



# *CAL FIRE* / Santa Clara Unit STRATEGIC FIRE PLAN

Revised May 2016



## PLAN AMENDMENTS

<b><u>Date</u></b>	<b><u>Section Updated</u></b>	<b><u>Page #</u></b>	<b><u>Description</u></b>	<b><u>By</u></b>
4/10/16	Executive Summary	1	Updated information	C. Carroll
4/10/16	Unit Overview	3	Added fire environment information	C. Carroll
4/10/16	Values at risk	14	Added fire risk vs. fire hazard section	C. Carroll
4/10/16	Unit Overview	11	Added drought, tree mortality, and CFIP information	C. Carroll
4/11/16	Entire document		Added/updated photos, added links	C. Carroll
4/11/16	Table of Contents	iii	Reformatted TOC	C. Carroll
4/17/16	FireSafe Council	15	Added section to include info on FireSafe councils in the unit	C. Carroll
4/19/16	2015 Ignition Statistics	28	Updated to 2015 statistics	C. Carroll
4/23/16	Battalion 6	59	Updated	M. Marcucci
4/23/16	Safety Battalion	73	Updated	B. Giambrone
4/24/16	Entire Document		Converted bullet lists to tables	C. Carroll
4/25/16	Pre Fire Management	32	Added information on Fire Severity Zones with maps and tables	C. Carroll
4/28/16	Pre Fire Management Tactics	71	Updated info/ priorities/objectives	P. Temmermand
4/28/16	Pre Fire Management Tactics	68	Updated info/ priorities/objectives	P. Provence
4/30/16	Pre Fire Management Strategies	40	Updated VMP info	E. Orre
4/30/16	Pre Fire Management Tactics	49	Updated info/ priorities/objectives	M. Mathiesen
4/30/16	Pre Fire Management Tactics	53	Updated info/ priorities/objectives	M. Martin
5/1/16	Pre Fire Management Tactics	75	Updated info/ priorities/objectives	N. Ciardella
5/1/16	Pre Fire Management Tactics	56	Updated info/ priorities/objectives	B. Leitzke
5/1/16	Unit Fire Plan Collaboration	16,17	Added Diablo FireSafe Council info and Hills Forum info	C. Carroll
5/2/16	Pre Fire Management Tactics	43	Updated info/ priorities/objectives	T. Lubas

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# SIGNATURES

## Unit Strategic Fire Plan Developed for the Santa Clara Unit:

This Plan:

- Was collaboratively developed; Interested parties, State, City, and County agencies within the County have been consulted and are listed in the plan.
- Identifies and prioritizes pre-fire and post-fire management strategies and tactics meant to reduce the loss of values at risk within the State Responsibility Area (SRA) and Mutual Threat Zones in County jurisdiction.
- Is intended for use as a planning and assessment tool only. It is the responsibility of those implementing the projects to ensure that all environmental compliance and permitting processes are met as necessary.
- This plan recommends measures to reduce the ignitability of structures throughout the area addressed by the Plan.

Recommended By:

  
\_\_\_\_\_

Chuck Carroll, Pre-Fire Engineer

5-11-16

Date

Approved By:

  
\_\_\_\_\_

Edgar Orre, Unit Forester

5-11-16

Date

  
\_\_\_\_\_

Derek Witmer, Unit Chief

5-11-16

Date



## EXECUTIVE SUMMARY

The California Department of Forestry and Fire Protection's (CAL FIRE) Santa Clara Unit prepares an annual Strategic Fire Management Plan for the coming fire season. The Plan documents an assessment of the fire situation in the Unit, includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work with the local fire problem area.

Pre-Fire Engineering and Fire Protection Planning is the responsibility of the Santa Clara Unit Pre-Fire Engineer (PFE). The main job of the PFE is to coordinate the creation of the Unit Fire Plan and then assist with its implementation. Under the direction and authority of the Unit Chief, the PFE works with Unit Chief Officers (Battalion and Division Chiefs) and stakeholders to develop the Unit's Fire Plan which is designed to achieve the goals and objectives of the 2010 Strategic Fire Plan for California. The PFE and Unit staff works with many stakeholders/cooperators (federal, state and local government entities, FireSafe Councils, individual citizens and many other organizations) to assist with the development and implementation of the Fire Plan. Each CAL FIRE Unit and Contract County has a funded position for a PFE. The PFEs in all CAL FIRE Units and most Contract Counties are Fire Captains. Pre-Fire Engineering includes geographic information system (GIS) mapping of values at risk, wildland fuel belts, and the maintenance of various other GIS data layers to assess the existing levels of wildland protection services, identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires, rank these areas in terms of priority needs, and prescribe what can be done to reduce future costs and losses. The PFE is also responsible for the CALFIRE Management Activity Project Planning and Event Reporter (Cal MAPPER) program, a tracking database that CAL FIRE uses to record fuel reduction efforts within the unit, Cal MAPPER records funding information (source, amount, grant ID's, etc.) treatment activity information (start/end dates, executing agency, and costs) along with a spatial representation of the treatments

This plan will utilize the seven Strategic Goals and Fire Plan Framework identified in the [California Fire Plan](#) and incorporate them into the planning and implementation process. The seven goals and framework components of the Santa Clara Strategic Fire Management Plan are as follows:

1. Identify and evaluate wildland fire hazards and recognize life, property and natural resource values at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the sharing of all analyses and data collection across all ownerships for consistency in type and kind.
2. Articulate and promote the concept of land use planning as it relates to fire risk and individual landowner objectives and responsibilities.

3. Support and participate in the collaborative development and implantation of wildland fire protection plans and other local, county and regional plans that addresses fire protection and landowner objectives.
4. Increase awareness, knowledge and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires, such as defensible space and other fuels reduction activities, fire prevention and Fire Safe building standards.
5. Develop a method to integrate fire and fuels management practices and landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility area.
6. Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
7. Address post-fire responsibilities for natural resource recovery, including watershed protection, reforestation and ecosystem restoration.

## **FISCAL FRAMEWORK**

The California State Board of Forestry and Fire Protection, and CAL FIRE are developing a [fiscal framework](#) for assessing and monitoring annual and long term changes in California's wildland fire protection systems.

### Applications of the Fire Plan Framework

1. Identify for State, Federal, local officials and the public those areas of concentrated assets and high risk.
2. Allow the Santa Clara Unit to create a more efficient fire protection system, focused on meaningful solutions for identified problem areas.
3. Give citizens an opportunity to identify public and private values at risk and to design and carry out projects to protect those assets.
4. Identify, before fires start, where the most cost effective pre-fire and fire management investments can be implemented.
5. Encourage an inter-governmental approach to reducing costs and losses.
6. Enable policy makers and the public to focus on what can be done to reduce future costs and losses from wildfire.
7. Through the Land Use and Safety Element of the Santa Clara, Alameda, Contra Costa, San Joaquin and Stanislaus County's General Plans, incorporate elements of the California Fire Plan so that each county plan supports the State plan.

This Plan provides planning information on a Unit-wide scale and recognizes the variation in fuels, weather, topography, and community/agency priorities present in each County. It is intended to be a dynamic planning tool for promoting wildfire protection efforts in the Unit. Additionally, this Plan is not intended to satisfy the [California Environmental Quality Act \(CEQA\)](#) or regulatory permitting requirements. Any recommended projects or actions contained herein shall be subject to the appropriate permitting and environmental review for the jurisdiction in which they are proposed.

\*Note: All text in [BLUE](#) is hyperlinked to external websites.



## SECTION I: UNIT OVERVIEW

This Plan covers the [CAL FIRE / Santa Clara Administrative Unit](#). This section presents more detailed information about the areas within the Santa Clara Unit, specifically, a description of factors affecting wildfire risk within each county.

### LOCATION

The Santa Clara Unit is unique to CAL FIRE. The Unit is located between the San Francisco Bay and the San Joaquin River, encompassing the Counties of Contra Costa, Alameda, Santa Clara, and Western portions of Stanislaus and San Joaquin. There are 1.3 million acres of direct protection area within the Unit with a combined population of 5.5 million people.



### POPULATION

This Unit is characterized by large urban population centers which are adjacent to the wildland areas creating some of the largest wildland urban interface (WUI) areas in California. No other Northern Region Unit has a greater population within its borders. Major population centers within the Unit includes the cities of San Jose (and the surrounding “Silicon Valley”), Oakland, Berkley, Livermore/Pleasanton, Walnut Creek, Concord, Martinez and Richmond. Numerous major highways run through the Unit and daily traffic congestion is common. Technology, manufacturing, heavy industry, three major sea ports, and three major airports all drive a large portion of the 5<sup>th</sup> largest economy in the world. The large population concentrations in the Unit have created continual interest in outdoor recreational use and open space preservation issues. Air quality control within the Unit is managed by The [San Joaquin Valley Air Pollution Control District](#) and the [Bay Area Air Quality Management District](#). Santa Clara Unit management staff works closely with these agencies to ensure reduced smoke impacts as a result of our Vegetation Management Program and wildland fire activity upon the local population.

### UNIT OUTLINE / CHARACTERISTICS

Vegetation types in the Unit are predominantly annual grasses, chaparral, and oak-dominated woodland. The Santa Cruz Mountains along the west side of Santa Clara County also supports coast redwood and mixed conifer stands. Recent large damaging fires include the Lexington Fire

in 1985 (13,128 acres), the Tunnel Fire in 1991 (1,624 acres, 25 deaths and 3,500 structures), the Croy Fire in 2002 (3,007 acres and 300 structures), the Santa Clara Complex in 2003 (32,000 acres), the Lick Fire in 2007 (47,183 acres), the Summit Fire in 2008 (4,270 acres), the Corral Fire in 2009 (12,500 acres), the Morgan Fire in 2013 (3,111 acres) and the Tesla Fire in 2015 (2,850 acres). With the current population levels in the Unit and the continuing spread of urban development into wildland, the Santa Clara Unit is taking every opportunity to be pro-active with wildland fuels management. Unit staff is heavily involved in fire protection planning programs with local cooperators to address existing problems and identify areas where changes can be implemented early in the planning stages. The Santa Clara Unit is also located in an active earthquake hazard area, dominated by the San Andreas and Hayward Faults. The Santa Clara Unit and many other CAL FIRE resources were heavily involved in the emergency response to the 1989 Loma Prieta earthquake.

In 2008, the [Federal Farm Bill](#) added a provision to federal law that required states to conduct an assessment of forest resources. These assessments were to identify key issues and trends affecting all forest and rangelands in each state. Priority landscapes were delineated to help focus investments and other programs to deal with the associated issues.

The general themes are:

1. Conserve working forest and range landscapes.
2. Protect forests and rangelands from harm.
3. Enhance public benefits from trees, forests and rangelands.

These themes were then followed by subthemes that provide more detail for a priority landscape rating.

High priority topics identified within the Santa Clara Unit include:

- Restoring wildfire impacted areas to maintain ecosystem health.
- Priority landscaping to protect communities from wildfire.
- Water quality and the threats within the watershed that affect water quality.
- Urban forestry tree planting.
- Urban forestry maintenance.
- Community wildfire planning.
- Wildfire threat to areas protected for habitat.

Principal findings from the [California's Forests and Rangelands 2010 Assessment](#) that affect the Santa Clara Unit include:

- Forest and rangelands support valued assets critical to economic, social, and the environmental well-being of California.

- Forest and rangelands face a variety of threats, and trends indicate these threats are increasing in number.
- Demands on forest and rangeland resources are increasing.
- Opportunities exist to improve the quality and quantity of benefits from these lands.
- Reaching desired future conditions will require political, social, and economic commitments.
- The potential to reach desired future conditions of our forest and rangelands will depend on taking advantage and augmenting existing collaborative efforts.

Priorities for the Santa Clara Unit include working with local landowners, non-governmental organizations and governmental agencies for implementation of fire management plan objectives. The Santa Clara Unit will continue to support the development of, and updates to, Community Wildfire Protection Plans (CWPPs) that are adopted within the Unit and assist with grant funding for Community Wildfire Protection projects. A continuance of the Vegetation Management Program (VMP) is a priority for healthy fuels management. Additionally, through the use of this Strategic Fire Plan, the Santa Clara Unit is working with local landowners to reduce unplanned ignitions within the Unit and limit damage caused by uncontrolled fires through the use of education, pre-fire mitigation projects, patrol, and law enforcement to meet the mission statement of the California Department of Forestry and Fire Protection.

Also, the Santa Clara Unit is doing our part to follow the Governor’s multiple Executive Orders regarding the California Drought State of Emergency that started in 2013, and is making water conservation a high priority. The Unit is helping to fulfill the CAL FIRE Mission of protecting

California’s resources by reducing water use wherever possible and setting an example to the public to ensure that this resource will be available for emergencies when the need arises.



## **UNIT PREPAREDNESS AND FIREFIGHTING CAPABILITIES**

Initial attack forces are essential to keeping unwanted fires to a minimum. In order to do this, the Santa Clara Unit maintains a strong force of personnel and equipment always ready to respond at a moment's notice to any fire that threatens the wildland. The Santa Clara Unit has 12 State funded fire stations (Forest Fire Stations) and one helitack base (Alma Helitack) under its jurisdiction. These stations and the helitack base are fully staffed during declared fire season with three of the stations being staffed year round under local cooperative fire agreements. These stations combined provide for the staffing of 15 State owned fire engines, one state owned helicopter, and three state owned transports/bulldozers.

Twelve Battalion Chiefs are available in the Unit and are strategically positioned to maintain quick response times of overhead personnel.

Two Law Enforcement/Prevention personnel along with a Pre-Fire Engineer and a Fire Prevention Specialist II are available within the Unit and will frequently assist with initial attack operations.

A Forester II (Division Chief) supports State Responsibility Area (SRA) fire prevention projects, Vegetation Management Program (VMP) projects, and to support partnering organizations with similar goals. This position also assists with Unit and incident overhead needs. Four seasonal Defensible Space Inspectors (Forestry Aides) were added in 2014 to conduct defensible space inspections in the SRA pursuant to Public Resources Code 4291. The program continued in 2015. Funding for these positions comes from the SRA Parcel Fee ([Assembly Bill X1 29](#)).

In order for the Santa Clara Unit to meet the objective of keeping 95% of all wildland fires to 10 acres or less (CAL FIRE's Statewide goal), the Unit has entered into a large number of auto-aid agreements in the area. These agreements promote the nearest fire suppression resource to respond to the scene of a wildland fire and begin fire suppression activities.

The following agencies participate in auto-aid agreements with the Santa Clara Unit:

Alameda County Fire Department	Berkeley Fire Department
Contra Costa Fire Protection District	Crockett Fire Department
East Bay Regional Parks Fire Department	East Contra Costa Fire Protection District
El Cerrito Fire Department	Fremont Fire Department
Gilroy Fire Department	Hayward Fire Department
Livermore-Pleasanton Fire Protection District	Milpitas Fire Department
Moraga-Orinda Fire Protection District	Morgan Hill Fire Department (Cooperative fire agreement )
Oakland Fire Department	Palo Alto Fire Department
Piedmont Fire Department	Richmond Fire Department
Rodeo-Hercules Fire Department	San Jose Fire Department
San Ramon Valley Fire Protection District	Santa Clara County Fire Department
South Santa Clara County Fire District (Cooperative fire agreement )	Tracy Fire Department
West Stanislaus Fire Department	

The Unit’s Morgan Hill Emergency Command Center (ECC) provides dispatch Command and Control through local government cooperative agreements with the City of Morgan Hill Fire Department, the South Santa Clara County Fire District, and the Alameda County Fire Protection (Department Sunol Forest Fire Station only). The ECC also provides dispatch under three Amador Contracts: Pacheco Forest Fire Station and Sweetwater Forest Fire Station in Santa Clara County and the Sunshine Forest Fire Station in Contra Costa County.

## FIRE ENVIRONMENT

The fire environment is defined as the “surrounding conditions, influences, and modifying forces that determine fire behavior”. The four components that affect fire behavior are fuels, weather, topography, and human behavior. Understanding the relationship between these factors and their influence on fire behavior must be considered in order to plan the most effective strategies for reducing the threat of unwanted fire.

Of the factors listed above, fuels (vegetation, buildings, etc.) are the component that is targeted most often since this factor is the most easily affected. For example, vegetation can be removed or manipulated in ways that will dramatically reduce the fire risk. Homes can be “hardened”, i.e. built with non-combustible or fire-resistant materials and maintained with adequate defensible space.

While the weather cannot be controlled, it is important to understand what types of weather can occur that increase the fire hazard and what options there are for reducing this hazard. An example of this is limiting certain activities including open burning, welding, or mowing when weather conditions are hot and dry.



As with the weather, topography, the [terrain](#) or lay of the land, cannot be significantly altered to reduce the fire hazard. Terrain, however, has a strong influence within the fire environment and should be carefully assessed when designing fire hazard reduction treatments. [Aspect](#) has a strong bearing on the type of vegetation present and the temperature and moisture regime of the soil and vegetation. Slope steepness ([gradient](#)) is important since fire behavior usually increases with steepness. Slope position (ridge, valley, saddle, draw, etc.) should be considered when planning fire prevention measures. For example, additional defensible space may be warranted where slopes are steep and if positioned on a warm southerly aspect and/or within a “chimney” (draw, saddle).

“Full alignment” is a term used to describe the fire environment when all the conditions are conducive for increased fire activity. This occurs when fires burn in heavy fuels, during hot, dry weather with strong winds blowing up steep slopes and draws. Highest priority for fire prevention measures should be focused on areas where these types of conditions are known to occur or are considered likely. Additional discussion on fuels, weather, and topography is below.

## DROUGHT

In January of 2014, Governor Brown issued a Drought State of Emergency Declaration. In this Declaration, he directed CALFIRE to



For more information on Governor Brown's declaration visit [water.ca.gov](http://water.ca.gov)

increase fire engine staffing statewide. A fourth Firefighter was added to 5 CALFIRE engines in the Unit to increase fire suppression ability due to California's drought conditions. 2 State owned fire engines at Almaden Station 22 and Castle Rock Station 26 were staffed during the non-peak season of 2015/2016. These provisions continue to apply through 2016.

## TREE MORTALITY

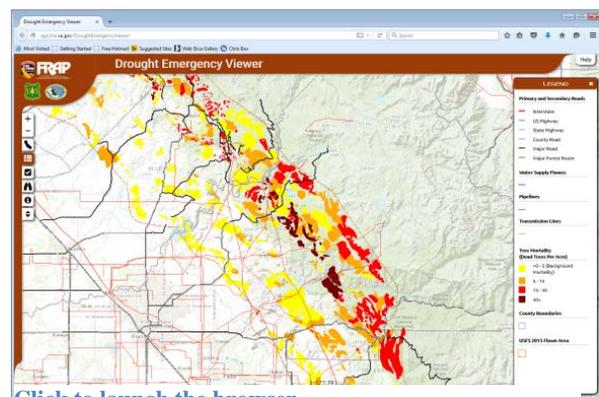
Large numbers of trees are dying due to four consecutive years of drought that have weakened trees and left millions of acres of forestland highly susceptible to bark beetle attacks. The drought stress is exacerbated in forests with too many trees competing for limited resources, especially water. Tree losses due to drought stress and bark beetle attacks are expected to increase until precipitation levels return to normal or above normal for one to multiple years.

On October 30, 2015 Governor Brown issued an emergency declaration requiring public agencies to identify areas of tree mortality that hold the greatest potential to result in wildfire and/or falling trees and threaten people and property in these areas. Once identified, these areas will be prioritized for tree removal.

The Santa Clara Unit is currently working on identifying the areas where tree mortality and assets to be protected coincide. With the current information on the viewer, you can see and turn on and off:

- Tree mortality from 2012 through 2015 detected by the US Forest Service and CAL FIRE

CAL FIRE has created a web-based map viewer to allow Californians to participate in understanding and identifying the areas most impacted with tree mortality as a threat to life and property. This viewer shows areas of tree mortality mapped from 2012 through 2015 as well as assets important to life and property, such as roads, water supply infrastructure, and communications facilities. Where the tree mortality intersects an asset will be categorized as high priority.



[Click to launch the browser](#)

## SECTION II: UNIT FIRE PLAN COLLABORATION

### COMMUNITY / AGENCIES / FIRESAFE COUNCILS

Representatives involved in the development of the Unit Strategic Fire Plan are included in the following table. Their organization and title are indicated below:

#### Plan Development Team:

Organization	Title
Diablo FireSafe Council	Executive Director
Santa Clara FireSafe Council	Programs Manager
Hills Emergency Forum	Executive Director
CAL FIRE / Santa Clara Unit	Unit Chief
CAL FIRE / Santa Clara Unit	Unit Forester
CAL FIRE / Santa Clara Unit	Pre-Fire Engineer
CAL FIRE / Santa Clara Unit	Battalion Chiefs



## **FireSafe COUNCILS**

Four FireSafe Councils including the Santa Clara FireSafe Council, the Diablo FireSafe Council, the South Skyline FireSafe Council and the Oakland FireSafe Council as well as the Hills Emergency Forum. Other organizations that provide similar services include the Guadalupe-Coyote Resource Conservation District, the Loma Prieta Resource Conservation District, and the Claremont Canyon Conservancy are also involved with Fire Safety and planning in the five county area. These organizations have access to many grant programs and other funding sources that public agencies are not eligible to receive.



With input and cooperation from these groups, and other stakeholder groups, the Unit's managers establish goals and projects in the Unit Strategic Fire Plan to reduce the threat of large damaging fires. The document is the Units' template for fuels reduction projects to pending, completed, and for general public review, and comment. The Unit Strategic Fire Plan allows us to respond to the needs and concerns of the public and identifies projects to be funded through cooperative grants and donations.

### **SANTA CLARA COUNTY FIRESAFE COUNCIL**

The Santa Clara County FireSafe Council (SCFSC) is a non-profit 501(c)(3) organization funded by federal grants, local funding from the county, cities, and fire agencies, contributions from many partners in the community, and donations. Its programs protect thousands of residents and homes and bring together individuals, public and private agencies and companies that share a common, vested interest in preventing and reducing losses from wildfires.



SCFSC programs and projects are focused on protecting the 14 designated communities at risk for wildfire in Santa Clara County, which are: Stanford, Palo Alto, Los Altos Hills, Cupertino, Saratoga, Monte Sereno, Los Gatos, Lexington Hills, San Jose, Morgan Hill, San Martin, Gilroy, East Foothills, and Milpitas. Homes, schools, businesses and important infrastructure such as power transmission lines, communication facilities, creeks and reservoirs are all present in these areas.

The SCFSC programs work to create a "FireSafe" Santa Clara County -- protecting lives, homes and the environment, in three main program areas: Community Outreach and Education, Hazardous Fuel Reduction, and Planning.

The SCFSC also has an aggressive fundraising and grant-writing program and an annual budget of \$450,000. It was established in 2001 and has a dedicated board of directors who have contributed over 40 years of service collectively. It has the support of a wide range of agency stakeholders and community leaders who regularly provide input on SCFSC programs and

projects. Staff consists of 12 consultants who help deliver its programs and manage projects throughout the county.

Priority outreach programs include Smokey Bear story time presentations at schools; general outreach to residents of the WUI at community events; distribution of educational materials via mail, published articles, online content posted to its website, email list, and social media; and signage. Educational workshops are delivered to community groups to raise awareness and provide practical information on how to make homes and property more resistant to wildfire, and to remind people of the need for evacuation planning and preparedness. SCFSC consultants are training and preparing to deliver a defensible space and home ignition zone consulting program. A contractor training workshop is being planned to provide comprehensive education to tree contractors, arborists and landscapers about best practices for defensible space clearing.

Hazardous fuel reduction projects include community chipping services, subsidized defensible space clearing for low income/disabled, neighborhood fuel reduction projects, roadside evacuation route fuel reduction, dead/hazard tree abatement, and coordination, development and maintenance of fuel breaks as part of implementing local CWPPs and the Unit Fire Plan.

Planning efforts include developing and updating CWPPs, general project planning prior to grant applications, and detailed project planning once funding has been secured. The SCFSC also assists with biotic studies, forest and vegetation analysis, and preparation of CEQA documents. The SCFSC is developing a strategic plan for the council concurrent with the countywide CWPP that will help it deliver its programs more effectively.

CAL FIRE staff provides assistance to the SCFSC in all three program areas.

### **DIABLO FIRESAFE COUNCIL**

Diablo FireSafe Council (DFSC) works closely with the Santa Clara Unit to bring together residents, agencies, and funding to reduce the impact of wildland fire. The organization serves the 2.5 million residents communities in Alameda and Contra Costa Counties; covering 1500 square miles. The two counties include over 100 miles of wildland urban interface and a history of devastating fire on long intervals (20 yrs. In September 2013 the Morgan Fire burned over 3,100 acres southeast of the community of Clayton and in Mt. Diablo State Park in Contra Costa County.



Throughout the two counties, homes are located among dense vegetation, including highly flammable eucalyptus, pine, and acacia. Wildfire risks posed by climate, topography, high fuel loads, and development patterns are a significant threat. The size, diversity, and dispersed nature

challenge hazard reduction efforts. For instance, the East Bay Hills, with established neighborhoods next to treasured parklands, form a 45 mile long wildland urban interface. There is abundant vegetation in close proximity to residences, highly flammable building and roofing materials, and difficult access.

The DFSC was founded in 1998 as a public and private coalition. By 2002, DFSC had obtained nonprofit 501(3) (c) status, formed a Board of Directors, established a website and held regular meetings. Their current 11 member Board of Directors includes fire agencies, park district, industry and homeowners.

In 2015 DFSC provided over \$279,000 in funding, including funding from the CAL FIRE SRA Fire Prevention Fund grant program. Collectively their partners in wildfire prevention provided matching funds and in-kind services valued of \$295,080 with over 1,930 volunteer hours. Programs include \$5,000 cost-share funding for 31 defensible space projects working with groups of neighbors linked by common concern of wildfire hazards around their homes. Landscape contractor defensible space workshops provide training in wildfire behavior, local defensible space requirements, ignition prevention as well as hands-on fuel reduction. Updates for the two County-wide Community Wildfire Protection Plans for Alameda and Contra Costa Counties have led to on-going local planning efforts in Clayton-Morgan Territory, El Cerrito and Kensington and the community of Sunol.

DFSC began 2016 with over \$1.2 million in federal, state and private grants for local groups' FireSafe efforts. DFSC programs continue to fund outreach, awareness, planning, and fuel reductions programs as we seek to engage more property owners, neighborhood groups, and stakeholders to build strong partnership in wildfire prevention.

### **OAKLAND FIRESAFE COUNCIL**

The Oakland FireSafe Council is a grassroots community-based organization dedicated to mobilizing the people of Oakland to reduce the risks of wildfire danger to people and property through outreach, programs, and projects.



They are residents of the Oakland Hills, survivors of the 1991 Tunnel Fire, open space/park stewards and others working to reduce the risks of wildfire in the Oakland hills. The Oakland FireSafe Council is an affiliate of the Diablo FireSafe Council, serving Alameda and Contra Costa counties.

### **HILLS EMERGENCY FORUM**

The Santa Clara Unit is an active member of the Hills Emergency Forum (HEF). Formed in 1992 as a result of the 1991 Tunnel Fire, the HEF provides a leadership structure to facilitate a broad and cooperative approach among nine local governing organizations for fire prevention mitigation, suppression and emergency planning for the wildland urban interface area of the Oakland-Berkeley hills.

HEF members include the City Managers of Berkeley, Oakland, and El Cerrito; the General Managers of East Bay Municipal Utility District and East Bay Regional Park District; Fire Chief of Moraga Orinda Fire District, Director of CAL FIRE, Director of Lawrence Berkeley National Laboratory and Vice Chancellor of University of California, Berkeley.



The HEF's administrative component -- the Staff Liaison Committee (SLC) -- is comprised of representatives from all member agencies. The SLC is responsible for developing and monitoring progress on the Forum's annual work plan, analyzing HEF policy issues for agency executives, identifying issues for possible legislative support, and coordinating the HEF annual meeting. During their monthly working sessions SLC members will continue to focus on key activities such as: coordination on FEMA funded hazardous fuel reduction projects during permitting and regulatory review, strategic partnering with training in the fuels inventory photo series, providing field tours for special interest groups to share lessons learned and best management practices, and working with local jurisdictions on land use planning to comply with SB1241 land use planning requirements.

#### **SOUTH SKYLINE FIRESAFE COUNCIL**

The South Skyline FireSafe Council (SSFSC) is a non-profit organization dedicated to the public benefit, whose mission is to provide education and outreach programs for fire prevention and preparedness to all South Skyline residents within the Council area in order to prevent the loss of lives and reduce losses of personal and public property and natural resources from wildfire. The SSFSC also plans and manages fuel break construction and homeowner chipping services.



#### **GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT**



The Guadalupe-Coyote RCD (GCRCD) was established in 1995 as a result of merger of the Black Mountain and Evergreen Soils Conservation Districts. The Black Mountain Soil Conservation District was organized in 1943 to cover some 5,500 acres of land in the Calabazas Watershed on the west side of Santa Clara Valley. The Evergreen Soils Conservation District was formed in 1944 and originally covered about 10,000 acres on the east side of the Santa Clara Valley.

The GCRCD's boundaries now cover over 362,000 acres in the northern area of Santa Clara County. Included in the district boundaries are most of the hilly or mountainous land surrounding the Santa Clara Valley north of Morgan Hill. The district also participates in partnerships with other public agencies and community organizations located in incorporated areas to facilitate coordination of efforts benefiting district watersheds

The Long Range Plan of the GCRC is to identify long-range opportunities and needs for the conservation and development of natural resources within the district. The District supports proper rangeland management practices for the preservation of species diversity and proper watershed management of wetlands and riparian corridors for protection of wildlife, aquatic resources and water quality.

Resource Conservation Districts (RCD) are closely affiliated with the US Department of Agriculture's Natural Resource Conservation Service. Together, these non-regulatory organizations have specialized staff to provide educational programs, technical assistance, grant funds, and tools to manage and protect land and water resources, provide.

### **LOMA PRIETA RESOURCE CONSERVATION DISTRICT**

Established in 1942 as a non-regulatory agency, Loma Prieta Resource Conservation District (RCD) was created to develop and administer a program of soil, water and related resource conservation in Southern Santa Clara County.



Since its creation, the District has grown to encompass more than 220,000 acres.

The mission of Loma Prieta Resource Conservation district is to facilitate the education of landowners, and the general public, about creating and promoting sustainability in all human activities that interface with the world of Natural Resources.

### **CLAREMONT CANYON CONSERVANCY**

The Conservancy is a non-profit, citizen-based organization with a membership base of several hundred individuals and families. The Claremont Canyon Conservancy is a catalyst for the long-term protection and restoration of the canyon's natural environment and an advocate for comprehensive fire safety along its wildland urban interface.

The Conservancy works closely with public and private property owners and various government agencies to ensure the best possible stewardship of the canyon as a whole. The Conservancy supports educational programs designed to improve Fire Safety and seek out the most effective measures that private property owners can take to protect their own properties from wildfire. The Conservancy supports and actively conducts strategic fuel reduction projects in Claremont Canyon. We promote stewardship through general weed management to help restore the natural balance in the various ecosystems within the watershed, through educational programs that increase public awareness and appreciation of the canyon, and through advocacy for improved public access.

### **MOUNT HAMILTON RANGE IMPROVEMENT ASSOCIATION**

The Mt. Hamilton Range Improvement Association (MHRIA) was established on July 21, 1954 to represent the rural landowners in the Diablo Range of Eastern Santa Clara County and to promote local issues.

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## SECTION III: VALUES AT RISK

CAL FIRE's [Fire and Resource Assessment Program \(FRAP\)](#) prepared the document entitled [California's Forest and Rangelands: 2015 Assessment](#). This document satisfies the 2008 Federal Farm Bill provision that each state conduct an assessment of forest resources, which is intended to identify key issues facing each state and requires the delineation of spatial areas called Priority Landscapes. Priority Landscapes are intended to focus investments and other programs to address issues identified in the assessment. Priority Landscape datasets related to fire include an evaluation of fire risk as related to community water, ecosystem health, forest economics, human infrastructure, range economics, recreation and open space, and wildlife.

The fire/human infrastructure [Priority Landscape](#) developed by FRAP represents the convergence of areas with high wildfire threat and human infrastructure assets. Included in this assessment are communities and assets. Community areas include incorporated city boundaries and Census Designated Places for unincorporated communities while assets include residential and commercial structures, major roads, and transmission lines. Wildfire threat is the result of an analysis of fire frequency (likelihood of a given area burning) and potential fire behavior (fire hazard).



**FIRE RISK vs. FIRE HAZARD**

The concept of [risk vs. hazard](#) can be confusing and these terms are often used interchangeably. The purpose of this Plan is to assist fire agencies with development of collaborative methods of reducing the fire ‘risk’ within their jurisdictions by using strategies and tactics that will reduce or eliminate one or more fire ‘hazards’. Examples of fire hazards include dense stands of decadent brush, faulty wiring, broken vehicle exhaust systems, and homes that are not built in accordance with fire code requirements. The fire risk (vulnerability) of a given area constantly rises and falls depending on conditions within the fire environment. Successful implementation of this Plan will result in the meaningful reduction of the fire risk in strategic portions of the County through identification and abatement of important fire hazards.



**VALUES**

The primary goal of wildland fire protection in the Santa Clara Unit is to safeguard the wide range of values found within the Unit from the effects of wildfire. The values at risk are the public and private assets that the wildland fire protection system is created and funded to protect. The following have been identified as values at risk from wildfires and delineates their economic and non-economic values: people, structures, timber, watershed, wildlife, unique scenic and recreation areas, range, wildlife, and air quality. The table below provides a description of the values evaluated.

Values at Risk	Public Issue Category	Location and ranking methodology
Fire-flood watersheds	Public safety Public welfare	Watersheds with a history of problems or conditions for future problems, ranked based on affected downstream population.
Soil erosion	Environment	Watersheds ranked based on erosion potential.
Water storage	Public welfare	Watershed area up to 20 miles upstream from water storage facility, ranked based on water value and dead storage capacity of facility.
Water supply	Public health	Watershed area up to 20 miles upstream from water supply facility.

<b>Values at Risk</b>	<b>Public Issue Category</b>	<b>Location and ranking methodology</b>
Scenic	Public welfare	Four mile view shed around Scenic Highways and 1/4 mile view shed around Wild and Scenic Rivers, ranked based on potential impacts to vegetation types (tree versus non-tree types).
Timber	Public welfare	Timberlands ranked based on value/susceptibility to damage.
Range	Public welfare	Rangeland ranked based on potential replacement feed cost by region/owner/vegetation type
Air quality	Public health Environment Public welfare	Potential damages to health, materials, vegetation, and visibility; ranked based on vegetation type and air basin.
Timber	Public welfare	Timberlands ranked based on value/susceptibility to damage.
Recreation	Public welfare	Unique recreation areas or areas with potential damage to facilities, ranked based on fire susceptibility.
Structures	Public safety Public welfare	Ranked based on housing density and fire susceptibility.
Non-game wildlife	Environment Public welfare	Critical habitats and species locations based on input from California Department of Fish and Wildlife and other stakeholders.
Game wildlife	Public welfare Environment	Critical habitats and species locations based on input from California Department of Fish and Wildlife and other stakeholders.
Infrastructure	Public safety Public welfare	Infrastructure for delivery of emergency and other critical services (e.g. repeater sites, transmission lines).
Ecosystem Health	Environment	Ranking based on vegetation type/fuel characteristics.

An example of a value at risk within the Santa Clara Unit is the Lick Observatory on Mt. Hamilton owned and managed by UC Santa Cruz University. This Observatory dates back to the late 1800's when an observatory was built at the top of Mount Hamilton, located east of San Jose. This facility would grow throughout the years and now has 9 research grade telescopes located in the area. A large number of structures including residences and other support facilities exist at the observatory. Nearby Copernicus Peak is the site of numerous radio and microwave towers as well as the Copernicus Forest Fire Lookout. The current lookout built in the 1930's is owned by CAL FIRE on land leased from UCSC. It is staffed during periods of high fire danger by volunteers in prevention (VIPs) and/or Unit staff.



[Lick Observatory located in Battalion 2 Mount Hamilton San Jose, CA](#)

Many factors are involved in target area and value at risk identification, including political considerations of the region and suppression cost reductions. By looking at the 'big picture' and identifying the values at risk, the Santa Clara Unit staff along with input from other agencies and the public can better protect these areas and prioritize pre-fire projects.

## COMMUNITIES

In recent years, wildfires have burned millions of acres throughout the United States. These fires dramatically illustrated the threat to human lives and development. Under Executive Order, the [National Fire Plan](#) was created as a cooperative, long-term effort of the U.S. Forest Service, Department of the Interior and the National Association of State Foresters, to protect communities and restore ecological health on Federal lands.

A major component of the National Fire Plan was funding for projects designed to reduce fire risks to people and property. A fundamental step in realizing this goal was the identification of areas that are at high risk of damage from wildfire. Federal fire managers authorized State Foresters to determine which communities were under significant risk from wildland fire on Federal lands. CAL FIRE undertook the task of generating the state's list of communities at risk. With California's extensive wildland urban interface situation, the list of communities extends beyond just those on Federal lands.

Three main factors were used to determine wildland fire threat to Wildland urban interface areas of California.

- **Ranking Fuel Hazards:** ranking vegetation types by their potential fire behavior during a wildfire.
- **Assessing the Probability of Fire:** the annual likelihood that a large damaging wildfire would occur in a particular vegetation type.
- **Defining Areas of Suitable Housing Density that Would Create Wildland urban interface Fire Protection Strategy Situations:** areas of intermingled wildland fuels and urban environments that are in the vicinity of fire threats.

To help protect people and their property from potential catastrophic wildfire, the National Fire Plan directs funding to be provided for projects designed to reduce the fire risks to communities. A fundamental step in achieving this goal was the identification of communities that are at high risk of damage from wildfire. These high risk communities identified within the wildland urban interface, the area where homes and wildland intermix, were published in the Federal Register in 2001. At the request of Congress, the Federal Register notice only listed those communities neighboring Federal lands. The list represents the collaborative work of the 50 States and five Federal agencies using a standardized process, whereby states were asked to submit all communities within their borders that met the criteria of a structure at high risk from wildfire. Within the Santa Clara Unit, there are no federally designated Communities at Risk because of the absence of federally managed land.

With California's extensive wildland urban interface (WUI) situation, the list of communities extends beyond just those adjacent to Federal lands. There are 1,327 communities currently on the California Communities at Risk List. The California State Forester (CAL FIRE Director) has assigned the role of managing the list to the California Fire Alliance.

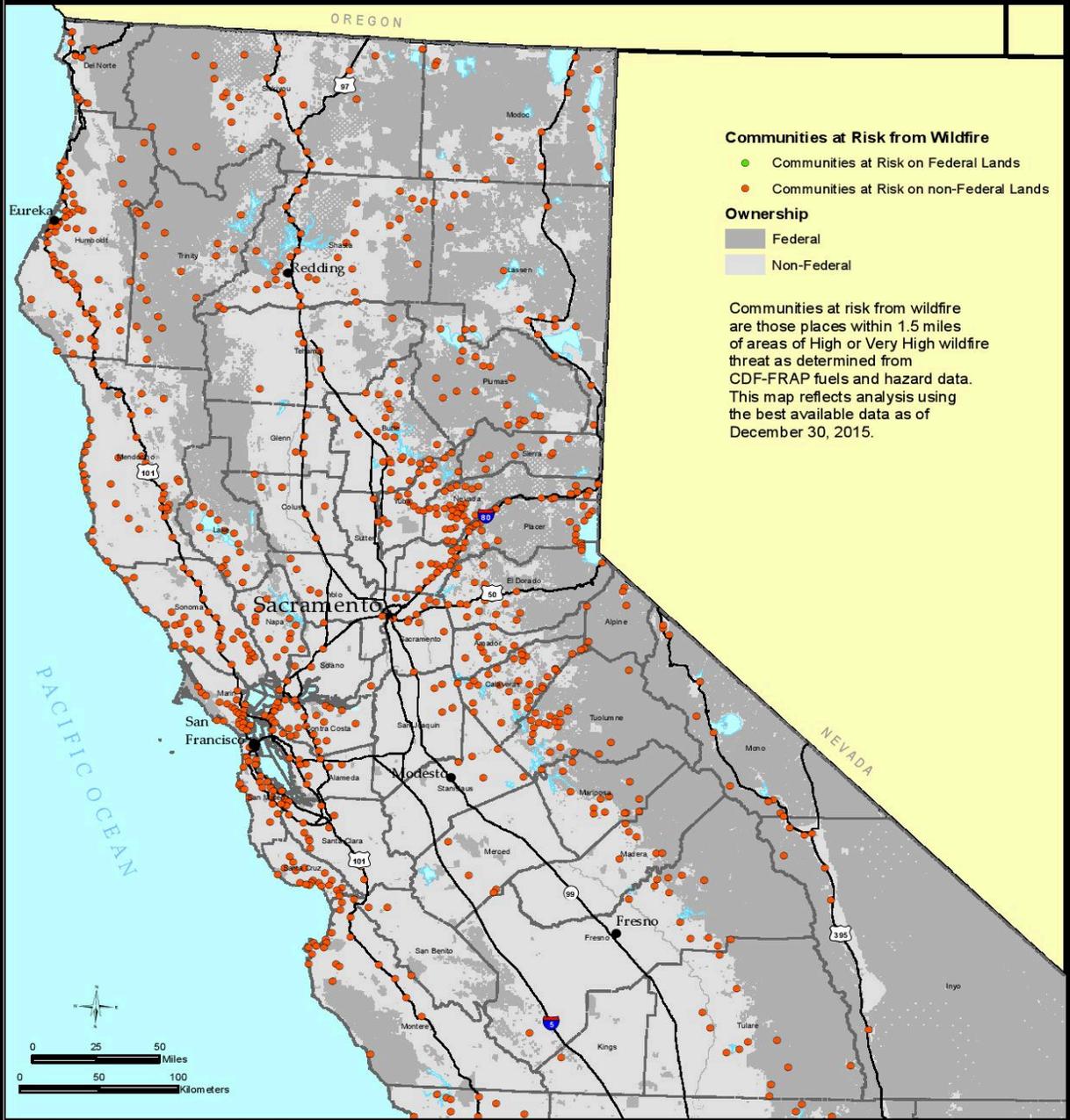
There are 51 California-designated Communities at Risk within the Santa Clara Unit:

• Alamo	• Antioch	• Berkeley
• Blackhawk	• Brentwood	• Canyon
• Castro Valley	• Clayton	• Concord
• Crockett	• Cupertino	• Danville
• Dublin	• East Foothills	• East Richmond Heights
• El Cerrito	• El Sobrante	• Fairview
• Fremont	• Gilroy	• Hayward
• Hercules	• Kensington	• Lafayette
• Lexington Hills	• Livermore	• Los Alto Hills
• Los Gatos	• Martinez	• Milpitas
• Moraga	• Morgan Hill	• Monte Sereno
• Oakland	• Orinda	• Palo Alto
• Pinole	• Pittsburg	• Pleasant Hill
• Pleasanton	• Richmond	• Rodeo
• San Ramon	• San Leandro	• San Jose
• San Martin	• Saratoga	• Stanford
• Union City	• Walnut Creek	• West Pittsburg

[California Communities at Risk](#)



# NORTHERN CALIFORNIA COMMUNITIES AT RISK FROM WILDFIRE



The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.

Obtain FRAP maps, data, metadata and publications on the internet at <http://frap.cal.ca.gov>  
 For more information, contact CAL FIRE-FRAP, PO Box 944246, Sacramento, CA 94244-2460, (916) 327-3939.

**DATA SOURCES**  
 comatrisk v15\_2  
 ownership15\_1

Jerry Brown, Governor, State of California  
 John Laird, Secretary for Resources, The Natural Resources Agency  
 Ken Pimlott, Director, Department of Forestry and Fire Protection

Northern California Communities at Risk 2015 – Courtesy of FRAP

## SECTION IV: PRE-FIRE MANAGEMENT STRATEGIES

Pre-fire management as used in this Plan is a collective term that refers to all activities undertaken by county land managers, property owners, agencies and fire departments intended to reduce the risk of wildfire and resulting suppression costs and also to minimize the resulting damage to lives, property, and the environment. This section details the objectives of pre-fire managements two main categories; Fire Prevention and Vegetation Management.

### **FIRE PREVENTION**

To prevent unwanted fires from occurring, it is important to understand what is causing these fires. The Fire Prevention Bureau of the Santa Clara Unit works diligently to determine the cause of all fires with the assistance of Engine Company Officers. By understanding what the causes are, it allows the Bureau to focus education, enforcement, and patrol activities in a more efficient way.

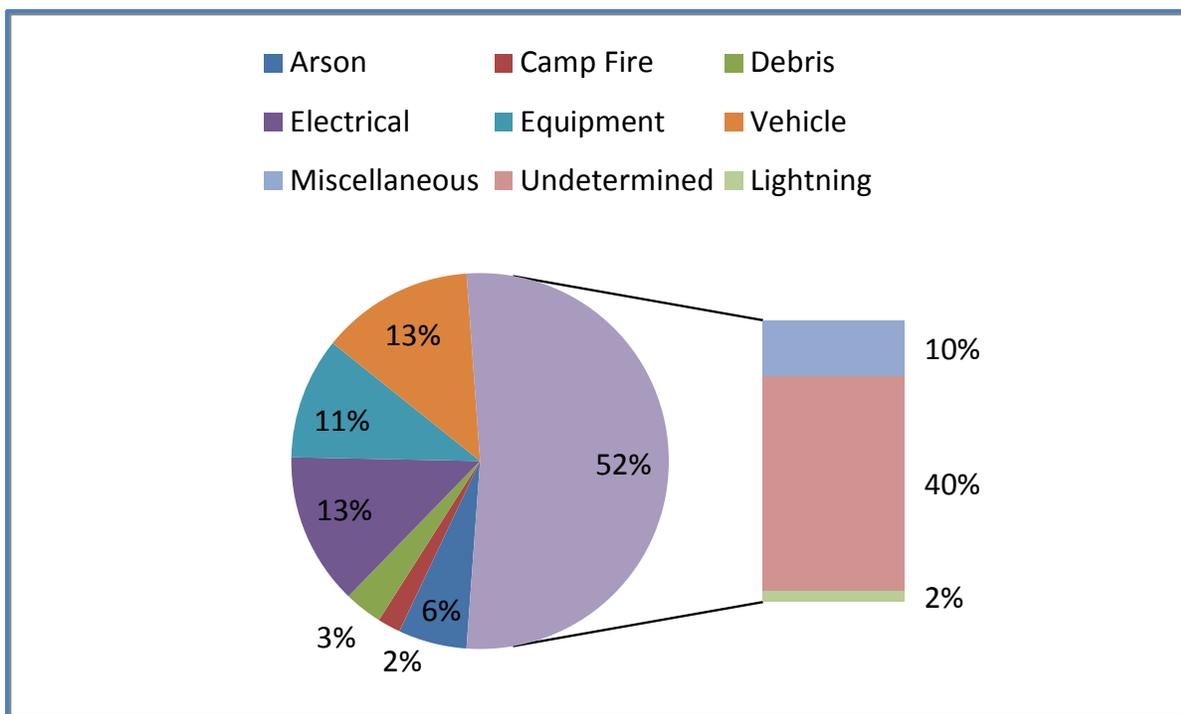


## 2015 IGNITION MANAGEMENT PLAN

### 2015 Fire Season Ignition Statistics

Wildland fire ignition statistics were tracked for the entire year of 2015. The Unit experienced 153 fires within its Direct Protection Area (DPA) for the year. Wildfires burned a total of 4,137 acres within the Unit. The Unit had one large fire in August 2015, the Tesla Fire, which burned 2,850 acres.

In reviewing fire causes during the 2015 season, it was found that the causes of vegetation fires in the Unit were:



#### Santa Clara Unit Ignitions 2015

Fire activity for 2015 has decreased slightly in the Unit compared to 2014. An analysis of the fire causes in the Unit during 2015 was done and compiled below:

**1) Vehicles** accounted for 20 fires or 13% of the total ignitions in the Unit. The Unit currently has a population of over 4 million people with a large percentage of that number operating motor vehicles of all types, not including that daily influx of commuters transiting the Unit. Catalytic converter failure and other maintenance issues remain the leading cause of fires caused by vehicles. With the current economic conditions there appears to be less maintenance done on vehicles which could potentially lead to an increase in the number of vehicle caused ignitions.

**2) Electrical power** accounted for 20 fires or 13% of the total ignitions in the Unit. Electrical caused fires resulted in three out of the five largest fires in the Unit. The electrical caused fires in the Unit can be separated into two distinct types. The first and most recognized is distribution caused fires. The second is generation/collection. The Unit is unique in the fact that the Altamont Wind Resource Area is located within our boundaries. The wind resource area currently contains approximately 4,000 wind turbines that generate electricity for sale to the distribution grid. Most of the turbines located in the wind resource area are older models that are being replaced with newer more efficient and FireSafe models.

**3) Equipment** accounted for 16 fires or 11% of the total ignitions in the Unit. One of the contributing factors in this category is the increasing number of people moving out into the wildfire prone areas of the Unit. These members of the public do not understand that the activities that would have not likely caused a fire in an urban environment are very hazardous and likely to cause a fire in the rural areas. Continued education is the key to reducing fires in this classification.

**4) Miscellaneous causes** accounted for 16 fires or 11% of the total ignitions in the Unit. This classification includes causes such as spontaneous combustion; fireplace ashes deposited improperly, shooting and other causes.

**5) Undetermined** accounted for 61 fires or 40% of the total ignitions in the Unit. Undetermined cause is utilized when the investigator cannot eliminate additional cause classifications. Continued hard work and dedication of the Unit's Fire Prevention Staff and the company officers who conduct thorough origin and cause investigations aid in the declining number in this cause class. The Bureau continues to provide training to company officers to improve their skills at investigating fires by annually hosting an FI-210 Wildland Fire Investigation training class.

**6) Arson** accounted for 9 fires or 6% of the total ignitions in the Unit. Enforcement of the fire laws in the State of California are a priority for the members of the Prevention Bureau.

**7) Lightning** accounted for 3 fires or 2% of the total ignitions in the Unit. The Unit's response to lightning caused fires is early detection and rapid response to reduce the acres burned.

**8) Illegal campfires and campfire escapes** accounted for 3 fires or 2% of the total ignitions in the Unit.

**9) Debris Fires** accounted for 5 fires or 3% of the total ignitions in the Unit.

**10) Smoking** did not cause any fires in the Unit in 2015.

**11) Railroads** did not cause any fires in the Unit in 2015.

## ENGINEERING & STRUCTURE IGNITABILITY

The Santa Clara Unit has always known the threat of wildfire. Due to current fuel conditions, weather patterns, and increased human activity in wildland areas the occurrence of fire has become more of a danger than ever. In the event of a large wildfire, there potentially will not be enough emergency responders and equipment to protect each and every structure. In some instances due to the size, speed, and intensity of the fire, or the building construction materials and surrounding vegetation, structures can ignite and potentially be destroyed before emergency responders can arrive. In order for a structure to survive it must be able to avoid ignition.

State and local fire agencies having jurisdiction within the Santa Clara Unit continually provide wildland fire prevention education to those living in hazardous wildland fire areas. This education provides recommendations to reduce the chances of structure ignition.

The [Wildland Urban Interface Fire Area Building Standards](#) were established to create minimum standards for materials and material assemblies, and provide a reasonable level of exterior wildfire exposure protection for buildings in wildland urban interface Fire Areas. The use of ignition resistant materials and design to resist the intrusion of flame or burning embers projected by a wildfire and exposure to it

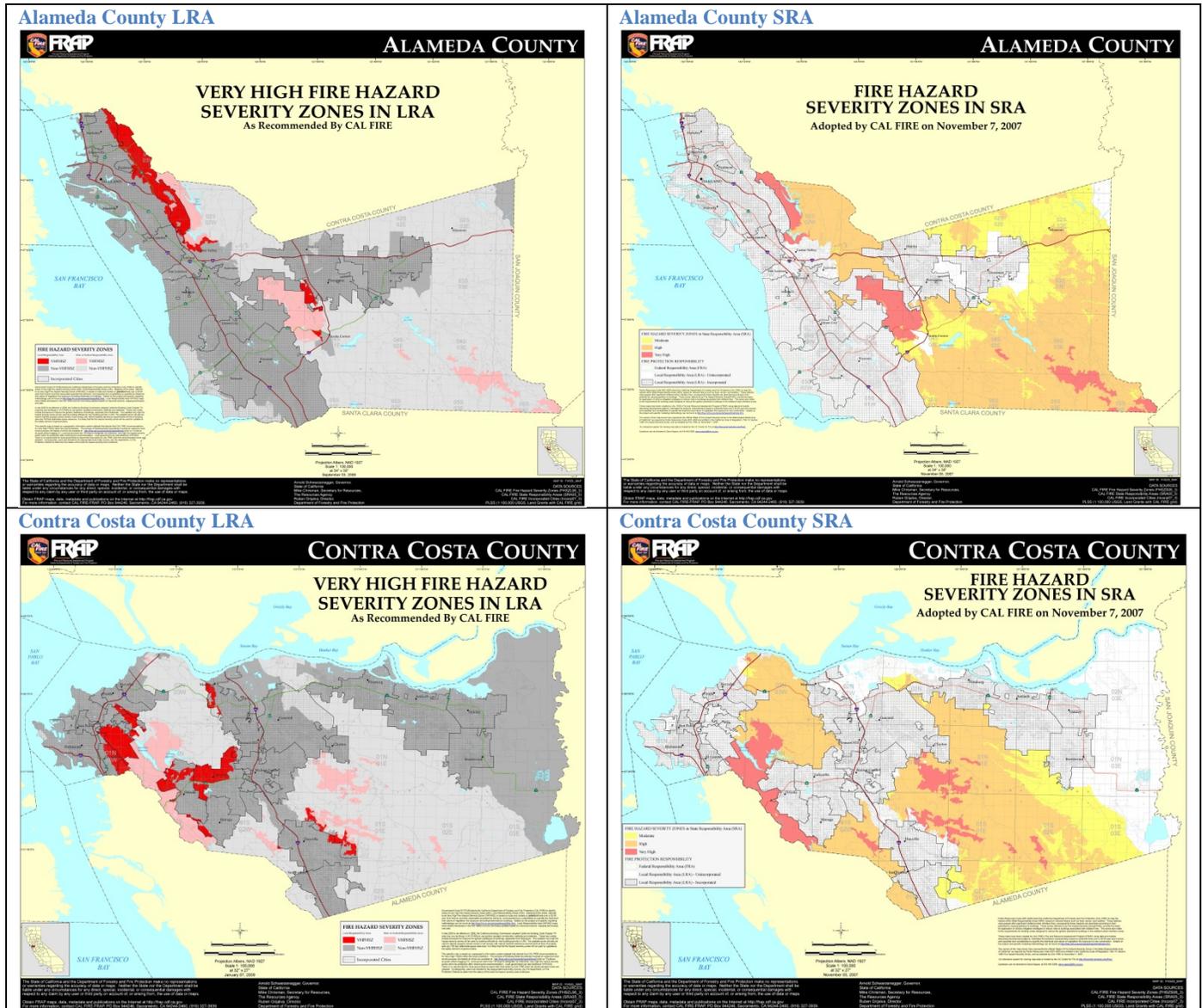
will prove to be the most prudent effort California has made to try and mitigate the losses resulting from our repeating cycle of wildland urban interface fire disasters. California law requires CAL FIRE to identify areas based on the severity of fire hazard that is expected to prevail there. These areas, or “zones,” are based on factors such as



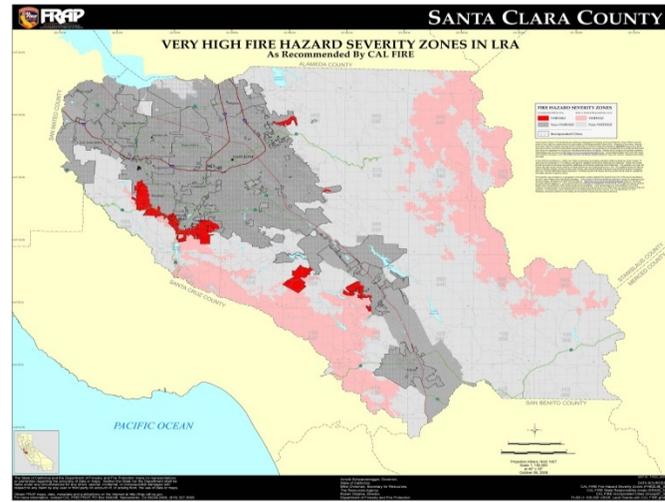
fuel (material that can burn), slope and fire weather. There are three zones, based on increasing fire hazard; moderate, high and very high. These zones serve several purposes. They are used to designate areas where exterior wildfire exposure protection building codes apply to new buildings. It can also be a factor in real estate disclosure. Local government considers fire hazard severity in the safety element of their general plan.

On September 20, 2005, the [California Building Standards Commission approved](#) the Office of the State Fire Marshal's ([OSFM](#)) emergency regulations amending the California Code of Regulations (CCR), [Title 24, Part 2](#), known as the 2007 California Building Code (CBC).

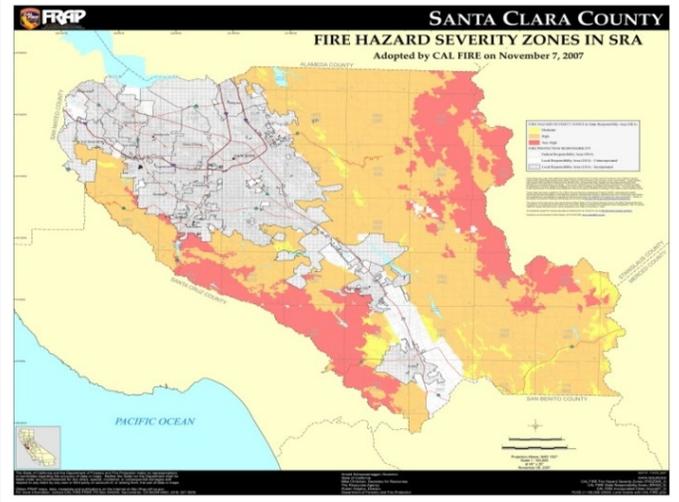
In part it states that new buildings located in a fire hazard severity zone within state responsibility areas, any Local Agency Very-High Fire Hazard Severity Zone, or any wildland urban interface Fire Area (see maps below) designated by the enforcing agency for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter.



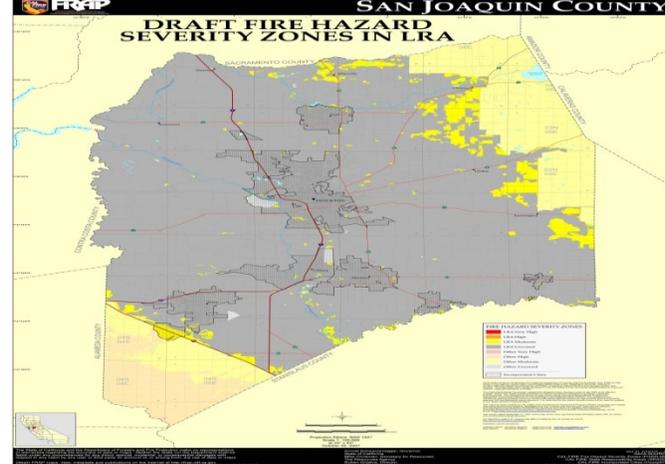
**Santa Clara County LRA**



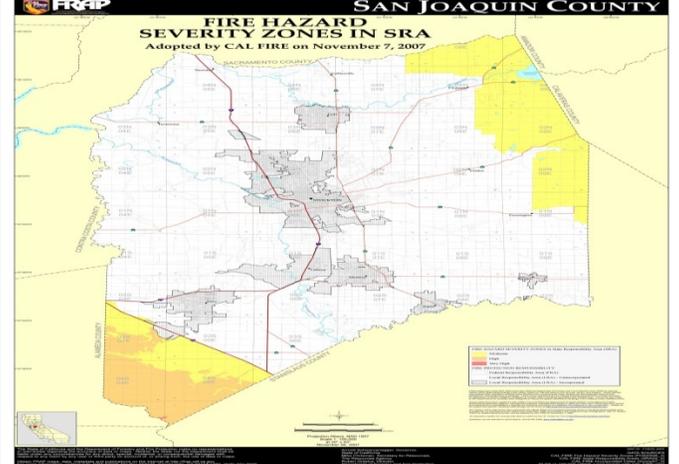
**Santa Clara County SRA**



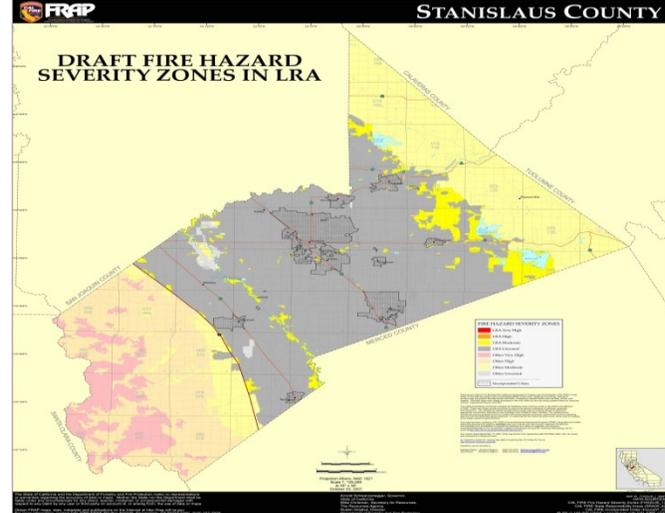
**San Joaquin County LRA**



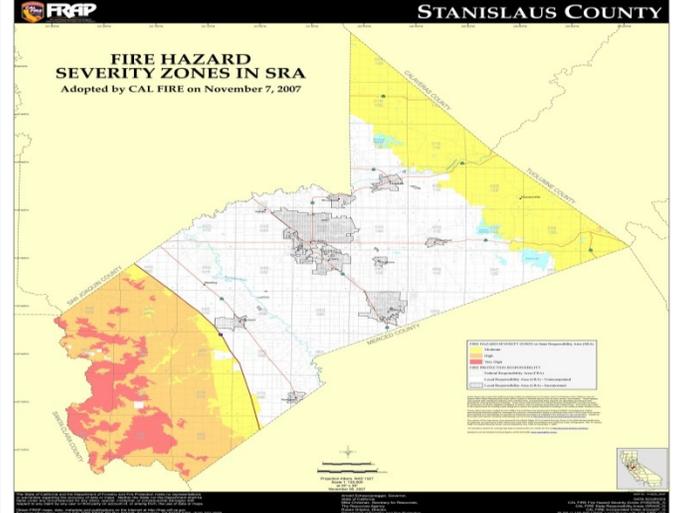
**San Joaquin County SRA**



**Stanislaus County LRA**



**Stanislaus County SRA**



Source: California Fire Hazard Severity Zone Map Update Project. Click on any map to view larger image.

With the exception of the LE-100 program (fire safe clearances around structures); the Santa Clara Unit has delegated the enforcement of these building standards to the local authority. The Unit however, continues to provide guidance and assistance to local authorities who frequently inquire as to specific building standards, changes to State Responsibility Areas, fire hazard severity zone designations, and through PRC 4290 plans checks.

Cities in the Santa Clara Unit for which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ)		
Alameda County	Contra Costa County	Santa Clara County
Berkeley	Danville	Cupertino
Oakland	El Cerrito	Los Gatos
Piedmont	Lafayette	Monte Sereno
Pleasanton	Martinez	Morgan Hill
San Leandro	Moraga	San Jose
Berkeley	Orinda	Saratoga
	Pinole	Cupertino
	Richmond	

Source: [CAL Fire Wildland Zone City Maps](#)

## INFORMATION AND EDUCATION

CAL FIRE's Fire Safety Education Programs are spread throughout the Santa Clara Unit and come in the form of fair exhibits, school presentations, station tours, posters, flyers, thousands of other printed materials, radio and television spots, community meetings, one-on-one contacts with wildland homeowners, and the internet.

The Santa Clara Unit makes it a priority that residents within the Unit that reside in wildland areas are informed as to the dangers of wildfire. In order to do this, the Santa Clara Unit has put a priority on conducting LE-100 inspections. These inspections are conducted in order for the homeowner to become educated on section 4291 of the Public Resources Codes. This section states in part that all structures located within State Responsibility Areas shall have a clearance of up to 100 feet of flammable vegetation cleared around all structures. By conducting LE-100 inspections, Santa Clara Unit staff is able to have one-on-one contact with homeowners providing Fire Safety education while at the same time enforcing the Public Resources Code.

## INSPECTION PROGRAM (LE-100)

The hazard reduction inspection program (LE-100) is managed by each planning area Battalion Chief. Engine companies are responsible for performing inspections within their initial attack

areas and are typically performed during spring and summer months. Engine companies are directed to leave an inspection notice at all properties to inform the homeowner there has been an inspection. Engine companies are also instructed to leave notices at residences where access is blocked. During the inspection, engine company personnel review and educate the homeowner on fire prevention requirements. If there are violations, a notice is issued and the homeowner is instructed to mitigate the violation. The engine company then returns for a re-inspection and if the violation is not mitigated, a citation may be issued and/or turned over to fire prevention staff for enforcement.



[Wildland urban interface Code Information](#)

### **State Requirements (SRA Lands)**

Public Resources Code 4290 ([PRC 4290](#)) – California Code of Regulations (CCR)

CCR Chapter 1, Division 1.5 of Title 14 (PRC 4290) is the statute that requires emergency access, signing and building numbering, private water supply reserves for emergency fire use, and vegetation modification in areas designated as State Responsibility Area (SRA).

Public Resources Code 4291 ([PRC 4291](#))

The State of California Public Resource Code 4291 (PRC 4291) requires owners of property to create defensible space around structures on their property where firefighters can provide protection during a wildfire. PRC 4291 applies to areas of the state within the responsibility area of CAL FIRE (SRA) and includes:

“a building or structure in, upon, or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material...”

The defensible space distance is measured along the grade from the perimeter or projection of the building or structure. Under PRC 4291, the defensible space distances require up to 100 feet, or to the property limit, whichever is closer; however, the amount of fuel modification necessary may extend beyond 100 feet depending on the flammability of the structure, topography, and fuels. [The CAL FIRE Guidelines for Creating Defensible Space](#) as outlined in PRC 4291.

These fuel reduction techniques should be conducted annually during the early spring and late summer in order to avoid the accumulation of hazardous fuels over time. Finally, the 4291 guidelines are specific to State Responsibility Areas (SRA), but may be applicable in Local Responsibility Areas (LRA), depending on local agency standards.

## **DEFENSIBLE SPACE FUEL TREATMENT TACTICS**

The following descriptions of vegetation treatment/hazard reduction operations are provided to promote individual homeowner compliance with PRC 4291. The guidelines, published by CAL FIRE should be reviewed by homeowners. Additionally, Figure 8 presents an illustrated graphic outlining the basics of defensible space creation and maintenance, as published by CAL FIRE. The following guidelines, provided by CAL FIRE, outline two distinct zones: from the structure outward to 30 feet and from 30 to 100 feet from structures (Reduced Fuel Zone):

1. Maintain a firebreak by removing and clearing away all flammable vegetation and other combustible growth within 30 feet of each building or structure, with certain exceptions pursuant to PRC §4291(a). Single specimens of trees or other vegetation may be retained provided they are well-spaced, well-pruned, and create a condition that avoids spread of fire to other vegetation or to a building or structure.
2. Dead and dying woody surface fuels and aerial fuels within the Reduced Fuel Zone shall be removed. Loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, shall be permitted to a depth of 3 inches. This guideline is primarily intended to eliminate trees, bushes, shrubs and surface debris that are completely dead or with substantial amounts of dead branches or leaves/needles that would readily burn.
3. Down logs or stumps anywhere within 100 feet from the building or structure, when embedded in the soil, may be retained when isolated from other vegetation. Occasional (approximately one per acre) standing dead trees (snags) that are well-space from other vegetation and which will not fall on buildings or structures or on roadways/driveways may be retained.
4. Within the Reduced Fuel Zone, one of the following fuel treatments (4a. or 4b.) shall be implemented. Properties with greater fire hazards will require greater clearing treatments. Combinations of the methods may be acceptable under §1299(c) as long as the intent of these guidelines is met.
5. Reduced Fuel Zone: In conjunction with General Guidelines 1, 2, and 3 above, minimum clearance between fuels surrounding each building or structure will range from 4 feet to 40 feet in all directions, both horizontally and vertically. Clearance distances between vegetation will depend on the slope, vegetation size, vegetation type (brush, grass, trees), and other fuel characteristics (fuel compaction, chemical content etc.). Properties with greater fire hazards will require greater separation between fuels. For example, properties on steep slopes having large sized vegetation will require greater spacing between individual trees and bushes (see Plant Spacing Guidelines and Case Examples below). Groups of vegetation (numerous plants growing together less than 10 feet in total foliage width) may be treated as a single plant. For

example, three individual manzanita plants growing together with a total foliage width of eight feet can be “grouped” and considered as one plant and spaced according to the Plant Spacing Guidelines in this document. Grass generally should not exceed 4 inches in height. However, homeowners may keep grass and other forbs less than 18 inches in height above the ground when these grasses are isolated from other fuels or where necessary to stabilize the soil and prevent erosion. Clearance requirements include:

- Horizontal clearance between aerial fuels, such as the outside edge of the tree crowns or high brush. Horizontal clearance helps stop the spread of fire from one fuel to the next.
  
- Vertical clearance between lower limbs of aerial fuels and the nearest surface fuels and grass/weeds. Vertical clearance removes ladder fuels and helps prevent a fire from moving from the shorter fuels to the taller fuels.

To achieve defensible space while retaining a stand of larger trees with a continuous tree canopy apply the following treatments:

- Generally, remove all surface fuels greater than 4 inches in height. Single specimens of trees or other vegetation may be retained provided they are well-spaced, well-pruned, and create a condition that avoids spread of fire to other vegetation or to a building or structure.
  
- Remove lower limbs of trees (“prune”) to at least 6 feet up to 15 feet (or the lower 1/3 branches for small trees). Properties with greater fire hazards, such as steeper slopes or more severe fire danger, will require pruning heights in the upper end of this range.

# WILDFIRE IS COMING. ARE YOU READY?



Defensible Space is your property's front line defense against wildfire. Creating and maintaining defensible space around your home can dramatically increase your home's chance of surviving a wildfire and improves the safety of firefighters defending your property. 100 feet of defensible space is required by law.\*



**ONE LESS SPARK**  
ONE LESS WILDFIRE

\*For more information on creating defensible space and legal requirements visit [READYFORWILDFIRE.ORG](http://READYFORWILDFIRE.ORG)

## TWO ZONES MAKE UP THE REQUIRED 100 FEET OF DEFENSIBLE SPACE:

### ZONE 1: 30 feet of Lean, Clean & Green

- 1 Remove all dead plants, grass and weeds.
- 2 Remove dead or dry leaves and pine needles from your yard, roof and rain gutters.
- 3 Keep tree branches 10 feet away from your chimney and other trees.

### ZONE 2: 30-100 feet of Reduced Fuel

- 4 Cut or mow annual grass down to a maximum height of 4 inches.
- 5 Create horizontal spacing between shrubs and trees.
- 6 Create vertical spacing between grass, shrubs and trees.

### Use Equipment Properly to Keep from Sparking a Wildfire

- 7 Mow before 10 a.m., and never on a hot or windy day. String trimmers are a safer option (vs. lawnmowers) for clearing vegetation.



### VERTICAL SPACING

Large trees do not have to be cut and removed as long as all of the plants beneath them are removed. This eliminates a vertical "fire ladder."



### HORIZONTAL SPACING

Create horizontal and vertical spacing between plants, the amount of spacing will depend on how steep the slope is and the size of the plants.

[Defensible Space Illustration by CAL FIRE](#)

## INTERNET RESOURCES

In 2015, the Santa Clara Unit developed a new webpage ([fire.ca.gov/scu](http://fire.ca.gov/scu)) under CAL FIRE's main website. This webpage was created to provide information, education and communication to the public about the Santa Clara Unit. Some of the material includes: news releases, incident information, contacts and stations, cooperative fire agencies, local government agencies, evacuation plans, a photo gallery, and links to FireSafe councils, concerned citizen groups, and local permitting agencies.



[fire.ca.gov/scu](http://fire.ca.gov/scu)

## VEGETATION MANAGEMENT

The Santa Clara Unit promotes vegetation management for fire hazard reduction while protecting and enhancing diverse ecosystem functions. Support for vegetation management is provided through various Department programs and with direct consultation with other agencies and landowners. VMP projects are developed consistent with the [California Environmental Quality Act](#) (CEQA).

**The Vegetation Management Program (VMP)** is a cost-share program with private landowners to promote mutual objectives using prescribed fire and mechanical treatments. Prescribed fire includes broadcast burns of large contiguous areas and hand pile burning in smaller and more sensitive areas. Mechanical treatments include manual cutting and chipping as well as mastication using heavy equipment. The goal of the VMP is to reduce the chance of large, damaging wildfires by reducing fire hazards on wildlands in California. Encouraging the best 'mix' of natural resource benefits from these lands, consistent with environmental protection and landowner objectives, is the Department's intent. This includes the three broad purposes, which encompass most Vegetation Management objectives:

- Reduction of conflagration fires.
- Optimization of soil and water productivity.
- Protection and improvement of intrinsic ecosystem values.



The VMP Coordinator in the Santa Clara Unit is also the Unit Forester and CEQA coordinator (Division 1604). The VMP coordinator is responsible for all aspects of the planning and development of the contract and burn plan. The Prescribed Fire Manager (Battalion 1613) is responsible for conducting the burn operation.

VMP projects also provide valuable opportunities for training with live fire, command and control functions and logistic support. These training opportunities are extended to many partnering agencies as well.

**State Responsibility Area Fire Prevention Fund (SRA FPF)** is a grant program managed by CAL FIRE for eligible applicants to support fire prevention activities that address the risk and potential impact of wildfire to habitable structures in SRA. Qualifying projects include hazardous fuel reduction projects, fire prevention education, and fire prevention training and planning that reduce the risk of wildfire upon habitable structures in SRA as worsened by drought conditions. Grants awarded within the Santa Clara Unit are administered by the Unit Forester. CAL FIRE often provides substantial additional support for these projects with personnel, equipment and technical support.

**Partnering organization projects** are projects sponsored and funded by other governmental agencies like parks and open space districts and non-governmental organizations (NGO's) like Fire Safe Councils. These organizations have identified priority areas for fuel reduction needs and have secured funding for such work. CAL FIRE often provides substantial additional support for these projects with personnel, equipment and technical support.

Unit personnel support for fuel reduction projects includes Engine Companies, firefighter hand crews and foresters. The Santa Clara Unit also has access to Conservation Camp crews from Ben Lomond Camp (San Mateo-Santa Cruz Unit), Delta Camp (Lake-Napa Unit), and Gabilan Camp (San Benito-Monterey Unit), as well as the personnel assigned to Battalion 3 utilizing the Unit's Firefighter Fuels crew and aviation resources on VMP Burns.

The program administrator (D 1604) and The Prescribed Fire Manager (B 1613) work closely with the FireSafe Councils , to identify projects that fall within the Unit's Fire Plan and assist in securing wildland-urban interface (WUI) and SRA Fee grants to pay for work in support of the Fire Plan.



A number of fuel break and escape route maintenance projects in the Lexington Hills, Loma Prieta, Montevina Road, County Line Road and in the north end of the Unit. In the 2014-2015 work years over 1000 acres were treated throughout the Unit thru Vegetation Treatment or VMP burns and pile burning. The program also hired 4 Forestry Technicians thru the SRA fee funds to assist Unit personnel in LE-100 inspections to aid homeowners living within the SRA on how to maintain defensible space around their homes.

## **CALIFORNIA FOREST IMPROVEMENT PLAN**

The California Forest Improvement Program (CFIP) is a State cost-share program aimed at improving the economic value and environmental quality of forest lands. CFIP projects help sustain forest and wildlife resources to meet our future needs for a healthy environment and productive forests. Healthy forests are more resistant to drought, pests and fire damage. Qualified landowners can generally be reimbursed up to 75 percent of their expenses for tree planting, thinning, release, fuels management, erosion control, and fish and wildlife habitat improvement projects. Ninety percent cost share rates may apply for projects on land damaged by wild fires, diseases, insects, wind, floods, landslides or earthquakes during the last ten years. This program is managed by forestry assistance specialists (FAS) at the Unit and Region level.

### **What kind of projects are funded by CFIP?**

- Preparation of a Management Plan and project supervision by a Registered Professional Forester
- Site preparation, tree planting, and follow-up activities, such as adding browse guards, to enhance tree survival and growth
- Tree thinning, release, and pruning
- Fuels management and slash disposal work, if located more than 100 feet from dwellings
- Erosion control, including revegetation, road rehabilitation, and installation of structures such as water bars, rocked crossings, or check dams, to reduce soil erosion and stream sedimentation
- Fish and wildlife habitat improvement, including planting native oaks or riparian species, installing exclusion fencing around watercourses and wetlands, and stream restoration projects.

**What are the minimum qualifications?** The property must contain at least 20, but not more than 5,000 acres of forest land and the property zoning must allow forest management activities to occur. Forest land is defined as areas having at least ten percent tree cover or suitable land where native tree species will be planted. The minimum project size for tree planting, thin/release/pruning, or fuels management work is five acres. The five-acre limitation does not apply to erosion control or fish and wildlife habitat improvement projects. Any work required under the Forest Practice Act is not eligible for CFIP funding. Planting or thinning of trees for use as Christmas trees, greenery or fire wood is also not eligible.

**Priority Areas**

In general, the Unit’s priority for vegetation management are areas very high fire severity zone designations, little or no recent fire history, and areas with high population in the SRA (especially in the wildland-urban Interface). Each of the Unit’s Battalions has identified specific areas within their Battalion Fire Plans.



**Objectives**

- Reduce hazardous vegetation for defensible space at CAL FIRE facilities such as fire stations, radio repeater sites (Pacheco & Loma Prieta) and lookouts (Copernicus Peak and Mt. Oso).
- Develop and conduct VMP projects for Joseph D. Grant County Park, Henry Coe State Park, Motorcycle County Park/ Santa Clara Valley Open Space Authority, and Mustang Peak.
- Maintain Truck Trails where CAL FIRE has use agreements. This requires periodic maintenance of roadside vegetation and road surfaces to ensure adequate emergency response capability.
- Promote CFIP agreements with local qualifying landowners to restore and enhance ecosystem functions and to reduce hazardous vegetative fuel conditions.
- Provide grant administration and technical assistance to projects funded by SRAFPF grants:

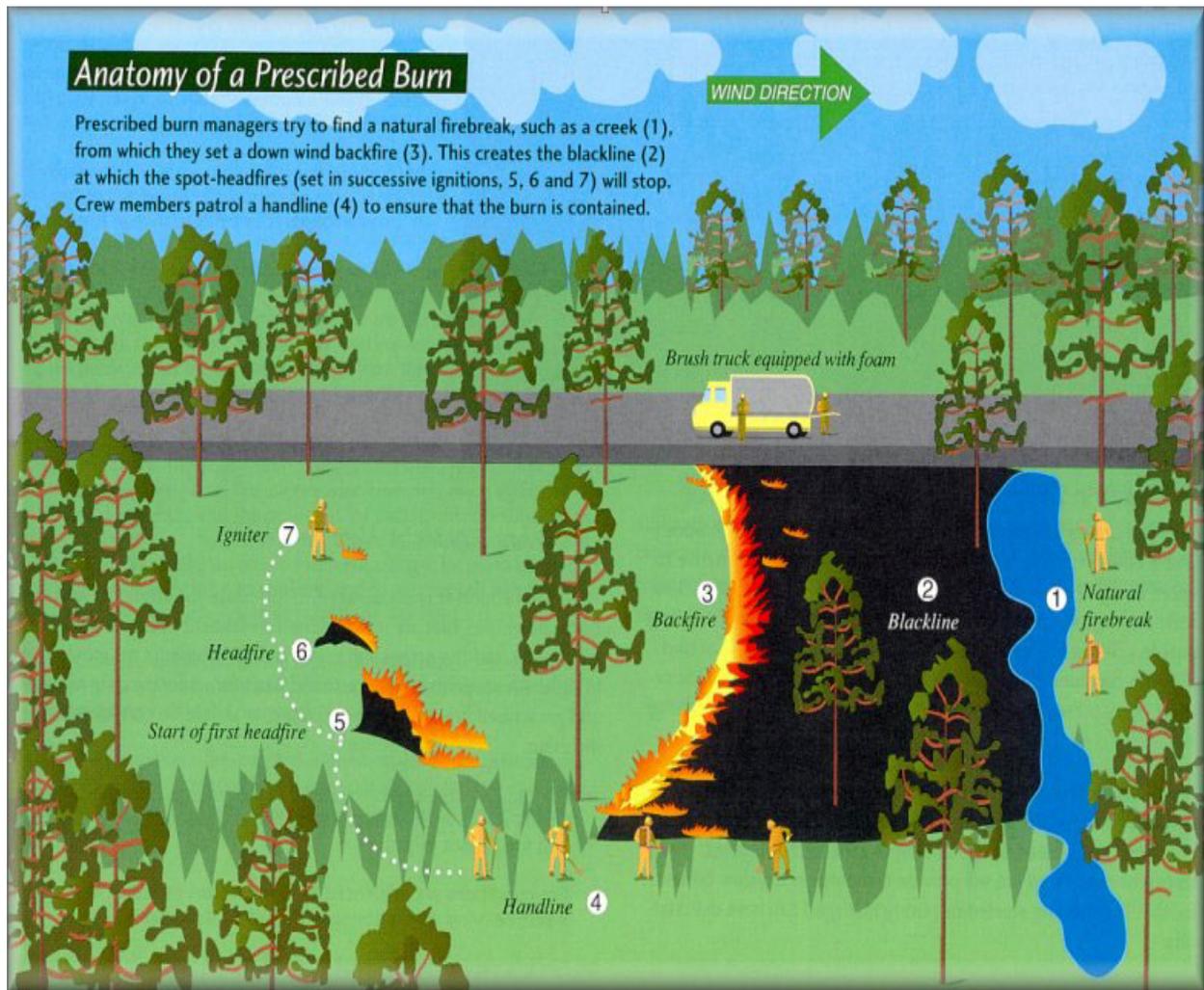
**SRA Fee Fuel Reduction Grants Active in 2016**

Project Name	County	Project Location	Funding Recipient	Funding Amount	Grant Number
Goat Grazing, East Bay Hills SRA	Contra Costa	Oakland Hills	East Bay Regional Park District	\$204,000	5GS14108
Clayton-Morgan Territory Fire Safe 2015	Contra Costa	Clayton-Morgan Territory	Diablo Fire Safe Council	\$170,680	5GS14120
Santa Clara County CWPP	Santa Clara	All Santa Clara Co.	Santa Clara County Fire Department	\$250,000	5GS14160
Fire Safe Sunol 2016	Alameda	Sunol	Diablo FireSafe Council	\$56,740	5GS15140
Highway 17 Corridor Hazardous Fuels Reduction	Santa Clara	Highway 17/ Redwood Estates	Santa Clara County FireSafe Council	\$99,000	5GS15159
Total				\$780,420	

- Provide technical assistance and material support when possible to partnering organization's projects:

**Assistance to partnering organizations**

<b>Project</b>	<b>County</b>	<b>Project Location</b>	<b>Partnering Organization</b>
Chipping	Alameda	Sunol/Kilkare Woods	Diablo FSC
CWPP Development	Alameda	City of Hayward	Diablo FSC
Homeowner assistance chipping	Alameda	County-wide	Diablo FSC
CWPP Development	Contra Costa	El Cerrito/ Kensington	Diablo FSC
CWPP Development	Contra Costa	Clayton/ Morgan Territory	Diablo FSC
Fuel break/ Evacuation route	Contra Costa	Oak Hill Rd Morgan Territory	Diablo FSC
Fuel reduction	Contra Costa	Hacienda de la Flores	Diablo FSC/ Moraga Orinda Fire Dept.
Evacuation route	Contra Costa	Sleepy Hollow School	Moraga Orinda Fire Department
Homeowner assistance chipping	Contra Costa	County-wide	Diablo FSC
Fuel break	Santa Clara	Twin Creeks	Mid-Peninsula Open Space District
CWPP Development	Santa Clara	Santa Clara County	Santa Clara County Fire
Fuel break	Santa Clara	Montevina Road	Santa Clara County FSC
Fuel break	Santa Clara	Black Road	Santa Clara County FSC
Fuel break	Santa Clara	Highway 17 Corridor	Santa Clara County FSC
Fuel break/ Evacuation route	Santa Clara	Old Santa Cruz Hwy & connecting roads to Hwy 17	Santa Clara County FSC
Fuel break/ Evacuation route	Santa Clara	Highway 35 Corridor	Santa Clara County FSC
Fuel break/ Evacuation route	Santa Clara	Casa Loma & Loma Chiquita	Santa Clara County FSC
Fire prevention education	Santa Clara	County-wide	Santa Clara County FSC
Homeowner assistance chipping	Santa Clara	County-wide	Santa Clara County FSC
Contractor workshop	Santa Clara	Santa Clara County	Santa Clara County FSC
Fuel break and pile burning	Santa Clara	Mt. Madonna County Park	Santa Clara County Parks & Recreation
Fuel break	Santa Clara	Moody Gulch	Santa Clara County Parks/ RESA/
Fuel break	Santa Clara	Chual Spur	Santa Clara Valley OSA
Fuel break	Santa Clara	Upper Uvas	Santa Clara Valley OSA
Fuel break	Santa Clara	North Llagas Creek watershed	Santa Clara Valley OSA
Fuel break	Santa Clara	South Llagas Creek watershed	Santa Clara Valley OSA
Fuel break	Santa Clara	Charcoal Road	South Skyline FSC
Fuel break	Santa Clara	Henry Coe State Park	California State Parks
Fuel break and pile burning	Santa Clara	Mt. Hamilton/ Copernicus Peak	UCSC - Lick Observatory
Homeowner assistance chipping	Santa Clara	County-wide	Santa Clara County FSC
Establish a new FSC	Stanislaus	Western Stanislaus County	To be determined



The key distinction between a VMP and a wildfire is that pre-planning a prescribed burn reduces uncertainty and makes the overall VMP assignment less complex. Prior to ignition, the Incident Commander must confirm that proper approvals and notifications have been performed and then satisfactorily complete the VMP Go/No Go Checklist.

## SECTION V: PRE-FIRE MANAGEMENT TACTICS

Pre-fire management tactics are employed by the Santa Clara Unit through multiple programs available to each planning area. These programs can be tailored to meet the needs at a countywide or community level. These programs are also scalable to meet the needs of the county and communities we serve.

### DIVISION / BATTALION / PROGRAM DESCRIPTION & PLANS

The following pages contain descriptions of each field Battalion and lists of projects and goals for the implementation of the Santa Clara Unit's Strategic Fire Management Plan. They are compiled by the field Battalion Chiefs with input from the Unit's Pre-Fire Engineer, FireSafe Councils, other stakeholders, and the general public through community outreach. While they reflect an amazing cross section of goals and ideas, they are not inflexible or cast in stone, nor are they the only options available to mitigate a problem. These are suggestions and a starting point for the journey, not the end point.

#### BATTALION 1 (Morgan Hill)



E-1661 Morgan Hill

Battalion 1 covers portions of Western, Southern and Eastern Santa Clara County and lies solely in the State Responsibility Area (SRA) ([see Appendix C](#)). The boundary of the Western portion follows the south side of Bailey Road in the Northwest; East of Uvas Road; then westward on the Redwood Retreat Road; South along the Santa Cruz County line to San Benito County line. The boundary of the Eastern portion follows the San Benito County Line at San Felipe Road

to the Henry Coe State Park and private ranches to the West side of County Line Road, including the Highway 152 corridor- from Dinosaur Point to Dunne Hill.

Topography in the Battalion ranges from rolling hills bordering the Santa Clara Valley and Highway 152 corridor to steep slopes at higher elevations covered with brush or conifers at the mid and upper elevations. Portions of the Battalion such as Henry Coe State Park and the Western border with the San Mateo-Santa Cruz Unit (CZU) are remote and require extended travel times for ground resources to make access. The Battalion also encompasses thousands of acres of watershed critical to domestic drinking water, contains habitat critical to numerous animal and plant species, and has an abundance of historic and pre-historic cultural sites.

Fuels in Battalion 1 range from annual grass and oak woodland (60%) at the lower, more arid elevations, to conifers, (10%) at the upper elevations of the Western border of the Battalion with CZU. The mid elevations as well as shaded slopes of the lower elevations and the Southern aspects of the upper elevations have a significant amount of California mixed chaparral species (30%). Depending on the live fuel moisture content of these fuel models and any adverse weather conditions, all of these fuels can present significant fire behavior and resistance to control.

Due to the moderating influence of the Pacific Ocean, Battalion 1 typically enjoys a mild, Mediterranean climate. Summer months in the Western portion of the Battalion are characterized by coastal fog which arrives from the ocean around 10 p.m. and dissipates the next morning by 10 a.m. The Eastern portion of the Battalion above 2000 feet is often above the marine influence allowing fires to burn actively at night. Both wind and low relative humidity play important roles in influencing fire behavior in the Battalion. Afternoon winds in the Santa Clara valley blow most days from 10-15mph. During the nighttime hours, dry air over the higher elevations of the Eastern portion of the Battalion sinks towards the Central Valley causing moderate downslope winds and a drop in humidity commonly into the single digits typically between midnight and 4am above 1500 feet. Extended travel times into these areas combined with heavy fuel loads can create significant fire behavior concerns.

In addition to CAL FIRE and its cooperative agreements, there are two paid fire agencies operating in Battalion 1 that border SRA. Historically, major wildland fire occurrence has been in the remote and sparsely populated eastern portion of the Battalion. The 1936 Fire, the 1961



E-1680 Coyote

Bollinger Ridge Fire, and the 2007 Lick Fire, are the largest fires recorded in the Santa Clara Unit. The Croy fire in fall of 2002, located in the hills West of Morgan Hill burned for a week destroying numerous structures. Other recent notable fires include the Hummingbird and Whitehurst Fires in June of 2008. These fires required a significant commitment of resources and time to prevent structure loss.

A complex wildland urban interface zone (WUI) exists in the Battalion. Many residences are located in areas with poor access, steep slopes and heavy fuels. Fires in the Battalion often require significant resource augmentation and coordination with local government resources both from in and out of Santa Clara County. With the cooperation of local fire agencies, Mutual Threat Zones (MTZ'S) have been created allowing a significant increase in initial attack capabilities and therefore an increased probability of fires being contained with the initial response assignment.

Fire prevention in Battalion 1 will focus around aggressive public education and information, fuel reduction, and maintaining fuel breaks and access roads. One of the oldest FireSafe demonstration gardens in the State is located in the Battalion at the Santa Clara Unit (SCU) Headquarters. This garden was just re-named the "*Chris W. Morgan FireSafe Demonstration Garden*" in honor of Chris Morgan's years of service to fire prevention in SCU. Other notable ongoing projects in the Battalion include the County Line Road fuel break and various Vegetation Management projects in and around Henry Coe State Park requiring close interagency cooperation and planning. These ongoing projects accomplish both fuel reduction and provide access to isolated areas of Eastern Santa Clara County.

### **Priority Areas**

Provide assistance for Henry Coe State Park and private ranchers in fuel modification projects.

1. Continue to maintain the Santa Clara County Line Road Fuel Break. This Road runs from the San Antonio Valley at Hwy 130 to Hwy 152 just east of Pacheco Fire Station. This road serves as a critical access to fires in Coe Park and the Orestimba Creek Watershed. The road is maintained by Unit personnel every two years or when needed.
2. Develop concise pre-response and evacuation plans for Pacheco Pass, Henry Coe Park, and Watsonville Road areas. These plans and maps will provide new personnel, ECC staff, and incident management teams with the location of strategic control points and access into remote SRA land.
3. Obtain and install additional water tanks for fire protection at the Coyote Fire Station and the Canada de los Osos Ecological Reserve.
4. Develop and establish a FireSafe demonstration garden at Pacheco Station.
5. Install fire prevention signs for the public at Coyote and Pacheco Fire Stations.

## **Objectives**

Improve awareness and involvement between the Santa Clara County FireSafe Council and South Santa Clara County communities with personnel at the fire station.

1. Continue to maintain the Santa Clara County Line Road Fuel Break (along Stanislaus County). This Road connects the San Antonio Valley at Highway 130 to Highway 152 just east of the Pacheco Fire Station. This road serves as a critical access to fires in Henry Coe Park and the Orestimba Creek Watershed. The road is maintained by Unit personnel every two years or when needed pursuant to longstanding agreements with local landowners.
2. Continue homeowner defensible space inspections (LE100 Inspections) for habitable structures with Volunteers in Prevention (VIP), Engine Companies, and dedicated defensible space inspectors.
3. Continue providing input on all new construction and developments with the Santa Clara County Fire Marshall's office.
4. Participate in various local community activities (i.e. Back Country Event, Renaissance Fair, Indian POW WOW, and Tarantella Festival)
5. Staff all state funded Type III fire engines with 3 personnel during declared fire season.
6. Assist with training and planning to assist local government for the possibility of Weapons of Mass Destruction (WMD) and terrorist acts.
7. Assist with training and planning to assist local government for the possibility of natural or man-made disasters.
8. Provide support for establishment of a Santa Clara County-wide Community Wildfire Protection Plan.
9. Maintain Pacheco Peak repeater site due to it being a key communication site for the Unit.
11. Develop concise pre-response and evacuation plans for the battalion. These plans and maps will provide new personnel, ECC staff, and incident management teams with the location of strategic control points and access into the vast area of SRA lands.

## BATTALION 2 (San Jose)

Battalion 2 encompasses approximately 250 square miles of SRA lands in the Northeastern portion of Santa Clara County and the SRA lands in the Almaden Valley ([see Appendix C](#)). A major portion of the Battalion covers the remote undeveloped area of the Diablo Range.

Topography in Battalion 2 ranges from the foothills South and East of the bay to the mountainous areas of the Diablo Range. Fuel types are generally grassland (30%), oak woodland (30%) California mixed chaparral (30%) and mixed conifer (10%) along the ridgelines of the Diablo Range.

Most of fuels in the wildland urban interface (WUI) areas on the border of San Jose City would be classified as a grass model with the exception of the Alum Rock area. The fuel type that presents the greatest threat for this interface area is the eucalyptus trees. These trees will be the main source of fire brand production and have the potential to cause moderate to long range spot fire ignitions, and will make control efforts and structure protection difficult.

Higher elevations above the frequent inversion layer stay very dry and commonly experience nighttime subsidence with an off shore component dropping the relative humidity into the single digits. Extreme fire behavior has been observed on several wildfires above 2,000 feet in elevation in the Diablo Range due to this micro climate. In late summer and fall when the offshore flow is more prevalent, and the live fuel moistures reach critical levels, large fire potential is quite high. Strong pressure gradients between interior California and the ocean produce very strong winds through the area.

Most of Battalion 2 encompasses the rural areas East of San Jose. An expansive Wildland urban interface zone exists in the East San Jose foothills as well as in the Almaden Valley area South of



E-1672 Almaden

San Jose City. This creates the potential for a significant wildfire within San Jose City that could result in considerable structure loss. Some high density Local Responsibility Area (LRA) communities in the lower foothills are intermixed with native wildland fuels, eucalyptus trees, and flammable non-native landscaping. Alignment of a high wind event could drive a fire front through these subdivisions with the structures themselves becoming the main source of fuel loading and fire spread.

The remote SRA areas also have a high potential for major fires but ignitions are limited. In 2003, lightning ignited numerous fires in the Diablo Range with several becoming major incidents.

Most fires in the Battalion are typically contained by the initial attack resource assignment. Cooperation with the City of San Jose Fire Department as well as Mutual Threat Zones (MTZ'S) and the augmented dispatch this provides are a significant factor in rapid containment of fire starts in the wildland urban interface zone.

Fire Prevention in Battalion 2 focuses on public information and education as well as fuel reduction projects in the areas of Grant Ranch County Park and the Lick Observatory complex on Mt. Hamilton. Several vegetation management burns are also planned for private landholdings in the Eastern portion of the Battalion.

### **Priority Areas**

The priority areas within the Battalion were based on three factors; values at risk, communities at risk, and watershed value. The three areas are:

1. Alum Rock Falls
2. Lick Observatory
3. The community of Twin Creeks

### **Objectives**

1. Continue homeowner defensible space inspections (LE100 Inspections) for habitable structures with Volunteers in Prevention (VIP) and Engine Companies and designated Defensible Space inspectors.
2. Develop concise pre-response and evacuation plans for the Mt. Hamilton area. These plans and maps will provide new personnel, ECC staff, and incident management teams with the location of strategic control points and access into the vast area of SRA lands.
3. Provide support for establishment of a Santa Clara County-wide Community Wildfire Protection Plan
4. Continue development and maintenance of a fuel break around Copernicus Lookout.
5. Continue repairs to the Copernicus Lookout.
6. Install additional water tanks for fire protection at Smith Creek Station.
7. Install public education signs at Smith Creek Station

## BATTALION 3 (West Santa Clara County)

Battalion 3 is located in Santa Clara County along the Eastern slope of the Santa Cruz Mountains from Los Altos at the San Mateo County line south to Hecker Pass (Hwy 152) west of Gilroy ([see Appendix C](#)). The Battalion resides solely in the State Responsibility Area (SRA) and enjoys positive working relationships with the Santa Clara County Fire Department in the North, San Jose Fire Department centrally, and Morgan Hill and South Santa Clara County Fire District (CAL FIRE cooperative fire protection agreements) to the South. Within the Battalion are the primary domestic water supply watersheds for Silicon Valley providing water to over two million residents thru six reservoirs and two water companies; the Santa Clara Valley Water District and the San Jose Water Company. The Battalion is home to a large amount of coast redwoods protected from development by Open Space Districts and County Parks.

The large population centers of Palo Alto, Cupertino, Los Gatos and Saratoga are all within the Local Responsibility Areas (LRA) but are treated as Mutual Threat Zones (MTZ). Weather in Battalion 3 is typical of a Mediterranean climate. Fog often intrudes during the evening hours



E-1673 Alma

and burns off late the next morning. Onshore breezes from the Pacific raise humidity and moderate fire danger most summer afternoons, but offshore flow, coupled with low 100 and 1000 hour fuel moisture levels in late summer, fall and even in the winter months create critical fire weather conditions. All of the historic large fires in this Battalion occurred under the influence of strong North winds which bring the whole Santa Cruz

Mountain range in a dangerous wind alignment when they surface. The East Slope of the Santa

Cruz Mountains receives on average 25 inches of rain per year. Strong Pacific storms come off the ocean and lift on the mountain range creating good rain production. During drought conditions as seen in the Battalion over the last 4 years, live fuels can become extremely stressed and hit critically low levels around August instead of mid-September and result in fires that become resistant to control as seen in the 2008-2009 fire seasons.

Fuels in Battalion 3 are diverse and can change rapidly over the mountain range depending on slope, aspect and elevation. Elevations in the Battalion range from 350ft above sea level in the valley up to nearly 4000 ft. on the summits of Loma Prieta and Mt. Umunhum. Grass/Oak woodlands dominate the lower elevations transitioning to mixed conifers and mixed chaparral on the upper slopes. Conifers present include coast redwood, Douglas-fir, gray pine, knob cone pine and Monterey pine. Chaparral is dominant and extremely continuous on the southwest aspects of the eastern mountain range, with some stands having little to no fire history recorded

in the stands. The [National Fire Danger Rating System](#) (NFDRS) fuel models most common in the Battalion are A, B, G and I. The Highway 17 corridor is heavily populated and has a large amount of coastal redwood with a significant understory of brush and young trees from decades of build-up. Fires starting along Highway 17 can take large amounts of resources to fully control due to the down and dead fuel components in the understory.



Copter 106 Alma Helitack

The Battalion has 2 Stations; Alma Station in Los Gatos at Lexington Reservoir and Stevens Creek Station in Cupertino on the Stevens Creek Reservoir. Both stations are staffed by a Type 3 Engine. The battalion is home to the Alma Helitack Base which houses one UH-1H Bell 205 Super Huey Helicopter, and one Helicopter Support Unit. During Fire Season the Battalion responds to SRA related wildland fires and also enjoys an Automatic Aid agreement with Santa Clara County Fire to assist with their all-risk mission. During the winter months the Captains assigned to the Battalion perform duties in support of the Unit Fire Plan through the Vegetation Management Program (VMP). The Captains staff and run our Firefighter Fuels crew while performing vegetation treatment projects, VMP burns, and will staff Helicopter 106 for water dropping and air rescue missions.

The Battalion has a long history of large devastating fire occurrences including the 2009 Loma Fire, the 2008 Summit Fire, 2002 Croy Fire, 1996 Cats Fire, and the 1985 Lexington Fire. Alma Station, named after the town of Alma, was the original Unit Headquarters before it was moved to make way for the construction of the dam face at Lexington Reservoir in 1953. The towns of Alma and Lexington were consumed when the reservoir was created. When the reservoir lowers during drought years, foundations from houses and structures from the towns as well as the original “Santa Cruz Highway” can be seen. The station was moved to its present location and Headquarters was then moved to Morgan Hill. The garage structures at both Alma and Stevens Creek Stations are the original structures that housed the Unit’s vehicles at the original Headquarters and are two of the oldest historical structures in the Unit.

### **Priority Areas**

1. Lexington Basin area including Aldercroft Heights, Chemeketa Park, Redwood Estates and Soda Springs Canyon. These communities combined cover 3,000 acres and include an estimated population of 2,400 residents.
2. Saratoga area including the Highway9 and Highway35 Corridors, Stevens Canyon Road, Redwood Lodge Road, and Sanborn County Park.

3. Loma Chiquita and Casa Loma area of the former PL-566 project. These communities combined cover 5,500 acres and include an estimated population of 175 residents.
4. Watershed areas controlled by Santa Clara Open Space Authority, Mid-Peninsula Open Space District and Santa Clara County Parks.

### **Objectives**

1. Continue fuel modification work within the Lexington Basin in support of the Lexington Hills Community Wildfire Protection Plan (CWPP) on projects including Montevina Road, Morell Road, Moody Gulch, Black Road and Bear Creek Road.
2. Conduct fuel modification work within the vicinity of Saratoga (including Highway 35 and Highway 9), Redwood Lodge Road, Sanborn County Park, and Stevens Canyon Road.
3. Conduct fuel modification work along escape routes on Loma Chiquita and Casa Loma Roads, fuel break around the Loma Prieta repeater site, fuel modification along Chual Spur Road.
4. Conduct fuel modification at Rancho Canada Del Oro Open Space and the Sierra Azul Open Space preserve
5. Develop VMP burn plans for Rancho Canada Del Oro Open Space, the Sierra Azul Open Space preserve, Motorcycle Park, Grant Ranch Park and the San Antonio Valley Ecological Reserve.
6. Assist the Santa Clara County FireSafe Council thru grants to expand a chipper program to include stakeholders in the Croy Ridge community.
7. Assist in gaining stakeholder support for a shaded fuel break along the western boundary of Santa Clara County.
8. Assist in gaining stakeholder support and implementation of a County-wide CWPP for Santa Clara County.
9. Assist Santa Clara County Parks on a shaded fuel break around camp grounds and cabin structures in Mt. Madonna County Park.
10. Continue maintenance of evacuation routes on Morrill, Montevina and Wright Station Roads.
11. Assist in securing grant money in pursuit of above ground water storage tanks for fire suppression use at the Bear Creek Stables in the Sierra Azul Open Space Preserve.
12. Assist County Parks and the South Skyline FireSafe Council to develop a fuel break along Charcoal Road from Table Mountain through to Sanborn County Park.
13. Continue homeowner defensible space inspections (LE 100) in and around the Lexington Basin with a focus on the communities of Aldercroft Heights and Soda Springs Canyon.
14. Continue homeowner defensible space inspections (LE 100) in the Stevens Canyon area with a focus on Montebello and Redwood Lodge Roads.
15. Continue collaborative work with the South Skyline FireSafe Council in Santa Cruz County along Skyline Road (Highway 35) including fuel modification work to maintain an evacuation route between Santa Clara and Santa Cruz Counties.

16. Complete pre response and evacuation plans for the Lexington Basin and Saratoga in collaboration with Santa Clara County Fire.
17. Complete pre response and evacuation plans for the, Los Altos, Stevens Canyon and Montevina Road areas.
18. Develop concise pre response and evacuation plans for priority areas in the Battalion. These plans and maps will provide new personnel, ECC staff, and incident management teams with the location of strategic control points and access into the SRA lands.

## BATTALION 4 (Alameda County)

Battalion 4 covers the entire County of Alameda. Alameda County has a population of 1.5 million people. It is geographically located on the Eastern side of the San Francisco Bay and stretches eastward from Oakland into the greater San Joaquin valley near Tracy (see [Appendix C](#)). Contra Costa County borders it to the north while Santa Clara and San Joaquin border it to the south and east.

Topography ranges from rolling hills near the bay to mountainous elevations up to 4000 feet with steep canyon drainages south of Livermore. Fuel types are generally grass (50%), chaparral (30%) and oak woodland (20%). Weather during fire season is temperate near the bay and hotter and drier further inland approaching the inland valleys. The most significant weather factor in Alameda County is wind. Wind patterns are predominately west to east during fire season due to the cooler marine air flowing from the San Francisco Bay into the Livermore and San Joaquin valleys. Wind speeds vary but on most summer days the winds near the bay are 10 to 20 mph in the eastern portion of the county on those same days wind velocities will be 15 to 25 mph Wind velocities of 40 to 50 mph in the eastern portion of the Battalion are not uncommon under normal weather patterns. Even though relative humidity is tempered by the marine influence, the higher wind speeds adversely affect fire behavior. Any fire starts with sustained fuel continuity downwind quickly progress into moderate to rapid rates of spread at the fire's head. Quick initial attack by fire suppression forces is critical in these conditions.

Operationally, Battalion 4 is a complex environment for CAL FIRE. There are twelve local government fire agencies operating in Alameda County. Combined, there are 125 paid



E-1664 Sunol

companies in the Alameda County Fire Service. Nine of the twelve departments border CAL FIRE state responsibility areas (SRA). There are approximately 70 miles of wildland urban interface (WUI) separating local government responsibility areas (LRA) from the 286,000 acres of CAL FIRE jurisdiction. The interface area is densely populated with homes that easily exceed one million dollars each. The high values at risk in Battalion 4 and the windy conditions have combined to create high damage loss fires historically. A single two acre fire in the Oakland Berkeley hills destroyed two homes and damaged a third

for a total damage loss of four million dollars. The 1991 Tunnel Fire destroyed 3,000 homes for a loss of 1.8 billion dollars. Life safety at wildland fires is also a major concern. There have

been 28 wildland fire fatalities in Alameda County going back to 1968 including citizens, police and firefighters. Coordination during wildland fire evacuations in the densely populated interface areas is a major challenge. Coordination with local government fire resources is critical to fire response in Alameda County. An extensive cooperative effort over the past ten years to create and manage mutual threat zones and responses to fires has dramatically increased CAL FIRE's initial attack capability in this area. That coupled with CAL FIRE moving additional fire engines and helicopters into the East Bay during times of high fire danger increases the probability of keeping fires small and therefore reducing the need for evacuations and reducing dollar loss.

The main focus for fire prevention in Battalion 4 is public education, information and fuel reduction in prioritized areas. This focus includes a strong relationship with stakeholders to maximize effectiveness of limited resources to accomplish prioritized objectives. East Bay Regional Parks completed an Environmental Impact Report to address fuels management by way of the establishment of fuel breaks, shaded fuel breaks and the reduction of hazardous trees and other vegetation within their jurisdiction of Alameda County. CAL FIRE is partnered with local government fire agencies, the Diablo FireSafe Council and the Hills Emergency Forum. This partnership is designed to reach beyond the fire service to involve homeowners, community leaders, planners, developers, insurance companies, public utilities and others to reduce the risk of wildfire, before a fire start

### **Priority Areas**

Wildland urban interface (WUI) areas that are SRA/ local responsibility area (LRA) jurisdiction:

1. Oakland-Berkeley Hills: 16,200 acres with an estimated population of 105,000. Oakland Fire, Berkeley Fire, East Bay Regional Parks and CAL FIRE have jurisdiction.
2. San Leandro-Castro Valley Hills: 8,500 acres with an estimated population of 30,000. Alameda County Fire, East Bay Regional Parks and CAL FIRE have jurisdiction.
3. Hayward Hills: 5,000 acres with an estimated population of 38,000. Hayward Fire, East Bay Regional Parks and CAL FIRE have jurisdiction.
4. Union City-Fremont Hills: 10,000 acres with an estimated population of 20,000. Alameda County Fire, Fremont Fire and CAL FIRE have jurisdiction.
5. Pleasanton Ridge- Kilkare Woods: 4,000 acres with an estimated population of 5,000. Livermore-Pleasanton Fire, East Bay Regional Parks and CAL FIRE have jurisdiction.
6. Palomares-Niles Canyon: 3,500 acres with an estimated population of 1,500. Alameda County Fire, Hayward Fire, Fremont Fire, East Bay regional Parks and CAL FIRE.

## Objectives

1. Continue and enhance fuel modification and fuel reduction projects in the wildland urban interface areas. Coordinate resources with the Hills Emergency Forum and the Diablo FireSafe Council. Projects include but are not limited to:
  - i. Sunol-Diablo FireSafe Council fuel reduction project.
  - ii. Castro Valley-Diablo FireSafe Council shaded fuel break project.
  - iii. Berkeley upper Strawberry Canyon fuel reduction project.
  - iv. Diablo FireSafe Council East Bay roadside clearance project.
  - v. East Bay Regional Park Claremont Canyon fuel reduction project.
  - vi. Tilden Park eucalyptus removal project.
  - vii. Oakland-Berkeley Hills 15 mile fuel break project.
  - viii. Oakland Shepherd Canyon shaded fuel break project
  - ix. East Bay Regional Park Chabot Park fuel reduction project.
  - x. Highway 24 Caldecott Tunnel fuel reduction project.
  - xi. Hayward Hills-Fairview Diablo FireSafe Fuel Reduction Project.
  - xii. Obtain language changes in the conditions of approval for wind generators use.
2. Permits requiring numbering and marking gates and road access utilizing the standards of PRC 4290 with regard to signage.
3. Conduct geographic information system (GIS) / global positioning satellite (GPS) mapping and marking of wind farm gates and road system for emergency responses.
4. Conduct public information and education programs at local schools.
5. Distribute FireSafe educational materials at public gatherings and public venues.
6. Utilize Defensible Space Inspectors and Volunteers in Prevention for targeted inspections of dwellings and buildings for LE 100 inspections and compliance with PRC 4291.
7. Whenever dealing with the media suggest fire prevention messages to be included and integrated into their story.
8. Conduct meetings with agricultural groups such as the Cattleman's Association, and Farm Bureau to provide information and encourage the use of firebreaks and clearance around all improvements such as dwellings, barns, out buildings and wells.
9. Conduct training exercises and pre-fire season briefings with cooperating fire agencies and share pre-fire plans for special target hazards.  
Assist with an update of the countywide community wildfire prevention plan (CWPP).  
(Current update January 1, 2015)
10. Develop concise pre response and evacuation plans for priority areas in the Battalion. These plans and maps will provide new personnel, ECC staff, and incident management teams with the location of strategic control points and access into the SRA lands.

## BATTALION 5 (Stanislaus County)

Battalion Five covers all of western Stanislaus County west of the San Joaquin River between San Joaquin County to the north and Merced County to the South (see [Appendix C](#)). Most of Stanislaus County between the San Joaquin River and Interstate 5 is local responsibility area (LRA). The Battalion also includes a portion of Eastern Santa Clara County; including the San Antonio Valley and is bordered by the top of the China Grade on Mount Hamilton Road to the west of the San Antonio Valley.

The vegetation and topography in Battalion Five transitions from annual grass rangelands on rolling foothills along the Interstate Five corridor to remote, steep, brush and pine covered mountains to the west.

The area includes over 230,000 acres of watershed critical to maintaining downstream water quality. All runoff flows into the San Joaquin River, a valuable fisheries and source of agricultural and domestic water supply.

Numerous plants and animals that are designated as rare, threatened or endangered species, or are candidates for such designation, occur here.

The Battalion includes sparsely populated rural and ranch properties and a

planned upscale residential resort community in the Salado Creek area, being developed under the Diablo Grande Specific Plan. Currently development at Diablo Grande consists of two golf courses and just over 500 homes. The Battalion includes wilderness areas of Henry Coe State Park and the Frank Raines Off-Highway Vehicle Park.

Frank Raines Park is a 1,800 acre multi-use park operated by Stanislaus County, located 18 miles west of Patterson in Del Puerto Canyon. Eight hundred acres of the park is designated for off



E-1675 Del Puerto

highway vehicle (OHV) use. The OHV portion of the park is in very steep and treacherous terrain. Because of the steep terrain and the potential fire risk, The OHV portion of the park is typically closed from June through October of each year.

The 23,300 acre wilderness area of the 87,000 acre Coe State Park is located in western Stanislaus County. The wilderness area is environmentally sensitive and has a number of archeological sites within its boundaries.

The Battalion has a significant history of large damaging wild land fires. While the majority of fires start along the Interstate 5 (I-5) corridor, the majority of large damaging fires have occurred in more remote areas of the Battalion. The primary factors contributing to difficulty of control have been the steep, inaccessible terrain, the extreme burning conditions from decadent brush and pine trees, and the prolonged response time for fire suppression resources to the remote areas of the Battalion.

### **Priority Areas:**

1. Diablo Grande Development Fire Break / Fuel Reduction Project in the wildland urban interface (WUI)
2. Diablo Grande Development is a 28,500 acre Planned Residential and Resort Community (Specific Plan) located nine miles west of Patterson. Currently constructed (as part of the first phase) are two 18 hole golf courses and approximately 520 residential homes. This project consists of a combination of fire breaks, fuel reduction projects, and greenbelts.
3. The Mount Oso Road fire break is maintained by CAL FIRE to provide safe access and to act as a critical fire break to protect the critical communications facilities, which serve central California, located at the summit of Mount Oso.
4. Stanislaus / Santa Clara County Line Road fire break
5. This primarily ridge top road runs from the San Antone Valley to Highway 152. The road serves as a critical access road and a fire break between the urban interface of Santa Clara County and the environmentally sensitive wilderness areas of Henry Coe State Park and the Orestimba Creek watersheds.
6. The Fink Road Solar Farm is a proposed 800 acre, 80 to 100 megawatt, photovoltaic solar energy farm located just west of Interstate 5 west of Newman.
7. The Copper Mountain Solar Farm is a proposed 13 megawatt photovoltaic solar energy facility located in portions of a 4,147 acre site within the confines of the Diablo Grande Development.

### **Objectives:**

1. Improve local operational efficiency and effectiveness by improving mutual and auto aid agreements between CAL FIRE and West Stanislaus Fire Protection District, City of Patterson, and City of Newman. This will include improving communications systems and dispatch procedures. The Current Automatic Aid Agreement with the city of Patterson was signed in 2014.
2. Review all development projects for compliance with PRC 4290 and make recommendations for fire defense improvements.

3. Continue Participating as a voting member of the Stanislaus County Fire Authority in developing improved local fire codes, ordinances and fire prevention processes.
4. Work with Caltrans and local landowners on mowing, disking, and other and fuel reduction projects along the I-5 corridor, to prevent large wind driven fires that endanger the motoring public and interrupt transportation and commerce through the area.
5. Work with the electric utilities (PG & E and TID) on grading fire roads and maintaining fuel breaks along critical transmission lines.
6. Work closely with local fire officials to improve communications between agencies.
7. Maintain critical fire roads and fuel breaks.
8. Work with West Stanislaus County Fire Protection Districts and Stanislaus County Parks on improving fire safety conditions in Frank Raines OHV Park.
9. Develop concise pre response and evacuation plans for priority areas within the Battalion. These plans and maps will provide new personnel, ECC staff, and incident management teams with the location of strategic control points and access into the SRA lands.
10. Repair the Mt. Oso Fire Lookout Facility, and bring it back to operational status to use in the detection of wildfire on the East side of the Unit. Seek funding and a fiscal sponsor to establish a fire detection camera at Mt. Oso.
11. Work with the West Stanislaus County Resource Conservation District (RCD) to establish a Fire Safe Council on the west side of Stanislaus County.
12. Cooperate with Santa Clara County to maintain an Amador Agreement at Sweetwater Station located in the San Antonio Valley. The San Antonio Valley is an underserved area of Santa Clara County. The County is working with area residents to establish funding.

## **BATTALION 6 (Contra Costa County)**

The Contra Costa battalion covers all of Contra Costa County as well as western San Joaquin County (see [Appendix C](#)). It is geographically located on the eastern side of the San Francisco Bay and stretches eastward from the Port of Richmond into the San Joaquin Delta and south into the San Joaquin Valley to Tracy. Alameda County borders the Battalion to the south and west while bridges connect it to Marin and Solano Counties to the north. Stanislaus County shares a border with San Joaquin County to the south as well.

The vegetation and wildlife habitat of Contra Costa County includes several broadly defined types: native and non-native forests and woodlands, shrub lands, grasslands, riparian woodland and scrub, and wetlands. Numerous plants and animals that are designated as rare, threatened, or endangered species or are candidates for such designation occur here.

Contra Costa County contains 13 major watersheds and sub-watersheds, with over 1,300 miles of creeks and drainages. These watersheds form a crucial part of the Bay Area's domestic water supply, and includes several large reservoirs.

Weather during fire season is temperate near the bay and hotter and drier further inland approaching the inland valleys. Like Alameda County, the most significant weather factor in San Joaquin County is wind. Wind patterns are predominately west to east during fire season due to the cooler marine air flowing from the San Francisco Bay into the Livermore and San Joaquin valleys. Wind speeds vary but on most summer days the winds near the bay are 10 to 20 mph. In the eastern portion of the county on those same days wind velocities will be 15 to 25 mph. Wind velocities of 40 to 50 mph in the eastern portion of the Battalion are not uncommon under normal weather patterns. Even though relative humidity is tempered by the marine influence, higher wind speeds adversely affect fire behavior. Any fire starts with sustained fuel continuity downwind quickly progress into moderate to rapid rates of spread at the fire's head. Quick initial attack by fire suppression forces in these conditions is critical for containing fires at a small size.



In Contra Costa County, the Mediterranean-like climate along with the rugged wind-conducive topography and fire-adaptive native vegetation set the stage for periodic burns. In addition to this fire receptive environment, the naturally occurring subsidence inversion that occurs on hills and mountains above 1,000 feet in elevation continually creates challenging firefighting conditions with low humidity's and warm temperatures in the overnight hours.

In the past 60 years there have been more than 30 wildfires that were more than 300 acres and countless smaller fires in Contra Costa County mainly in the Central and Eastern portions of the County. In San Joaquin County there has been also more than 30 large wildfires, many burning into adjacent Alameda and/or Stanislaus Counties. The acreage in San Joaquin County is more substantial than Contra Costa due to the expansive grass lands of the Altamont and I-5 corridor.

Operationally, Battalion 6 is a complex network of agencies working together to protect the community from fire. In Contra Costa County and Western San Joaquin Counties there are thirteen local and federal government fire agencies that comprise 79 paid and volunteer companies. Of these thirteen departments, nine border CAL FIRE state responsibility areas (SRA). There are 45 mutual threat zones (MTZ) that separate the local government responsibility areas (LRA) from the 259,072 acres of CAL FIRE jurisdiction. These MTZ's are at times densely populated and with homes that easily exceed one million dollars each. By responding both the local government departments as well as CAL FIRE to fires in these MTZ's our response is dramatically increased assisting in keeping the majority of fires within CAL FIRE's goal of less than 10 acres within the SRA.

There are several large landowners in the Battalion. Three of the largest are the East Bay Regional Park District, Mt Diablo State Park, and the Contra Costa Water District.

Mt Diablo State Park encompasses approximately 30,000 acres of open space in the middle of the Battalion. The Park had its first significant wild land fire event in recent years. The Morgan Fire burned 3,111 acres in September of 2013. The fire was primarily focused on the North Peak area of the State Park extending to the Summit Road and into the Curry Canyon Area. The fire damaged park infrastructure and some outbuildings but no homes were damaged and no lives were lost. It is important to note here that the fire burned in a previous footprint of the fires of 1931 and 1977 allowing CAL FIRE to gather additional fire history to aid in planning for future fires.

The Contra Costa Water District includes the Los Vaqueros Reservoir and is a large stakeholder in overall watershed protection with close to 80,000 acres under management. The Los Vaqueros Reservoir and watershed incorporates some 20,000 acres and provides a domestic water supply to over 450,000 people.

The population of Contra Costa County is now over one million people while in contrast the population within the 65,647 acres of the San Joaquin County SRA portion of the Battalion is under 100 and comprised mainly of ranch owners. In Contra Costa County the majority of citizens reside within the 19 incorporated cities, although more than 20% live in unincorporated communities. The continuing growth in the population further increases the pressure on areas of wildland urban interface. Top on the list of projects for the Battalion are the cooperative agreements with other fire agencies. These include the continued staffing of Sunshine Forest Fire Station though the non-fire season months under the current Amador plan with the East Contra

Costa Fire Protection District and updating and improving the Mutual Threat Zone response plans.

The main focus for fire prevention in Battalion 6 is public education, information, and fuel reduction in prioritized areas. One of our biggest partners in this field is the Diablo FireSafe Council (DFSC). The DFSC has been very successful in obtaining grant money to further Fire Safety and fuels management projects in Alameda and Contra Costa Counties. In 2015 the DFSC received a grant for over \$170,000 for the Clayton/Morgan Territory area. Some of the focus areas this grant funding will be used for are defensible space and chipping, fire road maintenance and outreach and education. The DFSC after working with CAL FIRE and Contra Costa County Stakeholders completed its first update to their Community Wildfire Prevention Plan (CWPP) in 2015 which was originally written in 2009. Battalion 6 personnel will continue to support the CWPP and all other projects in any way possible. Finally with this year being the 25<sup>th</sup> anniversary of the Tunnel Fire that occurred in October of 1991 in the Oakland Hills, CAL FIRE will be continuing its relationship with the Hills Emergency Forum (HEF). This Forum made up of stakeholder agencies in both Alameda and Contra Costa Counties has worked tirelessly for over 2 decades to both prevent and prepare for another wildland urban interface event that could occur in the Oakland Hills area. The Tunnel Fire remains the largest loss of structures (3,000) by a single wildfire in the history of California.

### **Priority Areas**

Wildland urban interface (WUI) areas that are SRA/LRA jurisdiction as well as sensitive infrastructure and cultural areas:

1. Canyon: 1,200 acres with an estimated population of 500. This area borders Contra Costa and Alameda Counties and has very poor ingress and egress for citizens. Moraga-Orinda Fire, East Bay Regional Parks and CAL FIRE have jurisdiction.
2. Mt Diablo State Park: 30,000 acres that border the communities of Danville, Alamo, Diablo, Walnut Creek, Clayton, Morgan Territory. Estimated population effected of 20,000. Many endangered species as well as a very high cultural importance to Native American Indians. Currently working with Save Mt. Diablo to provide technical assistance in fuel modification.
3. Alhambra Valley, Wild Cat Canyon and West Contra Costa County: 25,000 acres with an estimated population of 20,000. Richmond Fire, Contra Costa County Fire, Moraga-Orinda Fire, Pinole Fire, Rodeo-Hercules Fire, Crockett Fire, East Bay Regional Parks and CAL FIRE have jurisdiction.
4. Bollinger Canyon and Las Trampas Ridge: 5,400 acres with an estimated population of 5,000 including Saint Mary's College in Moraga. Moraga-Orinda Fire, San Ramon Valley Fire, East Bay Regional Parks and CAL FIRE have jurisdiction.
5. Los Vaqueros Watershed and Mallory Ridge: 25,000 acres with an estimated population of less than 2,000. This area includes the Los Vaqueros Reservoir which provides drinking water to nearly a half million citizens.

## **Objectives**

1. Continue and enhance the fuel modification and fuel reduction projects in the wildland urban interface areas. Coordinate resources with the Diablo FireSafe Council and Hills Emergency Forum. Projects include but are not limited to:  
Diablo FireSafe Council fuel reduction projects
  - i. Morgan Territory
  - ii. Kensington Hills
  - iii. Moraga area
  - iv. Orinda area
  - v. Lafayette area
  - vi. Shakespeare Theatre
  - vii. El Cerrito area
  - viii. Highway 24 Caldecott Tunnel
2. In cooperation with Moraga-Orinda Fire conduct LE-100 inspections and look at access and egress issues within the Community of Canyon
3. Review/update Mt. Diablo State Park pre-fire management plan with State Parks and other local agency cooperators.
4. Utilize Defensible Space Inspectors and Volunteers in Prevention for targeted priority areas.
5. Inspections of dwellings and buildings for LE-100 inspections and compliance with PRC 4291.
6. Continue working with Contra Costa Water District to protect and enhance the Los Vaqueros watershed and nature area.
7. Update the countywide CWPP as needed. (current as of 2015)
8. Upkeep, maintenance and mapping of the Contra Costa County fire trails.
9. Remain active in the Diablo FireSafe Council.
10. Participate in public education events at public gatherings and venues.
11. Conduct training exercise and pre-fire season briefings with cooperating fire agencies and share pre-fire plans for special target hazards.
12. Develop concise pre attack plans and compartment maps that will provide new personnel, ECC staff, and overhead teams with the location of strategic control points and access into the vast areas of SRA lands.
13. Educate the public on equipment caused fires.
14. Reduce arson fires.

## **BATTALION 7 (South Santa Clara County Fire District & Morgan Hill Fire Department)**

The South Santa Clara County Fire District and the Morgan Hill Fire Department, together known as Battalion 7, is located in the Southern end of Santa Clara County ([see Appendix C](#)). Battalion 7 provides fire control and advanced emergency medical services to approximately 70,000 customers in the unincorporated areas of Morgan Hill, Gilroy, and the community of San Martin and the City of Morgan Hill. The Battalion has five fire stations that cover approximately 300 square miles.

Battalion 7 protects residential, commercial and light industrial occupancies, wildland, wildland urban interface communities, 10 wildland Mutual Treat Zones, 80 miles of State Highways 152, 156, 25, and 101, and 45 miles of two separate rail lines owned by Southern and Union Pacific Railroads, which are also used by Cal Train Commuter and Amtrak trains.

The San Andrea's, Hayward, and Sergeants Fault Zones run through Battalion 7. One large major water supply from San Luis Reservoir and a gas pipeline also run through the Battalion.



**Santa Clara Unit administrative staff**

Since 1997, Battalion 7 has provided Advanced Life Support (paramedic) services for all members of the community. Battalion staff works closely with the local ambulance provider, (Rural Metro) and Santa Clara County EMS. Along with fire suppression and emergency medical service, battalion personnel are trained in many other aspects of emergency responses. These include: vehicle extrication, swift water rescue, hazardous material response, earthquake, and flood preparedness. The battalion also provides fire prevention education, code enforcement, and engineering services to the public. Battalion staff includes three Battalion Chiefs, one Fire Captain Paramedic in the position of EMS Coordinator, one Fire Captain in the position of Fire Marshal, six Fire Captains/Paramedics, six Fire Captains, thirteen Fire Apparatus Engineers/Paramedics, fourteen Fire Apparatus Engineers, one Mechanic, four Communication Operators, one Staff Service Analyst and one Office Technician. The Battalion operates seven type I Fire Engines, one 105 foot Truck, one Type VI Engine, one Type III engine, two 3,000 gallon Water Tenders, three Utility Vehicles, three Chief Officer's Vehicles, one Mobile Air Support Unit and one Technical Rescue Unit. One Type I Engine, one Type VI Engine and a Type III Engine were purchased new in 2015. The battalion is supported by its sixteen Volunteer Firefighters. In addition to emergency response, Volunteer Firefighters are frequently utilized to staff stations when front line engines are on other emergencies. Volunteer Firefighters are also involved in numerous charitable activities and fund raisers. The battalion sponsors a youth Fire Explorer program with 15 active participants.

Battalion 7 actively participates in automatic aid agreements with the Gilroy Fire Department, California Department of Forestry and Fire Protection (CAL FIRE), Pajaro Valley Fire District, San Benito County Fire, and the San Jose Fire Department. Battalion 7 is also an active participant in the Santa Clara County and State of California Mutual Aid Plans responding to disasters in the County and throughout California.

The Battalion is an all risk emergency response battalion. Personnel respond to approximately 5,500 incidents per year which include various assists to other fire departments, emergency medical services, structure, vehicle, wildland fires, hazardous materials spills, water rescues, and public service assists.

### **BATTALION 7 - South Santa Clara County Fire District**

The [South Santa Clara County Fire District](#) was established in 1980 when the Gilroy Rural Fire District merged with the Morgan Hill Rural Fire District. Personnel and administration for the South Santa Clara County Fire District is provided by the California Department of Forestry and Fire Protection (CAL FIRE) under a cooperative agreement. CAL FIRE is the largest multi-purpose emergency service and resource protection agency within the United States. The Santa Clara Unit (SCU) of CAL FIRE is responsible for over 1.35 million acres of State Responsibility Area (SRA), as well as Local Responsibility (LRA).

The Insurance Service Organization Rating (ISO) rating for the South Santa Clara County Fire District is a 4/10. The ISO rating of 4 is for properties within 5 miles of any fire station, or any fire department that we currently have an auto aid agreement with. The ISO rating of 10 is anything outside of that 5 mile zone.

A seven-member Board of Fire Commissioners oversees the South Santa Clara County Fire District. The Santa Clara County Board of Supervisors appoints them. Each Board Member lives in a different area of the Fire District and represents the diversified views of the local community. The Board provides input, oversight, and budget management, as representatives of the Santa Clara County Board of Directors.

All properties in Battalion 7 that are also in the SRA are inspected for defensible space against wildfire. Defensible Space Inspectors are hired annually using funding from SRA fees collected from property owners.

### ***Santa Clara County Mission Statement***

*Our mission is to provide quality public services with measurable outcomes for the residents of the County of Santa Clara, in order to meet their needs for a healthy, safe, and prosperous environment and help them develop a community rich in both natural beauty and economic opportunity where diverse people come together to celebrate a*

*higher quality of life. The South Santa Clara County Fire District is dedicated to provide professional customer service through performance and accountability.*

*We provide fire and emergency medical services to protect life and property and we strive to reduce emergencies through fire prevention and public education.*

### ***The South Santa Clara County Fire District Mission Statement***

*The South Santa Clara County Fire District is dedicated to provide professional customer service through performance and accountability. We provide fire and emergency medical services to protect life and property and we strive to reduce emergencies through fire prevention and public education.*

### ***South Santa Clara County Fire District Board of Commissioners Strategy***

*We will advise responsibly and in accordance with all Federal, State, and Local laws, codes, and ordinances. We will ethically represent the residents of the Fire District at all times with Respect, Leadership, and Integrity. We will be fiscally responsible, while providing the Fire District residents with highly trained and properly equipped personnel, meeting and exceeding industry standards*

### **BATTALION 7 - City of Morgan Hill Fire Department**

The [City of Morgan Hill](#) was incorporated in 1906, and is a General Law City operating under the Council-Manager form of government. It is a community of 12 square miles, serving 50,000 people. It is located 12 miles south of the City of San Jose and 15 miles east of Monterey Bay. It is a comfortable, thriving residential community, surrounded by agricultural lands producing fruits, vegetables and wines. Its top employers include Anritsu, Comcast Cable, and the Morgan Hill Unified School District. Fire and emergency medical service (EMS) delivery in the city is provided by two stations; El Toro and Dunne Hill.

The Insurance Service Organization Rating (ISO) rating for the City, updated in 2014, is 2/3X. The ISO rating of 2 is for properties within 5 miles of any fire station, or any fire department that we currently have an auto aid agreement with. The ISO rating of 3X (formerly 9) is anything outside of that 5 mile zone.

### ***The Morgan Hill Fire Department Mission Statement***

*The Morgan Hill Fire Department is committed to the Protection of Life, Property, and the Environment through Performance, Preparedness, and Prevention.*

## *The Morgan Hill Fire Department Vision Statement*

*The Morgan Hill Fire Department will be recognized as a fire service leader through innovative programs focusing on regionalization, community preparedness, education, and youth programs while delivering exceptional emergency and non-emergency services.*

### **Priority Areas**

Conduct homeowner defensible space inspections (LE-100 inspections within the State responsibility areas):

1. Holiday Lake Estates/ Jackson Oaks
2. El Matador Drive
3. Redwood Retreat Road
4. Developed areas East of New Avenue.
5. Day Road
6. Burchell Road
7. Chesbro Reservoir and Live Oak area.

### **Objectives**

1. To keep structure fires to the room of origin on the valley floor, to the floor of origin in rural locations, and to the building of origin in extreme rural or mountainous locations of Battalion Seven.
2. To treat, package, and transport patients to definitive care within 1 hour.
3. To meet designated EMS response times 95% or above.
4. To adopt Fire Code every three years.
5. To minimize the interface fire threats.
6. To identify high fire severity zones and complete pre-response and evacuation plans. Holiday Lakes/Jackson Oaks pre-response and evacuation plans were completed in January 2015.
7. To identify fuel reduction and fuel modification projects in the high fire severity zones.
8. To support a Community Emergency Response Team (CERT).
9. To maintain adequate staffing at all fire stations.
10. To pursue additional funding for improved service using grant resources
11. To continue exploring regionalization possibilities.
12. Support development of a county-wide community wildfire prevention plan (CWPP).
13. Educate the public about the Santa Clara County FireSafe Council.
14. Maintain school and special event programs.
15. Assist CAL FIRE staff conducting homeowner defensible space inspections (LE-100) pursuant to PRC 4291 on State responsibility areas.
16. Continue to recruit and retain volunteer firefighters.
17. Continue plans reviews and enforcement of PRC 4290.
18. To provide employees with the latest fire and EMS training to support objectives 1 and 2.
19. Continue to work with and support all of our cooperators.

20. Work in cooperation with the Santa Clara County FireSafe Council, local law enforcement, and our local cooperators to develop evacuation plans and fire plans for communities at risk susceptible to a major incident.
21. Utilize the reverse 911 system for public notification during major incidents which may impact their communities.

## **BATTALION 9 (Emergency Command Center)**

The CAL FIRE Emergency Command Center (ECC) of the Santa Clara Unit (SCU) is one of 21 Emergency Command Centers within the agency. Using the radio call sign “Morgan Hill”, the ECC provides command and control services for eight field Battalions, 17 fire stations, the Fire Prevention Bureau, and one Helicopter Base. The twelve fire stations in SCU are strategically positioned within Santa Clara, Alameda, Contra Costa, western San Joaquin, and western Stanislaus Counties. Those twelve stations house 15 Type III Engine Companies to protect State Responsibility Areas (SRA). Six fire stations under “Schedule A” cooperative agreements house six Type I advanced life support (ALS) Engines, one ladder truck, one Type III Engine, one Type VI Engine, and two Type I water tenders serving the South Santa Clara County Fire District, the City of Morgan Hill, and Alameda County Fire. The one Helicopter Base houses a State owned Type II fire/ rescue capable helicopter. Three of the SRA stations provide fire protection outside of State declared fire season under Amador contracts serving East Contra Costa Fire District, County of Santa Clara and the South Santa Clara County Fire District.

ECC staffing consists of one full time Battalion Chief, four permanent full time Fire Captains, one Limited-term “drought augmentation” Fire Captain, and five permanent full time Communications Operators. The ECC maintains a staffing level of 2 qualified staff on duty at all times. During State declared Fire Season the staffing is augmented to 3 qualified staff during daylight hours. One Duty Officer (Fire Captain) is on duty at all times as a part of our staffing model.

The ECC provides communications, logistical support and maintains command and control of all resources within the Santa Clara Unit (SCU). Resources may be utilized to mitigate wildfires and to assist local, State and Federal Government with any emergency management needs including, but not limited to fires, floods, and earthquakes in the Local Responsibility Areas (LRA) within SCU or elsewhere in the State.

A portion of the LRA lands in SCU are protected by means of 110 Mutual Threat Zone Agreements (MTZs) established between CAL FIRE and local governments. MTZs are divided into geographic areas dictated by community, geography, and structure density, in relationship to State Responsibility Areas (SRA).

The ECC works hand in hand with our cooperators by means of Mutual Aid and Automatic Aid Agreements. On a day to day basis, the ECC provides assistance to adjoining jurisdictions by means of Automatic Aid Agreements. These agreements allow CAL FIRE and its cooperators to dispatch the closest available resource to any given incident. On a broader scale, if a given entity determines the incident they are responding to will exceed or has exceeded their capabilities, CAL FIRE will assist as requested to manage and mitigate the incident.

The ECC provides a leadership role in the monitoring of fire weather conditions within SCU. The issuing of Red Flag Warnings and Fire Weather Watches are a foundation for determining wildfire threat. The ECC works closely with the Monterey and Sacramento Fire Weather Office to anticipate such weather events, which allows the ECC to augment staffing prior to potentially higher fire activity that accompanies some weather events. The ECC also works closely with the SCU Duty Chief and the Northern Region Operations Center (NOPS) Duty Officer as it pertains to pre-positioning of CAL-FIRE resources in critical areas of the State and tracking of costs associated with these movements and augmentations.

The ECC manages two Remote Automated Weather Stations (RAWS) and monitors fourteen others (which are the property of State Parks, San Francisco Water Department, East Bay Regional Parks, Contra Costa Water District, Central Fire Protection District and the San Ramon Valley Fire Protection District) stations on a daily basis to set the appropriate dispatch levels based on calculated burn indices. A Standard Response is pre-determined for each dispatch level in the event of a wildfire, or other type of fire determined to be a threat to the wildland. Dispatch levels and responses are determined based on the Unit's Fire Danger Operating Plan.

The ECC Expanded Operation (SCU Expanded) is a co-located facility that supports operations on an incident that goes beyond the scope of initial attack, to be managed off the main ECC floor. The ECC can then continue to maintain the day-to-day business of the Unit with less distraction. The SCU Expanded operation can fully manage Crews, Equipment, Overhead, Supplies, and General Information. When an initial attack incident occurs that has the potential to become an extended attack or major incident, the ECC Duty Officer can request to open the SCU Expanded. Additional staffing can be requested by call-back of off duty ECC personnel or by requesting an ECC Support Team to be activated by NOPS.

### ***The Emergency Command Center Mission Statement***

*The Mission of the CAL FIRE Morgan Hill Emergency Command Center is to provide timely, professional, consistent, accurate and coordinated command and control functions; utilizing existing and future resources, funding sources and technology in a creative manner to produce the best possible service to those in need.*

### **Priorities**

1. The ECC will endeavor to meet or exceed the call processing and dispatching recommendations set forth in NFPA 121 and NENA Standards.
2. To hold the public and fire service personnel safety as the number one priority in relation to ECC responsibilities.
3. Provide proper notification to the public through designated processes including the media, regarding incidents and events that have a potential effect on their safety.

4. Maintain efficiency of all tasks required, and perform them in a timely manner.
5. To maintain a proper database to use in the event of an emergency to query and activate proper resources to mitigate an event.
6. Develop a Continuity of Operations Plan.
7. Establish an Eastside Command Frequency.
8. Maintain a high level of customer service to the public and cooperating agencies.

### **Objectives**

1. To provide accurate and timely dispatching services to the population served by the CAL FIRE Santa Clara Unit and cooperators through training, instruction and procedural guidelines.
2. To provide notifications to CAL FIRE and cooperator resources of all incidents in the Santa Clara Unit based on information collected, the approved standard response plans, and the Duty Officer's knowledge and experience.
3. To keep Unit personnel and cooperators informed in areas of significance; including the media, regarding incidents and events that have a potential effect on their safety.
4. Aggressively initiate the Fire Management Assistance Grant (FMAG) request process as soon as an incident is identified to meet the criteria of any given wildland fire which is damaging, or threatening to damage infrastructure within SCU.
5. To maintain the ECC and Unit telecommunications resources to meet the needs of Unit personnel with fiscal responsibility.
6. Employ new technologies for incident information gathering and sharing such as with the Next generation ICS (NICS) software program in cooperation with resources on the incident and the ECC.
7. Provide accurate and timely incident information to NOPS and Sacramento staff through the ICS 209 reporting program and the Report on Conditions (ROC) procedures.
8. Continue to improve and expand SCU's frequency management capabilities through the use of Schedule A funded Command Frequencies to be used as alternate command channels.
9. Monitor the six EnviroVision Solutions LLC ForestWatch cameras installed in late 2014 as an aide to detecting wildfires.

## **BATTALION 20 (Prevention-Law Enforcement)**

The Santa Clara Fire Prevention Bureau falls under the direction and supervision of the Unit's East Bay Law Enforcement Division Chief. The Bureau is staffed by a Battalion Chief, one Fire Captain Specialist, , a Fire Prevention Specialist II (FPS II), and four Defensible Space Inspectors. All of the Prevention Bureau staff are California Peace Officers, except the FPS II and Defensible Space Inspectors. The Bureau is involved in all areas of law enforcement, fire prevention, education, engineering, and enforcement. There are three separate but related functions handled by the individuals assigned to the Bureau; Education, and Enforcement.

The Volunteers in Prevention program (VIP) is administered and coordinated by the FPS II. The VIP's currently have 23 members and conduct public education programs. When combined with other projects, they have donated over 2,966 hours of their personnel time to fire prevention education in the Unit.



In 2015, Defensible Space Inspectors and Unit staff conducted in excess of 3,355 LE-100 inspections. In 2016, the Santa Clara Unit is again taking an aggressive approach to conducting LE-100 inspections using Defensible Space Inspectors, as well as Unit staff, to handle the large task. Another successful program within the Santa Clara Unit is the Volunteers in Prevention (VIP) program. This statewide program was designed to allow persons within the community to participate in assisting CAL FIRE with fire prevention and education programs. The Santa Clara Unit currently has in excess of 23 members and in 2015 conducted 12 public outreach and public education programs making an estimated 1,400 personal contacts, , and when combined with other projects donated a total of 2,966 hours of personnel time to fire prevention education and public events to the Unit.

The Law Enforcement branch of the Bureau includes; fire investigations (origin and cause determination), issuing citations, processing criminal complaints with local District Attorneys, and civil cost collections, which are returned to the State's General Fund. The Bureau maintains active membership in the Santa Clara County Arson Task Force, the Alameda County Fire Prevention and Fire Investigation Officers groups, and is currently working to establish an interdisciplinary fire investigation team in Stanislaus and Contra Costa County. In addition to these groups the Bureau is actively fostering working relationships with the over 40 other Law Enforcement agencies within the Units boundaries.



### **Mission Statement**

*The mission statement of the Santa Clara Fire Prevention Bureau is to work to reduce unplanned ignitions within the unit, limit damage caused by uncontrolled fires, through the use of education, pre fire mitigation projects, patrol, and law enforcement to meet the mission statement of the Department of Forestry and Fire Protection.*

### **Objectives**

1. Identify potential arson fires, develop suspects and make arrests swiftly to protect the public.
2. Utilize Defensible Space Inspectors for residential fire inspections (LE-100) according to PRC 4291.
3. Educate the public on the laws and how to properly remove flammable vegetation to maintain clearance in and around inhabited structures to prevent structures from being damaged, and to provide a means for firefighters to defend them.
4. Directly patrol the area's that pose a high fire danger risk to citizens for education and enforcement.
5. Implement the Unit's Fire Management Plan to reduce the threat of large damaging fires by vegetation management treatments.
6. Implement the SCU VIP Program to assist the Unit in a variety of Fire Prevention Activities to educate the public in wildfire awareness.
7. Collaborate with the Local Agency fire investigators in the detection and investigation of fires that occur within the SRA, and assist with fire investigations in LRA.
8. Work with local law enforcement agencies to provide law enforcement mutual aid assistance.

## **SAFETY BATTALION**

The CAL FIRE Santa Clara Unit's sphere of influence includes Santa Clara, Alameda, Contra Costa and portions of Stanislaus, and San Joaquin Counties. It shares jurisdictional boundaries with 35 separate city fire departments and fire protection districts; two State Parks; numerous county and special district parks; several open space districts; and several public and private domestic water provider watersheds.

The Santa Clara Unit Safety Battalion actively participates in the Santa Clara County, Contra Costa, and Alameda Counties Safety Officer's Associations. In addition, the Santa Clara Unit Safety Battalion Chief participates in regular meetings with the East Bay Regional Parks District; Mount Diablo and Henry Coe State Parks; the Morgan Hill Police Department; the Santa Clara County Sheriff's Office, the California Highway Patrol, and other responding agencies.

The Safety Battalion oversees quarterly Safety Committee meetings to discuss safety issues, review personnel and vehicle accidents, identify issues that could lead to potential employee injuries or hazards, and ensure CAL FIRE's safety requirements and safety programs are being adhered to in the fire stations and on incidents.

### ***Safety Battalion Mission Statement***

*The CAL FIRE Santa Clara Unit Safety Battalion is to provide the most current national industry standards for safety in all mentioned program areas with the highest attention given to providing safety in the work environment. The Battalion tracks work related injuries and illnesses for the Santa Clara Unit employees through the Injury and Illness Prevention Program to provide for the overall safety of the Santa Clara Units permanent and seasonal employees.*

*The Santa Clara Unit Safety Battalion is to enhance fire department safety by seeking creative and alternative safety training mechanisms. Ensure employee participation at all levels for a successful safety program. Encourage employee support in the safety program.*

### **Priorities**

1. Protect the life and physical well-being of employees.
2. Protect the life, physical well-being, and property of the public.
3. Provide a safe and healthy work environment for employees.
4. Identify potential work hazards and initiate reasonable actions to eliminate or control them before they contribute to accidents, injury, or illness.

5. Respond to employee reports of Unsafe Practices (IIPP-8) in a timely and effective manner.
6. Make safety a normal part of all work practices and procedures.
7. Investigate work related accidents, injuries, and illnesses promptly and implement improved accident prevention methods.
8. Maintain employee well-being and minimize the loss of productivity due to injury.
9. Reduce the frequency and severity of occupational illnesses, injuries and property damage.
10. Comply with applicable safety-related laws, regulations, and policies, such as state safety orders published in the California Code of Regulations (CCR), Title 8.
11. Assist with the Units Health and Wellness Program.
12. Make sure any CAL-OSHA inspections or violations are handled in an appropriate manner.
13. Conduct Unit and State Safety meeting to ensure any unsafe issues are discussed and handled in a timely and appropriate manner.

## **Objectives**

1. Review accident reports to determine causation and develop prevention recommendations.
2. Review IIPP 8 forms submitted by employees and follow through with solutions and reply back to the employees in a timely manner.
3. Develop a lessons learned educational format to disseminate information to the Unit for Safety Review.
4. Recommend Guidelines and Programs for safety education and training.
5. Exchange ideas to improve methods of operations safely and efficiently.
6. Take an active role in the Unit-wide safety inspections to address concerns with health and safety issues at all Unit facilities.
7. Developing recommendations regarding Unit Policy and Programs.
8. Disseminate safety information to keep managers, supervisors, and employees informed of safety hazards and prevention techniques.
9. Evaluate the effectiveness of the Unit's Safety Program on an annual basis.
10. Participate and evaluate employee fitness program as well as monitor employee nutrition.
11. Have an open line of communication at the Unit and State level with CAL-OSHA and its regulations.
12. Have quarterly Unit Safety meeting and Semi-annual State meeting.

## TRAINING BATTALION

The CAL FIRE Santa Clara Unit's (SCU) sphere of influence includes Santa Clara, Alameda, Contra Costa and portions of Stanislaus, and San Joaquin Counties. It shares jurisdictional boundaries with 35 separate city fire departments and fire protection districts, two State Parks, numerous county and special district parks, several open space districts, and several public and private domestic water provider watersheds. Cooperative training is held with local, county and volunteer fire departments, emergency medical services (EMS) agencies, FireSafe Councils, five different Sheriff Offices, the California Highway Patrol and various city police departments.



SCU Training Battalion personnel actively participate in the Santa Clara County, Contra Costa County, and Alameda County Training Officer's Associations. In addition, SCU Battalion Chiefs participate in regular meetings with the Santa Clara County FireSafe Council, the Diablo Fire Safe Council, East Bay Regional Parks District, Mount Diablo State Park, Henry Coe State Park,



Morgan Hill Police Department, Santa Clara County Sheriff's Office and other responding agencies. The Battalion Chiefs assist these agencies with wildland fire training exercises and provide the Training Battalion with a list of training needs so joint operations may take place. This provides for cost effective operations and allows for enhanced interagency partnerships.

To accomplish the training objectives in 2015, the Battalion provided a total of 25,000 student contact hours to over 125 Company Officers, 105 Firefighter I's, 100 Volunteer Firefighters, and other local cooperators. There are also numerous training hours logged by all permanent personnel using the online training program Target Solutions. There was also a significant amount of staff time spent to coordinate students, courses, instructors, recording and tracking training, and ensuring those newly qualified trainees are listed in the statewide Resource Ordering Status System (ROSS) program. The Training Battalion is also managing the Incident Qualification System (IQS) program that assist in the training needs analysis and ensuring personnel are becoming qualified after attending Incident Command System (ICS) courses.

The first priority of the Santa Clara Training Battalion is to provide for the overall safety of over 125 permanent personnel and 105 seasonal employees through instructional programs that target

operational efficiency with emphasis on safe operating procedures in all aspects of fire and emergency operations. The Training Battalion's responsibility is to also facilitate and to ensure coordination for the Unit-wide Training Plan, match training courses with approved personnel training requests, and to maintain a central location for updated training records for all employees.

The Battalion Staff includes one Battalion Chief, one Fire Captain Paramedic, one Fire Captain and two engine Captains that work in training during non-peak staffing periods. The Training Battalion is responsible for training five volunteer fire companies in Santa Clara County under a cooperative agreement with Santa Clara County. Staff continually strives to provide creative, cost effective, innovative training with the highest commitment to safety. The State-funded training operations, which are divided into 19 separate program areas, are a seven-day a week operation, and listed below are:

- Administrative and Office staff
- Battalion Chiefs
- Company Officers
- Firefighters
- Training Battalion
- Emergency Command Center
- Alma Helitack
- Fire Prevention
- Automotive Fleet Maintenance
- Pre-fire Engineering
- Joint Apprenticeship Program (JAC)
- Vegetation Management
- Emergency Medical Services
- Hazardous Materials Responses
- Volunteer Firefighters
- Volunteers-in-Prevention (VIPs)
- Fire Safe Councils
- Joint-Agency Operations
- Resource Management



### *The Training Battalion Mission Statement*

*The Santa Clara Unit Training Battalion responsibility is to provide on-going training, education and certification to fire service personnel. All training is focused on providing and maintaining the highest quality emergency service at both fire and medical responses to the citizens of California. Instructional programs target operational efficiency with emphasis on safe operating procedures for our personnel in all aspects of fire and emergency operations.*

## Priorities

1. Deliver continual professional training in a twice-annual Company Officer workshop and provide a 12 month training program via internet based training and Engine Company level training. February and March 2016.
2. Attend Training Officer's meetings with local cooperators to determine their needs in response to all-risk incidents. Participate in the county wildland exercises in Santa Clara, Alameda, and Contra Costa Counties. – Spring 2016.
3. Work with the South Bay Regional Training Consortium to facilitate continuing education training with the Unit's LE officers. February 2016 – ongoing.
4. Facilitate and coordinate the Unit's instructors and develop additional cadre members within the Unit. Ongoing.
5. Continue to use Target Solutions as the tracking tool for the Unit's personnel that are in the JAC program. Ensure employees are tested in their first and third year once training has been completed. - Ongoing
6. Enter the Unit's data into IQS and interview each employee to determine ICS track and establish their training needs analysis and track any open task books. Ongoing.
7. In the fall of 2015, we sent two personnel to attend POST physical fitness training and brought that information back to the Unit to share with the staff and created programs to ensure the health and fitness of our staff. The program has been developed and deployed starting in our rehire academies and moving to station level training
8. Establish drills and locations for the "McLean Drill" in the month of July 2016.
9. Provide Strike Team Leader –Engine presentations for our local government cooperators. April-June 2016.
10. Maintain the Unit Training Calendar with a variety of all-risk drills and safety training for Santa Clara personnel. - Ongoing
11. Utilize IQS to monitor task book progress to ensure we have a quality Priority Trainee List. Ongoing
12. Meet with the Volunteer Fire Companies to discuss their needs and share with them the mandates for fire and rescue responses commensurate with their level of training and equipment. Develop training calendar for summer and coordinate with on duty engine companies. Ongoing
13. Identify personnel that can act in the capacity of mentors and establish a list of personnel who need to be mentored. – Ongoing.
14. Provide Chief and Company Officer training from State Fire Marshal to the Unit's Chief and Company Officers. Spring 2016



15. Instruct 200 level ICS courses for FF and FAE ranks to strengthen the Units ability to manage type 3 incidents and to support incidents outside SCU. February 2016 and rehire academies.
16. Determine the stakeholders and reach out to them to establish an Optional Skill Program that will work for response between counties.
17. Work with the Training Officers in the San Mateo-Santa Cruz and San Benito-Monterey Units to put on a State Fire Training Chief and Company Officer class. The Units are also in need of a purchasing class because of the number of new Company Officers.
18. Review and update the Unit's Emergency Resources Directory (ERD).
19. Determine the Unit's training needs for the Northern Region Training allocations meeting. February 2016.
20. Make student selections to fill the allocated training slots and advise their respective program managers for their planning purposes. September 2015.
21. Enhance electronic dissemination of training announcements. Ongoing.
22. Seek outside funding sources. Ongoing.
23. Seek a permanent location for a training facility and classroom. Discussions with County executives and grant opportunities being explored. April 2016.

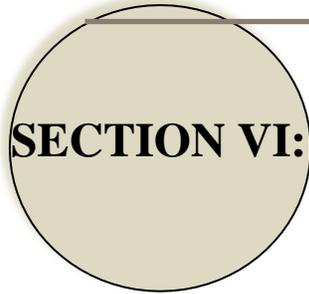
### **Objectives:**

1. Provide continual professional training to the all personnel in the Unit through classroom-based and technology-based training.
2. Ensure local cooperators are receiving the required training for response to all risk emergencies.
3. Provide and coordinate law enforcement (LE) training to the Unit's LE Officers and cooperators.
4. Foster and improve personnel involvement in instructional cadres.
5. Provide a process for employees to successfully complete their JAC required training.
6. Implement the IQS program to better track and qualify our personnel in ICS.
7. Improve the Unit's physical fitness program and base them off of the Peace Officer's Standardized Training (POST) Standards.
8. Provide a Unit Readiness Drill to measure the performance of our personnel and to identify training deficiencies.
9. Provide annual Strike Team Leader refresher classes to our cooperators.
10. Establish and maintain a training calendar for the Unit's Personnel.
11. Maintain a priority trainee list for incidents within and outside of the Unit.
12. Develop and maintain a standardized training program for the volunteer companies.
13. Provide support and mentoring for new



- Fire Captains, Battalion Chiefs, and Division Chiefs in the Unit.
14. Train our Company Officers and Chief Officers to the State Fire Training Standards.
  15. Host 200 level ICS courses
  16. Develop and support Optional Scope of Skills training programs for the Unit's Emergency Medical Technicians (EMTs).
  17. Work with the adjacent San Mateo-Santa Cruz and San Benito-Monterey CAL FIRE Units on a regional training plan and a Fire Truck Academy.
  18. Identify the legal State and Federal requirements for training in each program area. Work with CAL FIRE and local government agencies to determine mandates.





## **SECTION VI: REFERENCES**

### Software

- [Google Earth](#)
- [ArcGIS Explorer](#)

### On-Line Mapping Resources

- [ArcGIS Explorer Online](#)
- [DFG - IMAPS](#)
- [Google Maps](#)
- [Open Street Map](#)
- [The National Map](#)
- [National Atlas Mapmaker](#)
- [Geo.Data.gov](#)
- [Tree and Drought Mortality Viewer](#)
- [State Responsibility Area Viewer](#)
- [California Statewide Fire Map](#)

# SECTION VII: APPENDICES

## APPENDIX A: 2015 PRE- FIRE PROJECTS

Planning area	Project Number	Project Name	Status	Estimated Completion Year	Project Type	Net Acres
2	VMP-001/Rx-North-SCU-055	Grant Ranch VMP	P	2018	VMP	9,560
2	VMP-002/ Rx-North-SCU-052	Isabel VMP	C	2016	VMP	3,000
1	VMP-002/Rx-North-SCU-054	Henry Coe VMP	P	2017	VMP	5,500
1	Rx-North-SCU-056	Metcalf VMP	P	2018	VMP	500
Unit	14-SRA-HF-01-0093	Santa Clara County CWPP	P	2016	PRE	N/A
6	14-SRA-HF-01-0093	Clayton-Morgan Territory FireSafe 2015	P	2016	PRE	20
4A/6	14-SRA-HF-01-0052	Goat Grazing, East Bay Hills SRA	A	2016	PRE	260
6	14USFS-SFAX0029	2015-16 Filling more gaps	A	2016	PRE	TBD
6	14USFS-WUI005	Center-west Contra Costa County Community Fuel Reduction	A	2017	PRE	TBD
3	15 USFS-WUI 0092	Santa Cruz Mountains Defensible Space and Fuel Break Project	A	2016	PRE	TBD
3	4USFS-SFA0040	Defensible Space for Santa Clara County Communities at Risk	A	2015	PRE	TBD
Unit		SCU Media Public Service Announcements	A	2016	PRE	N/A
Unit		SCU Incident Pre-Attack and Evacuation Plan	A	2017	PRE	N/A
1		Headquarters Fire-Safe Landscape Demonstration	O	2016	PRE	1
2	2014-PRE-001	Copernicus Lookout Fuel Reduction	O	2016	PRE	2
6	2014-PRE-003	Contra Costa County CWPP Update	A	2016	PRE	N/A
4		Alameda County CWPP Update	A	2015	PRE	N/A
1/5		County Line Road Fire Road Maintenance	P	2015	PRE	TBD
1/2/3		Anthony Chabot Park Fuel Reduction	P	2015	PRE	6

**Status Guide:** A = Active, P = Planning, C = Completed, O = Ongoing, M = Maintenance.

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## **APPENDIX B: UNIT GOALS AND OBJECTIVES**

**Goal 1:** Develop a method to integrate fire and fuels management practices with landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility areas.

Objective:

Support the availability and utilization of CAL FIRE hand crews and other CAL FIRE resources, as well as public and private sector resources, for fuels management and activities, including ongoing maintenance.

Measurement Criteria:

CAL FIRE will report to the Board of Forestry on the number of crews available each year with a description of projects, including acres treated, completed by each Unit. Report the number of agreements and/or amount of funding and acres treated that involve grants or partnerships with federal agencies, resource conservation districts, local FSCs, fire districts, watershed groups or other non-profit or community groups that support the ability to carry out fuels reduction projects.

**Goal 2:** Address post-fire responsibilities for natural resource recovery, including watershed protection reforestation, and ecosystem restoration.

Objectives:

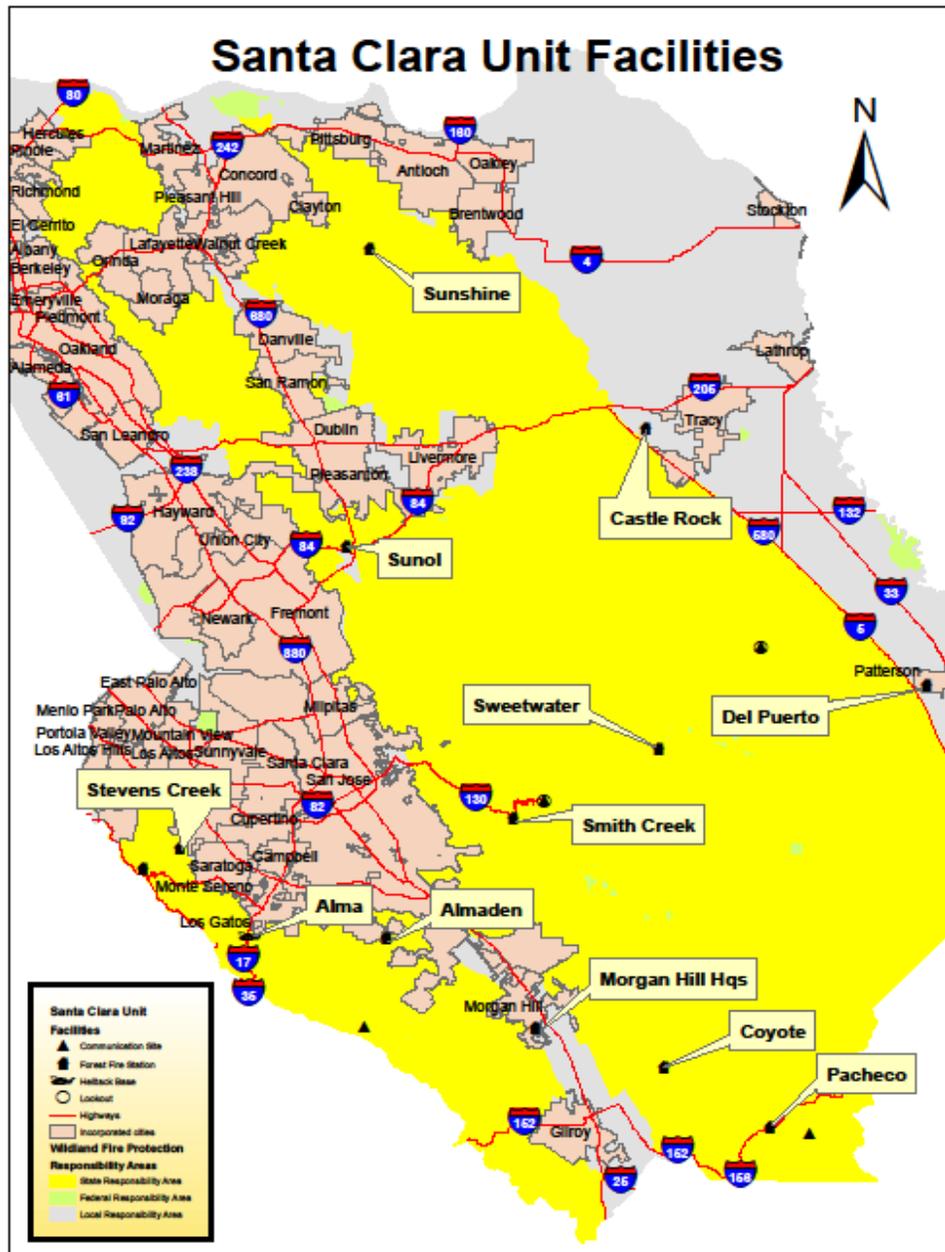
Assist landowners and local government in the evaluation of the need to retain and utilize features (e.g., roads, firelines, water sources) developed during a fire suppression effort, taking into consideration those identified in previous planning efforts.

Measurement Criteria:

CAL FIRE (utilizing Incident Management Teams) to schedule a post-fire review of the planning documents that cover the area affected by the fire. Review the goals, objectives and projects (implemented and planned) to identify successes and failures. Review the features developed during the fire and incorporate them into the existing Unit fire plan documents. This objective will only be reported when a fire occurs in an area with an existing Unit fire plan document. Incident Management Teams may conduct this post-fire assessment under the direction of the Unit Chief.

# APPENDIX C: UNIT MAPS

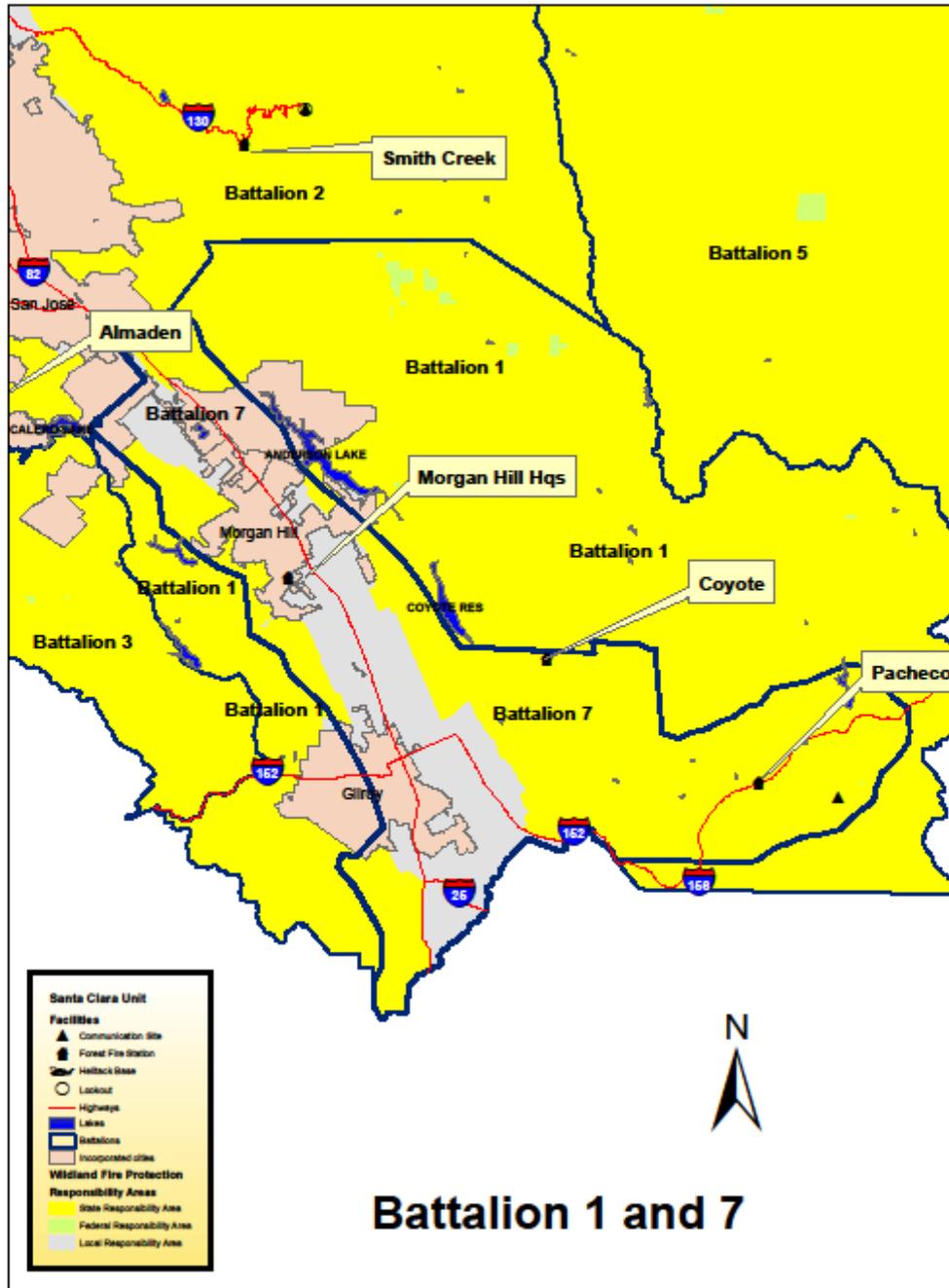
## Unit Map



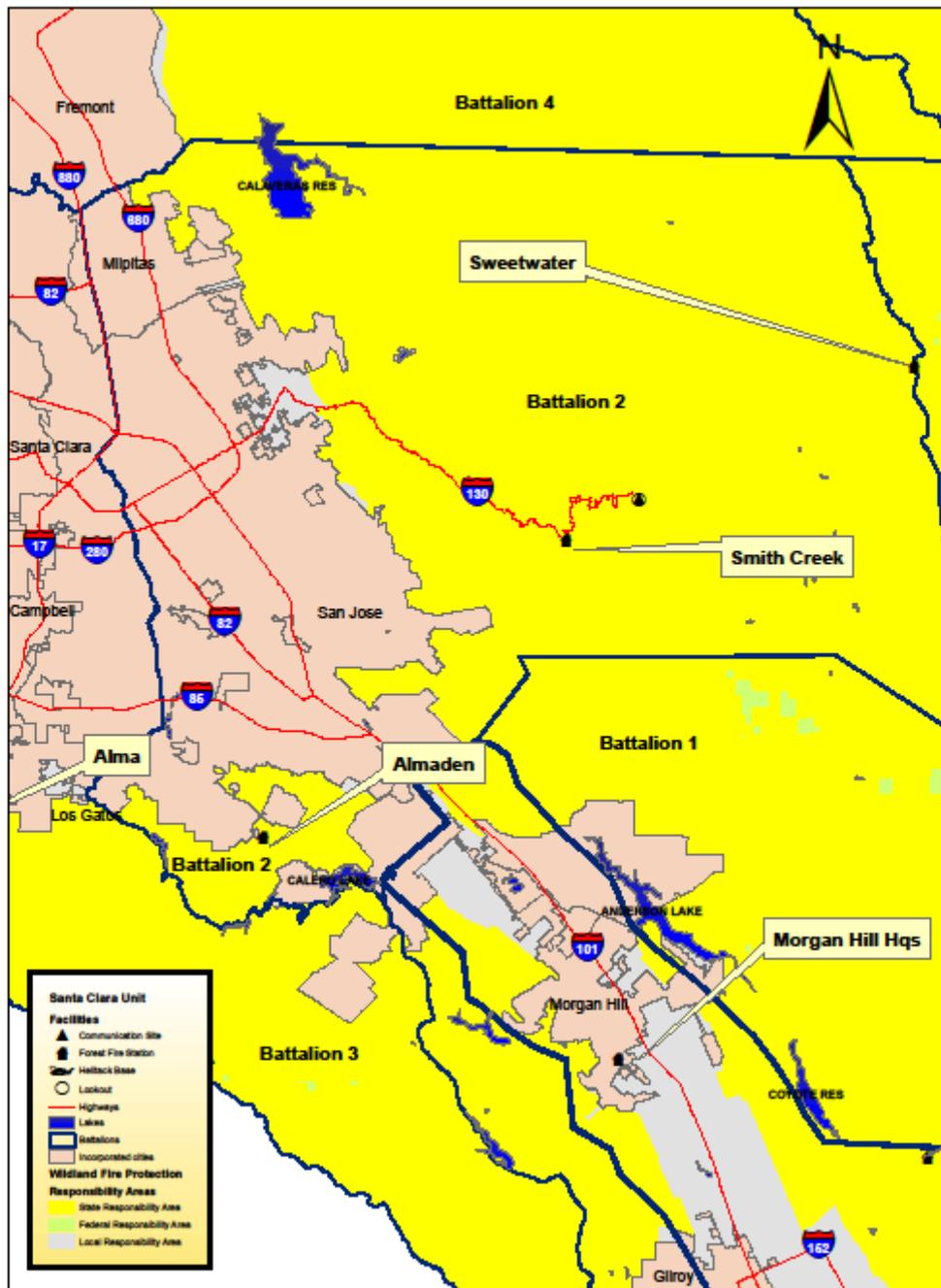
# Unit & Battalions



**Santa Clara Unit Battalions Boundaries**



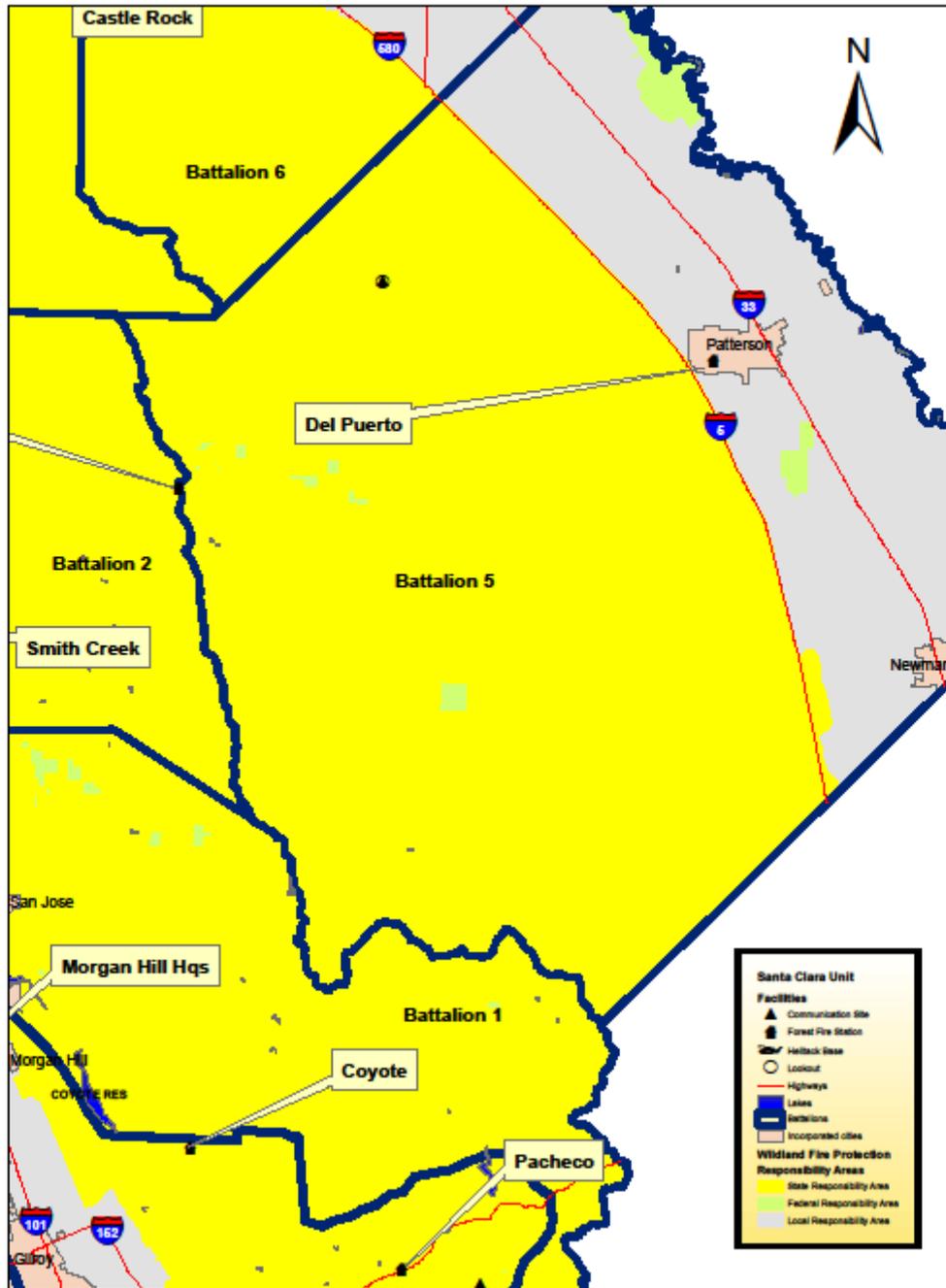
## Battalion 2







# Battalion 5



## APPENDIX D: GLOSSARY

**Authority Having Jurisdiction (AHJ)** – The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure (NFPA, NFPA 1144, 2002, p. 4).

**Aspect** – Compass direction toward which a slope faces (NFPA, NFPA 1144, 2002, p. 4).

**Building** – Any structure used or intended for supporting or sheltering any use or occupancy (NFPA, NFPA 1144, 2002, p. 4).

**Combustible** – Any material that, in the form in which it is used and under the conditions anticipated will ignite and burn or will add appreciable heat to an ambient fire (NFPA, NFPA 1144, 2002, p. 5).

**Community Wildfire Protection Plan (CWPP)** – Address issues such as wildfire response, hazard mitigation, community preparedness, or structure protection. The process of developing a CWPP can help communities clarify and refine their priorities for the protection of life, property, and critical infrastructure in the wildland urban interface (Source: Preparing a Community Wildfire Protection Plan. March, 2004).

**Condition Class** – Describes fire-related risk to ecosystems and relates current expected wildfires to their historic frequency and effects. Condition class ranks are defined as the relative risk of losing key components that define an ecosystem. Higher ranked areas present greater risk to ecosystem health. Condition class is a measure of the expected response of ecosystems to fire given current vegetation type and structure that often is far different from that historically present.

Class	Departure from natural regimes	Vegetation composition, structure, fuels	Fire behavior, severity, pattern	Disturbance agents, native species, hydrologic functions	Increased smoke production
Low Condition Class 1	None, minimal	Similar	Similar	Within natural range of variation	Low
Moderate Condition Class 2	Moderate	Moderately Altered	Uncharacteristic	Outside historical range of variation	Moderate

High Condition Class 3	High	Significantly different	Highly uncharacteristic	Substantially outside historical range of variation	High
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**Defensible Space** – An area as defined by the AHJ (typically a width of 30 feet or more) between an improved property and a potential wildland fire where combustible materials and vegetation have been removed or modified to reduce the potential for fire on improved property spreading to wildland fuels or to provide a safe working area for fire fighters protecting life and improved property from wildland fire (NFPA, NFPA 1144, 2002, p. 5), or as defined by PRC 4291.

**Disaster** – Disaster is characterized by the scope of an emergency. An emergency becomes a disaster when it exceeds the capability of the local resources to manage it. Disasters often result in great damage, loss, or destruction (Greene, R.W., Confronting Catastrophe, ESRI Press, 2002, p. 110).

**Dry Hydrant** – An arrangement of pipe permanently connected to a water source other than a piped, pressurized water supply system that provides a ready means of water supply for fire-fighting purposes and that utilizes the drafting (suction) capability of fire department pumpers (NFPA, NFPA 1144, 2002, p. 5).

**Dwelling** – One or more living units, each providing complete and independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation (NFPA, NFPA 1144, 2002, p. 4).

**Emergency** – A deviation from planned or expected behavior or course of events that endangers or adversely affects people, property, or the environment (Greene, R.W., Confronting Catastrophe, ESRI Press, 2002, p. 110).

**Evacuation/Escape Route** - An organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas.

**Fire Behavior** – The manner in which a fire reacts to the influences of fuel, weather, and topography.

**Fire Frequency** – A broad measure of the rate of fire occurrence in a particular area. For historical analyses, fire frequency is often expressed using the fire return interval calculation. For modern-era analyses, where data on timing and size of fires are recorded, fire frequency is often best expressed using fire rotation (CDF FRAP 2010 Forest and Range Assessment, p. 320).

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**Fire Hazard** – A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.

**Fire Hydrant** – A valved connection on a water supply system having one or more outlets and that is used to supply hose and fire department pumpers with water (NFPA, NFPA 1144, 2002, p. 5).

**Fire Lane** – A means of access or other passageway designated and identified to provide access for emergency apparatus where parking is not allowed (NFPA, NFPA 1141, 1998, p. 4).

**Fire Protection** – All measures taken to reduce the burden of fire on the quality of life. Fire protection includes measures such as fire prevention, fire suppression, built-in **fire protection systems**, and planning and building codes (NFPA, NFPA 1141, 1998, p. 4).

**Fire Protection System** – Any fire alarm device or system or fire extinguishing device or system, or their combination, that is designed and installed for detecting, controlling, or extinguishing a fire or otherwise alerting occupants, or the fire department, that a fire has occurred (NFPA, NFPA 1141, 1998, p. 4).

**Fire Threat** – The combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). Components include surface fuels, topography, fire history, and weather conditions (Source: CDF FRAP)

**Fire Regime** – A measure of the general pattern of fire frequency and severity typical to a particular area or type of landscape: The regime can include other metrics of the fire, including seasonality and typical fire size, as well as a measure of the pattern of variability in characteristics (CDF FRAP 2010 Forest and Range Assessment, p. 320).

**Fire Rotation** – An area-based average estimate of fire frequency, calculated as the length of time necessary for an area equal to the total area of interest to burn. Fire rotation is often applied to regionally stratified land groupings where individual fire-return interval across the variability of the strata (i.e., the fine scale pattern of variation in timing of fires) is unknown, but detailed information on fire size is known. Hence, fire rotation is a common estimate of fire frequency during periods of recorded fire sizes (CDF FRAP 2010 Forest and Range Assessment, p. 320).

**Fire Weather** – Weather conditions which influence fire ignition, behavior, and suppression.

**Firebreak** – A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

**Fuel break** – A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled.

**Fuels** – Any combustible material, especially petroleum-based products and wildland fuels.

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**Fuel Loading** – The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area. This may be available fuel (consumable fuel) or total fuel and is usually dry weight.

**Fuel Models** – Description of the types of vegetative combustible material:

-Light Fuels – grasses, forbs

-Medium Fuels – short light brush and small trees

-Heavy Fuels – tall dense brush, timber and hardwoods

-Slash Fuels – logs, chunks, bark, branches, stumps, and broken understory trees and brush.

**Fuel Modification** – Manipulation or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling and burning).

**GIS** - See **Geographic Information Systems**

**Geographic Information Systems** – The combination of skilled persons, spatial and descriptive data, analytic methods, and computer software and hardware – all organized to automate, manage, and deliver information through geographic presentation (i.e., maps) (Zeiler, M., Modeling Our World, ESRI Press, 1999, p. 46).

**Ground Fuels** – All combustible materials below the surface litter, including duff, tree or shrub roots, punky wood, peat, and sawdust that normally support a glowing combustion without flame.

**Hazard** – Refers generally to physical characteristics that may cause an emergency. Earthquake faults, flood zones, and highly flammable brush fields are all examples of hazards (Greene, R.W., Confronting Catastrophe, ESRI Press, 2002, p. 110). Also see **Fire Hazard**.

**Healthy Forests Restoration Act (HFRA), 2003** – Gives incentives for communities to engage in comprehensive forest planning and prioritization. This legislation includes statutory incentives for the US Forest Service (USFS) and the Bureau of Land Management (BLM) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction priorities. The Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and it places priority on treatment areas identified by communities themselves in a CWPP (Source: Preparing a Community Wildfire Protection Plan. March, 2004).

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**Improved Property** – A piece of land or real estate upon which a structure has been placed, a marketable crop is growing (including timber), or other property improvement has been made (NFPA, NFPA 1144, 2002, p. 5).

**Intermix** – An area where improved property and wildland fuels meet with no clearly defined boundary (NFPA, NFPA 1144, 2002, p. 5).

**Ladder Fuels** – Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning. (National Wildlife Coordinating Group, 2014,

**Mitigation** – Action that moderates the severity of a fire or risk (NFPA, NFPA 1144, 2002, p. 5).

**National Fire Protection Association (NFPA)** – An international nonprofit organization, established in 1896, to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education (NFPA, 2009,

**NFPA-1144 Standard for Protection of life and Property from Wildfire** – Standard developed by the NFPA to be used to provide minimum planning, construction, maintenance, education, and management elements for the protection of life, property, and other values that could be threatened by wildland fire. The standard shall be used to provide minimum requirements to parties responsible for fire protection, land use planning, property development, property maintenance, and others responsible for or interested in improving fire and life safety in areas where wildland fire could threaten lives, property, and other values (NFPA, NFPA 1144, 2002, p. 4).

**Noncombustible** – Any material that, in the form in which it is used and under the conditions anticipated will not ignite and burn nor will add appreciable heat to an ambient fire (NFPA, NFPA 1144, 2002, p. 5).

**Overstory** – the level of forest canopy that includes the crowns of dominant, codominant, and intermediate trees. (Maryland Department of Natural Resources, 2003,

**Risk** – The potential or likelihood of an emergency to occur. For example, the risk of damage to a structure from wildfire is high if it is built upon, or adjacent to, a highly flammable brush field or other area deemed to have a high **Fire Threat** (Greene, R.W., Confronting Catastrophe, ESRI Press, 2002, p. 110).

**Safe Zone** – An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas which can be used with relative

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safety by firefighters and their equipment in the event of blowup in the vicinity. (National Wildlife Coordinating Group, 2014,

**Slope** – The ratio between the amount of vertical rise of a slope and horizontal distance as expressed in a percent. One hundred feet of rise to 100 feet of horizontal distance equals 100 percent (National Wildlife Coordinating Group, 2012, <http://www.nwgc.gov/pms/pubs/glossary/s.htm>). Upward or downward incline or slant (NFPA, NFPA 1144, 2002, p. 5).

**Turnaround** – A portion of a roadway, unobstructed by parking, that allows for a safe reversal of direction for emergency equipment (NFPA, NFPA 1144, 2002, p. 5).

**Turnouts** – A widening in a travel way of sufficient length and width to allow vehicles to pass one another (NFPA, NFPA 1144, 2002, p. 5).

**Understory** – The layer formed by the crowns of smaller trees in a forest. (Mountain Association for Community Economic Development, 2014,

**Water Supply** – A source of water for fire-fighting activities (NFPA, NFPA 1144, 2002, p. 5).

**Wildfire** – Any fire occurring on undeveloped land; the term specifies a fire occurring on a wildland area that does not meet management objectives and thus requires a suppression response. Wildland fire protection agencies use this term generally to indicate a vegetation fire. Wildfire often replaces such terms as forest fire, brush fire, range fire, and grass fire (CDF FRAP 2010 Forest and Range Assessment, p. 330).

**Wildland** – A region with minimal development as evidenced by few structures; transportation networks may traverse region. Region typically contains natural vegetation and may be used for recreational or agricultural purposes (CDF FRAP 2010 Forest and Range Assessment, p. 330).

**Wildland urban interface (WUI)** – Commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. In the absence of a CWPP, Section 101 (16) of the HFRA defines WUI as “ (I) an area extending ½ mile from the boundary of an at-risk community; (II) an area within 1 ½ miles of the boundary of an at-risk community, including any land that (1) has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community; (2) has a geographic feature that aids in creating an effective fire break, such as a road or ridge top; or (3) is in condition class 3, as documented by the Secretary in the project-specific environmental analysis; (III) an area that is adjacent to an evacuation route for an at-risk community that the Secretary determines, in cooperation with the at-risk community, requires hazardous fuels reduction to provide safer evacuation from the at-risk community.” A CWPP offers the opportunity to establish a localized definition and boundary for the wildland urban interface (Source: Preparing a Community Wildfire Protection Plan. March, 2004).