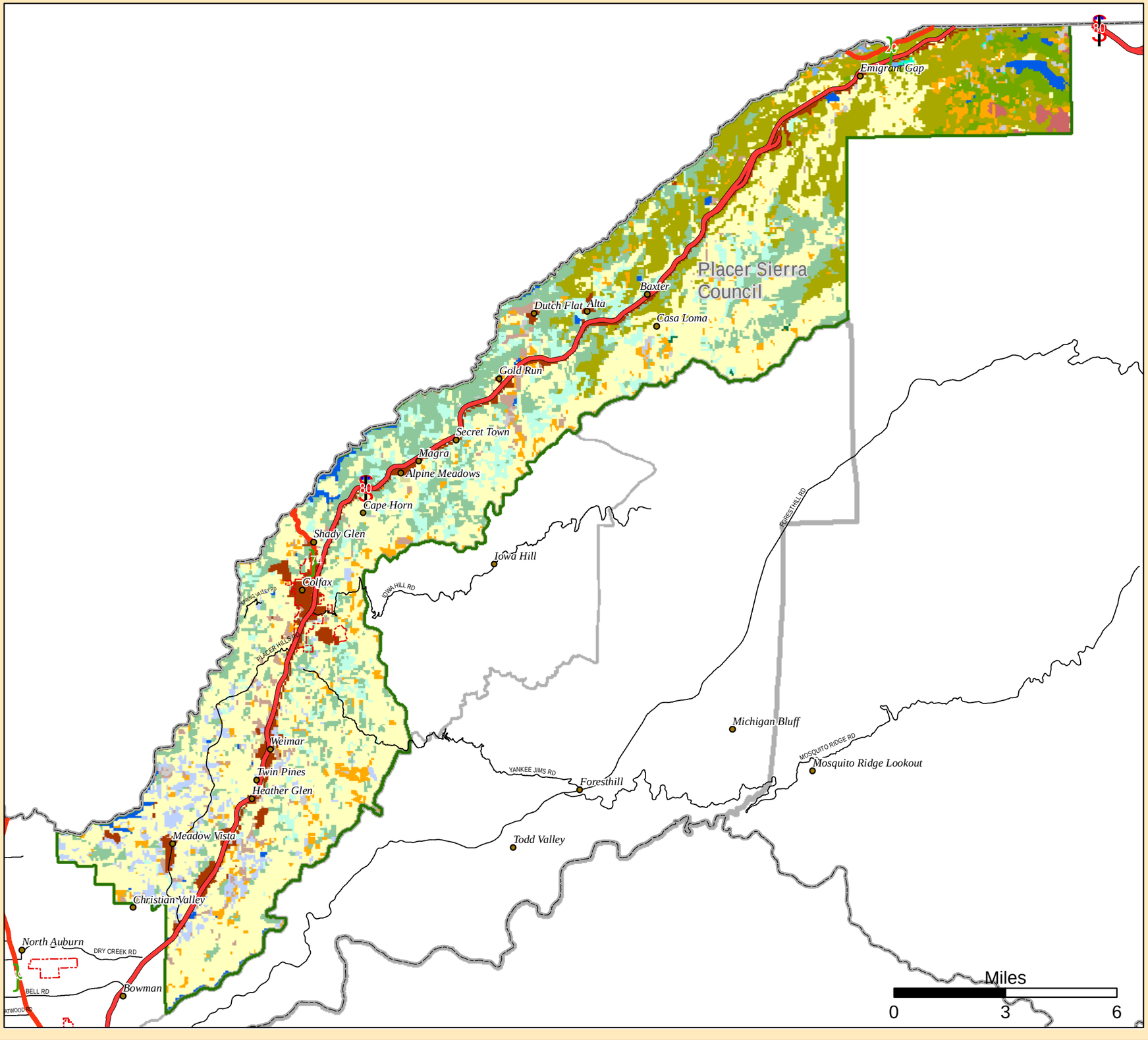
Land Ownership

Most of the FSC area is privately owned (67,600 acres), except for federal lands administered by BLM (7,500 acres), BOR (3,850 acres), and a state parcel (360 acres) along the North Fork of the American River and TNF-administered lands (13,750 acres) east of Dutch Flat

FIGURE 6-1

Placer Sierra Council

Vegetation Map



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Vegetation Types

- Agriculture
- Annual Grassland
- Barren
- Blue Oak-Foothill Pine Woodland
- Chaparral
- Closed-Cone Pine-Cypress
- Douglas-Fir
- Montane Hardwood-Conifer
- Montane Riparian
- Ponderosa Pine
- Red Fir
- Sierran Mixed Conifer
- Urban
- Water
- Wet Meadow
- White Fir

- Placer Sierra Council
- County Boundary
- City Limits

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Produced by Placer County CDRA
Print date: September 25, 2007

Location: S:\CDRA\Projects\OES_CWPP\ArcMap
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and Alta. Fire suppression responsibilities are shared between Placer County, CAL FIRE, and the TNF.

FIRE SUSCEPTIBILITY

Fire susceptibility includes ignition risks and fuel hazards. An area with high fire susceptibility has high risks and high hazards; whereas, an area with low susceptibility has fewer risks and lower hazards (Appendix A). Therefore, fire susceptibility can be used as one criterion to locate and prioritize projects. In the Placer Sierra FSC, the areas with highest fire susceptibility were southeast of Weimar along Ponderosa Way, along the I-80 corridor from Alpine Meadows (Rampart) to Gold Run, and between Dutch Flat and Alta (Figure 6-2). Areas with moderate-high fire susceptibility include: developed areas around Christian Valley and Meadow Vista and the remainder of the I-80 corridor up to Baxter. There were approximately 4,100 acres ranked high, 21,000 acres of moderate-high, 20,000 acres ranked moderate, and the remaining 22,150 acres are low-moderate and low fire susceptibility.

FUEL REDUCTION PROJECTS

The Placer Sierra FSC identified 18 projects, totaling approximately 1,500 acres (Table 6-2) that have been proposed and mapped (Figure 6-3). All projects were identified on 1:24,000 topographic maps and those are available in GIS format. These projects were identified after reviewing existing plans, fire behavior rankings (CAL FIRE), and the WUI boundaries. Fire regime condition class is a national ranking system that describes how far the current fire regime has departed from the historic regime and it is required on federal grant applications.

- FRCC 1 describes fire regimes and vegetation-fuel conditions that are within the reference condition range of variability;
- FRCC 2 describes fire regimes and vegetation-fuel conditions that are a moderate departure from the reference conditions[1] range of variability; and
- FRCC 3 describes fire regimes and vegetation-fuel conditions that are a high departure from the reference range of condition range of variability.

Priorities were established by Placer County and CAL FIRE after reviewing fire susceptibility ratings and the location of completed projects.

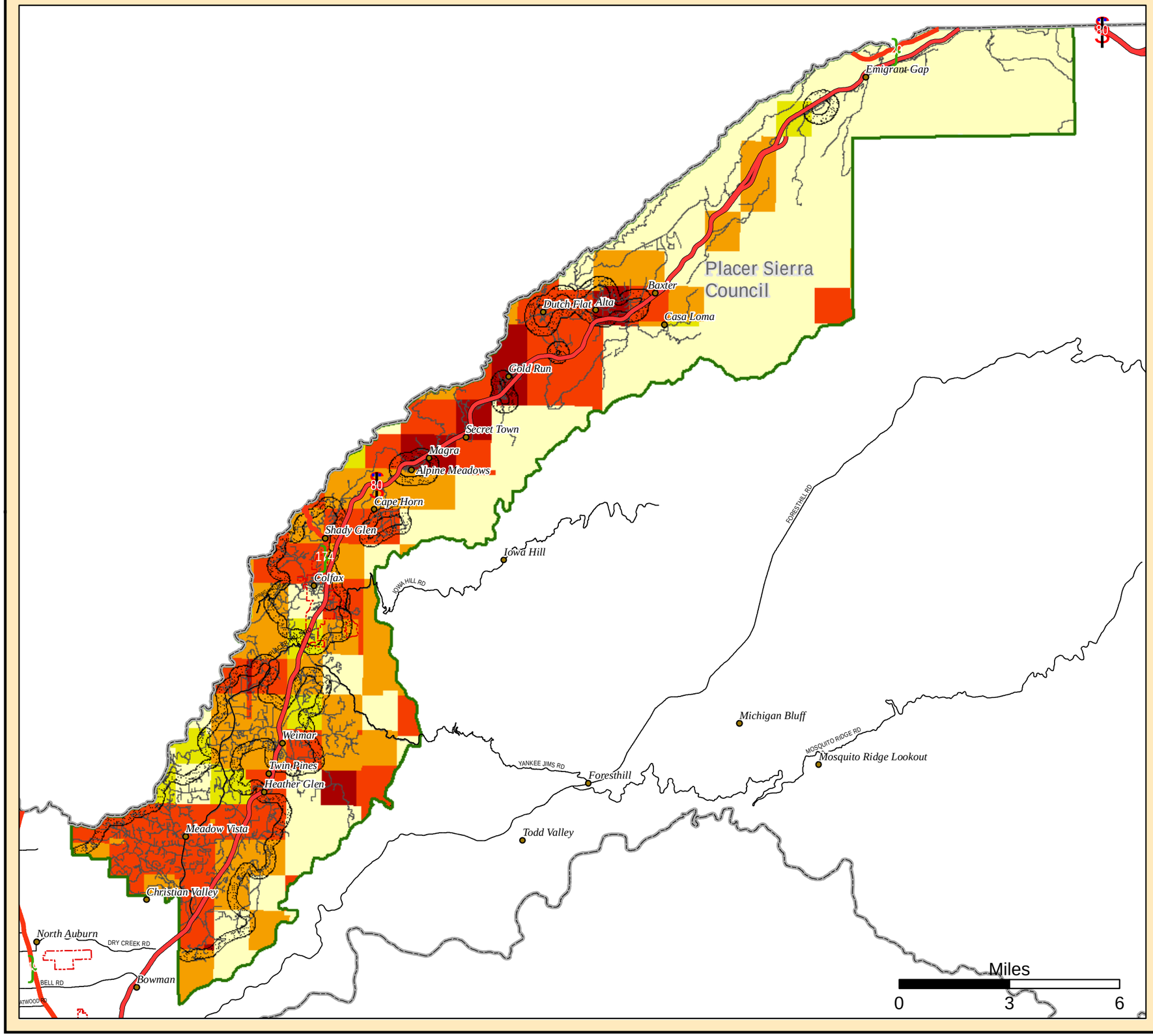
Cost estimates were based on estimated planning costs for categorical exemptions and 40 and 150 acre projects (see Table 3-2) and the number of project acres times average costs for various techniques (Table 3-3). Only half of the acres shown in Table 6-2 were assumed to be treated for community defense projects. The total estimated cost for planning proposed and mapped projects is $240,800 and implementation of those projects is $1,881,065, for a total cost of $2,121,865.

[1] Reference conditions describe historic vegetation-fuel types, fire regime, and fire severity.

FIGURE 6-2

Placer Sierra Council

Fire Susceptibility



Legend

Fire Susceptibility

- Low
- Low-Moderate
- Moderate
- Moderate-High
- High

- Wildland Urban Interface (WUI)
- Placer Sierra Council
- County Boundary
- City Limits

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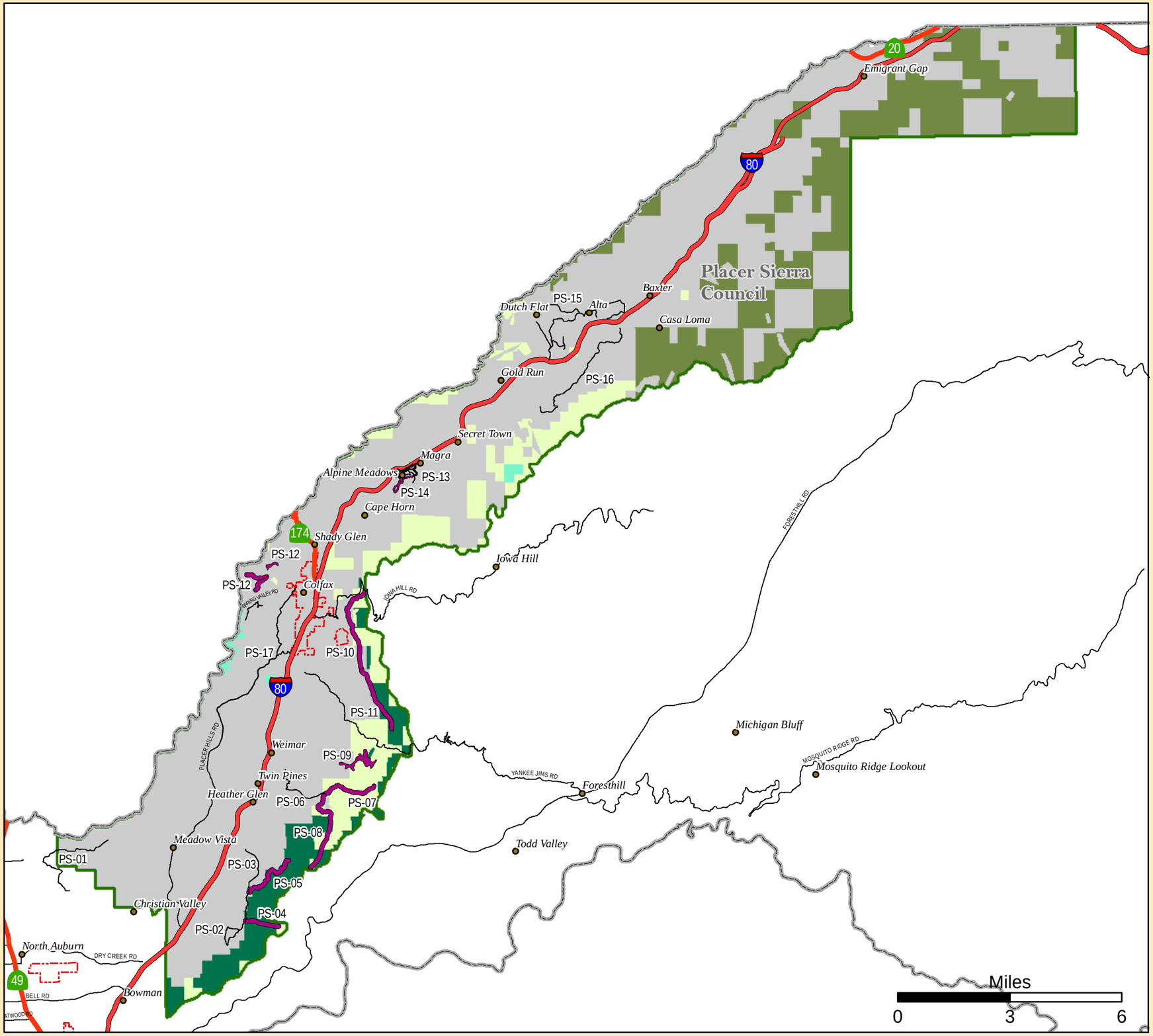
FIGURE 6-3

Placer Sierra Council

Fuel Reduction Projects



Legend

Project Status

- Completed
- Funded
- Future Proposed
- Proposed

Land Ownership by Agency

- Bureau of Land Management
- Bureau of Reclamation
- United States Forest Service
- State of California
- Private

- County Boundary
- City Limits
- Placer Sierra Council

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Print date: October 4, 2007

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Table 6-2. Fuel reduction treatments proposed in the Placer Sierra FSC.

Proposed and Mapped Fuel Reduction Projects								
Project Name	*Project number*	*Fire Regime Condition Class*	*Treatment*	*Technique*	*Acres*	*Priority*	*Plan Cost*	*Implement Cost*
MeadowVista-McElroy Roadside Clearing	PS-1	2	Treat vegetation 30 feet on both sides of McElroy road from MeadowVista Road to Christian Valley Road.	Hand thin, pile and burn or chip	23	1	$3,500	$53,790
Cerro Vista Roadside Clearing	PS-2	2	Treat vegetation 30 feet on both sides of Cerro Vista Road.	Hand thin, pile and burn or chip	23	5	$3,500	$37,490
Boole Roadside Clearing	PS-3	2	Treat vegetation 30 feet on both sides of Boole Road.	Hand thin, pile and burn or chip	16	8	$3,500	$26,080
Long Point Fuelbreak	PS-4	3	Construct a 300-foot wide fuelbreak from Cerro Vista Road to Long Point along the American River.	Masticate, hand thin, pile and burn or chip	74	3	$18,500	$86,950
Canyon Rim Fuelbreak	PS-5	2	Construct a 300-foot wide fuelbreak from Cerro Vista Road to Heather Glen Drive.	Masticate, hand thin, pile and burn or chip	137	7	$24,660	$160,975
Ponderosa Way Roadside Clearing	PS-6	2	Treat vegetation 30 feet on both sides of Ponderosa Way from Sun Valley Road to Heather Glen Drive.	Hand thin, pile and burn or chip	19	6	$3,500	$30,970
Ponderosa Way Fuelbreak	PS-7	3	Construct a 300-foot wide fuelbreak along Cross Road from Ponderosa Way to Sora Finger Point.	Masticate, hand thin, pile and burn or	118	4	$21,240	$138,650

Proposed and Mapped Fuel Reduction Projects

				chip				
Jefferson Fuelbreak	PS-8	2	Construct a 300-foot wide fuelbreak from Ponderosa Way to Codfish Creek and the American River.	Masticate, hand thin, pile and burn or chip	189	5	$34,020	$222,075
Big John Ridge Fuelbreak	PS-9	3	Construct a 200-600-foot wide fuelbreak along Big John Ridge.	Masticate, hand thin, pile and burn or chip	102	6	$18,360	$119,850
Gillis Fuelbreak	PS-10	2	Construct a 2.3 mile long and 300-foot wide fuelbreak south of Iowa Hill Road.	Masticate, hand thin, pile and burn or chip	187	1	$33,660	$219,725
Gillis Fuelbreak Extension	PS-11	2	Construct a 300-foot wide fuelbreak from the existing fuelbreak to south of Camel's Hump.	Masticate, hand thin, pile and burn or chip	146	2	$26,280	$171,550
Colfax Fuelbreak	PS-12	3	Construct a 300-foot wide fuelbreak along Hillcrest and Saddleback Roads.	Masticate, hand thin, pile and burn or chip	50	8	$14,580	$95,175
Alpine Meadows Subdivision Roadside Clearing	PS-13	3	Treat vegetation 30 feet on both sides of all roads in subdivision.	Hand thin, pile and burn or chip	31	2	$3,500	$50,530
Alpine Meadows Subdivision Community Defense	PS-14	3	Treat vegetation more than 100 feet beyond residences to create a community defense buffer.	Hand thin, pile and burn or chip	40*	1	$3,500	$39,975

Proposed and Mapped Fuel Reduction Projects								
Dutch Flat/Alta Roadside Clearing	PS-15	3	Treat vegetation 30 feet on both sides of Sacramento Street, Main Street, Ridge Road, Frost Hill Road, Frost Hill Place, Alta Bonny Nook, Boony Nook, and Towle Roads.	Masticate, hand thin, pile and burn or chip	72	3	$3,500	$117,360
Moody Ridge Roadside Clearing	PS-16	3	Treat vegetation 30 feet on both sides of Moody Ridge.	Masticate, hand thin, pile and burn or chip	40	7	$3,500	$65,200
Placer Hills Roadside Clearing	PS-17	2	Treat vegetation 30 feet on both sides of Placer Hills and Tokayana Way Road	Masticate, hand thin, pile and burn or chip	52	4	$3,500	$84,760
Secret Town Fuelbreak***	PS-18	2	Construct a 300-foot wide fuelbreak on the ridge east of Secret Town Creek	Masticate, hand thin, pile and burn or chip	100	5	$18,000	$160,000
Total					1,469		$240,800	$1,881,065

***** Acreages for Community Defense projects are exaggerated because defensible space treatments around residences were not subtracted.
**Source: CAL FIRE
*** This project has not been mapped

This section describes projects that are considered county-wide programs, either large single projects that include multiple FSCs or management programs that should be the responsibility of the Placer County Fire Safe Alliance.

MAINTAIN THE CHIPPER PROGRAM

The Placer County chipper program, initiated in 1998, is free to all Placer County residents, except those in Truckee. Funding for the program is administered by the RCD, project management and equipment are provided by CAL FIRE, and the Placer County's sheriff's office provides inmates for the crews.

COMPLETE I- 80 ROADSIDE CLEARANCE

Placer County and Caltrans have developed a program to reduce fuel hazards along I- 80 from Penryn to the Nevada border. The objective is to remove excessive fuels along the Caltrans right-of-way and reduce to probability that a fire ignited by a vehicle, equipment, or other source will result in a catastrophic fire. The program has been operating since 2005 and is expected to continue for several years.

EXPAND THE PLACER COUNTY BIOMASS REMOVAL PROGRAM

Placer County has initiated a Biomass Removal Program to assist local landowners with the removal of excessive forest fuels. Individuals or communities can request a free green waste box in which to place all forest fuels removed during community projects. Once full, waste management companies will retrieve the green waste box and transport it to a biomass facility, where the material will be processed to generate power. The program benefits Placer County residents by assisting them remove excessive fuels hazards, emissions are reduced because the material is not burned in place, and power is generated using a renewable source of material.

EXPAND THE PUBLIC AWARENESS PROGRAM

Individual FSCs have developed brochures and demonstration projects to educate the public about the importance of fuel reduction projects. The Placer County Fire Safe Alliance and FSCs should develop a comprehensive public awareness program that describes the requirements to reduce hazardous fuels and the ecological and economic benefits those projects have on the local environment. The public awareness program, should take the form of brochures, demonstration areas, and news articles that increase the public's awareness and willingness to support and participate in fuel reduction projects. Examples of existing websites and literature are described in Appendix B.

IMPROVE THE GIS DATABASE

Planning and managing fuel reduction projects on a large landscape such as the west slope of the Sierra Nevada in Placer County is very complicated. Projects should be strategically located based on fuel hazards, ignition risks, assets at risk, and the location of previous projects. Once the strategic project locations are identified multiple landowners must be contacted and extensive coordination is required to ensure the project is completed as planned.

Large amounts of digital data identifying topographic, vegetative, fire history, fuel hazard assessments, water, land ownership, property values, and transportation routes have been developed by federal, state, and local agencies. Numerous fuel reduction projects have been planned and implemented; however, many are not readily available in a digital format. Additionally, data are scattered among agencies that have not maintained a complete GIS database. All of the data used in this plan are now on file with Placer County. Therefore, it is recommended that a single organization be identified as responsible for maintaining and improving the current GIS database and make it accessible to all other participating agencies. The database should include individual data layers in compatible projections that are necessary for planning, developing strategic evaluations, and standardizing maps of resources and projects that individual agency representatives frequently use for reports and public meetings.

MONITORING

Monitoring is an effective management tool used to determine if the program is being implemented (implementation monitoring) or to determine if the management actions are achieving their goals (effectiveness monitoring). In this program monitoring is used by the Placer County Fire Safe Alliance as a feedback mechanism to evaluate the success of their actions and provide information necessary to modify those actions in the future (equaling adaptive management).

Implementation Monitoring

Implementation monitoring will provide metrics that projects are achieved. It should be used to identify compliance of individual defensible space clearing and if projects identified in this plan are implemented based on the location and estimated size, cost, and schedule. CAL FIRE is currently monitoring compliance with PRC 4291; that program should be expanded to include other geographic areas in the planning area.

An annual accomplishment plan should be prepared by the Placer County Fire Safe Alliance identifying the defensible space inspections and projects that were implemented during the previous year. All changes in projects identified in the CWPP should be briefly identified. At a minimum, the annual accomplishment report should identify:

- the location and number of defensible space inspections, and
- the location, name, and cost of each project, funding sources, the date completed, and necessary explanations.

Effectiveness Monitoring

Effectiveness monitoring should be used to measure the effectiveness of projects as they are implemented. Selected projects should be identified and fire behavior should be simulated using a standard model (Behave, Fire Management Analyst, Farsite, or FlamMap) and fuel hazard data collected from the project site. The effectiveness of projects should be evaluated immediately post-project and then at approximately three-year intervals to develop an effective

maintenance program. Thus, effectiveness monitoring may also be used to schedule maintenance of previously completed projects.

Adaptive Management

Information obtained from the implementation and effectiveness monitoring should be used as the foundation for an adaptive management approach where this plan is modified and improved based on local experience and knowledge.

American River Watershed Institute. 2006. Colfax community watershed and fire safe ecosystem project. Colfax, CA. (www.arwi.us/)

CAL FIRE. 2004. Nevada-Yuba-Placer Fire Management Plan. Auburn, CA.

_____. 2006. General guidelines for creating defensible space. State Board of Forestry, adopted February 8, 2006. Sacramento, CA.

Celio, C. G. and Sons, Steve Holl Consulting, and Wildland Rx. 2004. Community wildfire protection plans for the California portion of the Lake Tahoe Basin. Prepared for the Tahoe Basin Fire Safe Council, South Lake Tahoe, CA.

Citygate Associates. 2002. Strategic fire safe plan for the wildland/urban interface greater Auburn area. Folsom, CA. Prepared for the Sierra Economic Development District, Placer, County, CA.

ERT. 2005. Draft risk assessment and mitigation strategies plan for the Foresthill/Iowa Hill Fire Safe Council. Prepared by ERT, Loomis, CA.

Gruell, G. E. 2001. Fire in Sierra Nevada forests a photographic interpretation of ecological change since 1849. Montana Press Publishing Company, Missoula, MT.

Mayer, K. E. and W. F. Laudenslayer, jr. 1988. A guide to wildlife habitats of California. California Fish and Game, Sacramento, CA.

Placer County. 2005. DMA 2000. Multi-hazard mitigation plan for Placer County, CA including the incorporated cities of Auburn, Colfax, Lincoln, Loomis, and Rocklin. Prepared by AMEC.

Skinner, C. N. and Chang. 1996. Fire regimes, past and present. In Sierra Nevada Ecosystem Project-Final Report to Congress, vol. II, Chapter 38. University of California, Davis.

USDA, Forest Service. 2001. Sierra Nevada Forest Plan Amendment final environmental impact statement. Vallejo, CA.

_____. 2004. Sierra Nevada Forest Plan Amendment final supplemental environmental impact statement. Vallejo, CA.

Western Governors Association. 2004. Preparing a community wildfire protection plan. A handbook for wildland-urban interface communities. Sponsored by National Association of Counties, National Association of State Foresters, and Society of American Foresters.

LIST OF PREPARERS

- Steve Holl, Steve Holl Consulting, was project manager.
- Barry Callenberger, Wildland Rx, Camino, CA assisted with project design, obtaining and reviewing fire behavior data, and assisted with preparation of the report.
- Chris Brown, Placer County Planning Department, prepared all of the GIS maps.
- Laura Lukes assisted with document preparation and publishing.

Appendix A describes the methodology used to identify the Wildland Urban Interface (WUI); the Weather, Assets at risk, Fuels, and Level of Service (W.A.F.L.) analysis, and fire susceptibility which were the primary criteria used to identify the location and priority of fuel reduction projects.

WUI

The Healthy Forest Restoration Act (H.R. 1904) defines the WUI as an area within or adjacent to an at-risk community that is identified in a community wildfire protection plan (CWPP) (Section 101, 16A). The west slope of the Sierra Nevada in Placer County has numerous communities (see Section 1) that were identified as communities-at-risk and it also has developments of varying densities that are not recognized as communities. In most cases, the boundaries of these communities have not been defined. Therefore, a method was developed to identify a "community boundary" and its interface with the adjacent wildland.

Communities were defined as aggregations of houses with densities $\geq$ one unit per acre. This density was selected because it was assumed they had a high enough density that property owners frequently interacted with each other and that they shared a common infrastructure(s). Lower densities were evaluated; however, they often identified individual homes and these could not be considered a community. Once these community polygons were identified a 1,320-foot (0.25 mile)–wide buffer was drawn around the polygons. The buffer was then reviewed by local fire staff and modified and it was also smoothed along the edges to simplify the boundary.

W.A.F.L. ANALYSIS

The W.A.F.L. analysis is a planning tool developed by CAL FIRE to combine weather, fuels, assets, and level of service http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf384.pdf**.** The analysis in this report was prepared for the Nevada-Yuba-Placer Fire Management Plan (CAL FIRE 2004). The analysis relied on mapped variables (individual GIS layers), that each received a pre-established weight and then the variables were combined and the analysis assigned a rank of high, medium, or low to each square mile for each resource in the analysis area. Assets that were used in the analysis included:

- Air quality
- Ecosystem health
- Historic buildings
- Hydroelectric power
- Infrastructure (e.g. transmission lines)
- Range forage
- Recreation resources
- Scenic resources
- Soil erosion capability
- Structure density
- Timber resources
- Water storage
- Water supply
- Wildlife habitat

FIRE SUSCEPTIBILITY

The fire susceptibility index is a planning tool to rank areas as more or less susceptible to a fire, based on the historic number of ignitions and current fuel hazards. Thus, areas with high fire susceptibility had a large number of historic ignitions and very high fuel hazards, whereas, areas with low fire susceptibility had the least number of ignitions and low fuel hazards.

All of the data used in the susceptibility analysis were developed by CAL FIRE. Ignitions from 1996-2005 were mapped at a scale of the number of ignitions per square mile. Fuel hazards, which identify expected fire behavior, were mapped by the Fire and Resource Assessment Program (FRAP) http://frap.cdf.ca.gov/data/fire_data/fuel_rank/index.html. Expected fire behavior were based on surface fuel model + slope = surface rank and surface rank + ladder index + crown index = fuel rank; identified as very high, high, or medium.

The number of ignitions in each section received a rank from 0-5, with 0 having no ignitions and five having the highest number of ignitions (n = 21-45). The fuel rank dataset was converted to an index where the dominant fuel rank mapped by FRAP was assigned to each section as 0 (no fuel; water or urban), 1 (medium), 2 (high) or 3 (very high).

The ignition rank and fuel rank were then multiplied to calculate the susceptibility index. Almost half (48%) of the cells received a low susceptibility index (Figure A-1); in most cases the result of no recorded ignitions. The remaining indices followed a normal distribution, with the majority of cells having a moderate index. In most cases, the moderate fire susceptibility index still had a very high fuel ranking, meaning the mapped fire behavior was similar to areas with higher susceptibility indices.

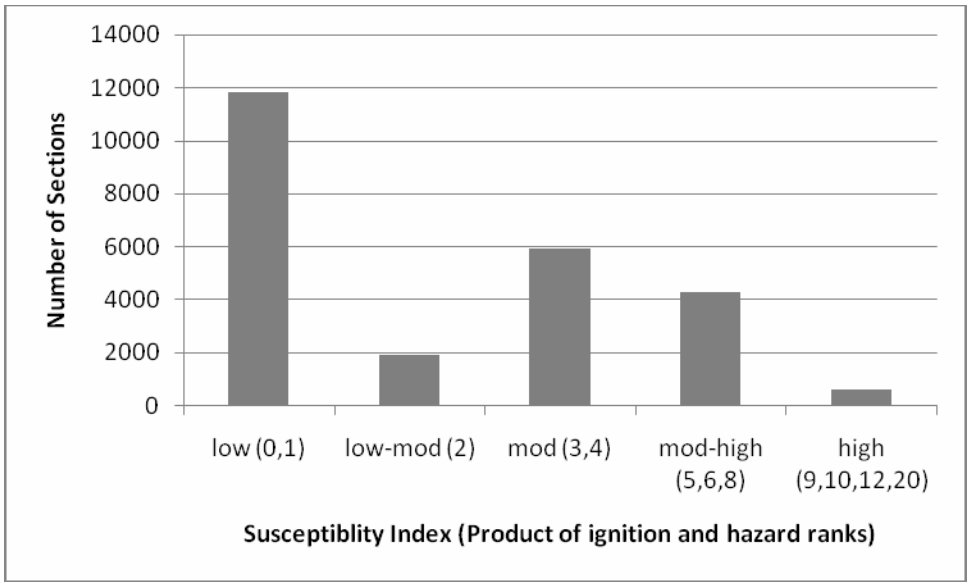

Figure A-1. Distribution of fire susceptibility indices for the west slope of the Sierra Nevada in Placer County.

The following information on web sites, books, recordings, laws and regulations, and organizations was provided by Ms. Robin Yonash of Placer County.

Web Sites for Fire Safe Information

80 Years of Change in a Ponderosa Pine Forest *(the photographs, taken from the same vantage points in Bitterroot National Forest, demonstrate the changes in vegetation resulting from fire exclusion)*
http://www.firesafecouncil.org/education/80yearschange.cfm

Disaster Preparedness for Pets
http://www.hsus.org/hsus_field/hsus_disaster_center/resources/disaster_preparedness_for_pets.html

Fire Information Engine Toolkit: Tools for Homeowners
http://firecenter.berkeley.edu/toolkit/homeowners.html

Fire Safe Landscaping—Brushland
http://www.firesafecouncil.org/education/attachments/landscapingbrushland.pdf

Fire Safe Landscaping—Grassland
http://www.firesafecouncil.org/education/attachments/landscapinggrassland.pdf

Fire Safe Landscaping—Timberland
http://www.firesafecouncil.org/education/attachments/landscapingtimberland.pdf

FireWise Plants for the Mother Lode
http://www.firesafecouncilnevco.com/Publications/FSC_plant03.pdf

Fuel Management Terms for Homeowners
http://www.livingwithfire.info/pdf/WEB-Fuel_Mgt_Terms.pdf

Fuels Reduction Contractors List
http://www.firesafecouncilnevco.com/contractors.htm

Homeowner Wildfire Assessment—how safe is your house (goes beyond defensible space)
http://firecenter.berkeley.edu/homeassessment/home_assess_intro.html

Homeowners Wildfire Mitigation Guide—how to fire proof your home
http://groups.ucanr.org/HWMG/ (page down to get to the parts of the house)

Search-by-Address Wildfire Maps for California, Includes Fire Recurrence
http://giifweb.cnr.berkeley.edu/fire/california/

Why 100 Feet? Brochure
http://www.fire.ca.gov/communications/downloads/CDFWHY100FEETBROCH2006.pdf

Why 100 Feet? Flyer
http://www.fire.ca.gov/communications/downloads/DefensibleSpace.pdf

Books

Fire in Sierra Nevada Forests: a Photographic Interpretation of Ecological Change Since 1849 by George E. Gruell, Mountain Press Publishing Company, 2001.

Available at the Auburn, Colfax, Foresthill, Kings Beach, Meadow Vista branches of the Placer County Library and the Bookmobile; call number 577.3 GRU.

Firescaping : Creating Fire-Resistant Landscapes, Gardens, and Properties in California's Diverse Environments by Douglas (Douglas K.) Kent, Wilderness Press, 2005.

Available at the Auburn, Colfax, Foresthill, Loomis, Meadow Vista, and Penryn branches of the Placer County Library; call number 635.95 KEN.

Recordings

California Living: Fire Safe by Vicki Liviakis and the California Dept. of Forestry and Fire Prevention (CDF), 2005.

Available at the Auburn, Applegate, Colfax, Foresthill, Granite Bay, Kings Beach, Meadow Vista, Rocklin, and

Fire Safe Landscaping: How To Protect Your Investment Against Wildfire Destruction by the California Dept. of Forestry and Fire Prevention (CDF), 1995 (includes PSA's featuring Tim Allen and Tom Selleck).

Available at the Auburn and Foresthill branches of the Placer County Library; call number VIDEO 628.922 FIR

PSA's also at www.fire.ca.gov/communications/communications_firesafety_multimedia_videopsas.php

(Note that since the above video was produced, the requirement for defensible space has increased from 30 feet to 100 feet.)

Making Your Home Fire Wise by Ron Hazelton for the Fire Wise program. A production of Hearst-Argyle Television.

Available at the Applegate and Colfax branches of the Placer County Library, call number VIDEO 628.922 MAK

(Note that the above video was produced for a nationwide audience, not specifically for California.)

Laws and Guidance Relating to Wildfire Safety

Community Wildfire Protection Plan Guidance Documents
http://www.cafirealliance.org/cwpp/

Healthy Forests Restoration Act (HFRA)
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_bills&docid=f:h1904enr.txt.pdf

Meadow Vista Vegetation Management PTEIR (MVPTEIR)
http://frap.cdf.ca.gov/projects/Meadow_Vista_PTEIR/PTEIRframes.html

New Wildland Urban Interface Building Standards
http://www.fire.ca.gov/wildland.php

Public Resources Code 4291
http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=prc&codebody=4291

Cost Share Programs for Property Owners

Environmental Quality Incentives Program (EQIP)
http://www.nrcs.usda.gov/programs/eqip/

Proposition 40 Fuels Reduction
http://frap.cdf.ca.gov/projects/prop40/

Fire Safe Organizations

California Fire Safe Council
http://www.firesafecouncil.org/

FireWise
http://www.firewise.org/

Placer County Fire Safe Alliance
http://www.placerfirealliance.org/

Web Sites for Information about Wildfires

Fire Wars Wildfire Simulator (can you put the fire out in time?)
http://www.pbs.org/wgbh/nova/fire/simulation.html# (requires Shockwave)

Fire Weather Forecasts for the Mother Lode
http://www.wrh.noaa.gov/sto/getfwfzone.php?wfo=sto&pil=fwf&sid=sto&zone=267&format=pre

GEOMAC Wildfire Mapping (nationwide, can drill down to specific fire)
http://geomac.usgs.gov/

Lightning Strikes Map (nationwide)
http://www.weather.com/maps/activity/golf/uslightningstrikes_large.html?from=mapofweek

National Fire News (see links at bottom of page for other useful sites)
http://www.nifc.gov/fire_info/nfn.htm

Scanner Frequencies for Placer County
http://www.scancal.org/placer/freq.html

Wildfires in CAL FIRE Jurisdiction (California)
http://cdfdata.fire.ca.gov/incidents/incidents_current (also has a link for archived incidents)

Wildfires in USFS Jurisdiction (nationwide)
http://www.inciweb.org/

Appendix C includes comments received on the draft CWPP and the responses to those comments. The comments are organized by the order they were received.

Comments from: Louanna Dowling – Foresthill Fire Protection District

Louanna (for Kurt snyder)

Chief Snyder asked me to review this document. The following are my comments at his request.

1 On Page 4-3 paragraph # 4 (Priorities established by) please include Cal-Fire as they are a major contributor to our Fire Safe Council efforts.

2 Cost estimates for planning were based on categorical exemptions. I believe we still fall under these rules, but after the 9th Circuit Court Ruling on December 5th we may want to double check.

3 The amount of BOR land in the Foresthill/Iowa Hill FireSafe Council area is significant compared to the other FireSafe Councils in Placer County, do you think there is anyway to get them to the table?

Response to comments from Louanna Dowling:

1. Comment noted. CAL FIRE will be included.

2. The 9th Circuit Court ruling on December 5, 2007 prohibits the Forest Service from using a categorical exclusion for fuels treatments. At this time, Forest Service projects will require an environmental assessment which will increase planning costs; however, it is difficult to accurately predict those costs at this time.

3. Comment noted. The BOR is potentially a key participant in these efforts.

Comments from Mark D'Ambrogi – Auburn City Fire Department

1 I would evaluate the treatment costs as stated in section 3; 3-7 & 3-8. These seem a bit low based on my experience over the past 3-4 years. I'm seeing about $2100.-$3000. an acre. I would tend to project on the higher side for future projects.

2 Review of the FIRE SUSCEPTIBILITY should be done to make sure the latest Fire Hazard Severity Zone rating completed by Cal Fire match the CWPP.

3 On page 5-3 for the GAAFSC ....."projects since _____:" should be "2001".

Response to comments from Mark D'Ambrogi:

1. Comment noted. The implementation costs for Greater Auburn will be increased.

2. The recently approved Fire Hazard Severity Zone maps differ from the Fuel Hazard maps used in the CWPP. Fuel Hazard maps in the CWPP identify fuel hazards based on vegetation and terrain. The Fire Hazard Severity maps homogenize the fuel hazard data with other data to

identify expected fire behavior over a larger area. The intended use of these maps is to identify structure construction requirements rather than describe fuel hazards.

3. Comment noted. The text will be added.

Comments from Brett Storey – Placer County Office of Emergency Services:

Within the CWPP there was no emphasis on public lands (i.e. our own parks or state parks), no mention of the biomass program or the air pollution control districts desire to reduce burning. In fact most of the fuel reduction projects are recommending burning the materials as an option.
Costs are at a premium. In the FH area the cheapest project is $150k, GAA some are under $50k most are quite high, PS is like GAA. Could these be broken down to manageable projects to achieve a higher percentage? Where are we going to get the money for these?
Good overall document though.

Response to comments from Brett Story

A summary of the biomass program and desire to reduce prescribed burning will be included in Chapter 7. Note also that techniques to implement projects generally include the option to burn or chip. Project costs are based on current data from Placer County and adjacent areas. Reducing the size of projects will reduce cost; however, it will also result in less protection from a wildfire. Project costs may be reduced, depending on landowner contributions to individual projects.

Comments from Chris Paulus and Ian Gow – Fire Chiefs, CAL FIRE, Placer Sierra FSC

Here is what Ian and I have worked out tentatively for priorities for the CWPP. We view them as three categories and then prioritized based upon category. The categories are Fuel Breaks (FB), Community Defense (CD), and Road Side Hazard Reduction (RSHR). Overall our first priority is individual defensible space per approved parcel and this needs to be emphasized and funded.

Fuel Breaks

1-1 Gillis FB
1-2 Gillis FB Extension
1-3 Long Point FB
1-4 Ponderosa Way FB
1-5 Jefferson FB
1-6 Big John Ridge FB
1-7 Canyon Rim FB
1-8 Colfax FB

Community Defense
2-1 Alpine Meadows CD

Road Side Hazard Reduction

3-1 Meadow Vista-McElroy RSHR
3-2 Alpine Meadows RSHR
3-3 Dutch Flat/Alta RSHR
3-4 Placer Hills RSHR
3-5 Cerro Vista RSHR
3-6 Ponderosa Way RSHR
3-7 Moody Ridge RSHR
3-8 Boole Road RSHR

Response to comments from Chris Paulus and Ian Gow:

Project priorities will be identified as shown.

Comments from Robin Yonash – Concerned Citizen

Ms. Yonash provided both general comments and editorial comments. The general comments and their responses are below. The editorial comments were not included in this Appendix.

- The WUI boundary of ¼ mile is much too narrow. Please define it to be the boundary of each FSC, at a minimum. It could even be wider where appropriate. The reasons for this recommendation are:
  - The *CWPP Lessons Learned* document[1] states:

    Designate a Generous WUI: … HFRA includes advantages for communities that designate larger WUIs by providing streamlined NEPA documentation for projects that are greater than 1½ miles from the community but within the community designated WUI. A community designated WUI of 1½ miles loses this advantage. A plan in New Mexico established WUI boundaries 15 miles from the community.
  - The ***HFRA***[2] itself states:

> (16) WILDLAND-URBAN INTERFACE.—The term "wildland-urban interface" means—
> (A) an area within or adjacent to an at-risk community that is identified in recommendations to the Secretary in a community wildfire protection plan; or
> (B) in the case of any area for which a community wildfire protection plan is not in effect—
> (i) an area extending ½-mile from the boundary of an at-risk community;
> (ii) an area within 1½ miles of the boundary of an at-risk community, including any land that—
> (I) has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community;
> (II) has a geographic feature that aids in creating an effective fire break, such as a road or ridge top; or
> (III) is in condition class 3, as documented by the Secretary in the project-specific environmental analysis; and
> (iii) an area that is adjacent to an evacuation route for an at-risk community that the Secretary determines, in cooperation with the at-risk community, requires hazardous fuel reduction to provide safer evacuation from the at-risk community.

Under this definition, the FSCs, especially the Placer Sierra, are better off without a CWPP if the WUI definition is artificially defined as ¼ mile.

- In order to qualify for federal funds, projects must be within 1½ mile of federal lands.
- The definition of ¼ mile for the WUI in the current draft CWPP does not provide adequate protection. Wildfires spread with embers, which can easily loft over ¼ mile from the flame front.
- The properties in the SRA that have less than one home per acre are generally very overgrown and are at least as much of a threat as federal lands, again making the definition of ¼ for the WUI inadequate for protection.

2

- The maps must include the locations of completed and planned projects on federal lands because:
  - The *CWPP Lessons Learned* document[1] states:

    Include federal Projects: … HFRA provides for meaningful participation in federal project planning through the opportunity to recommend projects on federal lands. When federal agencies implement the community recommendations, the NEPA process is streamlined, reducing planning time and expenses. An easy method to realize this benefit is to consider all federal projects near a community that are in some stage of planning development. Considering planned federal projects also helps meeting the requirement to consult with federal land

[1] http://www.cafirealliance.org/cwpp/downloads/cwpp_lessons_learned2.pdf
[2] http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_bills&docid=f:h1904enr.txt.pdf

management agencies. The community may recommend changes to the scope of the projects or method of treatments. Communities may also recommend additional projects.

2

- The *Briefing Paper Community Wildfire Protection Plans, May 11, 2005*[3] states:

  Collaboration. …Local officials and state officials must *meaningfully* involve federal agencies that manage land in the vicinity of the community [emphasis added; and another reason for a wider WUI definition]

  Benefits to the Community Include: … The requirement for federal agencies, when planning fuel reduction projects, to give priority to projects that provide for the protection of at-risk-communities or watersheds, or that implement recommendations in a CWPP.

  Expedited NEPA …(If a federal agency is planning a fuels reduction project to implement a recommendation in a CWPP that lies within the WUI and is located no more than 1-½ miles fromm the community boundary, the federal agency does not need to analyze any other alternatives under NEPA. [another reason for a wider WUI definition]

  The USFS and BLM **must spend not less than 50%** of the funds allocated for hazardous fuel reduction project **in the WUI, as defined by a community in a CWPP**.

  On page 3, USFS, BLM, FWS, and NPS are directed to "assist the community in identifying and prioritizing areas for hazardous fuel reduction treatments on federal lands, and in determining the types and methods of treatment that, if completed, would reduce the risk to the community.

- The USFS Community Protection grant program requires that fuel reduction projects on non-federal lands must be adjacent to USFS prescribed burn projects planned within the next three years.
- Even if the federal projects have been completed, a project on non-federal lands that extends on on federal lands will be looked on more favorably than one that does not. The feds want to protect their lands from encroaching wildfires.
- When a CWPP for the Western Slope was first brought up at the Alliance meetings, the federal agencies were very excited because if their projects are included in the CWPP, which gets approved by FSCs, CAL FIRE, etc., it will make it easier for them to get internal funding to implement their projects.

3

- The list of Communities at Risk needs to be updated as many Placer County communities were not included, such as Blue Canyon. Since being on the list is a pre-requisite for federal funding, it is important to include all at-risk communities. I have previously given George Alves a list of the missing communities. Updating this list should be on the County-wide projects list. In the meantime the list of communities to be added should be included here. In addition to the full list in Section 1, the list for each fire safe council should be included in the individual FSC sections. It would also be helpful to have a map of the Communities at Risk, including those to be added.

4

- Infrastructure and other resources need protection at least as much as individual homes and property. The NYP Unit of CAL FIRE already has maps of critical infrastructure, historical places, etc., that could readily be included in this plan, plus adding the FSC boundaries. The value of these needs to be included when calculating the resources at risk.

5 • The lists of fuel reduction projects need to be enhanced, especially the County-level items. One purpose of the CWPP is to make it easier to obtain federal, and other, funding. Also, these projects will be included in the update of the County's DMA 2000 Multi-Hazard Mitigation Plan (MHMP), and additional information is necessary.

6 • Per an e-mail to me from Rui Cunha on November 30, 2006, both "values at risk" (aka resources protected) and "possible methods of funding" should be included. Rui also stated that priority should be tied to Cost Benefit or some other operational consideration [such as the ratio of resources protected, including infrastructure, to the cost of the project.]

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7 • In addition, in order to know what grant sources might apply, each project needs an indication as to whether or not it is within 1½ miles of federal lands, and if it is, what federal agency owns the land; e.g. USFS, BLM, BOR, … Also indicate if it extends an existing or planned federal fuel reduction project.

8 • On the fuel break projects, cost and periodicity of maintenance needs to be provided. It's hard to get initial funding for a fuel break; showing a plan for funding the periodic maintenance helps. These maintenance projects should also be included in the County MHMP.

9 • Instead of "large" wildfires, I think it's more useful to refer to "intense" wildfires. The definition of large is different between CAL FIRE and USFS. Also, even a "small" fire can cause significant damage, depending on where it is located.

10 • A list of acronyms is needed.

11 • A list of web sites, especially those helpful to the public, should be included. I have included some suggested URLs to start things off with.

12 • The SRA needs to be defined in the overview materials and its significance provided. For example, PRC 4291 and 4290 only apply in the SRA, not on the lands owned by the feds.

13 • No educational projects are included, either at the County level or for the FSCs. It is crucial to add these. Even if we could snap our fingers and get all of the overgrown fuel reduced instantaneously, i wouldn't stay that way without an educated and active population. Also, it is difficult to obtain federal funding for education projects, unless they are part of an on-the-ground project. Listing them in the CWPP opens up other potential funding sources.

14 • This is may be something for a future update to the CWPP, but please consider the following. Given (1) The 100' requirement for defensible space is equivalent to about an acre; (2) A fuel break or SPLAT is effective even if only 45% of the land is treated; (3) It is difficult to impossible to obtain grar funding for fuel breaks and SPLATs; and (4) No grant funding is available for maintenance of fuel breaks or SPLATs. Then: If enough landowners complied fully with defensible space, plus some assistance from Pro 40 and/or EQIP in an area where a lot of the parcels are larger than 1-2 acres, this results in a fuel break or a SPLAT with NO (or very little if EQIP/Prop 40 is used) grant funding and NO funding required for maintenance. As part of the Colfax Fuel Break project, the USFS provided a SPLAT map for the former Ponderosa FSC (now part of the Placer Sierra). (See pages 6 12 of www.arwi.us/fire/Finalpart1.pdf) What if the 4291 Inspections and Prop 40 and EQIP outreach focused on these areas, to encourage the landowners to fully comply with defensible space? SPLAT maps could also be developed for other FSCs and for the rest of the Placer Sierra. This latter projec could be included in the current CWPP as preparation for implementing the SPLATs, as described above, in the next update.

15 • The Placer County Fire Safe Alliance is not an umbrella organization as it has no authority over any of the participants. It is an open consortium of agencies, fire safe councils, and other organizations that support its mission. Also, the Alliance itself does not provide any services or programs. Its members do.

16 • I would like to see additional emphasis on hardening the structures in addition to defensible space. Defensible space is only part of the equation. During the 2002 Sierra Fire, one home with significant defensible space burned because embers collected in the rafters of the attached carport.

17 • The two-way impact of defensible space also needs to be given more emphasis. Its purpose is not just to protect the structure, but to prevent a structure fire from spreading to wildlands and/or adjacer properties (remember those embers…). The CWPP is also an educational tool for the public who reads it.

18 • The Meadow Vista PTEIR should be expanded to the Foresthill and WAM MACs Community plan areas. This is the ideal time to do it because both plans are in the process of updating their CPs. This is a County-level project. Note that the RCD is funding a demonstration area in Meadow Vista.

• Comments that are not suggested changes to the text are denoted by [NOTE: brackets]

19

- All maps that show fire safe council boundaries which include the Placer Sierra FSC are incorrect, including Figure 1-1, and others, as well as all figures in Section 6. ***The southern boundary of the PSFSC is the North Fork of the American River all the way from the western to the eastern boundary***. See page 8, Section 3.0 Geographical Boundaries of the Placer Sierra FSC Partnership Agreement signed by the BOS where it states "The Placer Sierra Fire Safe Council (PSFSC) … extends between the Bear River and the North Fork of the American River north of the southern boundary of the Placer Hills Fire Protection District extended to the North Fork of the American River Canyon up to the section line that runs northsouth between sections 31 and 32 of Township 17N, Range 12E just east of Emigrant Gap." http://www.placer.ca.gov/upload/bos/cob/documents/sumarchv/2006archive/060822a/bosd_060822_12b_p147-p168.pdf

20

- On the maps that include land ownership, the two greens used for the USFS and BOR are easy to confuse because they are very similar. Please try to find colors that are more obviously different.
- TYPOs:
  - CAL FIRE is spelled as two words, all capitals (www.fire.ca.gov). Also, CDF still exists—CAL FIRE is another name for the fire fighting element.

21

  - Not exactly a typo, but a recommendation. To reduce confusion, please use USFS throughout instead of TNF. The general public is much more used to USFS. Few understand the significance of TNF. Also, if USFS is used throughout, then you don't have to watch out for references to the full agency, as in discussing funding or the HFRA, vs actions of the TNF.
  - Page iii, Figure 1-1 is on page 1-4, not 1-5
  - Change "Placer County Fire Alliance" to "Placer County Safe Fire Alliance." It is called both things in the text.
  - Title on Figure 2-4 is formatted with "justify" instead of "left" as other figures are.

Response to comments from Robin Yonash:

1. The wildland urban interface (WUI) is not a protective buffer around communities. Creating a wider WUI would require larger projects that will not streamline preparation of a NEPA document because larger projects generally require more documentation and therefore costs are higher than smaller projects. The WUI is a planning tool to assist in the location of projects. Housing density was used to identify communities and to place less emphasis on individual landowners. In most cases the 0.25 mile-wide WUI is adjacent to federal lands. Projects have been identified within communities, within the WUI, and adjacent to the WUI. In those cases, the location was considered to be strategic location, rather than dictated by a boundary line. Representatives from CAL FIRE, the local fire departments, and Placer County, who are responsible for approving the CWPP, reviewed the size of WUI and the location of projects. In all cases, the projects were designed to reduce the threat of a wildfire to communities at risk.

2. The HFRA, *Preparing a Community Wildfire Protection Plan, A Handbook for Wildland-Urban Interface Communities* (2004, sponsored by the Communities Committee, Society of American Foresters, National Association of Counties, and National Association of State Foresters), and the Simplified Template for a Community Wildfire Protection Plan (www.cafirealliance.org) do not require the inclusion of federal projects in CWPPs. The Placer County Fire Safe Alliance and local FSC provide monthly meetings that offer the opportunity for meaningful collaboration between federal, state, and local agencies. Representatives from the BLM and TNF have been active participants in the development of projects in local FSC in Placer County.

3. The list of communities-at-risk on page 1-2 was developed from the list on www.cafirealliance.org. The list was reviewed again in February 2008 and no other communities in the planning area were identified.

4. The draft CWPP included a placeholder for Figure 2-6, CAL FIRE's earlier map of assets at risk. That map has been included in the final document and an explanation of the assets included in that map is described in Appendix A. The draft CWPP includes a 5-year planning horizon that focuses on communities. As this plan is implemented additional projects and assets at risk will be included in future updates to this plan.

5. The project lists in the CWPP include: the name of the project, fire regime condition class, a brief description of the project, recommended treatment technique, acres, planning priority, and planning and implementation costs. If additional information is required in the County's DMA 2000 MHMP it can be added at that time.

6. Existing information on values at risk were included in the CWPP. Priorities were established by the Fire Chiefs after reviewing the WUI boundary around communities, fire susceptibility ratings (ignition risks and fuel hazards), and strategic locations of projects.

7. Grant requests for fuel reduction projects will be submitted based on the assigned priorities and opportunities to collaborate with federal land management partners. The distance between projects and applicable federal lands can be estimated from the maps or from the GIS files that are filed with Placer County. The HFRA requires the BLM and Forest Service to collaborate with CWPP implementers; however, the BOR is not required to comply with the HFRA. Identification of existing and proposed treatments on federal lands will occur during regularly scheduled FSC meetings.

8. The projects identified in the CWPP are primarily initial treatments and the costs have been identified. Maintenance treatments will be required in the future and FSCs should prepare grant requests for those projects. As more of the initial treatments are completed, maintenance techniques and costs will be identified and included in future updates to this plan.

9. The term large fire was used because large fires are generally severe. Fire severity rankings were described in Table 2-1. The term catastrophic fire was also used to emphasize the results of either a large or a small, but intense fire.

10. Thank you, a list of acronyms will be provided.

11. The list of resources that you provided will be included in the CWPP (Appendix B), thank you.

12. State Responsibility Areas (SRA) is used to identify suppression responsibilities. It is not required in CWPPs because those documents should focus on fuel reduction projects, rather than suppression responsibilities. PRC Code 4291 applies to all non-federal lands where suppression responsibilities may be federal, state, or local responsibility.

13. An education component will be included in section 7 of the CWPP, thank you.

14. Strategically placed area treatments (SPLATs) are treatments used in wildlands to modify fire behavior; they do not include residential buildings. The CWPP includes several projects where communities would be expected to conduct clearings beyond PRC 4291 requirements. These treatments were described as community defense projects (see draft page 3-4) and were included in the projects lists for each individual FSC.

15. Comment noted. The Placer County Fire Safe Alliance does not have any authority; however, it is responsible for coordinating activities among the three fire safe councils (see page 1-3). The mission of the Alliance membership ". . .is to minimize catastrophic wildfire losses to values-at-risk. . ." (see page 3-2).

16. Private landowners are responsible for their property. State law currently requires those landowners to comply with PRC 4291 (create and maintain defensible space) and construction codes for new buildings were modified in January, 2008. At this point, the Placer County Fire Safe Alliance is placing its emphasis on compliance with PRC 4291, rather than establishing a new set of regulations for hardening structures.

17. Thank you. Language will be added to page 3-1, identifying the risks of fires moving from residences into the wildland.

18. The Meadow Vista PTEIR is an approved environmental document. Expanding that document would open it up to public comment and potential appeals. Therefore, separate environmental documents would have to be prepared for Foresthill and WAM MAC. Although both communities are updating their community plans, the existing resource information required for a PTEIR may not be current or adequate to prepare a successful document. It is acknowledged that programmatic environmental documents are beneficial and should be considered in the future.

19. The geographic boundaries of the Placer Sierra Fire Safe Council approved by the Placer County Board of Supervisors are included in the CWPP maps. The area covered in the CWPP maps is larger because it includes all of land under the responsibility of the Dutch Flat Fire Protection District.

20. Comment noted.

21. Comment noted. We will correct the spelling of CAL FIRE. TNF was used to identify Forest Service responsibility in the planning area because it is specific to that administrative unit. Comment noted, and the proposed changes will be incorporated.