CITY OF FOLSOM

COMMUNITY WILDFIRE PROTECTION PLAN

April 2013

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Introduction

The Healthy Forest Restoration Act of 2003 (HFRA) provided landmark legislation that directs the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) to acknowledge and follow established community wildfire protection plans. The act requires that the USFS and BLM: 1) Consider recommendations contained within community wildfire protection plans in developing annual programs of work to reduce hazardous fuels and increase protection for at-risk communities. 2) Consider projects recommended by community wildfire protection plans in the allocation of financial assistance to communities for work on non-federal land, and 3) To the maximum extent practicable, give priority to communities that have an approved community wildfire protection plan or have taken proactive measures to encourage willing property owners to reduce fire risk on private property.

Requirements

The requirements for a Community Wildfire Protection Plan (CWPP) as described in the HFRA are:

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

This CWPP meets these requirements

Mutual Agreement

The HFRA requires that three entities must mutually agree to the final contents of the CWPP; 1) The applicable local government, 2) The local fire department, and 3) the state entity responsible for forest management. In compliance with the act, the representatives recorded by signature below agree with the findings and recommendations contained in the plan that follows.

Linda

Date: 4/25/13

Linda Conroy, Chair
Folsom Fire Safe Council

Date: 4/26/13

Ronald A. Phillips, Chief
City of Folsom Fire Department

Date: 7/26/2013

Evert W. Palmer, City Manager
City of Folsom

Date: 4/26/2013

Kelly Keenan, Unit Chief
California Department of Forestry and Fire Protection;
Amador- El Dorado Unit

Approved as to Form:

Bruce C. Cline
City Attorney

Executive Summary

This Community Wildfire Protection Plan (CWPP) is a collaborative effort between the City of Folsom, the Folsom Fire Department (FFD), California Department of Forestry and Fire Protection (CAL-FIRE), US Bureau of Reclamation (Reclamation), US Bureau of Land Management, and concerned Folsom residents and property owners. The Folsom Fire Safe Council (FFSC) has provided fundamental services to Folsom neighborhoods and facilitated homeowner participation in this effort. The plan has been developed in cooperation with and reviewed by the California Department of Parks and Recreation.

Folsom is located in the foothills on the western slopes of the Sierra Nevada mountain range and constitutes the eastern border of Sacramento County. With its roots in the historic California Gold Rush era, Folsom has a population of over 71,000 residents and encompasses approximately 30 square miles. The California Department of Finance estimates Folsom has 25,000 housing units made up of 18,000 single family dwellings, 5,000 multiple family units and 900 mobile homes. Folsom boasts a public zoo sanctuary, scores of commercial buildings, retail centers, schools, hospitals and medical facilities. The California Independent System Operator, which operates the State's high voltage power grid, is located in Folsom as is the Sierra Nevada Region Office of the Western Area Power Administrator which markets power to wholesale customers and Federal end-use customers. Folsom is also home to research and design facilities for technology giant Intel which employs nearly 6,000 technicians, engineers, marketing, sales and support personnel at its Folsom campus.

Folsom is bisected by the American River and within the city boundaries are two California Department of Corrections and Rehabilitation prison facilities, Folsom Dam and portions of the Folsom Lake State Recreation Area (FLSRA); each under the management of different state and federal agencies. Folsom residents value the preservation of open space areas and within the community there are many areas where homes were constructed in close proximity to dense vegetation. Folsom is bordered by Folsom Lake and unincorporated Placer County to the north, unincorporated El Dorado County to the East, and unincorporated Sacramento County to the South and West. The Sacramento County Multi-Hazard Mitigation Plan identifies Folsom as having the greatest density of housing subject to wildfire in Sacramento County.

The varied topography, fuel loading, and history of wildland fire ignitions combined with extensive and diverse use activities has many of the elements for a wildfire occurrence of catastrophic portions. Severe fire seasons in the western United States over the

past decade led to the enactment of the Healthy Forest Restoration Act (HFRA) of 2003, which can provide funds for fuel treatment in communities at risk adjacent to federal Forest Service and Bureau of Land Management lands. The HFRA provides communities at risk with a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal and non federal lands. A CWPP is the most effective way to take advantage of this opportunity. The City of Folsom is a registered community at risk. FFD has identified the greatest threat to the community from fire would be a fast moving wildfire in the brush and oak woodland fuel bed which line the American River where it flows through Folsom.

Folsom is not immune to numerous types of grass and brush fires and any one of them may accelerate into a large urban interface wildfire. Such a situation could lead to evacuation of large portions of the population and the potential for significant loss of personal property, structures and rangeland. The natural fuels available in the City vary greatly in the rate and intensity of burning. Fires in heavy brush and stands of trees burn with great intensity but more slowly than in dry grass and leaves. Dense fuels will propagate fire better than sparse fuels. The local fire season generally extends from June through late September or early October.

During extremely windy conditions, both small and large-scale fires will generate enough smoke to necessitate the closing of key transportation routes, including US Route 50. It may be necessary to close streets and/or re-route traffic to maintain traffic lanes and access for firefighting apparatus. Large parking areas may be cordoned off for the staging of various types of resources needed during large-scale emergencies.

This CWPP was prepared by the FFSC and addresses the hazards and risks within and adjacent to the community. The FFSC has already begun education efforts within the community by providing free fire safe home evaluations, staffing informational booths at various community events and promoting the International Association of Fire Chiefs "READY, SET, GO" public education program (www.readyforwildfire.org).

Homeowners throughout Folsom neighborhoods must be ever diligent and cognizant of defensible space around their homes and structures. Fuels management on undeveloped parcels within neighborhood boundaries sometimes poses a greater risk to residents than wildland fuels in the interface. Enforcement of ordinances that require property owners to maintain fire safe vegetative conditions should be used when necessary. The ongoing need for maintenance of fuel reduction and defensible space treatments must remain a priority for both private landowners and land management agencies. The National Fire Protection Association "Firewise" program offers recommendations and a wealth of free information for wildfire safety through their website at www.firewise.org.

Ultimately, it is each homeowner's responsibility to establish and maintain the physical characteristics of a fire-safe interface property. Public and non-profit agencies such as the FFD, FFSC, and CAL-FIRE offer resources to assist individuals and neighborhoods in achieving the objectives of fuels reduction treatments such as those recommended within this report. Using a strategy of offering defensible space assessments to aid homeowners in improving defensible space, the FFSC reminds homeowners – and the owners of undeveloped wildland parcels – that the safety of their individual property is directly related to property owners taking the initiative within their neighborhoods for ongoing fuel reduction and vegetation management. Additional information for defensible space and home hardening strategies is available through the California Fire Alliance website: takeresponsibility.cafirealliance.com.

The City of Folsom also has a responsibility to insure that future planning and zoning decisions for development adjacent to open space areas include sufficient provisions for the clearance required to protect new and future structures. These provisions may include adequate setbacks, buffer areas or other measures to reduce the wildfire risk.

The Folsom Community Wildfire Protection Plan is a dynamic, evolving document designed to continuously clarify and refine our community priorities for the protection of life, property and critical infrastructure from wildfire in the wildland-urban interface areas found within and surrounding Folsom. It is intended to serve as a vehicle to facilitate discussion among community members and participating organizations and agencies regarding pre-fire management options and the implications for the City of Folsom.

Purpose:

The purpose of this CWPP is to protect human life and reduce loss of property, critical infrastructure and natural resources due to wildfire. This document is intended to help agencies, businesses and local homeowners define, plan and prioritize types of actions that will limit the damage associated with the inevitable wildfire event. This plan can be used to reduce the risk of conflagration by the following actions:

1. Increased collaborative planning and cooperative actions that will build useful relationships between communities and agencies.
2. Reduction of hazardous fuels in the Wildland Urban Interface(WUI)
3. Creation and maintenance of defensible space for structures and properties.
4. Reduction of structural ignitability hazards.
5. Planning of evacuation protocols and drills.

The stake holders in this effort believe that the work outlined above requires a collaborative approach that combines the following elements:

a. Development and implementation of strategic, cost effective, sustainable and environmentally sensitive fuel management plans;
b. Educational programs that explain fire risk, promote voluntary citizen involvement and emphasize long term strategies for creating and maintaining a fire-resistant community;
c. Application of resources to areas and projects where efficacy is most probable.

To that end, stakeholder participation and regular review are central to maintaining the ideas and priorities of the CWPP in the future. The dynamic nature of the CWPP will reflect the changes in practices, technology and information available to prevent and minimize lost resulting from a wildfire.

Scope

The scope of this document applies to land and property within the city limits of Folsom and encompasses the following:

1. Describes the fire environment
2. Identifies values at risk as defined by stakeholders
3. Provides maps that show fire hazard areas as defined by Federal, State and local agencies
4. Describes fire prevention strategies including but not limited to education, fuel management projects, and treatment strategies and outlines protocols for selecting and prioritizing projects when funds are available.
5. Describes measures property owners can take to reduce the ignitibility of structures.
6. Identifies best practices for the fuel reduction treatments identified in this plan

The FFSC makes no guarantee expressed or otherwise implied and assumes no liability that this CWPP will prevent wildfires from destroying natural resources or threatening private property or residents. However, full implementation and maintenance of the CWPP mitigation measures will greatly reduce the exposure of the community and adjacent property to losses from wildfire.

It is up to individual homeowners and landowners to assume responsibility for protection of their property from wildfires.

Stakeholders

For the purposes of this CWPP, stakeholders are defined as those individuals, agencies, or business entities that would be directly impacted by a catastrophic wildfire. The process of identifying stakeholders and their interests will be an ongoing process. It is the goal of the Folsom Fire Safe Council to collaborate with as many stakeholders as possible. The following is a list of participating stakeholders:

US Bureau of Land Management

US Bureau of Reclamation

California Department of Forestry & Fire Protection

California Department of Parks & Recreation

California Department of Corrections & Rehabilitation

City of Folsom

- Folsom Fire Department
- Parks and Recreation Department
- Zoo Sanctuary
- Municipal Landscape Division

Folsom Ridge Homeowners Association

Folsom Bluffs Owners Association

Fire Environment

Weather

The City of Folsom has what is described as a Mediterranean type climate which features hot, dry summers and cool moist winters. From June to October conditions are typically ideal for wildfires. Annual plants die and perennial plants lose moisture content becoming highly flammable. Fires burning late in the dry season can be intense and resistant to suppression efforts. These fires threaten lives, property and resources. At some point nearly every summer, the Pacific High Pressure System moves eastward over California further aggravating conditions by bringing extreme high temperatures coupled with low humidity. The area is also occasionally subject to strong north or easterly winds during the fall or early winter months that can easily spread a wildfire.

Under similar conditions, the North Auburn wildfire in late August 2009 destroyed 63 homes and the Oakland Hills fire in 1991 which claimed 25 lives, burned 1,520 acres and destroyed 3,354 single family dwellings and 437 apartments. These events clearly demonstrate the potential for catastrophic loss from wildfire in Folsom.

Fuels

Maps developed by CAL FIRE show the vegetation type in the Folsom area to be predominantly Annual Grassland, Pine and Oak Woodland. CAL FIRE identifies two High Fire Hazard Severity Zones within city limits; the American River canyon from Folsom Dam to Lake Natoma Crossing and the Southeast corner of the city in the Broadstone and Empire Ranch developments.

The natural environment of Folsom contains a variety of natural resources. Environmental considerations have been taken into consideration during development protecting hillsides, riparian habitats, vernal pools, local streams and other localized environmentally sensitive areas. Much of these areas have been preserved in open space. (See Fire Threat Map Appendix A)

Vegetation Communities

The Folsom area includes the following vegetation communities:

Chamise Chaparral
Interior Live Oak Woodland
Blue Oak Woodland and Savanna
California Annual Grassland

Cottonwood/Willow Riparian
Freshwater Marsh
Seasonal Wetlands
Vernal Pools
Lake Shoreline Fluctuation Zone
Ruderal and Barren Areas

Folsom has many areas that are susceptible to small fires that could grow into some form and size of urban interface fire. These areas can be divided into four main areas: the American River/Lake Natoma corridor, the various parkways and easements, natural areas involving wetlands and dredger tailings, and open fields and rangelands.

American River/Lake Natoma Corridor

The American River flows from the base of Folsom Dam into Lake Natoma. The property adjacent to the river and Lake Natoma are owned by the US Bureau of Reclamation. The California Department of Parks and Recreation (DPR) manages public use and recreation on these federal lands as part of FLSRA through a 25-year Managing Partner Agreement (MPA) with Reclamation. DPR also owns fee title lands adjacent to the federal lands along Lake Natoma that are also part of FLSRA. The area is mostly natural habitat accessed through limited roadways, a bicycle/horse trail and numerous footpaths. These means of ingress provide access to remote areas in which fires can begin and access for fire equipment is difficult.

The area upstream from the Rainbow Bridge is mostly rough and steep terrain with very limited access. This creates an opportunity for fires to grow at a rapid rate and gain momentum while continuing to burn towards the residential structures that are scattered about the edge of the beltway. The natural growth, type of construction, and roofing materials provide ample opportunity for fire to spread into residential areas. The Negro Bar, Folsom Powerhouse, and Willow Creek units of FLSRA are downstream of the bridge. At the west end of Negro Bar are bluffs that are 300 feet high in some locations.

Adjacent to the Negro Bar area is the bluff area on Greenback Lane and an area known as the Orangevale cut. Both of these locations have very steep terrain with dry, flashy, rapid burning fuels. They directly interface with residential and multi-family structures with wood shake roofs. These areas have occasional fires throughout the fire season and require continuous monitoring and aggressive fire suppression activities to prevent a catastrophic event from occurring.

Open Space Areas

Throughout the City, there exist numerous un-maintained alleyways, easements, and rights-of-way. In many locations, some of which are trail corridors for the City's system of paved bike trails, these provide easy access to residential structures or other types of vegetation, which could increase the likelihood that a fire may rapidly spread beyond the capabilities of responding units. Areas of concern include the Hinkle Creek, Willow Creek, Humbug Creek and Blue Ravine Parkway beltways.

Natural Areas, Wetlands, and Dredger Tailings

Continuous development of the City has created many landlocked areas, mandatory wetland areas and the preservation of pre-existing dredger tailings. Areas of this nature tend to be surrounded by residential developments and are difficult to access. Their proximity to development provides an opportunity for ideal fire conditions to spread fire via flying brands and consumption of small stands of trees.

Open Fields and Rangelands

The east areas of Folsom provide the greatest opportunity for a large-scale fire to start and spread uncontrollably into developed areas or into the foothills of El Dorado Hills. The undeveloped areas within city limits are considered a Local Responsibility Area (LRA) which means the FFD has responsibility for fire protection. The hilly, rocky terrain with its numerous rock outcroppings around developed areas along the Sacramento/ El Dorado County line will make it very difficult to contain a fire before it rapidly grows and threatens structures. This portion of the City is also where numerous transmission towers and repeater antennas are located on the ridge tops. They can be both a source of ignition for a wildland fire and an exposure from a fire starting in lowlands.

2012 Annexation

In February 2012 Folsom received approval to annex 3585 acres of land south of US Highway 50. The area is bordered by Highway 50 on the north, White Rock Road to the south, Prairie City Road to the west and the El Dorado County line to the east. The proposed land use plan calls for 1000 acres of open space, 120 acres of parks, 474 acres of residential development and 511 acres of commercial, industrial and office space. This newly annexed land south of U.S. 50 is now designated LRA with some,

but not all, of the land designated within a Mutual Dispatch Area (MDA) requiring CAL FIRE response in the event of a major fire event. In its current undeveloped state, the land is categorized as a high to very high fire hazard threat on the CAL FIRE fire threat map. It will be important to carefully monitor the area and work closely with developers to ensure that fire safe principles described throughout in this CWPP are incorporated into any future development. (Annex B)

History

Folsom is on the CAL FIRE list of communities at risk which takes into account factors such as Fuel Hazards, Probability of Fire and Housing Density that would create WUI Fire Protection Strategy Situations.

FFD reports that multiple wildland fires occur in the Folsom area every year. Fortunately most are quickly contained and extinguished. However, there have been incidents that could have easily resulted in catastrophic wildfires.

In 2003, the Mountain Oak fire burned several acres and came within feet of occupied dwellings. That fire started off the American River Bicycle Trail on Reclamation managed lands in Natoma Canyon. Driven by winds it grew quickly and burned up the canyon toward north Folsom homes.

In 2008, the "Parkway" fire in the FLSRA burned 25 acres of land designated as having historical significance. The fire, which started in the FLSRA, spread to the City of Folsom Corporation Yard destroying one City owned building and damaging several others. Neighborhoods adjacent to the FLSRA were threatened and evacuations were briefly ordered for some.

Then in 2010, disaster was again averted when a residential fire broke out in a Folsom Bluffs condominium at the top of the same Natoma Canyon area. This fire could easily have spread to adjacent State Park land had the Folsom Bluffs Owners Association not taken steps to create defensible space before the fire season began.

Values at Risk

Based on information contained in the 2011 Sacramento County Multi Hazard Mitigation Plan update, the following values are identified as at risk from wildfire. In addition to these values there are numerous cultural and historic resources in the Folsom area.

Count and Structure Value of Improved Parcels by Land Use by Fire Threat Class
(Source 2010 Assessor and Parcel data; CAL FIRE)

Little or No Threat		
Residential	3,108	$691,251,364
Retail/Commercial	18	$28,712,046
Office	9	$18,090,115
Industrial	3	$3,536,602
Care/Health	3	$1,373,669
Church/Welfare	1	$118,758
Moderate		
Residential	305	$636,056,728
Retail/Commercial	155	$740,829,109
Office	27	$54,636,633
Industrial	16	$48,487,617
Care/Health	28	$43,914,436
Church/Welfare	12	$43,923,233
Recreational	6	$26,512,955
Miscellaneous	12	$1,741,864
Vacant	6	$14,059,317
No Data	14,498	$3,910,713,167
High		
Residential	1,355	$514,145,457
Retail/Commercial	15	$25,171,679
Office	33	$83,578,037
Industrial	6	$34,215,844
Care/Health	2	$54,729,165
Recreational	1	$3,215,955
Miscellaneous	2	$7,700,900
Vacant	1	$219,478
No Data	4	$4,819,834
Very High		
Residential	286	$75,155,737
Retail/Commercial	4	$10,287,089
Office	1	$1,008,285
Miscellaneous	2	$5,882,446
Totals	**19,919**	**$7,084,087,519**

Residential Population at Risk to Wildfire in the City of Folsom

Source US Census Bureau; CAL FIRE

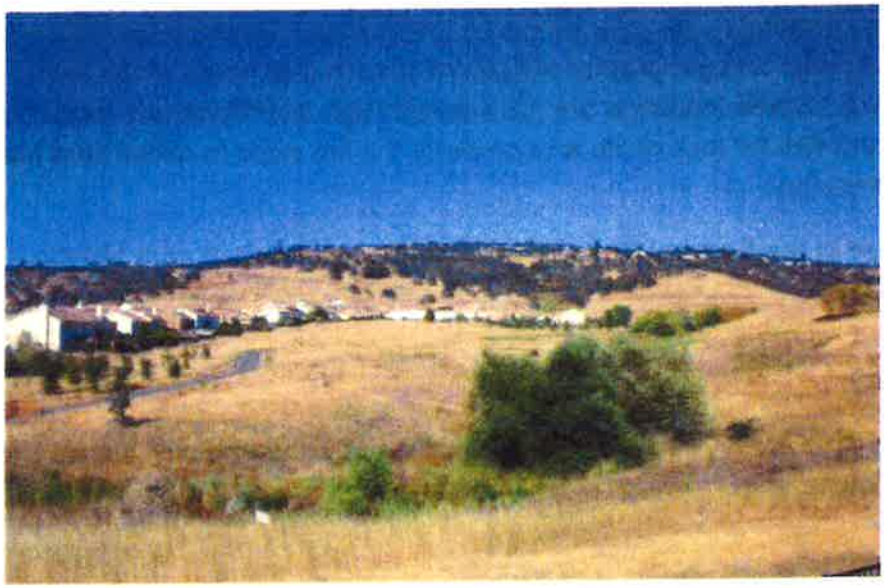
Jurisdiction	High Fire Threat Population	Very High Fire Threat Population
Folsom	3,672	775

City of Folsom Critical Facilities in the Wildfire Threat Zone

Source Sacramento County GIS; CAL FIRE

Jurisdiction	Critical Facility Definition	Fire Threat	Count
Folsom	Essential Services Facilities	Little or No Threat	4
Folsom	Essential Services Facilities	Moderate	23
Folsom	Essential Services Facilities	Very High	1
Folsom	At Risk Population Facilities	High	3
Folsom	At Risk Population Facilities	Little or No Threat	13
Folsom	At Risk Population Facilities	Moderate	48

Wildland Interface Defined



Urban (WUI)

HFRA 110, 16) Wildland Interface

(Section paragraph defines Urban as follows:

(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 1/2-mile from the boundary of an at-risk community;

(ii) an area within 1 1/2 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.

In lay terms, WUI can be described as an area in which wildlands and communities are sufficiently close to each other to present a credible risk of fire spreading from one to the other. The importance of the WUI is increasing as more homes are built in rural settings adjacent to public lands.

For the purposes of this CWPP, the CAL FIRE Fire Hazard Severity Maps are used to determine where significant fire hazards exist. Folsom Fire Department has also produced a Draft Fire Hazard Severity Zone for Local Responsibility Area.

The housing density and geography of Folsom is such that much of the city is considered WUI. Some locations are considered High and Moderate Hazard areas and are at significant risk for loss of life and property if a fire were to occur on a normal or extreme weather day.

Folsom is listed in the Federal Registry of Communities-At-Risk from Wildland Fire.

WUI Boundary

When used in this CWPP, WUI shall refer to all lands within the city limits of Folsom regardless of ownership.

Fuel Reduction Strategies

Fuel Management is the practice of removing or modifying vegetation in order to reduce wildfire ignition, rate of spread and intensity. Fuel management requirements depend on the vegetation type, location, condition and configuration. Given the dynamic nature of these fuels, a single treatment type or prescription is typically not effective. Rigorous oversight, active management, and an adaptive approach are required to achieve fuel management goals. Generally, five fuel management methods can be used within the WUI:

1. Manual (e.g. hand labor such as pulling or cutting)
2. Mechanical (e.g., mowing, selective cutting of trees, chipping)
3. Prescribed herbivory (targeted grazing by goats, sheep or cattle)
4. Herbicides (chemical treatment)
5. Prescribed burns

When funding is available, fuel reduction projects with the following attributes should be given the highest priority:

a. The project reduces hazardous fuels that if left untreated would generate high intensity burning adjacent to structures or produce large quantities of airborne burning embers that would carry into other important resources.
b. The project reduces hazards along strategic emergency access and evacuation routes or other critical infrastructure.
c. The project includes vegetation modification treatments that will reduce the threat of unacceptable impacts of high intensity fire to high value ecosystems, sensitive watersheds and high concentration recreation areas including regional parklands and state and federal lands.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA), Public Resources Code §21000, requires the preparation of an Environmental Impact Report (EIR) in connection with public or private activities that may alter the condition of land, water and/or vegetation. Guidelines for CEQA implementation have been codified in the California Code of Regulations (CCR).

However, with respect to fuel management projects within the WUI, CEQA guidelines provide an exemption to the EIR process. The following are excerpts from CCR Title 14, Division 6, Chapter 3, Article 19:

§15300. Categorical Exemptions.

Section 21084 of the Public Resources Code requires these guidelines to include a list of classes of projects which have been determined not to have a significant effect on the environment and which shall, therefore, be exempt from the provisions of CEQA.

In response to that mandate, the Secretary for Resources has found that the following classes of projects listed in this article do not have a significant effect on the environment, and that they are declared to be categorically exempt from the requirement for the preparation of environmental documents.

§15304. Minor Alterations to Land

Class 4 consists of minor public or private alterations in the condition of land, water, and/or vegetation which does not involve removal of health, mature, scenic trees except for forestry and agricultural purposes. Examples include but are not limited to:

(i) Fuel management activities within 30 feet of structures to reduce the volume of flammable vegetation, provided that the activities will not result in the taking of endangered, rare, or threatened plant or animal species or significant erosion and sedimentation of surface waters. This exemption shall apply to fuel management activities within 100 feet of a structure if the public agency having fire protection responsibility for the area has determined that 100 feet of fuel clearance is required due to extra hazardous fire conditions.

Environmental Compliance on Reclamation Lands

Projects and activities occurring within the FLSRA on Reclamation fee title and managed lands are required to comply with the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), National Historic Preservation Act, and any

other applicable Federal Laws Acts or Regulations such as those established by the U.S. Council on Environmental Quality and the U.S. Department of Interior.

Hazardous Fuel Reduction Projects are categorically exempted if the project or activity complies with Section 43 Code of Federal Regulations (CFR) Section 46.210 (k) which is outlined below:

43 CFR 46.210

(k) Hazardous fuels reduction activities using prescribed fire not to exceed 4,500 acres, and mechanical methods for crushing, piling, thinning, pruning, cutting, chipping, mulching, and mowing, not to exceed 1,000 acres. Such activities:

(1) Shall be limited to areas –

(i) In wildland-urban interface; and

(ii) Condition Classes 2 or 3 in Fire Regime Groups I, II or III, outside the wildland-urban interface;

(2) Shall be identified through a collaborative framework as described in "A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan;"

(3) Shall be conducted consistent with bureau and Departmental procedures and applicable land and resource management plans;

(4) Shall not be conducted in wilderness areas or impair the suitability of wilderness study areas for preservation as wilderness and;

(5) Shall not include the use of herbicides or pesticides or the construction of new permanent roads or other new permanent infrastructure; and may include the sale of vegetative material if the primary purpose of the activity is hazardous fuels reduction. (Refer to the ESM Series for additional required guidance.)

Coordination with Reclamation

Projects or activities occurring on Reclamation lands will require the project proponent to coordinate with Reclamation to ensure compliance with the NEPA and other regulations referenced above. Additionally, the project proponent will need to apply for a Land Use Authorization from Reclamation prior to commencement of activities.

Treatment of Structural Ignitability

The presence of structures within the WUI exposes both the natural and developed environment to increased risk of destruction by wildfire. In areas where the accumulation of flammable vegetation coexists with residential development, an ignition can lead to catastrophic fire. Mitigation of hazards that can contribute to structural ignitability can reduce the potential of fire loss. Property owners should follow California Building Code Chapter 7A which provides the latest standards for maximum protection of structures from wildfire.

The keys to reducing this risk are the design of structures, materials used in construction and the presence of defensible space. Studies have identified basic factors that affect the risk of a structure burning in a wildfire. A weakness in any of these areas can lead to a destroyed or severely damaged home or building. The factors are:

Flammability of the Roof

At minimum, a home should have a class A rated fire resistant roof cover and preferably one that is self-extinguishing once a falling ember burns out. Self extinguishing means that a firebrand will not burn through to the roof deck and flames will not spread to other parts of the roof. Without a fire-resistant roof, all other approaches toward mitigation will fall short of protecting the structure.

Overhanging Structures

Eaves, alcoves, entryways, patio covers, decks, porches and exterior stairways all have the potential to "trap" heat under them or create areas where burning embers can accumulate.

Structural Openings

Areas where there are direct pathways to the attic, house, or crawl space provide an easy entry point for embers and flames. These can include vents, soffits or windows prone to breaking when exposed to wildfire conditions (usually unprotected single pane glass). Window fans, pet doors, fireplaces and chimneys can also allow firebrands to enter if left open or unscreened.

Fuel Hazards

Any fuel sources that will bring flames close to the structure can be a hazard. Examples include flammable plants close to a wall, dead foliage that builds up under normally fire resistant plants, certain types of mulch or a combustible fence located close enough to permit flames to contact the overhanging roof above. Fuel sources within the "defensible space" areas that support a high intensity spot fire are especially problematic. These can include any trees that quickly become a fire torch, such as an untrimmed palm tree, a wooden trellis made of common lumber, playground equipment made with wooden pieces or piles of firewood on the ground or in a rack or wheelbarrow. (See Appendix E for a copy of a CAL FIRE Notice of Fire Hazard Inspection. This form outlines the specific requirements of Public Resource Code §4291 pertaining to defensible space and is an excellent guide to follow)

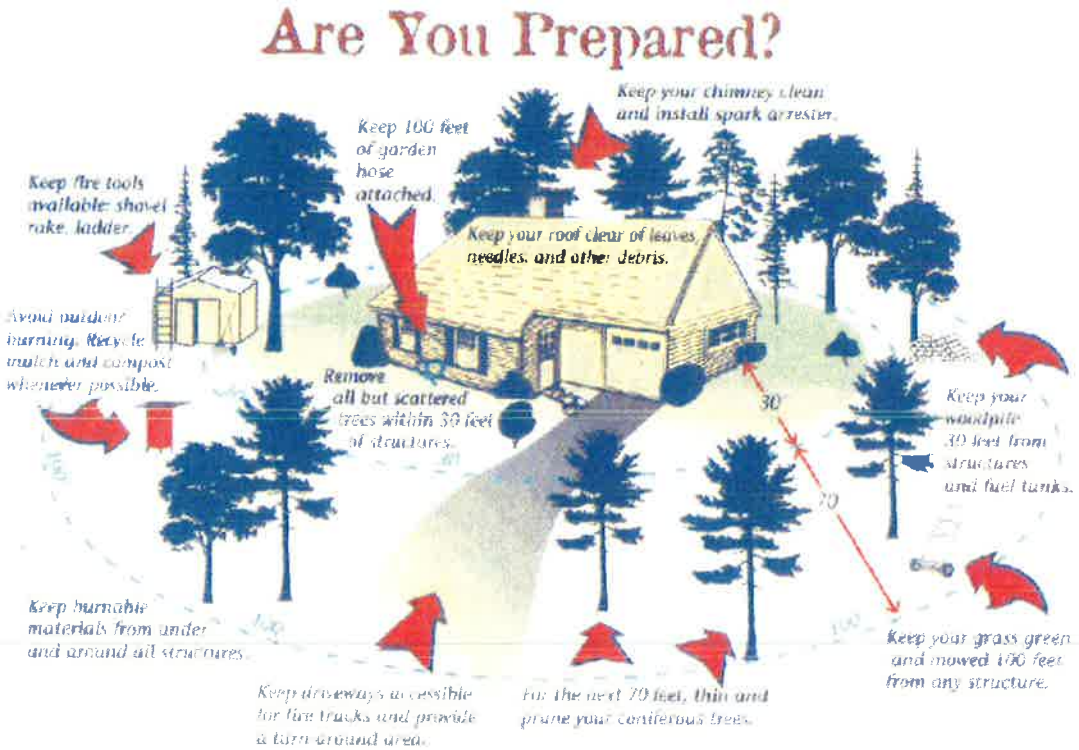
Access

If firefighters and their equipment cannot gain access to the property or water sources, there is little chance they can protect the structure. Access also affects the property owners ability to evacuate the site should the need arise.

Improving the Survivability of Structures

Protecting structures exposed to wildfire is not a simple matter. Structures can ignite due to direct exposure to flames, from radiated heat, or from airborne embers. All three sources must be addressed in order to increase the chances the structure will survive. The following measures should be taken:

1. Reduce the amount of heat the structure will be exposed to through construction design, managing vegetation, and creating defensible space.
2. Limit the time the structure may be exposed to heat through vegetation management and construction design.
3. Use fire resistant building materials and construction methods.
4. Remove combustible materials stored near the structure.



Project Selection

As funding becomes available through grants and fund raising campaigns, education efforts, mitigation projects and workshops proposed by stakeholders will be prioritized based on the following:

- Will the project protect life, property and infrastructure within the WUI where risk of catastrophic wildfire has been identified as most severe?

- Will the project reduce the risk of fire spreading from private lands to open space, state or federal lands or to areas where significant cultural resources or values are at risk?

- Does the project create a plan for fire prevention or mitigation in a new area or supports ongoing, previously planned efforts?

- Does the project involve stakeholders at all levels; that is, is there strong community support as well as support from all applicable agencies and landowners? The intensity of local support will be weighted heavily is selecting projects to be funded.

- How well have those proposing the project demonstrated the capacity to continue to plan, execute, manage and maintain the project effectively?

Project Priorities

While any wildfire protection project is important, the reality of funding constraints requires priorities to be established among types of projects. Given the information within this document, the types of projects that are determined to be of the highest priority, in order of priority, are:

1) Vegetation management projects where a potential wildfire threatens life, property, critical infrastructure and/or emergency ingress/egress in and around Folsom;

2) Vegetation management projects where a potential wildfire threatens watershed, riparian areas or other sensitive ecosystems or high-traffic recreation areas;

3) Wildfire Safety Education Programs that provide homeowners and other community members with information on defensible space, fire resistant landscaping, structural ignitability, emergency procedures and related topics and Planning or Preparedness projects that improve citizen and/or firefighter safety in the event of a wildfire.

The following page describes wildfire protection projects for the City of Folsom in order of priority. Specific project details may also be found in the Appendix section of this plan.

Wildfire Protection Priorities
(listed in order of priority)

Concern	Parties Involved	Priority Notes
Lake Natoma Canyon fuel reduction/modification adjacent to Crestridge Lane	Folsom Bluffs Owners Assn., State Parks, Reclamation	High Weed abatement and clearing recently performed in May 2012
Lake Natoma Canyon fuel reduction/modification adjacent to Grant Lane	Folsom Ridge HOA, State Parks, Reclamation	High
Folsom Zoo Sanctuary defensible space and fuel reduction	Folsom Zoo, Folsom Parks, Folsom Fire Safe Council, State Parks, Reclamation	High Vegetation Management Project (Appendix H) completed May 2012
East Natoma Trail/City Corporation Yard Vegetation Management	City of Folsom, State Parks Reclamation	High
Hinckle Creek Nature Area Vegetation Management	City of Folsom	High
Orangevale Cut Vegetation Management	City of Folsom, Private Homeowners, State Parks	High
Folsom Ranch/Gray Canyon Drive Vegetation Management	City of Folsom, Folsom Ranch Apartments, American River Canyon HOA	High
Public Outreach, Home Evaluations, Ready-Set-Go Program	Folsom Fire Dept., Folsom Fire Safe Council	Moderate
Trowbridge Court; Vegetation Management in areas adjacent to	City of Folsom, Private Homeowners, Empire Ranch HOA	Moderate
Nisenan Community Park vegetation management	City of Folsom	Moderate Priority subject to change as this area is developed
Municipal Complex vegetation management	City of Folsom	Moderate
Fundraising Activities	Folsom Fire Safe Council	Moderate Council will continually need to raise funds for matching grants, providing educational materials and funding wildfire safety projects

Additional Resources

www.sacramentoready.org – Emergency information for Sacramento County including County Emergency Plan and Evacuation Plan

www.readyforwildfire.org – This site, sponsored by CAL FIRE, utilizes the Ready-Set-Go program and provides homeowners with information about defensible space, home hardening and emergency preparation.

www.firewise.org – sponsored by the National Fire Protection Association, USDA Forest Service, US Department of the Interior and National Association of State Foresters

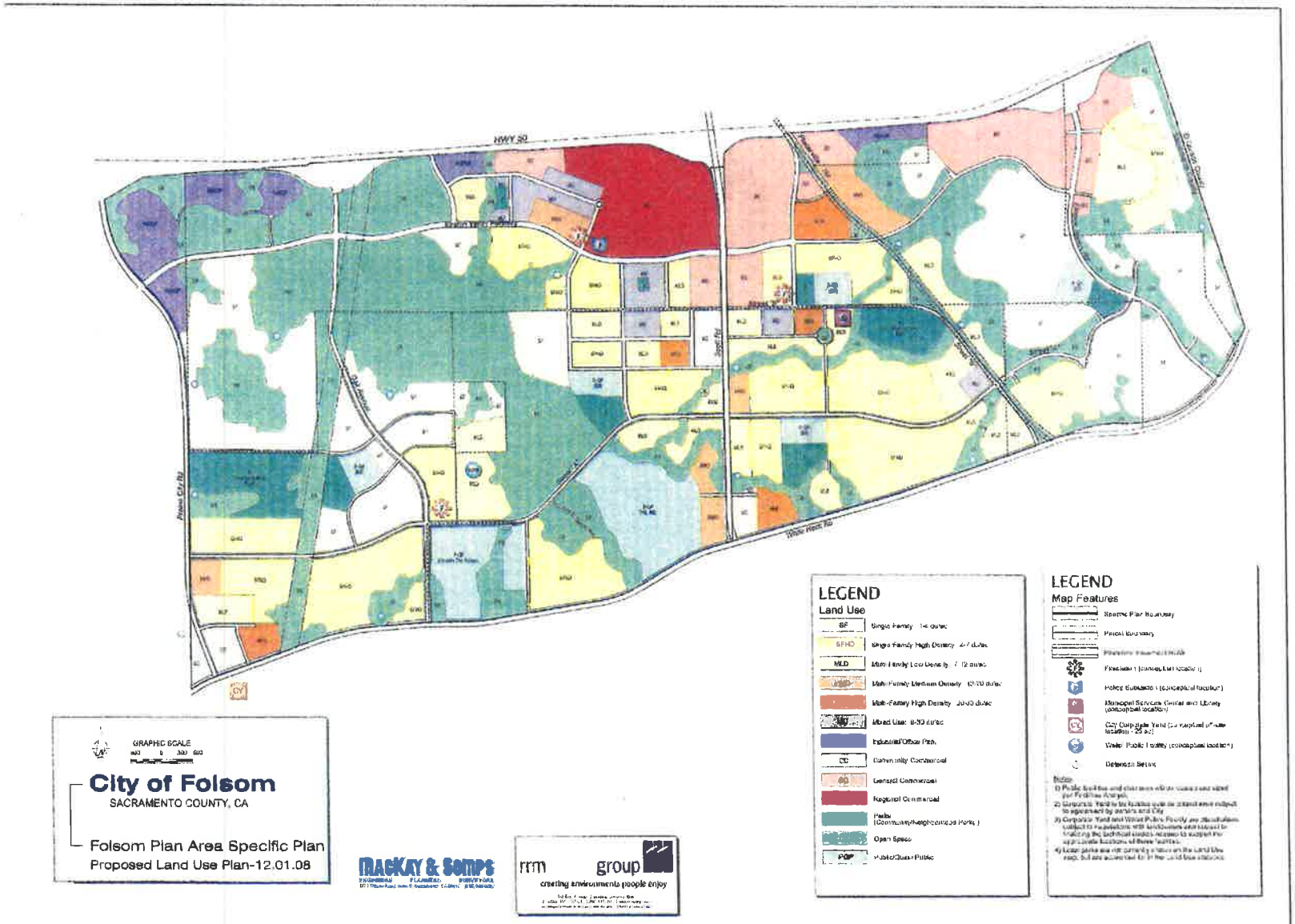
takeresponsibility.cafirealliance.com – California Fire Alliance tips on living in the Wildland Urban Interface

APPENDICES

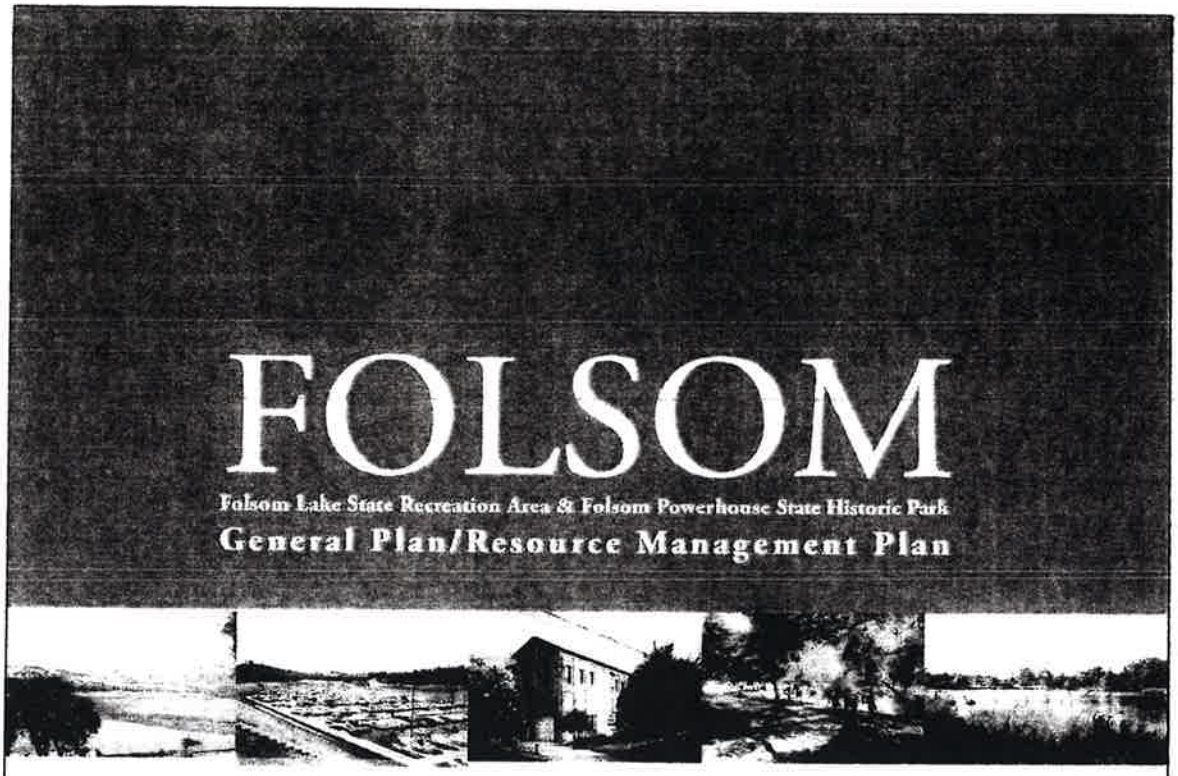
A. Fire Threat Map. Prepared for Sacramento County Local Hazard Mitigation Plan update July 2011
B. City of Folsom Annexation Land Use Plan
C. Selected excerpts from Folsom Lake SRA & Folsom Powerhouse State Historical Park General Plan / Resource Management Plan, June 2010
D. Guidelines for the Protection of Structures From Wildland Fire, California Department of Parks and Recreation, March 2009
E. CAL FIRE Notice of Fire Hazard Inspection form
F. Non-Fire Fuels Treatment Objectives and Strategies; excerpt from US Bureau of Land Management Folsom Field Office Fire Management Plan 2004 (Updated 2008)
G. Lake Natoma Canyon/Folsom Bluffs and Folsom Ridge Project Area Description
H. Folsom Zoo Sanctuary Project Area Description
I. Municipal Complex Project Area Description
J. Hinckle Creek Nature Area Project Description
K. Orangevale Cut Project Area Description
L. East Natoma Trail Project Area Description
M. Folsom Ranch/Gray Canyon Drive Project Area Description
N. Trowbridge Court Project Area Description
O. Nisenan Community Park Project Area Description

APPENDIX A

APPENDIX B


HWY 50
Prairie City Rd
Old Auburn
Scott Rd
White Rock Rd
LEGEND
Land Use
SF
SFHD
MLD
Mixed Use: 8-30 du/ac
Industrial/Office Park
CC
Community Commercial
GC
General Commercial
RC
Regional Commercial
Parks
(Community/Neighborhood Parks)
Open Space
PQP
Public/Quasi-Public
LEGEND
Map Features
Specific Plan Boundary
Parcel Boundary
Fire Station 1 (concept/Last location)
Police Substation 1 (conceptual location)
Municipal Services Center and Library
(conceptual location)
Water Facility (conceptual location)
Detention Basins
GRAPHIC SCALE
0 300 600
City of Folsom
SACRAMENTO COUNTY, CA
Folsom Plan Area Specific Plan
Proposed Land Use Plan-12.01.08
MACKAY & SOMPS
ENGINEERING PLANNING SURVEYING
rrm group
creating environments people enjoy

APPENDIX C



Volume 1: Chapters I – III

FINAL GENERAL PLAN & RESOURCE MANAGEMENT PLAN

Approved by the State Park & Recreation Commission on October 8, 2009

Prepared for
California Department of Parks and Recreation and
United States Department of the Interior, Bureau of Reclamation

June 2010

FOLSOM

Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park

General Plan/Resource Management Plan

Volume 1: Chapters I – III
FINAL GENERAL PLAN & RESOURCE MANAGEMENT PLAN

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Prepared for

California Department of Parks and Recreation
Arnold Schwartzenegger, Governor
Mike Chrisman, Secretary for Resources
Ruth Coleman, Director of Parks and Recreation

Department of Parks and Recreation
P.O. Box 942896
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United States Department of the Interior,
Bureau of Reclamation

Bureau of Reclamation Mid-Pacific Region
Federal Office Building
2800 Cottage Way
Sacramento, CA 95825-1898

June 2010

FOLSOM
General Plan/Resource Management Plan

Chapter II:
EXISTING CONDITIONS

Other camping-related issues in the SRA include the need for additional group camping facilities and the demand for showers at Peninsula Campground. This General Plan addresses these issues as a means of improving access and providing a visitor experience that is in keeping with the vision for the SRA.

It should be noted that the continued demand for camping facilities statewide, coupled with the limited additional capacity developed by State Parks in the last decade, has resulted in a severe shortage of campsites in the state. Many campsites in the State Parks system are reserved months in advance and campgrounds tend to reach capacity every weekend during the peak season – 6.5 million people camped at State Parks facilities in 2001-02. In response, the State Park System Plan (2002) proposes the development of some 20,000 additional campsites over the next 20 years. In order to make this happen, State Parks must carefully balance this need with the particular natural and cultural resources present at each park unit. At Folsom Lake SRA, this General Plan must determine if family camping remains an appropriate use at Beals Point, and if not, where this camping capacity may be relocated.

This General Plan proposes the conversion of a portion of the family camping at Beals Point to group camping and the relocation of the family camping capacity to another location within the SRA – most likely to Peninsula Campground.

Refer to guidelines in Section C.3b. in Chapter III related to camping (guidelines VISIT-30 through VISIT-33). Also refer to guidelines in Sections D.5, D.14, and D.22 in Chapter III related to the Negro Bar, Beals Point, and Peninsula management zones.

7. Wildland-Urban Interface

The interface between the SRA and adjacent lands raises several complex issues related to the proximity of urban and rural development to the SRA. While the majority of urban and rural development surrounding the SRA is residential in nature and of low intensity and scale—exceptions include more intense non-residential uses that abut the SRA in the City of Folsom—neighboring development does raise several concerns.

First, the proximity of development results in visual intrusion where visitors can see outside development from within the SRA. When land was originally acquired in the 1950's to create the reservoirs, little consideration was given to the potential for urban encroachment. As the Folsom area continues to urbanize, homes are being built on the ridgelines

overlooking Folsom Lake. In fact, views of the lake are a key selling point for such real estate. Residential development on overlooking hillsides and ridgelines has an adverse effect on views from the SRA since homes here tend to be silhouetted against the sky and significantly alter the skyline and the perception of the SRA as a rural, natural area. On Folsom Lake, examples of the visual intrusion of development on the SRA include Granite Bay and Brown's Ravine on Folsom Lake. On Lake Natoma, views from the SRA are generally more limited and of higher quality due to the dense riparian vegetation along the shoreline and the Lake Natoma Bluffs. Although some visual intrusion from development does occur in the area of Lake Overlook and Nimbus Flat, simple buffering and screening here would soften the interface between the SRA and adjacent lands. The reality is that it is difficult for State Park to influence development activity outside of the SRA.

Second, there are locations in the SRA where noise is an issue. In these locations, visitors are affected by noise coming from beyond the SRA or neighbors are affected by noise coming from within the SRA. For visitors, noise coming from outside the SRA is limited to those locations proximate to major roadway routes that parallel or cross the SRA, including Nimbus Flat on Lake Natoma where Highway 50 and Hazel Avenue pass close by, and Negro Bar in the area of the Lake Natoma Crossing (Folsom Boulevard), and Folsom Bridge (Riley Street). For neighbors, noise coming from inside the SRA is generally the result of traffic backups at popular day use facilities that reach capacity on peak season weekends, and from water-based activities on Folsom Lake. The noise from power boats and jet skis on Folsom Lake can travel great distances depending upon atmospheric conditions and wind direction (see discussion of a "quiet day" on Folsom Lake below). In addition, music coming from boats moored or floating in nearshore areas does generate complaints from lakeside neighbors, particularly in the lower reaches of the North and South Forks of the American River.

Third, access is an important interface issue for two reasons. First, several facilities in the SRA—such as Beals Point, Granite Bay, and Salmon Falls/Skunk Hollow—reach capacity by midday on peak season weekends, which results in traffic delays, illegal parking, pedestrian hazards, noise, and access difficulties for neighbors of the SRA. Second, informal access to the SRA from abutting neighborhoods is a concern with homeowners often adding gates to access the SRA property or completely removing property line fencing and extending their yard use into the SRA. In rare instances, homeowners use SRA lands as a dump site for yard waste and personal refuse.

Finally, the proximity of residential development to the natural areas of the SRA raises the issue of wildfire safety, particularly in the northern portions of the SRA along the North and South Forks of the American River. In these more remote rural areas of unincorporated Placer and El Dorado counties, emergency response times are higher and the natural landscape within the SRA poses the highest risk of wildfires and property loss. A Draft Prescribed Fire Management Plan has been prepared concurrently with this General Plan and relevant land use policies are incorporated as appropriate.

State Parks and Reclamation have a number of policies which address fire and fuel management. State Parks goal is to prevent unplanned human caused wildfires and to protect people, property, natural and cultural resources from unplanned and unwanted wildfires. State Parks develops wildfire management plans which outline the prevention, suppression and restoration activities associated with wildfires.

State Parks manages wildland properties which contain native plant communities and ecosystems which are fire prone or fire-dependent. Fire is a natural process and condition under which these plant communities evolved. Buildings and developments constructed adjacent to park units with wildland-urban interface are at risk from wildfires. Many of the risk factors for these structures are associated with siting, design and construction materials. State Parks expects adjacent property owners and jurisdictions to provide appropriate setbacks, fuel clearance on their own property and the use of appropriate building materials to help reduce wildfire risk. State Parks policy is to prohibit the construction and maintenance of fuelbreaks and fuel modification zones except under specific circumstances, including: where required by State law; where previous legal commitments were made; or park vegetation within 130 feet of a habitable non-Department structure which is at specific risk of ignition from wildfire.

State Parks policy and goal is to restore fire to its proper role as a natural ecological process in native ecosystems. The Department develops prescribed fire programs for appropriate park units for the purpose of restoring and maintaining native plant communities and structure, improving wildlife habitat, the control of exotic species and other ecological purposes. State Parks develops unit prescribed fire management plans, which provide programmatic direction, and project burn plans to guide and implement the prescribed fire program.

Refer to guidelines in Section C.3e in Chapter III related to circulation, Section C.3f in Chapter III related to visual resources and aesthetics, and Section C.4e in Chapter III related to wildfire management.

FOLSOM

General Plan/Resource Management Plan

Chapter III:
THE PLAN

e. Fire Management

Fire is a natural process that has shaped native plant communities within the unit, many of which are fire prone or fire dependent. The suppression of fire has altered this natural process and the composition and structure of native plant communities. The development of residential structures and sub-divisions adjacent to natural areas of the SRA has created risk from wildfire to these adjacent developments. This is particularly true in the more remote rural areas of unincorporated Placer and El Dorado counties along the North and South Forks of the American River where emergency response times are longer.

Much of the development in these wildland/urban interface areas was approved with inadequate setbacks and without fire safe building materials and requirements. Residential development continues to be approved in areas adjacent to the SRA which are comprised of native vegetation. In many instances current zoning standards and building requirements are still inadequate to fully address and mitigate the wildfire risk created by the development. As detailed in Section C.7 in Chapter 2, both State Parks and Reclamation have specific requirements and guidelines that need to be considered in fire planning and management. A recently completed Unit Prescribed Fire Management Plan addresses this aspect of fire management. Refer to the Plant Life Management policies in the Resource Management and Protection section of this Chapter for more detail.

Reclamation, in partnership with State Parks, has the authority and statutory responsibility to provide for resource protection and public safety on Reclamation lands within the Folsom Lake SRA and Project Area.

Goals

- Protect natural and cultural resources in developing and implementing fire management plans and strategies, including: native plant communities and habitat, water quality, wildlife, fisheries, sensitive and listed plant and animal species, and wetlands..

- Clearly communicate the role of fire in native plant communities, the risks and responsibilities of residents and local jurisdictions in wildland/urban interface areas, the full range of causes of wildfire risk in these areas and the positive actions that all involved entities can take in addressing the issue.

- Acknowledge the concerns and risk from wildfire of adjacent property owners while seeking solutions and strategies that protect SRA resources and values.

- Coordinate and collaborate with local jurisdictions, fire protection agencies, fire safe councils, neighborhood associations and SRA neighbors in developing wildfire management plans and strategies.

- Provide for firefighter and public safety.

- Suppress all wildfires.

Guidelines

WILDFIRE-1: Develop a Fire Management Plan for the SRA, consistent with Reclamation and State Parks policies and planning requirements. Federal policy includes the National Fire Plan, the Federal Wildland Fire Policy, the Cohesive Fuels Treatment Strategy and the 10-Year Comprehensive Strategy. State policy includes the Wildfire Management Planning Guidelines and Policy and the appropriate sections of the Department Operations Manual (DOM) including Chapter 0300. The Fire Management Plan will identify, integrate and coordinate all fire management guidance, direction and activities. The Plan will develop specific strategies including:

- Wildfire suppression
- Prescribed fire
- Non-fire fuel treatment
- Emergency stabilization and rehabilitation (ESR)
- Community Protection, Assistance, Prevention and Education.

WILDFIRE-2: Ensure all wildand fire management actions on federal lands are compliant with the 1995/2001 Federal Wildland Fire Policy Update guiding principles, which are:

- Provide for firefighter and public safety;
- Reduce fire risk and hazardous fuels that threatens life and property;

- Protect communities, watersheds, sensitive and high risk areas;
- Use fire and non-fire treatments to restore and/or sustain ecosystems;
- Work closely with the California Department of Forestry and Fire Protection (CDF);
- Meet resource goals and objectives including, watershed, wetlands, wildlfire, fisheries, cultural, vegetation management and fuels;
- Use prescribed fire as the primary management tool. When prescribed fire is not a viable option, use non-fire treatments to achieve desired objectives.
- Work with communities-at-risk within the Wildland-Urban-Interface (WUI);
- Collaborate with federal, state and local partners.

WILDFIRE-3: Public and firefighter safety are the priority during fire suppression actions. Protecting natural resources, cultural resources and property are secondary priorities.

WILDFIRE-4: The Fire Management Plan will include specific strategies for post-fire emergency stabilization and restoration. As appropriate, this will include: assessing damage to natural and cultural resources and determining appropriate restoration treatments, restoring firelines to natural condition, removing debris, re-establishing natural drainage patterns, implementing erosion control measures and preventing the infestation and establishment of invasive non-native species.

WILDFIRE-5: The use of wildfire (unplanned ignitions) as a fire management strategy is not appropriate for the area due to the close proximity of development, infrastructure and housing. All wildfires will be suppressed.

WILDFIRE-6: Where feasible and appropriate, use prescribed fire to approximate fire regimes appropriate for the native vegetation and to restore and maintain native vegetation condition at appropriate succession stage, composition,

structure and pattern. Where the use of prescribed fire is determined not to be feasible, consider the use of non-fire treatments as appropriate.

WILDFIRE-7: Burn plans will be prepared for all prescribed fires. Prescribed burns will be planned and executed by persons with the appropriate training, skills and experience in fire ecology, fire behavior and prescribed fire. Prescribed fire planning and implementation will be coordinated with the appropriate air quality and air pollution control districts.

WILDFIRE-8: Non-fire fuel treatments and strategies will be developed through the Fire Management Plan and through coordination between Reclamation, State Parks and CDF.

WILDFIRE-9: Ensure that any strategies and treatments developed to address wildfire risk as part of the Fire Management Plan reflect the General Plan goals and objectives for protecting natural and cultural resources in the SRA. Such treatments could include the use of shaded fuel breaks in strategic areas. Some vegetation management practices that help maintain and restore native plant communities and that control invasive exotic plant species can also provide benefits in reducing wildfire risk.

WILDFIRE-10: Communities-at-Risk will be identified in the Fire Management Plan and community assistance strategies and activities will be articulated.

WILDFIRE-11: Develop and implement an education program as part of the Fire Management Plan to inform local jurisdictions, SRA neighbors, and the public about wildfire management including the natural role of fire in native vegetation communities, fire safe practices in designing and building structures in interfaces areas and in landscaping.

WILDFIRE-12: Collaborate with CDF, local fire districts, fire safety councils, neighborhood groups, and others in the development and implementation of the Fire Management Plan and its projects and programs. Insure that the financial responsibility for developing and implementing wildfire management programs and practices is appropriately borne by those benefiting from these actions.

WILDFIRE-13: Work with local jurisdictions and fire districts in the land use planning and development process to promote land use decisions that reduce wildfire risk. This will include instituting appropriate general plan land use designations as well as zoning to regulate matters such as building height and setback, fire buffer zones, fire safe building design and materials.

f. Sustainability

Resource conservation and enhancement represents a primary policy directive for future planning and management of the SRA. Implementation of sustainable design principles and criteria will supplement these efforts. Sustainable design involves siting, construction, operation, and maintenance of facilities as models of energy, water, and materials efficiency. Sustainable design will be incorporated into future park improvements and operations and reflect the following key principles and practices.

Goal

- To the degree feasible, employ sustainable design and construction practices in the development of park facilities.

Guidelines

SUSTAIN-1: *Sustainable Sites:* Minimize the negative environmental impacts associated with site enhancement, development, maintenance, and operations activities by considering the following guidelines when implementing the Plan:

- Reuse or rehabilitate previously disturbed or developed sites, and, to the degree feasible, avoid developing greenfield sites or sites that contain sensitive species, habitats, or wetlands.

- Facilitate access to public transportation in order to provide an alternative to the private automobile.

- Minimize impact during construction. Prepare and implement site sedimentation and erosion control plans. Limit heavy equipment access.

- Emphasize utilizing existing native vegetation in the planning, design and construction of new facilities. Preserve and protect existing native vegetation during construction.

- Limit the area of parking, paving, and lawns to the minimum required for support an approved activity or development.

APPENDIX D

GUIDELINES FOR THE PROTECTION OF STRUCTURES FROM WILDLAND FIRE

California Department of Parks and Recreation

INTRODUCTION

Vegetation modification around Department structures is required by State Law. Vegetation modification of Department wildlands in the vicinity of neighboring private structures is discretionary. This document is a guideline for vegetation modification actions wherever the Department conducts these activities.

SCOPE:

- Applies to DPR managed vegetation up to 130 feet of DPR buildings made of ignitable materials.
- Does not apply to miscellaneous ignitable structures (e.g., fences, signs, boardwalks, etc.).
- Applies to aboveground fuel tanks and fueling stations.
- Applies to DPR wildland vegetation up to 130 feet of a neighbor's habitable home or business. Does not apply to neighbor's non-habitable buildings or structures.
- Does not influence the production or deposition of aerial flaming embers onto structure.

OBJECTIVES

- These specifications are designed to significantly reduce the probability that DPR structures in close proximity to flammable vegetation will ignite and burn during a wildland fire even with no support from fire suppression personnel or equipment.
- These specifications are designed to minimize the cumulative radiant and convective heat generated by DPR vegetation impinging a neighbor's habitable structure. However, without concurrent fuel reduction actions by the neighbor on their property, these specifications are not designed to unilaterally reduce the probability that the neighbor's habitable structure will ignite and burn during a wildland fire on DPR lands.

ASSUMPTIONS:

- Fire suppression equipment/personnel not present during passage of flaming front.
- Structure itself incorporates building materials, systems and/or assemblies for exterior design and construction consistent with the 2007 California Building Code Chapter 7A Materials and Construction Methods for Exterior Wildfire Exposure.
- Private owner of habitable structure has complied with the appropriate flammable vegetation clearance laws (i.e., PRC § 4291 or GC § 51182).

BACKGROUND

Piloted Ignition (Definition): *When wood is sufficiently heated, it decomposes to release combustible volatiles. At a sufficient volatile-air mixture, a small flame or hot spark can ignite it to produce flaming; thus, a piloted ignition.*

Wildland-Urban Interface Fire Area or WUI (Definition): *A geographic area identified by the state as a "Fire Hazard Severity Zone" in accordance with Public Resources Code § 4201 – 4202 and Government Code § 51175- 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfire.*

Structure

The design and maintenance of the structure itself is the most important factor in building survivability during a wildland fire. Lofted burning embers, radiant, conductive and convective heat transmission and direct contact by flames are the principal methods of igniting the exterior of a structure or gaining access to the ignitable portions of the interior of the structure.

Combustibles Around Structure

The process of raising exterior building materials or interior furnishings to ignition temperature from radiant, conductive and convective heat is a time-temperature relationship (e.g., low heat for a long time or high heat for a short time). Even well maintained structures can be vulnerable if heat sources close to the structure burn for many minutes. Furthermore, lofted burning embers are an indirect threat, if the embers ignite small accumulations of dry organic matter and combustible synthetic material that are touching burnable parts of the structure.

The management techniques necessary to enhance the survivability of an existing structure are: a) to eliminate **all** flammable materials touching the structure and b) to eliminate **most** flammable materials close to the structure. This area, called the DEFENSIBLE SPACE ZONE (DSZ), begins at all exposed building surfaces and extends into the surrounding area for **up to, but usually less than,** 130 feet.

Minimizing flammable fuels in the DSZ has two purposes: 1) to enhance the survivability of the building, and 2) to provide a safe working environment for firefighters and their equipment. The DSZ must be wide enough so that the unmodified vegetation outside this zone cannot generate sufficient cumulative heat to jeopardize a well constructed and maintained structure or firefighters and their equipment operating in the DSZ.

Mitigation Activities

All tasks are designed to lessen the fire intensity and the flame duration within the zone. The fuels that remain after mitigation may ignite, but the cumulative generated heat will not ignite the roof, siding, decks, railing, or interior furnishings, or implode the windows, nor will it endanger firefighters or their equipment operating in this zone.

DEFENSIBLE SPACE ZONE (DSZ)

Width of DSZ around structure (based upon vegetation type

Slope distance if vegetation is uphill or sidehill of structure.
Horizontal distance if vegetation is downhill of structure.

These tasks must be accomplished throughout the DSZ in the following order:

1. Fell dead trees (*see resource management goals*)
2. Fell live trees with poor vigor or poor structure.
3. If any remaining live trees have overlapping driplines, fell least desirable tree (*see resource management goals*).
4. Fell additional trees for spacing if tree crown cover exceeds 1/3 of treatment area.
5. Cut dead limbs on retained plants up to 10 feet above ground.
6. Prune live foliage of retained trees up to 10 feet above ground or up to 1/3 of the tree's total live foliage, **whichever is less**.
7. Cut dead shrubs and poor vigor live shrubs.
8. If live shrub overlaps dripline of retained tree, cut shrub unless sensitive species (*see resource management goals*).
9. Thin live shrubs until spacing between shrubs/shrub islands exceeds 2 times shrub's height.
10. Remove or pile/burn all downed woody fuel that is greater than 1 inch diameter. Piles (*see resource management goals*) must be at least 30 feet away from structure.
11. Scatter twigs less than 1-inch diameter (*see resource management goals*).

These additional tasks must be accomplished on the structure itself or within 30 feet of the structure

- Remove dead organic matter and synthetic combustible materials on, under, or in contact with the structure including decks, building overhangs, gutters and foundations.
- Pull, grind or flush cut tree stumps in contact with structure.
- Remove all live plant parts in contact with ignitable portions of the structure.
- Remove live tree limbs within 10 feet of chimney outlet.
- Cut grass to 4 inches high or less.
- Remove dead organic matter under, attached or trapped within retained live plants.

Resource Management Goals

- *Remove exotic plant species unless historic.*
- *Retain sensitive native plant species*
- *Retain shade intolerant native tree species / cut shade tolerant native tree species.*
- *Retain litter/duff up to 2-inch depth (except remove humus layer in contact with wooden part of structure.*
- *Retain 1 wildlife snag per acre if the retained snag will not hit the structure.*
- *Retain 1 down wildlife log per acre if log is more than 30 feet from structure and more than 5 feet away from a retained tree.*
- *No abrupt/linear edge – feather outer boundary.*
- *Circular piles shall not exceed 4 feet in diameter and 4 feet height.*
- *Windrows shall not exceed 4 feet high, 4 feet wide and 100 feet long.*

Mitigation Frequency

- Grass dominated vegetation types = Annual.
- Shrub dominated vegetation types = When shrub crown cover exceeds 1/2 of treatment area.
- Tree dominated vegetation types = When tree crown cover exceeds 1/2 of treatment area.
- Vegetation types with significant shrub and tree components = When the combined tree crown cover and shrub cover exceeds 1/2 of treatment area.

Other Maintenance Tasks

- Remove / repair any decayed wooden structure (e.g., interpretive signs, fences, tool sheds).
- Relocate large flammable bone-yard materials to locations greater than 30 feet from structure (e.g., tables, food lockers, posts).
- Relocate above ground fuel tank to locations greater than 30 feet from structure. Remove all combustible materials within 10 feet of tank.
- Remove/cover wooden tools, burnable furniture, or all stored combustible materials (e.g., firewood, lumber) on decks.

Reference publication for fuel types.
Anderson, H.E. 1982. Aides to Determining Fuel Models for Estimating Fire Behavior.
http://www.fs.fed.us/rm/pubs_int/int_gtr122.pdf

GRASSLANDS

Grass dominated communities produce flames as a fast moving crown fire of very short duration. The cumulative heat from these fires at 30 feet distance is far below that necessary to ignite building exteriors or interior furnishings or implode windows. Scattered shrubs and /or trees
present in these grass types do not significantly increase the energy released provided their combined cover is less than 1/3 of treatment area. The foliage of scattered live trees may be scorched (killed), but heat load is usually not sufficient to evaporate foliage moisture which is necessary before tree foliage can be consumed. Scattered aromatic shrubs may experience flare-ups. Maximum heat pulse from grassfires is less than 15 seconds.

Defensible Space Zone Treatment Width for All Grassland Types is 30 feet

Note - Slope distance if vegetation is uphill or sidehill of structure;
Horizontal distance if vegetation is downhill of structure

National Fire Danger Rating System (NFDRS) Fuel models included in the grassland types are:

NFDRS Model A – Western annual grasslands (short grass averaging 1 foot height)
Western grasslands dominated by annual grasses and forbs. Scattered shrubs or trees may be present but occupy less than one third of the area. Examples of types where Fuel Model A should be used are cheatgrass and medusahead. Open pinyon-juniper, sagebrush-grass and desert shrub associations may appropriately be assigned this fuel model if the woody plants meet the density criteria. The quantity and continuity of the ground fuels vary greatly with rainfall from year to year.

BEHAVE Model 1

NFDRS Model L – Western perennial grasslands, (tall grass averaging 2.5 feet height)
This fuel model represents western grasslands dominated by perennial grasses. The principal species are courser and loadings heavier that those in Model A fuels. Otherwise, the situations are very similar; shrubs and trees occupy less than one third of the area. The quantity of fuel in these areas is more stable from year to year. In sagebrush areas Fuel Model T may be more appropriate.

BEHAVE Model 3

NFDRS Model N – Marsh grasses.
Although specifically constructed for the sawgrass prairies of south Florida, fuel model N may be used in marsh situations where the fuel is coarse and reed-like. This model assumes that one-third of the aerial portion of the plants is dead. Fast spreading, intense fires can occur even over standing water due to high hydrocarbon content of the marsh plants.

- Reed/sedge marsh at Anderson Marsh SHP.

VEGETATION COMMUNITIES DOMINATED BY SHRUBS AND SHORT TREES

Crown fires in contiguous or the nearly contiguous shrub/short tree canopies. Foliage of scattered tall trees will be consumed.

Table 1. Defensible Space Zone widths for vegetation types dominated by shrubs and/or short trees.

National Fire Danger Rating System & BEHAVE Fuel Models	Defensible Space Zone Treatment Width
Open Shrub – Grass averaging 1 foot height (NFDRS Fuel Model T) The shrubs burn easily and are not dense enough to shade out grass and other herbaceous plants. The shrubs must cover from 1/3 to 2/3 of the area. ➢ Sagebrush-grass types of the Great Basin/ Intermountain West. ➢ Immature scrub oak and desert associations in the west. **BEHAVE Model 2**	**0 - 40 feet from structure** [A] Red Flag fires have variable flame lengths of longer duration than grassland types due to shrub cover.
Brush / Short Tree: Average < 6 feet height (NFDRS Fuel Model F) ➢ young closed mixed chaparral (< 30 years old) ➢ mature open stands of California mixed chaparral (> 30 years old) ➢ Coastal scrub, pure chamise, montane, desert, and serpentine chaparral, ➢ Dense conifer saplings. ➢ open stands of pinyon-juniper. **BEHAVE Model 6**	**0 - 100 feet from structure** [A] Red Flag fires rapidly consume live foliage and live and dead aerial branchwood. Flame length/Fire intensity in contiguous young chaparral moderately high for moderate duration; Flame length/Fire intensity highly variable in open old chaparral. Both situations produce lower total heat load on buildings than mature dense chaparral.
Mature Tall Dense Chaparral: Average > 6 ft height **(NFDRS Fuel Model B)** ➢ Mixed chaparral (> 30 years old) where > ¼ of aerial fuels are dead and the live foliage burns readily. Woody plants occupy > 2/3 of site. **BEHAVE Model 4**	**0 - 130 feet from structure** [A] Red Flag fires rapidly consume live foliage and aerial live and dead branchwood. Flame length/Fire intensity very high for moderate duration. Heat Load on buildings and windows very high.

A - Slope distance if vegetation is uphill or sidehill of structure;
Horizontal distance if vegetation is downhill of structure

FOREST / WOODLAND COMMUNITIES

Fire is carried through the ground fuels under cool, moist conditions in all tree cover types. As the conditions become drier and warmer, parts of the tree canopy can ignite when ladder fuels are present to transmit the heat. Leaves and woody twigs under 1 inch diameter generate the maximum intensity. The maximum heat pulse can last up to 120 seconds.

Table 2. Defensible Space Zone widths for vegetation types dominated by tall trees.

National Fire Danger Rating System & BEHAVE Fuel Models	Defensible Space Zone Treatment Width
Open Pine – Grass & Forbs (NFDRS Fuel Model C) Perennial grasses / forbs are the primary ground fuel, but significant needle and branch wood present. Scattered shrubs are not significant. ➢ Open ponderosa, Jeffrey and sugar pine forests. **BEHAVE Model 2**	**0 - 40 feet from structure [A]** Red Flag fires have variable flame lengths of longer duration than grassland types due to accumulation of pine needles and branches.
Closed Canopy Short-Needle Conifer Forests (NFDRS Fuel Model H) Short needles (< 2 inches long) create compact litter/duff layer. ➢ Mixed conifer forests of true fir, cedar, Douglas-fir, lodgepole pine **Closed Canopy, Evergreen Hardwoods (NFDRS Fuel Model R)** **BEHAVE Model 8**	**0 - 70 feet from structure [A]** Red Flag fires (high winds) will produce fast moving short duration flames, unless shrub layer, down wood piles, or snags are present.
Closed Canopy Long-Needle Pine Forests (NFDRS Fuel Model U) Long needles (> 2 inches long) and branch wood create loose litter/duff layer that burns rapidly. ➢ Closed ponderosa, Jeffrey and sugar pine dominated forests. **Hardwood-Mixed conifer forests (NFDRS Fuel Model E)** Hardwood leaf litter is primary fuel ➢ hardwood-mixed conifer if hardwoods dominate. **BEHAVE Model 9**	**0 - 100 feet from structure [A]** Red Flag fires are frequent after leaf fall. Tree torching likely. Probability of a sustained tree crown fire increases as the amount of ladder fuels and woody fuel accumulations increase.
Dense Conifer Forests (NFDRS Fuel Model G) Any forest type with heavy accumulation of woody material > 3 inches diameter, Deep litter/duff layer, often damaged by insect, disease, wind, ice. ➢ Beetle killed lodgepole pine & mixed conifer forests. **BEHAVE Model 10**	**0 - 130 feet from structure [A]** Red Flag fires are high intensity with long duration flames. Tree torching very likely. Sustained tree crown fire likely with ladder fuels and woody fuel accumulations.

A - Slope distance if vegetation is uphill or sidehill of structure;
Horizontal distance if vegetation is downhill of structure

FOREST / WOODLANDS FOLLOWING LOGGING OR STORM DAMAGE

Slash fuel models are included here for those rare occasions when a wind, snow or ice storm breaks and uproots numerous trees in one location. Forest management projects that the Department undertakes will always include clean up, so slash will never be intentionally left on a managed site next to a structure.

Fire is conveyed through a contiguous or semi-contiguous layer of slash. The slash is very flammable the first year, but with the passage of time, the dead foliage will detach, woody fuels will settle, and grasses forbs and shrubs will invade the forest floor making the fuel complex less flammable and the fire intensity lower. Larger fuels ignite after flaming front has passed and will burn intensely for a long time with many lofted firebrands.

Table 3. Defensible Space Zone widths for slash dominated fuels storm damaged forests.

National Fire Danger Rating System & BEHAVE Fuel Models	Defensible Space Zone Treatment Width
Light Thinning Partial Cut Logging Slash (NFDRS Fuel Model K) Scattered slash under an open overstory in conifer or hardwood. Fuel loading of < 6-inch diameter wood is less than 15 tons / acre **BEHAVE Model 11**	**0 - 70 feet from structure** [A] Red flag fires will torch some trees.
Clearcut or Heavy Thinning Conifer Slash (NFDRS Fuel Model J) Fuel loading of < 6-inch diameter wood is between 15 to 25 tons / acre. **BEHAVE Model 12**	**0 - 100 feet from structure** [A] Foliage is not attached. Woody fuels have settled. Grass forbs and shrubs are invading. Red Flag fires will torch all trees in a thinned forest.
Clearcut Heavy Conifer Slash (NFDRS Fuel Model I) Fuel loading of < 6 inch diameter wood exceeds 25 tons /acre. **BEHAVE Model 4 - foliage attached / woody fuels not settled** **BEHAVE Model 13 - foliage not attached / woody fuels settled**	**0 - 130 feet from structure** [A] Red Flag fires: Even after foliage detaches and woody fuel settles, heavy slash will generate a long duration high heat load on a structure.

A - Slope distance if vegetation is uphill or sidehill of structure;
Horizontal distance if vegetation is downhill of structure

TABLE 4. Slope Correction Distances.

SLOPE		Correction Factor	Downhill slope distance required to achieve horizontal distance from structure				
%	Degrees		30' horizontal	40' horizontal	70' horizontal	100' horizontal	130' horizontal
0	0	1.000	30	40	70	100	130
10	6	1.005	30	40	70	101	131
20	11	1.020	31	41	71	102	133
30	17	1.044	32	42	73	104	136
40	22	1.077	32	43	75	108	140
50	27	1.118	34	45	78	112	145
60	31	1.166	35	47	82	117	152
70	35	1.220	37	49	85	122	159
80	39	1.280	38	51	90	128	166
90	42	1.345	40	54	94	135	175
100	45	1.414	42	57	100	141	184
110	48	1.487	45	59	104	149	193
120	50	1.562	47	62	109	156	203

CEQA Exemption

California Code of Regulations Article 19, §15304 (i): "Fuel management activities within 30 feet of structures to reduce the volume of flammable vegetation, provided that the activities will not result in the taking of endangered, rare, or threatened plant or animal species or significant erosion and sedimentation of surface waters. This exemption shall apply to fuel management activities within 100 feet of a structure if the public agency having fire protection responsibility for the area has determined that 100 feet of fuel clearance is required due to extra hazardous fire conditions."

Note: This activity shall not be exempt if the activities will disturb cultural sites.

References

Alexander, M.E., B.J. Stocks, B.M. Wotton, M.D. Flannigan, J.B. Todd, B.W. Butler, and R.A. Lanoville. 1998. The International Crown Fire Modeling Experiment: An overview and progress report. In Proceedings of the Second Symposium on Fire and Forest Meteorology, 20-23, Boston: American Meteorological Society

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California Building Code 2007 Chapter 7A

APPENDIX E

State of California
Department of Forestry and Fire Protection

NOTICE OF
FIRE HAZARD INSPECTION

A representative from CAL FIRE has inspected your property for fire hazards. You are hereby notified to correct the violation(s) indicated below.
Failure to correct these violations may result in a citation and fine.

Occupant:	Physical Address:		Phone #
Occupant Not Home 1st Attempt: ___/___/___	Occupant Not Home 2nd Attempt: ___/___/___	Refused Inspection: ___/___/___	For Questions, Contact Inspector at: (___) ___-	Battalion #

Roof Construction Combustible/Non-Combustible	Exterior Siding Combustible/Non-Combustible	Window Panes Single Pane/Double Pane	Eaves Enclosed/Unenclosed	Decks or Porches Masonry/Composite/Wood	Location of Structure Flat Ground/Slope/Ridge Top

Check boxes above violations

Recommendations

Corrected		
	2	3

Defensible Space Zone (within 30 feet of all structures or to property line):

- 2 3 A. Remove leaves, needles or other vegetation on roofs, gutters, decks, porches and stairways etc. PRC §4291(a)(6)
- 2 3 B. Remove all dead trees, shrubs or other plants adjacent to or overhanging buildings. PRC §4291(a)(3)
- 2 3 C. Remove all dead or dying branches and stems from trees, shrubs or other plants adjacent to or overhanging buildings. PRC §4291(a)(5)
- 2 3 D. Remove all branches within 10 feet of any stovepipe or chimney outlet. PRC §4291(a)(4)
- 2 3 E. Remove all dead or dying grass, leaves, needles or other vegetation. PRC §4291(a)(1)
- 2 3 F. Remove or isolate live flammable ground cover and shrubs (i.e. Bear Clover, Mountain Misery, Juniper etc.). PRC §4291(a)(1)

Reduced Fuel Zone (within 30 - 100 feet of all structures or to property line):

- 2 3 G. Mow dead or dying grass to a maximum of 4 inches in height. Trimmings may remain on the ground. PRC §4291(a)(1)
- 2 3 H. Live flammable ground cover less than 18 inches in height (i.e. Mountain Misery, Bear Clover etc.) may remain, but overhanging and adjacent trees must be pruned up to 15 feet. PRC §4291(a)(1)
- 2 3 I. Reduce fuels in accordance with the Continuous Tree Canopy Standard (see back). PRC §4291(a)(1)
- 2 3 J. Reduce fuels in accordance with the Horizontal Spacing Standard (see back). PRC §4291(a)(1)

Defensible and Reduced Fuel Zone (within 100 feet of all structures or to property line):

- 2 3 K. Logs or stumps embedded in the soil must be removed or isolated from structures and other vegetation. PRC §4291(a)(1)
- 2 3 L. Remove all dead or dying brush, trees and branches within 15 feet of the ground. PRC §4291(a)(1)

Other Requirements:

- 2 3 M. Clear dead, dying or flammable vegetation within 10 feet around and above propane tanks. CFC §3807.3
- 2 3 N. Address numbers shall be displayed in contrasting colors (4" Min. Size) and readable from the street or access road. CFC §505.1

Other Recommendations:

- Cover all chimney or stovepipe openings with a metal screen having openings no larger than 1/2 inch.
- Clear 10 feet around and 15 feet above fuels (i.e. Woodpiles, lumber, scrap etc.). Move woodpiles as far as possible from structures.
- Remove flammable materials stored under decks and similar overhangs of structures.
- Clear vegetation 10 feet from cities and 15 feet above all driveways and turnaround areas.

Comments:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Additional Information on Back

Complete only if occupant contacted

1 Inspector _____ Date ___/___/___ A re-inspection will occur on/after: ___/___/___

2 Inspector _____ Date ___/___/___ A re-inspection will occur on/after: ___/___/___

3 Inspector _____ Date ___/___/___

AEU 02/99

(White-Inspector, Canary-1st to Occupant, Pink-2nd to Occupant, Gold-3rd to Occupant)

Continuous Tree Canopy Standard

To achieve defensible space while keeping a proper stand of trees with a continuous tree canopy, adhere to the guidelines below:

- Prune lower branches of trees to a height of 6 to 15 feet from the top of the vegetation below or 1/3 to 1/2 the tree height for trees under 30 feet, whichever is less.
- Remove all ground fuels greater than four inches in height. Single specimens of trees or other vegetation may be kept if they are well spaced, well pruned and create an overall condition that avoids the spread of fire to other vegetation or to structures.

Horizontal Spacing Standard

- Shrubs, grass should not exceed four inches in height. In situations where these fuels are isolated from other fuels or where necessary to stabilize soil, grasses may reach a height of 18 inches.
- Clearance between shrubs should be 4 to 40 feet depending on the slope of the land and size and type of vegetation. Check the chart below for an explanation of clearance distance. Any questions regarding requirements for a specific property should be addressed to your local fire official.

Minimum Horizontal Spacing Guidelines		
Slope	Shrubs, Ground Covers & Other Ornamental Plants Space required between clumps of ground cover, plants, bushes, shrubs, seedlings or sapling trees, etc.	Trees Space required between tree canopies
Flat or gentle slope (0% to 20%)	2 times the height of the plant	10 feet
Moderate slope (20% to 40%)	4 times the height of the plant	20 feet
Steep slope (greater than 40%)	6 times the height of the plant	30 feet

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

(1) Maintain defensible space no greater than 100 feet from each side of the structure, but not beyond the property line unless allowed by state law, local ordinance, or regulation and as provided in paragraph (2). The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. This paragraph does not apply to single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion.

(2) A greater distance than that required under paragraph (1) may be required by state law, local ordinance, rule, or regulation. Clearance beyond the property line may only be required if the state law, local ordinance, rule, or regulation includes findings that such a clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. Clearance on adjacent property shall only be conducted following written consent by the adjacent landowner.

(3) An insurance company that insures an occupied dwelling or occupied structure may require a greater distance than that required under paragraph (1) if a fire expert, designated by the director, provides findings that such a clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. The greater distance may not be beyond the property line unless allowed by state law, local ordinance, rule, or regulation.

(4) Remove that portion of any tree that extends within 10 feet of the outlet of a chimney or stovepipe.

(5) Maintain any tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood.

(6) Maintain the roof of a structure free of leaves, needles, or other vegetative materials.

For additional information on how to comply with defensible space clearance requirements, please visit:
WWW.FIRE.CA.GOV

APPENDIX F

- Conduct appropriate pre-treatment surveys (archeological, botanical, etc…) to ensure no unintended loss of other resource values.
- Fire and fuels management specialists will work closely with in local air quality regulators to ensure prescribed fire emissions stay within permitted levels.
- Conduct post-treatment surveys for increases in non-native plant species.
  - If non-native species cover **exceeds 5%** in treated areas, implement appropriate eradication measures, as determined by an interdisciplinary effort.
- **Air Quality Strategy:**
  - Develop and implement a smoke management plan for each prescribed burn.
  - Plans are required to be approved by the local Air Quality Monitoring District (AQMD) and must assure that predicted emissions from each burn will not exceed the National Ambient Air Quality Standards (NAAQS).
- **Rx Fire Monitoring Strategy:**
  - All prescribed fires will have on-site monitoring during the operational period to collect fire behavior and weather data.
  - Photo points will be established pre-burn.
  - Post-burn data will be collected immediately post-burn for initial estimate of consumption of fuels and attainment of resource objectives.
  - Long-term post burn monitoring should include identification of species, esp. presence of invasive non-native species.

Non-Fire Fuels Treatment Objectives and Strategies

Non-Fire Fuels Treatment Objectives:

- Non-Fire annual acre target: **20 acres to 200 acres**
- Non-fire treatment decadal acres target: **500 acres**
- The first priority objective is to protect private property while providing for firefighter and public safety.
- Reduce the potential for catastrophic wildfire.
- Reduce heavy fuel loads resulting from long term suppression.
- Reduce catastrophic fire potential near Spivey pond
- Reduce hazardous fuel loadings in order to reduce fire intensity levels which will minimize negative fire effects on natural and cultural resources in the unit.

- **Reduce the future need for aggressive suppression activities by the development of non-fire treatment fuels management strategies that reduce or eliminate risk to life and property.**

Non-fire Fuels Treatment Strategies:

- Treatment emphasis will be in WUI.
- Mechanical treatments will be utilized on public land along the wildland urban interface to reduce fuel loadings and create fuel breaks to serve as control lines for unwanted wildfires and prescribed burns.
- Fuels treatments using mechanical means will be utilized because returning fire to many areas would do more harm than good considering the current fuel loading situation because fires within the current fuel structure may burn to intensely and possibly damage or kill the plant community and damage other sensitive features such as soils.
- These mechanical treatments will somewhat mimic fires role in that they will be removing a large portion of the biomass accumulation from the landscape thus allowing a better opportunity in subsequent years for follow up treatments using prescribed fire without such damaging effects.
- Once this level of fuel reduction is achieved prescribed fire treatment may be all that is needed to properly manage these areas subsequently greatly reducing the cost of fuels treatments and the dangers of catastrophic wildfires near our communities and on our public lands.
- An interdisciplinary approach is used to determine the best site-specific non-fire fuels treatments to accomplish fuels reduction and other resource goals and objectives.
- Conduct appropriate pre-treatment surveys (archeological, botanical, etc…) to ensure no unintended loss of other resource values.
- Use of herbicides as a vegetation treatment option will be carefully examined, for potential impacts to water sources, wildlife habitat, and cultural/traditional uses.
- Conduct post-treatment surveys for increases in non-native plant species.
    - If non-native species cover **exceeds 5%** in treated areas, implement appropriate eradication measures, as determined by an interdisciplinary effort.
- **NEPA Compliance:** For chemical treatments, must adhere to California State BLM compliance. (complete reference) including on file MSDAs.
- **Hazardous Fuels Reduction:**
    - "NEPA Documentation Needed for Fire Management Activities; Categorical Exclusions" Federal Register, June 5, 2003.

- For hazardous fuels reduction, these activities:
  - Will not be conducted in wilderness areas or where they would impair the suitability of wilderness study areas for preservation for wilderness;
  - Will not include the use of herbicides or pesticides;
  - Will not involve the construction of new permanent roads or other infrastructure;
  - Will not include sales of vegetative material that do not have hazardous fuels reduction as their primary purpose;
  - Will not exceed 1,000 acres for mechanical hazardous fuels reduction activities and will not exceed 4,500 acres for hazardous fuels reduction activities using fire;
  - Will only be conducted in wildland-urban interface or in Condition Classes 2 or 3 in Fire Regime Groups I, II, or III, outside the wildland-urban interface."

- **Treatment Monitoring:**
  - Pre- and post-treatment photo points, fuel loading estimates. Post-treatment monitoring for non-native invasive species.

Post Fire Rehabilitation & Restoration Objectives and Strategies

Post Fire Rehabilitation & Restoration Objectives:

- Preserve scenic quality of the American River canyon
- Stabilize any steep slopes to minimize erosion
- Exclude non-native invasive species
- Rehabilitate burned areas to mitigate the adverse effects of wildland fire on soil and vegetation in a cost-effective manner and to minimize the possibility of wildland fire recurrence or invasion of weeds.
- Post-Fire Rehabilitation and/or Restoration will emphasize the re-establishment and perpetuation of habitat diversity and the reduction of annual grass establishment and proliferation.
- Ensure that equipment and stabilization material, e.g., straw etc… are weed-free.

Post Fire Rehab & Restoration Strategies:

- Post fire rehabilitation will be considered on a case-by-case basis depending on the location of the fire and resources to be protected.

- Site specific projects will be considered to meet the objectives as identified in the LUP.
- Where rehabilitation and/or restoration are deemed necessary or desirable, successfully achieve slope stabilization, re-establishment of appropriate, site-specific native plant species, or other rehabilitation/restoration work in a timely manner.
    - If appropriate, develop and submit an ESR plan to CA BLM State Office.
        - State Director approval is currently required for all ESR work under $100,000 (WO IM 2004-184).
        - WO approval is currently required for all ESR work over $100, 000 (WO IM 2004-184).
- Fire Suppression Rehabilitation plan to be prepared by environmental specialist and carried out
- Post-suppression mitigation shall include reestablishing drainage, removing trash, rehabilitation of firebreaks and other ground disturbances and obliteration of vehicle tracks sufficient to discourage future casual use and erosion.
- Fire damages resulting from wildland fires takes two forms: suppression damages and resource damages. Suppression action damages may be the result of suppression operations; resource damages are a result of the fire itself as it related to the damage to the natural resource.
    - Suppression damage restoration or rehabilitation involves short term actions usually (0-6 months) to stabilize a burned area and mitigate suppression damage. This includes replacing region equipment, infrastructure, buildings or facilities damaged or destroyed by suppression action.
        - Immediate rehabilitation actions to prevent further land degradation or resource loss.
    - Resource damage restoration or rehabilitation involves long term or post incident actions:
        - Post-incident rehabilitation actions must be specified in a rehabilitation plan.
        - Post-Fire Rehabilitation and/or Restoration needs should be considered for each fire and plans prepared for those fires requiring complex rehabilitation and restoration efforts.
- **Emergency Stabilization Strategies:**
    - Stabilize and prevent unacceptable degradation to natural and cultural resources
    - Minimize threats to life and property resulting from the effects of a fire
    - Repair/replace/construct physical improvements necessary to prevent degradation of land or resources
    - Actions must be taken within one year following containment of a wildland fire

- **Rehabilitation Strategies:**
  - Specifies treatments required to implement post-fire rehabilitation policies
  - Repair or improve fire-damaged lands unlikely to recover naturally to management approved conditions
  - Repair minor facilities damaged by fire
  - Actions must be taken within three years of containment of a wildland fire
  - Consult with staff archaeologist, botanist, wildlife biologist, and other staff specialists to evaluate fire and suppression operations effects and determine if additional restoration is necessary.

- **Rehabilitation:**
  - "NEPA Documentation Needed for Fire Management Activities: Categorical Exclusions" Federal Register, June 5, 2003. "Activities carried out under the rehabilitation category will take place only after a wildfire. These activities cannot use herbicides or pesticides, nor include the construction of new permanent roads or other infra-structure, and they must be completed within three years following a wildland fire. Activities carried out under the rehabilitation categorical exclusion will not exceed **4,200 acres.**"

- Use agency resource specialists to provide guidance during fire rehabilitation efforts.

- All fire restoration efforts will be carried out in a manner that least impairs wilderness values (MIST).

- Inspect equipment and stabilization material, e.g., straw etc. to ensure weed-free status.

- Hand tools will be used for rehabilitation activities whenever feasible.

- All firelines will be rehabilitated to natural conditions.

- Long term rehabilitation could involve the use of an ESR team on larger fires.

- Long term rehab may include repairs to structures (like fences, signs, windmills and such), construction of temporary fences to exclude people and livestock from burned areas and signing.

Community Protection/Community Assistance

Community Protection/Community Assistance Objectives:

- Increase public awareness, participation, and cooperation pertaining to the mitigation of fire threats in the WUI

- Educate area population on the basic principles of fire ecology and fire's role in the environment

- Build public support for fuels reduction efforts in and around WUI
- Collaborate with local fire departments and other entities and individuals regarding federal grants available to communities at-risk
- Develop and implement collaborative mitigation and prevention strategies with communities at risk
- Reduce the risk of human caused wildland fires, with Special emphasis on recreationist-caused fires
- Improve rural and volunteer fire department readiness and fire fighting capacity

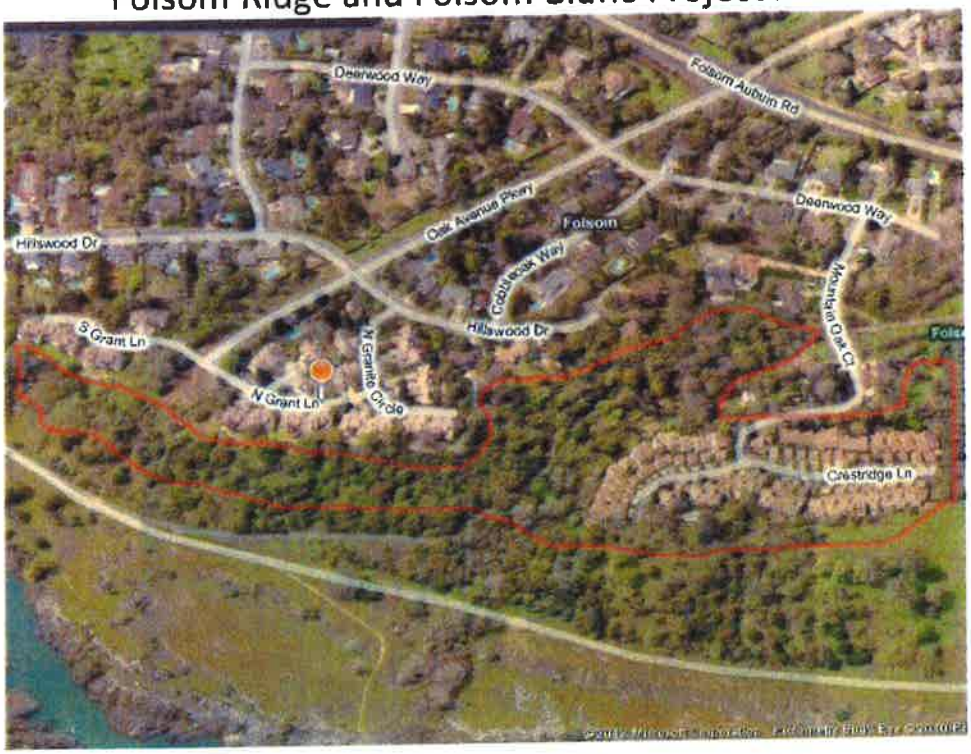
Community Protection/Community Assistance Strategies:

- Support the formation of fire safe councils in all communities at risk.
- Work collaboratively with communities and other partners to develop a Community Wildfire Protection Plan (CWPP) and will update or amend the FMP as necessary to incorporate mitigation/prevention recommendations and priorities developed by the community or outlined in the CWPP.
- Work with US Forest Service and CDF prevention staff through an interagency agreement to make sure recreation and high use areas are patrolled and signs are maintained
- Provide yearly fire prevention outreach materials to agencies offering campfire permits and general camping information to the public.
- Provide fire restriction and emergency closure information to the public.
- Present fire mitigation and prevention information to local K-12 schools at least once a year over the 5 year period and then re-evaluate the program to determine its effectiveness.
- Present fire ecology information to local youth groups to help enhance the understanding and support the BLM management activities.
- Coordinate information relating to funding and training opportunities to rural fire departments in order to enhance their fire fighting capacity.
- Provide informational brochures and materials to communities and homeowners on reducing fire risks. Provide Defensible Space fire education materials at events.
- Use local media outlets to encourage defensible space and to mitigate current fire causes.

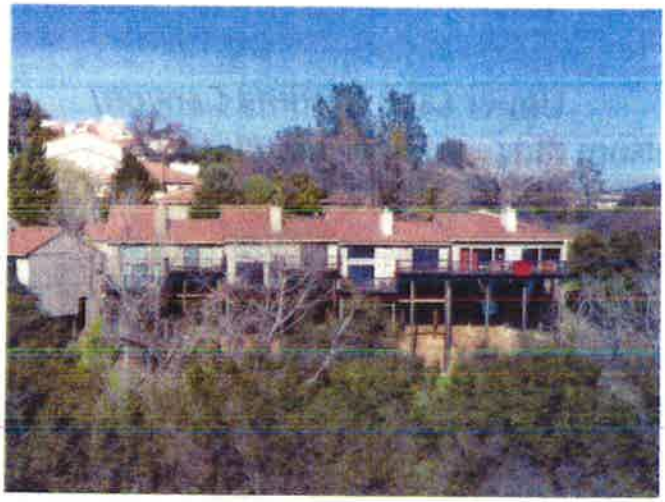
- Produce mini campaigns each year to address the priority fire cause which may include some of the following: billboards, flyers, Fire Safe Council ads, and radio PSA's.
- Participate in residential assessments and provide education to the homeowners.
- Conduct presentations to local homeowner groups explaining "Defensible Space" and/or fire prevention risks and mitigation.

APPENDIX G

Upper Lake Natoma Canyon/
Folsom Ridge and Folsom Bluffs Project Area



This project area is comprised of private, State Parks and Bureau of Reclamation land adjacent to residential developments known as Folsom Bluffs (Crestridge Lane) and Folsom Ridge (Grant Lane). The area is located on the west side of the upper Lake Natoma Canyon. Access is via Oak Avenue Parkway off Folsom-Auburn Road. The American River Bicycle Trail (a public multi-use trail running from Downtown Sacramento with Beals Point at Folsom Lake) transits the steep, heavily wooded canyon that leads up from the American River and through the residential area. The area has had a history of recent fires and both Folsom Bluffs Owners Association and Folsom Ridge Homeowners Association are actively working to reduce fuels and to create and maintain defensible space.



The mitigation efforts recently conducted by and at the expense of Folsom Bluffs Owners Association demonstrate a model project completed with the cooperation of private and public landowners. The fuels reduction activities were performed by private wildfire industry professionals after consultation with the Owners Association, Folsom Fire Safe Council, State Parks, Bureau of Land Management, Bureau of Reclamation and Folsom Fire Department. The plan called for treatment of up to 130' from any home and in general provided for removal of trees under 10 inches DBH (diameter at breast height), clearing of up to 90% of all brush species and pruning of trees to a maximum of 8 feet. Cut material was chipped and spread onsite. The results can be seen in the following illustrations:

BEFORE

AFTER

BEFORE

AFTER

APPENDIX H

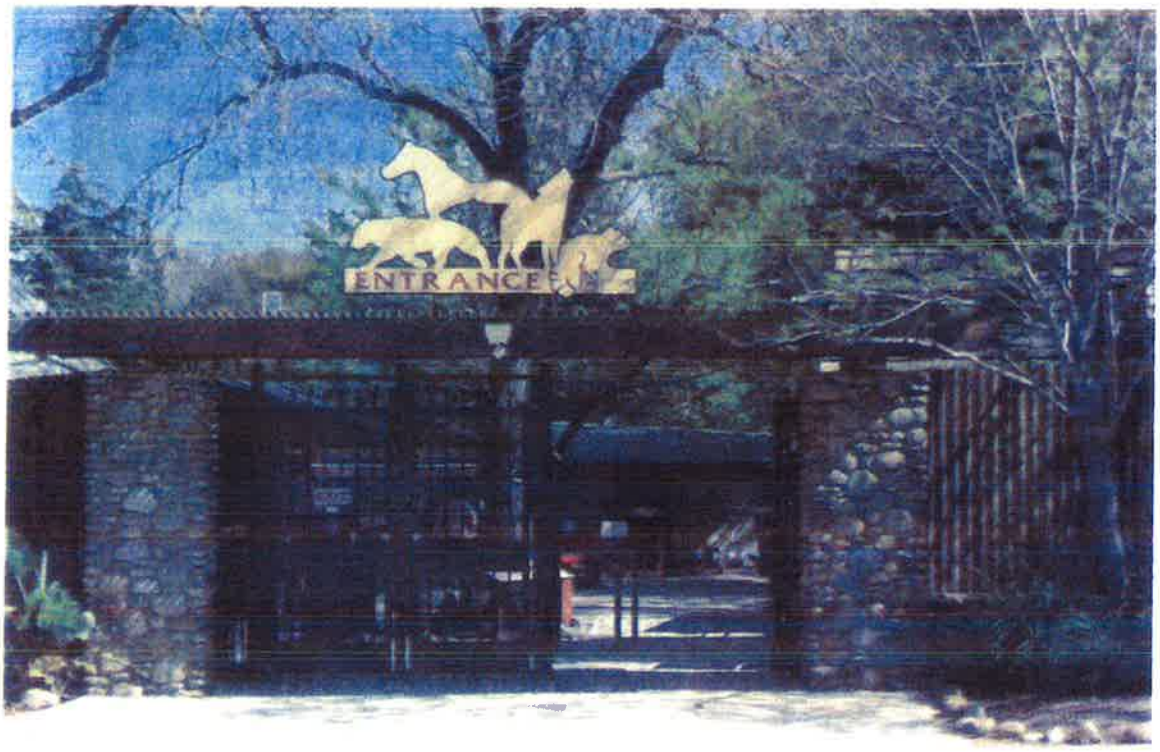
Folsom Zoo Sanctuary Project Area
403 Stafford Street

The Folsom Zoo Sanctuary is located behind Folsom City Hall on the southeast rim of the Upper Lake Natoma Canyon; a steep, heavily wooded canyon that is part of the Folsom Lake State Recreation Area. Uncontrolled tree and brush growth along the perimeter fences create a hazard not only to structures but to the animals housed within the Zoo Sanctuary.

In May 2012 a vegetation management project (detailed in the following pages) to reduce ground ladder fuels was completed by Cal Fire inmate crews.

Folsom Zoo Sanctuary

Vegetation Management Project



Project Approval Page

DATE: _____

APPROVED BY:

_____
Ronald A. Phillips, Fire Chief

DATE: _____

APPROVED BY:

_____
Robert Goss, Parks & Recreation Director

FOLSOM
FIRE SAFE COUNCIL

DATE: _____

APPROVED BY:

_____
Linda Conroy, Chairperson

Description of Vegetation Management Project

A. *Vegetation Management Project Overview*

The Folsom Zoo Sanctuary Project is a Folsom Fire Safe Council and City of Folsom sponsored vegetation management project. The project area is 5 acres in size and is located in the City of Folsom. This project will improve the fire safety of the Folsom Zoo Sanctuary and adjacent private and publically owned properties. The project area has not had a significant wildfire in the last twenty years. The project area has an extensive vegetation canopy that will create significant challenges to firefighters when attempting to control a wildfire that becomes established in the drainage located on the east side of the site.

B. *Vegetation Management Project Goals and Objectives*

1. Establish a fuel reduction zone within the open space area adjacent to the Folsom Zoo Sanctuary. This passive protection method provides defensible space that can serve as a force multiplier for active firefighting resources during a wildfire.

2. Reduce the potential hazard posed by airborne embers to the animals and structures within the Folsom Zoo Sanctuary. Embers have been documented to cause 40 to 60 percent of structure losses in large wildfires.

3. Improve the fire safety for visitors and firefighters without compromising environmental concerns. Maintaining water quality in the American River Canyon drainage shall be an important aspect of this project.

C. *Physical Description of Project Site*

1. *Location*: The project is located at 403 Stafford Street in the City of Folsom. The City is located in the northeast corner of Sacramento County. The property owner is the City of Folsom. Latitude 38° 41' 04" N by Longitude 121° 09' 58" W.

2. *Size*: Approximately 5 acres

3. *Topography*: The project site is located mid-slope. The elevation ranges from 250 to 295 feet.

4. *Project Boundary*: Irregular shaped boundary following natural features along the slope and adjacent to the fence line of the zoo property.

D. ***Vegetation / Fuels Description***

The vegetation located within the project site is described as a Live Oak / Blue Oak woodland area. The site also contains several other species of vegetation. Several areas of vegetation within the project dominate the overstory due to a lack of management. Several dead and diseased trees are located within the project site and will be evaluated for removal.

The project is located on the western slope of a side drainage that runs into the American River Canyon. The areas generally south and east of the project site are mostly grasslands with sporadic Oak Trees.

E. ***Treatment Methods Proposed***

The following treatment methods will be used throughout this project area:

- Mowing
- Thinning
- Strategic recycling

The project is proposed to remove all ground ladder fuel plant materials (1-10" in diameter dead and 1-5" in diameter alive) that are between the ground floor and eight feet. The project will clear to approximately seventy-five feet (75') from the zoo property line fencing along the eastern side of the property, and will maintain a buffer of between fifty-feet (50') and seventy-five feet (75') from the stream zone.

The project work will be done by a combination of City staff members, Cal Fire or California Conservation Corp crew personnel and community volunteers. The project is proposed to be completed in three phases:

Phase I – Cal Fire crew members, working under the guidance of the City's Arborist, will use mechanical equipment to thin all ground ladder fuels within the project site meeting the specifications noted above.

Phase II – Community volunteers will remove the thinned fuels from the project site to an area located on the grounds of the Zoo Sanctuary property. City personnel will then use a chipper to create recycled wood chips for use in areas throughout the City.

Phase III – On-going maintenance to retain defensible space will be completed by City personnel and community volunteers in future years.

F. ***Description of Unique Features***

Unique features of the project site include its proximity to animals located within fenced areas of the Folsom Zoo Sanctuary. The project site also includes overhead electrical transmission lines serviced by the Western Area Power Authority (WAPA), PG&E and Sacramento Metropolitan Utility District (SMUD). The California Department of Corrections and Rehabilitation (CDCR) Medium Security Prison, Folsom State Prison (FSP), is located on the eastern side of the draining directly across from the project site.

Steep terrain, a dense vegetation canopy, Poison Oak and snakes offer challenges to the methods and techniques proposed to remove the fuels from the project site. Vehicle access is located along the top of the side slope adjacent to the project site.

G. ***Project Cost***

The project is anticipated to cost less than $2,500 to complete. The bulk of the costs required relate to the use of Cal Fire crew personnel and logistic support for community volunteers.

H. ***Environmental Review***

This project concerns a fuel management activity as defined by Section 15304 (i) of the California Environmental Quality Act (CEQA) Guidelines and is otherwise exempt pursuant to this section due to the extra hazardous fire conditions present within the project site. No Elderberry bushes were identified within the project site at the time of the site visit.

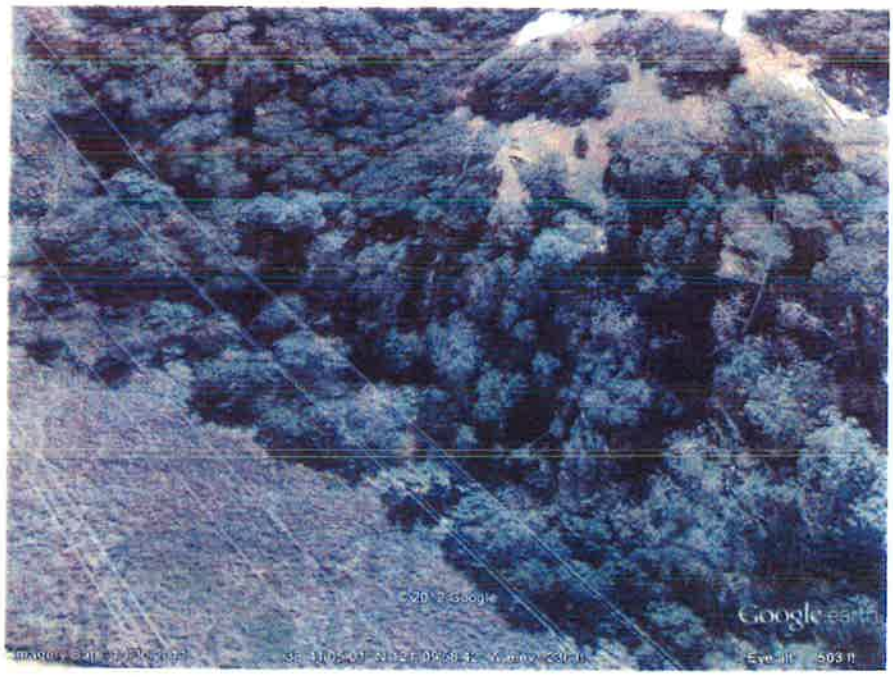
END OF PROJECT DESCRIPTION

Maps / Photos of VMP Site

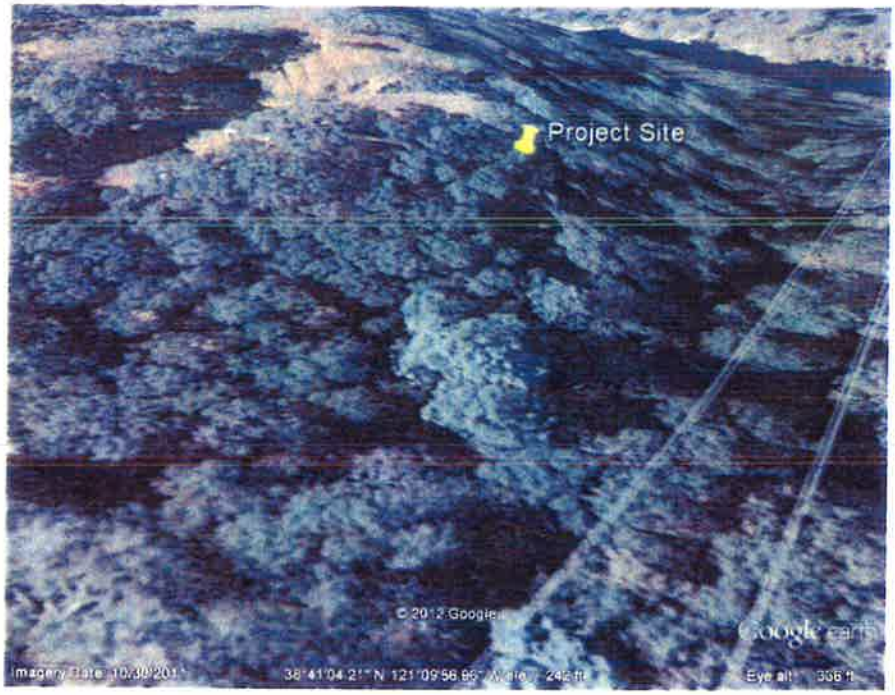
Topo Map:

Area Map:

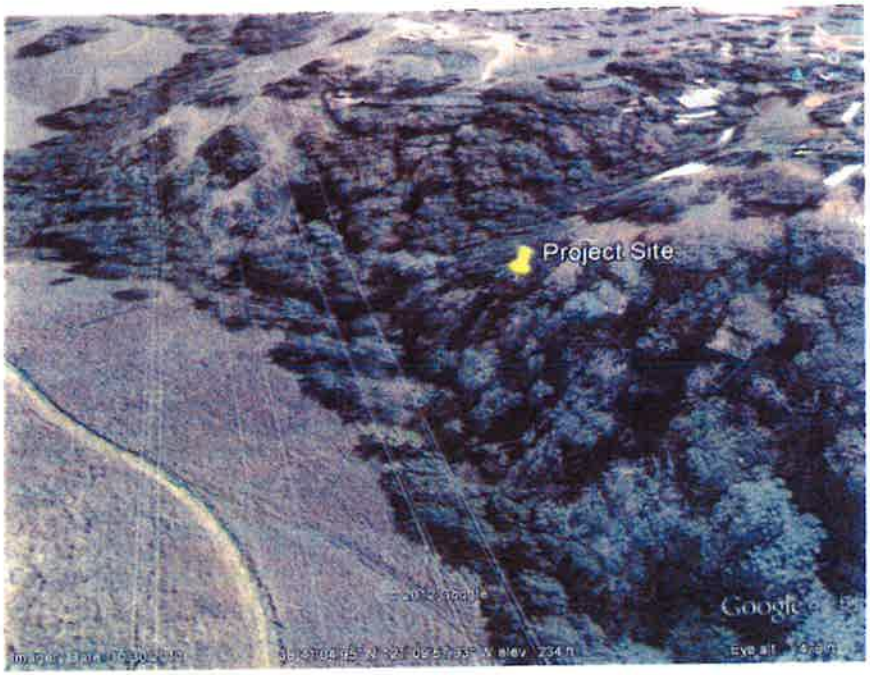
Project Site View (Looking South)



Project Site (Looking Northwest)



Project Site (Looking Southwest)



Project Site (Looking Southeast)

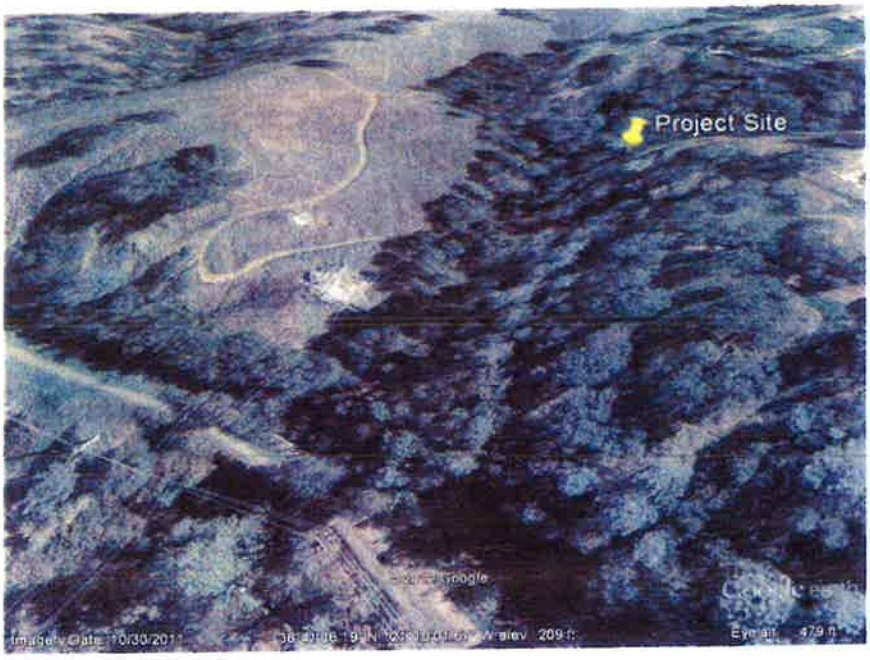


Photo 1

Photo 2

APPENDIX I

City of Folsom Municipal Complex
50 Natoma Street

Like the Zoo Sanctuary previously described, the entire Folsom Municipal Complex including City Hall, Community Center, Senior and Arts Center, Police Department and City Park are located along the south rim of the Upper Lake Natoma Canyon. The vegetation in the area has been allowed to remain in a natural state and in many areas has grown close to occupied structures. Additionally, access by emergency equipment to these woodland areas in the event of a fire would be extremely difficult. Although no specific projects have been identified, it will be important to consider this area for projects that address creation and maintenance of defensible space and improving access.

APPENDIX J

Hinckle Creek Nature Area Project Area
Oak Avenue & Baldwin Dam Road

As a nature preserve, this area is meant to be enjoyed and in its natural state. However, this also means that trees and other vegetation have been permitted to grow unchecked. The problem is that hundreds of homes literally surround the preserve. A public access trail follows the narrow canyon and a fire originating from the trail could quickly burn uphill toward dwellings.

Projects to be considered for the area include fire safety education for residents of the area with private property owners being strongly encouraged to create defensible space for their own structures as well as utilizing home hardening practices. Where possible the Fire Safe Council will work with the City of Folsom to keep fuel loading to a minimum while maintaining the natural elements perhaps through volunteer "trail days" or cleanup days.

APPENDIX K

Orangevale Cut Project Area
Orangevale Avenue & American River Canyon Drive

The Orangevale Cut, as it is called locally, is a narrow canyon that climbs from the American River at Lake Natoma, upward through a Folsom neighborhood and on into the community of Orangevale. Numerous homes have been built overhanging the Cut and the drainage below has been for the most part unmaintained for years. Projects considered for this area include FireSafe Education for residents and after determining property ownership, working with owners to create defensible space, reduce fuels and improve defensibility of affected structures.

APPENDIX L

East Natoma Trail/City Corporation Yard Project Area
1300 Leidesdorff Street

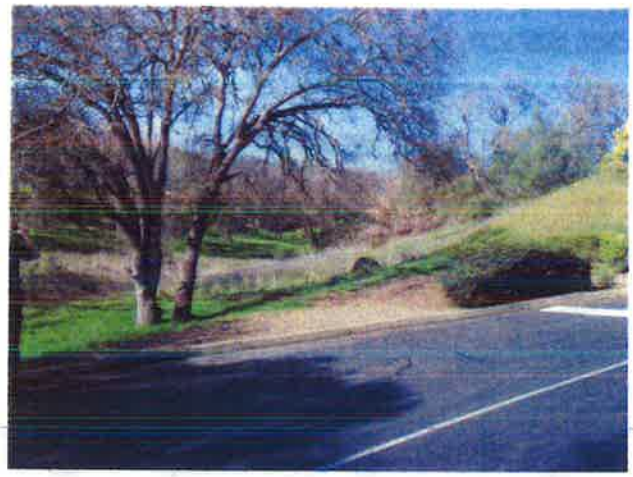
The City Corporation yard, located on the east shore of upper Lake Natoma, has already been exposed to the threat of wildland fire in recent years. Within the yard are vehicle and equipment maintenance facilities and fuel storage as well as various city cars, trucks and other types of heavy equipment. These resources would be at risk in the event of a fire in the adjacent State parklands. Public access to the area is facilitated by a paved multi-use trail known as the East Natoma Trail. Vegetation in the area has been allowed to grow up to the fence line in some parts of the corporation yard creating a hazardous condition. Any work done in this area will have to be coordinated with State Parks but because of easy access to the area, it lends itself well to Fire Safe Council sponsored volunteer projects.


STOP

APPENDIX M

Folsom Ranch/Gray Canyon Drive Project Area
Folsom Ranch Road

This project area is an open space island lying between Folsom Ranch Apartments and single family homes in the American River Canyon neighborhood. The area slopes upward from Folsom Ranch Road to numerous structures; both apartments and homes. Its location also has limited access for fire fighting personnel and equipment. Potential projects would include fire safety education and fuel reduction projects.



APPENDIX N

Trowbridge Court Project Area
Trowbridge Lane near Silberhorn Drive

This project area covers a hillside neighborhood with a history of grass fires. Trowbridge Court follows a narrow ridgeline to the top of a small hill surrounded by open space. The terrain and vegetation, a combination of grasses and trees have demonstrated the potential for fast moving fire endangering the homes on this hillside.

APPENDIX O

Nisenan Community Park Project Area
Golf Links Drive & Broadstone Parkway

This project area is within Folsom's newest city park but will need to be monitored as development progresses in the Empire Ranch area. The area is designated open space but is crisscrossed with walking trails and fairly heavy vegetative growth exists. In addition, high winds frequent this hillside at the eastern end of the city.