

CAL FIRE San Mateo - Santa Cruz Unit

2023 STRATEGIC FIRE PLAN



Table of Contents

Table of Contents.....	iii
SIGNATURE PAGE	1
EXECUTIVE SUMMARY	2
SECTION I: UNIT OVERVIEW.....	4
UNIT DESCRIPTION	4
Priority Landscapes.....	7
UNIT PREPAREDNESS AND FIREFIGHTING CAPABILITIES	9
Paid Schedule “A” Stations.....	9
Paid Schedule “B” Stations.....	9
CDCR Conservation Camp	10
Volunteer Stations /Equipment	10
Initial Attack Resources	11
Aid agreements	11
Dispatch Agreements	12
Federal Areas.....	12
Local Government	12
Santa Cruz County	12
San Mateo County.....	13
SECTION II: COLLABORATION.....	14
COMMUNITY / AGENCIES / FIRE SAFE COUNCILS	14
SECTION III: VALUES	17
A: VALUES	17
B: COMMUNITIES	18
SECTION IV: PRE-FIRE MANAGEMENT STRATEGIES.....	20
A: FIRE PREVENTION	20
ENGINEERING & STRUCTURE IGNITABILITY	21
Santa Cruz County	21
San Mateo County.....	24
INFORMATION AND EDUCATION.....	26
B. VEGETATION MANAGEMENT	29
SECTION V: PRE- FIRE MANAGEMENT TACTICS.....	32
DIVISION / BATTALION / PROGRAM PLANS	32
Battalion I	32

Battalion 2	35
Battalion 3	37
Battalion 4	40
Battalion 5	44
Training	47
Ben Lomond Conservation Camp.....	48
APPENDIX A: PRE-FIRE PROJECTS: CWPP/Fireplan Project List	49
APPENDIX C: GENERAL RECOMMENDATIONS (taken from CWPP)	54
APPENDIX D: LANDSCAPE LEVEL NEEDS (taken from CWPP)	59
APPENDIX E: IGNITION ANALYSIS	63
EXHIBITS: MAPS	70
Annual Report of Unit Accomplishments	83

SIGNATURE PAGE

Unit Strategic Fire Plan developed for the San Mateo-Santa Cruz Unit

This Plan:

- Was collaboratively developed. Interested parties, Federal, State, City, and County agencies within the Unit 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 Unit.
- 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.



Unit Chief

Nate Armstrong



Pre-Fire Engineer

Frank Rodgers

EXECUTIVE SUMMARY

The history of wildfire in the San Mateo – Santa Cruz Unit can be dated back to Native Americans and later in the 1900's with slash and burn logging. Our knowledge of these fires is limited to verbal history and newspaper clippings. In the 1950's, the Division of Forestry began gathering data on large fires. Prior to the devastating wildfires of 2008 and 2009, large destructive wildfires were vague memories. Besides large fires in neighboring Units, Santa Cruz and San Mateo Counties had not seen much significant fire activity since the early 1960's. Until the Summit Fire of 2008, most residents had never experienced a destructive wildfire firsthand. The reasons for the lack of fire activity in the past 40 to 50 years can be argued; weather, changes in the way we manage our forests, extended fire regimes, aggressive firefighting, or a multitude of others. Regardless the reason, the fact remains, wildfires will occur. This concept was driven home in August of 2020 with the CZU Lightning Complex. By the time these fires were contained, they had consumed as many acres in one season as had been burned in the last 100 years combined and had burned from the southern boarder of San Mateo County to the town of Felton.

What makes the present different from early part of this century is the number of people living in the wildland. In the past 40 years, scores of people have chosen to live in the mountainous, rural part of the counties (aka: the Wildland Urban Interface (WUI)) rather than in the urban environment. People living in the wilderness is nothing new, however, their increasing numbers has caused the fire service to change the way the fire department does business. In the past, firefighters focused primarily on the fire; they are now faced with an ever-increasing infrastructure of roads, structures, traffic, and people. What has also changed is the fact there are not enough firefighters or fire apparatus to protect each and every home during a wildfire. Knowing this, it is the joint responsibility of the greater community and government to take preventative measures to make homes, neighborhoods, and the community more defensible from wildfire.

The 2010 strategic Fire Plan, developed collaboratively between the State Board of Forestry and Fire Protection (Board) and the California Department of Forestry and Fire Protection (CAL FIRE), asks how we can utilize prescribed fire and live with the risk of wildfire. The answer is through establishing a vision, goals, and objectives.

Locally, there is a history of collaborative efforts between fire agencies and groups such as Fire Safe San Mateo, and communities like Las Cumbres, La Honda, Olive Springs,

and Bonny Doon. Efforts such as these have culminated in numerous fuel reduction projects and community education. More recently, the Unit has seen an unprecedented amount of pre-fire “grass roots” organization, including the formation of the Soquel, South Skyline, and Bonny Doon Fire Safe Councils. In 2016, many of these groups began discussions regarding the formation of an overarching, county-wide Fire Safe Council for Santa Cruz County. A year later, the formation of the Santa Cruz Fire Safe was approved and a functioning board of directors and bylaws were voted in place. CAL FIRE is working closely with Fire Safe Santa Cruz County as it develops policies, practices, and projects.

With the assistance of the San Mateo County Resource Conservation District (RCD) through a grant from the United States Fish and Wildlife Service, a Community Wildfire Protection Plan (CWPP) was developed with input from stakeholders throughout San Mateo and Santa Cruz Counties. In 2010, the Board of Supervisors for both San Mateo and Santa Cruz County adopted the 2010 San Mateo County – Santa Cruz County CWPP. In 2014, 2018, and 2022 the CWPP had updates that were approved by all the Fire Chiefs with a stake in the document. The Unit is cooperating with the two counties’ Resource Conservation Districts, Fire Safe Councils, and Fire Chief’s Associations in order to maintain an up-to-date list of priority projects that will amend the CWPP as future updates occur.

The Unit Strategic Fire Plan is a living document, to be updated annually with additional goals and objectives. This document is also meant to work in collaboration with the already completed 2018 San Mateo County - Santa Cruz County Community Wildfire Protection Plan. Over time, we will be able to utilize measurement criteria to evaluate our accomplishments and their effectiveness.

SECTION I: UNIT OVERVIEW

UNIT DESCRIPTION

The San Mateo – Santa Cruz Unit includes the counties of Santa Cruz, San Mateo, and San Francisco. The Unit primarily operates in the State Responsibility Areas (SRA) of Santa Cruz County and San Mateo County; an area of approximately 894 square miles. CAL FIRE is the County Fire Department for both San Mateo County and Santa Cruz County. In addition to providing fire protection in the SRA, CAL FIRE contracts with the Coastside Fire Protection District in San Mateo County, Pajaro Valley Fire Protection District in Santa Cruz County, and Pajaro Dunes CSA#4 in Santa Cruz County.

San Mateo and Santa Cruz Counties border the Pacific Ocean to the west; San Francisco County to the north; San Francisco Bay and Santa Clara County to the east; and the Pajaro River along San Benito and Monterey Counties to the south. The counties straddle the eastern and western flanks of the Santa Cruz Mountains (part of the Coast Range) which runs in a general northwest to southeast direction. The ridgeline travels about 65 miles from just south of San Bruno Mountain in San Mateo County to Mount Madonna in Santa Cruz County. The highest point of the range is Loma Prieta at 3,806 feet (southwest of San Jose). Other notable peaks include: Mount Umunhum (3,442 feet); Castle Rock (3,214 feet); Ben Lomond Mountain (2,600 feet); Long Ridge (2,603 feet); Eagle Rock (2,488 feet); Kings Mountain (2,315 feet); Montara Mountain (1,900 feet); and Mount Madonna (1,897 feet).

Weather conditions in the Unit are considered to be Mediterranean in nature due to the warm dry summers and colder wet winters. In both Santa Cruz County and San Mateo County, the weather is generally mild throughout the year. Due to the proximity of the Monterey Bay in Santa Cruz County, the Pacific Ocean and San Francisco Bay in San Mateo County, fog and overcast conditions are common in the morning and evening.

Vegetation is dominated by dense conifer stands that typically have forest floor accumulations of litter and downed woody material and by coastal scrub communities consisting of low vegetation up to six feet in height, typically occurring on coastal bluffs, coastal hills and wind-swept summits. Within many of the Unit's evergreen/conifer forests, there are some areas of Oak woodland understory. There are additional areas that are dominated by Oak woodland, but often have evergreens starting to intrude.

Unmodified vegetation is usually dense and difficult to penetrate. True chaparral communities can be found in isolated areas on southwest aspects and at higher elevations. Grasslands occupy coastal valleys along the western slopes of the Santa Cruz Mountains and in the southern end of Santa Cruz County (the majority of this community has been converted to agriculture or urban development). Grasslands can also be found on the western slopes of the Santa Cruz Mountains in rural San Mateo County, especially in upland areas historically used for grazing.

Approximately one million residents make up the combined population of San Mateo and Santa Cruz Counties. Additionally, numerous other non-residents frequently visit the counties for work, recreation, and tourism. Recreational use of public lands is a year-round activity in great demand by people from the local communities, the surrounding metropolitan Bay Area, and points beyond. There are approximately 29 miles of beaches in Santa Cruz County and almost double that in San Mateo Co. Between State Parks, County Parks, Mid-Peninsula Open Space District, and local land trusts, there are over forty thousand acres of parks available to the public.

Santa Cruz County has an estimated population over a quarter million, of which the highest population densities occur in the Cities of Santa Cruz and Watsonville. San Mateo County has much higher population densities than Santa Cruz, with many of the county's three quarter million residents dwelling in the more urban northeastern portion of the county. The Cities of Daly City, San Mateo, Redwood City, South San Francisco, and San Bruno make up the highest population centers. With the exception of the city of Half Moon Bay and communities to the north of that city, coastal San Mateo County is largely undeveloped. Major landowners in the area include local and state government, private timberland, water districts, open space trusts and private ranch ownerships.

The boundary between residential/commercial development and wildland in both counties is not clearly demarcated. Development of rural residential dwellings is progressing at a moderate to rapid pace. Where there were once scattered rural summer cabins on winding, narrow roads, there are now year-round residential subdivisions, and an increased density of structures. Much of this intermix zone is within the State Responsibility Area (SRA) in Santa Cruz County and contiguous to SRA in San Mateo County.

Due to local topography, fuels (forest, chaparral, grasslands) and certain weather conditions, San Mateo and Santa Cruz counties have the potential for large, destructive wildfire events. Each year, State, local, and volunteer departments throughout the region respond to numerous wildfires. The vast majority of these are held to less than one acre. The reasons for this include but are not limited to: early identification and reporting, large fire suppression response (both local and state agencies), generally good access to fire areas, favorable fuels, favorable fire weather, and air support. Effective fire suppression over the past 100 years has led to uncharacteristically high fuel loads. When ignitions occur during unfavorable weather and/or in areas with poor access, fires can rapidly increase to an unmanageable size prior to fire resources arrival. In 2008 Santa Cruz County experienced three large wildfires resulting in approximately 5,400 acres burned and numerous homes destroyed. In 2009, Santa Cruz County experienced two large wildfires resulting in approximately 8,500 acres damaging and destroying numerous homes and structures. After an eight-year hiatus, large fires returned to Santa Cruz County in 2017 with the 300+ acre Bear Fire, which destroyed 6 structures. In the year 2020, we saw an alignment of weather and ignitions that resulted in a fire larger than the combined acreage burned in the past 100 years and more than 1400 structures destroyed.



*Martin Fire as seen
from Felton HQ (2008).*

Since the 1970s, there has been increasing public pressure to preserve local natural features. This philosophy has influenced the management of parks, open space, and private land holding. There are also the pressures of subdivision and home development on rural lands prone to fire hazards. The result is an ever-increasing land base where little to no vegetation management occurs. In many instances, the resulting landscape is overgrown with a variety of species, often with a non-native, invasive species component in a variety of age classes. The increased number of homes and proximity to flammable landscapes can be a potentially dangerous situation in the event of a fire. With new ownership and management objectives, many existing access roads are abandoned resulting in poor access to fires during suppression activities. With demand for additional housing intensifying, lands previously used to either access historical fires or used to create fire breaks are now occupied, making suppression significantly more difficult. Fuel reduction has become a priority of the CAL FIRE leadership and the local Unit is committed to working diligently towards reaching the set goals for acres treated through both mechanical means and broadcast burning. Local Unit personnel have been working with both public and private landowners/managers, fire safe councils, and local utilities to plan and carry out fuel reduction projects that help protect residents and infrastructure in and around the SRA.

Priority Landscapes

State law requires periodic assessment of California's forest and rangeland resources. Beginning in 2008, this became a Federal Law as well. In June of 2010, the Fire and Resource Assessment Program (FRAP) released California's Forest and Rangelands: 2010 Assessment, then updated the document in 2017. As part of the assessment, states were required to identify key issues and define the status and trends throughout the forests. Additionally, they were asked to identify specific geographic areas, called "priority landscapes". The intent of identifying "priority landscapes" was to assist planners and encourage investment in projects associated with the identified areas. The assessment identifies forest and rangeland issues across the state, with strategies to address them. A complete copy of the assessment can be found on the CAL FIRE FRAP Website (<https://frap.fire.ca.gov/assessment/>). The Unit will consider the following priority landscapes, as discussed by the 2017 assessment, when planning for future projects:

Chapter 1 – Sustainable Working Forests and Rangelands – Priority landscapes were identified in the Unit in regard to “Risk Reduction on Rangelands”.

Chapter 6.1 – Population Growth and Development Impacts - Landscapes at risk include annual grasslands and coastal scrub, found in both San Mateo and Santa Cruz County. Strategies to address development include land acquisition, easements and zoning policies.

Chapter 7 – Climate Change: Threats and Opportunities - San Mateo and Santa Cruz County have been identified as priority landscapes for threats to forest carbon from wildfire, insects, and disease. Strategies to mitigate these issues include reforestation, forestland conservation, fuels reduction, urban forestry and forest management to improve carbon sequestration

Chapter 9.1 – Water Quality and Quantity Protection and Enhancement – Landscapes at risk include both San Mateo and Santa Cruz County for water supply from forests in source watersheds.

Chapter 11 – Planning for and Reducing Wildfire Risks to Communities - San Mateo and Santa Cruz Counties have been identified as priority landscapes. A primary strategy for this priority landscape is to complete a CWPP (this has occurred for both counties).

UNIT PREPAREDNESS AND FIREFIGHTING CAPABILITIES

The San Mateo – Santa Cruz Unit (CZU) Headquarters is located in Santa Cruz County, in the town of Felton. CAL FIRE is contracted to provide personnel and services for Santa Cruz County and San Mateo County Fire Departments, respectively. CAL FIRE has contracts to provide fire protection to Pajaro Valley Fire District & Pajaro Dunes CSA 4 in Santa Cruz County and to Half Moon Bay, El Granada and Montara (collectively known as Coastside Fire Protection District) in San Mateo County. The Unit is geographically divided into five battalions. Battalion's One, Two and Five are within San Mateo County (with a small sliver extending into Santa Cruz County) and Three and Four in Santa Cruz County. See page 71 for a map of the battalions. Within the Unit there are State and County paid stations, local government departments, fire protection districts, as well as numerous volunteer companies. Additionally, the Unit manages both schedule "A" and schedule "B" stations.

Paid Schedule "A" Stations

Belmont Station #17	320 Paul Scannell Dr., San Mateo, CA 94402
Cordilleras Station #18	300 Edmonds Rd., Redwood City, CA 94062
Skylonda Station #58	17290 Skyline Blvd. Woodside, CA 94062
Pescadero Station #59	1200 Pescadero Rd., Pescadero, CA 94060
Half Moon Bay Station #40	1191 Main Street, Half Moon Bay, CA 94019
El Granada Station #41	531 Obispo Road, El Granada, CA 94018
Point Montara Station #44	501 Stetson Street, Moss Beach, CA 94038
Pajaro Dunes Station #42	2661 Beach Rd., Watsonville, CA 95076
Pajaro Valley Station #45	562 Casserly Rd., Watsonville, CA 95076

Paid Schedule "B" Stations

Saratoga Summit Station #21	12900 Skyline Blvd., Los Gatos, CA 95033
Jamison Creek Station #23	16115 Jamison Creek Rd., Boulder Creek, CA 95006
Fall Creek Station #31	7272 Empire Grade Road, Bonny Doon, CA 95060
Big Creek Station #33	240 Swanton Rd., Davenport, CA 95017
Felton Station #39	6059 Highway 9, Felton, CA 95018
Soquel Station #43	4750 Soquel-San Jose Rd., Soquel, CA 95073

Burrell Station #47	25050 Highland Way, Los Gatos, CA 95033
Corralitos Station #49	120 Eureka Canyon Rd., Watsonville, CA 95076
Belmont Station #17	320 Paul Scannell Dr., San Mateo, CA 94402
Skylonda Station #58	17290 Skyline Blvd. Woodside, CA 94062
Pescadero Station #59	1200 Pescadero Rd., Pescadero, CA 94060

CDCR Conservation Camp

Ben Lomond Camp #80 13575 Empire Grade Rd., Santa Cruz, CA 95060

The next closest CDC Conservation Camp is Gabilan Conservation Camp in Soledad, approximately 40 miles south of Santa Cruz County, in the CAL FIRE San Benito-Monterey Unit.

Volunteer Stations /Equipment

South Skyline Volunteers, Company 29:

Saratoga Summit Station 21 12900 Skyline Blvd., Los Gatos, CA 95033

Las Cumbres Station 29 18271 Las Cumbres Road, Los Gatos, CA 95033

Bonny Doon Volunteers, Company 32:

Martin Road Station 32 975 Martin Road, Santa Cruz, CA 95060

McDermott Station 34 7276 Empire Grade Rd., Santa Cruz, CA 95060

Loma Prieta Volunteers, Company 36:

Loma Prieta Station 36 17445 Old Summit Road, Los Gatos, CA 95030

Burrell Station 47 25050 Highland Way, Los Gatos, CA 95033

Davenport Volunteers, Company 37:

Davenport Station 37 75 Marine View Ave., Davenport, CA 95017

Corralitos Volunteers, Company 41:

Corralitos Station 49 120 Eureka Canyon Rd., Corralitos, CA 95076

Kings Mountain, Company 56:

Kings Mountain Station 56 13889 Skyline Blvd., Woodside, CA 94062

La Honda, Company 57:

La Honda Station 57 8945 Highway 84, La Honda, CA 94020

Loma Mar Fire Brigade:

Loma Mar Fire Station 55 8879 Pescadero Creek Rd., Loma Mar CA 94021

Initial Attack Resources

The following CAL FIRE resources are available for initial attack (not accounting for local agency and adjacent Unit response):

(2) Dozers: D1741, D1743

(13) Engines: E1760, E1761, E1762, E1764, E1765, E1766, E1767, E1768, E1769, E1771, E1774, E1776, E1781

(5) Fire Crews: Ben Lomond Crew #1 through Crew #5. Crew levels vary and fully staffing all 5 crews is dependent on qualified inmate resources. Current staffing level is two crews due to available inmates.

(1) CCC Crew: Beginning in 2021, CAL FIRE began contracting with the California Conservation Corps (CCC) to provide a crew for fire response (IA and large incidents), paired with a CAL FIRE Captain. In the 2022 fire season the CCC Crew, with a CAL FIRE Captain, have been rated as a type I crew.

The following CAL FIRE resources are held in reserve, to be used in times of need or while front line equipment is being repaired:

(2) Engines: E1763, E1791

(1) Camp Engine: E1799

The nearest air support is Alma Helitack in the Santa Clara Unit off of Highway 17, adjacent to Lexington Reservoir.

Aid agreements

There are agreements in place with cooperators and allied agencies to ensure adequate and appropriate responses are dispatched to provide for the mitigation of all types of emergencies occurring within the jurisdiction of CALFIRE San Mateo – Santa Cruz Unit, including cooperative agreements and contracts.

Most local government jurisdictions which are enclosed within the boundaries of the CAL FIRE unit have areas that are considered a Mutual Threat Zone (MTZ).

Additionally, there is a Mutual Aid Agreement with South San Francisco Fire for the wildland threat in the area of Sign Hill Park.

Dispatch Agreements

Currently, the Unit has no dispatch agreements.

Federal Areas

While not widely known, the San Mateo – Santa Cruz unit does have Federal Responsibility Areas (FRA) within its borders. These include the BLM Cotoni-Coast Dairies National Monument, US Fish and Wildlife Refuges and Golden Gate National Recreation Area. Being the closest available resource, CAL FIRE provides fire protection under an Assistance by Hire (ABH) agreement in the BLM lands and in GGNRA properties within San Mateo and Santa Cruz counties. The total acreage of FRA within the Unit is approximately 19,175 acres, which is about 3% of the land area.

Local Government

While the majority of wildland fires occur in the SRA, there is potential for many different agencies in the county to be affected. Fires have occurred in Mutual Threat Zones (MTZ's), in areas near adjoining jurisdictions, or in the Local Responsibility Area (LRA). It is through mutual relationships with local government agencies that initial attack resources become larger and more effective. The following local government agencies are typically available and involved in suppressing wildland fires:

Santa Cruz County

- Central Fire District of Santa Cruz County (previously Aptos/LaSelva FPD and Central FPD)
<https://www.centrafire.org/>
- Scotts Valley Fire Protection District
<https://www.scottsvalleyfire.com>
- Branciforte Fire Protection District
<http://www.branciforte-fire.com/>
- Santa Cruz City Fire Department (City of Santa Cruz & UCSC)
<http://www.cityofsantacruz.com/government/city-departments/fire-department>
- Watsonville Fire Department
<http://cityofwatsonville.org/430/fire-department>

- Boulder Creek Fire Protection District
<https://bcfd.com>
- Felton Fire Protection District
<https://feltonfire.com>
- Ben Lomond Fire Protection District
<http://www.benlomondfd.com/>
- Zayante Fire Protection District
<https://zayantefire.com>
- Pajaro Valley Fire District
<https://www.pajarovalleyfire.com/>

San Mateo County

- South San Francisco Fire Department
<https://www.ssf.net/departments/fire>
- North County Fire Authority (Brisbane, Daly City, & Pacifica)
<https://northcountyfire.org>
- Central County Fire Department (Burlingame, Hillsborough, & Millbrae)
<https://ccfd.org>
- Colma Fire Protection District
<https://www.colmafire.org>
- San Bruno Fire Department
<https://www.sanbruno.ca.gov/294/Fire>
- Redwood City Fire Department (Redwood City/San Carlos)
<http://www.redwoodcity.org/departments/fire-department>
- San Mateo Consolidated Fire Department (Belmont, Foster City, & San Mateo)
<https://www.smcfire.org>
- San Mateo County Fire Department (Unincorporated County & Highlands)
<https://www.cfsfire.org>
- Woodside Fire Protection District
<https://www.woodsidefire.org>
- Coastsid Fire Protection District
<https://www.coastsidefire.org/>

SECTION II: COLLABORATION

COMMUNITY / AGENCIES / FIRE SAFE COUNCILS

The Unit is continually engaging the community, local government, and other stakeholders to address the wildfire issues. CAL FIRE is typically involved in the recommendation and development of pre-fire projects in both counties independently and in advisory roles. CAL FIRE participates in Fire Safe programs as well as other ad hoc fire prevention groups seeking assistance. In 2008, CAL FIRE, with the assistance of the Resource Conservation Districts of both San Mateo and Santa Cruz Counties and from a grant from the US Fish and Wildlife Service (USFWS) began development of a CWPP. The CWPP was completed in 2010 and is a living document (**updated 2014, 2018, & 2022**). The information obtained during the Collaborative efforts undertaken in the development of the CWPP applies to this document as well.

As many residents of San Mateo and Santa Cruz Counties have experienced firsthand, wildfire can threaten lives, property, community assets, and natural resources. There are preventive measures that can be taken to help protect communities from the devastating losses that can result from wildfire. However, individual implementation of such measures can be prohibitive in terms of both cost and time, especially when neighboring properties do not participate. In this respect, the Strategic Fire Plan and Community Wildfire Protection Plan (CWPP) can be very empowering tools, providing communities with the opportunity to influence where and how fuel reduction projects are implemented.



CWPP community outreach, Zayante (2009).

Communities with CWPPs in place are given priority for funding of hazardous fuels reduction projects. Funding is made available primarily through the California Fire Safe Council's grant clearinghouse that combines federal and state funding sources into one place. Organizations such as Fire Safe councils and the RCD's regularly apply for grant funding on behalf of the community. This plan, in conjunction with the approved CWPP creates the opportunity to address the wildfire problem across the two counties.

Early stages of development of the CWPP for San Mateo and Santa Cruz Counties began in 2008. After securing limited funding, a core Planning Group convened in June of 2008 to discuss the feasibility for developing a CWPP for Santa Cruz and San Mateo Counties. This Group discussed the potential project scope and a rough timeline for the process of developing a CWPP. The Planning Group included the following participants:

- CAL FIRE
- Resource Conservation District of Santa Cruz County (RCDSCC)
- San Mateo Resource Conservation District (SMRCD)
- US Fish and Wildlife Service (USFWS)

Each time a CWPP is created in a given locale, a unique and new process ensues for that region and it always involves a steep learning curve for each community. Rather than recreating the wheel, from July to November of 2008, the Planning group gathered and reviewed available guidance documents and talked to people in other areas who had previously developed CWPPs in order to gain from lessons they learned.

Beginning in December of 2008, representatives of CAL FIRE and the RCDs conducted preliminary outreach to Fire Districts to compile existing wildfire prevention information. Through individual meetings with local Fire Districts, this effort harnessed local fire professionals' knowledge in both counties about high-risk areas, WUI boundaries, and priority projects. CAL FIRE compiled this information and represented it graphically on maps.

CAL FIRE and the RCDs solicited community input by holding several public meetings in order to create a draft CWPP. State Parks, the Bureau of Land Management (BLM) and the Central Coast Fire Learning Network were invited to advise on development of

a process for public input. In May 2009, two public meetings were convened, one in each county, to introduce community members to the CWPP process, solicit self-identified members for a Stakeholder Advisory Committee and conduct breakout sessions to gather a preliminary round of feedback.

Throughout the process of public feedback, from May 2009 until March 2010, community members interested in following the CWPP process online have been able to access updates and information about how to provide feedback through the CWPP blog (<http://wildfireplan.blogspot.com>).

In the middle part of 2010, the Santa Cruz County - San Mateo County Community Wildfire Protection Plan was adopted by the respective Board of Supervisors for each County. Much of the information contained in the approved CWPP is related to and should be used in conjunction with the development of the Strategic Fire Plan. A link to the approved CWPP can be found here: <http://www.santacruzcountyfire.com/cwpp.html>

The update process for the CWPP that occurred in 2014, 2018, & 2022 involved the following stakeholders: CAL FIRE, Resource Conservation District of Santa Cruz County (RCDSCC), San Mateo Resource Conservation District (SMRCD), local Fire Safe Councils (Fire Safe San Mateo County, Bonny Doon Fire Safe Council, South Skyline Fire Safe Council, & Fire Safe Council of Santa Cruz County), other fire departments & districts within San Mateo & Santa Cruz counties. The process was designed to re-identify communities at risk, target hazards, and potential project locations. After all the stakeholders had given their input on updates, the document was sent to the Fire Chiefs Associations of the two respective counties for final approval, which occurred most recently in November 2022. Any future updates will follow the same process.

Over the past couple of years, several small community groups have successfully worked through the Firewise USA program created by NFPA to form Firewise Communities. These communities have completed an assessment of their fire preparedness, taken appropriate measures to become more fire resistant and agree to maintain this status, all as a grassroots effort. There are now 5 in San Mateo County and 39 in Santa Cruz County. More are being added monthly. While the local unit has not been able to take a leadership roll in this effort, we are pleased with the process and hope that it continues to grow in the unit.

SECTION III: VALUES

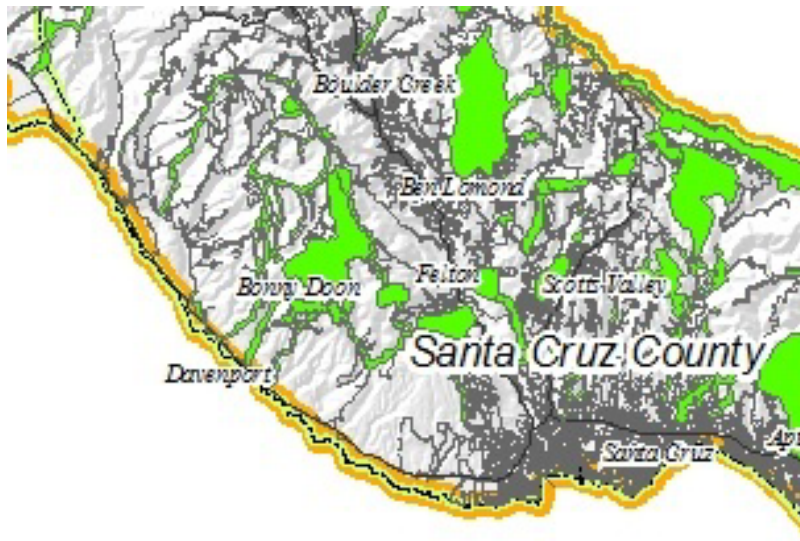
A: VALUES

During the preparation of the 2010 San Mateo County – Santa Cruz County CWPP, stakeholders were invited to identify assets at risk. Stakeholders provided specific assets at risk in each county. Due to the large size of the lists, they have not been included here. For complete lists of specific assets at risk for each county, please refer to the 2010 San Mateo County – Santa Cruz County CWPP (**updated 2014, 2018, & 2022** found at the website below).

<https://santacruzcountyfire.com/wp-content/uploads/2023/03/CWPP-Santa-Cruz-San-Mateo-2022-update.pdf>

In general terms, assets at risk have been divided into communities/neighborhoods, environmental, and other (non-environmental). It was determined most major assets would fall within one of these three categories. Communities and neighborhoods were given the highest priority because they are most often associated with life and property. Also considered high priority assets at risk are both environmental and non-environmental assets. This includes public facilities such as parks, wildlife, open space, watershed, and includes uninhabited public facilities in the wildland.

Following stakeholder meetings, assets at risk were identified throughout the plan area. Based on priority ranking, high priority areas were identified and mapped.



Excerpt of CWPP map showing high priority project areas (in green). See Exhibits:Maps:Figure M, pg82

B: COMMUNITIES

Communities at risk identified on the California fire alliance website do not accurately represent the number at risk from wildfire. This list was created with the intent of identifying communities adjacent to federal lands. In Santa Cruz County and San Mateo County, there are few federal properties and no US Forest Service holdings. There are, however, numerous communities threatened by the possibility of wildfire. Included below are the communities identified by the California Fire Alliance as well as those identified during the development of the San Mateo County and Santa Cruz County CWPP and listed on the Office of the State Fire Marshal website:

<https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/fire-plan/communities-at-risk/>

Communities at risk in San Mateo County:

- | | |
|--------------------|---------------------|
| San Mateo | South San Francisco |
| San Carlos | Belmont |
| Moss Beach | Pacifica |
| Portola Valley | Redwood City |
| West Menlo Park | Menlo Park |
| Hillsborough | Brisbane |
| Burlingame | Colma City |
| Daly City | El Granada |
| Emerald Lake Hills | Half Moon Bay |
| Highlands | Woodside |
| La Honda | Montara |

Communities at risk in Santa Cruz County:

- | | |
|-----------------------------|---------------|
| Santa Cruz | Soquel |
| Scotts Valley | Aptos |
| Aptos Hills - Larkin Valley | Davenport |
| Twin Lakes | Rio del Mar |
| Opal cliffs | Interlaken |
| Freedom | Felton |
| Day Valley | Corralitos |
| Capitola | Boulder Creek |
| Ben Lomond | Bonny Doon |
| Watsonville | |

In addition to those communities identified on the federal and state list, there are numerous other communities identified by stakeholders during the preparation of the CWPP. Many of these communities are unincorporated developments and sometimes neighborhoods within the WUI. Their names, although not cities, are known to fire agencies throughout the plan area (refer to table on next page).

San Mateo County - Communities at Risk	
Alpine Creek Tract	Middleton Tract
Barranca Knolls	Miramar
Big Canyon Open Space Park	Los Trancos Woods
Butano Park / Canyon Road	Palomar Park, Half Moon Bay
Cuesta Subdivision	Portola Heights
Dearborn Park	Princeton
Devonshire Canyon	Redwood Terrace
Eaton Park	Rocky Creek - Heacocks - Crazy Pete's Roads Community
Emerald Hills	San Gregorio
Guthrie Subdivision	San Juan Canyon in Belmont
La Honda/Redwood Properties	Skylonda
Ladera	Vista Verde
Loma Mar	Water Dog Lake in Belmont
	Whitehouse Canyon
Santa Cruz County - Communities at Risk	
Bear Creek Canyon	Mountain View community
Ben Lomond Camp	Mt Hermon
Braemoor	Mt Madonna
Branciforte corridor	Oak Ridge
Calabassas Road	Old Pilkington Road corridor
Deer Creek	Olive Springs community
Empire Grade corridor	Paradise Park
Fairway Drive community	Pine Ridge
Fern Flat	Porter Gulch community
Glen Canyon Road corridor	Rapley Ranch
Glen Haven corridor	Redwood Drive community
Glenwood Acres	Rodeo Gulch community
Graham Hill Road corridor	Smith Road corridor
Harmon Gulch	Swanton
Indian Trails	Trabing
La Selva Beach	Trout Gulch
Langley Hill Quarry Roads	Hwy 1 corridor between Freedom Blvd & Buena Vista
Las Cumbres	Valencia Road
Laurel Glen community	Vienna Woods
Lockhart Gulch corridor	Weston Road corridor
Lockheed area	Whalebone Gulch
Loma Prieta	White Road
Lompico Canyon	Zayante

SECTION IV: PRE-FIRE MANAGEMENT STRATEGIES

A: FIRE PREVENTION

The Fire Prevention Program is made up of the Prevention Bureau overseeing Fire related public education and law enforcement, the Fire Marshal's Office who oversees building code compliance issues, and the Pre-Fire Engineering Program, who works with Resource Management and the Vegetation Management Program Manager. Each of these programs works towards a common goal of reducing ignitions. It is the goal of the prevention program that with the combined efforts of each program, through enforcement, education, and implementation of projects, ignitions will be reduced.

Reducing the number of ignitions is a goal; however, fires will always occur. The Unit's objective is to keep these ignitions and subsequent fires to a manageable size, minimizing negative impacts to people and their property. There are a variety of methods for this to be accomplished. The CZU prevention program aims to reduce ignitions through the use of education, defensible space inspections, fuel reduction, and enforcement activities. The Unit plans on educating numerous residents throughout each county through LE-100 inspections and public contacts. Through the development of the CWPP and with numerous collaborators, fuel reduction projects are almost always in progress throughout the Unit. Increased educational efforts, coupled with fuel reduction projects in high priority areas are intended to reduce the number of ignitions.

The Unit acknowledges the state-wide directive we have been given from the Director of CAL FIRE to increase the number of acres both mechanically treated and broadcast burned using our Vegetation Management Program. As such, the Unit is constantly looking for vegetation management projects that would meet the goal of protecting the communities at risk. This can be accomplished by partnering with State and Local government agencies, non-Government agencies, Fire Safe Councils, and private landowners to complete vegetation fuels reduction projects that help protect communities in the SRA. The priority of any potential projects is filtered through the CWPP to ensure work is being done in areas that stakeholders have identified as high priority.

ENGINEERING & STRUCTURE IGNITABILITY

Santa Cruz County

Santa Cruz County Fire Marshal's Office provides the fire prevention services for areas outside of established fire districts within Santa Cruz County and for the Pajaro Valley Fire Protection District. Santa Cruz County is known to have a pro-active fire prevention program in regard to new and existing building construction. Santa Cruz County has completed adoption of the 2019 California Fire and Building codes (Title 24 parts 2, 2.5 and 9) with local amendments. The local amendments detail the requirements for roads, driveways, water supply, and the local fire sprinkler requirement for all new construction (in place since 1989).

Road Construction

Fire Apparatus access roads shall have an unobstructed width of not less than 20 feet except for approved security gates in accordance with Section 503.6 of Title 24, and an unobstructed vertical clearance of not less than 13 feet 6 inches. There are exceptions, contrary to State Fire Code, outside of the Urban Services Line as established by the County of Santa Cruz. In these locations access roads shall be a minimum of 18 feet wide for all access roads or driveways serving more than two habitable structures, and 12 feet for an access road or driveway serving two or fewer habitable structures. Where it is environmentally inadvisable to meet these criteria (due to excessive grading, tree removal or other environmental impacts), a 12-foot-wide all-weather surface access road with 12-foot wide by 35-foot long turnouts located approximately every 500 feet may be provided with the approval of the fire code official.

Title 19 of the California Administrative Code requires that access roads from every state governed building to a public street shall be all-weather hard-surface (suitable for use by fire apparatus) roadway not less than 20 feet in width. Such roadway shall be unobstructed and maintained only as access to the public street. Vertical clearance may be reduced; provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance when approved by the fire code official. It is important to note this is for new construction and that many roads, both public and private, in the county do not comply with the standard.

Water Supply

In Santa Cruz County, an approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings which are constructed or moved into or within the jurisdiction. The minimum water supply for all new dwellings within the SRA shall be capable of supplying a flow of 500 gallons per minute for 20 minutes (10,000 gallons) for each parcel. Privately owned water that is not supplied by a licensed water purveyor shall: (1) serve no more than two dwellings and no more than 10,000 square feet of habitable dwelling space, and (2) be provided pursuant to a recorded covenant that runs with the land if the water supply originates from another parcel. If a water purveyor supplies the water, the applicant must submit with the building plan written verification from the licensed purveyor that the water supply meets the flow requirement

Fire Sprinklers

An automatic fire sprinkler system shall be provided in all new occupancies as defined in Chapter 3 of the California Building Code, regardless of type of construction and/or floor area, unless otherwise pre-empted by the California Health and Safety Code. Any occupancy not specifically mentioned shall be included in the group that it most nearly resembles based on the proposed life and fire hazard. Private garages, carports, sheds not more than 1,000 square feet of total floor area shall not require fire sprinklers where they are detached and separate from other structures and provided with exterior wall and opening protection as per the California Building Code. Sheds exceeding 1,000 square feet, but not exceeding 3,000 square feet shall not require fire sprinklers at the discretion of the fire chief when the applicant demonstrates that the applicant's proposal does not increase the fire hazard or fire load. For existing structures an automatic sprinkler system shall be provided when, after the effective date of the fire code, a building permit is issued to allow additions to be made to existing structures which either: already are six thousand (6,000) square feet or greater in total floor area; or when additions are made to a structure which contains an existing fire sprinkler system, the fire sprinkler system shall be extended, thus creating fire sprinkler protection throughout the entire structure.

Summary

These requirements are placed on new construction and some remodels that are reviewed by the Santa Cruz County Fire Marshal's Office during the plan review phase of building permitting. The Santa Cruz County Building department reviews plans for the fire resistive construction requirements found in the fire and building codes (previously Chapter 7a UWIC).

Protection planning is reviewed during the discretionary and building permitting process by both the Santa Cruz County Fire Marshal's office and the building department. Codes found in local amendments to the California fire and building codes and in the Santa Cruz County General Plan provide guidance and requirements for fire and life safety.

Code enforcement for new and existing construction is provided for in a joint effort by the Fire Marshal's office and the Santa Cruz County code enforcement department located within the building department.

All new construction and remodels over 500 square feet that are reviewed by the Santa Cruz County Fire Marshal's office have holds that are placed on the project that can only be removed by thorough inspections of the project during multiple phases of the construction. Most projects that go through the permitting process receive a pre-site inspection prior to construction. All projects are inspected during rough and final construction for fire sprinklers. Inspections are also made prior to the final sign-off the roads and driveways, address numbers, smoke detectors, water supply, and vegetation clearance around the structure (PRC §4291).

Pre-plans for fire operations are conducted, at the local level, by the fire station personnel that will respond to an incident. Pre-plans are done for commercial occupancies, schools, and larger residential facilities. Pre-plans are sometimes conducted in conjunction with business inspections or on a rotating basis throughout the year. Starting in 2021, the Santa Cruz County Fire Marshal's office will be conducting all the mandated Fire and Life Safety inspections, as required by the State Fire Marshal's Office and Health and Safety Code.

San Mateo County

The Fire Marshal's Office in the CZU San Mateo Division consists of two offices responsible for fire prevention services in all unincorporated San Mateo County and the City of Half Moon Bay. Both offices are currently staffed with three personnel each and overseen by one Fire Marshal. San Mateo County and the Coastside Fire Protection District (CFPD) both have completed adoption of the 2022 California Fire and Building codes (Title 24 parts 2, 2.5 and 9) with local amendments. The local amendments detail the requirements for roads, driveways, water supply, and the local fire sprinkler requirement for all new construction.

WUI Deputy Fire Marshal

Starting in 2019, the San Mateo County Fire Marshal's Office added a specialized position dedicated to the Wildland Urban Interface (WUI). This position is primarily tasked with community risk reduction efforts throughout the County. The WUI Deputy Fire Marshal position involves investigating vegetation complaints, conducting public presentations related to wildland fire safety and home-hardening, and coordinating vegetation management projects with multiple agencies.

Coastside Vegetation Management Programs

The Coastside Fire Marshal's Office has implemented both Weed Abatement and Vegetation Abatement programs to aid in reducing fire hazards throughout the community. The goal of these programs is to identify and reduce fire hazards on unimproved parcels throughout the Coastside Fire Protection District. Parcels are identified as requiring abatement, and the parcel owners are sent a notice to abate weeds/vegetation. After the allotted time frame for compliance, CFPD hires a contractor to perform the abatement, and all costs are recuperated through a tax lien process. These programs are approved by the Board of Directors annually and have been in place for several years.

County Vegetation Management Forestry Assistant II

San Mateo County has funded a position for a Forestry Assistant II that assists in Fuel Reduction Projects around the unincorporated County area in the County Fire

jurisdiction. This position has been key to maintaining an active Fuel Reduction program in the county including Chipper support, project layout, project crew supervision.

Fire Sprinklers

Fire sprinklers are required in all new construction built after the 2007 code adoption cycle. Additionally, sprinkler systems will be required if an existing residential structure undergoes a significant addition or remodel with the valuation of 50% or more of the existing structure. All new fire sprinkler systems undergo a minimum of three inspections to ensure the system is robust and built to code.

Water Supply

San Mateo County contains many homes and businesses which are rural and relatively far from urban areas. Water supply is key for fire personnel to perform effective suppression operations; therefore, water supply is a major consideration during the plan review process for new construction. Reliable water supply is generally required 400 feet from any new structure and must flow a minimum of 500 gallons per minute at 20 pounds per square inch for 30 minutes. If there are no domestic water lines, water storage for one- and two-family dwellings up to 3,600 ft² shall be 7,500 gallons reserved for Fire, in addition to any domestic use. If larger than 3,600 ft² single family dwelling, use NFPA 1142.

Fire Department Access

Access to all new and improved structures must meet standards for length, width, and grading in order for fire engines to operate safely and effectively. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of Section 503 of the California Fire Code and local standards. These access roads shall extend to within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved area for turning around fire apparatus. Turn-around areas for fire apparatus must comply with CFC 2022 Appendix D.

INFORMATION AND EDUCATION

Education is arguably the most valuable tool available to reach this goal of reduced ignitions and large fires. The Unit employs education in every aspect of our department from Firefighters to Foresters to Office Personnel. The fire service hopes to educate the community and cooperators through word of mouth, through the media, printed material and other documentation. Some of our educational effort is informal in nature, occurring through unplanned contact at the station, or while out in the community. The majority of our educational effort is more formal and delivered at a variety of public events, community meetings, and defensible space inspections, at the scene of an incident and during law enforcement contact. The formalized events allow the Unit to work with the County and local government agencies to deliver standardized messages and literature. It is the hope of the Unit that through education, the public will have a better understanding of the risks they face and have resources to take action both before and during a wildland fire. This can include everything from removing flammable vegetation and debris from around their residence to having a specific plan of escape should there be a fire.

Each year, Unit personnel and local government agencies attend a variety of events where pre-fire preparedness messages and materials are provided to the public. Events commonly attended include; community parades, fairs, festivals, community picnics, and school events. It is expected CAL FIRE resources will attend upwards of thirty events per year.

Property owners living in State Responsibility Areas (SRA) are required by Public Resource Code (PRC) §4291 to maintain clearance of flammable vegetation around their property. A property owner's clearance responsibility is limited to 100 feet from his or her structure(s) or to the property line, whichever is closer, and is limited to their lands. In both counties, state and local fire departments are generally available to conduct home defensible space inspections. Depending on the policy of each department, inspections are made when requested. Prior to the start of fire season, each battalion in CZU identifies priority areas for defensible space inspections (LE-100's.). There are far too many residents in the County to inspect each property every year. Battalions recognize this and focus on different areas each year, with goal of inspecting all SRA residences in the WUI every three to five years. To assist the

Battalion personnel complete more inspections, the Unit hires Defensible Space Inspectors (DSI) that are managed through the Unit Prevention Bureau.

Due to the fact there are more residences than can be inspected by station personnel, the Unit has made efforts in the past to mail defensible space literature to properties, serving as an informal “inspection”. The Unit had mailed defensible space information to over seven-thousand properties in the WUI and would like to collaborate with local RCD’s to do another round of mailers.

When CAL FIRE personnel make a physical inspection of a property, the visit is documented on an electronic LE-100 form. This is a legal form documenting whether the property in question has passed or failed to comply with PRC §4291. If a property fails, the homeowner is given a reasonable amount of time to come into compliance. If the owner or resident of the property is home at the time of inspection, CAL FIRE inspectors can use this time to educate the public on what proper defensible space looks like. For failures, a second inspection is made and, again, it is documented on the inspection form. If the property fails a second time, the homeowner is given a final opportunity to come into compliance and the case is forwarded to the Prevention Bureau. The Prevention Bureau contacts the property owner and advises them legal action may occur and they could be cited for failure to comply with state law. In almost every case, homeowners have complied prior to law enforcement action.

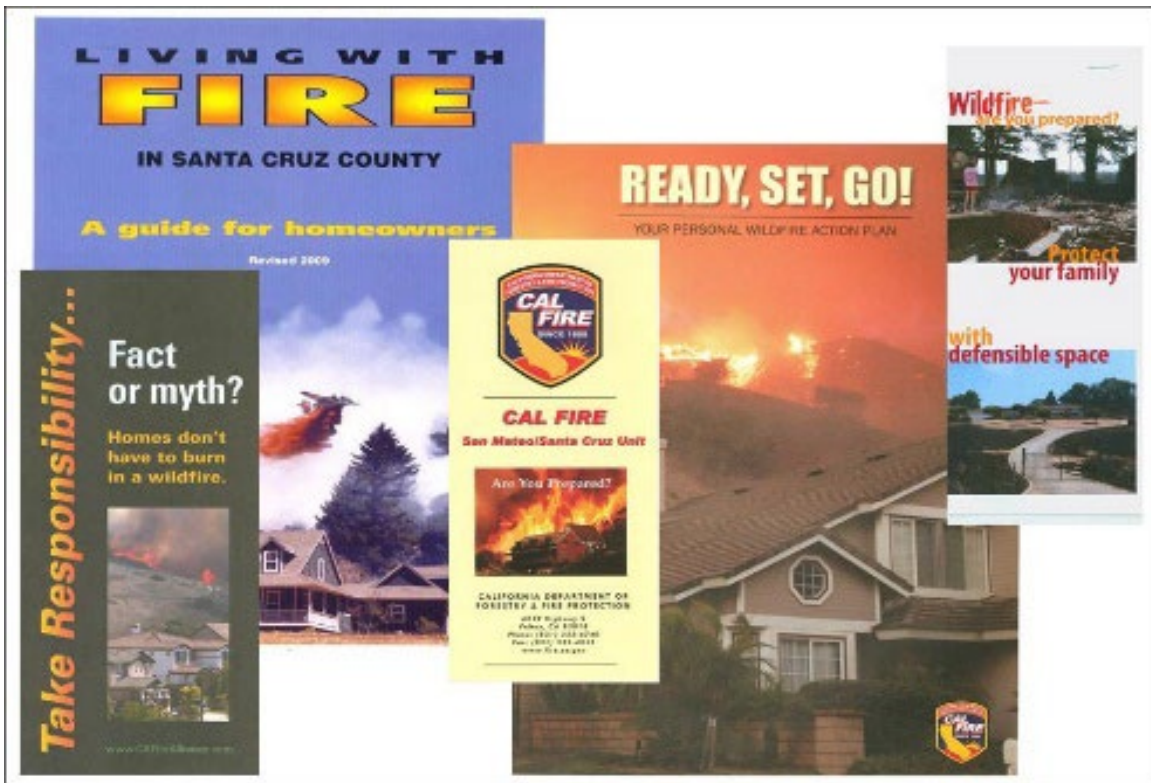
Each year, the Unit distributes educational materials through a variety of methods: direct mailing, at defensible space inspections and at public events. Materials are sometimes provided by CAL FIRE Headquarters in Sacramento, such as Ready, Set, Go!, while other times they are developed locally through cooperative partnerships. Such is the case with the Living with Fire in Santa Cruz County and Living with Fire in San Mateo County. These documents have been developed in partnership with CAL FIRE and Fire Safe San Mateo and the RCD of Santa Cruz County to reflect information relevant to the local jurisdictions.

Another locally produced fire prevention material is the CAL FIRE San Mateo/Santa Cruz Unit - Are you prepared pamphlet. The pamphlet, easily mailed or handed out, contains important wildfire preparedness information for Santa Cruz and San Mateo County. These handouts have been mailed and handed out to County residents living in the WUI since 2008.

Beginning in 2011, a new trifold titled “Wildfire – are you prepared” was developed in Santa Cruz County with a partnership between the RCD of Santa Cruz, CAL FIRE, and Aptos-La Selva Fire Protection District. The material focuses on defensible space around your home. There are tips on where to clear and what to plant. A fire safe checklist is also included. In an attempt to deliver a standardized message to specific jurisdictions, the pamphlet has been designed to include some agency specific information such as websites and phone numbers.

The Unit in partnership with local agencies and the RCD has also developed a 20-page pamphlet called “Living with Fire – in Santa Cruz County” and “Living with Fire – In San Mateo County, a guide for homeowners.” The document is revised and updated every other year and distributed to the community. This document contains a large amount of important information from available resources, to defensible space, to fire safe landscaping.

Some of the printed materials provided to the community.



B. VEGETATION MANAGEMENT

The Unit Vegetation Management Program (VMP) is heavily involved in all aspects of project planning, development, and implementation. The Vegetation Management Program collaborates with Fire Safe councils, community groups and cooperating agencies. In recent years, the VMP program has developed fuel reduction projects utilizing both mechanical and prescribed fire. The CAL FIRE Vegetation Management Program performs as both lead and in advisory roles in the development of fuels management throughout the Unit. There are a variety of methods of treatment prescribed whenever a project is developed. The type of treatment should be tailored to each individual project. Appendix D – General Recommendations describes the types of treatments typically prescribed.



Henry Cowell VMP Burn (2018)

Resource Management

Forested areas occupy a large percentage of land area within the San Mateo/ Santa Cruz Unit. The Unit Resource Management staff is tasked by state statute to enforce the California Forest Practice Act and Forest Practice Rules on private timberland in the State of California. Santa Cruz and San Mateo Counties are within a special rules district, where the only allowable management practice is single tree selection. CAL FIRE and other agencies involved in the review of harvesting permits continually look

for ways to improve fire safety, hazard reduction, public safety, vehicular access, water sources, timing of operations, and benefits to wildlife. Managed timberland constitutes an active and critical area for fuels management. Lands utilized for timber management are typically traversed with roads and trails, and their use can be critical during fire suppression operations. During fires such as the Summit and Lockheed, roads primarily maintained for timber management were also used by CAL FIRE for fire-fighting operations. The Unit approves a variety of forest management permits including 150-foot Fire Hazard Reduction Permits, Timber Harvest Plans, and Non-Industrial Timber Harvest Plans. As part of the permit, operators are required to comply with hazard (slash) reduction rules next to public roads, permitted structures, and throughout the harvest area. Operators are required to maintain firefighting tools during operations within fire season. On average, the Unit reviews and approves an average of two thousand plus acres per year of timber harvesting plans.

Suppression Repair

The Unit has a responsibility to repair damage incurred on the landscape during suppression activities, while at the same time attempt to reduce any increased fire hazard those suppression activities may have created. There are (7) Registered Professional Foresters (RPF's) on staff in CZU, each trained and experienced in suppression repair. Unit foresters work with other state agencies, large landowners, and the community to complete suppression repair efficiently and to high standards. The large fires that have occurred in Santa Cruz County within the last 10 years have been in forested and chaparral landscapes, and so suppression repair activities are completed with future fire prevention in mind.

Due to high fuel loading and, in some locations, coupled with reduced fuel consumption, many areas are left with high amounts of unburned fuel. Unless all fuels are consumed, there is typically fuel loading found adjacent to roads, dozer trails, and structures where fire crews or equipment have modified the landscape for fire suppression.

Following control of the fire, the areas of increased fuel loading need to be addressed. This is done through a variety of methods including: Hand crew, lop and scatter, and pile burning (as weather permits) or mastication. The Group Supervisor, usually a local RPF, will complete a plan of action and oversee the completion of suppression repair activities.



Post Fire Suppression Repair on the Lockheed Fire (2009).

Documentation of Vegetation Management

In order to help quantify work done and provide a platform for the agency to visualize where work has occurred, CAL FIRE uses the CALFIRE Management Activity Project Planning and Event Reporter (CalMAPPER) online program to track work done within the Unit. This program creates a data base, internal to CAL FIRE, that tracks both acres of land treated and hours spent on the project. It allows the Unit to track grant funding spent and links all projects to a GIS referenced map. The program is linked to CAL FIRE's eFC-33 program in order to automatically load the hours and type of work done on projects on a daily basis. By being GIS referenced, it allows fire planning managers a mapping resource to see where work has been done for potential fire breaks. All CAL FIRE Units are mandated to input vegetation management projects as well as California Forest Improvement Projects (CFIP) in the CalMAPPER program. Since 2021, the public can view portions of the information collected in the CalMAPPER program. The online web viewer can be accessed at the following URL:

<https://experience.arcgis.com/experience/dfb8672f201145a4a8bf04cd9d3e37c1/page/Overview/>

SECTION V: PRE- FIRE MANAGEMENT TACTICS

DIVISION / BATTALION / PROGRAM PLANS

Battalion I

Battalion 1 stretches from the Santa Clara County line north along the Highway 280 and Highway 35 corridors to just south of the San Francisco City limits. It sits between two of the most densely populated cities in the nation, those being San Francisco and the City of San Jose. The infamous San Andreas earthquake fault bisects the western portion from the eastern portions of the Battalion. See page 72, Exhibits:Maps:Figure C for a map of Battalion 1.

The geography within the battalion is very diverse. Vegetation ranges from rolling grass and brush intermix in the valley and foothill locations to heavily forested coastal redwoods. The fire weather conditions are also very diverse throughout the battalion. The temperature and humidity values within the battalion typically fluctuate widely. The northern portions of the battalion are usually under a coastal influence with mild temperatures in the mid 60's, while just 10 miles south the temperature may be in the mid 80's to low 90's. The Battalion has many areas of Wildland Urban Interface (WUI) and most fires will threaten structures within the initial attack period. The Hwy 280 corridor and San Bruno Mountain area continue to be the locations with the most fire activity.

Cooperators: CAL FIRE / San Mateo County Fire Department, Fire Safe San Mateo, San Francisco Water Department, Mid-Peninsula Regional Open Space District, San Mateo County Parks, Woodside Fire Protection District, Redwood City Fire Department, South San Francisco Fire Department, North County Fire Authority, Central County Fire Department, Menlo Park Fire District, and Colma Fire Department.

Currently, CAL FIRE administers San Mateo County Fire Department, which is in a Class 1 rating in CSA#1 due to its ISO rating of 1. This is in part due to excellent response times, hydrant capabilities, pumping capabilities, available work force, and diverse responses from county/state equipment typing (engines, ladder trucks, breathing support, and rescues).

Service levels in CAL FIRE/San Mateo County Fire Department have been steadily increasing with the addition of truck company service in 2018, a 2000-gallon water tender at the Skylonda Fire Station, Emergency Response Vehicles (ERV) at the Skylonda, Pescadero, and Cordilleras fire stations. The ERV vehicles are diversely equipped and designed to transport patients from hard to access locations, such as beaches and remote trails, to conventional ambulance transport on the pavement. Older fire apparatus has been cycled out of daily operations at the Pescadero & Skylonda stations, which received new type 1 fire engines in 2022. The Belmont & Cordilleras stations have new engines being built to replace their older equipment, with delivery expected in 2023/2024. A medium rescue apparatus is being built and will be housed at Belmont station when complete. Additionally, a new type-3 fire engine was put into service in 2020 and housed at Cordilleras station. A second, new type-3 fire engine has been ordered, which will be housed at Belmont station. A new radio repeater site, tone 15, on the north peak of Montara Mountain was installed in 2020. This improves communication in the north end of the Battalion.

A complete tear-down and rebuild of the Skylonda Fire Station was completed within the last five years and plans for similar construction at Pescadero Fire Station and Belmont Fire Station are in process.

Battalion personnel participate in community outreach programs including MDA's Fill the Boot campaign, Smokey Bear school presentations, station tours for Boy Scouts of America and local schools, sponsoring the San Mateo Explorer program, Touch-a-Truck pre-school event, Career Day at the County Receiving Facility, and Disaster Preparedness Day (a community out-reach day to educate and better prepare the public for natural disasters). In order to help local residents prepare for wildfire, an evacuation mailer was sent to all residents within the San Mateo County Fire jurisdiction in 2021.

The Battalion works closely with the community of Highlands. Among the activities that the Highlands community sponsors, personnel have participated in their Walk-a-Jog Fundraiser, Easter Event, July Fireworks and Parade, December Holiday Event, and the Highland Rec Staff BBQ. Battalion personnel help train the Highland CERT.

The Battalion works with local colleges as well. The San Francisco State University interior design students visited Belmont Station to learn about fire safety issues and

burn a variety of fabric types as part of learning about material flammability. The Belmont Station also plays host to the Community College of San Francisco students doing their Wildland Days training and assist with wildland fire instruction for local fire academies. Since the addition of a truck at Belmont Station 17, that station hosts two-week long truck academies twice a year, which are attended by both CAL FIRE and local government participants.

The Battalion has identified four primary ways to assist in Pre-Fire Management. It continues to actively inspect properties for vegetation clearance around structures, as required by Public Resource Code §4291, in the areas identified by the Battalion Chiefs as a priority. The personnel assist in identifying areas for potential fuel breaks or fuel reduction projects and pass that information on to Unit Foresters. This has led to a VMP project that will treat up to 1,100 acres of vegetation on SFPUC property as well as an ongoing VMP project that helps maintain the health of dam faces on SFPUC property. The Battalion participates in the hands-on work of ongoing fuel reduction projects. The personnel of the Battalion will continue to engage the public at community outreach activities, many of which have been mentioned in the page above.

Battalion 1 was the location of one of the 2019 Governor's "45-day projects". The Kings Mountain Roadside Shaded Fuel Break treated 90 acres of vegetation, within Huddart County Park, that helps protect the access and egress for residents from fires on the eastern side of the Santa Cruz mountains.

Battalion 1 currently has 5 AlertCalifornia Wildfire Cameras operational within its boundaries. These cameras were installed to provide real time intelligence on wildfires or potential wildfires in the area. Numerous "smokes" are reported to our ECC and this camera system allows them to confirm location and potentially significance of the incident. This can allow the ECC to add additional resources to an initial attack if conditions on the cameras indicate a need. An additional 3 more sites are proposed for this battalion's area.

Battalion 2

Battalion 2 is the Coastside Fire Protection District, which consists of the City of Half Moon Bay, the communities of Miramar, El Granada, Princeton-by-the-Sea, Moss Beach and Montara, as well as some surrounding unincorporated sections of San Mateo County. Of these areas, Half Moon Bay, El Granada and Moss Beach are the most densely populated and urbanized areas in the Battalion. CAL FIRE has a schedule A contract with Coastside Fire Protection District to provide fire personnel and management of fire resources within their district. See page 74, Exhibits:Maps:Figure E for a map of Battalion 2.

Vegetation ranges from rolling grass and brush intermix in the coastal foothills to eucalyptus groves and coastal redwoods in the uplands.

The fire weather conditions are diverse throughout the battalion and heavily influenced by the nearly ubiquitous marine layer. The temperature and humidity values typically fluctuate widely throughout the changes in elevation within the battalion. The coastal portions of the battalion are usually under a marine influence with mild temperatures in the mid 60's. As the battalion extends to the east the elevation increases and temperatures can increase rapidly.

Topography of this battalion consists of the coastal plains, which transition quickly into brush and forest covered hills. Like many other places in the Unit, there are a number of very steep sided canyons, many of which have residential neighborhoods perched on their slopes.

The Hwy 1 and Hwy 92 corridors continue to be the locations with the most fire activity. Battalion 2 is committed to working with our cooperators in reducing the fire and life safety hazards that exist within the battalion boundaries.

Cooperators: Coastside Fire Protection District, Fire Safe San Mateo

Battalion 2 is the location of one of the 2019 Governor's "45-day projects". The El Granada-Quarry Park Fuel Reduction project treated about 100 acres of eucalyptus within Quarry Park adjacent to the community of El Granada. The project removed a large amount of invasive eucalyptus fuel loading, which helps protect residents from fires.

The Unit has installed a new radio repeater in 2020 at the north end of the Battalion, along the Batt.1 / Batt.2 border, for improved communication in the north end of the division.

Battalion 2 currently has 4 AlertCalifornia Wildfire Cameras operational within its boundaries. The most recent addition is one on Montara Mountain. An additional 2 cameras are proposed for this battalion.

In order to help local residents prepare for wildfire, an evacuation mailer was sent to all residents within the Battalion 2 jurisdiction in 2021.

Fuels management in Coastside Battalion near El Granada (2010), similar to the work completed on the 2019 El Granada – Quarry Park project.



Battalion 3

Battalion 3 is the northern Santa Cruz County Battalion. The boundaries of Battalion 3 are west of the Highway 17 corridor & Santa Clara County line, east of the Pacific Ocean, south of the San Mateo County line and north of the City of Santa Cruz. The Battalion includes the communities of Bonny Doon and Davenport, which have volunteer fire companies that are part of Santa Cruz County Fire. Inside the border of this battalion is the Big Basin Redwoods State Park, the largest state park in the unit. Within and adjacent to the Battalion are Boulder Creek, Ben Lomond, Felton, Scotts Valley, and the City of Santa Cruz, all of whom are local cooperators in fire protection. This battalion has the largest area of FRA within the unit between the BLM Coast Dairies property and the Lockheed/Navy testing site. See page 76, Exhibits: Maps: Figure G for a map of Battalion 3.

The Battalion, like most of the rest of the Unit, has a variety of fuel types. Annual grasses cover many of the lower elevation coastal ridges and are found in occasional locations throughout the Battalion. Brush species are mixed with the timber types throughout the area, with a few endangered Chaparral species sprinkled about the hills. The heavier fuels include timber types of oak, madrone, knobcone pine, Douglas fir, and coastal redwood. A few large acre landowners and some small acre landowners have timber harvest plans on properties in the battalion, creating the potential for a timber slash fuel model. Due to state regulations, clear cutting is not allowed. The timber harvest plans within this battalion typically take redwood and Douglas fir species, much of which can be milled at a sawmill on the coast within the battalion or trucked out of county.

The weather is heavily influenced by the ocean, keeping coastal areas cool and the dispatch levels normally at low to medium. Inland and ridge top temperatures will cause dispatch levels to vary based on the presence or absence of marine layer influence. Most critical fire weather conditions occur when the marine layer has been pushed back due to a north wind event.

The topography in Battalion 3 varies greatly depending on your location. Coastal areas have flats and gently rolling hills, which then quickly transition into moderate and steep, canopy covered canyons. Many of the valley bottoms within the battalion are semi-urban with a significant intermix of structures within heavily vegetated forests. There is a

limited amount of agriculture within its boundaries, most of which is limited to small scale vineyards on steep slopes.

The Battalion has seen four major fires (Martin Fire 2008, Lockheed Fire 2009, Bear Fire 2017, and the CZU Lightning Complex 2020) in the last 15 years. The Battalion has areas rated both high and very high fire hazard severity. Many of these areas are overgrown and have overcrowded forests, which lead to hazardous burning conditions when weather comes into alignment. The Unit has attended community meetings with residents of the Las Cumbres and Boulder Creek communities to provide fire prevention information. The Unit has created and implemented a comprehensive evacuation plan in Battalions 3 and 4 for large scale events. Since 2018, Santa Cruz County Fire has added a Type 3 engine in Battalion 3 to the fleet, to help combat wildfires.

Cooperators: Santa Cruz County Fire Department, Santa Cruz Fire Safe Council, South Skyline Fire Safe Council, South Skyline C.E.R.T., Bonny Doon Fire Safe Council, Bonny Doon C.E.R.T., Santa Cruz Resource Conservation District, Lockheed Martin Space Systems Cooperation, and Big Creek Lumber.

The Battalion has been heavily invested in the Vegetation Management Program (VMP), with the majority of the Unit's broadcast burns happening within its boundaries. In recent years, the San Vicente VMP along Empire Grade, the Wilder Ranch VMP, the Lower Empire VMP on UCSC property, and the Henry Cowell Observation Platform VMP have all used broadcast burning as a tool for fuel reduction and/or habitat improvement. The China Grade VMP in Big Basin State Park is an ongoing project for all concerned as preparation work is done prior to broadcast burning. Many of the roads used to access the more remote sections of the county, designated by CAL FIRE as Truck Trails, are located within this battalion. The personnel have maintained and improved these truck trails during the off-peak fire season for over 50 years. In an effort to assist the fuel reduction projects in the Unit and help protect its communities, San Mateo County Fire Department has invested in a remotely controlled forestry masticator (2021).

The Battalion is working towards finishing at least two of the burn plots in the China Grade VMP in the next year and prepping the remaining plots for future burning opportunities. Discussions have begun with landowners for a future VMP on Cal Poly

property within the initial attack area of the Big Creek Station. The leadership in Battalion 3 would like to continue our relationship with UCSC and expand the broadcast burning program in the area of Chinquapin Road in order to provide a fuel break and promote native vegetation growth. The San Vicente shaded fuel break has continued opportunity for improvement and expansion beyond work already completed. Similarly, the Ice Cream Grade VMP has potential for expanding a shaded fuel break that would help protect the community of Bonny Doon. In addition to maintaining existing truck trails, it is a goal of the Battalion to improve and clear a road that connects Santa Cruz Ave, Boulder Creek with Roberts Road, Ben Lomond for the purpose of providing the community an alternate evacuation route in the event of disaster.

Battalion 3 currently has 7 AlertCalifornia Wildfire Cameras operational within its boundaries. Additional camera sites are proposed along the North Coast section of the battalion, currently a blank spot for coverage.



The San Vicente VMP. Using a broadcast burn to create a shaded fuel break in Battalion 3.

Battalion 4

The Battalion stretches from Highway 17 in the northwest to the Monterey and San Benito County lines to the south and the Santa Clara County line to the north and east. The western boundary runs adjacent to several Fire Protection Districts and to the Pacific Ocean in the southern part of the County. Special features include the Soquel Demonstration State Forest and the Forest of Nicene of Marks State Park, numerous State and County Beaches, two high schools, the county fairgrounds, and portions of Highways 1, 129 and 152. See page 78, Exhibits: Maps: Figure I for a map of Battalion 4.

Most of the SRA within the Battalion consists of heavy timber on steep slopes. This is a mixture of redwood, fir, pine, and oak. Mixed in the timber are batches of brush and grass, particularly along the ridge tops. South of Highway 152, the slopes of the hills have a greater occurrence of grasslands, with much of the acreage being used as grazing for ranch animals. Where the hills transition to valley floor, most of the vegetation has been converted to either agriculture or housing, though there are many areas of undisturbed brush, particularly along creek beds. This transition closely matches the switch from SRA to LRA. This battalion also has ongoing active timber harvest plans, with most of the harvest being redwood and some Douglas fir. Because of this, the potential for a timber slash fuel model exists on working forest plots.

The weather of the Battalion is Mediterranean in nature, with warm, dry summers and wet winters. The proximity of the ocean and the highest point in the Battalion being less than 3000 feet elevation make snow rare, even in winter when temperatures can drop to freezing. Average rainfall is about 26 inches at the RAWS station in Corralitos and higher in the hills above. Most of the rain occurs from November to April, with the months of May through October typically getting less than an inch of rain. The marine layer keeps the relative humidity high through most of the year in the lower elevations. The highest points of the Battalion are often above the layer, a fact that is visible when looking down at the top of the fog bank that covers much of the Battalion, typically during the summer mornings and evenings. Most critical fire weather occurs during a north wind event when conditions have pushed the marine layer back off coast for days at a time.

The general population varies from dense residential and commercial to the less dense rural settings found throughout much of the SRA. As with most SRA areas, there is the increasing challenge of protecting homes in the Wildland Urban Interface (WUI).

Battalion 4 is committed to working with our cooperators to reduce the fire and life safety hazards that exist within the Battalion boundaries. Cooperators include: Pajaro Valley Fire Protection District, Santa Cruz County Fire Department, Watsonville Fire Department, Central Fire District of Santa Cruz County, Scotts Valley Fire Protection District, Branciforte Fire District, Soquel Demonstration Forest, Santa Cruz Resource Conservation District, Santa Cruz Fire Safe Council, CAL FIRE Santa Clara and CAL FIRE San Benito Monterey Unit.

Large fire history within or directly adjacent to Battalion 4 includes the Rocha VMP Escape (1984), the Lexington Fire (1985), the Croy Fire (2002), the Hummingbird Fire (2008), the Summit Fire (2008), the Trabing Fire (2008), the Loma Fire (2009), and the Loma Fire (2016). Since 2018, Santa Cruz County Fire has added a Type 3 engine and a 2000-gallon water tender in Battalion 4 to the fleet, to help combat wildfires.

The Battalion participates in many community outreach programs including:

- MDA Fill the Boot fundraiser
- Toys for Tots
- Second Harvest Food Bank: food collection during the holiday season
- Volunteer Fire Company and Community Feeds and fundraisers, including working closely with the Portuguese Community at functions at the Our Lady Help of Christians Church on East Lake Ave, Knights of Columbus, Foothill Firefighters Association, and the Mount Madonna Center Community.
- Fire prevention programs with the local schools, including the Watsonville Charter School of the Arts, Alianza, Amesti, Bradley and Loma Prieta Schools
- Staffing of the Fire Prevention booth at the annual Santa Cruz County Fair.
- Working with road associations on Redwood Road and Fern Flat Road
- Installation and upkeep of Fire Prevention signs, including Smokey's Fire Danger Rating sign and a new prevention sign at Pajaro Valley Station.

There are Community Emergency Response Teams (CERT) located in the Corralitos and Aptos areas that are supported with training by Battalion personnel. The Battalion

has hosted community presentations with the Santa Cruz County Farm Bureau and CAL FIRE also participates in the Town Hall meeting at the Mt. Madonna Center by giving residents information on fire safety in the Wildland Urban Interface Zone and evacuation training. The stations have all been very active in helping residents stay aware of the wildfire threat in the area by performing LE-100 inspections and instructing homeowners in proper defensible space requirements.

The Battalion has been working closely with Santa Cruz County Roads and our ECC to maintain an accurate and up to date listing of road closures. This has led to modifying response plans in the CAD, so that there is minimized disruption of closed roads. They have also worked with the Pajaro Dunes Association to implement an Automated Emergency Call Out (similar to reverse 911) during storms and flooding.

The Battalion has multiple objectives for the coming year, including completing residential LE-100 inspections, inspections of burn piles/areas, and public education during burn permit issuance. In 2023 the focus of the residential inspections will be the areas known as Zone 2 for Corralitos, Burrell, Soquel, and Pajaro Valley Stations. They are committed to completing all reports and informing the Fire Prevention Office of cost recovery incidents. The Battalion is committed to assist the County of Santa Cruz by reporting abandoned vehicles to the vehicle abatement program.

The Battalion intends to work cooperatively with California State Parks by presenting public awareness/education of fire danger during the Public Access days as well as working with State Parks and County Roads to establish viable roadway and evacuation routes for Buzzard Lagoon and Aptos Creek Fire Road.

Battalion 4 has worked with California State Parks maintaining access to fire road truck trails by doing brushing and roadbed maintenance, building shaded fuel breaks, expansion of helicopter landing zones and re-establishing a water tank within Nisene Marks for fire protection. Other fire prevention activities include a vacant lot weed abatement program within the boundaries of the Pajaro Valley Fire.

Meetings with local ranchers have resulted in agreements to do fuel reduction projects on private property. The Estrada VTP was implemented in 2021, completing over 27 acres of broadcast burning, and the Kelly Thompson VMP (potential for up to 660 acres) is moving forward, with the prep work done for about 34 acres in 2023. In accordance with the desire of the Director of CAL FIRE, the Battalion has plans to do fuel reduction

broadcast burns over as many acres as possible. In addition to broadcast burning, the Unit is interested in establishing a fuel break along the ridge from the end of Bella Vista, south through several large ranches toward the San Benito County line.

Battalion 4 was the location of one of the 2019 Governor's "45-day projects". The Aptos-Buzzard-Hinckley Ridgetop and Roadside Fuels Treatment project cleared 260 acres of vegetation and an additional 14 acres of broadcast burning. This created a fuel break following Buzzard Lagoon Road to the ridgeline through Nisene Marks State Park, which is designed to protect the public from fires similar to the large fires of 2008 & 2009. At the completion of the project, the treatment area transitioned into the Santa Roaslia VTP project for ongoing broadcast burning and maintenance.

Battalion 4 currently has 3 AlertCalifornia Wildfire Cameras operational within its boundaries. There are currently efforts to place a camera on the Watsonville Government Center which would cover a significant blank spot in this area.



Representative photo of Battalion 4 showing the forest covered mountain slopes, the ridges of mixed brush and grass, and the valley bottom areas that are largely converted to agricultural use. This photo shows where the 2008 Summit fire, 2009 Loma fire and 2016 Loma fire occurred. The fire scar from 2016 can still be seen on the peak in the upper left side of the photo.

Battalion 5

Battalion 5 stretches north from the Santa Cruz County line through the southern half of San Mateo County to approximately the Lobitos Creek & Purisima Creek drainages. The Battalion extends from the coast to Skyline Boulevard. The eastern boundary runs adjacent to Santa Cruz County, Santa Clara County, and Woodside Fire Protection District. This battalion covers a largely unpopulated area of San Mateo County as well as the communities of Pescadero, La Honda, Skylonda, Loma Mar and Middleton Tract. See page 80, Exhibits: Maps: Figure K for a map of Battalion 5.

The flora within the battalion is very diverse. The Battalion contains heavy timber in the form of coastal redwood and mixed conifer on steep slopes, which turns to mixed chaparral type brush and grass on some ridges, with grass lands in the foothills, valleys, and some ridgetops. Eucalyptus groves have spread in many areas of the battalion, typically in the lower elevations. There are many acres of State and County parks and Open Space Trust areas within the battalion. That means, combined with the large timber company landowners, there are very large tracts of land that are unbroken swaths of vegetation. The Pescadero Creek and Butano Creek watersheds in particular have vast stands of timber, much of which was scorched in the 2020 CZU Lightning Complex. This battalion also has ongoing active timber harvest plans, with most of the harvest being redwood and some Douglas fir. Because of this, the potential for a timber slash fuel model exists on working forest plots.

Battalion 5 overlooking Peters Creek and Pescadero Creek drainage basins. Photo shows the heavily forested areas along with the mixed brush and grass that are found throughout the battalion.



The fire weather conditions are also very diverse throughout the battalion. The temperature and humidity values typically fluctuate widely. The coastal portions of the battalion are usually under a marine influence with mild temperatures in the mid 60's. There is a typical summer inversion layer that will often drop the relative humidity values on the ridgetops below 20% during times of high temperatures.

The terrain in Battalion 5 is similar to other areas of the Unit. It ranges from the fairly flat strip of coastal plains, up the various river basins to steep sided canyons topping out at 2,500' to 3,000' elevation.

The general population varies from small pockets of dense residential and commercial to large geographic areas of sparsely populated rural settings found throughout much of the SRA. As with most SRA areas we have the increasing challenge of protecting homes in the WUI. Battalion 5 has many Open Space Preserves and State Parks within its boundaries, and the recreational population that comes with having large areas of parkland.

Battalion 5 is committed to working with our cooperators to reduce the fire and life safety hazards that exist within the Battalion boundaries. Cooperators include: San Mateo County Fire Safe, South Skyline Fire Safe Council, San Francisco Water Department, Mid-Peninsula Open Space District, Woodside Fire Protection District, Redwood City Fire Department, CAL FIRE / San Mateo County Fire Department, Coastside Fire District and San Mateo County Parks.

This past year, Battalion personnel have been active in community outreach with the residents of Pescadero, participating in the Pescadero Elementary School Garden Work Party, Christmas community events, Pescadero Booster Club clean up days, and attending High School sporting events as both first responders and community participants. In addition to completing residential LE-100 inspections, the Battalion has been performing business inspections in the town of Pescadero. In order to help local residents prepare for wildfire, an evacuation mailer was sent to all residents within the San Mateo County Fire jurisdiction in 2021.

To maintain access to all of the areas in Battalion 5, the following truck trails (TT) have been identified as important to assist the landowners in maintenance with roadside brushing and occasional road grading: South Butano TT, North Butano TT, Whitehouse Canyon TT, Gazo's Creek TT, Ward Road TT, Chalks TT, Olmo TT, and Pomponio TT. Broadcast burning has occurred on the TomKat Ranch as part of the TomKat VMP project that achieves goals for both the ranch owner and fire prevention purposes. Other VMP's designed to reduce large areas of vegetation, with multiple landowners, are in process of approval within the Battalion.

The Battalion has added new apparatus and equipment in the past couple of years to increase the effectiveness of its emergency response. An Emergency Response Vehicle (ERV) with trailer was added at the Pescadero Station and an ERV with stake side truck was added at the Skylonda Station, for both medical and fire responses. Additionally, as of 2020, the Skylonda Station 58 completed its move into a new facility on the same site as the old building.

Battalion 5 currently has 4 AlertCalifornia Wildfire Cameras operational within its boundaries. There are currently plans for additional cameras in the County line area of the battalion to cover blank spots in coverage.

Training

The CALFIRE CZU Training Battalion is responsible for delivery and documentation of training for all career and volunteer personnel. The Training Battalion will ensure that all federal, state, and local training mandates, laws, and regulations are followed as they pertain to training.

The CALFIRE CZU Training Battalion in coordination with local cooperators conducts pre-wildland fire training. Training is conducted at the company level and covers all mandated safety requirements including perishable wildland firefighting skills. Many other State Fire Marshall and NWCG course of are offered through the Training Officer Associations to build local knowledge of wildland firefighting.



State and local Government firefighters participate in wildland fire training (2011).

In addition to the day-to-day operations of the Training Battalion, CALFIRE CZU has laid out goals for the Battalion to accomplish. These goals include: ensuring all suppression personnel are trained in the Rope Rescue Operations Course, hosting a Company Officer training course, facilitating a Physical Fitness program in which all employees are expected to participate and doing Unit wide training with vehicles in order to reduce the number of accidents per year.

Ben Lomond Conservation Camp

The Ben Lomond Conservation is one of 35 Conservation Camps statewide, operated in conjunction with the California Department of Corrections and Rehabilitation (CDCR). The statewide program houses approximately 1,800 inmates and wards. Ben Lomond Camp is located in northern Santa Cruz County, near the communities of Boulder Creek and Ben Lomond. Through the cooperative effort with CDCR, CAL FIRE is authorized to operate 5 fire crews year-round. Currently, CAL FIRE staffs up to five inmate firefighting crews with a minimum staffing of 12 persons in each crew. These crews are available to respond to all types of emergencies including wildfires, floods, search and rescue, and earthquakes. When not responding to emergencies, the crews are busy with conservation and community service work projects for state, federal, and local government agencies. Ben Lomond Crews are routinely involved in the hands-on removal of hazardous vegetation fuel levels locally. They participate in all manual labor aspects of pre-fire work from vegetation removal requiring chainsaws and hand tools to chipping and pile burning.

Starting in 2021, CAL FIRE CZU began contracting with the CCC to provide one crew, staffed at 15 persons, which is available for initial attack and large incident fires. This crew is supervised by one CAL FIRE Captain and one CAL FIRE Engineer, and work on similar types of fuel reduction projects as the Ben Lomond Crews when not on an active incident. CAL FIRE puts the CCC crew members through a minimum two-week initial training regime to ensure the personnel are proficient in firefighting skills. The addition of a CCC crew comes from a state-wide budget change.



APPENDIX A: PRE-FIRE PROJECTS: CWPP/Fireplan Project List

(ongoing / 5-year history 2018 to 2022)

Batt Planning area	Project Number	Project Name	Status	Estimated Completion Year	Project Type	Net Acres
		Community Outreach Projects				
1		Belmont Parade	C	Ongoing	CO	
1		July 4 Parade – Highlands	C	Ongoing	CO	
1 - 2		Community Preparedness Day	C	Ongoing	CO	
1 - 2		San Mateo County Fair	C	Ongoing	CO	
2		Half Moon Bay Pumpkin Festival	C	Ongoing	CO	
1 - 2		San Mateo City Parade	C	Ongoing	CO	
2		July 4 Parade – Half Moon Bay	C	Ongoing	CO	
1 - 2		Belmont Touch a Truck Event	C	Ongoing	CO	
5		Pescadero Fun Festival	C	Ongoing	CO	
1 - 5		Huddart Park Skylonda	C	Ongoing	CO	
5		Pescadero High School	C	Ongoing	CO	
5		Pescadero Elementary School	C	Ongoing	CO	
5		Pescadero Christmas community event	C	2018	CO	
5		Pescadero Booster Club Clean Up Day	C	2018	CO	
4		Pajaro Valley Open House Prevention Week	C	2020	CO	
4		CT English/Loma Prieta School	C	2020	CO	
4		Bradley School	C	2020	CO	
4		Mount Madonna School	C	2020	CO	
4		Watsonville High School – Career Day	C	2020	CO	
4		July 4 Parade – Watsonville	C	2020	CO	
4		Building Blocks prevention program	C	2020	CO	
4		Corralitos CERT program	C	2020	CO	
4		PVFPD & Pajaro Dunes Defensible Space mailer	C	2020	CO	
		Potential Planned Projects				
1	1700-2014-FPL-001	Pescadero Ck. Ridge, Memorial, Towne	P		FR	
3,4	1700-2014-FPL-002	Santa Cruz County Chipping Project	P		FR	County Wide
4		Browns to Eureka Fuel Break	P		FR	
4		Skyward Drive Fuel Reduction Project	P		FR	
4		Eureka-Haines Shaded Fuel Break	P		SFB	
1		Montara Fuel Break	P		SFB	
1	MROSD	Upper Alpine Emergency Access	P		FR	

1	MROSD	La Honda Creek OSP various projects	P			
1	MROSD	Fire Management Planning	P			
4	MROSD	Rattlesnake Gulch/Loma Prieta Ranch	P		FR	
4		Old Evans Road Fuel Reduction	P			
5	1700-2016-FPL-016	La Honda Community Chipping	P	Ongoing	FR	
3		Olympia Watershed SFB	P		SFB	
3		Scotts Valley-Zayante Fuel Break	P		FB/SF B	
3		Lockewood Fuel Break Scotts Valley	P		FB	
3		Lockhart Fuel Break	P		FB	
1	1700-2020-FPL-005	Big Canyon	P		FR	
5		La Honda Fuel Break Project	P		FR/FB/SF B	
5/3/4		Highway 35 – Tri-county collaboration	P		FR/SF B	
		VMP/VTP – Broadcast Burn Projects				
3	1700-2016-VMP-004	Ben Lomond SandHill VMP	A	2026	Burn	6
3	1700-2011-VMP-012	Big Basin VMP- Rx-North-CZU-034	A	2031	Burn	342
3	1700-2015-VMP-001	Big Basin /China Grade VMP Rx-North-CZU-037	A	2024	Burn	1310
3	1700-2021-VMP-004	Bonny Doon Rd VTP 2020	A	2031	FR	33
3	1700-2020-VMP-003	Deadman Gulch VMP	P	2027	FR, Burn	
4	1700-2020-VMP-002	Estrada Ranch VTP	A	2023	Burn	39
3	1700-2015-VMP-003	Hennry Cowell Observation Platform VMP: Rx-North-CZU-038	A	2020	Burn	104
3	1700-2018-VMP-001	Locatelli VMP	A	2028	Burn	25
3	1700-2017-VMP-001	Lower Empire VMP	A	2027	Burn	22
1	1700-2017-VMP-003	San Francisco PUC (Dam Faces)	A	2027	Burn	11
3	1700-2016-VMP-002	Ice Cream Grade VMP	M	2017	FB	14
4	1700-2020-VMP-001	Kelly Thompson Ranch VMP	P	2030	FR, Burn	2
5	1700-2022-VMP-002	Pomponio Ranch VMP	A	2031	FR	1
5	1700-2021-VMP-001	TomKat VMP 2021	A	2031	Burn	32
3	1700-2016-VMP-001	San Vicente Redwoods VMP	A	2028	Burn	139
4	1700-2021-VMP-002	Santa Rosalia VTP	A	2031	FR, Burn	35
1	1700-2022-VMP-001	SFPUC Prescribed Burn VMP	A	2030	FR, Burn	24
3	1700-2017-VMP-005	Wilder Ranch SP VMP	A	2018	Burn	400
		Truck Trail Projects				
5	1700-2014-FPL-008	S. Butano Shaded Fuel Break	M	2016	SFB	10

3/5	1700-2017-FPL-006	Johansen TT	C	2017	FR	8
3	1700-2011-FPL-010	Kings Creek TT	M	2017	SFB	60
3	1700-2015-FPL-002	Fall Creek TT Shaded Fuel Break	C	2017	SFB	100
3	1700-2017-FPL-003	Eagle Rock Road	M	2017	FR	3
5	1700-2017-FPL-004	Chalks Truck Trail	M	2017	FR	9
3/5	1700-2017-FPL-007	Gazo Creek Road	C	2017	FR	10
5	1700-2017-FPL-010	Oil Ridge Road	P	2020	FR	4
5	1700-2016-FPL-002	Olmo TT Roadside Fuel Reduction	A	2017	FR	12
3	1700-2017-FPL-005	Middle Ridge TT	C	2017	FR	2
5	1700-2017-FPL-008	North Butano TT	M	2017	FR	11
3	1700-2017-FPL-009	Ward Rd Roadside Fuel Reduction	C	2017	FR	40
3	1700-2015-FPL-004	Warrenella Fuel Break	C	2016	SFB	163
5	1700-2016-FPL-014	Upper Whitehouse Canyon	M	2017	FR	8
		Pomponio Truck Trail	P	2020	FR	
		Other Projects				
1	1700-2020-FPL-002	Adobe Gulch	P	2020	FR	
5	1700-2017-FPL-013	Ano Nuevo SP Fuel Reduction	A	2019	FR	8
4	1700-2019-FPL-005	Aptos-Buzzard-Hinkley Project	C	2019	SFB,Bu m	259
3	1700-2019-FPL-004	Bielawski Hazard Tree Removal	C	2022	FR	5
1	1700-2020-FPL-005	Big Canyon	P	2021	FR	11
3	GT-151-CZU-009	Bonny Doon Ecological Reserve SFB	M	Ongoing	SFB	35
3	1700-2022-FPL-003	Bonny Doon Community Chipping	C	2022	FR	3
5	1700-2017-VMP-004	BurleighMurray VMP	A	2019	FR	6
1	1700-2018-FPL-008	Burlingame	A	2018	FR	10
5	1700-2018-FPL-010	Butano	C	2019	FR	1
1	1700-2020-FPL-014	Cahill	C	2021	FR	17
3	1700-2017-FPL-001	Camp Cheseborough	A	2018	FR	36
3	1700-2016-FPL-011	Castle Rock	C	2019	FR	8
4	1700-2020-FPL-006	Cliffwood Estates	A	2021	FR	3
1	1700-2020-FPL-004	Cordilleras	C	2020	SFB	7
1	1700-2019-FPL-011	Crestview	C	2019	FR	2
1	1700-2019-FPL-010	Crystal Springs Trail	C	2019	SFB	7
3	1700-2022-FPL-005	Daybreak	C	2022	FR	3
1	1700-2019-FPL-001	Eaton Park	A	2019	FR	10
1	1700-2010-FPL-005	Edgewood County Park	P	2020	FR	22
2	1700-2019-FPL-007	El Granada – Quarry Park	C	2019	FR	88
3	1700-2016-FPL-007	Graham Hill Fuel Reduction	A	2019	FR	30
2	1700-2019-FPL-002	Gray Whale	C	2019	FR	2

1	1700-2018-FPL-011	Hallmark	C	2018	FR	2
4	1700-2016-FPL-012	Happy Valley School	M	Ongoing	FR	5
1	1700-2018-FPL-001	Hawthorne MROSD	C	2018	FR	4
3	1700-2014-FPL-006	Highland Fuel Break (Loch Lomond)	O	Ongoing	SFB	3
1	1700-2015-FPL-006	Highlands Recreation District	M	Ongoing	FR	21
1	1700-2018-FPL-019	Highway 84	C	2018	FR	6
3		Indian Trails Fuel Reduction	M	2018	FR	20
1	1700-2017-VMP-002	Jasper Ridge	C	2018	FB	2
1	1700-2020-FPL-001	Junipero Serra Park	C	2020	FR	5
1	1700-2019-FPL-006	Kings Mountain Roadside SFB	C	2019	SFB	86
1	1700-2018-FPL-022	La Ventana	C	2018	FR	3
3	1700-2016-FPL-013	Las Cumbres Fuel Reduction	A	2022	SFB	34
3	1700-2012-FPL-009	Lockheed Fuel Reduction	A	2020	SFB	125
4	1700-2020-FPL-013	Loma Prieta School	C	2020	SFB	6
5	1700-2020-FPL-027	Middleton Road Fuel Break	C	2021	FR	51
1	1700-2013-FPL-019	Mills Canyon	M	2018	FR	30
3	1700-2018-FPL-021	Park Way – De La Veaga	A	2019	FR	40
5	1700-2014-FPL-001	Pescadero Creek County Park	A	2019	FR	14
1	1700-2020-FP-003	Polhemus	M	2020	FR	30
5	1700-2018-FPL-009	Portola State Park	C	2018	FR	14
5	1700-2018-FPL-004	Quam MROSD	P	2019	FR	23
2	1700-2018-FPL-016	Quarry Park	A	2019	FR	7
3	1700-2020-FPL-031	Riva Ridge	A	2021	SFB	9
1	1700-2020-FPL-023	Runny Meade	A	2023	FR	8
1		S.F. Water Southern Fuel Break	O	ONGOING	SFB	
1	1700-2016-FPL-001	San Bruno Mountain	M	2021	FR	3
2		San Mateo County Chipper Program	O	ONGOING	FR	
2	1700-2013-FPL-022	San Mateo Co. Parks - Huddart	A	Ongoing	SFB	40
1	1700-2018-FPL-018	San Pedro Valley Park	C	2018	FR	7
3	1700-2016-FPL-018	Santa Cruz Water District Fuel Reduction	A	2023	FR	47
4	1700-2013-FPL-021	SDSF Shaded Fuel Break	A	Ongoing	SFB	48
1	1700-2018-FPL-006	Skyline Fuel Load	P	2018	FR	20
3	1700-2016-FPL-015	Skymeadow / Lodge Road	C	2018	FB	10
5	1700-2022-FPL-001	Skywood Trading Post LZ	C	2022	FR	1
4	1700-2015-FPL-003	Soquel High School Fuel Reduction	O	ONGOING		1
5	1700-2022-FPL-002	Station Fuel Reduction	C	2022	FR	1
3	1700-2018-FPL-013	Swanton View	C	2018	FR	10
1	1700-2019-FPL-003	Teague Hill – Partition Road	A	2019	FR	16
1	1700-2018-FPL-005	Viewridge Drive – Sugarloaf Mtn.	C	2022	FR	8

5	1700-2016-FPL-006	Vista Verde/Los Trancos Fuel Reduction	C	2019	FR	52
1	1700-2016-FPL-017	Water Dog Lake	M	2019	FR	61
3	1700-2017-VMP-005	Wilder Ranch	A	2018	Burn	420
1	1700-2020-FPL-012	Windermere	C	2020	FR	3
1		Woodside Chipper Program	O	ONGOING	FR	
1	1700-2011-FPL-008	Wunderlich Park	C	2019	FR	2

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

In addition to the above listed specific projects, there are additional set of potential projects listed in the CWPP referred to as "Landscape Level Need". ~~Strikeout~~ under project name means that particular grant was completed but work is still in progress outside of grant. This are ongoing and potential projects the Unit would like to engage is as time and resources allow (refer to **Appendix E – Landscape Level Needs**).

Project Type: FR = Fuel Reduction, SFB = Shaded Fuel Break, FB = Fuel Break, Burn = Broadcast Burn, CO = Community Outreach, PRP = Pre-fire Resource Planning.

APPENDIX C: GENERAL RECOMMENDATIONS (taken from CWPP)

The following general recommendations were taken from the 2010 San Mateo County - Santa Cruz County CWPP (The CWPP was updated in December of 2014, 2018, & 2022). The plan identifies “high priority” areas, where fuel reduction projects should take precedence. When individual projects are implemented, site specific guidelines shall be developed by the persons/agency responsible for project development. Any proposed project shall conform to all applicable local, county, and state regulations concerning fuel modification projects. The following general recommendations are not intended to be site specific, but rather a tool to aid in the development of appropriate prescriptions.

Reduction of fuels adjacent to roads

Statewide, over 95% of wildland fires are started by human activity, and of those 90% start within 10’ of a road or trail. Overgrown vegetation on or adjacent to roads makes access difficult for fire-fighters and equipment. Additionally, roadside vegetation, including tree limbs, brush, and grass is the fuel first ignited for numerous fires each year. This is a problem adjacent to all types of roads in both counties. There are many, overgrown, narrow, one-lane road that often make it difficult for emergency vehicles to access a fire area while residents are simultaneously leaving. This document declares that fuel reduction along roadsides is a high priority. Maintaining reduced fuel along roads allows the road to be a safer evacuation route in the event of a fire. Roadside vegetation should be reduced to a level that allows ease of access for emergency response personnel and equipment, reduces the number of roadside fire starts and ensures the safety of fire-suppression personnel using roads as fire control lines.

County Public Works and Caltrans routinely conduct roadside clearing for access, visibility, and fire safety. Historically, this work was accomplished through a combination of chemical and mechanical means. In recent years, however, there has been increasing public pressure to eliminate the use of chemicals as a roadside treatment. Therefore, most of the recent work has been completed with mechanical mowers and masticators.

Strategically placed fuel breaks (including shaded fuel breaks)

The primary goal of a fuel break or shaded fuel break project is to change the behavior of a fire entering the fuel-altered zone in order to reduce large flame lengths and high energy outputs. Changing fire behavior may be the key to allowing fire crews to protect people and property from wildland fire. Effective fuel breaks may:

- Act as an anchor point for indirect attack on wildland fires.
- Allow for fire fighters to use fire as operational tool (firing out).
- Support safer ingress/egress for emergency responders and the general public.

With reduced fuel adjacent to a roadways and structures, flame lengths, fire activity, and heat production will be reduced, making it safer for firefighters to access the area and protect structures in the community.

A fuel break typically refers to either the removal of all or the majority of vegetation in a strategic area. A shaded fuel break refers to “thinning” of vegetation in a specific area with the remaining vegetation shading the ground. Non-shaded fuel breaks are typically used in non-residential, less visible areas. For the purposes of large-scale wildland firefighting, fuel breaks are preferable to shaded fuel breaks because they make little to no fuel available for combustion. However, shaded fuel breaks are often implemented because they are cheaper and easier to maintain, less detrimental to sensitive habitat, and often have more support from adjacent property owners.

The type and size of fuel reduction projects should be determined on a project-by-project basis. The widths of roadside shaded fuel breaks generally range from 10 feet up to 50 feet, with 75 to 100 feet a more effective, but less popular target prescription. Strategic fuel breaks can be as wide as 400 feet. The responsible fire agency as well as the community should collaboratively develop projects that meet the needs of the stakeholders.

Shaded fuel breaks can be placed around individual structures, communities or neighborhoods identified to be at risk. For example, after a community has developed defensible space out to 100 feet from structures, they may wish to augment that with an extended fuel break, depending on the topographical location. There is no specific prescription for this type of project. It should be developed in collaboration with the

community and responsible fire agency and should be adapted to local environmental constraints.

Roadside Fuel Breaks

There are many communities and neighborhoods identified as priority areas in this document where a roadside fuel break would be beneficial. Stakeholders in both counties consistently agreed that reducing fuel loading adjacent to roads is of highest priority. There is no standard distance recommended from a road's edge, other than more is often better. Extended fuel reduction projects may be reduced in some areas with continued maintenance and treatment of roadside grass and continued trimming of vegetation. Roadside fuel breaks are typically between 10 and 40 feet wide. The exact distance should be based on fuel type, slope, aspect, and be environmentally feasible.

There are a variety of methods used to create a fuel break or shaded fuel break, however, the primary method is manual labor using chainsaws. Locally, many fuel reduction projects are completed by CAL FIRE inmate fire crews, residents, and private contractors. Although chainsaws are the primary vegetation removal tool, other methods may include livestock, mowing, or other mechanical means (such as masticators), or prescribed fire. Treatment of the removed vegetation can be accomplished by a variety of methods, listed below.

- Chipping – Various chippers are available for use in both counties. The Santa Cruz County Fire Chiefs Association offers a chipping program, utilized through local agencies. Chipping programs have also been developed through Fire Safe San Mateo County and the Fire Safe Council of Santa Cruz County. Independent contractors with chippers are available for hire in both counties. When a fuel reduction project requires use of a chipper, vegetation to be treated should be placed in a location easily accessible to a chipping crew arranged in a manner to allow for efficient chipping. Such specifications are determined in project planning according to the size of the chipper. Depending on the location and project goals, the chips will be either left on site or be taken away for proper disposal.
- Pile burning – Vegetation can be placed in manageable piles to be burned by qualified personnel at a later date. Though this is a very effective means of fuel treatment, vegetation piles can become an increased fire hazard if left unburned. Other factors to consider are the risk of escape, smoke management, and air quality

restrictions. The agency having jurisdictional authority should be contacted prior to burning for information on all applicable fire and air quality rules and regulations. In general, guidelines for pile burning include:

- Burn only during daylight hours.
- Have adequate fire tools and water onsite.
- Always have an adult in attendance.
- Piles shall be no larger than 4-feet x 4-feet and no taller than 4-feet. If a project wishes to have piles of a larger size, an inspection by a CAL FIRE official is required and an LE-7 & LE-8 permit must be obtained.
- 10-foot clearance around each pile

Additionally, burning can only occur on “burn days” set by:

- Santa Cruz County – Monterey Bay Area Unified Air Pollution Control Board
1-800-225-2876, 831-647-9411, or 916-445-0747 or visit <https://www.mbard.org>
- San Mateo and Santa Clara Counties – Bay Area Air Quality Management District
1-800-435-7247 or <https://www.baaqmd.gov>

■ Lop and Scatter – This method of fuel treatment involves the cutting and spreading of cut material, so that it does not extend above a predetermined height above the ground. This can be between 12 and 24 inches. Material is spread out to prevent continuous fuels and to allow for quicker decomposition. Care should be taken to not spread cut material in sensitive locations, as identified during the planning process. This method may be used in an area removed from roadways and homes, and in projects with low amounts of cut vegetation.

■ Removal to off-site location – If there are no feasible on-site treatments, vegetation can be removed to an appropriate off-site location.

■ Masticators – Another option for reducing fuel involves the use of a masticator. Masticators are a mechanical means of vegetation removal, in which spinning blades “masticate” or “chew” vegetation. The masticator head can be attached to the end of an excavator arm or to the front of a tracked or wheeled vehicle such as a dozer or loader. They are primarily used in fuel break situations, rather than shaded fuel breaks, due in part, to the large swath of vegetation they remove. Masticators cut, as well as treat the

vegetation they remove, pulverizing the vegetation into a loose “chip like” material, obviating the need for a chipper. Masticators are very effective in roadside and ridge top fuel breaks. Smaller masticators are now being used in some shaded fuel breaks.

- Prescribed Herbivory – This is also known as targeted grazing. It is using domestic livestock, typically goats, sheep, or cows, to browse or graze vegetated landscape with the intent of reducing the overall density and abundance of vegetation. Prescribed herbivory operations often involve the use of mobile fencing material to confine livestock to specific locations, as well as the guidance of skilled livestock managers and dogs. There is added ecological benefits using this method with the reincorporation of nutrients via feces and aeration of the soil from hooved animals.

- Controlled / Broadcast / Prescribed Burns involves the burning of surface fuels in a predetermined area, under the supervision of trained fire personnel. Prescribed burns are planned in detail, occurring only when predetermined weather and fuel conditions exist. Other factors affecting prescribed burning include resource availability and atmospheric conditions favorable for adequate smoke dispersion. Prescribed burns have been implemented on State Parks, Peninsula Open Space Trust, Midpeninsula Regional Open Space District lands, the San Vicente Redwoods, San Francisco Water lands and several private ranches for the purpose of fuel reduction and habitat improvement. While prescribed fire is an effective means of reducing fuels in the wildland, it has not widely used as treatment locally for a variety of reasons including: narrow weather windows for burning, limited resources available for burning, and the potential threat of escape. CAL FIRE will cooperate with interested landowners to determine opportunities for the appropriate use of controlled burning.

Stakeholders interested in working with CAL FIRE to implement controlled burning can contact the local Unit Resource Management office at (831)335-6740 and speak with a state Forester. The CAL FIRE Forester will be able to explain the details of the California Vegetation Treatment Program (Cal VTP) and the CAL FIRE Vegetation Management Program (Cal VMP) and how these program may be able to collaboratively help land owners reduce their wildland fire fuel hazards

APPENDIX D: LANDSCAPE LEVEL NEEDS (taken from CWPP)

Road data

Whether private, dirt, rock or paved, there is agreement between stakeholders that proper mapping and identification of road systems throughout the counties is a high priority. Complete and accurate road mapping is vital during a wildland fire incident. Proper mapping allows emergency responders to locate and manage an incident. In many instances, emergency responders from out of the county do not know the local road systems in the vicinity of the wildfire. The Counties of San Mateo and Santa Cruz both have Geographic Information Systems (GIS) personnel who maintain county data. Although the county roads data is accurate, there are areas where data is lacking. These omissions primarily occur in the more rural areas of the counties and on large private and public landholdings such as parks or preserves, and managed timberland. Over the past several years, CAL FIRE has been compiling roads data, utilizing a variety of sources. This data was helpful during the large wildfires of 2008, 2009, 2017, and 2020.

- This process should continue into the future. Collaboration between stakeholders to prepare a comprehensive map and inter-operable system is a priority.
- Since 2018, CAL FIRE has been in collaboration with the Santa Cruz Mountain Stewardship Network and the Golden Gate National Parks Conservancy on a Lidar mapping project that identifies road surfaces and vegetation types in both counties. This data is available to the public at the website <https://pacificvegmag.org>

Roads, Bridges and Water in the WUI

In terms of new construction within the WUI, there are many common standards in terms of access, road width, water supply, and bridge specifications. These standards take into consideration the risk of wildland fire and the needs of responding fire agencies. There was, however, considerable construction in the WUI prior to modern fire code. There are, throughout both counties, numerous residences accessed by narrow, unmaintained roads, sometimes by inadequate bridges. This coupled with a

limited water supply can result in disaster during a wildfire. The following issues should be strategically addressed:

- Identifying inadequate bridges and plan for fixes.
- Identify existing water supplies in the wildland.
- Identify locations for additional wildland water supplies.
- Identify, prioritize, and mitigate high risk roads in the WUI

Truck Trails/Fire Roads

There are numerous “truck trails” or “fire roads” located throughout both counties, most of which are historic logging roads, referred to as truck trails for the purpose of this plan. The current conditions of truck trails are varied. Some are maintained at regular intervals, while some may see less frequent maintenance due to limited available resources. Some have been abandoned due to poor initial location, improper construction, and failures due to landslides or washouts. Truck trails often bisect public and private property. The importance of these roads in the event of a wildfire cannot be overstated. For example, the Warrenella truck trail and shaded fuel break provided critical ingress and egress access to the Lockheed Fire in 2009. The truck trail was used as a final perimeter line, stopping the eastward growth of the fire. Without the access the Warrenella allowed, it is likely the Lockheed Fire would have burned an additional two thousand acres and would have required fire personnel to make a stand within the residential portion of the community of Bonny Doon. In northern Santa Cruz and most of San Mateo County, numerous truck trails provide access to the primarily roadless areas between the coast and Hwy 35. When wildland fires affect these parts of San Mateo and Santa Cruz Counties, the truck trails are of vital importance. Accurate mapping, appropriate maintenance, and consideration of abandoning failed sections is needed on all truck trails throughout both counties.

Structure Protection Planning

One of the common difficulties during the wildfire season in California is when fire crews respond to regions of which they are unfamiliar. This problem is compounded when responders have limited information on roads, number of structures, evacuation routes, water supply, and other hazards. The Santa Cruz County Fire Chiefs have been working on a project identifying pre-determined protection planning zones. The zones

have been identified by local fire officials and include pre-packaged information, which will be provided to first responders in the event of an emergency. This is an ongoing project.

Vegetation Removal: Types and Locations

This plan (CWPP) discusses areas where fuel reduction projects, such as fuel breaks, shaded fuel breaks, and roadside fuel breaks, should take place. There is a need to further investigate environmentally and socially acceptable landscape level fuel breaks. Part of the benefit of bringing multiple parties to the table, is that priority areas and assets at risk have become identified. This allows planners to consider not only community or neighborhood specific projects but also landscape level projects.

Eucalyptus

Eucalyptus was introduced into California in the mid 1800's both as a windbreak and for fiber production. It has thrived in California's climate and has since spread throughout the state. Eucalyptus is responsible for the displacement of numerous native species; and the aromatic oils in eucalyptus will eventually kill off all native understory vegetation and macro-decomposers, leading to dangerous accumulations of extremely flammable litter to a depth of several feet.

Because of its invasive nature and proclivity to burn rapidly and violently, eucalyptus has been identified as one of the highest priority tree species recommended for fuel modification or removal. Eucalyptus as a wildland fuel was observed in Santa Cruz County during the 2008 Trabling Fire and prior to that, the Oakland Hills Fire in 1991. Both fires resulted in losses of property, residential structures and, in the case of Oakland, loss of life. Historically, there have been eucalyptus fires adjacent to the community of El Granada (Wicklow Property) which has involved the loss of life and property. Reports of embers observed falling two to five miles downwind illustrates the danger of fires in large eucalyptus stands.

Eucalyptus was imported into the local area in the early 1900's for several uses, including fuel for powering locomotives. Numerous hedgerows were planted in the area and the species was quickly found to exhibit strong adaptation and rapid growth. What was planted over 100 years ago as single or double wide rows of trees, have expanded to large extended stands. Recent estimates of eucalyptus grove expansion are 3 lineal feet per year. Eucalyptus is so successful in colonizing new ground, to the exclusion of

native species, that a common comment during scoping sessions for this CWPP was to request that the species be declared a noxious weed or an invasive pest and be eradicated.

Eucalyptus stands frequently grow in excess of 80 feet tall and have a propensity to generate copious amounts of ground litter. Vertical ground litter accumulations of three feet or more of dry leaves, branches, bark are not uncommon. Because of peeling bark, small branches and sprouts, many eucalyptus stands exhibit fuels from the ground to canopy. Fire behavior in these stands can become extreme.

Flame length one and a half times the height of the stand is frequent in large stand replacement fires. Other examples of these conditions can be found in southern Australia in the frequent large catastrophic fires. This becomes a huge factor in fire control when residential and other structures are built within and adjacent to these stands.

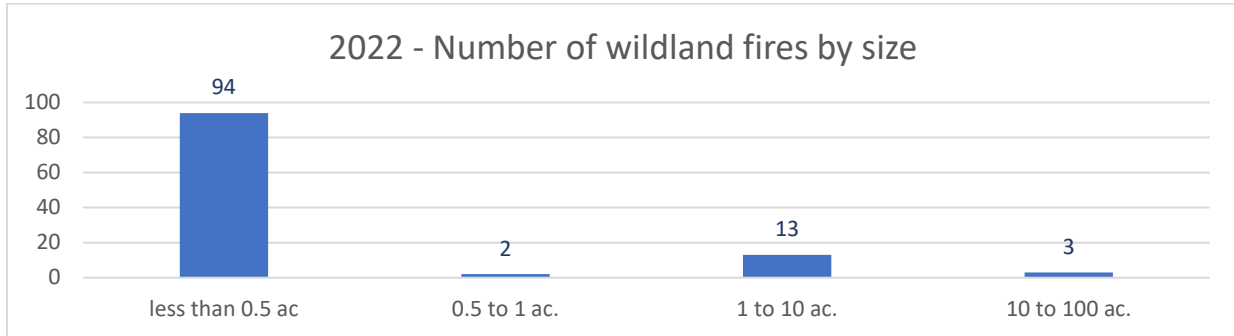
There are several locations throughout San Mateo and Santa Cruz Counties where residents live in close proximity to large eucalyptus stands. Addressing the potential risk to lives and property where this situation exists should be considered. Several projects have been completed as pilot projects to thin or remove stands in San Mateo County, including thinning in the Quarry Park area of El Granada and clearing along Highway 84 in the Woodside area. Other projects include the Wicklow Project by Peninsula Open Space Trust and the Coral Reef project by the RCD, CALFIRE and Cabrillo Unified School District.

Potential projects needed across the landscape include:

- Identify and map eucalyptus stands in both counties.
- Identify risks to lives and property.
- Mitigate risk to lives and property through appropriate vegetation management projects (thinning, removal and Potential projects needed across the landscape include:

APPENDIX E: IGNITION ANALYSIS

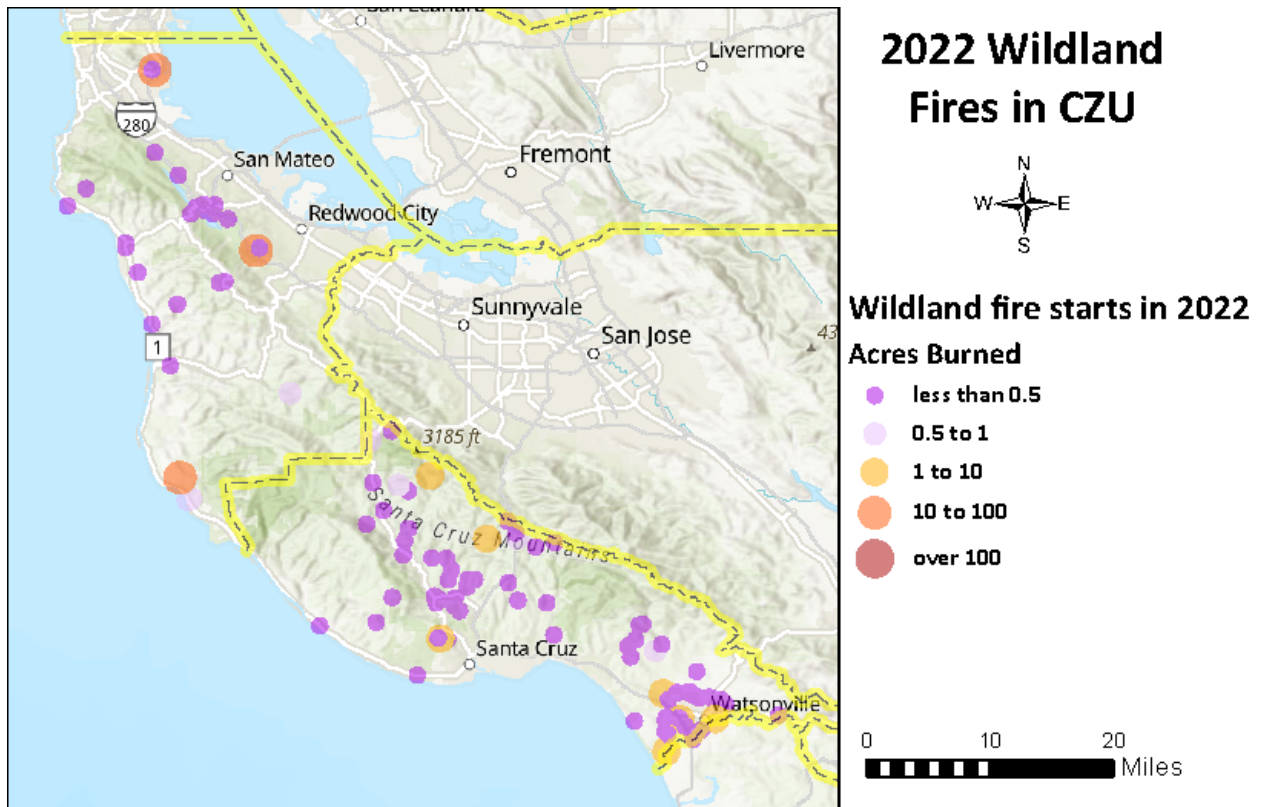
The primary goal of the fire prevention program is to reduce the number of ignitions within the Unit. By identifying the locations and causes of fire, the Prevention Bureau can allocate additional resources to combat and prevent fires. There were 372 ignitions of all types of fires reported in 2022. Of these, 112 were wildland fires within the SRA in 2022 totaling 92.8 acres burned. The Unit kept 97% (109 of 112) of all fires to less than 10 acres in size. The largest fire was 29 acres and the average size of all wildland fires in 2022 was 0.8 acres.



2022 Wildland Fire Statistics:

Total # of fires: 112; Mean size: 0.8 ac; Median size: 0.1 ac; Mode: 0.01 ac (33 occurrences)

A map displaying the location distribution of the wildland fires is shown here:



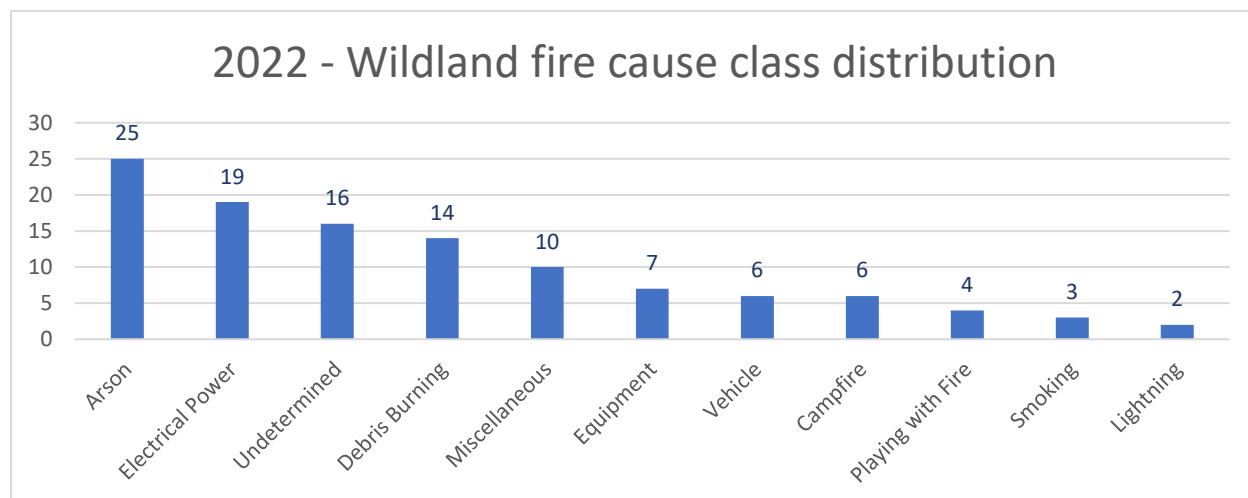
The table below compares the number and acreage of fires in the Unit over the past several years.

Table - Ignition and acreage totals by year								
	2015	2016	2017	2018	2019	2020	2021	2022
Total # of fires	94	73	91	84	80	140	104	112
Total # of acres	42	36	508	55	100	86,721	440	93
% of total fires less than 10 ac	99%	98%	98%	99%	96%	98%	94%	97%
Largest fire size (acres)	11	13	391	17	61	86,509	170	29
Average fire size (acres)	0.44	0.49	4.89*	0.66	1.25	619.44*	4.23	0.83

* average fire size skewed by large incidents

This past year (2022), there were 8 more wildland fires than the previous year (2021) and 12 more than the previous five-year (2017-2021) average of 100. The total acreage burned (93 acres) in 2022 is less than the previous five-year average of 17,565 acres. However, this average is disproportionately high due to the single large "100-year fire" in 2020 that burned more acres in the Unit than had been burned in the last 100 years combined. Without that 86,509-acre fire in the average, the five-year average annual total acreage burned is 263 ac. With that in mind, the number of fires occurring is above average, but the amount of land burned in the 2022 fire season is below average. Additionally, the percentage of fires the Unit was able to keep below 10 acres in size was identical to the five-year average. The combination of having more than average number of ignitions, less than average number of acres burned and the same percentage of fires less than 10 acres in size leads to the conclusion that 2022 was a fairly average fire season.

The following chart shows the frequency of wildland fires by cause for the most recent data (2022).



On the chart, the top two cause classes are Electrical Power and Arson. These two classes represent 39% of ignitions in the Unit for 2022.

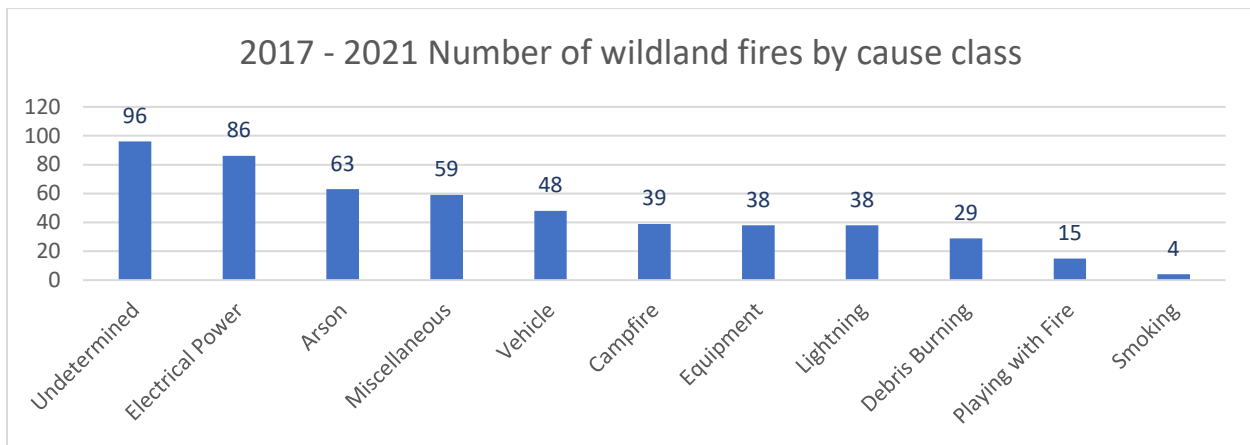
The number of arson fires in 2022 increased from the number of arson fires in 2021 and while it is above the five-year average, it is still within one standard deviation of average. The increase in arson determinations can partly be attributed to the training our company officers have received, with our investigators being better at coming to conclusions rather than leaving the cause as “undetermined”.

The number of fires started due to electrical power was the second most common ignition source found for fires in 2022. When looking at averages, the number of electrical power ignitions was, similar to arson, at the top end of the five-year average. This past year there was no single event that caused a large number of ignitions by electrical sources, but rather the normal operation of weather and electrical power distribution.

During 2022 no fires were determined to be caused by railroad activities, as has been the case for the past ten years.

The distribution of cause class can be compared to the total previous five years of fire causes in the chart below. The biggest differences from average for 2022 were the three categories: Campfire, Debris Burning, and Smoking. The number of ignitions due to campfires was slightly below the five-year average, whereas the number of fires due to debris burning and smoking were both above the five-year average.

Additionally, it is worth noting that 34% (181 out of 528) of wildland fires within the year range of 2018-2022 occurred within 50 feet of a road surface and 9% (50 out of 528) of the ignitions started within 50 feet of a state highway.

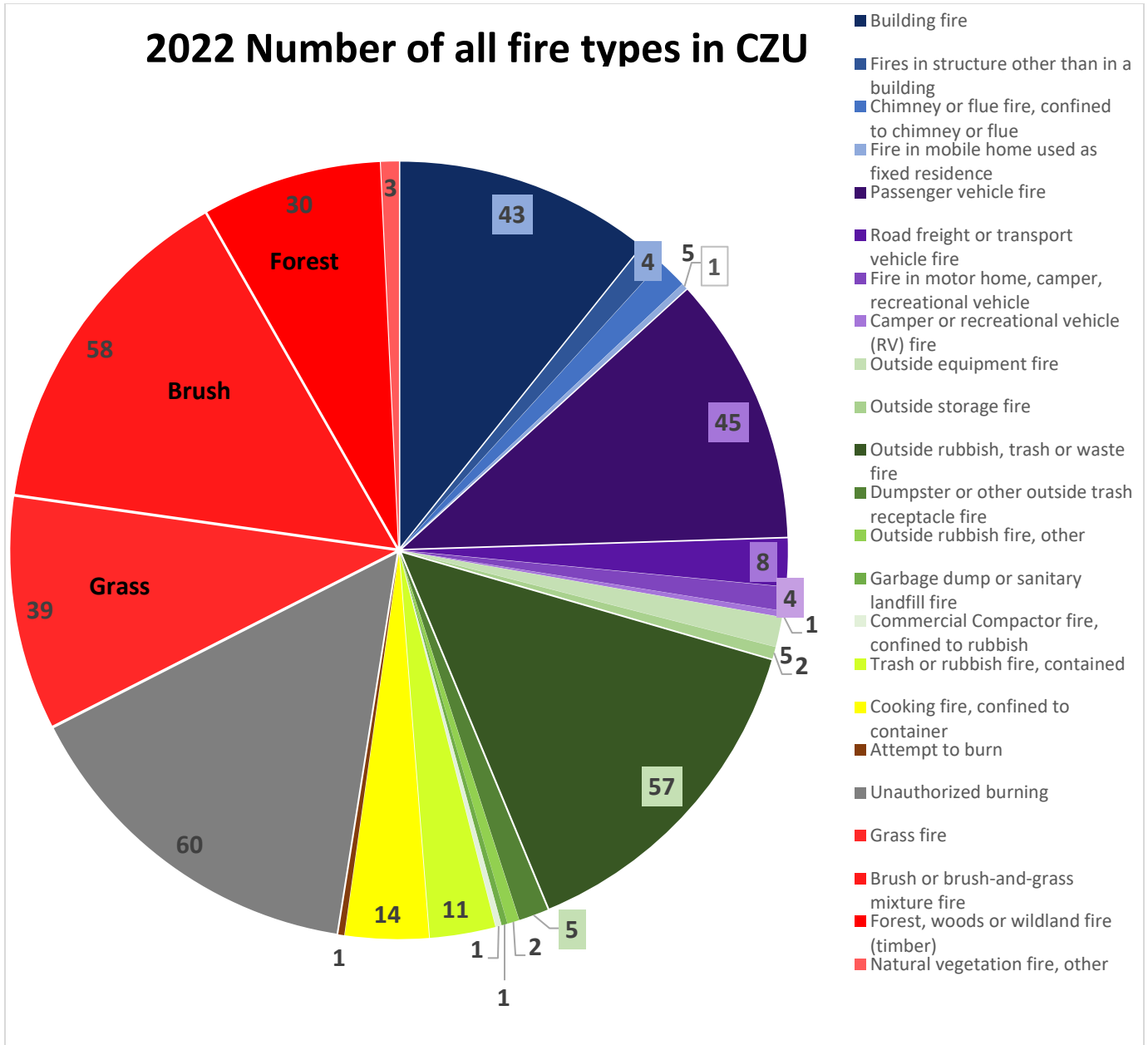


The table below compares the number and causation of fires in the Unit over the past several years.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	5-yr average
Arson	28	7	3	4	5	3	30	19	25	16.4
Campfire	19	7	7	7	6	8	9	9	6	7.6
Debris Burning	19	4	4	7	3	5	4	7	14	6.6
Electrical Power	14	13	16	18	14	16	13	21	19	16.6
Equipment Use	4	6	4	5	11	10	9	2	7	7.8
Lightning		1		7		1	28	2	2	6.6
Miscellaneous	7	11	11	10	9	11	13	14	10	11.4
Playing with Fire	3	2	1		1	3	2	8	4	3.6
Railroad										0
Smoking	3	3	2		3				3	1.2
Undetermined	28	34	21	28	26	12	14	14	16	16.4
Vehicle	5	6	4	5	6	11	18	8	6	9.8
Annual Totals:	130	94	73	91	84	80	140	104	112	

While a large part of the State mission is to control wildland fires, the Unit is also responsible for controlling other types of fires as well. The pie chart below shows the distribution of the various types of all 400 fire ignitions that occurred in 2022. Wildland fires, of all types, account for 33% of the fires. The other types of fires, not extending into the wildland include the following: illegal burns (15%), rubbish/trash (19%), vehicle fires (15%), structure (13%), and other miscellaneous fire types (5%).

2022 Number of all fire types in CZU



Discussion:

General Mitigation Measures

The Prevention Bureau has determined the most effective way to mitigate the number and type of ignitions includes both education and enforcement. The following describes the Unit's plan for dealing with specific fire problems.

Playing w/ fire:

Reducing the number of ignitions caused by children and juveniles playing with fire is best accomplished through education. Fire safety is a common topic at many community outreach events. Prevention officers will also speak to children at the

request of educators. In the event a child is identified by prevention, there is the option of a juvenile fire setter program and of course the criminal justice system in some circumstances.

Equipment Fires:

Reducing the number of ignitions caused by equipment is best accomplished through education, followed with increased enforcement. In many cases, equipment fires are caused by individuals engaged in hazard reduction projects such as mowing or chainsaw operations. Rather than discourage these activities, individuals are educated on proper equipment maintenance and time of day to operate. Spot inspections of tree service and logging operator equipment can further reduce the potential of ignitions.

Debris Fires:

The number of fires started by burning debris fires in 2022 is higher than the 5-year average. Due to the number of debris fires and legal controlled burns in the Unit, the potential for escaped fires is always high. Correspondingly, the Department responds to many reported debris burns each year whether they have escaped control or not. Engine companies will respond to debris burns and assess whether or not they are safe, controlled, and are being burned within guidelines. Unsafe fires and fires burning material illegally are extinguished, while safe and permitted fires are allowed. In many instances, the individual involved in the burning is educated on the proper and safe way to burn in order to avoid escapes. The Air Pollution Control Board is the primary agency determining whether a burning process is allowed, while the fire department is the agency that determines whether the fire is safe. Law Enforcement action is utilized when illegal or unpermitted burning is discovered.

Undetermined/Misc./Other fires:

The Unit has a fully staffed prevention staff and is actively training engine companies and overhead personnel in Wildland Fire Investigation. It is the goal of the Unit to reduce the number of undetermined and miscellaneous as fire causes through increased use of Unit investigators and continued training of Unit personnel.

Arson:

There was a jump in Arson fires in 2013 and again in 2020. Both the Prevention Bureau and the public are aware of the problem, however some of the increase can be attributed to increased training of engine company personnel & prevention staff in detecting the signs of arson. Where previously fires had been classified as undetermined, they now have documented evidence of arson. Prevention efforts include increased patrols, working with the public and allied agencies to investigate and pursue all leads.

Campfire:

While the number of campfire ignitions in the Unit has been fairly steady over the last five years, there is always the potential for a large number of fire starts, due to the large numbers of individuals illegally using public and private forest lands for camping and living. Compounding the problem are the unusual dry fuel conditions that appear periodically throughout the Unit and State. These conditions are due to periodic drought, specifically the three years of below average rainfall in the years from 2014 to the start of 2017 and then again in the year 2021, that caused a decrease in vegetation health that had not been fully resolved. Prevention efforts include increased patrols, educating the public, and enforcement action. The Unit has worked with local government cooperators, including law enforcement and fire, to discuss and implement mitigation efforts aimed at reducing campfire ignitions through education, enforcement, and seasonal burn restrictions.

EXHIBITS: MAPS

Figure A: Unit Map

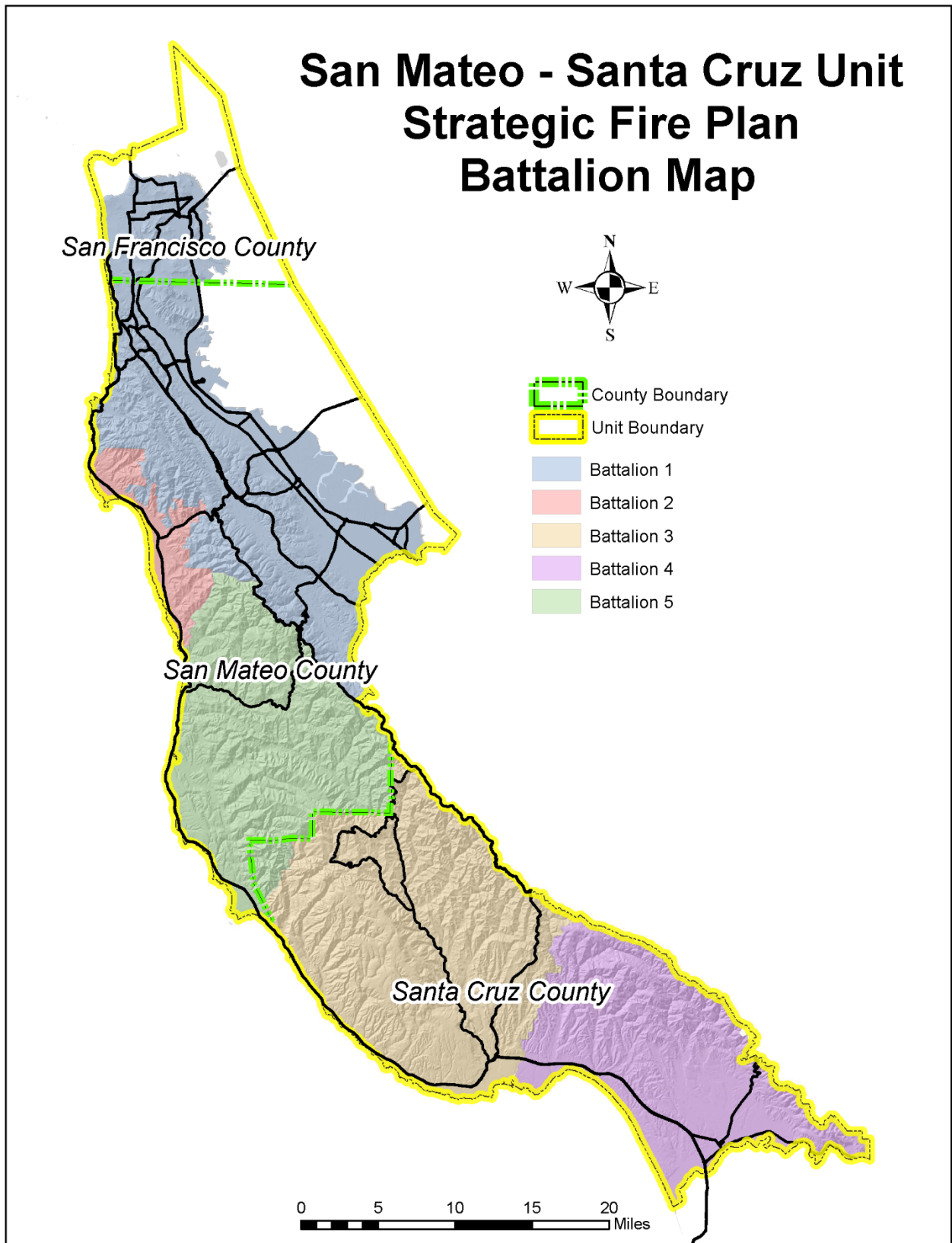


Figure B: Unit Map



Figure C: Battalion 1 Map

San Mateo-Santa Cruz Unit Strategic Fire Plan Battalion 1 Map

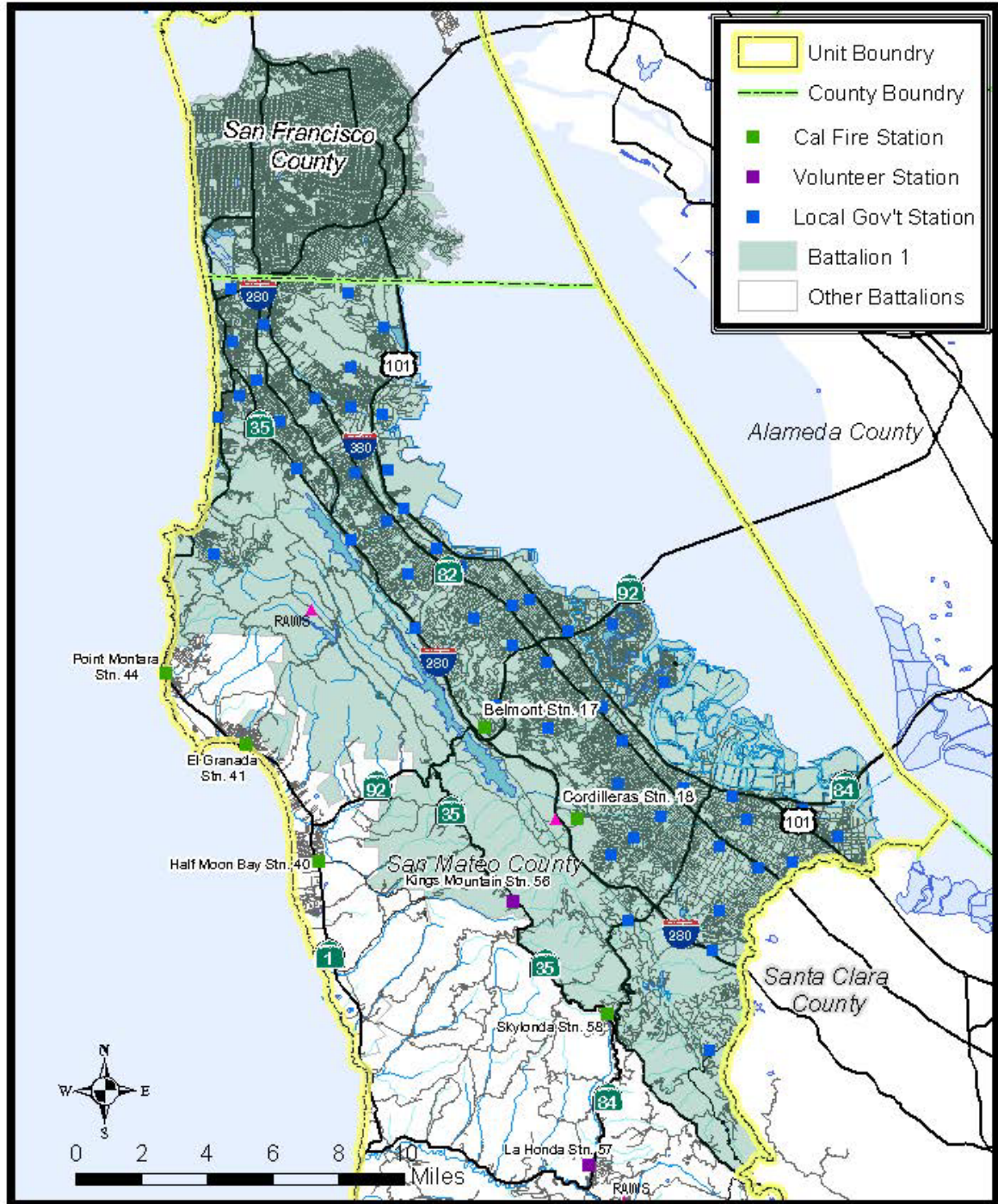


Figure D: Battalion 1 Responsibility Map

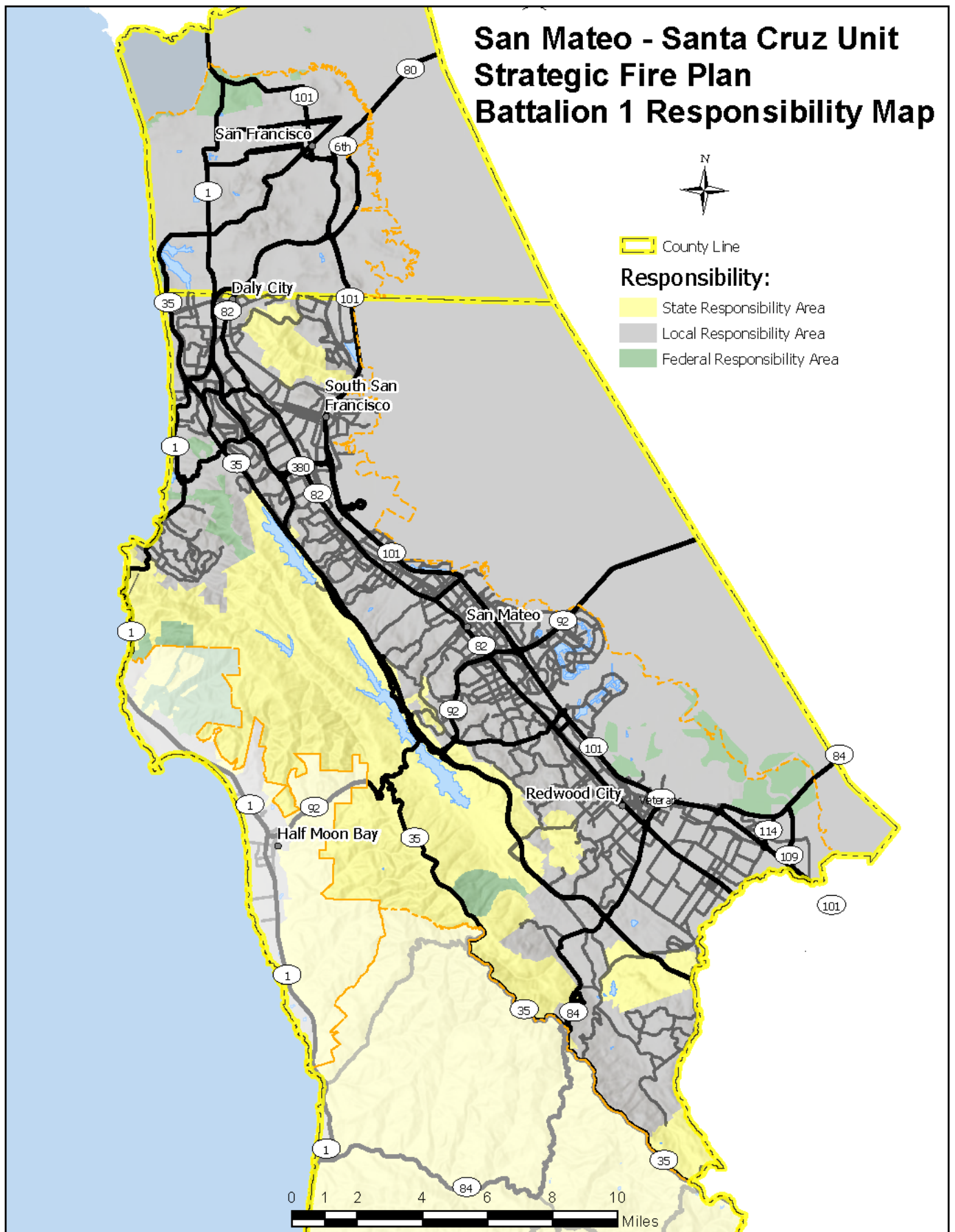


Figure E: Battalion 2 Map

San Mateo-Santa Cruz Unit Strategic Fire Plan Battalion 2 Map

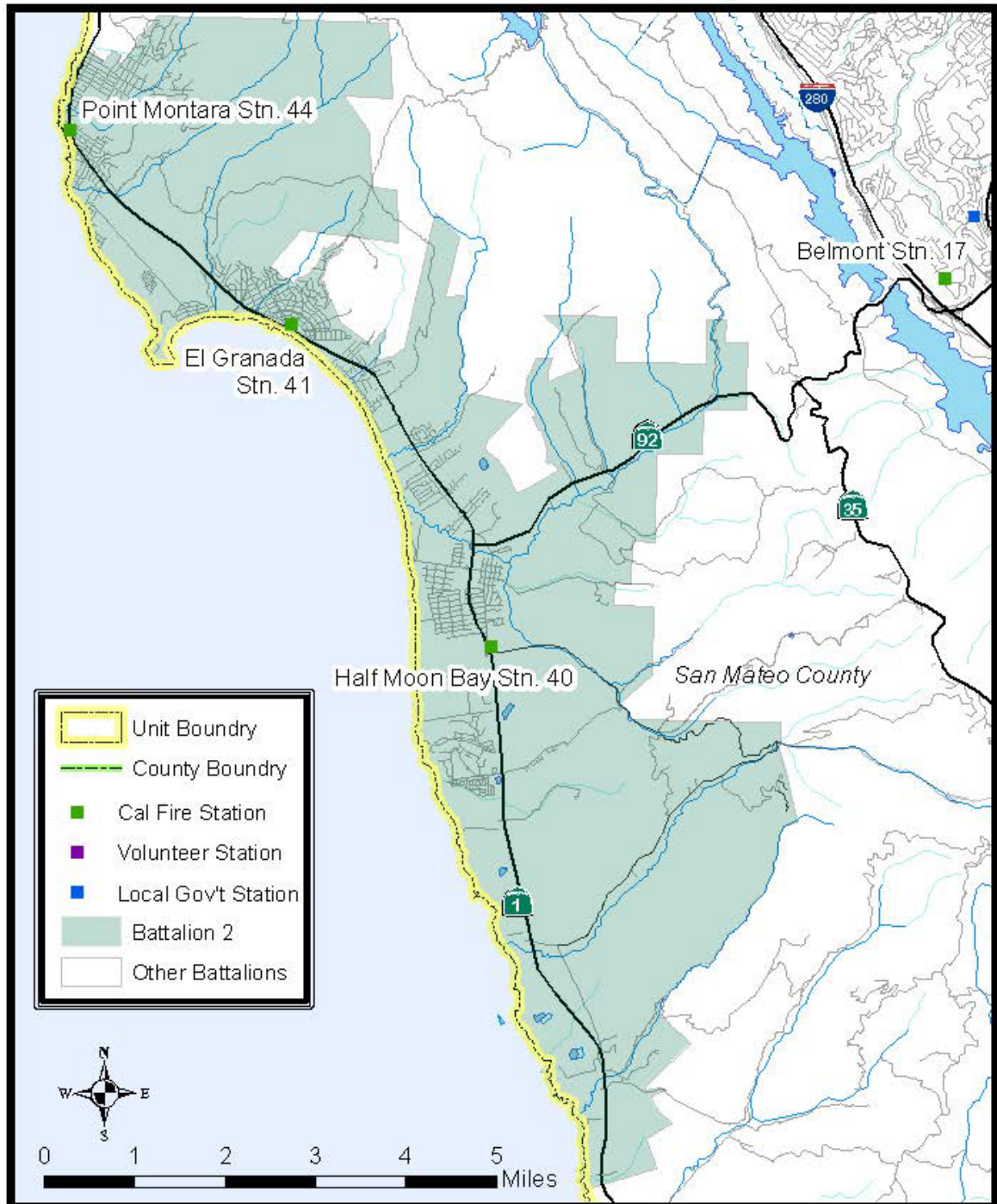


Figure F: Battalion 2 Responsibility Map

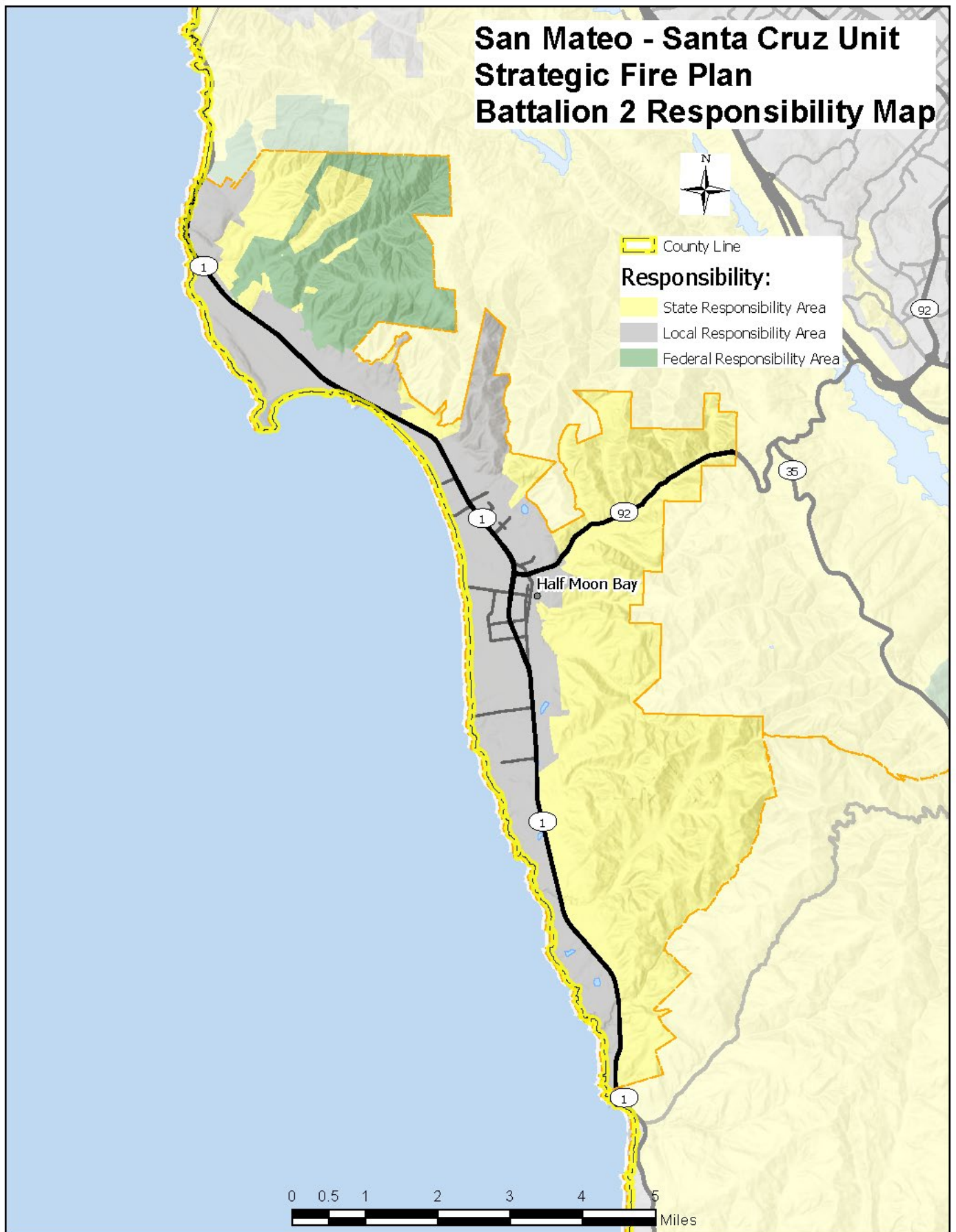


Figure G: Battalion 3 Map

San Mateo-Santa Cruz Unit Strategic Fire Plan Battalion 3 Map

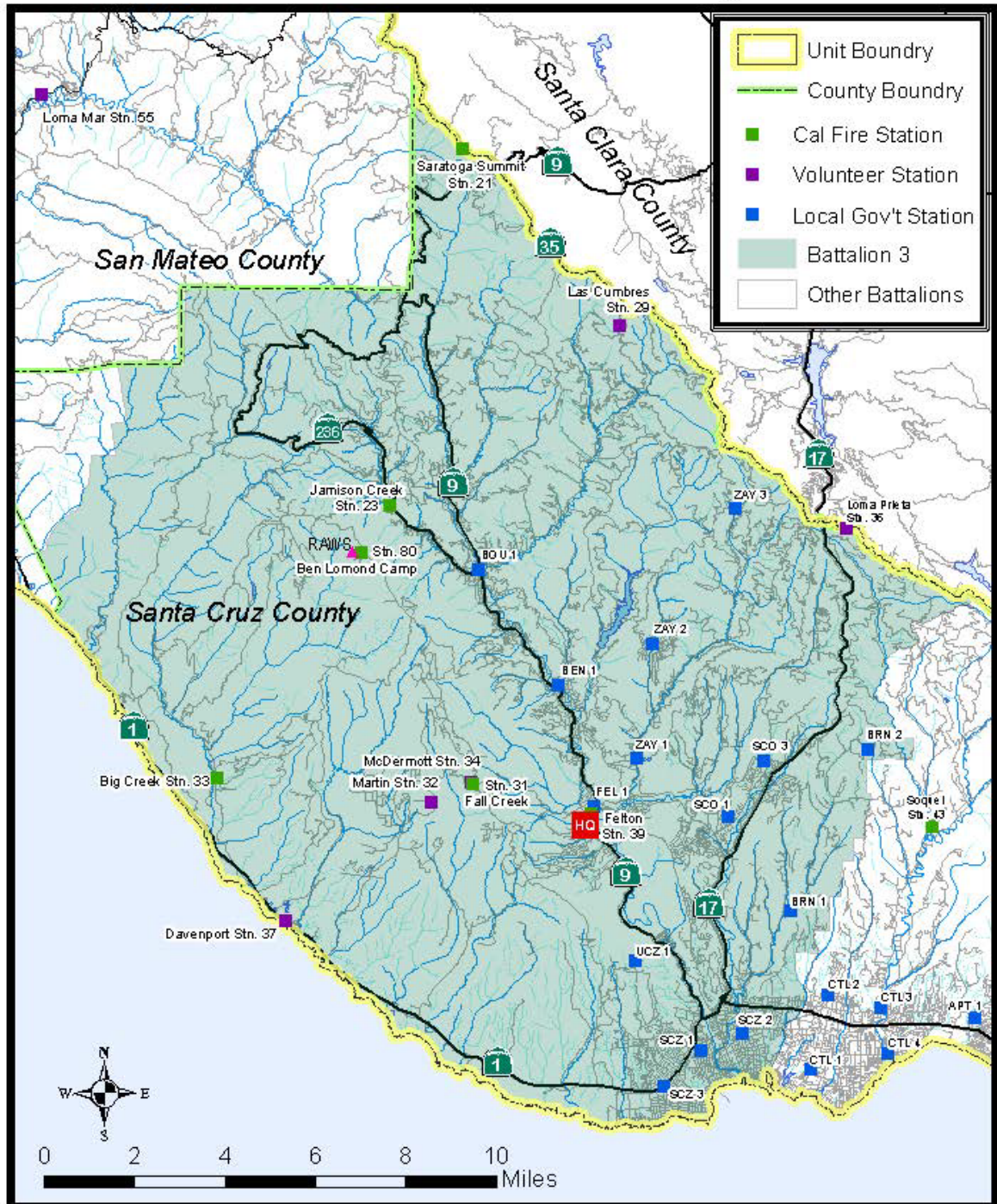


Figure H: Battalion 3 Responsibility Map



Figure I: Battalion 4 Map

San Mateo-Santa Cruz Unit Strategic Fire Plan Battalion 4 Map

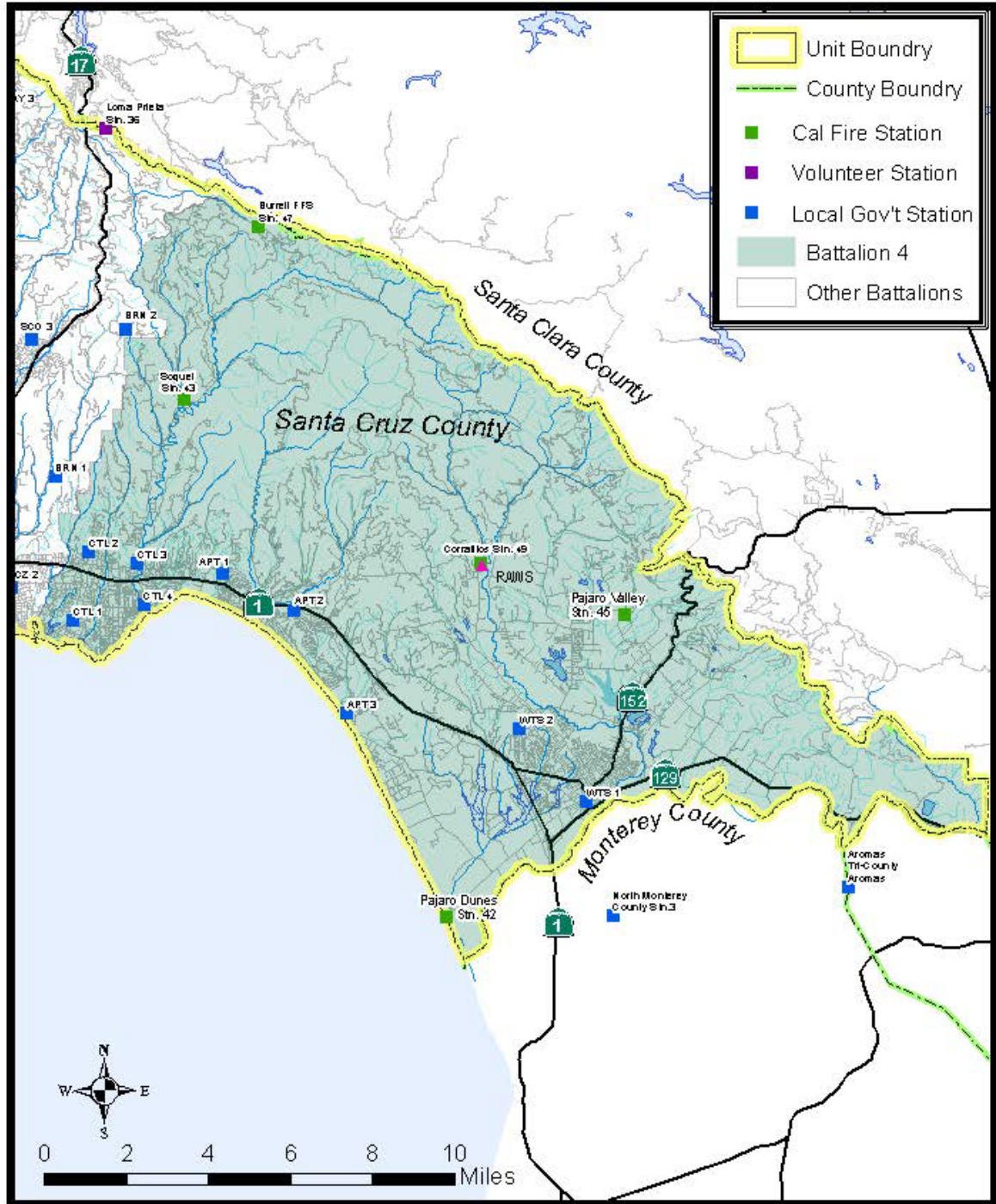


Figure J: Battalion 4 Responsibility Map

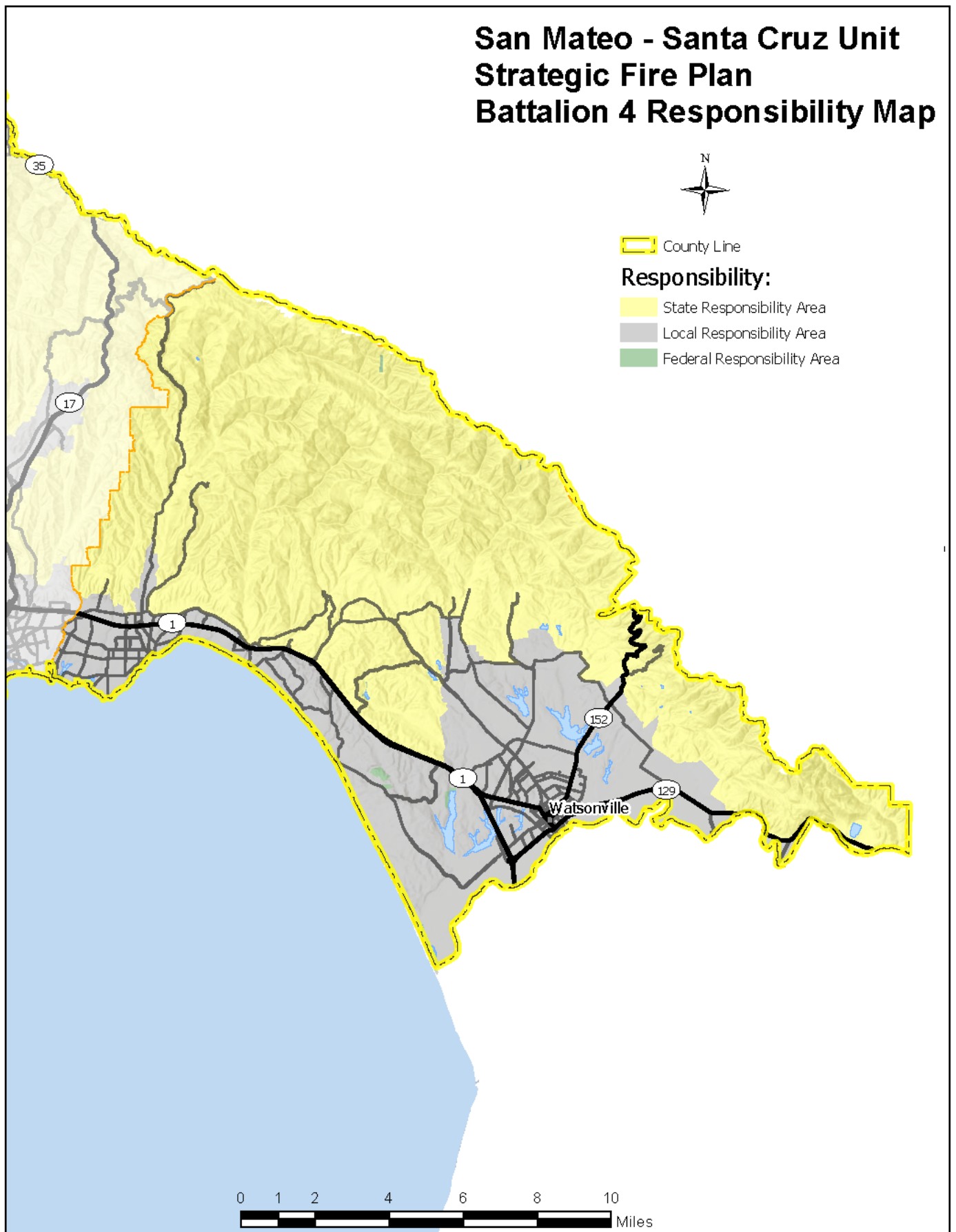


Figure K: Battalion 5 Map

San Mateo-Santa Cruz Unit Strategic Fire Plan Battalion 5 Map

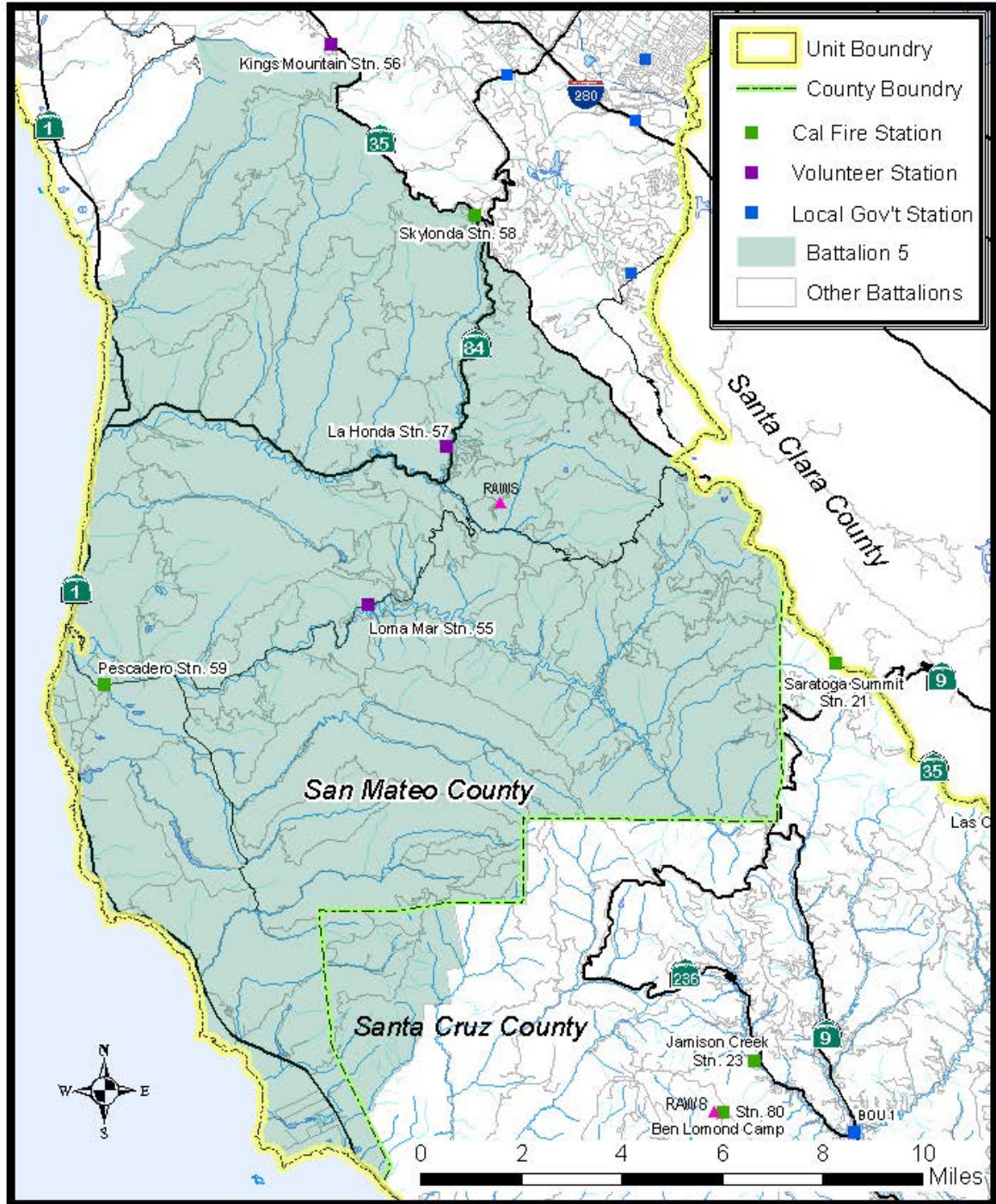


Figure L: Battalion 5 Responsibility Map

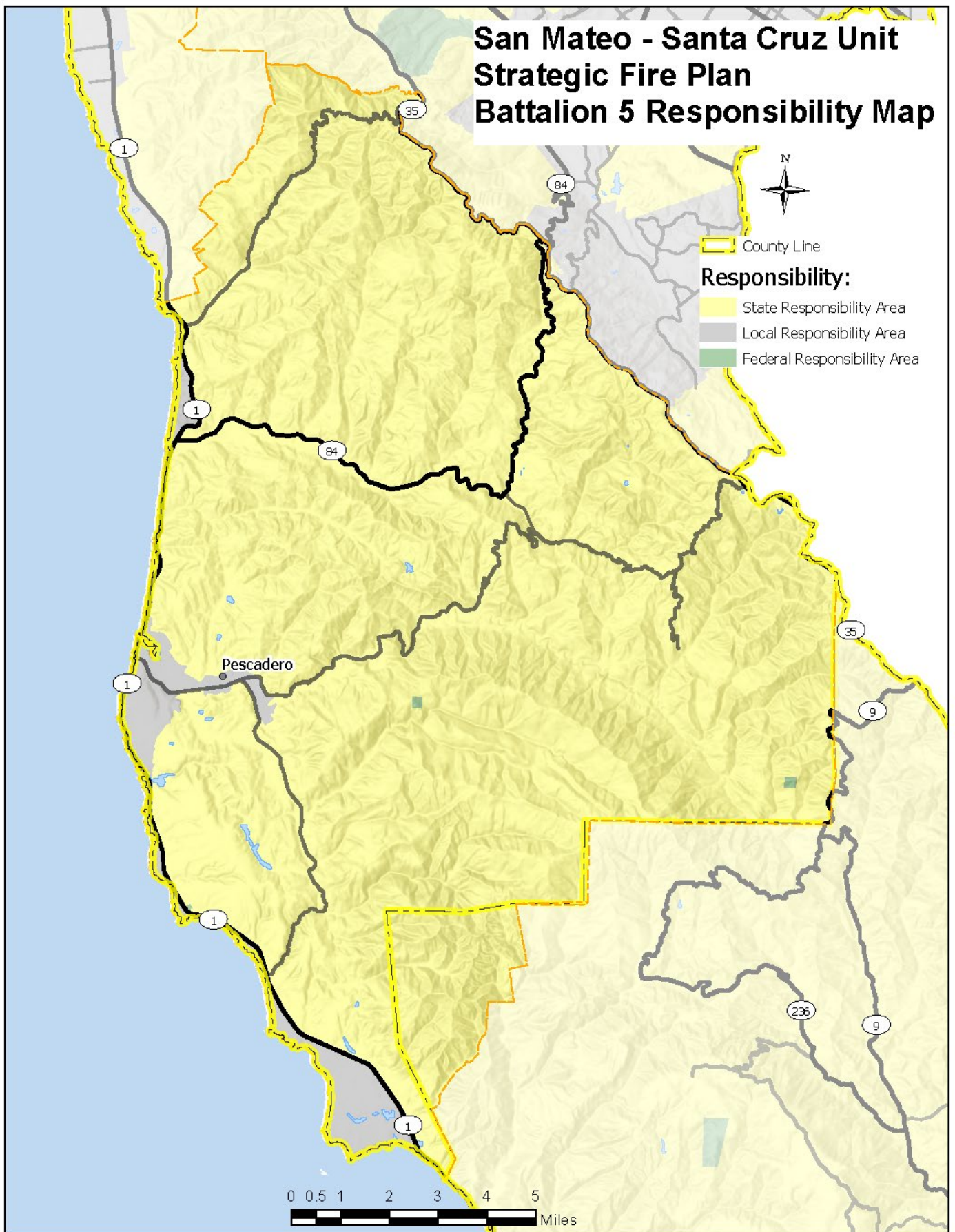
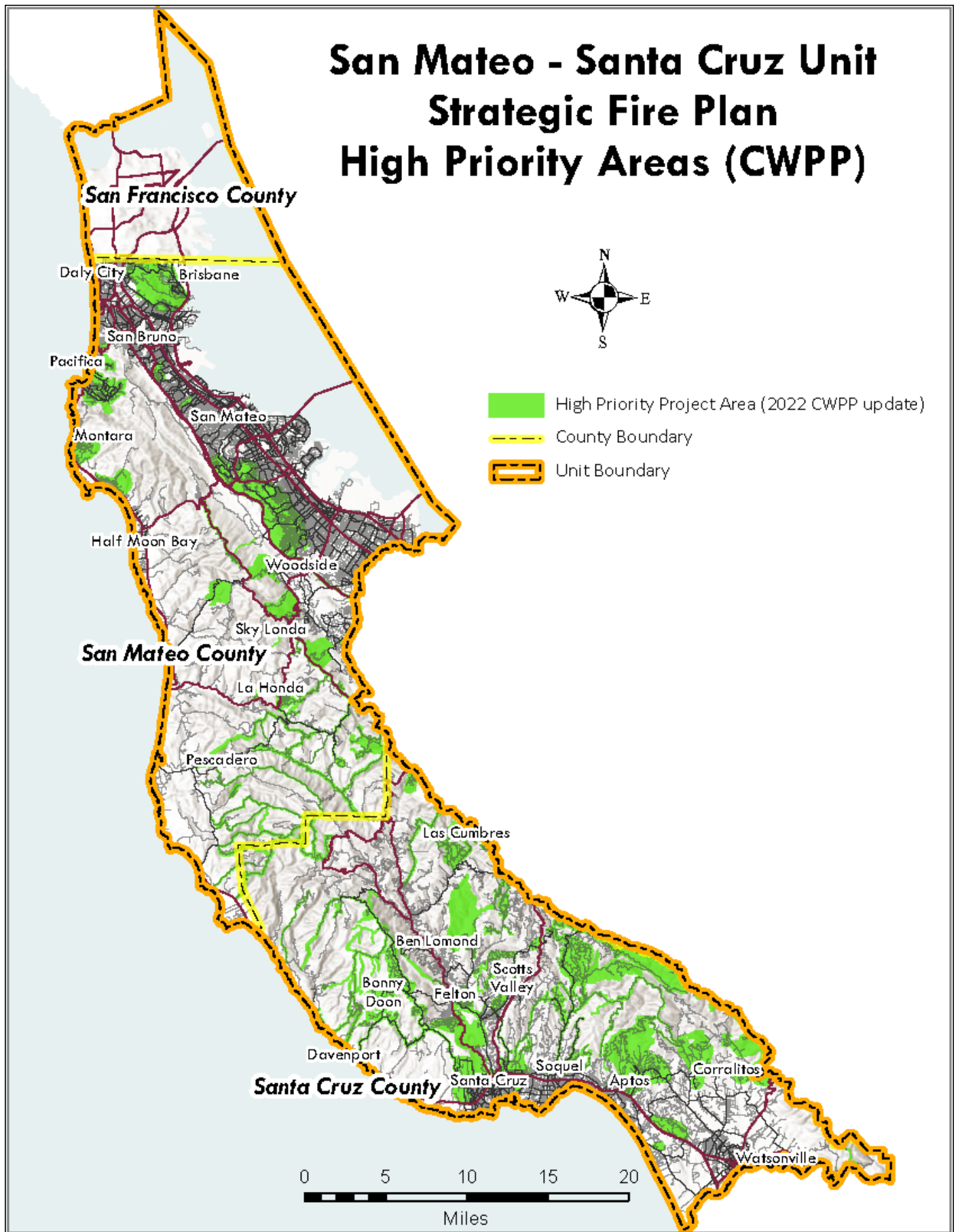


Figure M: High Priority Project Area Map



Annual Report of Unit Accomplishments

Fire Planning: The major accomplishment of the Santa Cruz County Fire Marshal's Office in 2022 was the implementation of a proper business inspection and tracking program. Other accomplishments include tracking and accountability of the State mandated occupancy inspection program. The Fire Marshal's Office performed 252 plan reviews, 421 building inspections, 215 business inspections, 21 licensed care facility inspections (including day care facilities), and 41 weed abatement inspections in Santa Cruz County. Additionally, the Santa Cruz County Fire Marshal's Office conducted 67 hydrant, 102 fire sprinkler, 17 fire alarm, 33 access road, 71 vegetation clearance inspections, and 16 Cannabis related fire clearance inspections. We conducted 57 inspections at the 52 state mandated facilities.

Our San Mateo Division Office of the Fire Marshal performed 916 plan reviews and 397 inspections on Fire Finals, Underground, or Fire Alarm systems. Additionally, The Fire Marshal Office continues to coordinate Vegetation and Weed abatement programs for both San Mateo County Fire Department and Coastside Fire Protection District contracts. The Fire Marshal's office staffing consists of 1 Battalion Chief, 5 Fire Captain/Deputy Fire Marshal/WUI Captain positions and 1 Retired Annuitant with 30 years of experience in Fire Protection and Planning.

Investigations and Enforcement: The Unit investigates all fires for origin and cause. An ignition analysis can be found in Appendix E.

Wildland Fire Prevention Engineering: The San Mateo Santa Cruz Unit is heavily committed to Pre-fire Engineering efforts across the Unit. The Unit updated the San Mateo County and Santa Cruz County Community Wildfire Protection Plan in 2014, 2018, & 2022. Additionally, the Unit employs a team of Defensible Space Inspectors who inspect structures in the SRA for compliance with the provisions of PRC §4291. These inspectors focused their attention on areas in the SRA that are within Fire Protection District boundaries, whereas the CAL FIRE engine crews concentrated on inspecting the structures in the SRA that were within their own response areas.

Between the Defensible Space Inspectors and the personnel assigned to fire engines, the Unit completed 2,940 inspections of vegetation clearance around homes within the SRA. The Unit Prevention office recently completed a set of maps that break up San Mateo & Santa Cruz counties into 3 zones, with the goal of focusing our inspections on one zone per year.

Civil Cost Recovery: The San Mateo Santa Cruz Unit is active in pursuing civil cost recovery. For 2022, the Unit is pursuing any cases they believe there is a valid reason for demanding cost recovery funds. The value of the recovered funds changes as litigation is settled.

Education and Information: While our personnel did educate the public about fire safety and defensible space when the opportunities arose, the number of in person contacts is still below pre-COVID averages. Methods of electronic public outreach have been utilized much more in the past couple of years, which often are more difficult to quantify how many people are receiving the message. The Unit maintains a twitter account, sends out email notifications, and has an account with Zonehaven for evacuation notifications, all of which allow us to communicate with and educate the public.

Vegetation Management: The Unit Vegetation Management Program is an integral part of all aspects of fuels treatment, including prescribed fire. In 2022, the VMP broadcast burned 99 acres in the Unit. Other than broadcast burn fires, within the Unit, CAL FIRE has worked on its own projects and in collaboration with local Fire Safe Councils using either hand treating methods or mechanical means to treat over 370 acres of vegetation. Many of those acres had the material burned after being cut and stacked in piles.

Volunteerism: The Unit utilizes two types of volunteers, including volunteers in prevention (VIP's) and non-affiliated volunteers for a variety of projects. Community volunteers routinely support fuel treatment projects by providing additional sponsor supervision when CDCR crews are utilized. VIP's also provide support to fuel treatment projects on an as needed basis.

Fire Hazard Severity Mapping and Mitigation: The Unit has worked with the Santa Cruz Mountain Stewardship Network and the Golden Gate National Parks Conservancy to use the Lidar derived data in the creation of a Wildfire Risk Index map, which is similar to the Fire Hazard Severity map created at the state level by FRAP. Santa Cruz County was mapped in 2021 and San Mateo County mapped in 2022. The mapping data has been shared to FRAP for the update to the Fire Hazard Severity Zones in 2022/2023.

Other Fire Prevention Projects in SRA: The Unit continues to plan, organize, and implement fire prevention projects. The Unit works with numerous cooperating agencies and Fire Safe Councils to develop projects throughout the Unit.



4 May 2023

Unit Chief

Date