

Sunol Wildfire Action Plan

An Appendix to the Alameda Countywide
Community Wildfire Protection Plan (CWPP)
Alameda County

Prepared by
Diablo Fire Safe Council

In conjunction with the
Alameda County Fire Department
CAL FIRE
Stakeholder Committee Members

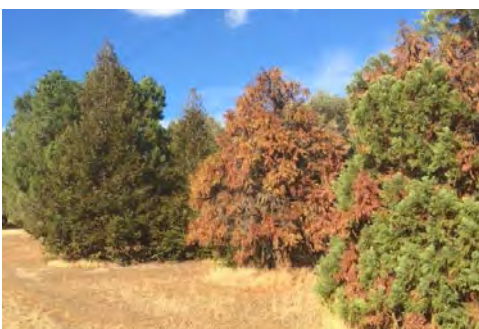


Table of Contents

Executive Summary
Introduction
Scope and Purpose

Section 1: Sunol Information

- 1.1 Area Overview
- 1.2 The Planning Process & Stakeholders

Section 2: Wildfire Hazard and Risk in the Wildland Urban Interface

- 2.1 Wildfire Environment
- 2.2 Wildland Urban Interface Risk & Hazard Assessments
 - 2.2.1 Potential for Wildfire to Occur
 - 2.2.2 What to Protect - Values at Risk within the WUI
 - 2.2.3 Protection Capabilities
- 2.3 Strategies for Reducing Risk within the WUI

Section 3: Recommended Action Plan

- 3.1 Selection of Recommended Priorities
- 3.2 Information, Education and Collaborative Planning Priorities
- 3.3 Enhanced Suppression Capability and Emergency Preparedness Priorities

Section 4: Prioritizing Hazardous Fuel Reduction Treatments

- 4.1 Hazardous Fuels Management
- 4.2 Fuel Reduction Treatments – Geographically Based Projects
- 4.3 Fuel Reduction Treatments – Related Priorities
- 4.4 Environmental Review and Permitting

Section 5: Prioritizing Treatment of Structure Ignitability

- 5.1 Structure Ignitability
- 5.2 Key Ignition Resistance Factors
- 5.3 Improving Structure Survivability in the WUI
- 5.4 Retrofitting an Existing Structure for Survivability

Section 6: Sustaining the Plan

- 6.1 Updates of the Wildfire Action Plan
- 6.2 Monitoring, Evaluating and Adapting Strategies
 - 6.2.1 Evaluating Information, Education and Collaborative Planning
 - 6.2.2 Evaluating Suppression Capability and Emergency Preparedness
 - 6.2.3 Evaluating Fuel Reduction
 - 6.2.4 Evaluating Reducing Structure Ignitability

Section 7: Signature Page

Appendices

- Appendix A: Community Notice: Help build the Sunol CWPP
- Appendix B: Map – Fire Hazards
- Appendix C: Plant species considered for inclusion as focal species for the East Alameda Conservation Strategy

Additional Materials from the planning process available at <http://www.diablofiresafe.org>

Executive Summary

The Sunol Wildfire Action Plan provides an analysis of wildfire hazards and risk in the wildland-urban interface (WUI) of the unincorporated community of Sunol in Alameda County, California. The Plan is an appendix to the Alameda Countywide Community Wildfire Protection Plan (CWPP) and follows the standards for CWPPs established by the federal Healthy Forest Restoration Act, including:

1. Identifying and prioritizing fuel reduction opportunities across the community
See Section 2: Fire Hazard and Risk in the Wildland Urban Interface and Section 4: Prioritizing Fuel Reduction Vegetation Management Treatments
2. Addressing structural ignitability
See Section 5: Prioritized Treatment of Structural Ignitability
3. Collaborating with stakeholders
See Section 1.2: The Planning Process and Stakeholders

Based on analysis, recommendations have been identified to aid stakeholders in reducing the threat of wildfire. The Plan complements local agreements and existing plans for wildfire protection for a coordinated effort in determining appropriate fire management actions.

The Alameda Countywide CWPP is the result of an area-wide planning effort. The Sunol Fire Action Plan looks at similar issues, but allows for a more detailed investigation and customized recommendations for Sunol. The first countywide CWPP in 2012 began with compilation of existing documents, analysis of fire behavior potential (based on fuels, topography and historical weather conditions) and collaboration with homeowners, representatives of special interest groups and agency officials. In 2014 - 2015 an Updated Plan was revised through a similar area-wide planning effort that reviewed the plan, updated relevant sections and refined priority actions. The Sunol Fire Action plan built upon those countywide plans with input from a stakeholder group and community members via meetings and a survey.

The goal of the plan is to reduce hazard through increased information and education about wildfires, hazardous fuels reduction, actions to reduce structure ignitability and other recommendations to assist emergency preparedness and fire suppression efforts. Most important, it facilitates a coordinated effort between the various stakeholders.

Recommendations

The Sunol Fire Action Plan recommendations are organized into four categories related to:

- Information, Education and Collaborative Planning
- Enhanced Suppression Capability and Emergency Preparedness
- Fuel Reduction Treatments around Homes and on Public Lands
- Improving Structure Survivability

Priority Action overviews are provided for four priority activities focused on:

- Reducing risk of ignition
- Local evacuation plans & awareness
- Geographically based fuels reduction projects and prevention
- Education on home ignition and training on structure retrofit

Each priority action identifies implementation steps, lead and partners, timeframes and funding needs.

The Sunol Fire Action Plan is a multi-year guiding document that will facilitate the implementation of present and future mitigation efforts. It is important to note that the Sunol Fire Action Plan is a working document and will need to be updated bi-annually and after major "events" such as wildfire, flood, insect infestation, significant new home development as well as the regional update of the Multi-Hazard Mitigation Plan or General Plan Safety Elements.

Introduction

Wildfire records for Alameda County document an active, damaging and costly wildfire history. There is little question that the region's unique ecology – particularly the topography, climate and vegetation – provides the setting for catastrophic wildfire to strike. While large-scale wildfires do not occur every year, wildfire incidents driven by extreme wind conditions have repeatedly been difficult to contain. Residential development in the wildland urban interface (WUI) along with the introduction and proliferation of exotic species exacerbates this problem by putting more people, property, critical infrastructure and natural resources in harm's way. In order to reduce the risk of loss of life and property due to wildfire, the Diablo Fire Safe Council and project partners have worked with residents, representatives of federal, regional, state and local agencies, and community organizations to develop this focused Appendix to the Alameda County Community Wildfire Protection Plan.

Although the format of this plan is guided by the Healthy Forest Restoration Act's (HFRA) call for such plans, the principles behind it are not new. The National and State Fire Plans, the Federal Emergency Management Agency Disaster Mitigation Act of 2000 and several locally developed documents all mandate community-based planning efforts, coordination, project identification, prioritization, funding review and multi-agency cooperation. Unique benefits of the CWPP include:

- The opportunity to establish a locally appropriate definition and boundary for the WUI.
- The requirement for federal agencies, when planning fuel reduction projects, to give priority to projects that provide for the protection of at-risk communities or watersheds, or that implement recommendations in a CWPP.
- Expedited National Environmental Policy Act (NEPA) procedures for federal agencies implementing fuel reduction projects identified in a CWPP.

Since within Alameda County there are few federally owned lands, the stakeholder group discussed what the Alameda County CWPP Update should include and why both the County-wide plan and the focused Appendices are of value to us. The ideas can be grouped around several themes including overall planning and participation, fuel reduction projects, increased public awareness and involvement in prevention, balance of wildfire hazard reduction and environmental protection, fire resistant structures. Many common challenges and shared solutions were identified and a few selected for development with action plans.

*Funding provided by a grant from the
Cooperative Fire Program of the U.S. Forest Service,
Department of Agriculture, Pacific Southwest Region,
through the California Fire Safe Council*

Scope

The scope of this Fire Action Plan focuses on the the unincorporated community of Sunol in Alameda County. The plan does the following:

1. Describes the fire environment of the area.
2. Identifies values at risk as defined by the stakeholders.
3. Provides maps that show high fire hazard areas, as defined by federal, state and local authorities.
4. Establishes the rationale for prioritization of fuel management projects and treatment methods, as well as outlines principles for selection of projects when funding is available.
5. Describes measures communities and homeowners can take to reduce the ignitability of structures.
6. Identifies sources for Best Management Practices for fuel reduction treatments included in the plan.
7. Identifies federal, state and local resources (fire, utility, wildlife, regulatory agencies, landscape groups, etc.)

Purpose

The purpose of the Sunol Wildfire Action Plan is to protect human life and reduce loss of property, critical infrastructure and natural resources due to wildfire. The document builds on the Countywide CWPP and is intended to help agencies, communities and local homeowners define, plan and prioritize types of actions that will limit the damage associated with the inevitable wildland fire 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 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 stakeholders in this effort believe that the work outlined above requires a collaborative approach that combines the following elements:

- Development and implementation of strategic, cost effective, sustainable and environmentally sensitive hazardous fuel management plans;
- Educational programs that explain fire risk, promote voluntary citizen involvement and emphasize long-term strategies for creating and maintaining fire resistant communities.
- 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 Fire Action Plan in the future. The dynamic nature of the plan will reflect changes in practices, technology and information available to prevent and minimize loss from wildfire.

Sunol Information

1.1 Area Overview

The unincorporated community of Sunol is located in Alameda County, east of San Francisco Bay. Sunol census designated place (CDP) is located at the northwest edge of Sunol Valley, along Niles Canyon, adjacent to two railroads and near the crossroads of Interstate 680 and State Route 84. It includes the historic unincorporated town of Sunol. The first Sunol post office opened in 1871, with a town name change to Sunol Glen. The name reverted to Sunol in 1920.

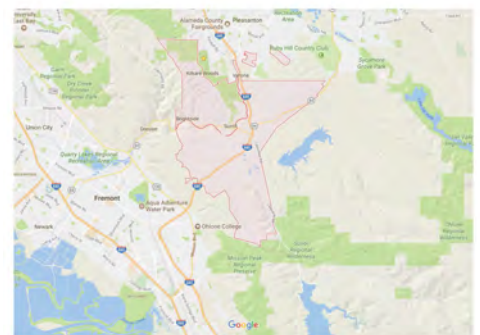
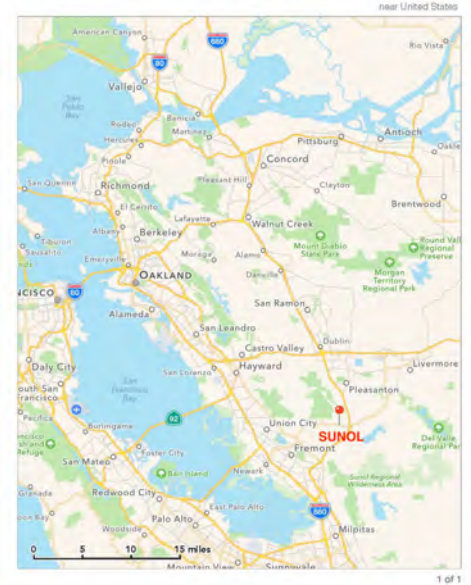
Sunol CDP includes Kilcare Woods, a community in Kilcare Canyon accessible only through Sunol by Kilcare Road. Kilcare Woods began as a private association of summer cottages that have developed into year round homes with undeveloped land, pool and recreation hall managed by The Kilcare Woods Association, Incorporated.

The Sunol CWPP also includes the rural residential areas to the south along Sheridan Road, Andrade Road, Calaveras Road, and Welsh Creek Road and to the east along Little Valley Road and Koopmann Road.

As of the 2010 census, Sunol CDP had a population of 913 (with a 2015 ACS 5-Year estimated population of 985).¹ The census lists the "census designated place" as a total area of 27.8 square miles for a total of 32.8 people per square mile. The census lists 362 occupied housing units with homeownership rate of 75.1%, well over the state rate of 55.3%, with 2.52 persons per household and a median house value of \$790,700. Median age is 49.3 with population age distribution of: 18.8% under the age of 19, 9.1% aged 20 to 29, 8.7% aged 30 to 44, 47.0% aged 45 to 64 and 16.4% aged 65 or older. A 2016 economic forecast listed with Alameda County (East Bay metro area), as the third highest median family income in California, with Sunol's median household income at \$72,500.

Transportation

Sunol is adjacent to two railroads and near the crossroads of Interstate 680 and State Route 84 (Niles Canyon Road). The Niles Canyon Railroad tourist railroad makes an in-town stop at the historic Sunol Trail Depot. The Altamont Commuter Express passes en route to San Jose and the Central Valley.



¹ Data from: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml includes both 2010 census and 2011–2015 American Community Survey 5 Year Estimates. Accessed 8/22/2017.

Geographic Features

Sunol is located at the northwest edge of the Sunol Valley surrounded by the Diablo Range. The Sunol Ridge and parallel Pleasanton Ridge separate the San Francisco East Bay located to the west from the increasingly urbanized Pleasanton-Livermore, Tri-Valley area north of Sunol. Niles Canyon, formed by Alameda Creek, connects Sunol to Fremont and Union City to the west.

Kilkare Canyon, a long deep box canyon, is located with Pleasanton Ridge to the east and Sunol Ridge to the west. The landscape is characteristic of California's north coast range and inland valleys with steep tree lined drainages. The eastern slope of Sunol Ridge and the western slope of Pleasanton Ridge descend steeply into Kilkare Canyon with a series of heavily wooded spur ridges, gullies, and seasonal and ephemeral creeks that drain into Sinbad Creek. Elevation in the area ranges from 200 feet along Main Street Sunol to 2,191 at peak of Sunol Ridge. Sunol Ridge is the highest point in the east Bay Hills and one of only a few peaks that exceed 2,000 feet in the Bay Area. Slopes of 25% and greater are common. Much of the area has bedrock geology of Cretaceous Panoche Shale, sandstone and conglomerate. The slopes and valleys are underlain by softer shale, with erosive soils and geologically unstable. Faulting and ancient landslides are located throughout the Kilkare Canyon area, with the Calaveras Fault running northwest to southeast parallel to Pleasanton Ridge.

Climate, Temperature and Rainfall

The Sunol area has a "Mediterranean" climate with mild winters and hot dry summers. Climatically it is intermediate between the moderate marine conditions of the Bay Area and the more marked seasonality of the interior Central Valley. Winter lows are typically in the 30s and summer highs can be above 90° Fahrenheit. Precipitation depends upon the season, location and topography with an average of 22 inches annual rainfall along Pleasanton Ridge increasing to 24 inches to the west of Sinbad Creek, and 10 to 20 inches in the eastern part of Sunol Valley depending on aspect and elevation. Most of the precipitation occurs as rainfall between November 1st to April 30th (occasional snow occurs at the higher elevations.)² The maritime influence causes predominately westerly or northwesterly winds throughout most of the year. These onshore winds have a cooling influence increasing the relative humidity. During late summer and fall this trend is reversed producing hot, dry easterly winds, locally called "Diablo winds" that desiccate vegetation and create periods of extreme fire hazard.

Natural Resources

Watersheds

Sunol lies within the East Bay's largest watershed, Alameda Creek, which drains approximately 705 square miles of hills and valleys from Mount Diablo in the North, and Mount Hamilton in the south before discharging into the San Francisco Bay. The intermittent Sinbad Creek runs parallel to Kilkare Road out of Kilkare Canyon. Sinbad Creek joins with Arroyo del la Laguna adjacent to the town of Sunol, which ultimately flows into Alameda Creek. The San Antonio Reservoir lies 3 miles to the east and the Calaveras

² *Land Use Plan for Pleasanton Ridge Regional Park*. East Bay Regional Park District. July 2012. http://www.ebparks.org/Assets/Nav_Categories/Park_Planning/Pleasanton_Ridge_LUP/Pleasanton+Ridge+LUP+FINAL+07+17+2012+1.pdf. Accessed 8/28/17.

Reservoir lies 8 miles to the south. The hydrology of the watershed has been greatly altered by water supply activities, development and flood control.

Vegetation and Wildlife Habitat

Differences in elevation, aspect topography, geology and soils have a strong effect on the vegetation and associated wildlife habitat. The Sunol area is included in the East Alameda County Conservation Strategy (EACCS)³, and portion of the Sunol area is covered in the San Francisco Public Utilities Commission's Draft Alameda Watershed Habitat Conservation Plan⁴. Both plans include strategies for long-term conservation for threatened and endangered species that could be affected by various activities, including hazardous fuel reduction.

The Sunol area contains several major plant communities:

- Grassland dominated communities: predominantly annual grasslands dominated by grasses and forbs, but also areas of native grassland (valley needlegrass grassland) and ruderal (disturbed areas with sparse typically weedy non-native vegetation).
- Coastal scrub dominated communities: consisting of woody vegetation dominated by shrubs (soft chaparral) with scattered trees. Dominant species include coyote brush, toyon, ceanothus, California sagebrush, with lupine and sticky monkeyflower as associates.
- Oak woodland communities: oak woodland (coast live oak), mixed with California bay, and deciduous trees such as buckeye and big leaf maple.
- Riparian woodland/ riparian scrub associated with drainages, intermittent, ephemeral and permanent streams and permanent water sources. May contain understory of shrubs and forbs.
- Other landscape features: rock outcrops, springs and seeps; landslides; ecotones; disturbed areas and developed landscaped areas.
- Exotic invasive species: stands of exotic and invasive species such as French broom, pampas grass and eucalyptus groves can be found throughout the Sunol area.

Several plants and animals that are designated as "special status" occur near Sunol (rare, threatened or endangered species, or candidates for such designation). These include both federally- and state-listed species, as well as those identified by the California Native Plant Society. Information about Federally protected species, vegetation and habitat is included in the *Best Management Practices Guidebook for Fuel Management Treatments in Alameda County* (developed for in 2012 as part of the Alameda County CWPP),⁵ and other resource documents.

Habitat for variety of wildlife species including critical breeding and foraging habitat for a number of federal and state listed species. These species include: Alameda whipsnake (*Masticophis lateralis euryxanthus*), California red-legged frog (*Rana draytonii*), western pond turtle (*Clemmys marmorata*), the state and federally protected golden eagle (*Aquila*

³ For more information about EACCS see <http://www.eastalco-conservation.org/about.html>. Accessed 8/28/17.

⁴ For more information about the DRAFT Alameda Watershed Habitat Conservation Plan see <https://sfwater.org/index.aspx?page=412>. Accessed 8/28/17

⁵ *Best Management Practices Guidebook for Fuel Management Treatments in Alameda County* is available online at www.diablofiresafe.org/publications.html - BMP.

chrysaetos), and other raptors, along with habitat that historically sustained federally threatened steelhead (*Onchorhynchus mykiss*)⁶.

A nine-quad search of the California Natural Diversity Database (CNDDDB) for the Sunol area resulted in the known presence of three special status herbaceous plant and several animal species within the project area. (See Appendix C for further information about these and other species considered for inclusion as focal species for the East Alameda Conservation Strategy).

The plant species are: *Chlorophyron palmatum*, *Holocarpha macradenia* and *Suaeda californica*. These three species occur in valley grasslands, vernal pools, coastal prairie and salt marsh/ coastal wetlands; not areas typically targeted for hazardous fuel reduction projects.

Animal species include: *Ambystoma californiense*, *Rana Draytonnii*, *Charadrius alesandrinus nivosus*, *Coccyzus americanus occidentalis*, *Rallus longirostris obsoletus*, *Sternula antillarum browni*, *Branchinecta lynchi*, *Lepidurus packardi*, *Masticophis lateralis euryxanthus*, *Onchorhynchus mykiss irideus*, *Sprininchus thaleichthys*, *Speyeria callippe callippe*, *Reithrontomys raviventris* and *Vulpes macrotis mutica*. Many of these species occur in valley grasslands, vernal pools, salt marsh/ coastal wetlands or require host plants not found in the Sunol area.

Three of the species *Ambystoma californiense*, *Masticophis lateralis euryxanthus* and *Rana Draytonnii* have the potential to be found in the oak woodland habitat in the Sunol area.

According to a preliminary assessment the hydrologic conditions of Sinbad Creek would only intermittently support the fish species⁷.

Public Lands Management

There are two public entities that manage large areas of lands in or adjacent to Sunol for public access and recreation (EBRPD), and water and power supply (SFPUC).

East Bay Regional Park District (EBRPD) is a special district that offers developed and dispersed recreation opportunities in over 120,931 acres in 65 parks in Alameda and Contra Costa Counties. The 5,271-acre Pleasanton Ridge Regional Park, surrounds on 3 sides the community Killkare Woods and the town of Sunol. The main staging area is off of Foothill Road. Dispersed park activities include hiking, biking, horseback riding and picnicking.⁸ Hazardous fuel management activities in the areas adjacent include seasonal goat grazing, cattle grazing and hazardous tree removal. A seven-member elected Board of Directors manages the Park District.

San Francisco Public Utilities Commission (SFPUC):

San Francisco Public Utilities Commission manages the Hetch Hetchy Regional Water System, a complex water and hydroelectric power supply system stretching from the Sierra and through the Alameda Watershed on its way to San Francisco.⁹ The water supply serves 2.7 million residential, commercial and industrial customers in the Bay Area, including the

⁶ As identified in *Land Use Plan for Pleasanton Ridge Regional Park*.

⁷ Source: A Preliminary Assessment of Potential Steelhead Habitat in Sinbad Creek, Alameda County. UC Berkeley May 2004. <http://www.alamedacreek.org/reports-educational/pdf/U.C.%20Berkeley%202004.pdf> . See Alameda Creek Alliance for the latest information on Sinbad Creek <http://www.alamedacreek.org/restoration-progress/Sinbad%20Stewardship.php>. Accessed 8/29/17.

⁸ Source: <http://www.ebparks.org/parks/pleasanton>. Accessed 8/29/2017.

⁹ Source: <http://www.sfwater.org/index.aspx?page=355>, <http://www.sfwater.org/index.aspx?page=198> accessed 8/29/17

town of Sunol and 27 suburban agencies in Alameda, Santa Clara and San Mateo counties. Hetch Hetchy power lines run over the Alameda Watershed and provide power to municipal customers and departments in San Francisco. SFPUC land (36,000 acres) in the Alameda Watershed is divided between Santa Clara and Alameda Counties and includes two major reservoirs, San Antonio and Calaveras. The watershed includes critical and unique wildlife habitat and a significant portion of farmland. The Sunol Valley Water Treatment Plant, located on Calaveras Road, treats all the water from the two local reservoirs. South of the town of Sunol, the Sunol Filter Galleries provide groundwater sources. The Sunol Water Temple marks the confluence of three sources of water flowing into the Sunol Valley; Alameda Creek, Arroyo de la Laguna and the Pleasanton Wells. The Sunol Corporation Yard is located adjacent to the Sunol Water Temple.

Federal Lands

Bureau of Land Management (BLM): While there are no BLM lands in the Sunol area, local stakeholders work with BLM staff from the Hollister Office in conjunction with federal grants for public education and fuel reduction projects.

US Forest Service (USFS): While there are no USFS lands in the Sunol area, local stakeholders work with USFS staff from the Vallejo Office in conjunction with federal grants for public education and fuel reduction projects. The USFS often provides grant funding through the California Fire Safe Council.

US Fish and Wildlife Service (USFWS): While there are no USFWS lands in the Sunol area, local stakeholders work with USFWS regional and zone fire management programs, the Recovery Program on critical habitat for the Alameda Whipsnake, and in Section 7 consultations for Biological Opinions related to fuel modification projects. USFWS funded the Diablo Fire Safe Council's development of the Best Management Practices Guidebook for Hazardous Fuel Treatments in Contra Costa County, California in 2009 by a grant through the California Fire Safe Council. The Alameda County appendix was developed in 2012.

Fire Protection Agencies

The Alameda County Fire Department provides professional emergency fire protection and medical services to a local responsibility area (LRA) service area of approximately 508 square miles with a daytime population of 394,000 people.¹⁰ Fire services for the unincorporated area around and including Sunol are provided under contract with CAL FIRE. Station 14 on Pleasanton-Sunol Road is the property of CAL FIRE; however, Alameda County Fire Department owns a Type 1 fire engine housed at this station. The Department also is responsible for the Alameda County Regional Emergency Communications Center providing regional fire, medical and rescue dispatch and communications center services. The efforts of these local fire protection agencies are made even more effective through common training in the National Incident Management Systems (NIMS), Incident Command System (ICS) and the California Standardized Emergency Management System (SEMS) that are used to manage response to multi-agency, multi-jurisdictional emergencies. Master mutual aid plans and automatic aid agreements also bring together resources from outside of the region. The two closest fire departments are the Livermore-Pleasanton Fire Department and Fremont Fire Department. Alameda County Fire Department is a dependent special district governed by the Alameda County Board of Supervisors.

California Forestry and Fire Protection Agency (CAL FIRE): Santa Clara Unit (SCU) provides fire protection for state responsibility areas (SRA) and contracts for fire service for the unincorporated areas around Sunol , including Kilkare woods. SCU also provides fire

¹⁰ Source: <https://www.acgov.org/fire/about/index.htm> accessed 8/29/17

protection in the SRA of other portions of Contra Costa, Alameda, Santa Clara counties and a portion of San Joaquin County.

East Bay Regional Park District Fire Department: EBRPD Fire Department provides professional fire, medical and aquatic services for emergencies that occur within and adjacent to Park District lands. A branch of the Public Safety Division, services include emergency response, search and rescue, fuels management, fire danger and weather information and lifeguard services.

Other Local Stakeholders

Alameda County: The unincorporated communities around Sunol are governed by the 5-member Alameda County Board of Supervisors. The area falls in two districts. Supervisor Scott Haggerty represents District 1, the area east of 680 and south of Highway 84 through Niles Canyon. Supervisor Richard Valle represents District 2, area west of Highway 680 and north of Highway 84 through Niles Canyon.

Supervisor Haggerty's district includes the cities of Livermore, Dublin, most of the city of Fremont and unincorporated areas in East Alameda County. Supervisor Valle serves the cities of Hayward, Union City, Newark and portions of Fremont, in addition to portions of Sunol. A five-person volunteer citizen advisory group, Sunol Citizens' Advisory Council (SCAC), provides input to the Board of Supervisors on Sunol issues.

The Alameda County Sheriff's Office is a full service law enforcement agency that includes the County Office of Emergency Services and East County Animal Shelter and Field Services

Other stakeholders in Alameda County include: Community Development Agency and Department of Public Works.

Alameda County Conservation Partnership: The Alameda County Resource Conservation District (ACRCD) and the USDA Natural Resources Conservation Service (NRCS) collaborate as the Conservation Partnership to serve as the lead conservation agency in Alameda County. The Partnership collaborates with many partners including private landowners, local, state and federal agencies and other organizations to develop and implement various conservation and agricultural strategies.

Alameda Creek Watershed Forum: The Alameda Creek Watershed Forum (acwForum) is a voluntary, non-regulatory stakeholder group that supports the community's interest in protecting and achieving a healthy and sustainable Alameda Creek watershed. The watershed's stakeholders have been working together as the Alameda Creek Watershed Council (ACWC) since 2007. The name change to acwForum, and the acwForum.org website are meant to reflect a renewed focus on information sharing and collaboration among agencies and organizations with an interest in working toward a well-managed and restored watershed.

Alameda Creek Alliance: The Alameda Creek Alliance is a non-profit, community watershed group dedicated to protecting and restoring the natural ecosystems of the Alameda Creek watershed. Their mission is protecting and improving natural habitats, with a goal to maintain and restore native wildlife, plants and ecosystems within the Alameda Creek watershed, as much as possible given modern constraints. Projects include Sinbad Creek Stewardship.

Diablo Fire Safe Council (DFSC) a non-profit organization formed in 1992 to bring together homeowners and agencies in Alameda and Contra Costa Counties to reduce the impact of wildfire. Programs include planning, outreach, education and cost share assistance for hazardous fuel removal.

Friends of the Garden: Friends of the Garden is a volunteer organization who maintain and manage the Sunol Depot Garden (aka Sunol Community Park). Located at Main Street and

Kilkare across from the Niles Canyon Railroad Station. The Sunol Community Park land is leased by the Pacific Locomotive Association (PLA) from Alameda County as part of the train transportation corridor. As a major user of the park, the PLA partially funds the Friends of the Park, and provides insurance, water and electricity.

Kilkare Woods Association (KWA): Kilkare Woods is a community in Kilkare Canyon accessible by Kilkare Road. Kilkare Woods began as a private association of summer cottages that have developed into year round homes. The Kilkare Woods Association, Incorporated manages the undeveloped land, private roads, a pool and recreation hall within the community.

Little Valley HOA: Little Valley is a gated community located off of Highway 84, Vallecitos Road, east of Highway 680.

Niles Canyon Railroad and the Pacific Locomotive Association Inc.: The Pacific Locomotive Association, Inc. operates the Niles Canyon Railway as a living history museum interpreting the importance of our heritage railroads in the development of California and the nation. Their mission is to develop and operate a working railroad museum for the benefit of the general public. The Pacific Locomotive Association Inc. also has railroad artifacts on display and interpretive educational exhibits at the Sunol Depot. Through an agreement with Alameda County, they maintain track and provide train rides to the public year-round between Sunol, California and Niles in Fremont, California.

Pacific Gas and Electric Company (PG&E): PG&E, incorporated in California in 1905, is one of the largest combination natural gas and electric utilities in the United States. Based in San Francisco, their service area stretches from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada in the east. PG&E utilizes a program of Integrated Vegetation Management (IVM) to manage vegetation on transmission rights-of-ways. Properly maintained right-of-ways (ROW) are essential for the safety of the public and workers. The long-term goal of their vegetation management program is to provide for public safety, worker safety, and environmental safety while providing for reliable service.¹¹ Sunol is located in PG&E's Vegetation Management Central Coast Region – North Division. PG&E high-voltage transmission lines are located east of Highway 680 and south of Highway 84, connecting from the Central Valley through to Fremont or Newark, with a substation at Calaveras Road.¹² Local electrical distribution lines also serve individual homes and businesses throughout the community. PG&E also has extensive gas transmission and distribution pipes to provide natural gas to individual homes and businesses throughout the community.

Sunol Citizen's Advisory Council: The SCAC is a five member council established in 1989 to advise the Alameda County Board of Supervisors on all matters concerning services which are or may be provided to Sunol by the County or other local governmental agencies, including but not limited to advice on matters of public safety, welfare, public works, and planning. Members are residents of Sunol and serve 4 year terms, nominated by their District Supervisor. 2 members are nominated by District 1 Supervisor Haggerty and three by District 2 Supervisor Valle.

Sunol Business Guild: Formed in 1994 by community members concerned with the dilapidation and decline in the downtown area, the purpose of the Sunol Business Guild is to "Improve and maintain the Town of Sunol and to support local nonprofit organizations and the community of Sunol". After building the two town signs (either end of town), the Guild

¹¹ Source: <http://www.pge.com/> accessed 8/29/17

¹² Source: Solar Photovoltaic (PV) and Renewable Auction Mechanism (RAM) Program <https://www.pge.com/b2b/energysupply/wholesaleelectricissolicitation/PVRFO/PVRAMMap/index.shtml> accessed 8/29/17

erected the community bulletin board and clock. They assisted the Pacific Locomotive Association in creating Depot Gardens. Over the years, they have provided grants totaling over \$150,000 to fellow non-profit corporations and needy students and households around Sunol.

Sunol Community Emergency Response Training (CERT) teaches neighbors to help themselves and each other. Sunol has an active CERT group with quarterly general meetings and many Sunolians are CERT trained. Recent projects include the Containers Project that created two caches of disaster supplies to enable the Sunol CERT team to efficiently put their training to use in the event of a region-wide disaster. They have implemented extensive "Map Your Neighborhood" groups. Alameda County Fire Department has been a strong supporter; committed to providing citizens with the ability to be self-sufficient for up to 72 hours and beyond in the event of a major disaster.

Sunol Firesafe Coalition (SFSC): A volunteer group of concerned Sunol citizens founded in 2014 with a seed grant from the Sunol Citizen's Advisory Council to work with Diablo Fire Safe Council. Since 2014, SFSC has coordinated with community members to provide outreach, build awareness and undertake hazardous fuel reduction projects in Sunol and Kilkare Woods. Projects have included: community chipping days, storm downed tree removal, dead tree removal, community led projects with groups of homeowners, reduce brush along Kilkare Road, remove invasive French broom and created defensible space around homes. Over \$300,000 in grant funds has been matched by volunteers' in-kind sweat equity and community members' private payments directly to contractors.

Sunol Community Volunteers: Sunol volunteers include formal groups, such as the Boy Scouts of America Troop 912, and individual high school seniors fulfilling their requirement for community service in order to graduate from Foothill High School in Pleasanton.

Sunol Glen Unified School District: Sunol Glen is a public K-8 school located in the town of Sunol. They are unique in that they are a one-school, school district. As a small rural school they depend upon inter-district transfers and families to choose the school from nearby communities.

Tri Valley Animal Rescue Volunteers assist the East County Animal Shelter with fostering and adoption of hundreds of animals every year.

Zone 7 Water Agency provides flood protection to all of 425 square miles of eastern Alameda County. They are a water wholesaler, providing treated drinking water to retailers, including the City of Pleasanton Utilities Division that provides water to Kilkare Woods.

1.2 The Planning Process & Stakeholders

The development of the Sunol Wildfire Action Plan: An Appendix to the Alameda Countywide CWPP was made possible through a grant from the Cooperative Fire Program of the U.S. Forest Service, Department of Agriculture, Pacific Southwest Region, through the California Fire Safe Council. The grant would not have been possible without matching in kind services of many stakeholders.

The planning process followed a four-step process that included 4 stakeholder meetings and outreach to the community. Materials were posted on the Diablo Fire Safe Council web site at <http://www.diablofiresafe.org/Sunol-CWPP-AP.html>. A community survey was developed and available online <http://fluidsurveys.com/surveys/dfsc/sunol-wildfire-action-plan-2017/>. Print copies of the survey were also available. Results are included in Appendix C and were incorporated into the planning results. Two public presentations were included in conjunction with the Sunol Citizen Advisory Council monthly meetings.

State, local and private agencies, companies, organizations and special interest groups, as well as the residents of Sunol contributed to the development and review of this Plan. Stakeholders included:

Alameda County Fire Department
Alameda County Board of Supervisors
Richard Valle's Office
Alameda County Public Works
Alameda Creek Alliance
CAL FIRE Santa Clara Unit
California Fish and Wildlife
Diablo Fire Safe Council
East Bay Regional Park District Fire
Department

East Bay Regional Park District Pleasanton
Ridge Regional Park
Pacific Locomotive Association (Niles
Canyon Railway)
Pacific Gas and Electric Company
San Francisco Public Utilities Commission
(SFPUC)
Sunol CERT
Sunol Citizen Advisory Committee
Sunol FireSafe Coalition

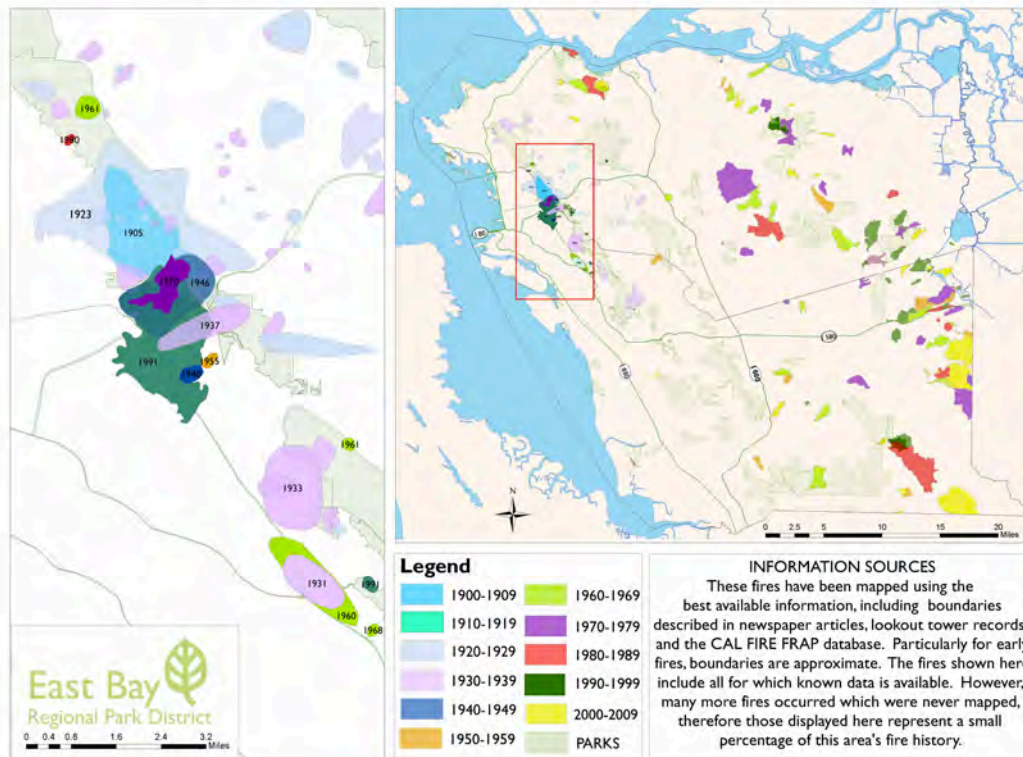
Wildfire Hazard and Risk in the Wildland Urban Interface

2.1 Wildfire Environment

Wildfires are a part of the natural ecosystem in the Sunol area. The Mediterranean-like climate with no summer rains, the steep, wind-conducive topography, and fire adapted native vegetation set the stage for periodic burns. The fire environment is made more dangerous by the abundant hazards and risk associated with a residential population and dense pattern of development. The urban side of the wildland-urban interface brings new hazards into the equation with introduced vegetation, structures constructed of flammable materials and many potential ignition sources.

Alameda County has a rich history of over 51 fires since the 1950s resulting in loss of lives, property and natural resources. The 1991 “Tunnel Fire” took place in the Berkeley and Oakland hills, destroyed 2,900 structures. Until the fires in late 2017, the Tunnel Fire was the largest recorded number in California history and the state’s second deadliest fire with 25 fatalities.¹ Historically, more frequent wildfires of lesser intensity were common. Drought and human behaviors, particularly in the arenas of land-use and fire suppression, have had a profound impact on the County’s fuel complex and fire regime. This increases the possibility of catastrophic wildfire, especially as the hazards of vegetation, topography, structures and fire

Fire History in the East Bay



Historically fires in Alameda County have clustered in 3 areas: the East Bay Hills along the border with Contra Costa County, east part of the county along Highway 580 and the southeast in remote areas of rugged terrain.

¹ Source: <http://www.fire.ca.gov/SCU/> accessed 9/5/2017.

weather are present.

Weather

Chief among fire hazards is the area weather. Despite efforts to improve neighborhood safety and fire fighting capability, uncontrollable fire storms will occur under the extreme but periodic conditions of "Red Flag" weather days. The National Weather Service issues "Red Flag" warnings when weather elements such as low relative humidity and strong winds could lead to rapid increases in wildfire activity.

"Red Flag" weather can mean the occurrence of strong, hot, dry offshore winds (technically called "foehn" winds). These winds are known locally as "Diablo Winds" and they come from the north, northeast. They carry extremely dry air at high velocity. They quickly desiccate vegetation and other flammable materials and can push a fire down or up a slope with amazing speed. These can occur at any time of year, but are especially dangerous in the driest months of summer and fall. During these times, fighting a fire becomes far more difficult.

Fuel – Structures and Vegetation

Due to the number and density of homes built in the high fire hazard zone and changes in the natural fire-cycle, Sunol has areas of highly flammable structures amongst an over-accumulation of flammable vegetation. This massive fuel load of homes and vegetation in the area's steep topography makes fires very difficult to contain. In addition, non-native and invasive weedy vegetation has replaced the more fire resistant and ecologically stable native species in many places, adding to the threat.

Years of drought and associated pests and disease have increased tree mortality. The Alameda County region has seen a decline in tree health due to drought, pine beetles and Sudden Oak Death (though not found immediately in the Sunol area). Ongoing tree mortality assessments will provide additional information on declining conditions.



Years of drought and associated pests and disease have increased tree mortality and fire hazard.

Topography

The area's steep topography, with canyons and swales, influences fire behavior and in many instances intensifies fire effects. Westward facing slopes are more arid (due to long exposure to the afternoon sun) and thus more combustible. The narrow roads in Sunol make ingress and egress difficult and delay fire fighter response time.

2.2 Wildland Urban Interface Risk & Hazard Assessments

The wildland urban interface (WUI) is defined 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. Nationally, the WUI has gained increasing importance as more Americans build homes in rural settings adjacent to public lands.

The housing density and geography of Sunol is such that most of the developed areas not only borders WUI areas, but also include conditions within the residential areas that can fuel wildfires. The community includes locations considered "Very High Fire Hazard Severity Zones" and is at significant risk for loss of life and property if a fire were to occur on a normal or extreme weather

day. For the purposes of this plan, the CAL FIRE Fire Hazard Severity maps were used as a starting point to determine where significant fire hazards exist both in the wildland and urban areas. Both Sunol and the adjacent EBRPD parklands have been identified as at significant risk from wildfire.

2.2.1. Potential for Wildfire to Occur

Factor 1 – Risk of Wildfire Occurrence

Fire History Locations

Alameda County has a history of fire. The map “*Fire History in the East Bay*” shows many fires throughout the county over the past century. Three areas show clusters of fire:

- East Bay Hills – Berkeley, Oakland, San Leandro and the Contra Costa County boundary
- East part of the county along Highway 580
- South east in the remote area of the county with rugged terrain.

Fire History Patterns, Climate Change Impact and Ignitions

There is limited detailed information on fires in the Sunol area. However, a regional look at the 15 fires in the vicinity of the Caldecott Tunnel from 1923 – 1991 shows a common pattern of ignitions during critical Diablo Wind conditions in the Fall, occurring every 10 to 20 years. The devastating 2017 fires in the North Bay also occurred during weather patterns of high winds and low relative humidity. Similar conditions occur in the Sunol area.

Climate change has the potential to affect multiple elements including fire behavior, ignitions, fire management and vegetation fuels. Hot dry spells may dry out fuels faster and increase disease and insect infestations resulting in higher fuel loads. Increased winds may result in more erratic fire behavior making fires harder to contain.

As a part of its fire management plan, EBMUD looked at causative agents for fires on its watershed from 1980-1997. Many ignitions were “unknown,” but known causes were primarily human and included arson, camping and picnic activities, power lines, fireworks, fuel reduction activities, smoking, children, automobiles and rekindles. Only 2 out of the 174 fires analyzed were caused by lightning. EBMUD used this information to help identify high fire risk areas including:

- All interface or intermix areas
- High use or recreational areas
- High travel transportation corridors with roadside grasslands.

EBRPD did a similar analysis of 1,900 fires over twelve years in Alameda and Contra Costa Counties and reached similar conclusions. While there has been no specific fire history developed for the Sunol area, stakeholders and fire personnel familiar with the communities’ fire history felt that these causes and patterns could be extrapolated to this area.

Fire Weather

Another factor that has been assessed is fire weather or periods of “Diablo winds” that bring low relative humidity and higher temperatures. Alameda and Contra Costa Counties have 11 remote automated weather stations (RAWS) that provide localized information on the weather. Many fire departments also take local weather readings to supplement these regional data. National Oceanic and Atmospheric Association’s National Weather



Service also provides “red flag warnings” and “Fire Weather Watch” of periods of high fire danger. www.wrh.noaa.gov/firewx/cfw/

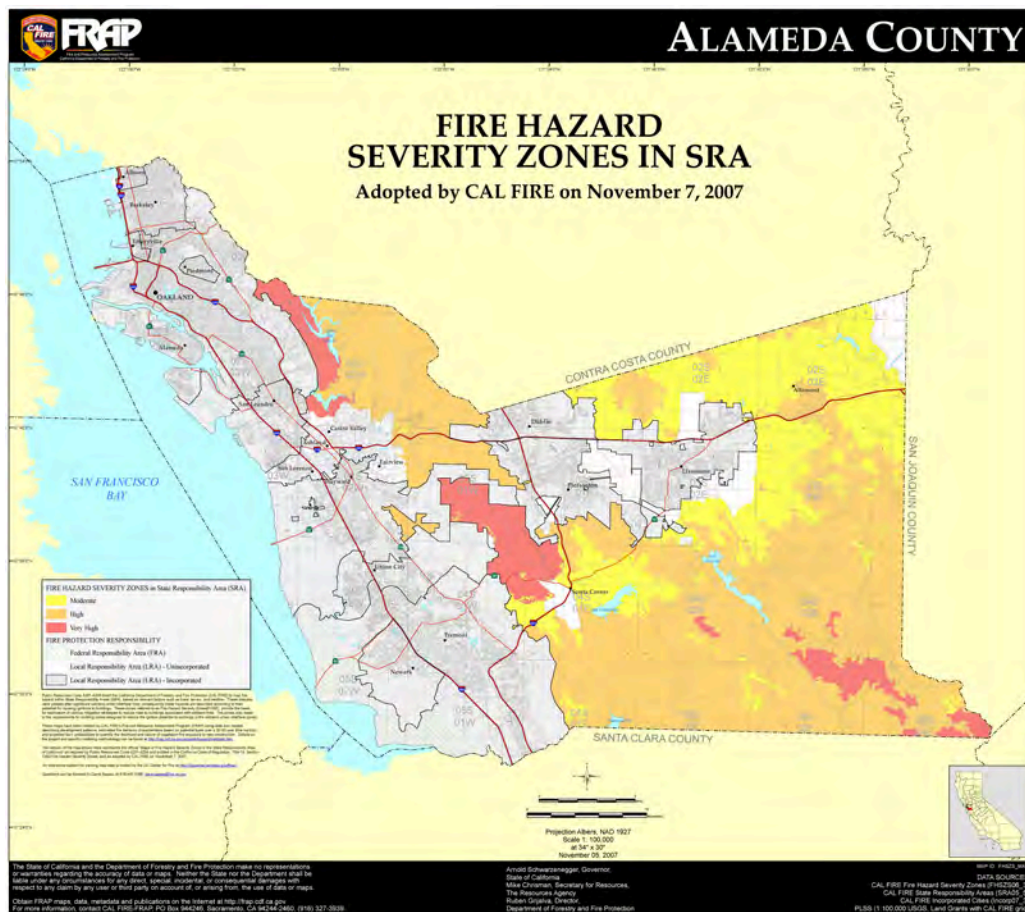
Factor 2 – Fuel Hazards

CAL FIRE Statewide Hazard Assessment Maps

The CAL FIRE statewide hazard assessment maps have served as the basis for much of the analysis in Alameda County. Very High Fire Hazard Severity Zones for State Responsibility Areas (SRA) are identified on these maps based on:

- Flame length modeled based on vegetation, topography and weather.
- Crown fire potential, ember production and ember movement
- Likelihood of burning based on fire history and other factors.²

Sunol, as well as adjacent EBRPD lands, were identified as very high wildfire hazard severity zones.



2.2.2. What to Protect - Values at Risk within the WUI

Factor 3 – Homes, businesses, critical infrastructure and other values to protect

Millions of people are exposed to the destructive forces of wildfire by virtue of living, working or visiting areas in the WUI. Much of what people value most highly – their lives, family,

² Map from: http://www.fire.ca.gov/fire_prevention/fhsz_maps_contracosta.php accessed 2/8/2017.

community, property, as well as cultural, economic and ecological interests is at risk of loss in an uncontrollable wildfire.

During planning meetings, area stakeholders identified homes, businesses, parklands and protected watersheds among values at risk. Regional roads are at risk, as are power and water supply facilities and substations, communications networks.

In addition to looking at fuel hazards, it is important to identify things that should be protected from the hazards. Some of the values at risk to protect include:

- Homes and businesses. The 2010 census shows a population of 913 with 362 housing units in Sunol CDP, all of which are located in the very high fire hazard severity zone.³ Of particular concern are those who for whatever reason would not be able to leave during an evacuation without assistance. Total monetary value of structures in the area is estimated at more than \$286 million.⁴
- Schools. Sunol includes Sunol Glen, a public elementary school (including pre-school).
- Other facilities. There are no hospitals or critical care facilities in Sunol. Other public facilities include the Sunol Post Office and the Little Brown Church. Private facilities open to the public include the Kilcare Woods Association clubhouse, Sunol Depot and private businesses such as the Ellison Winery, Boscoe's and Sunol Event Center.
- Infrastructure. The PG&E high voltage transmission lines that cross south of Sunol and to the Sunol sub-station are part of the national electric grid, as well as providing power to the region. PG&E also provides natural gas to homes and businesses in the community through underground pipelines. Similarly, the water facilities operated by San Francisco Public Utilities Commission are critical to the region, as well as for local water delivery and firefighting, while SFPUC power transmission lines supply municipal needs in San Francisco. Telecommunication networks and public emergency communication systems also serve the region. Underground gasoline pipelines also serve the region. A network of local public roads, maintained by Alameda County, and private roads provide both emergency access and evacuation routes for residents. Many of these roads are narrow and steep, reflecting the topography. Both public and private bridges provide access across rivers, local creeks and drainages. Maintenance of private roads and bridges is critical as they usually are the only access to residences.
- Other things to consider. Alameda County is seismically active with nearby faults including the Calaveras, Mission, Hayward, Los Positas, and other related faults.⁵ Seismic activity could impact access, reliability of power and water supply and result in potential ignitions from gas or fuel lines following an earthquake. The steep hillsides in Kilcare Canyon are also geologically unstable, with areas of slides located throughout the hills.

While fire is a natural and critical ecosystem process in much of California's diverse terrestrial ecosystem, many of the existing "fire regimes" in the Sunol area have been drastically altered from their natural variability. Introduced species, fire suppression, disease and insect infestations, and fire suppression are just a few of the reasons why some ecosystems now experience fires that are more intense and damaging. Severe environmental impacts from wildfires can include:

³ Data from: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml includes both 2010 census and 2011–2015 American Community Survey 5 Year Estimates. Accessed 8/22/2017.

⁴ Source: Based on average house value of \$797,000

⁵ Source: <http://earthquake.usgs.gov/hazards/qfaults/map/> Accessed 9/5/2017 and <https://pubs.er.usgs.gov/publication/fs20163020>

- Damaged fisheries, with increased water temperatures, sedimentation and changes in water quality
- Soil erosion from both wind and water erosion. Accelerated soil erosion can lead to landslides as well as threaten nearby aquatic habitats. Hot fires can also damage soil nutrients or make soil water repellent (hydrophobic).
- Disease and insect infestations as non-native plant species invade burned areas
- Damage to critical wildlife habitat.

Critical wildlife habitat and special status species

US Fish and Wildlife Service has identified critical habitat for the Alameda Whipsnake in the area including Sunol.⁶ Pleasanton Ridge Regional Park contains habitat that could support 17 special status wildlife species including: Golden eagle, loggerhead shrike, red legged frog, western pond turtle⁷ which are also likely to be found throughout the Sunol area (see Section 1.1 for additional listings).

Three species of special status plants are known to occur in Pleasanton Ridge Regional Plan and may also be found in suitable locations in Sunol: Bristly linanthus (*Linanthus acicularis*), Congdon's tarplant (*Hemizonia parryi ssp. congdonii*) and Santa Clara red ribbons (*Clarkia concinna* subsp. *Automixa*).⁸ Four other plant species located in the park are considered to be locally significant: Snapdragon (*Antirrhinum vexillocalyculatum subsp. vexillocalyculatum*, California Aster (*Lessingia filaginifolia var. californica*), Phacelia (*Phacelia nemoralis subsp. Nemoralis*) and giant chain fern (*Woodwardia fimriata*). (For further information see "Best Management Practices Guidebook for Hazardous Fuels Treatments in Alameda County").

Local watersheds, creeks and riparian areas

Alameda County has recognized the value of protecting their local watersheds, creeks and riparian areas and has storm water management, stream protection ordinances and regulations to protect these resources.⁹ State regulatory agencies, including the California Department of Fish and Wildlife (CDFW) and the San Francisco Bay Regional Water Quality Control Board (SFRWQCB), oversee protection of riparian areas, including along seasonal or ephemeral channels, and issue permits required for removal of riparian vegetation. Replanting or revegetation may be required in some areas when vegetation is removed to reduce wildfire hazards.

⁶ Source:

https://www.fws.gov/economics/Critical%20Habitat/ESA%20Reports%20as%20of%20August%202005/Alameda%20whipsnake/Alameda%20whipsnake_fCH_100300.pdf accessed 9/5/17.

⁷ Source: Pleasanton Ridge Land Use Plan. Final 7-17-2012.

http://www.ebparks.org/Assets/_Nav_Categories/Park_Planning/Pleasanton_Ridge_LUP/Pleasanton+Ridge+LUP+FINAL+07+17+2012+1.pdf

⁸ Source: Pleasanton Ridge Land Use Plan. Final 7-17-2012.

⁹ Source: <https://www.acpwa.org>, <https://www.acgov.org/sustain/what/water/cwpc.htm> Clean Water Program <http://www.acfloodcontrol.org> accessed 9/5/17. Note: Alameda County Flood Control District is a separate legal entity from the County of Alameda. The staff of the Alameda County Public Works Agency is shared between the two entities.

Significant recreation, scenic areas and areas of historical, economic or cultural value

Sunol is surrounded by EBRPD open space with significant values related to recreation and scenic areas. The community also contains areas of economic and cultural value both as documented historical and undocumented archeological sites.

2.2.3. Protection Capabilities

Factor 4 - Local Preparedness and Fire Fighting Capabilities

As identified in Section 1, local fire protection agencies leverage their resources through participation in emergency management systems and common incident command system. Local preparedness and firefighting capabilities include community preparedness and emergency personnel response. During fire incidents law enforcement, including the Alameda County Sheriff, are responsible for coordinating evacuation. Volunteer resources, such as local resident groups, CERT groups, amateur radio groups, Alameda County Medical Reserve Corps (activated through the California Disaster Healthcare Volunteer Program) and Alameda County Office of the Sheriff Volunteers, also play critical roles in both preparedness and during response to wildfires.

In December 2012, the County Office of Emergency Services produced an Emergency Operations Plan for the Alameda County Operational Area "to ensure the most effective and economical allocation of resources for protection of people and property in time of emergency or disaster."¹⁰ The plan establishes the emergency organization, assigns tasks, specifies policies and general procedures, and provides for the coordination of planning efforts of the various emergency staff and service elements utilizing the California Standardized Emergency Management System (SEMS).

2.3 Strategies for Reducing Risk within the WUI

Wildfire is a natural process in the Alameda County ecosystem. The natural hazards of the fire environment – weather, climate, topography and fire adaptive vegetation – all are immutable. Attention to decreasing the human impacts and risk factors can reduce the incidence of catastrophic wildfire. The following potential strategies for reducing risk are organized to focus on each of the existing risk and hazard assessments.

1. Collaborative Partners

Identifying and working with collaborative partners (including friends and volunteer groups) lays the groundwork for other strategies to reduce the risk of fire. Collaborative efforts may include:

- Information, including sharing ideas and cross messaging to reach wider audiences.
- Education - Existing programs include: "Ember Awareness, "FIREWISE, "Ready, Set, Go", Smokey Bear, CERT, volunteers in prevention that can be customized for each community, neighborhood or special interest group.
- Collaborative planning on a local level with more detailed assessments and project development to reduce risk of fire occurrence. This could also include identifying friends and volunteer groups for project work and facilitating roles for residents.
- Sharing best practices related to wildfire prevention, hazardous fuel reduction, natural resource conservation and stewardship.

¹⁰ Source: <https://www.acgov.org/ready/documents/EmergencyOperationsPlan.pdf>

- Developing policy, such as for planting restrictions or removal of highly flammable plant species.

Potential collaborative partners identified during the planning process include: the Boy and Girl Scouts of America, CERT, California Office of Emergency Services, planning and building departments, Alameda County Board of Supervisors, Alameda Fire Chiefs Association, Master Gardeners, University of California Extension, Institute of Building and Home Safety, California Landscape Contractors Association, local media (such as the Pleasanton Patch), Alameda County OES, non profit habitat restoration organizations (such as Friends of Alameda Creek), California Native Plant Society, special interest groups (such as Sunol Fire Safe Coalition, Killcare Woods Home Owners Association, Friends of Sunol Depot Park) and utilities including PG&E, Pleasanton Water and San Francisco Public Utilities Commission.

Electronic distribution allows for customization and distribution through existing partners networks. Communicating fire safety messages year-round, and identifying and facilitating roles for residents working with agencies could foster collaborative partnerships.

2. Recommendations to address risk of ignitions

Target key causes of ignitions in areas with ignition history, high equipment use and people (arson or accidents) through:

- Ignition Prevention Education – A specific ignition prevention campaign targeting homeowners, contractors and public works agencies may help reduce equipment-caused fires. Existing ignition campaigns include "One Less Spark," "Smokey Bear," fire department staff outreach, mowing guidelines, drought related information. Develop ignition prevention education aimed at both residents and visitors (recreation or trail users).
- Enforcement – enforce restriction on certain activities: support consumer fireworks exclusions, fire investigations and working with law enforcement and defensible space inspections/ enforcement. Limit access or activities during periods of high fire danger (red flag warnings). Increase staffing levels and patrols on red flag days. Develop new policy and associated enforcement, such as for planting restrictions or removal of highly flammable plant species.
- Engineering – equipment safety, fuel reduction activities. This could include undergrounding electrical power lines, roadside clearance of vegetation or a juniper removal campaign.
- Focusing on areas of high tree mortality due to drought, disease or pests where there may be higher potential for ignition.

3. Recommendations to address fire weather

Improve communication of hazardous weather conditions (red flag weather) through:

- Awareness of hazard conditions and what to do/ not do – red flag program flags, fire danger signs (through community and in parks), education, shared responsibility of agencies and residents. National weather service (NOAA/ Monterey) and remote area weather stations (RAWS).
- Restrictions on specific uses, certain activities, specific operations or equipment (abatement work) during periods of high fire danger weather. Fire weather operations plans.
- Local media alerts during red flag weather. Additional partners can get the word out over a variety of communication systems (newsletters, Nixel, websites, Alameda County

Warning System emergency alerts, etc.). Shared responsibility – patrols, community watch type activities.

4. Recommendations to address community at risk hazards

- Monitor tree decline mortality due to drought, disease (e.g. Sudden Oak Death) or pest infestation.
- Develop new policy and associated enforcement mechanisms, such as for planting restrictions or removal of highly flammable plant species.
- Project planning and funding to deal with increase in tree mortality.
- Public education and exterior hazard abatement:
 - Reduce surrounding fuels and ignitability of existing homes and structures – from the house out.
 - Focus on dense vegetation directly adjacent to homes and homes themselves.
 - Weed abatement/ defensible space inspections and enforcement.
 - Home ignition zone improvements (beyond weed abatement or fire code requirements).
 - Reduce structure ignitability.
- Evacuation routes
- Special needs populations (who, where they are, and needs in event of emergency).

5. Recommendations to further support defensible space programs

- Talk to people about what to do. Prevention programs, communication and education. “How to do” training. Information on flammability of specific plants (e.g. juniper, eucalyptus).
- Inspections, enforcement and abatement of hazardous vegetation, including on vacant lots where no structures are present.
- Funding and incentives for private property owners. “Seed” funding for community projects.
- Share effective techniques. Balancing habitat needs and defensible space. Effective techniques to reduce noxious weed invasion after soil disturbing hazardous fuel reduction treatments.
- Chipping programs.
- Green waste pickup or other programs for disposal.
- Hazardous (dead) tree removal programs. Right tree right place program (existing PG&E program)
- Demonstration garden. Showcase successful treatments of private properties where habitat values, aesthetics and fuel reduction (defensible space) goals have been met.



6. Recommendations to support improving structure survivability

- Education regarding home ignition, WUI building standards and existing code requirements. Local building and remodeling standards reflective of the State adopted WUI Chapter 7A or better (recognizing these are minimum standards). Including: Class A roofs, smoke detectors, fire extinguishers, street address numbers. Educational materials to address inside the home, external shell, ember hardening and non-ignition zone (fences, outdoor structures). Use a variety of outreach tools including DVD, website, flyers and presentations.
- Practical retrofit techniques and building materials for roofs, gutters, windows, siding, vents, decks, outbuildings, especially information regarding what can be done without major remodels.
- Sprinkler systems required for new homes or if more than 50% of home is remodeled.

7. Recommendations to support fuel management on public and large scale private lands

- Pre-fire hazardous fuel management program and plans.
- Integrating fire with scientifically based resource and vegetation management that protects and improves native habitat values. A lot of collaborative planning work has been done in the region that should be incorporated. Balance protection of biological resources with hazardous fuel removal (e.g. bird nesting and 100' defensible space). Support for further research on post fire effects.
- Share project implementation resources (contractors, equipment, specifications), best management practices (BMP) and lessons learned. Use of goats, cattle, control burns, disk or mow fire containment lines, understory maintenance, etc. Including use of volunteers to reduce fuel loads. Identify stakeholders and customize information and delivery methods.
- Project and funding support, for both the individual large property owner and for homeowner associations with private open space (e.g., Kilkare Woods).
- Access for firefighter and equipment.
- Enforcement for abatement of hazardous vegetation on public lands.

9. Recommendations for protecting homes, businesses, other facilities & essential infrastructure at risk

- Identify infrastructure to protect: roads, bridges, power grid, reservoirs, water treatment facilities, communications and utilities. Support hazardous fuel reduction projects, such as those on watersheds, roadside clearances and power-line clearance.
- Identify network of roads for fire response and resident evacuation. Private bridges are a critical component of access and egress in many areas of Sunol.
- Water for fire fighting, including public and private sources.
- Provide extra patrols during high fire (Red Flag) days.



Support hazardous fuel reduction projects such as roadside clearance.

10. Recommendations to support Local Preparedness and Firefighting Capability

- Develop local evacuation plans and educate residents on preparedness, including special needs communities and animal rescue and sheltering. Recognize parking on narrow roads further limits fire access and evacuation.
- Support local volunteers and community readiness. Participate in and enhance existing CERT/ Neighborhood Watch programs. Ready Set Go. FIREWISE.
- Continue to support fire department response improvements: expanded mutual aid, wildland fire training, equipment, vehicles suitable for narrow, steep roads, etc. Coordination between agencies and land managers.
- Continue to support public notifications systems –community warning sirens, AC Alert (mass notification system), etc.

Recommended Action Plan

3.1 Selection of Recommended Priorities

The Sunol Action Plan was developed through collaboration of stakeholders and residents that attended work sessions, public presentations or commented on draft versions of this plan. Participants were invited to submit project ideas that provide protection and reduce risk. The following recommended priorities are based on this collaboration, as well as the Countywide CWPP, analysis and the recommended strategies for reducing the risk with the WUI detailed in Sections 1 and 2.

Each of the following topics outlines specific recommendations and associated actions. It is anticipated that additional opportunities for actions will be identified as the Fire Action Plan is implemented. Projects, workshops, demonstrations and education efforts will be recommended for implementation and funding based on the following attributes:

- Protects life, property and infrastructure in areas of Sunol where risk of catastrophic wildfire is most severe.
- Reduces risk of fire spreading between private lands and public lands (regional parklands, open space, or watershed lands) or areas where significant natural or cultural resources are at risk.
- Seeks to create a detailed implementation plan for fire prevention or mitigation at the local level in an area identified as “at risk”.
- Involves stakeholders at all levels, which is to say there is strong community support, as well as support from applicable agencies and landowners. Intensity of local support will be a significant factor when choosing projects.
- Demonstrates the capacity to continue to manage and maintain the project effectively, and/or supports ongoing, previously planned efforts.
- Projects that will improve firefighting response, wildfire control capabilities and residential evacuation plans and operational programs.
- Removal of invasive plants of known high flammability listed in a recognized source such as Cal-IPC California Invasive Plant Inventory (publication 2006 or updated).

Many of the recommended actions will take long-term commitment over multiple years to address the complex hazards. Some actions have current funding, but additional funding and efforts are needed to continue to address the issue.

3.2 Information, Education and Collaborative Planning Priorities

Education is viewed as a force multiplier and stakeholders felt it should be a high priority. A key recommendation is working with potential partners to find common ground, share ideas and develop joint implementation of local projects. These partners may expand beyond the traditional agency partners to include volunteer groups who have interest in neighborhood or

nearby open spaces. They may also include organizations, such as the Friends of Alameda Creek, Friends of Sunol Depot Park, California Native Plant Society or Alameda County Master Gardeners, offices of the Supervisors or elected officials, homeowner associations or local businesses. One such recommendation includes reducing risk of ignition.

Priority Action: Reducing Risk of Ignition

Recommendation: Develop outreach awareness and training program around risks of ignition in the Sunol area. Program should include red flag weather and appropriate responses.

Implementation Actions:

- Expand collaborative partnerships including: Sunol CERT, Red Cross, Fire Department CAL FIRE, Sheriff Department, Pacific Locomotive Association, Sunol Fire Safe Coalition, San Francisco PUC.
- Identify various audiences (e.g. residents, contractors, special interest groups (Pacific Locomotive Association, Alameda Creek Alliance, Friends of Sunol Depot Park etc.). Identify the needs of residents versus special interest or recreational users.
- Develop topics including:
 - Ignition basics: Typical ignitions in Sunol area (mostly human caused). Wildfire behavior. How the home can ignite (e.g., the ignition chain - how a wildfire or adjacent house fire can be transmitted through the landscape or house to house).
 - Importance of community defensible space, especially critical on dead end streets, where homes are close together or on steep topography. Important ignition prevention tasks such as cleaning gutters and reducing amount of leaves. This information should be made available before defensible space inspections.
 - General awareness (e.g. wildfire season, red flag days). Monitoring of fire weather (National Weather Service – Monterey Forecast office at <http://www.wrh.noaa.gov/firewx/?wfo=mtr>. Most of Sunol is zone in CAZ511.
 - Specialized training (such as self-inspection of property, personal emergency preparedness, CERT training).
 - What to do (and not do) on red flag days. What to do (not do) with downed powerlines.
 - Critical ignition reduction actions – moving guidelines, equipment use, contractor responsibilities, response to red flag conditions. Use restrictions (e.g. no bar-b-cues in park during red flag conditions).
- Delivery methods: Direct mail, information on existing electronic/ social networks (county, city and community list serves), training and other community events.
- Encourage resident participation

Lead and Partners: Diablo Fire Safe Council, CERT, Sunol Fire Safe Coalition and partner agencies.

Time frame: Short-term timeframe. On-going 9 month or year round program.

Estimated Funding Need: \$ - \$\$ to development/ distribution of materials and evaluate additional needs.



3.3 Enhanced Suppression Capability and Emergency Preparedness Priorities

Each year wildfires reinforce the importance of local emergency preparedness and evacuation plans. The emergency service agencies (County Office of Emergency Services, County Sheriff, and the various fire departments) are interconnected through mutual aid agreements and common training of the Incident Command System and National Incident Management System. To expand this preparedness to a local and neighborhood level, Sunol has an active Citizen Emergency Response Training (CERT) group, with classes offered through the Alameda County Fire Departments. One priority recommendation focuses on assisting in the development of local evacuation plans. Another opportunity is to collaborate with updates to local hazard mitigation plan or general plan safety elements.

Priority Action: Local Evacuation Plans & Awareness

Recommendation: Collaborate with partners (CERT, Red Cross, Fire Departments, Sheriff's Department) to assist community groups in developing neighborhood evacuation plans so residents know what to do in the event of a wildfire. Build awareness of public responsibilities so firefighters can concentrate on putting out fires and not have to focus on protection of residents. Continue to collaborate with local fire agencies and support their needs.



Implementation Actions:

- Reinforce the existing CERT program and trainings at fire stations.
- Focus on community groups and block level. Identify special populations or needs at the block level. Develop topics including:
 - Tie to general education of wildland urban interface issues, red flag warnings, “Ready Set Go!,” community warning systems such as “AC Alert,” and “pulse point.” Encourage personal emergency preparedness training and involvement in Sunol CERT and participate in “Map Your Neighborhood” training.
 - Community evacuation procedures and develop appropriate expectations about who needs what assistance, access/ egress, parking, evacuation routes, role of Sheriff’s office, notifications etc. Encourage residents to register their landlines with Sheriff’s Department, CAL FIRE and PG&E.
 - Identify essential supplies to maintain (Go Pack).
 - Identify primary and secondary evacuation routes. Reinforce understanding that law enforcement (Sheriff’s office) is in charge of the evacuation. Reinforce message DO NOT evacuate through regional park (and reasons why).
 - Emergency contacts (who to call and what to do with downed trees, powerlines etc.)
 - Large animal evacuation. Locations for holding animals.
- Pre-designate suitable evacuation shelters. Identify potential for facilities that meet Red Cross standards.
- Identify physical improvements to the routes as needed (parking restrictions, vegetation clearance, roadside maintenance, signage etc.) Management of private roads.
- Local resources for first responders (locations for command post helibase, water sources, etc.)



- Delivery methods: Direct mail, information on existing electronic/ social networks (county, city and community list serves), training and other community events.
- Encourage resident participation

Lead and Partners: Coordinate with other groups that address evacuation trainings such as CERT and Red Cross, as well as outreach to home owner association, fire department and sheriff department.

Time frame: Short to identify, medium to long term to implement improvements.

Estimated Funding Need: \$ to development/ distribution of materials and evaluate additional needs. \$\$\$\$ for physical improvements.

STEP 1 GET READY
CAL FIRE AMADOR-EL DORADO UNIT EVACUATION PLAN

MAINTAIN DEFENSIBLE SPACE
Defensible Space is your property's front line protection against wildfires. Creating and maintaining Defensible Space around your home can dramatically increase your home's chance of surviving a wildfire. It also improves the safety of firefighters defending your property. 100 feet of Defensible Space is required by law.*

HARDENING YOUR HOME
Help minimize the risks and protect your home by hardening it using ember-resistant building materials.

TWO ZONES OF DEFENSIBLE SPACE
ZONE 1: 30 FEET
1 Remove all dead and dying plants
2 Remove dead your yard, firewood, and other debris
ZONE 2: 30-100 FEET
3 Cut or mow of four inches
4 Create vertical fuel breaks
5 Create vertical fuel breaks
6 Mow before
7 Sking trim
8 clearing vegetation

USE EQUIPMENTS FROM SPARK
7 Mow before
8 Sking trim
9 clearing vegetation

*For more information on preparing Defensible Space and fuel treatments, visit ReadyForWildfire.org.

STEP 2 GET SET...

PLAN
1. List
2. List
3. List

PREPARE YOUR FAMILY WITH AN EVACUATION PLAN

- Designate an emergency meeting location outside of the fire or hazard area. This is critical to determine who has safely evacuated from the affected area.
- Become familiar with your community's escape route options. Practice these often so everyone in your family is familiar in case of an emergency.
- Have an evacuation plan for pets and large animals such as horses and other livestock.
- Complete a family communication plan. Download and print a version to keep with this plan at www.ReadyForWildfire.org/prepare-your-family.

ASSEMBLE AN EMERGENCY SUPPLY KIT

- Three-day supply non-perishable and three gallons water per person
- Prescriptions or special medication
- Change of clothes
- Extra eyeglasses contact lenses
- First aid kit
- Flashlight
- Extra set of car credit cards, car traveler's checks
- Battery-powered and extra battery
- Sanitation supplies
- Copies of important documents (birth certificates, passports)
- Food and water
- This evacuation designated area

STEP 3 GO!

WHEN TO EVACUATE

If evacuation is recommended by fire officials, leave promptly—don't hesitate! If fire is becoming an increasing threat, also leave early—whether or not authorities have ordered evacuation. In an intense wildfire, officials may not have time to knock on every door. Early action can help you avoid being caught in a fire, heavy smoke or road congestion. Evacuating early also helps keep roads clear so that firefighters can move about more freely and concentrate on their work.

- Officials will determine the areas to be evacuated and escape routes to use depending on fire location, behavior, wind, terrain, etc.
- Law enforcement agencies are typically responsible for enforcing an evacuation order. Promptly follow their directions.
- You will be advised of potential evacuations as early as possible. You must take the initiative to stay informed and aware. Listen to your radio/TV for announcements from law enforcement and emergency personnel.
- You may be directed to temporary assembly areas to await transfer to a safe location.

WHAT TO DO IF YOU BECOME TRAPPED WHILE IN YOUR VEHICLE

- Stay calm.
- Park your vehicle in an area clear of vegetation.
- Close all vehicle windows and vents.
- Cover yourself with a wool blanket or jacket.
- Lie on vehicle floor.
- Use your cell phone to advise officials—call 911.

TAKE ACTION IMMEDIATELY WHEN WILDFIRE STRIKES

Follow these steps as soon as possible to get ready to Cal:

- Review pre-evacuation preparation checklists (if time allows) at www.ReadyForWildfire.org/pre-evacuation-preparation.
- Ensure your Emergency Supply Kit is in your vehicle.
- Cover up to protect against heat and flying embers. Wear long pants, long-sleeved shirt, hat, heavy shoes/boots, goggles/glasses, and a dry scarf to cover your face. 100% cotton is preferable for clothing.
- If time allows, gather your pets and take them with you.

Prioritizing Hazardous Fuel Reduction Treatments

4.1 Hazardous Fuel Management

Hazardous fuel management, ideally a subset of sound vegetation and ecosystem management, is the practice of removing or modifying vegetation in order to reduce wildfire ignitions, rate of spread and intensity. Fuel management requirements depend on the vegetation type, location, condition and configuration. Given the dynamic nature of the fuels in Sunol, a single treatment type or prescription is not effective. Follow up is often needed to avoid encroachment by weedy, non-native invasive species. Rigorous oversight, active management and an adaptive approach are required to achieve fuel management goals with a positive by-product of ecosystem improvement.

Generally five fuel management methods are available and used within the WUI:

- Manual (hand labor such as pulling or cutting, including chipping to remove cut materials)
- Mechanical treatment (equipment used for mowing, selective cutting of trees, masticating or crushing)
- Prescribed herbivory (targeted grazing by sheep, goats or cattle)
- Chemical treatment
- Prescribed fire



Community chipping programs have been an effective way to help homeowners dispose of hazardous fuels in Sunol where there is no greenwaste pickup service.

Specific fuel management treatment goals and methods are addressed more fully in the *Best Management Practices Guidebook for Hazardous Fuel Treatments in Contra Costa County*, its companion guidebook for Alameda County, and the *Vegetation Almanac for the East Bay Hills*. These best management practice guidebooks will continue to be refined based on environmental compliance documents, adaptive management practices and other lessons learned by the various stakeholders.

The sustainability of fuel management is an on-going challenge at all landscape scales – from a single residence, neighborhoods, public open space, watershed and parklands. Existing residential areas typically depend upon private property owners and their fire agency's fire prevention programs to reduce fuel loads. Community support and documentation of volunteer activities can provide critical "community hours" to match federal and state grant funds.

Alameda County and CAL FIRE have the ability to inspect and enforce compliance with local and state fire codes. In addition, any new or in-fill residential development needs not only a plan for fire hazard reduction, but also funding mechanisms for long term vegetation management of any commonly held open space. Funding must include not only initial treatments, but also on-going maintenance on an annual or multi-year cycle.

4.2 Fuel Reduction Treatments – Geographically Based Projects

Public agencies, private owners, and fire agencies establish hazardous fuel reduction treatment priorities on a regular basis as a part of their long-range planning or annual budgeting procedures. Some of the public land managers have detailed plans that incorporate fuel reduction treatments. Regionally such plans have not only identified geographically based projects, but also have developed best management practices and mitigation measures that should be incorporated into projects to reduce the impact of fuel reduction treatments on the environment.

Typically, fuel treatment is done around structures, by roadways and in areas of extreme fire behavior. Treatments can be organized by zone as follows:

- From the Home: 0-30', 30-100'
- Critical Infrastructure: 0-300'
- Emergency Access Roads: 0-30', 30-100'
- Community Protection: 100-300'
- Community Wildland Interface: 1.5-mile area around a community unless otherwise designated.

Regionally, stakeholders in Alameda County have further refined this list with the following areas as appropriate for fuel management, which is supported in this Sunol Fire Action Plan:

- Areas within 200 feet of homes in the wildland urban interface (WUI) with excessively flammable vegetation that would produce greater than 8-foot flame lengths.
- Areas within 200 feet of high-value or irreplaceable public facilities in the WUI with excessively flammable vegetation that would produce greater than 8-foot flame lengths.
- Areas within 30 foot to 100 foot of private residences in the WUI with excessively flammable vegetation that would exceed state or local defensible space codes.
- Areas with excessively flammable vegetation due to extreme amounts of litter or ground fuel levels. These may be areas where ground fuels exceed six-inches deep with occasional jackpots of fine material up to three-inch diameter. It may be with greater than two to six tons per acre with ribbon bark and understory fuel ladders in identified high risk forest like eucalyptus or Monterey pine that are subject to torching and crown fires with potential high ember flight rates into residential areas.
- Areas critical to strategic fire fighting operations in the event of a wildfire with excessively flammable vegetation.
- Areas with excessively flammable vegetation within 30 feet of wildfire evacuation and fire fighting access along paved roads and strategic fire trails.
- Areas of invasive plants that will increase the flammability of adjacent natural plant communities or displace more fire safe and fire adapted native species.



French broom or other flammable materials along Kilcare Road are targeted for fuel management.

The list of current geographically based priority projects follows at the end of this section. An intended outcome of the Fire Action Plan is for this list to be updated annually to ensure that efforts are coordinated whenever possible.

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

- Project reduces hazardous fuels that, if left untreated, would generate high intensity burning adjacent to structures or communities at risk, or produce large quantities of airborne burning embers that would carry into communities or other important resources.
- Project reduces hazards along strategic emergency access and evacuation routes, or other critical infrastructure.
- 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 or state lands. Projects to include strategies and funding for on-going maintenance, especially follow-up management of non-native invasive species that could create hazardous fire conditions.



Untreated eucalyptus trees could produce large quantities of airborne burning embers that would carry throughout Sunol or into other important resources.

4.3 Environmental Review and Permitting

The Sunol Action Plan, an Appendix to the Alameda Countywide CWPP, is an advisory document. The Plan was prepared by the Diablo Fire Safe Council in collaboration with public agencies and other interested stakeholders pursuant to the Healthy Forests Restoration Act. The committee was composed of stakeholders (or their representatives) living in at-risk communities, and the contents of this CWPP are opinions of these stakeholders following the procedures outlined in The Wildland Fire Leadership Council's handbook, *"Preparing a Community Wildfire Protection Plan, A Handbook for Wildland Urban Interface Communities."* More specifically, landscape and fire science discussions, WUI designation, priority of at-risk communities, regulatory interpretation and other discussions set forth in this Plan are findings and recommendations by these stakeholders to help protect their communities from wildfires. Because this Plan is an advisory document, the Plan does not legally commit any public agency to a specific course of action or conduct and thus, is not a project subject to CEQA or NEPA. At least twelve counties in California have signed CWPPs without considering the CWPP as a project subject to CEQA.

However, if and once funding is received from local, state or federal agencies and prior to work performed, or prior to issuance of discretionary permits or other entitlements by any public agencies to which CEQA or NEPA may apply, the lead agency must consider whether the proposed activity is a project under CEQA or NEPA. If the lead agency makes a determination that the proposed activity is a project subject to CEQA or NEPA, the lead agency must perform environmental review.

In addition to NEPA or CEQA, it is recognized there are a number of permits that may need to be obtained prior to fuel reduction work including:

- US Army Corps of Engineers: Clean Water Act Section 404 or Rivers and Harbors Act Section 10 Nationwide Permit or Individual Permit

- US Fish and Wildlife Service or National Marine Fisheries Service: Section 7 or Section 10 Consultation
- Regional Water Quality Control Board: Clean Water Act Section 401 or Porter Cologne Act 401 Certification or Water Discharge Requirement
- California Department of Fish and Wildlife: Section 1600 Streambed Alteration Agreement; Fish and Game Code and California Endangered Species Act Streambed Alteration Agreement, CESA 2081 or CESA 2080.1 Permit

Other activities may not require specific agency permits, but may require additional review or specific mitigation measures to comply with:

- Migratory Bird Treaty Act
- National Historic Preservation Act (Advisory Council on Historic Preservation Section 106 review; State Historic Preservation Office)
- Bay Area Air Quality Management District Regulation 5. Open Burning.
- County Agricultural Commission, CAL EPA and Federal EPA on use of herbicides
- Local tree ordinances
- Local stream protection regulations
- Local noise ordinances
- County road encroachment regulations

2017-18 Geographically Based Fuels Reduction Projects and Prevention Strategies

Agency or Group	Project or Strategy	Status
Alameda County	Emergency response to downed trees in County road right-of-ways.	Ongoing Funded (limited)
	Creek clearance work to protect road and bridges	Ongoing Funded (limited)
Alameda County Fire	Technical support and personnel to allied agencies who are conducting projects.	Ongoing Funded
	Sunol CERT Program	Ongoing Funded
CAL FIRE Santa Clara Ranger Unit	Technical support and personnel to allied agencies who are conducting projects. See Unit Plan Santa Clara County.	Ongoing Funded
	LE-100 inspections of private properties for defensible space.	Ongoing Funded
	Coordination of Fire Crews for project work.	Ongoing Funded (limited availability)
	Grant programs	2017 funding
Diablo Fire Safe Council (DFSC)	Defensible Space Program - seed fund for community projects + chipping.	2017 Funding
	Fiscal sponsor for Fire Safe Sunol Coalition	Ongoing Funded
	Outreach and education of wildfire hazards and ignition prevention	2017 Funding
East Bay Regional Park District	High fire danger information - use restrictions	Ongoing Funded
	Integrated Pest Management Program (some treatments also include fuel reduction)	Ongoing Funded
	Grazing for fuel reduction (goats and cattle)	Ongoing Funded
	Hazardous tree removal program	Ongoing Funded
Niles Canyon Railroad	Trackside vegetation clearance	Ongoing Volunteer
Pacific Gas and Electric	High voltage and distribution lines vegetation maintenance.	Ongoing Funded
San Francisco PUC (SF Water)	Vegetation management of watershed lands for fuel reduction	Ongoing Funded
Sunol Fire Safe Coalition	Community Chipping days. Community hours to match federal or state funding.	2017 funding
	Community fuel reduction - dead trees and dying + SNAP program	2017 funding
	Community volunteer projects - hours to match federal or state funding	Ongoing Volunteer

Prioritizing Treatment of Structure Ignitability

5.1 Structure Ignitability

The presence of structures within the WUI exposes both the natural and developed environments 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 contribute to ignitability can reduce the potential of fire loss.

Adoption and enforcement of fire and building codes is an essential part of managing the risk in the WUI. The California State Fire Marshal's Office developed state of the art building standards known as "Chapter 7A" effective January 1, 2008 for use on new building construction within Very High Hazard Severity Zones. Other pertinent codes are included in California Code of Regulations (CCR) Title 24, such as the California Building Code (CBC) (Title 15), California Residential Code (CRC) Part 2.5, California Fire Code (CFC) Part 9, California Reference Standards Code (CRSC) Part 12. The Uniform Fire Code and the Building Code form the basis of the County's fire prevention standards.¹ More detail about these codes, code compliance policies and accepted products can be found at <http://osfm.fire.ca.gov/codedevelopment/wildfireprotectionbuildingconstruction>.

The Alameda County Building Codes for the Sunol area meet the Chapter 7A standard for the high fire hazard areas. However these codes apply for new construction but not for remodeling of existing homes.

For communities such as Sunol that have limited room for new development, it is critical to incorporate fire safety in the general plan safety elements for Alameda County. In 2012, Senate Bill 1241 was signed into law creating new wildfire safety requirements related to land use planning and updates to the Housing and Safety Elements. The Board of Forestry and CAL FIRE will now sign off these plans for compliance. The Alameda County Safety Element was adopted in January 2013 and an amendment adopted April 2017².

No fire department can be expected to prevent all home losses in a WUI setting. The potential for a wildfire to outpace suppression efforts means that all homeowners in WUI areas must accept a high degree of risk, as well as responsibility.

5.2 Key Ignition Resistance Factors

The key to ignition resistance is the design of the structure, the materials used in its construction and the presence of defensible space. Research points to basic factors that affect the risk of a structure burning in a wildfire. A weakness in any of these areas can lead to a similar result – a destroyed or severely damaged home or building. The following information is adapted from several sources including the Insurance Institute for Building and Home Safety. Additional information can be found at their website <https://disastersafety.org/ibhs-risks-wildfire/>

¹ Alameda County Safety Element. Uniform Fire Code is in Section 6.04 of the County Ordinance Code.

² Source: Alameda County Safety Element <https://www.acgov.org/cda/planning/generalplans/documents/SafetyElementAmendmentFinal.pdf> and update http://alamedacounty.granicus.com/DocumentViewer.php?file=alamedacounty_ae82266ec5cd2877fe8891db6c6a87ae.pdf&view=1 Item 9 approved 4/25/17. Accessed 9/7/17

Flammability of the Roof

Research shows that homes with a non-combustible roof and defensible space of at least 30 to 60 feet around the structure have an 85-95% chance of survival in a wildfire.³ At a minimum, a home structure should have a Class A-rated, fire-resistant roof cover or assembly, and preferably one that is self-extinguishing once a falling ember burns out. Self-extinguishing means that the 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, other approaches toward mitigation will fall short of protecting the home.

Roof shape also plays an important role. If the roof has a lot of ridges and valleys or roof segments that intersect with vertical walls your house is more vulnerable to wildfire. Even a Class-A roof is more vulnerable because vegetative debris and wind-blown embers readily accumulate at these intersections and can expose combustible siding, vents or windows as well as the roof to fire.

Wind-blown debris and overhanging trees can lead to gutters full of leaves and needles on your roof and gutter. Research has shown that a home with a gutter full of leaves has enough fuel to ignite a roof, especially if there is a path for the fire to reach any exposed flammable surfaces such as the edges of roof structure or through vents. Keeping gutters clean of debris is especially important if you have a multi-story building or dormer windows where exterior siding would be exposed to flames from debris in gutters.

Structure Openings – Vents, Doors and Windows

Many post-fire surveys of damaged buildings have shown that the attic/roof and foundation vents are key entry points for embers and flames. Areas where there are direct pathways to the attic, house or crawl space provide an easy entry point. This can include vents, soffits or windows prone to breaking when exposed to wildfire conditions (usually unprotected, single pane windows). Window fans, pet doors, and fireplaces chimneys can allow firebrands to enter if left open or unscreened.

Recent fires have shown that screened vents alone may fail to keep embers out of attics or other spaces. Pre-cut fire resistive covers are one solution. New technology combines several features that increase the effectiveness of preventing embers from entering these flammable spaces; however, maintenance issues need to be evaluated when these products are considered.

³ Foote, Ethan. "Wildland-Urban Interface Ignition Resistant Building Construction Recommendations." Community Wildfire Protection Plan Workshops, California Fire Alliance and California Fire Safe Council. August 2004.

IBHS
WILDFIRE PREPAREDNESS

HOW TO PROTECT YOUR ROOF

Did you know roof design, materials and condition can increase or decrease your home's vulnerability to wildfire? Learn how to reduce your risk using the following IBHS guidance.

Time to Re-Roof?
Choose a product with a Class A fire rating when re-roofing. Non-rated products include non-fire-retardant treated wood shakes or shingles. Other roof coverings may have a Class B or C fire rating, but Class A fire-rated roofing products offer the best protection.

Regularly Clean Out Gutters
Combustible debris can accumulate in gutters, increasing the risk of ignition by wind-blown embers.

Seal Gaps Between Roof Covering and Roof Deck
Do gaps or openings exist between the roof covering and the roof deck? If yes, fill the space with either a commercially available "bird stop" material or plug with a mortar mix (the material used between layers of bricks). These materials will minimize the accumulation of debris in this space, which will reduce the risk of embers entering and igniting any accumulated fine fuels.

Remove Vegetative Debris on Roof
Debris can accumulate where the roof covering meets other materials such as siding, so can wind-blown embers. It's important to remove vegetative debris from these locations, even on Class A roofs, as they can be ignited by embers, potentially igniting adjacent material.

Remove accumulated debris from roof and gutters.

BEFORE: Gap between roof cover and roof deck.

AFTER: The "bird stop" material used above can minimize the accumulation of debris. However, note the gaps between the roof cover and "bird stop" material. Seal these gaps to prevent debris from accumulating.

DID YOU KNOW?
Class A is the highest fire rating for roof covering and is the best choice for those living in wildfire-prone areas.

Additional wildfire resources are available at DisasterSafety.org/wildfire

Insurance Institute for Business & Home Safety

Testing has shown that single pane windows are highly vulnerable to breaking when exposed to wildfire conditions. Larger windows are more vulnerable to breaking than smaller windows. Some glass will break after only 1 to 3 minutes exposure to intense heat allowing flames and embers to get inside and further ignite furnishings. Double pane windows with tempered glass for the outside pane can effectively increase the ability to survive a wildfire as well as a long-term solution for energy conservation within the home.

Siding

Siding can be vulnerable for several reasons. If ignited, combustible siding can provide a path for flames to reach other vulnerable components such as windows or eaves. Second, a horizontal or vertical joint in the siding (or at the top or bottom of the material) can provide access for embers or flames into the house. Some materials, such as vinyl siding, will deform and fall off the wall at relatively low heat or flame exposure. If this happens, protection of the structure will depend on the underlying sheathing in the wall assembly.

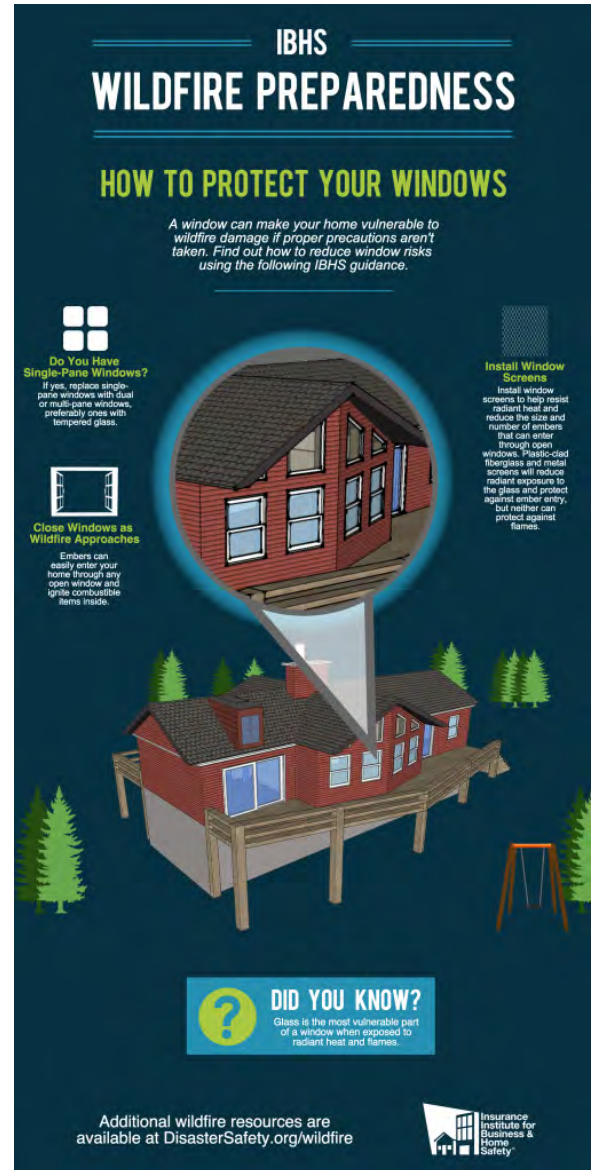
Walls need to resist heat and flames, as well as embers. Non-combustible materials like three-coat stucco, fiber cement, brick and tile resist flames, but don't always resist heat and embers. Therefore, incorporating sheet-rock or other non-combustible sheathing material into the wall assembly underneath the exterior material will improve performance. Regardless of wall material choice, all gaps at the top or bottom edges, or at lap joints must be sealed or caulked to reduce the potential for ember intrusion. Embers can also accumulate at the foundation if the lower edges of the siding material is left unsealed. The more complicated the lap joint, such as tongue-and-groove or shiplap, the better the resistance from flame or embers. Attention to construction detail, such as use of metal flashing where fences or decks attached to walls can prevent accumulation of debris and slow ignition.

Overhanging Structures

Eaves, alcoves, entry ways, patio covers, decks, porches, and exterior stairways all have the potential to "trap" heat under them or create areas where burning embers can accumulate. Openings or gaps in blocking also result in areas where wind-blown embers can become lodged and ignite debris or wood.

Decking

Decks, patios and porches can become a pathway for fire into a home. Most are attached to a home and adjacent to doors, windows, sliding glass doors or other openings and combustible siding. Materials used to build the deck, the furniture or other items on top of the deck, as well as the items stored beneath them, all can increase the ease of structure



ignition. Decks and porches can be particularly vulnerable when the home is sited on a slope or surrounded by vegetation where flame lengths can reach more than 30 feet, exposing even elevated decks.

The combustibility of wood deck boards is common knowledge; however, the performance of plastic composite decking products is less well known. Some manufacturers are incorporating fire retardant chemicals into these products. Information can be found at the California State Fire Marshal Wildfire Protection Building Construction website⁴. Specific products also can be searched. In general, large structural members will resist ignition better than small wood boards.

Fuel Hazards

Any fuel source that will bring flames close the structure can be a hazard. Examples of fuel hazards include:

- Flammable plants close to a wall
- Dead foliage that builds up underneath succulents or other normally fire-resistant plants
- Certain types of mulch and
- A combustible fence located close enough to allow flames to contact the overhanging roof above.

Fuel sources within the “defensible space” area that support a high intensity spot fire are especially problematic. These include: any trees that can quickly become a fire torch (such as an untrimmed palm tree) a wooden trellis made of small lumber sizes, playground equipment made with wood pieces, or a pile of firewood on the ground or in a wheelbarrow.

Access to the property and infrastructure

If firefighters and their equipment cannot gain access to the property and a water source, there is little chance they can protect the home. Access also affects the ability of the homeowner to evacuate the site should the need arise. In some areas these narrow roads can become constricted with on-street parking, temporary lane closures, encroachment into the road right of way by construction or by overgrown roadside vegetation. The communities and neighborhoods (such as those in Sunol) served by only one road are at increased risk. In Sunol, both public and private bridges provide access across rivers, local creeks and drainages. Year-round homeowner maintenance of private roads and bridges is critical as they usually are the only access to residences. PG&E or CAL FIRE may assist with

⁴ osfm.fire.ca.gov/codedevelopment/wildfireprotectionbuildingconstruction. Building materials listing at osfm.fire.ca.gov/licensinglistings/licenselisting_bml_searchcotest



storm-downed trees, but ultimately it is the homeowner or homeowner association that must ensure access on private roads.

Similarly, maintenance of signage, home addresses, water hydrants and other public infrastructure is critical to support firefighters. Provision of supplemental water tanks (with suitable valves) or other supplemental water sources, such as swimming pools or stock ponds, can help meet emergency water supply.

Surrounding topography and location of structures

Adjacent steep slopes and topographic features, such as natural chimneys or chutes, can intensify fire behavior. Structures located mid-slope or at the top of a steep slope are more likely to be damaged. A steeper slope will result in a faster moving fire, with longer flame lengths. A home with little setback from the slope will need to be more aggressive with vegetation treatment and maintenance.

Weather and “Red Flag” Conditions

Strong winds blowing a fire toward a house will have the same effect as being located on a slope. The fire will move faster and burn more intensely with taller flame lengths, blowing embers in front of the fire during periods of high winds. These high winds are often accompanied with an increase in temperature and decrease in relative humidity creating “Red Flag” conditions that further dry vegetation and wood building materials. Local topography often funnels wind and multiplies regional weather patterns.

5.3 Improving Structure Survivability within the WUI

Protecting structures exposed to wildfires is not a simple matter. Structures can ignite due to direct exposure to flames, from radiated heat or from embers. All three sources must be addressed in order to improve the survivability of structures within the WUI. It is recommended that the following measures be taken:

1. Reduce the amount of heat the structure will be exposed to through managing vegetation, creating defensible space and construction design.
2. Limit the time the structure is exposed to heat through vegetation management. Establishing a low fuel “home ignition zone” immediately adjacent to structures and creating “defensible space” in the first 30 - 100 feet from the house is critical.
3. Use fire resistant building materials and construction methods.
4. Remove combustible materials stored near structures.

Creating an effective defensible space around the structure and maintaining a fire safe landscape are critical to minimizing the threat of ignition. The homes Sunol are subject to regulations that require compliance with defensible space standards.

The selection of a building’s site and materials has direct relationship to its survivability. New structures need to be located to reduce their exposure to the most intense part of a wildfire that might sweep across the site. There also are many noncombustible and fire resistive materials and treatments available to better protect structures and inhibit fire spread. However, these have limited application to Sunol since there is little new construction in the community, most comes in the form of remodeling.

5.4 Retrofitting an Existing Structure for Survivability

The areas at highest risk from wildfire in Sunol are largely built out. In the Sunol area new construction will occur as infill between existing homes, so the new building codes offer limited opportunities to increase structure survivability. Identifying opportunities to retrofit

existing homes and businesses is key to reducing losses due to wildfire. Outreach and education were identified as priorities, as the new building codes for ignition resistant construction are not required for remodeling of existing structures. Funding assistance for retrofit of existing structures has been non-existent in the past. In 2011, FEMA provided two grants to assist with wood shake roof replacement (Lake Tahoe Basin FEMA shake roof program and San Bernardino Mountains FEMA wood shake roof replacement assistance).

Priority Action: **Education on Home Ignitions and Training on Structure Retrofit**

Recommendation: Education on home ignitions and training related to retrofit of existing homes and structures to improve their survivability. Identify what can be done without major remodel. Evaluate new technologies, materials and products that are available for retrofit and the pros and cons.

Implementation Actions:

- Find funding for education and training program on ignition resistance
- Develop an educational booklet of simple things homeowners can do to make their home ignition resistant:
 - Chimney cleaning
 - Wood stacking and storage
 - Smoke detectors
 - Propane tank (location and maintenance)
 - Shut off valves for water and gas
 - Access gates and garage door emergency operations
 - Water tanks and other supplemental water
 - Bridges and access routes.
- Explore dissemination and delivery methods, including building permit counters.
- Consider becoming a “FIREWISE” community. Some insurance companies recognize this national designation with coverage or discounts.

Lead and Partners: No lead identified. Institute for Building and Home Safety has information and research. State Fire Marshal’s Office has materials and product information related to Code 7A.

Time frame: On-going

Estimated Funding Need: \$\$ for training and materials.

The Insurance Institute for Building and Home Safety (IBHS) continues to sponsor building safety research that leads to real-world solutions. They have identified key areas at risk and offer retrofit ideas. The following table has been adapted from IBHS Wildfire Home Assessment and Checklist: see disastersafety.org/wp-content/uploads/wildfire-checklist_IBHS.pdf for additional detailed information. The information has been generalized for planning purposes. Consult building professionals and local building departments for more detail related to your structure.

Retrofitting Existing Structures to Increase Wildfire Survivability

<i>Survivability Threat</i>	<i>Retrofit</i>	<i>Relative Cost/ Ease</i>
Roof – the most vulnerable part of your home		
Combustible roof.	Professional roof inspection to determine if covering and assembly are not “Class A.” Need to remove old roofs.	\$\$\$\$ Contractor
Gaps at edges or ridges or other openings in tile (clay) or metal roof	Install bird stops in gaps at edges or ridges. Plug any roof openings that are not functioning as vents	\$\$-\$ Contractor or Experienced DIY
Combustible siding where lower level roof (first floor) meets upper wall or upper level roof (second floor)	Replace siding with more fire resistant material and underlayment	\$\$-\$\$\$\$ Contractor or Experienced DIY
Vegetative debris accumulated on roof and gutters	Routinely remove from roof. For complex steep, roofs may consider hiring professional.	Free - \$ Agile homeowner
Vents – vulnerable to wind-blown embers and flames		
Unscreened or unprotected vents (in foundations, crawl spaces, wall, dryer vents or gable end vents)	Attach screens (1/8” opening) or prepare solid covers to install when a wildfire is approaching. Use caution when installing or removing covers on upper story vents.	\$ Agile homeowner
Planning to replace vents	Several types of new vent covers on market designed to reduce risk of wind-blown embers. See http://osfm.fire.ca.gov/codedevelopment/wildfireprotectionbuildingconstruction	\$\$ Experienced DIY
Gutters – fuel for falling embers could lead to fire in attic		
Vegetative debris accumulated in gutters	Clean gutters on regular gutters. For complex steep, roofs may consider hiring professional.	Free - \$ Agile homeowner
Tired of cleaning gutters	Gutter covers help manage debris build up. Can result in accumulation of debris on roof behind gutter – so some maintenance may still be required.	\$\$
Open Eaves or Projections – vulnerable to flame or embers could lead to fire in attic		
Open eave construction or visible gaps between blocking and rafter tails.	Plug openings with durable caulk or install non-combustible covering over blocking to eliminate openings. Alternatively box in eaves. This method may require vents to remove excess moisture.	\$\$-\$\$\$ Contractor or Experienced DIY
Combustible soffit material or materials used to box in eaves (such as wood boards, untreated plywood).	Replace with non-combustible material such as fiber cement product or exterior fire retardant treated plywood. Vinyl soffit material not recommended as it will deform and sag causing gaps.	\$\$-\$\$\$ Contractor or Experienced DIY

Retrofitting Existing Structures to Increase Wildfire Survivability

<i>Survivability Threat</i>	<i>Retrofit</i>	<i>Relative Cost/ Ease</i>
Windows – open windows are most vulnerable. The vulnerable part of a closed window is the glass.		
Single pane windows	Install dual pane windows. Preferred are multi- pane, insulated glass with added benefit of greater energy conservation Multi-pane (double or triple), tempered glass is 4 times more resistant to breaking in wildfire. Cost increases are relative to the opening size.	\$\$\$ - \$\$\$\$ Contractor
No window coverings to protect from glass breakage	Screens, shutters or pre-made covers will protect window from embers, debris and radiant heat exposure. Covers would be installed prior to evacuation. Least expensive alternative is ½ plywood but need to clear area of combustible material that could ignite plywood.	\$\$-\$ Contractor or Experienced DIY
Dome type skylights vulnerable to breakage	Replace with flat, tempered glass skylight. Remove vegetation and accumulated debris next to and around skylight	\$\$-\$ Contractor or Experienced DIY
Siding – fire from ignited siding can spread into stud cavity and up wall into eave, soffit or attic as well as expose window to flames		
Combustible siding	Re-siding is expensive but can be worthwhile if building is 15 feet or closer to adjacent properties or if inadequate defensible space. Replace with non-combustible siding so vertical flame spread will not be a problem unless you have other combustible materials of highly flammable plants adjacent to wall. Siding products and assemblies that are better able to resist penetration of flames into stub cavity can be found at http://osfm.fire.ca.gov/codedevelopment/wildfireprotectionbuildingconstruction	\$\$\$\$ Contractor
Gaps in joints of siding panels or simple laps joint or plain bevel joint	Panel products have fewer lap joints and can be considered less vulnerable. Wood siding shingles and plain bevel lap joints are most vulnerable.	\$\$\$\$ Contractor
Foundations – post and beam style foundation can result in vulnerable crawl spaces		
Open crawl space and post and beam style foundations	Enclose foundation area with non-combustible skirting material. Be sure to address moisture management issues through drainage and ventilation. Remove combustible materials stored in the crawl space or under the building.	\$\$\$\$ Contractor or Experienced DIY

Retrofitting Existing Structures to Increase Wildfire Survivability

<i>Survivability Threat</i>	<i>Retrofit</i>	<i>Relative Cost/ Ease</i>
Decks can lead a wildfire directly into you home		
Deck boards of combustible material	Replace deck boards with fire or ignition resistant material. Learn more about choosing wildfire-resistant decking at http://osfm.fire.ca.gov/codevelopment/wildfireprotectionbuildingconstruction	\$\$\$-\$\$\$\$ Contractor or Experienced DIY
Combustible materials stored under or on top of deck	Move material to an enclosed area away from structure. If you choose to enclose underside of deck be sure to address moisture management issues through drainage and ventilation	Free-\$\$ Experienced DIY
Enclose area below deck to reduce accumulation of wind blown debris or embers	Use solid non-flammable material (fiber cement product or exterior fire retardant treated plywood; not lattice to enclose area below decks. Be sure to address moisture management issues through drainage and ventilation	\$\$-\$\$ Experienced DIY
Garages can lead a wildfire directly to combustible materials that can threaten you home		
Garage doors can provide embers access to combustible materials	Install weather seal at the perimeter of garage doors to reduce ember penetration.	\$\$-\$\$ Experienced DIY
Fencing can lead a wildfire directly into you home		
Combustible fencing that attaches directly to the home	Replace combustible fencing with a non-combustible section that is at least 5 feet long. Consider chin link gate, wood frame with metal mesh infill or other non-combustible material. Do not allow climbing vegetation to grown on fence.	\$\$-\$\$ Experienced DIY

Sustaining the Plan

6.1 Updates of the Wildfire Action Plan

To ensure long-term success, the Sunol Wildfire Action Plan needs to include a method for changing, updating and revising the plan. As partners learn from successes and challenges, they may identify new actions or propose a shift in how decisions are made or actions accomplished.

It is important to recognize that many communities may lack resources to engage in a complex planning, monitoring and adaptive management process. The collaborative planning effort for the Sunol Action Plan was funded through a generous grant; however, similar funding is unlikely to be available for update efforts. Regardless, streamlined communications can leverage the initial planning effort to maintain a functioning collaboration and provide updates.

Project partners have agreed to the following roles in sustaining the Plan:

- Diablo Fire Safe Council: Communicate electronically with stakeholders and other partner agencies collecting information for annual status of the plan. Annual information will include an update of the status of geographically based fuel reduction projects and prevention strategies listed in Section 4 Prioritizing Fuel Reduction Treatments and of the priority action projects identified in Sections 3, 4 and 5. Updated information will be posted on the DFSC website and sent electronically to Fire Action Plan planning participants and other interested stakeholders.
- Alameda County Association of Fire Chiefs: The Alameda County Association of Fire Chiefs provides a forum for interagency information sharing across the many fire jurisdictions. They are in the unique position to continue to foster inter-jurisdictional cooperation on WUI issues and emergency response.
- Alameda County Fire Department: The Alameda County Fire Department staff provides regular updates to the Sunol Citizen Advisory Council. Information shared will be shared with DFSC, which will incorporate the information into the Fire Action Plan updates.
- East Bay Regional Park District: As part of the annual budget development process EBRPD reports the prior year's fuels management accomplishments and present the proposed program of work for the next year. EBRPD works with cooperators to plan and conduct work in a way that improves fire protection and program efficiencies for both EBRPD and the cooperator. Information will be shared with DFSC, which will incorporate the information into the Fire Action Plan updates.
- CAL FIRE: The Santa Clara Unit Strategic Plan updates provide opportunity to view wildfire protection for Contra Costa County in context with neighboring Alameda, Santa Clara and San Joaquin Counties. Contra Costa County is Battalion 6 of seven geographically based battalions in CAL FIRE's Santa Clara Unit. The Santa Clara Unit collects information from the various stakeholders to update their unit plan. The most recent plan was completed in May 2016. CAL FIRE staff provides regular updates to the Sunol Citizen Advisory Council. Each

update of the unit plan will be shared with DFSC, which will incorporate the information into the Fire Action Plan updates.

- Sunol Fire Safe Coalition: Sunol Fire Safe Coalition works closely with the community and DFSC to provide project coordination for fuel hazard reduction projects as funding is available. As needs and capacity changes they will share information with DFSC, which will incorporate the information into the Fire Action Plan updates.
- Other Partners: **Note: This section to be further developed as the plan is implemented.**

6.2 Monitoring, Evaluating and Adapting Strategies

The following framework offers strategies to monitor, evaluate and adapt the elements of the Fire Action Plan¹. Strategies might include:

- Only monitor what matters. Partners should identify key goals and objectives and make decisions to monitor what is most important to the long-term sustainability of their Fire Action Plan.
- Tracking accomplishments and identifying the extent to which Plan goals have been met. This might include development of “success stories.” (Examples can be found at www.diablofiresafe.org/current.html)
- Examining collaborative relationships and their contributions to Fire Action Plan implementation, including existing participants and potential new partners.
- Identifying actions and priority fuels reduction projects that have not been implemented and determining why.
- Setting a course for future actions and updating the plan.
- Evaluating the resources necessary for successful Plan implementation. Identifying needed community and homeowner outreach and education programs.

In conducting an evaluation, it is important to think critically about the kind of information that is accessible, what is most important to evaluate and how it might influence future priority activities. For example, the number of homes in a community with an evacuation plan provides insight into the level of preparedness among the general public, but may be difficult to obtain. Each action team should adapt the evaluation process; how information and results are documented with an eye toward refinements of the Fire Action Plan to meet their own needs. The following ideas for monitoring and evaluation are provided as suggestions.

6.2.1 Evaluating Information, Education and Collaborative Planning

Understanding the extent to which information, education and collaborative planning have been maintained, grown or diminished through implementation of the Fire Action Plan will

¹ Evaluation framework adapted from: Community Wildfire Protection Plan Evaluation Guide. Prepared by Resource Innovations, Institute for a Sustainable Environment. August 2008. University of Oregon. http://static.colostate.edu/client-files/csfs/pdfs/eval_9-8-08_web.pdf Accessed 2/28/2017.

help identify strategies to strengthen future efforts. Monitoring and evaluation might address any of the following:

Programs: What kind of information, education and public involvement has the Plan or its implementation fostered? Public meetings, trainings, field trips, demonstration projects, household visits, youth engagement, community events, clean up days.

Public Awareness: What kind of change in public awareness about wildfire has resulted from the plan or implementation actions? Knowledge of fire policies and regulations; change in number and type of human caused wildfires; awareness of local efforts to increase emergency preparedness; outreach efforts or techniques.

Activities: What kinds of activities have citizens taken to reduce wildfire risks as a result of the plan? Defensible space, fuel reduction, household emergency plans, woody debris disposal.

New information: Are there new or updated data sources that might change the risk assessment and influence priorities? Changes to process used to identify fuels treatments priorities? New wildfire related policies or ordinances? Index to access specific information?

Involvement: Who has been involved with the Fire Action Plan development and implementation? How have relationships changed or grown? What expertise or resources did partners bring? Numbers and types of partners (local, regional, state)? Accomplishments or challenges?

Implementation Capacity: How has the collaborative process assisted in implementing the Fire Action Plan and building capacity for the community to reduce wildfire risk? More partnerships, increased financial resources, increases in programs or activities.

Engagement: Have the partners involved in the planning process remained engaged in the implementation? Have new partners become involved?

6.2.2 Evaluating Suppression Capability and Emergency Preparedness

Comprehensive emergency management plays a key role in reducing a community's risk from wildfire and other hazards. Integrating federal requirements for multi-hazard mitigation within the Fire Action Plan efforts can help access federal funds through FEMA and Department of Homeland Security.

Alignment: Is the Plan aligned with emergency operations plans and other hazard mitigation plans? Addressing National Incident Management System (NIMS), State Emergency Management Plan (SEMS) and Incident Command Training (ICS).

Evacuation Planning: Does the Plan include an evacuation plan? Has the plan been tested? Are there local neighborhood evacuation plans, information about special population needs, animal and livestock preparedness, communication systems, resources list?

6.2.3 Evaluating Fuel Reduction

Monitoring hazardous fuels reduction projects on private and public lands will assist stakeholders in understanding the extent to which risk reduction goals and native habitat preservation goals are being accomplished. Monitoring these projects allows stakeholders to better understand the extent of resources needed to accomplish and maintain goals, as well as to help in identifying future priorities.

Fuel Reduction on Public Lands: How many acres have been treated on public land that had been identified as high priority projects? Total number of acres treated; number and percentage in WUI, number and percentage within Fire Action Plan priority area; treatment types.

Fuel Reduction on Private Lands: How many acres have been treated on private land that had been identified as high priority projects? Total number of acres treated; treatment types; number of homes with defensible space; number and percentage treated in low income communities/ vulnerable populations.

Compliance: How many homes are in compliance with local fuel reduction requirements?

Joint Projects: How many projects have spanned ownership boundaries including public and private lands?

Jobs: Economic development and local jobs resulting from fuels reduction or restoration activities. Number of green tons/ volume of woody fuel utilized. Number of part-time/ full time jobs. Percentage of local labor.

Environmental Protection: Ecological monitoring to assess environmental outcomes and maintenance requirements. Community surveys using photo points. Vegetation/ invasive weed surveys.

6.2.4 Evaluating Reducing Structure Ignitability

Monitoring structure survivability of existing structures and new developments span a wide range of actions including retrofit, codes, public knowledge and emergency response capability.

Fire Statistics: Wildfire loss in year reporting on. Number of fire starts within high hazard areas. Number of human caused fires. Number of homes damaged/ lost to wildfire.

Codes and Regulations: Current codes and regulations for wildfire hazards. Building codes (Chapter 7A or better). How is new development increasing in high hazard areas. Requirements for new developments. Mechanism for long term open space fuel management. Infill requirements. Infrastructure design requirements (roads, sprinklers, utilities = NFPA standards).

Public Education: Public knowledge and understanding about structure ignitability. Homeowner education on how to reduce ignitability. How many homes have been retrofitted. Number and percentage of homes in high hazard area included in fire district.

Response Capabilities: Changes of local fire agency response capability. Increase in certified fire fighters/ wildfire training. Upgraded or new fire suppression equipment. Changes in response time, infrastructure, access routes.

Signature Page

Appendix Fire Action Plan An Appendix to the Alameda Countywide Community Wildfire Protection Plan

Mutual Agreement

This Fire Action Plan developed for Sunol as an Appendix to the Contra Costa Countywide Community Wildfire Protection Plan:

- Was collaboratively developed. Interested parties and agencies managing land in the Sunol area have been consulted.
- Identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatments that will protect community members and values at risk.
- Recommends measures to reduce ignitability of structures throughout the area addressed by the plan.

The following letters are from the entities that mutually agree with the contents of this Fire Action Plan.

Appendix Approved by Resolution
Alameda Board of Supervisors
Date: January 23, 2018

Alameda Countywide Community Wildfire Protection Plan
Approved by Resolution
Alameda County Board of Supervisors
Tuesday, June 5, 2012



Alameda County Fire Department

6363 Clark Avenue · Dublin, CA 94568

Tel (925) 833-3473 · (510) 632-3473 · Fax (925) 875-9387

www.acgov.org/fire

DAVID A. ROCHA
Fire Chief

September 29, 2017

SERVING:

City of Dublin

City of Emeryville

City of Newark

City of San Leandro

City of Union City

Lawrence Berkeley
National Laboratory

Lawrence Livermore
National Laboratory

Unincorporated Areas
of Alameda County

Alameda County
Regional Emergency
Communications Center
"Accredited Center
of Excellence"

Board of Directors
Diablo Fire Safe Council
P.O. Box 18616
Oakland, CA 94619

Dear Directors:

We are pleased to support the Sunol Wildfire Action Plan: an Appendix to the Alameda Countywide Community Wildfire Protection Plan (CWPP) to fulfill the standards established by the Federal Healthy Forest Restoration Act (HFRA). The plan will act as a multi-year guiding document that will facilitate implementation of present and future wildfire hazard mitigation measures.

The Community Wildfire Protection Plan developed for the Sunol community:

- Was collaboratively developed. Interested parties and agencies managing land in the Sunol area have been consulted.
- Identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatments that will protect community members and values at risk.
- Recommends measures to reduce ignitability of structures throughout the area addressed by the plan.

We mutually agree with the contents of this Community Wildfire Protection Plan.

Sincerely,

David A. Rocha
Fire Chief

**DEPARTMENT OF FORESTRY AND FIRE PROTECTION**

15670 MONTEREY STREET
MORGAN HILL, CA 95037
(408) 779-2121
Website: www.fire.ca.gov



November 15, 2017

Board of Directors
Diablo Fire Safe Council
P.O. Box 18616
Oakland California 94619

Dear Directors:

We are pleased to support the Sunol Wildfire Action Plan: It is designed to be an Appendix to the Alameda Countywide Community Wildfire Protection Plan (CWPP) to fulfill the standards established by the Federal Healthy Forest Restoration Act (HFRA). The plan will act as a multi-year guiding document that will facilitate implementation of present and future wildfire hazard mitigation measures.

The Community Wildfire Protection Plan was developed for the Sunol community:

- Was collaboratively developed. Interested parties and agencies managing land in the Sunol area have been consulted.
- This plan identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatments that will protect community members and values at risk.
- This plan recommends measures to reduce ignitability of structures throughout the area addressed by the plan.

We mutually agree with the contents of this Community Wildfire Protection Plan.

Sincerely,

A handwritten signature in blue ink, appearing to read "Derek J. Witmer".

Derek J. Witmer
Unit Chief
CAL FIRE/SCU

November 16, 2017

Alameda County Board of Supervisors
1221 Oak Street, Suite 536
Oakland, CA 94612

Dear Supervisors,

We are pleased to support the Sunol Wildfire Action Plan: An Appendix to the Alameda Countywide Community Wildfire Protection Plan (CWPP) to fulfill the standards established by the Federal Healthy Forest Restoration Act (HFRA). The plan will act as a multi-year guiding document that will facilitate implementation of present and future wildfire hazard mitigation measures.

The Community Wildfire Protection Plan developed for the Sunol community:

- Was collaboratively developed. Interested parties and agencies managing land in the Sunol area have been consulted.
- This plan identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatments that will protect community members and values at risk.
- This plan recommends measures to reduce ignitability of structures throughout the area addressed by the plan.

We mutually agree with the contents of this Community Wildfire Protection Plan and encourage your support of the Plan.

Respectfully submitted,

Sunol Community Advisory Council



PO Box 303
Sunol, CA 94586

October 18, 2017

Board of Directors
Diablo Fire Safe Council
P.O. Box 18616
Oakland California 94619

Dear Directors:

We are pleased to support the Sunol Wildfire Action Plan: An Appendix to the Alameda Countywide Community Wildfire Protection Plan (CWPP) to fulfill the standards established by the Federal Healthy Forest Restoration Act (HFRA). The plan will act as a multi-year guiding document that will facilitate implementation of present and future wildfire hazard mitigation measures.

The Community Wildfire Protection Plan developed for the Sunol community:

- Was collaboratively developed. Interested parties and agencies managing land in the Sunol area have been consulted.
- This plan identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatments that will protect community members and values at risk.
- This plan recommends measures to reduce ignitability of structures throughout the area addressed by the plan.

We mutually agree with the contents of this Community Wildfire Protection Plan.

Yours truly,

A handwritten signature in black ink that reads "Lynn Kozma".

Lynn Kozma, Sunol CERT



Sunol FireSafe Coalition (SFSC)

Community Notice

**Help build the
Sunol**

Community Wildfire Protection Plan

We want your input on wildfire risks and hazards. Share your concerns and local knowledge.

Participate in our short survey at

<http://fluidsurveys.com/surveys/dfsc/sunol-wildfire-action-plan-2017/>

or visit our website

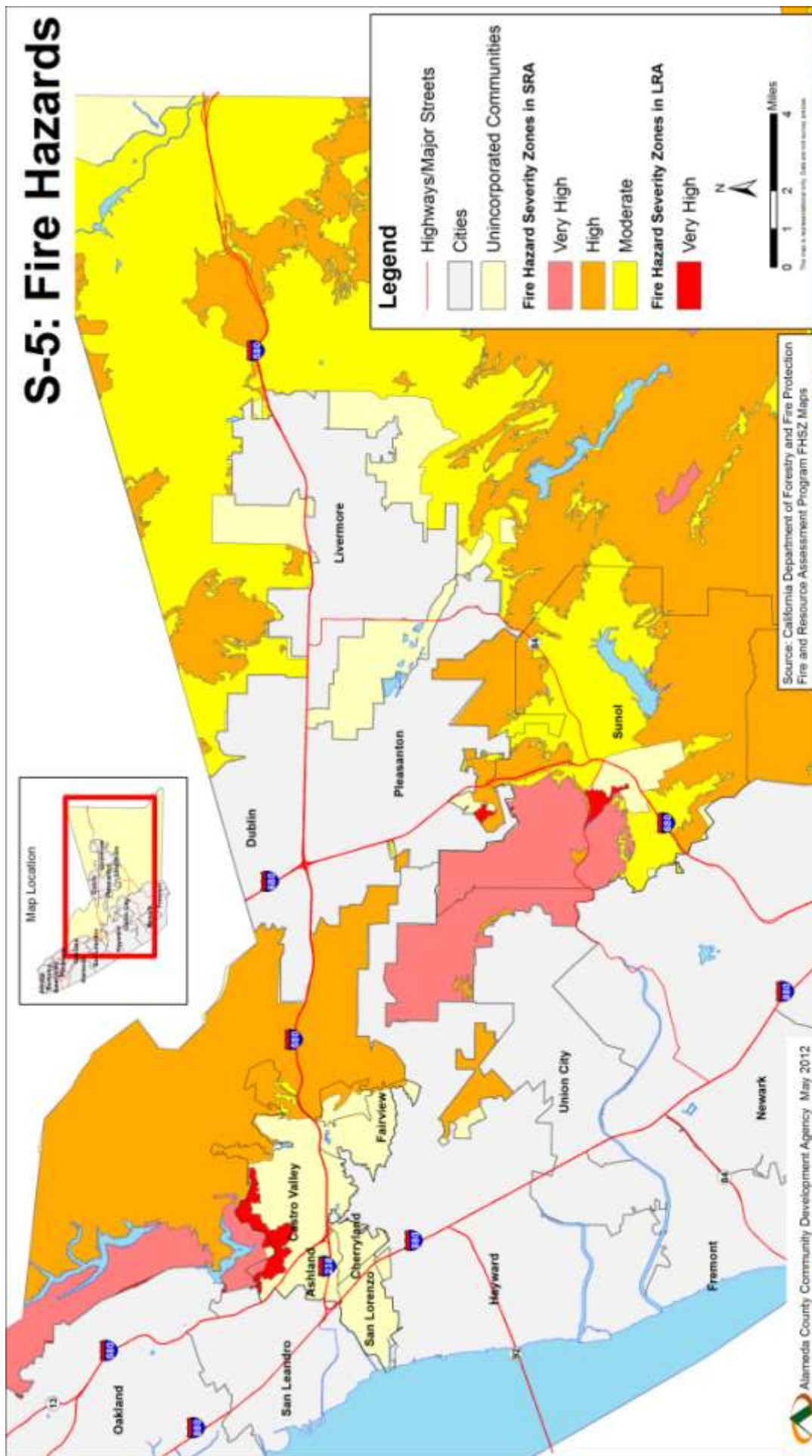
www.diablofiresafe.org.

A Community Wildfire Protection Plan (CWPP) is a collaboratively developed plan that identifies wildland fire hazards, prioritizes way to reduce those hazards and recommends measures for homeowners and communities to reduce ignitability of structures. The Diablo Fire Safe Council is working with Alameda County, Alameda County Fire Department, Cal Fire, homeowner groups and others to develop such a plan for the Sunol area.

For more information contact

Cheryl Miller, (510) 282-1265 or email DFSCMiller@comcast.net





**Plant Species Considered for Inclusion as Focal
Species for the East Alameda Conservation Strategy**

Species	Status ^a		Criteria ^b				Recommended Focal Species ^c	Notes	
	Federal	State	CNPS	Range	Status	Threat			Data
<i>Allium sharsmithiae</i> Sharsmith's onion	—	—	IB.3	Y	N	N	Y	N	Occurs in remote part of study area and is likely under little or no threat. Mixed serpentine chaparral will be addressed at the natural community level which will benefit species.
<i>Amsinckia grandiflora</i> large-flowered fiddleneck	FE	SE	IB.1	Y	Y	N	Y	N	One occurrence on Lawrence Livermore Lab property appears to be extirpated; no take designation requested by CNPS; this is a no take plant in the ECCC HCP/NCCP
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	—	—	IB.2	Y	N	N	N	N	Species not expected to become listed in near future; no local threats known; occurrence location not specific
<i>Arctostaphylos pallida</i> pallid manzanita	FT	SE	IB.1	N	Y	N	N	N	Does not occur in study area
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	—	—	IB.2	Y	N	N	N	N	Species not expected to become listed in near future; only known occurrence in study area is extirpated
<i>Atriplex cordulata</i> Heartscale	—	—	IB.2	Y	N	Y	N	N	Not expected to become listed in near future; taxonomic identity of study area populations in question
<i>Atriplex depressa</i> Brittlescale	—	—	IB.2	Y	N	Y	N	N	Not expected to become listed in near future; taxonomic identity of study area populations in question
<i>Atriplex joaquiniana</i> San Joaquin spearscale	—	—	IB.2	Y	Y	Y	Y	Y	Covered in the East Contra Costa County HCP/NCCP
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i> big-scale balsamroot	—	—	IB.2	Y	N	N	Y	N	Only occurrence in study area appears to be extirpated
<i>Blepharizonia plumosa</i> big tarplant	—	—	IB.1	Y	Y	Y	Y	Y	Not expected to become listed in near future; road maintenance threatens some occurrences; covered in the East Contra Costa County HCP/NCCP
<i>California macrophylla</i> round-leaved filaree	—	—	IB.1	Y	Y	N	N	N	No local threats; occurrence locations not specific; covered in the East Contra Costa County HCP/NCCP
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern	—	—	IB.2	N	Y	N	N	N	No occurrences in study area; covered in the East Contra Costa County HCP/NCCP
<i>Campanula exigua</i> chaparral harebell	—	—	IB.2	Y	Y	N	N	N	Not expected to be listed in near future; no local threats; occurrence locations not specific; covered in the Santa Clara Valley HCP/NCCP

Species	Status ^a		Criteria ^b				Recommended Focal Species ^c	Notes
	Federal	State	CNPS	Range	Status	Threat		
<i>Caulanthus coulteri</i> var. <i>lemmonii</i> Lemmon's jewelflower	—	—	IB.2	Y	N	N	N	Not expected to be listed in near future; no local threats; occurrence locations not specific
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	—	—	IB.2	Y	Y	Y	Y	Populations concentrated in areas subject to possible future development
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	—	—	IB.2	N	N	N	N	No occurrences in study area
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	FE	—	IB.1	N	Y	N	N	No occurrences in study area
<i>Cirsium fontinale</i> var. <i>campylon</i> Mt. Hamilton fountain thistle	—	—	IB.2	Y	N	N	Y	Occurs in remote part of study area and is likely under little or no threat. Serpentine communities, including seeps will be conserved at the community level.
<i>Clarkia concinna</i> ssp. <i>automixa</i> Santa Clara red ribbons	—	—	4.3	Y?	N	N	N	One non-specific occurrence in the Cedar Mountain region from 1903.
<i>Clarkia franciscana</i> Presidio clarkia	FE	SE	IB	N	Y	N	N	No occurrences in study area
<i>Cordylanthus maritimus</i> ssp. <i>palustris</i> Point Reyes bird's-beak	—	—	IB.2	Y	N	N	N	No occurrences in study area
<i>Cordylanthus mollis</i> ssp. <i>hispidus</i> hispid bird's-beak	—	—	IB.1	Y	Y	N	Y	Only occurrence in study area in Springtown Wetlands Preserve, threats from potential changes in local hydrology and from recreational uses
<i>Cordylanthus palmatus</i> Palmate-bracted bird's-beak	FE	SE	IB.1	Y	Y	Y	Y	Occurrences in study area in Springtown Wetlands Preserve and on adjacent private lands; threats from potential changes in local hydrology and from recreational uses
<i>Coreopsis hamiltonii</i> Mt. Hamilton coreopsis	—	—	IB.2	Y	N	N	Y	Two recorded occurrences in the study area; not expected to become listed in near future
<i>Deinandra bacigalupii</i> Livermore Valley tarplant	FE	—	IB.1	Y	Y	Y	Y	Very rare within study area; high potential for impacts on populations
<i>Delphinium californicum</i> ssp. <i>interius</i> Hospital Canyon larkspur	—	—	IB.2	Y	N	N	N	Occurs in remote part of study area; not expected to become listed in near future
<i>Delphinium recurvatum</i> recurved larkspur	—	—	IB.2	Y	Y	Y	Y	One occurrence in study area; covered in the East Contra Costa County HCP/NCCP
<i>Dirca occidentalis</i> western leatherwood	—	—	IB.2	N	N	N	N	No occurrences in study area

Species	Status ^a		Criteria ^b				Recommended Focal Species ^c	Notes
	Federal	State	CNPS	Range	Status	Threat		
<i>Eriogonum luteolum</i> var. <i>caninum</i> Tiburon buckwheat	—	—	IB.2	N	N	N	N	No occurrences in study area
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	—	—	IB.1	N	N	N	N	No occurrences in study area; taxonomic problems
<i>Eschscholzia rhombipetala</i> diamond-petaled California poppy	—	—	IB.1	Y	Y	N	Y	Known occurrences at Lawrence Livermore National Lab; no local threats (other than small population size)
<i>Fritillaria falcata</i> talus fritillary	—	—	IB.2	Y	N	N	N	Occurs in remote part of study area and is likely under little or no threat. Mixed serpentine chaparral will be addressed at the natural community level which will benefit species.
<i>Fritillaria liliacea</i> fragrant fritillary	—	—	IB.2	N	N	N	N	No occurrences in study area
<i>Helianthella castanea</i> Diablo helianthella	—	—	IB.2	Y	Y	N	Y	Occurs in remote part of study area; no known threats; covered in the East Contra Costa County HCP/NCCP
<i>Hesperolinon</i> sp. nov. " <i>serpentinum</i> " Napa western flax	—	—	IB.1	Y	N	N	Y	Not a published species; not expected to become listed in near future
<i>Hoita strobilina</i> Loma Prieta hoita	—	—	IB.1	N	Y	N	N	No occurrences in study area; covered in the Santa Clara Valley HCP/NCCP
<i>Holocarpha macradenia</i> Santa Cruz tarplant	FT	SE	IB.1	N	Y	N	N	No occurrences in study area
<i>Horkelia cuneata</i> ssp. <i>sericea</i> Kellogg's horkelia	—	—	IB.1	N	N	N	N	No occurrences in study area
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE	—	IB.1	N	Y	N	N	No occurrences in study area
<i>Legenere limosa</i> Legenere	—	—	IB.1	Y	N	N	Y	Occurs in remote part of study area; not expected to become listed in near future
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	—	SR	IB.1	Y	Y	N	Y	One population at edge of study area; no known threats
<i>Monardella villosa</i> ssp. <i>globosa</i> robust monardella	—	—	IB.2	N	N	N	N	No occurrences in study area
<i>Navarretia prostrata</i> prostrate navarretia	—	—	IB.1	N	Y	N	N	No occurrences in study area

Species	Status ^a			Criteria ^b				Recommended Focal Species ^c	Notes
	Federal	State	CNPS	Range	Status	Threat	Data		
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcorn-flower	—	—	1B.2	N	N	N	N	N	No occurrences in study area
<i>Plagiobothrys diffusus</i> San Francisco popcorn-flower	—	SE	1B.1	N	Y	N	N	N	No occurrences in study area
<i>Plagiobothrys glaber</i> hairless popcorn-flower	—	—	1A	Y	N	Y	N	N	Vernal pool species that will receive some protection by seasonal wetlands being called out at the natural community level. One possible occurrence in study area; may face threats and may expect to be listed in near future
<i>Sanicula maritima</i> adobe sanicle	—	SR	1B.1	N	Y	N	N	N	Species not expected to be impacted consistently; avoidance is possible
<i>Senecio aphanactis</i> Chaparral ragwort	—	—	2.2	Y	Y	N	Y	N	One occurrence in study area at Carnegie ORV SP; no threats evident; populations small, mostly historic, more rare than CNPS status indicates
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewel-flower	—	—	1B.2	Y	Y	N	Y	N	In SFPUC lands, no reported threats; covered in the Santa Clara Valley HCP/NCCP
<i>Suaeda californica</i> California seablite	FE	—	1B.1	N	Y	N	N	N	No occurrences in study area
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i> saline clover	—	—	1B.2	Y	N	Y	N	N	Vernal pool species. Not expected to be listed in near future; one occurrence in East Dublin from 2002, possibly extirpated by development in 2005
<i>Tropidocarpum capparideum</i> caper-fruited tropidocarpum	—	—	1B.1	Y	Y	N	N	N	Occurrences in study area are extirpated; no take scenario requested by CNPS; this is a no take plant in the ECCC HCP/NCCP

Species	Status ^a			Criteria ^b			Recommended Focal Species ^c	Notes
	Federal	State	CNPS	Range	Status	Threat		
Notes								
a. Status								
State Status								
SE State listed as endangered								
ST State listed as threatened								
SR State listed as rare								
Federal Status								
FE Federally endangered								
FT Federally threatened								
California Native Plant Society Ranking								
1A Presumed extinct in California								
1B Rare or endangered in California and elsewhere								
2 Rare or endangered in California but more common elsewhere								
Native Plant Threat Rankings								
.1 Seriously threatened in California (high degree/immediacy of threat)								
.2 Fairly threatened in California (moderate degree/immediacy of threat)								
.3 Not very threatened in California (low degree/immediacy of threats or no current threats known)								
b. Criteria								
Range: The species is known to occur or is likely to occur within the Conservation Strategy study area, based on credible evidence, or the species is not currently known in the study area but is expected in the study area in the foreseeable future (e.g., through range expansion or reintroduction to historic range).								
Status: The species is either:								
<ul style="list-style-type: none"> ▪ listed under the federal ESA as threatened or endangered, or proposed for listing; ▪ listed under CESA as threatened or endangered or a candidate for such listing, or listed under the Native Plant Protection Act as rare; or ▪ expected to be listed under ESA or CESA within the permit term. Potential for listing during the permit term is based on current listing status, consultation with experts and Wildlife Agency staff, evaluation of species population trends and threats, and best professional judgment. 								
Impact: The species or its habitat would be adversely affected by project related activities in Alameda County.								
Data: Sufficient data exist on the species' life history, habitat requirements, and occurrence in the study area to adequately evaluate impacts on the species and to develop conservation measures to mitigate these impacts to levels specified by regulatory standards.								
Species proposed as focal species were limited to those species for which impacts from project in the county were likely, or for which mitigation is often required under CEQA or ESA. However, many other special-status species are expected to benefit from the Conservation Strategy.								
c. Recommended Status								
Y recommended as a focal species for the EACCS								
N not recommended as focal species for the EACCS								