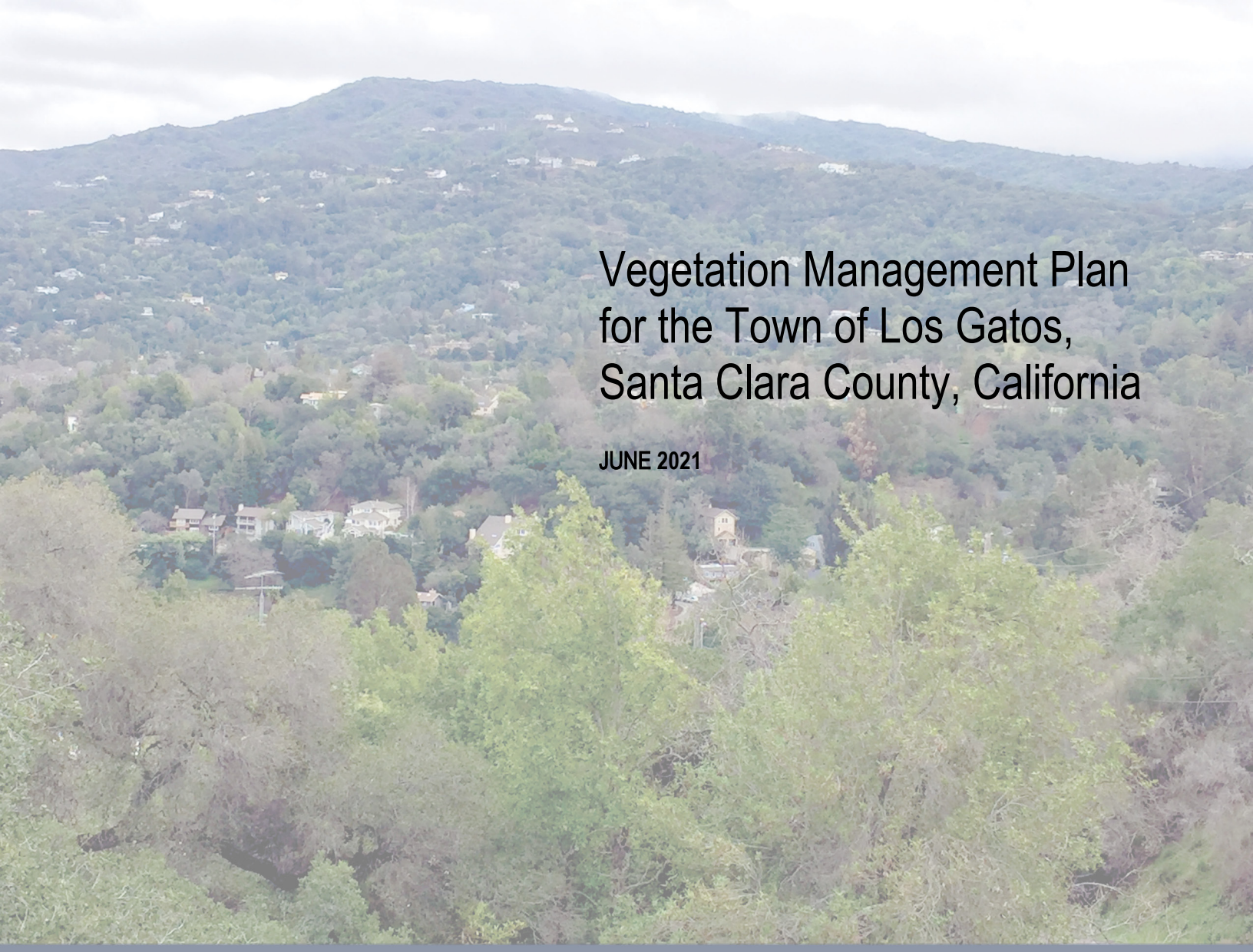


Vegetation Management Plan for the Town of Los Gatos, Santa Clara County, California

JUNE 2021

PREPARED FOR

Town of Los Gatos

PREPARED BY

SWCA Environmental Consultants

VEGETATION MANAGEMENT PLAN FOR THE TOWN OF LOS GATOS, SANTA CLARA COUNTY, CALIFORNIA

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EXECUTIVE SUMMARY

This Vegetation Management Plan (VMP) describes the strategy and guidelines that the Town of Los Gatos (Town) will take to reduce wildfire hazard on 193.91 acres of Town-owned open space land and undeveloped parks, as well as 31.09 miles of roadway generally in the Town's designated Very High Fire Hazard Severity Zone (VHFHSZ). The Community Wildfire Prevention Plan prepared for the Town identified Los Gatos as a high wildfire risk area due to the Town's steep terrain, varied vegetation composition and high acreage of open space adjacent to urban areas. This VMP has been designed to meet wildfire risk reduction goals on Town-owned land and highlights critical open space areas and urban infrastructure along emergency access and evacuation routes. Implementation of this VMP is designed to reduce wildfire hazard and risk and allow safe passage for emergency personnel and residents through active management strategies that avoid and minimize impacts to natural resources and aid in local and regional goals to reduce wildfire risk as detailed in the California Vegetation Treatment Program (CalVTP) (California Board of Forestry and Fire Protection 2019a). The CalVTP was developed by the Board of Forestry and Fire Protection and plays a crucial role in addressing wildfire in California. The CalVTP identifies vegetation treatment activities and environmental protection methods to reduce wildfire risk and protect communities and infrastructure in and around the Wildland Urban Interface (WUI). The CalVTP identifies specific approved vegetation treatment methods including prescribed burning, mechanical treatments, manual treatments, herbicides, and herbivory to reduce wildfire fuels, create fuel breaks and restore natural ecological fire regimes (CalVTP 2019). While this VMP does not implement all of the treatment activities put forth by the CalVTP, it has been prepared in accordance with CalVTP guidelines.

Development of this VMP included an in-depth analysis of wildfire risks and modeling, which was used to identify significant hazards and to predict and map areas of high concern. This process was completed in coordination with the Town and through public and stakeholder engagement to illustrate proposed vegetation management efforts within the Town. Ultimately, the VMP provides recommendations for both near-term and long-term vegetation management and identifies priority levels for vegetation management actions. Priorities were based on factors such as fuel type and density, potential elevated wildfire behavior, proximity to the WUI, and availability of emergency access.

This VMP also identifies highly combustible vegetation, vegetation treatment standards and goals, and management tools needed to achieve those goals. Vegetation management and treatments will be implemented by the Town and/or hired contractors with oversight by a wildland fire specialist and will be monitored to ensure the effectiveness of overall fuel reduction. This VMP also recognizes and anticipates that monitoring and field assessments may identify needs for adaptive management strategies to meet fuel reduction goals. Annual reports and work plans will be completed to identify changes in treatments and to record overall fuel management progress. Annual reporting and work plan development are included as part of VMP implementation, which identifies roles and responsibilities, timeline, costs, and prioritization of VMP Areas. This VMP is part of an ongoing effort to reduce wildfire risk by protecting the urban, natural, and cultural resources of the Town and region.

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Acronyms and Abbreviations

ºF	degrees Fahrenheit
≤	Less than or equal to
AB	Assembly Bill
Annex 9	Santa Clara County Community Wildfire Protection Plan, Town of Los Gatos Annex
Behave Plus	Fire behavior model
BMP	Best management practice
BTU/ft/sec	British thermal units per foot per second
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CalVTP	California Vegetation Treatment Program
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERRS	Community education and risk reduction services
CERT	Community Emergency Response Team
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources information System
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
County	County of Santa Clara
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
CZU	CAL FIRE San Mateo-Santa Cruz Unit (San Mateo and Santa Cruz Counties)
DHS	U.S. Department of Homeland Security
DPS	Distinct Population Segment
EMS	Emergency medical services

FAMWEB	Fire weather database maintained by National Wildfire Coordinating Group
FARSITE	Fire behavior model
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FireFamily Plus	Fire behavior model
FlamMap	Fire behavior model
FRAP	Fire and Resource Assessment Program
FT	Federally Listed Threatened
GR	Grass
GS	Grass-Shrub
HazMat	hazardous materials
HCP	Habitat Conservation Plan
HFRA	Healthy Forests Restoration Act
ICC	International Code Council
IFC	International Fire Code
IFTDSS	Interagency Fuel Treatment Decision Support System
IS/MND	Initial Study/Mitigated Negative Declaration
LANDFIRE	National remote fire sensing model
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
Midpen	Midpeninsula Regional Open Space District
NASA	National Aeronautics and Space Administration
NB	Non-burnable
NEPA	National Environmental Policy Act
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NPPA	California Native Plant Protection Act
NRHP	National Register of Historic Places
NWCG	National Wildfire Coordinating Group
NWI	National Wetland Inventory
NWIC	Northwest Information Center
OES	California Governor Office of Emergency Services
Open Space VMP	Open Space Vegetation Management Plan
OPR	California Office of Planning and Research

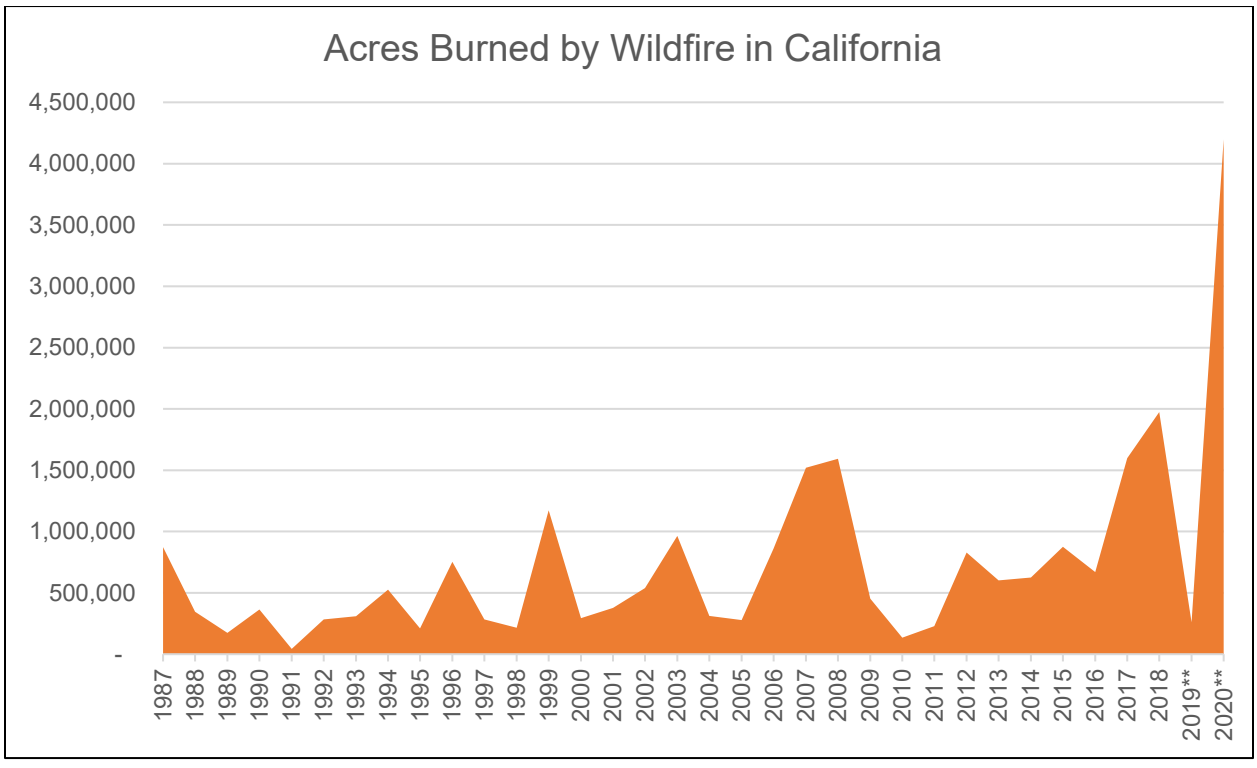
PG&E	Pacific Gas and Electric Company
PPE	Personal protective equipment
PRC	Public Resources Code
PSA	Project Specific Analysis
RAW	Remote Automated Weather Station
Roadway VMP	Roadway Vegetation Management Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB	Slash-Blowdown
SCU	CAL FIRE Santa Clara Unit Unit (Santa Clara, Alameda, Contra Costa, San Joaquin, and Stanislaus Counties)
SH	Shrub
SHMP	California State Hazard Mitigation Plan
SR-	State Route
SRA	State Responsibility Area
SSC	California Species of Special Concern
State Board	State Water Resources Control Board
SWCA	SWCA Environmental Consultants
TL	Timber-Litter
Town	Town of Los Gatos
TU	Timber-Understory
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USDOI	U.S. Department of the Interior
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
VMAL	Vegetation Management Action Level
VMP	Vegetation Management Plan
WRCC	Western Regional Climate Center
WUI	Wildland-Urban Interface

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1 INTRODUCTION

Wildfires have been a natural part of California's history and many kinds of vegetation are adapted to thrive with frequent fires. However, the potential for catastrophic wildfires has increased substantially in recent years. This is due to several conditions. Fuel loads are at a record high from a combination of wildfire management practices that suppressed wildland fires, resulting in an increase in underbrush and other fuels, and a series of droughts that have killed many trees and left them vulnerable to pests and disease (e.g., sudden oak death, bark beetle). In addition, rising temperatures have resulted in an increased length of the fire season and more intense fire behavior. Seventeen of the 20 most catastrophic fires in California have occurred since 2000. Eleven have occurred since 2017, with the top 11 burning over 1.8 million acres, destroying 37,776 structures, and killing 176 people (California Department of Forestry and Fire Protection [CAL FIRE] 2020a). In 2020, wildfires burned almost 4.2 million acres of land in California (Figure 1-1), making 2020 the worst wildfire season in California's history (CAL FIRE 2020b; National Aeronautics and Space Administration [NASA] 2020).

The Town of Los Gatos (Town) houses a complex wildfire environment (e.g., narrow, winding roads and combustible vegetation) that presents a significant risk to both residents and firefighters. Although the Town has been generally spared from devastating wildfires over the past 20 years, numerous damaging wildland fires have occurred in the region, including within Santa Clara County. As a result, the Town is included as a community at risk from wildfires on the federal and California Fire Alliance list of communities at risk in Santa Clara County (CAL FIRE 2020c). The potential for wildland fires with extreme behavior is exacerbated by rising temperatures, local extreme weather conditions (including droughts and Diablo winds), and the steep and varied terrain of the Santa Cruz Mountains surrounding the Town to the south and west.



Data Sources: CAL FIRE 2020b, 2020d.

Figure 1-1. Acres burned by wildfire in California by year.

The combination of increasing development in or near wildlands, the accumulation of wildland fuels, a drying and warming climate, longer fire seasons, and rugged terrain has resulted in significant wildfire risk to communities located in or near the wildland urban interface (WUI). The WUI area is best described as a wildland-urban intermix with homes scattered amongst wildland fuels. The Town WUI planning area includes approximately 4,740 acres of primarily Very High Fire Hazard Severity Zone (VHFHSZ) areas, as defined by CAL FIRE and the Town Fire Prevention and Protection Ordinance (CAL FIRE 2008; Town of Los Gatos 1996, 2019b, 2020a). Approximately a quarter of the Town's residences are located within the WUI. Of an estimated 2018 total of 13,299 residences, the WUI contains approximately 3,091 (Town of Los Gatos 2020e). A Community Wildfire Protection Plan (CWPP) was prepared for the County of Santa Clara (County) in 2016 (Appendix A1; County of Santa Clara 2016). The Town of Los Gatos Annex (Annex 9) of the CWPP (Appendix A2; updated in 2019) addressed specific wildfire prevention and mitigation needs for the Town and identified the need for the following:

- Removal of obstructions on road systems for evacuation (Strategic Goal FC-8).
- A roadside fuel treatment program (Strategic Goal FR-7).
- Community outreach and prioritizing treatments along existing trails that could help to provide a more substantial fuel break and break up the continuity of fuels (Strategic Goal FR-1).
- Prioritize treatments along existing trails to provide fuel breaks and break up continuity of fuels (Strategic Goal FR-1).
- Establish maintenance program in WUI areas where fire behavior and evacuation timing are problematic (Strategic Goal FC-2; County of Santa Clara 2019).

This Vegetation Management Plan (VMP) is being prepared to address those needs. The goal of the VMP is to identify fuel modification projects designed to reduce fire risk by removing and separating fuels in accordance with CAL FIRE fuel reduction guidelines. The goal is to increase fuel breaks along roadways, within the WUI, and in the overall Town-owned open space/undeveloped park lands through modification of vegetation to reduce crown overlap and ignition points with overhead powerlines, reduce ladder fuels and combustible surface fuels, enhance and maintain roadways for efficient and effective evacuations, and create defensible space for fighting fires. Vegetation management in the Town will provide defensible space around structures and assets where these zones extend onto Town open space/undeveloped parks; enhance circulation and access along evacuation routes; and create strategic fuel breaks to decrease intensity and duration of fires reducing their ability to accelerate and spread. Specific treatments associated with this VMP are described in more detail in Section 9.

This VMP outlines a strategy for managing fuel loads and vegetation along roadways in the Town's VHFHSZ (Phase I) and on Town-owned open space lands/undeveloped parks (Phase 2). The goals, objectives, and recommendations identified in this VMP are based on existing field conditions and accepted CAL FIRE, County, and Town vegetation management guidelines for wildfire hazard reduction. This VMP also identifies best management practices (BMPs) to be implemented during vegetation management activities to reduce or avoid impacts to the Town's valuable natural resources and maintain important wildlife habitat.

The Town considers wildfire mitigation to be a top-tier priority for the safety of its citizens. This VMP was developed to address potential fire risk within Town-owned open spaces/undeveloped parks and along its roadways with a goal of keeping residents and firefighters safe. While other efforts to reduce wildfire hazards referenced in this VMP are underway in Santa Clara County and the Town, this VMP is a stand-alone document that provides vegetation focused recommendations for fire hazard reduction. However, vegetation management is only one tool among many to reduce fire risk in the Town and this

document is meant to supplement and complement other plans in the Town's collective fire risk reduction tool kit.

1.1 Purpose

The CWPP identified that nearly all the southern and eastern portions of the Town are in a high or VHFHSZ, with over 3,000 buildings and over 6,800 residents within the high or VHFHSZ (Town of Los Gatos 2020e). Among the variables that contribute to wildfire hazard (e.g., weather, terrain, and vegetation), vegetation is the only variable that can be effectively managed to reduce the likelihood of extreme fire activity. The overarching purpose of the VMP is to provide a framework for reducing and managing vegetative fuel loads on Town-owned open spaces/undeveloped parks and public roads within the Town's VHFHSZ to minimize wildfire hazard while avoiding or minimizing negative environmental effects. This VMP follows the vegetation management treatments for reducing wildfire hazard described in the CalVTP.

The Town VMP has two phases. Phase I of the VMP is funded by the Town and addresses emergency access and evacuation routes in the Town (Roadway VMP). This phase began implementation in September 2020. The Roadway VMP phase will ultimately remove hazardous vegetation and create defensible space around approximately 31.09 miles of Town hillside roadways or right of way that have been identified by the Town and Town residents as roadways of high concern (Figure 1-2). These roadways[1] include evacuation routes and other collector, neighborhood, and hillside collector roads that are located within the WUI and/or have been identified by the Town and Town residents as having inadequate access for emergency response during a wildfire. Detailed maps of the Roadway VMP Area are available in Appendix B.

Phase 2 of the VMP identifies and prioritizes fuel reduction treatments to remove hazardous vegetation from 193.91 acres of Town-owned open space lands and undeveloped parks (Open Space VMP), including Santa Rosa and Heintz Open Spaces and La Rinconada, Novitiate, and Worcester Parks (Figure 1-2 and Appendix C). The Open Space VMP will also discuss fire safety of land uses bordering the Town's undeveloped parks and open space areas and identify and recommended measures that private landowners can take to reduce wildfire risk and ignition potential throughout the VMP Area. Defensible Space guidelines for private properties are described in more detail in Section 10.3, Defensible Requirements for Private Properties in the VHFHSZ not Included in the VMP Area.

The Town will utilize the VMP framework and methodology to prioritize vegetation management activities that should be considered for implementation. The VMP also provides information related to conducting, scheduling, and costing these priority actions to help the Town move forward rapidly with implementation as desired or needed. The Town will avoid and minimize potential negative environmental effects of vegetation management to the greatest extent feasible, but also acknowledges that vegetation management is essential to public safety and that environmental impacts of a catastrophic wildfire and post-fire effects within the Town could greatly exceed the impacts of routine maintenance activities.

[1] Although private roadways are not included in this project, the Town has identified a limited number of private roadways where vegetation management is recommended. The Town will communicate with property owners on these private roadways regarding associated risks and recommendations for vegetation management to be completed by the property owners.

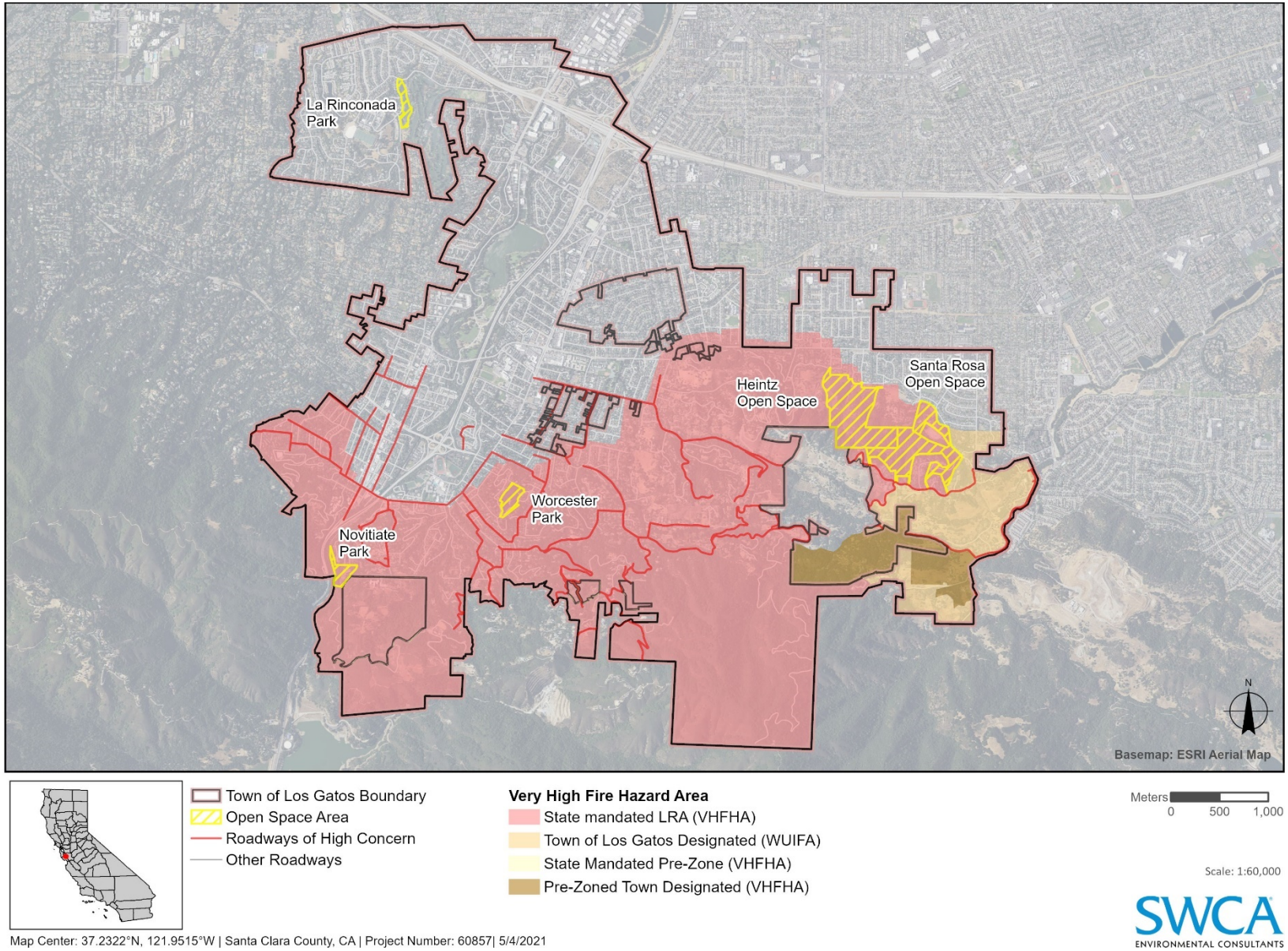


Figure 1-2. VMP Area Map.

1.2 VMP Area Location

1.2.1 *Location*

The Town's VHFHSZ encompasses approximately 4,740acres and is shown in Figure 1-2. For this VMP, the VMP Area encompasses Town-owned open space lands and undeveloped parks as well as areas within 20 feet of the edge of roadsides identified by the Town and Town residents as roadways of high concern (Figure 1-2). Specifically, the VMP area includes the following:

- 31.09 miles of high concern roadside areas within the Town's VHFHSZ as well as a few additional major evacuation routes that extend outside the VHFHSZ (Phase 1).
- Five Town-owned open space lands or undeveloped parks, mostly within the Town's VHFHSZ, ranging in size from 8 to 119 acres (Phase 2).

More detailed information on the VMP Area components is provided in the subsections below. A detailed description of the existing conditions in the VMP Area is provided in Section 2, VMP Area Description.

1.2.2 *Phase 1 Roadways*

The foothills above Los Gatos have steep, winding, and narrow roads that pose potential ingress and egress problems for emergency response and evacuations. Entrapment is also a concern due to minimal turnaround space and dead ends associated with many of the roadways. The surrounding vegetation is dominated by oak woodland that encroaches within a few feet of the roadside pavement. These woodland habitats have accumulated dead and downed wood, invasive species along the roadsides, brush and other vegetation that has been exposed to drought stress, and ongoing mortality from sudden oak death. The Town has identified 31.09 miles of high concern roadsides that require vegetation management within the Town's VHFHSZ. Within this 31.09 miles of roadway, the Town has identified three priority levels of roadways where vegetation management for fire safety is of utmost concern (Appendix B). These priority level classifications are described in more detail in Section 12, Plan Implementation, of this VMP. The potential for wildfire to spread from roadside vegetation to adjacent properties or vice versa is very high. As a result, immediate implementation of a portion of the Roadway VMP was necessary to protect the Town from wildfire risk and enhance existing evacuation routes within the Town that were not suitable for emergency response vehicles. Implementation of the Roadway VMP will enhance existing town evacuation routes for residents and visitors and continue to ensure that roads are suitable for emergency response vehicle access in case of a wildfire.

1.2.3 *Phase 2 Parks and Open Space Areas*

The Town has identified 193.91 acres of Town-owned and maintained open spaces/undeveloped parks, including two open spaces areas and three undeveloped parks within the VHFHSZ.[2] These areas are identified in Table 1-1 and described in more detail below. Within these open space/undeveloped parks areas, the Town has identified three priority levels for vegetation management. These priority level classifications are described in more detail in Section 12, Plan Implementation, of this VMP.

[2] La Rinconada Park is not within the VHFHSZ; however, it is included because it contains an area of mature trees and dense vegetation in close proximity to a residential area.

Table 1-1. Undeveloped Parks and Open Space Areas Included in the VMP

Name	Acreage
Santa Rosa Open Space	75.89
Heintz Open Space Area	88.12
La Rinconada Park	8.64
Novitiate Park	9.93
Worcester Park	11.33
Total	**193.91**

Source: Town of Los Gatos 2020e

1.2.3.1 SANTA ROSA OPEN SPACE

The Santa Rosa Open Space area is located on 119 acres of Town-owned land on the east side of the Town adjacent to Heintz Open Space. Santa Rosa Open Space almost surrounds Belgatos Park.

1.2.3.2 HEINTZ OPEN SPACE

The Heintz Open Space is located on 88 acres of Town-owned land near the Summerhill Homes development in the Heritage Grove neighborhood in the Town. The entrance to Heintz Open Space Preserve is located at the south end of Regent Drive or from Belgatos Park located at 330 Belgatos Road. The Heintz Open Space connects to the Shannon Valley Open Space, Belgatos Park, and Santa Rosa Open Space.

1.2.3.3 LA RINCONADA PARK

La Rinconada Park is a 14-acre forested, creekside park located at 151 Granada Way. It includes a 4-mile trail along Smith Creek, an unlit tennis court, a playground, and picnic areas. La Rinconada Country Club golf course is located adjacent to La Rinconada Park along the park's eastern boundary near Smith Creek. Residential properties are located to the west of the park along Granada Way.

1.2.3.4 NOVITIATE PARK

Novitiate Park is located at 300 Jones Road and includes 8 acres of former vineyard, now minimally developed with trails and coast live oak woodland. It is a gateway to Midpeninsula Regional Open Space District's (Midpen) St. Joseph Hill Open Space area.

1.2.3.5 WORCESTER PARK

Worcester Park is located at 140 Worcester Loop. It consists of 11 acres of oak woodland with three trails and is completely surrounded on all sides by residences.

1.3 Parks, Open Spaces, and Other Land Uses Within or Adjacent to the Town Not Included in the VMP Area

Parks and open spaces not included in the VMP Area are provided in Table 1-2 and described in more detail below. Generally, parks that are owned by the Town and not included in the VMP are developed with non-combustible vegetation and are not considered a fire risk. Other parks, open spaces, and land uses not included in the VMP are owned or managed by other entities and are not the responsibility of the Town.

Table 1-2. Parks and Open Space Areas Within or Adjacent to the Town not Included in the VMP

Name	Acreage
Town-Owned Parks	
Bachman Park	3.26
Balzer Field	1.38
Belgatos Park	17.00
Blossom Hill Park	8.82
Fairview Plaza	0.25
Forbes Flour Mill	0.83
Howes Playlot	0.54
Live Oak Manor Park	4.27
Los Gatos Creek Trail	31.66
Los Gatos Creekside Sports Park	2.71
Oak Hill Playlot	0.73
Oak Meadow Park	10.94
Pageant Grounds	1.62
Town Plaza	0.76
Private Landowner	
Shannon Valley Open Space	
Santa Clara County Parks and Recreation Department	
Vasona Lake County Park	155
Lexington Reservoir County Park	950
Midpeninsula Regional Open Space District	
St. Joseph's Hill Open Space Preserve	179
Sierra Azul Open Space Preserve	19,023
El Sereno Open Space Preserve	1,430

1.3.1 *Parks*

1.3.1.1 TOWN-OWNED DEVELOPED PARKS

Numerous parks within the Town and owned by the Town are developed and are not considered for vegetation management since they not considered a fire risk. These parks include Bachman Park, Balzer Field, Blossom Hill Park, Fairview Plaza, Forbes Flour Mill, Howes Playlot, Live Oak Manor Park, Los Gatos Creekside Sports Park, Los Gatos Town Plaza, Oak Hill Playlot, Oak Meadow Park, and Pageant Grounds.

1.3.1.2 BELGATOS PARK

Belgatos Park is owned by the Town. It is a 17-acre park located at 330 Belgatos Road and is the entrance to the multi-use trail system connecting to Santa Rosa Open Space and Heintz Open Space. The park is surrounded primarily by residential and open space land uses. The northern and eastern boundaries are adjacent to residential properties. The southern and western boundaries border the Santa Rosa and Heintz

Open Space areas. Belgatos Park is generally characterized by oak woodland and annual grassland with a small patch of turf.

1.3.1.3 LOS GATOS CREEK TRAIL

The Los Gatos Creek Trail is jointly operated by the Town, County of Santa Clara Parks and Recreation Department (Santa Clara County Parks), City of Campbell, and City of San Jose (Santa Clara County Parks 2020a). The trail follows the Los Gatos Creek, which flows from Lexington Reservoir. Riparian vegetation including trees and shrubs occupy the banks of Los Gatos Creek and provide important habitat for terrestrial and aquatic species. This riparian zone presents a low fire risk overall due to the high moisture content of the area. However, riparian vegetation is generally very productive and can accumulate high fuel loads without regular management or burns which put them at risk of high severity fires.

1.3.1.4 VASONA LAKE COUNTY PARK

The 155-acre Vasona Lake County Park is operated by Santa Clara County Parks. It is located at 333 Blossom Hill Road in Los Gatos, and is connected to Novitiate Park, St. Joseph's Hill Open Space Preserve, and Lexington Reservoir County Park via the Los Gatos Creek Trail. Vegetation in the park is characterized by a mixture of turf, landscaped trees, and riparian vegetation along Los Gatos Creek. There is a eucalyptus grove located in the park. (Santa Clara County Parks 2020b).

1.3.1.5 LEXINGTON RESERVOIR COUNTY PARK

The Lexington Reservoir County Park encompasses the 950-acres and is operated by Santa Clara County Parks. The park includes a 338-acre man-made reservoir. The park is connected to the Jones Trail and St. Joseph's Hill Open Space Preserve, which is actively managed by the Midpeninsula Open Space Trust (Santa Clara County Parks 2020c).

1.3.2 *Open Space Areas*

1.3.2.1 SHANNON VALLEY OPEN SPACE AND TRAILS

Shannon Valley Open Space area is recognized on some park maps within the Town (Town of Los Gatos 2020g). However, this area consists of trail easements located on privately held land (Town of Los Gatos 2020d). Shannon Valley Open Space area is not included in the VMP.

1.3.2.2 ST. JOSEPH'S HILL OPEN SPACE PRESERVE

The 179-acre St. Joseph's Hill Open Space Preserve is managed by Midpen[3]. It is located adjacent to Lexington Reservoir County Park off Alma Bridge Road on the southwestern side of the Town. It includes steep trails through grassland, chaparral, and oak woodland. There are trails available for hiking, biking, and equestrian uses. St. Joseph's Hill Open Space Preserve can be accessed from Novitiate Park via the Jones Trail and the City of San Jose via the Los Gatos Creek Trail (Midpen 2020a).

1.3.2.3 SIERRA AZUL OPEN SPACE PRESERVE

Sierra Azul Open Space Preserve is managed by Midpen. It is by far the largest open space system in Town spanning over 19,023 acres, including approximately 2,634 within the Town limits. Its 19,023 acres of

[3] Midpen manages vegetation through creation and maintenance of fuelbreaks, fuel management zones, and defensible space zones on their open space preserves through their Wildland Fire Resiliency Program.

wilderness area are divided into Kennedy, Limekiln, Mount Umunhum, Cathedral Oaks, and Rancho de Guadalupe. Habitats include serpentine grasslands; hard, rocky, and steep chaparral; dense stands of bay trees; oak woodland forests; deep ravines; and riparian corridors, some containing seasonal or year-round water flow. There are over 20 miles of trails, including trails for hiking, biking, and equestrian uses (Midpen 2020b).

1.3.2.4 EL SERENO OPEN SPACE PRESERVE

El Sereno Open Space Preserve is managed by Midpen and located west of the Town. It is named for the 2,249-foot Mount El Sereno, which is part of a prominent ridge west of the Town. This open space preserve includes 1,430 acres of primarily chaparral community with some wooded creeks and small meadows. (Midpen 2020c).

1.3.3 *Residential Areas Adjacent to the Plan Area*

Town undeveloped parks and open space areas are surrounded by residential development, including many residences within the 100-foot required defensible space zone between the Town-owned open space areas and residences (Table 1-3). As part of the Open Space VMP, a defensible space will be implemented within 100 feet of adjacent residences and other infrastructure where they intersect with Town-owned open space and undeveloped parks (Federal Emergency Management Agency [FEMA] 2019) to comply with Chapter 9 of the Los Gatos Municipal Code.[4] This VMP does not include vegetation management activities to implement defensible space on private property.

Table 1-3. Residences within 150 feet of the Open Space VMP Area

Park/Open Space	Residences Approximate Distance and Direction	Location of Residence
La Rinconada Park	70 feet west	Granada Way
	120 feet north	Calle el Padre
Novitiate Park	15 feet north	Euclid Avenue & Jones Road
	15 feet east	Oak Grove Way
Worcester Park	60 feet southeast	Worcester Loop
	40 feet southeast	Vista del Prado
	30 feet southwest	Stacia Street
	90 feet southwest	Private drive off Hollywood Avenue
	30 feet northwest	Hollywood Avenue
	20 feet northeast	Los Robles Way and Worcester Loop
Heintz Open Space	12 feet south	Sky Lane
	45 feet west	Sky Lane
	25 feet north	Surmont Court
	30 feet north	Heintz Court

[4] Los Gatos Municipal Code Section 4907.3. *Defensible space along property lines.* Pursuant to Government Code Section 51182 and Public Resources Code (PRC) Section 4291(a)(2): When an occupied building is less than 100 feet from a property line and combustible vegetation on an adjacent parcel presents a fire hazard for the occupied building as determined by the Fire Chief or his/her designee then the owner of the adjacent parcel where the hazard exists shall be responsible for fuel management, including removal to the satisfaction of the Fire Chief or his/her designee.

Park/Open Space	Residences Approximate Distance and Direction	Location of Residence
	40 feet north	Regent Drive
	40 feet north	Las Flores Lane
	60 feet north and 40 feet west	Larga Vista Drive
Santa Rosa Open Space	50 feet south	Sierra Azul
	60 feet south	Santa Rosa Drive
	15 feet south	Madera Court
	40 feet south	Auzerias Court
	60 feet east	Colorado Court
	40 feet northeast	Harwood Court
	70 feet northeast	Belridge Drive
	70 feet northeast	Baciagalupi Drive
	50 feet northwest	Belgatos Lane
	50 feet northeast	Westhill Drive

1.3.4 *Roads Outside the VMP Area*

State Route (SR-) 17 passes through the Town but is not part of the VMP. CAL FIRE, the California Department of Transportation (Caltrans), and the Santa Clara County Firesafe Council collaborated on the SR-17 Shaded Fuel Break Project, which included fuel reduction efforts on a 6.5-mile stretch of SR-17 between the Town and Summit Road (CAL FIRE, Santa Clara County Fire Safe Council, and Caltrans 2020).

1.4 Plan Scope and Schedule

The scope of the VMP covers all vegetation management activities along Town-owned roadways of high concern (Phase 1) and Town-owned open space and undeveloped park areas (Phase 2) within the VHFHSZ[5]. This VMP focuses on the vegetative fuels component of wildfire hazard and provides a framework to reduce fire risk through hazardous fuel reduction in the VMP Area. Although this VMP focuses solely on vegetation management, it is intended to complement other wildfire risk reduction plans and programs being implemented by CAL FIRE, the County, and the Town.

The VMP is being implemented in two phases, including the first phase for the Roadway VMP and the second phase for the open space areas and undeveloped parks. The overall timeframe for this VMP is 10 years, notwithstanding any adaptive management that may be required to meet evolving code and/or policy requirements. The goals, objectives, methods, and recommendations contained in this VMP should be reviewed at the end of the 10-year timeframe and revised to reflect any changed wildfire hazard conditions.

1.4.1 *Phase 1: Roadway VMP*

The Roadway VMP focuses on roadside vegetation to achieve a clearance of 20 feet horizontally and 13 feet, 6 inches above roadways, as well as clearance of non-fire-resistant vegetation within 10 feet of the roads. This limited work qualified for a California Environmental Quality Act (CEQA) Statutory

[5] La Rinconada Park is not within the VHFHSZ; however, it is included because it contains an area of mature trees and dense vegetation in close proximity to a residential area.

Exemption under Article 18, Section 15269(c) - Emergency Projects exemption (Appendix D). Article 18, Section 15269(b), addresses emergency repairs necessary to maintain services essential to public health, safety, or welfare. These emergency repairs include those that require a reasonable amount of planning to address an anticipated emergency. Article 18, Section 15269(c) applies to specific actions necessary to mitigate an emergency, including "activities such as fire or catastrophic risk mitigation or modifications to improve facility integrity."

This statutory exemption applies to the whole of the roadside vegetation management operation because the VMP Area is being implemented as wildfire or catastrophic risk mitigation to improve the integrity of the access roads, thereby improving both access for fire equipment and evacuation safety for residents. This statutory exemption is applicable if measures are "in response to an emergency at a similar existing facility" and if there is substantial evidence in the record to prove an emergency situation exists. Because of the increasing danger of wildfire in the VHFHSZ in California, the vegetation management activities commenced in September 2020 before the peak of the fire season, to reduce the vulnerability of its citizens to wildfire. By March 2021, vegetation management occurred on approximately 11 of the 31.09 miles of VMP roadways. The remaining Roadway VMP work will be completed based on priority level as soon as possible to ensure the safety of Town residents and firefighters. The Town will also work with private contractors including arborists and wildland fire specialists annually to inspect and clear vegetation along the roadways.

The Town used Town general funds to begin the Roadway VMP work in September 2020 and will continue to use these funds in the future. However, implementation of the Roadway VMP work will be contingent on a more sustainable funding source. The Town is currently exploring additional funding sources, such as a voter approved annual parcel tax to raise money for wildfire prevention in the Town.

1.4.2 *Phase 2: Open Space VMP*

The Open Space VMP will guide hazardous fuel reduction in five undeveloped parks/open space areas owned by the Town, including Santa Rosa Open Space, Heintz Open Space, Novitiate Park, La Rinconada Park, and Worcester Park. Fuel management activities in these areas will include clearing away dead trees and brush, reducing ladder fuels by achieving adequate vertical and horizontal separation of vegetation, removing eucalyptus (*Eucalyptus* sp.) trees and other invasive species, and creating defensible space within approximately 100 feet of residences adjacent to the VMP Area as well as within 100 feet of the Town Open Space boundary within the WUI. The Town will work with private contractors, including arborists and wildland fire specialists, annually to inspect and clear vegetation within the 100-foot defensible space area and every 3 years within the remaining open space/undeveloped park areas. Treatments for each open space/undeveloped park were selected based on field inspections that evaluated proximity to residences and other infrastructure and site-specific vegetative fuels. –Appendix C shows the treatments and target areas identified for each open space/undeveloped park. Within the open space/undeveloped park boundaries, treatment types include shaded fuel breaks, fuel reduction areas, and defensible space. Invasive species, excess woody slash and debris, and mowing/grazing areas are also identified as site-specific treatments. Treatment timing and methods are summarized in Section 9, Vegetation Management Treatments and Treatment Activities, and in Section 10.4.2, Treatment Timing.

The approval and implementation of the Open Space VMP requires review under CEQA, with the Town serving as the lead agency. The Town Open Space VMP projects are within the scope of the CalVTP as described in the CalVTP Final Program Environmental Impact Report (PEIR), Chapter 2, Program Description (California Board of Forestry and Fire Protection 2019c). The Town will submit a Project Specific Analysis (PSA) to the California Board of Forestry and Fire Protection and/or CAL FIRE to utilize CEQA streamlining provisions of the CalVTP. Projects or activities proposed in the VMP would not commence until the PSA is approved an the CEQA process is deemed complete. In addition,

implementation of the Open Space VMP will be dependent on securing funding. To date, the Town has received FEMA funding for developing the Open Space portion of the VMP. This portion of the VMP is Categorically Excluded from the National Environmental Policy Act (NEPA) in accordance with FEMA Instruction and Directive 108-1-1 as authorized by U.S. Department of Homeland Security (DHS) Instruction Manual 023-01-001-01 (Appendix E). Funding for the implementation of the Open Space VMP has not been received at this time.

1.5 Vegetation Management Goals and Objectives

The overall goal of the VMP is to reduce wildfire hazard on Town-owned roadways of high concern (Phase 1) and Town-owned open space/undeveloped parks (Phase 2) within the Town VHFHSZ to enhance public and firefighter safety. As stated previously, a CWPP was prepared for the County (County of Santa Clara 2019). Annex 9 of the CWPP addressed specific wildfire prevention and mitigation measures for the Town. Specific goals relevant to the VMP identified in the CWPP for the Town include the following:

- **Strategic Goal FC-8**: Where road systems are antiquated and do not provide for proper evacuation or two-way flow, require removal of obstructions or upgrade to minimum 2 lane road system over time.
- **Strategic Goal FR-1**: Incorporate single track trails into fire defense system where practical. Prioritize treatments along existing trails that could help provide a more substantial fuel break and break up the continuity of fuels.
- **Strategic Goal FR-7**: Develop roadside fuel treatment program, including a suite of methods available and sustainability mechanism.

The Safety Element of the Los Gatos 2020 General Plan (Town of Los Gatos 2020b) also addressed specific wildfire prevention and goals for the Town. Specific goals relevant to the VMP identified in the 2020 General Plan include the following:

- **Goal SAF-2**. To incorporate fire safety precautions as an integral consideration in planning development.
- **Goal SAF-3.** To reduce the potential for injuries, damage to property, economic and social displacement, and loss of life resulting from fire hazards.

Additional goals of the VMP are as follows:

- Participate in the regional efforts to reduce wildfire hazard in Santa Clara County and statewide.
- Implement practices to avoid or minimize impacts to natural resources.
- Identify strategies to reduce wildfire risk within the Town.
- To the greatest extent feasible, create and maintain conditions necessary for efficient and effective evacuations.
- Reduce the likelihood of catastrophic wildfires by limiting ignition potential and reducing fuel loads on the specified Town-owned VMP lands.
- Identify and prioritize fuel treatment areas based on fuel loads, terrain, and proximity to residences/roadways.
- Educate residents on vegetation management practices for private properties.
- Retain vegetation where feasible to maintain the existing visual character.

1.6 VMP Organization

The VMP is organized as follows:

- Section 1: Introduces the VMP and provides context for the VMP.
- Section 2: Describes the VMP Area.
- Section 3: Provides the methodology for the wildfire hazard assessment.
- Section 4: Describes the existing rules, regulations, and fire safety standards relevant to vegetation management activities in the VMP Area or the Town's VHFHSZ.
- Section 5: Summarizes existing management plans and programs relevant to vegetation management in the VMP Area.
- Section 6: Summarizes public and stakeholder engagement efforts conducted during the VMP development and revision.
- Section 7: Summarizes the Town's emergency partnerships.
- Section 8: Briefly describes the biological, cultural, and public resources found in the VMP Area.
- Section 9: Describes the different vegetation management treatments that may be used as part of the VMP. These are the general practices and actions used to modify or remove vegetation.
- Section 10: Outlines vegetation management standards, specific recommendations for key areas, and the procedures for identifying and planning the annual vegetation treatment operations. These are the measurable guidelines to achieve the desired vegetation condition to reduce wildfire hazard.
- Section 11: Outlines the BMPs intended to avoid or minimize potential to biological, cultural, or other sensitive resources associated with the vegetation treatment/removal.
- Section 12: Outlines the means and methods for implementing the VMP recommendations, including annual reporting, adaptive management, documentation of performance, implementation costs, and project priority.

2 VMP AREA DESCRIPTION

The Town is located in the San Francisco Bay Area, approximately 43 miles south of San Francisco, in the southwestern part of Santa Clara County at the base of the Sierra Azul, where the Santa Clara Valley meets the lower slopes of the Santa Cruz Mountains. The Town is bounded by the city of San Jose to the north and east, the city of Campbell to the north, the cities of Monte Sereno and Saratoga to the west, and unincorporated areas of the County of Santa Clara and the County of Santa Cruz to the south (Town of Los Gatos 2020a). The VMP Area encompasses a wide variety of terrain, ranging from flat topography at the edge of the valley floor to densely wooded hillsides.

2.1 Regional and VMP Area Fire History

Analysis of the Fire and Resource Assessment Program (FRAP) fire history database shows recurring years with high wildfire activity (in terms of area burned) in the San Francisco Bay Area. These data show that wildfires are increasing in both size and number over time. Prior to 2015, the peak fire year was 1964 (CAL FIRE 2020e). The north San Francisco Bay fires of October 2017 burned more than twice the area of any previous year, following close on the heels of the large and destructive Lake County fires of 2015. As of 2018, six of the top 20 most destructive fires in California history (in terms of buildings lost) have occurred

in the San Francisco Bay Area (Office of Planning and Research [OPR], California Energy Commission [CEC], and California Natural Resources Agency [CNRA] 2019). Most recently the August Lightning Complex Fires, ignited from lightning strikes in mid-August 2020, burned over 2 million acres. Two of these fires—the Santa Clara Unit (SCU; includes Santa Clara, Alameda, Contra Costa, San Joaquin, and Stanislaus Counties), and San Mateo-Santa Cruz Unit (CZU; San Mateo and Santa Cruz Counties) August Lightning Complex Fires—occurred in the San Francisco Bay Area. High fire danger conditions that can support very active fire behavior may be relatively uncommon, but with the advent of climate change, Santa Clara County is expected to experience an increase in the frequency, size, and duration of wildfires in the future.

The VMP Area is located in Santa Clara County and is approximately 3 miles northeast of the Santa Cruz County border. Santa Clara and Santa Cruz Counties each experienced between 30 and 90 wildfires per year between 2008 and 2018 (CAL FIRE 2020f). Table 2-1 shows the total number of large-scale wildfires (over 1,000 acres) in both counties. Although the number of fires has varied widely over time, the number of large and destructive wildfires in Santa Clara and Santa Cruz Counties has increased over time. In the 25 years between 1985 and 2009, there were six fires that burned more than 1,000 acres in both counties. In the 5 years between 2016 and September 2020, there have been four fires in both counties that burned over 4,000 acres (see Table 2-1).

In addition to increasing severity, the number of fires per year has increased. Prior to 2016, there were few years with multiple large-scale fires in Santa Clara and Santa Cruz Counties. Most years between 1985 and 2015 had between zero and two fires per year within 10 miles of the VMP Area. Every year since 2016 has seen multiple fires within 10 miles of the VMP Area—four fires in 2016, nine fires in 2017, five fires in 2018, and eight fires in 2019. As of September 2020, two fires greater than 10 acres had occurred within 10 miles of the VMP Area (CAL FIRE 2020b). Despite the increasing wildfire danger in the VMP Area, the last reported wildfire within the Town was the Cats Fire in 1997, which burned 15 acres and destroyed six homes (Town of Los Gatos 2019a).

Table 2-1. Wildfires Over 1,000 Acres in Santa Clara and Santa Cruz Counties, 1985–2020

Name	Year	Impact	County	Approximate Distance
SCU August Lightning Complex Fire	2020	396,624 acres burned and 222 structures destroyed in five counties, including Santa Clara County.	Santa Clara, Alameda, Stanislaus, Contra Costa, San Joaquin	26 miles
CZU August Lightning Complex Fire	2020	86,509 acres burned, 1,490 structures destroyed, and 140 structures damaged.	Santa Cruz, San Mateo	8 miles
Crews Fire	2020	5,513 acres burned and one structure destroyed north of Gilroy.	Santa Clara	25 miles
Loma Fire	2016	4,474 acres, 12 residences, and 16 outbuildings burned northwest of Morgan Hill.	Santa Clara	8 miles
Pacheco Fire	2009	1,650 acres burned.	Santa Clara	40 miles
Summit Fire	2008	4,270 acres, 35 residences, and 64 outbuildings burned south of the Town of Loma Prieta.	Santa Clara	10 miles
Lick Fire	2007	47,760 acres, four residences, and 20 outbuildings burned at Henry Coe State Park.	Santa Clara	25 miles
Santa Clara Complex	2003	30,170 acres burned and one structure destroyed in Mt. Diablo Range.	Santa Clara	18 miles

Croy Fire	2002	13,128 acres burned and 31 residences destroyed.	Santa Clara	9 miles
Lexington Fire	1985	4,200 acres burned and 37 residences destroyed.	Santa Clara	1 mile

Source: CAL FIRE 2020d

Although there have been no catastrophic wildfires in the Town, there is evidence to show that rising temperatures associated with climate change are increasing fire activity in the San Francisco Bay Area. As mentioned above, on August 18, 2020, an extreme lightning storm ignited multiple wildfires in California. The two closest wildfires ignited by this storm were the CZU and SCU August Lightning Complex Fires. The CZU fire burned over 86,500 acres and was located approximately 8 miles to the west of the VMP Area. The SCU fire burned over 396,600 acres and was located approximately 21 miles east of the VMP Area (CAL FIRE 2020b; National Interagency Fire Center [NIFC] 2020).

2.2 Fire Hazard Severity Zoning

California Public Resources Code (PRC) Sections 4201–4204 and Government Code Sections 51175–51189 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones are referred to as Fire Hazard Severity Zones (FHSZ). CAL FIRE uses a model to evaluate properties for FHSZs based on many factors, including fire history, existing and potential fuel, flame length, blowing embers, terrain, weather, and the likelihood of buildings igniting. The resulting FHSZs define the application of various mitigation strategies to reduce risk associated with wildland fires (CAL FIRE 2016). There are three zones based on increasing fire hazard including medium, high, and very high (CAL FIRE 2007).

As discussed above, the VMP Area is located within the VHFHSZ areas adopted by the Town. The local responsible agency for fire protection in the Town is the Santa Clara County Fire Department. The Local Responsibility Area (LRA) lands in the VMP Area are adjacent to State Responsibility Area (SRA) lands managed by CAL FIRE. The VHFHSZ of the VMP Area and proximity of SRA lands to the VMP Area are shown in Figure 1-2.

2.3 Wildland-Urban Interface

The WUI area is best described as a wildland-urban intermix with homes scattered amongst wildland fuels. The Town WUI planning area includes primarily VHFHSZ areas on the southern side of the Town, as defined by CAL FIRE and the Town Fire Prevention and Protection Ordinance (Figure 1-2; CAL FIRE 2008; Town of Los Gatos 1996, 2019b). The combination of increasing development in or near wildlands, the accumulation of wildland fuels, dry fire seasons, and rugged terrain has resulted in significant risk due to wildfire to communities located in or near the WUI (County of Santa Clara 2016).

There is also evidence that suggests fire risk is increased where development expands into the WUI (California Governor Office of Emergency Services [OES] 2018; OPR, CEC, and CNRA 2019). Warming temperatures combined with expansion of the WUI are projected to increase fire risk in most of the San Francisco Bay Area, including the VMP Area. Wildfire risk is dependent on three variables, including weather, terrain, and fuels (vegetation). With the advent of increasing temperatures and extreme weather events, reducing fuels is an important management technique for reducing wildfire risk. Vegetation management is recognized as an important strategy for managing future fire risk to people and structures.

2.4 Climate

Wet winters and dry summers with mild seasonal changes generally characterize the San Francisco Bay climate. This climate pattern is occasionally interrupted by heat waves, cold snaps, isolated thunderstorms, fog, or dry easterly winds, known locally as "Diablo" winds (Western Regional Climate Center [WRCC] 2020). Live fuel moisture content, an indicator of ignitability, for most vegetation in the San Francisco Bay Area reaches the driest point in the late summer or early fall.

Diablo winds are characterized by warm, dry winds that occur when prevailing westerly winds reverse. This process can occur on a regional scale from late summer to early fall, resulting in warm, dry winds from inland areas moving east through canyons towards the Bay. When winds converge in the canyons, an increase in velocity occurs which dissipates once the wind reaches flatter terrain and eventually the Bay. In addition, the reversal from onshore to offshore winds causes a drastic decrease in atmospheric, soil, and vegetative moisture resulting in increased fuel loads. This means that if a wildfire were to occur, areas with steeper terrains are at a higher risk of rapid wildfire dispersal due to steep slopes, high velocity winds, and increased fuel due to the low moisture content.

In general, the region experiences a prevailing wind pattern from the west or northwest. The San Francisco Bay Area experiences a diurnal wind pattern caused by the Pacific Ocean, which creates a daily variation in wind due to higher surface temperatures during the daytime. Pressure differentiations cause more turbulent winds during the day and gentler winds during the night when temperatures are cooler. In the summer months, winds can be stronger due to greater pressure forces. Topography and slope can also influence surface wind velocity. In the Town, areas with steeper slopes and canyons are more likely to experience severe wind velocities, which create higher fire risks (WRCC 2020).

The average annual high temperature calculated from 1948 to 2006 for the VMP Area is approximately 72.2 degrees Fahrenheit (ºF). Summer and early fall high temperatures (June through September) average between 81.6°F and 85.7°F. The average annual low temperature for the VMP Area is 46.1°F, and winter low temperatures (November through February) are routinely between 38.4°F and 42.6°F (WRCC 2020). The average annual precipitation for the VMP Area is 24.78 inches, with the most rainfall concentrated in the months of November (2.86 inches), December (4.62 inches), January (5.35 inches), February (4.55 inches), and March (3.76 inches). Rainfall is much less during summer months of June (0.09 inches), July (0.03 inches), and August (0.06 inches) (WRCC 2020).

The Town's fire season is characteristic of the area, generally starting in the summer months in June or July and extending until November when winter rains typically commence. However, due to climate change, California is experiencing more severe and prolonged wildfire seasons. It is possible that wildfire season in and around the Town will be more extended in the future.

2.5 Topography and Soils

The Town is located in the central portion of the Coast Ranges Physiographic Provinces and encompasses a wide variety of terrain ranging from flat topography at the edge of the valley floor to densely wooded hillsides. The majority of the VMP Area is located on the hillsides and ridges to the south, west, and southeast of the Town center. These areas are generally characterized by the steep hillsides of the Coast Range (Town of Los Gatos 2019a). Elevations in the VMP Area range from a low of approximately 265 feet above mean sea level at La Rinconada Park to a high of approximately 1,650 feet above mean sea level on Blackberry Hill Road.

Several surface water drainages traverse the VMP Area, including the Guadalupe River, Los Gatos Creek, Ross Creek, and Smith Creek. Los Gatos and Smith Creeks flow south to north. The Guadalupe River and Ross Creek flow southwest to northeast. All drainages in the VMP Area enter San Francisco Bay.

The primary soil types in the Town are clay and clay loam. The soils on the hillside and mountain areas of the VMP Area are approximately half clay mixed with substantial sand and smaller amounts of silt. Soils in the VMP Area are well-drained, exhibit rapid to very rapid runoff, and are characterized by moderate permeability (Town of Los Gatos 2019a).

The majority of the VMP Area is in the eastern, southern, and southwestern areas of the Town. These areas are characterized by moderate to steep slopes and have a high potential for both erosion and landslides (Town of Los Gatos 2019a) that are exacerbated by the loss of vegetation during wildfires. Topography also affects wildfire movement and spread. Within the Town, slopes range from 0 to 37 percent for roadways and open space and park areas (Figure 2-1). Steep terrain typically results in faster upslope wildfire spread due to pre-heating of uphill vegetation. Flat areas typically result in slower wildfire spread. Topographic features, such as canyons and saddles, can form unique conditions that concentrate wind and accelerate fire spread. In steeply sloped areas, wind is directed and funneled through canyons, ravines, and natural landforms causing wind velocities to increase. Higher wind velocities allow for a faster rate of wildfire spread. Wind velocities tend to be less severe in flatter areas due to a larger dispersal area, which prevents wind from funneling. Landforms can both enhance the rate of spread and create protective barriers depending on terrain conditions and features.

The foothills in the VMP Area are characterized by steep, winding, and narrow roads that pose potential ingress and egress complications for emergency response and evacuations. Some homes have minimal turnaround space, exacerbating the wildfire risk and posing a concern to emergency responders due to potential entrapment.

The orientation of the foothills and vegetation cover is another important factor to consider. South- and west-facing slopes receive more sun exposure causing thermal heating to increase the fuel and ground surface temperature and decrease fuel moisture. As a result, wildfire moves upslope more easily than it does downslope. In addition, the type of vegetation cover and fuel type is also affected by sun exposure. In general, south- and west-facing slopes are usually dominated by flashy fuel cover types like brush and grass, which tend to ignite fast and burn quickly compared to denser cover types that typically grow on colder, north- and east-facing slopes such as trees, which ignite faster but burn much longer. Overall, the Town contains more north- and east-facing slopes comprised of vegetation cover types including oak woodland.

Topography is another key factor considered in wildfire analysis due to its effect on wildfire movement and severity. In the Town-owned open space and undeveloped park areas, topography and soil type vary. Terrain ranges from gently sloping to moderately steep slopes with open space areas containing steeper slopes than undeveloped parks. The Santa Rosa and Heintz Open Space areas topography ranges from gently to moderately steep slopes. Novitiate, Worcester, and La Rinconada Park contain only gently sloping terrain. Areas with steeper slopes are more likely to experience erosion due to higher speed winds and runoff rates depending on the type of ground cover. Depending on the orientation and vegetation cover along the slopes, wildfires typically move uphill more easily due to ground warming. Wildfire can have drastic impacts on soil chemistry and erosion. Soils in areas with steep slopes are generally more vulnerable to these impacts. BMPs to protect soil and slope stability are provided in Section 11, Practices to Avoid or Minimize Impacts, and were considered during the treatment selection process to ensure minimal impacts.

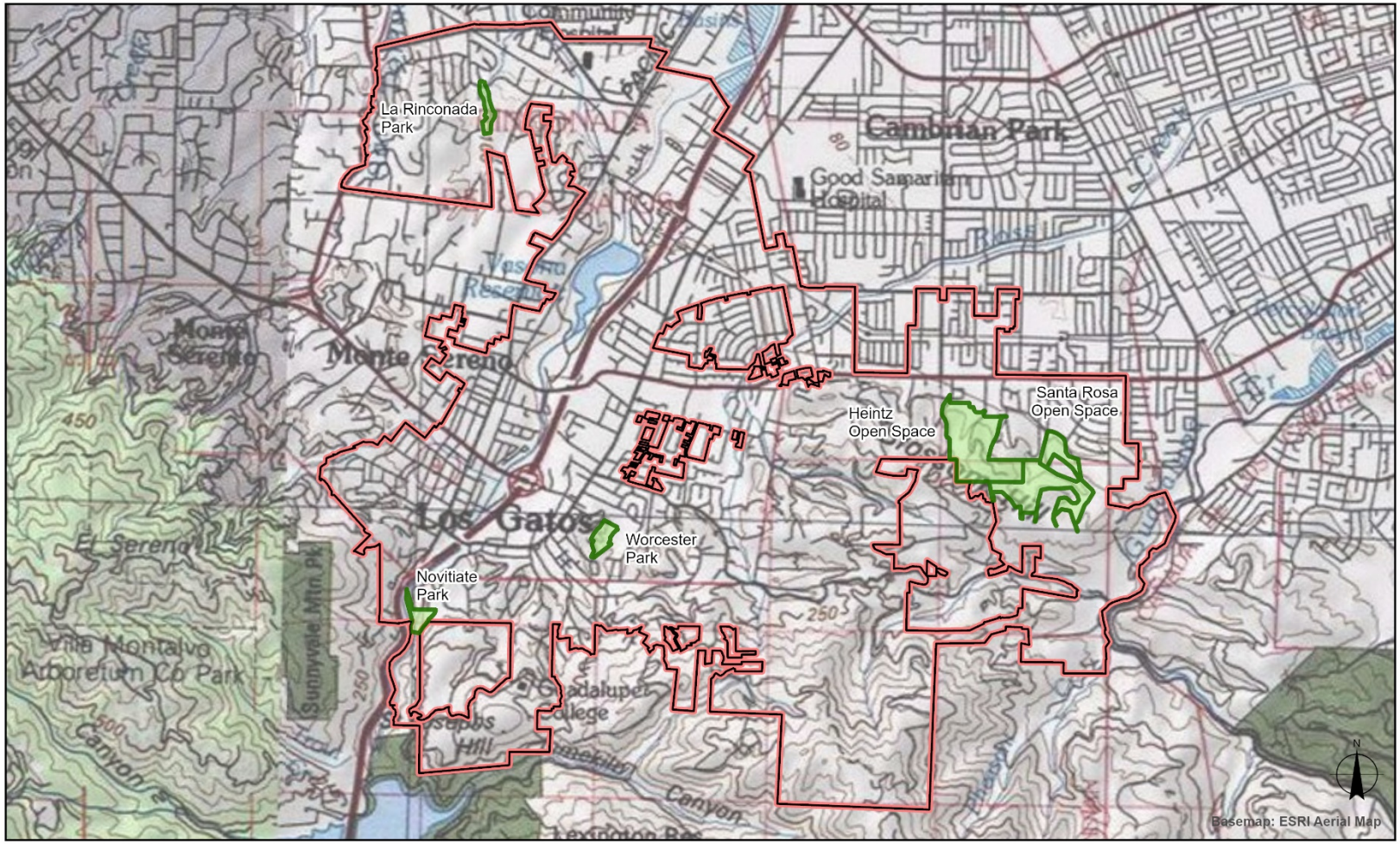


Figure 2-1. Topography in the Town and VMP areas.

2.6 Habitat Types, Vegetation, and Fuels

This section summarizes the vegetation and fuel types present in the VMP Area. Hazardous fuels that can contribute to wildfire include live and dead vegetation that can easily ignite, transmit wildfire to adjacent areas or structures, or is capable of extreme wildfire behavior.

2.6.1 *Field Assessments*

Field assessments were conducted in June and July 2020 by SWCA Environmental Consultants (SWCA) biologists Laura Moran, Erich Schickenberg, and Charlotte Moran. Field assessments were conducted on foot and in vehicles to evaluate existing fuel loads and overall vegetation communities and wildfire risk for the open space areas, undeveloped parks, and roadways of concern. Within the open space areas, biologists also monitored for invasive species, vegetation density, highly flammable species, and overlapping crown canopy. Biologists also observed defensible space and setbacks in open space areas adjacent to urban development. Areas within 100 feet of residences and infrastructure were evaluated, and areas that should be prioritized for vegetation management action were mapped and associated recommendations for fuel reduction were noted. In addition to these criteria, roadways were monitored for vegetation entangled in overhead wires. Site conditions were documented through field notes and photographs (Appendix F). The results of the field assessment were used to calibrate the fire behavior fuel model layer described in Section 3, Wildfire Hazard Assessment, below.

2.6.2 *Vegetation and Fuels within the VMP Area*

The Town includes a range of vegetation types with various fuel hazards. Figure 2-2 shows the distribution of vegetative cover and land types throughout the Town. Chaparral vegetation is often found on the south-facing slopes of the Town. Chaparral burns with long flame lengths under either moderate or extreme weather conditions and burn quickly and intensely. The surrounding vegetation is dominated primarily by oak woodland (*Quercus* spp.). A wildfire ignited in oak woodland habitat would likely burn as a surface wildfire with fairly low rates of spread, although active wildfire behavior is possible in some patches, especially under extreme weather conditions. A limited number of conifers, such as redwoods (*Sequoia sempervirens*), cone pine (*Pinus attenuate*), grey pine (*Pinus sabiniana*), and Douglas fir (*Pseudotsuga menziesii*), are located at lower elevations in the Town where precipitation is high, fog is common, and temperatures are moderate. Wildfire spread is generally limited in this fuel type; however, given the right combination of weather conditions, surface wildfire can be expected to burn uphill. Vegetation found along main roadways in the Town include planted street trees (e.g., elm [*Ulmus* spp.], ash [*Fraxinus* spp.], sweet gum [*Liquidambar* spp.], pine [*Pinus* spp.], palm [*Arecaceae*]), blue gum eucalyptus [*Eucalyptus globulus*], Monterey pine [*Pinus radiata*]), a wide variety of ornamental species, and some natives (County of Santa Clara 2019).

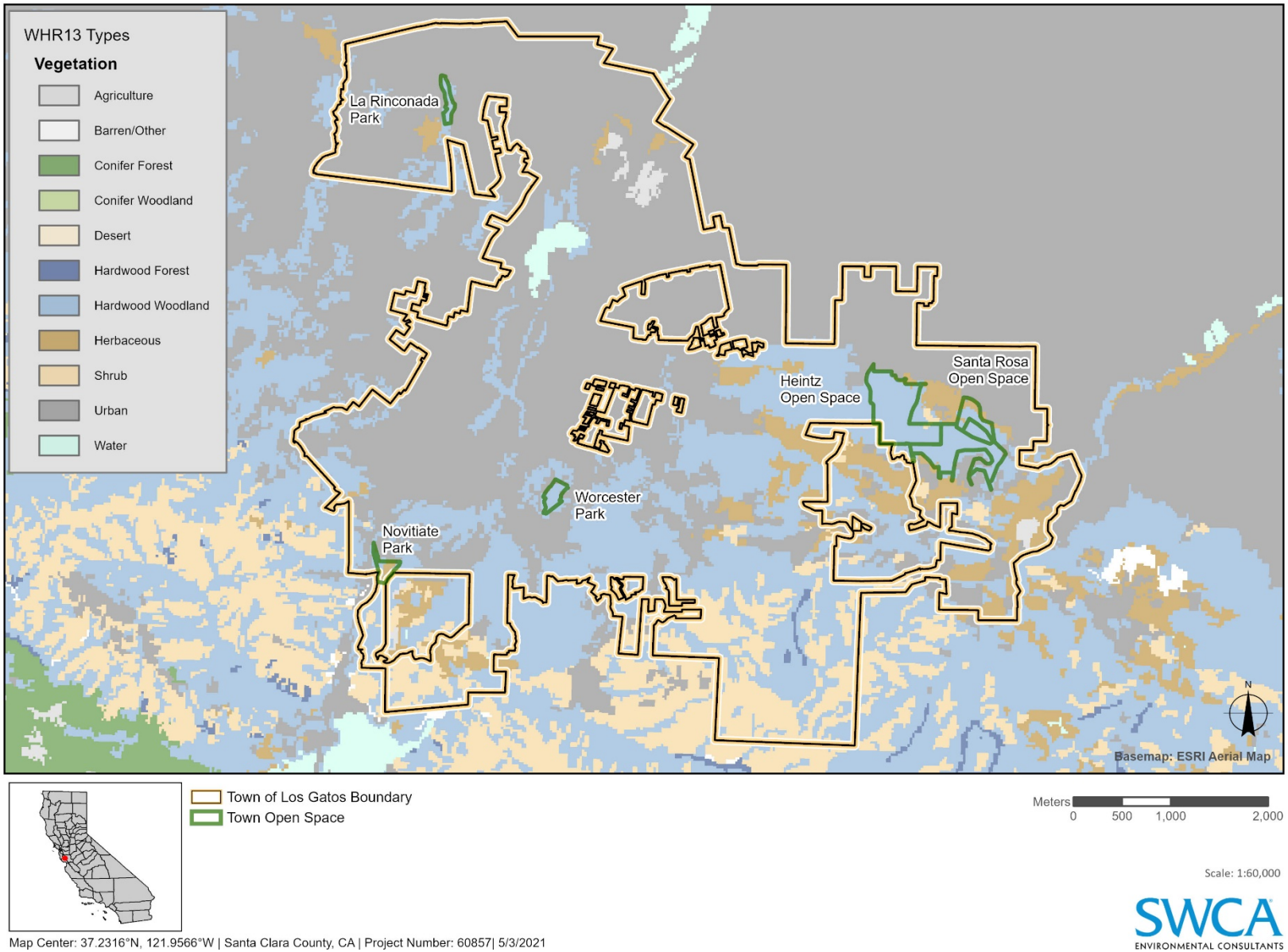


Figure 2-2. Vegetation communities in the Open Space and Undeveloped Parks VMP area.

The foothills above the Town have steep, winding, and narrow roads that pose potential ingress and egress problems for emergency response and evacuations. The surrounding vegetation is dominated by oak woodland that encroaches within a few feet of the roadside pavement. These woodland habitats have accumulated dead and downed wood, invasive species along the roadsides, brush, and other vegetation that has been exposed to drought stress and experienced ongoing mortality from sudden oak death. The potential for wildfire to spread from roadside vegetation to adjacent properties or vice versa is very high.

The VMP Area is dominated primarily by urban land, hardwood woodland, and herbaceous and shrub cover. Urban land is present throughout the VMP Area concentrated mainly around roadways and in gently sloping and flat areas. As the terrain steepens, urban development mostly consists of homes, infrastructure, and developed parks surrounding open space and undeveloped park boundaries. Oak woodland is present throughout the VMP Area but dominates in the foothills and canyons along the southern Town boundary along with other hardwood woodland species. California oak woodland is a designated sensitive vegetation community. Herbaceous and shrub species are interspersed in understories and canopy openings throughout the southern portion of the VMP Area. Vegetation communities and individual species observed in the open space and undeveloped park areas are described in Section 8, Plan Area Resources.

3 WILDFIRE HAZARD ASSESSMENT

3.1 Research, Documentation and Community Input

In 2016, the County developed a Countywide CWPP (SWCA 2016) to serve as a strategic planning document to identify wildfire hazards across the County and develop common strategies and goals for wildfire mitigation, including hazardous fuel reduction, public education, and outreach; actions to mitigate structural ignitability; and projects to enhance wildfire response and fire-fighting capacity. During that planning process, a core team of stakeholders also developed organizational annexes to provide detail and specific tasks for individual jurisdictions throughout the County.

The public were invited to provide input on the CWPP and annexes through a series of outreach events that were held during the spring of 2016 and through participating in a public review period in the summer of 2016. The outreach meetings provided participants with information on the CWPP process, the hazard analysis and risk assessment, and mitigation measures that residents can take to harden their homes, increase defensible space, and enhance preparedness in the event of an ignition and facilitating safe evacuation. During the community meetings, break-out sessions were used to gather feedback from residents. The residents in the Town were particularly concerned about right-of-way clearances along Pacific Gas and Electric Company (PG&E) utility lines; developing and maintaining evacuation routes; road maintenance to enhance emergency access, particularly on narrow roads; risk of ignitions from motor vehicles, particularly along SR-17; response times for emergency response, due to narrow road networks; and availability of water for suppression within the communities. These concerns are addressed in general recommendation matrixes in the Countywide CWPP and more specifically in the Los Gatos Annex, Tables 9.3 and 9.4 (Appendix A2).

The annexes form the legs of the strategic Countywide document and provide projects that could be implemented at the community level, but that are tiered to the Countywide strategic goals. The Town Annex (Annex 9) was finalized in 2016 and later revised in 2019.

The 2016 CWPP and the associated annexes encompass a suite of wildfire mitigation measures. The mitigation measures are based upon a robust assessment of wildfire hazard and risk, which is used to prioritize treatments in areas that are most vulnerable to wildfire impacts. Although many definitions exist

for hazard and risk, for the purpose of this document these definitions follow those used by the firefighting community:

- ***Hazard*** is a fuel complex defined by kind, arrangement, volume, condition, and location that forms a special threat of ignition and resistance to control.
- ***Risk*** is defined as the chance of a fire starting as determined by the presence and activity of causative agents (National Wildfire Coordinating Group [NWCG] 1998).

The CWPP, Annex 9, describes the Town planning area as comprising a range of vegetation communities that differ depending upon elevation, precipitation, and slope. Areas with increased fuel loading from dead and down materials may experience crowning under the right conditions. The varied vegetation composition results in the Town WUI comprising a range of wildfire hazards.

This VMP addresses wildfire hazards related to hazardous fuels along roadways (Phase 1) and Town-owned open space areas/undeveloped parks (Phase 2). The wildfire hazard assessment that was developed for the CWPP was focused on a County scale (SWCA 2016); it is at too coarse of a resolution to use for this assessment. To support the development of vegetation treatment measures, a finer scale analysis was completed that has been calibrated to conditions observed on the ground.

3.2 Fire Behavior Modeling

The wildland fire environment consists of three factors that influence the spread of wildfire: fuels, topography, and weather. Understanding how these factors interact to produce a range of fire behavior is fundamental to determining treatment strategies and priorities in the Town VMP Area. In the wildland environment, vegetation is synonymous with fuels. When sufficient fuels for continued combustion are present, the level of risk for those residing in the WUI is heightened. Fire spreads in three ways: (1) surface fire spread—the flaming front remains on the ground surface (in grasses, shrubs, small trees, etc.) and resistance to control is comparatively low; (2) crown fire—the surface fire "ladders" up into the upper levels of the forest canopy and spreads through the tops (or crowns) independent of or along with the surface fire, and when sustained is often beyond the capabilities of suppression resources; and (3) spotting—embers are lifted and carried with the wind ahead of the main wildfire and ignite in receptive fuels; if embers are plentiful and/or long range (>0.5 mile), resistance to control can be very high. Spotting is often the greatest concern to communities in the path of a wildland fire. In areas where homes are situated close to timber fuels and/or denser shrubs and trees, potential spotting from woody fuels to adjacent fuels should be acknowledged.

Treating fuels in the WUI can lessen the risk of intense or extreme fire behavior. Studies and observations of fires burning in areas where fuel treatments have occurred have shown that the fire either remains on or drops to the surface, thus avoiding destructive crown fire. Also, treating fuels decreases spotting potential and increases the ability to detect and suppress any spot fires that do occur. Fuel mitigation efforts should be focused specifically where these critical conditions could develop in or near communities at risk.

3.2.1 *Fire Behavior Model Components*

For this VMP, an assessment of fire behavior has been carried out using well-established fire behavior models: FARSITE, FlamMap, BehavePlus, and FireFamily Plus housed within the Interagency Fuel Treatment Decision Support System (IFTDSS), as well as ArcGIS Desktop Spatial Analyst tools. Data used is largely obtained from LANDFIRE.

3.2.1.1 LANDFIRE

LANDFIRE is a national remote sensing project that provides land managers a data source for all inputs needed for FARSITE, FlamMap, and other fire behavior models. The database is managed by the U.S. Department of the Interior (USDOI) and USDA and is widely used throughout the United States for land management planning. More information can be obtained from http://www.landfire.gov.

3.2.1.2 FARSITE

FARSITE is a computer model based on Rothermel's spread equations (Rothermel 1983); the model also incorporates crown fire models. FARSITE uses spatial data on fuels, canopy cover, crown bulk density, canopy base height, canopy height, aspect, slope, elevation, wind, and weather to model fire behavior across a landscape. In essence, FARSITE is a spatial and temporal fire behavior model. FARSITE is used to generate fuel moisture and landscape files as inputs for FlamMap. Information on fire behavior models can be obtained from http://www.fire.org.

3.2.1.3 FLAMMAP

Like FARSITE, FlamMap uses a spatial component for its inputs but only provides fire behavior predictions for a single set of weather inputs. In essence, FlamMap gives fire behavior predictions across a landscape for a snapshot of time; however, FlamMap does not predict fire spread across the landscape. FlamMap has been used for this VMP to predict fire behavior across the landscape under extreme (97 percentile) weather scenarios.

3.2.1.4 BEHAVEPLUS

Also using Rothermel's (1983) equations, BehavePlus is a multifaceted fire behavior model and has been used to determine fuel moisture in this process.

3.3 Fire Behavior Model Inputs

3.3.1 *Fuels*

The fuels in the VMP Area are classified using Scott and Burgan's (2005) Standard Fire Behavior Fuel Model classification system. This classification system is based on the Rothermel surface fire spread equations (Rothermel 1983), and each vegetation and litter type are broken down into 40 fuel models (Figure 3-1).

The general classification of fuels is by fire-carrying fuel type (Scott and Burgan 2005):

- (NB) Non-burnable
- (TU) Timber-Understory
- (GR) Grass
- (TL) Timber Litter
- (GS) Grass-Shrub
- (SB) Slash-Blowdown
- (SH) Shrub

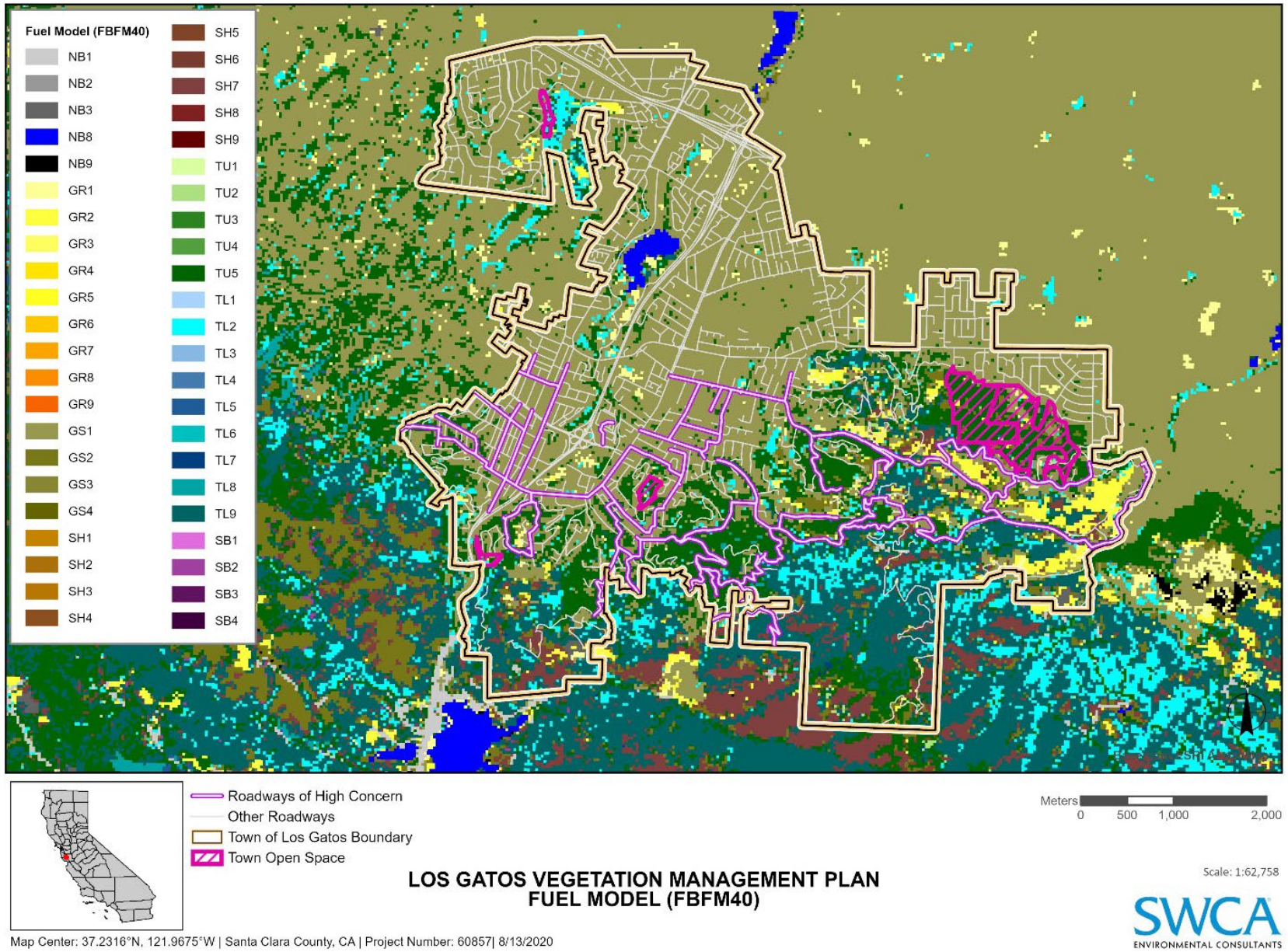


Figure 3-1. Fuel model.

3.3.1.1 MODEL CALIBRATION

During development of the wildfire hazard analysis and from review of the field assessment data, it became clear that the existing LANDFIRE fuel models—classified using the Scott and Burgan (2005)—did not accurately represent the fuel conditions on the ground. Using photographs captured during the site visit, the following fuel model calibrations were made:

- All incidence of TL4 (small, downed logs) were changed to TL9 (Very High Load Broadleaf Litter).
- All incidence of SH2 (Moderate Load Dry Climate Shrub) were changed to SH7 (Very High Load, Dry Climate Shrub).
- All incidence of TL6 (Moderate Load Broadleaf Litter) were changed to TU5 (Very High Load, Dry Climate Timber-Shrub).
- All incidence of TL3 (Moderate Load Conifer Litter) were changed to TU5 (Very High Load, Dry Climate Timber-Shrub).
- Along prioritized roadways (priority levels 1–3) with sections that contain continuous canopy timber fuels, were changed from NB1 (non-burnable) to TU5 (Very High Load, Dry Climate Timber-Shrub). Roads were buffered by 3 pixels (90 feet).
- Along prioritized roadways (priority levels 1–3) with sections that do not have overhanging canopy, all areas classified as NB1 (non-burnable) were changed to GS1 (Low Load, Dry Climate Grass-Shrub). Roads were buffered by 3 pixels (90 feet).
- All residential areas classified as NB1 (non-burnable) were changed to GS1 (Low Load, Dry Climate Grass-Shrub).

Table 3-1 provides a description of the dominant fuel types that intersect with the VMP Area.

Table 3-1. Fuel Model Classification for the Planning Area

Nearly pure grass and/or forb type (Grass)
GR1 (1.5% of planning area): Grass is short, patchy, and possibly heavily grazed. Spread rate is moderate (5–20 chains/hour); flame length low (1–4 feet). Typical of manicured grassland vegetation.
GR2 (2.5% of planning area): Moderately coarse continuous grass, average depth about 1 foot. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet). Typical of native grasslands.
Mixture of grass and shrub, up to about 50% shrub cover (Grass-Shrub)
GS1 (55% of planning area): Shrubs are about 1 foot high, low grass load. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet). Typical of urban yards with combustible structures.
GS2 (2.3% of planning area): Shrubs are 1–3 feet high, moderate grass load. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet). Typical of California sage scrub and coyote brush (*Baccharis pilularis*).
Shrubs cover at least 50% of the site; grass sparse to non-existent (Shrub)
SH7 (2.8% of planning area): Very heavy shrub load, possibly with pine overstory. Fuel bed depth 4–6 feet. Spread rate high (20–50 chains/hour); flame length very high (12–25 feet). Typical of dense chapparal fuels.
TU5 (20.6% of planning area): Very high load, dry climate shrub, heavy forest litter with shrub or small tree understory, moderate spread rate (5–20 chains/hour) and moderate flame length (4–8 feet). Typical of chapparal fuels and some planted street trees including eucalyptus.
TL2 (3.9% of planning area): Low load, compact. Spread rate very low (0–2 chains/hour); flame length very low (0–1 foot). Typical of oak woodland fire regimes.
TL9 (9.8% of planning area): Very high load broadleaf litter; heavy needle drape. Spread rate moderate (5–20 chains/hour), flame length moderate (4–8 feet). Typical of conifer forests comprised of redwoods, pine, and fir species

Notes: Based on Scott and Burgan's (2005) 40 Fuel Model System.

3.3.2 *Topography*

Topography is important in determining fire behavior. Steepness of slope, aspect (direction the slope faces), elevation, and landscape features can all affect fuels, local weather (by channeling winds and affecting local temperatures), and rate of wildfire spread. There are some very steep slopes in the planning area that contribute to modeled fire behavior.

3.3.3 *Weather*

Of the three fire behavior components, weather is the most likely to fluctuate. Accurately predicting fire weather remains a challenge for forecasters, particularly during drought conditions. As summer winds and rising temperatures dry fuels, conditions can deteriorate rapidly, creating an environment that is susceptible to wildland fire. Fine fuels (grass and leaf litter) can cure rapidly, making them highly flammable in as little as 1 hour following light precipitation. Low live fuel moistures of shrubs and trees can significantly contribute to fire behavior in the form of crowning and torching.

One of the critical inputs for FlamMap is fuel moisture files. For this purpose, weather data have been obtained from FAMWEB (NWCG 2012), a fire weather database maintained by the National Wildfire Coordinating Group. The Los Altos Remote Automated Weather Station (RAW) was selected as best representing the VMP Area. Weather observations at the Los Altos RAW span the period from March 6, 2005, through October 4, 2016.

Using an additional fire program (FireFamily Plus) with the RAW data, weather files that included prevailing wind direction and 20-foot wind speed were created. Fuel moisture files were then developed for downed (1-, 10-, and 100-hour) and live herbaceous and live woody fuels. These files represent weather inputs in FlamMap; 95 to 100 percentile weather is used to predict the most extreme scenarios for fire behavior.

3.4 Fire Behavior Model Outputs

The following is a discussion of the fire behavior outputs from FlamMap.

3.4.1 *Flame Length*

Figure 3-2 illustrates the flame length classifications for the VMP Area. Flame lengths are determined by fuels, weather, and topography. Flame length is a particularly important component of the wildfire hazard analysis because it relates to potential crown fire and suppression tactics. Direct attack by hand lines is usually limited to flame lengths less than 4 feet. In excess of 4 feet, indirect suppression is the dominant tactic. Suppression using engines and heavy equipment will move from direct to indirect with flame lengths in excess of 8 feet.

Flame lengths within the urban sections of the VMP Area are typically predicted to be in the 0–1-foot category. Within the open space areas/undeveloped parks and hillside roadways, flame lengths are modelled to reach 1–4 feet and 4–8 feet. Some small areas are modelled to experience flame lengths in excess of 25 feet; these fuels occur in small pockets, and are typically shrub fuels like chapparal (SH7) that experience high spread rates and very high flame lengths.

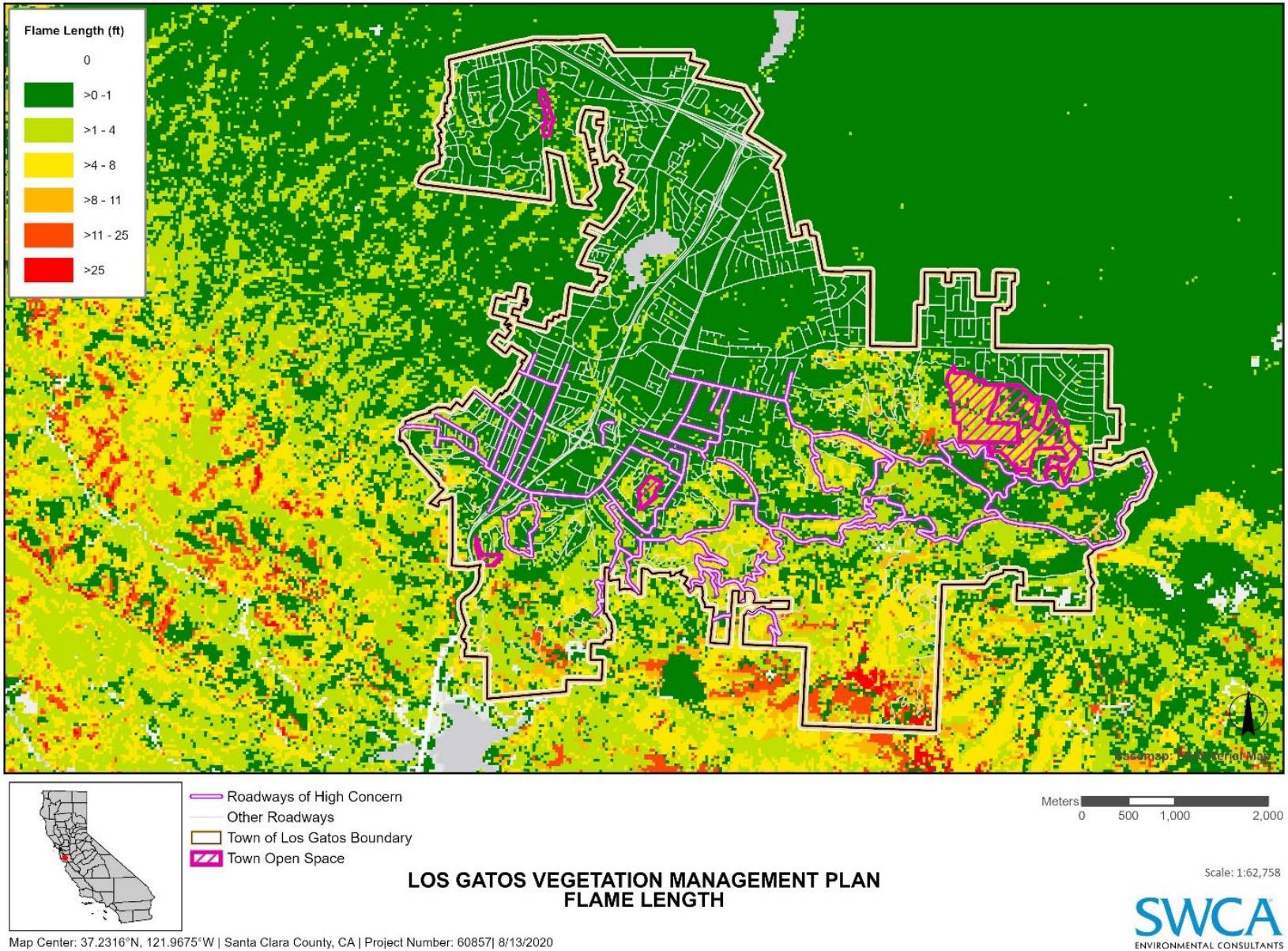


Figure 3-2. Flame length.

3.4.2 *Fireline Intensity*

Figure 3-3 illustrates the predicted fireline intensity throughout the VMP Area. Fireline intensity describes the rate of energy released by the flaming front and is measured in British thermal units per foot per second (BTU/ft/sec). This is a good measure of intensity and is used for planning suppression activities. The expected fireline intensity throughout the VMP Area is similar in pattern to predicted flame length, as fireline intensity is a function of flame length. The pattern for fireline intensity is similar to flame length in that intensities are primarily low (less than 100 BTU/ft/sec) throughout the more urban sections of the VMP Area, but moderate (100–500 BTU/ft/sec) with very small areas of extreme intensity (greater than 1,000 BTU/ft/sec) along some Roadways of High Concern, which tend to be associated with areas dominated by heavy shrub fuel loads.

3.4.3 *Rate of Spread*

Figure 3-4 illustrates the rate of spread classifications for the VMP Area. Most areas within the VMP Area would exhibit low and moderate rates of spread. Low rates of spread are associated with the many of the sparse woodland fuels, while the shrub dominated areas exhibit moderate to high spread rates. Higher rates of spread are associated with shrub and timber understory fuels found in the southern portion of the Town away from focus areas in this VMP.

3.4.4 *Crown Fire Potential*

Figure 3-5 illustrates the lack of passive or active crown fire in the VMP Area, with most fuels predicted to burn through surface fire only. Under extreme weather conditions, however, there is potential for crown fire initiation.

3.4.5 *Historic Fire Occurrence*

The fire occurrence maps are used to provide information on areas where human-ignited fires are prevalent and hence could be more prone to fire in the future. Regional and local fire history is described in Section 2.1, Regional and VMP Area Fire History, and illustrated in Figure 3-6. While the area has a history of regular wildfire occurrence, the frequency and magnitude of recent wildfires has far outpaced historic fire occurrence over the previous few decades, and with projected climate change, the VMP Area is expected to continue to experience longer fire seasons, with higher intensity wildfire and potential for large fire growth. Intense fire behavior, including extreme rates of spread, flame lengths, crown fire activity and significant spotting, has been observed on some recent wildfires in adjacent areas, including the 2020 SCU and CZU August Lightning Complex Fires (CAL FIRE 2020f, 2020g), demonstrating the potential severe wildfire impacts that could be felt throughout the VMP Area.

3.5 Wildfire Hazard Assessment Summary

The wildfire behavior analysis described above was used to identify priority areas for hazardous fuels treatment along roadways of high concern and Town open space/undeveloped park areas and contributed to the development of the Vegetation Management Action Levels (VMAL) that guide the Roadway VMP. While all fire behavior outputs were considered in the analysis, the prioritization process focused most heavily on areas that are expected to exhibit high flame lengths, as flame length is a wildfire behavior parameter that influences decisions regarding appropriate wildfire suppression strategies. Reducing the potential for extreme wildfire behavior through vegetation management actions to reduce hazardous fuels, reduces the potential for large wildfire spread into WUI areas, as well as mitigates the danger to wildfire responders and residents utilizing roadways during response and evacuation. The VMP prioritization process is described in more detail in Section 12.6, Project Prioritization.

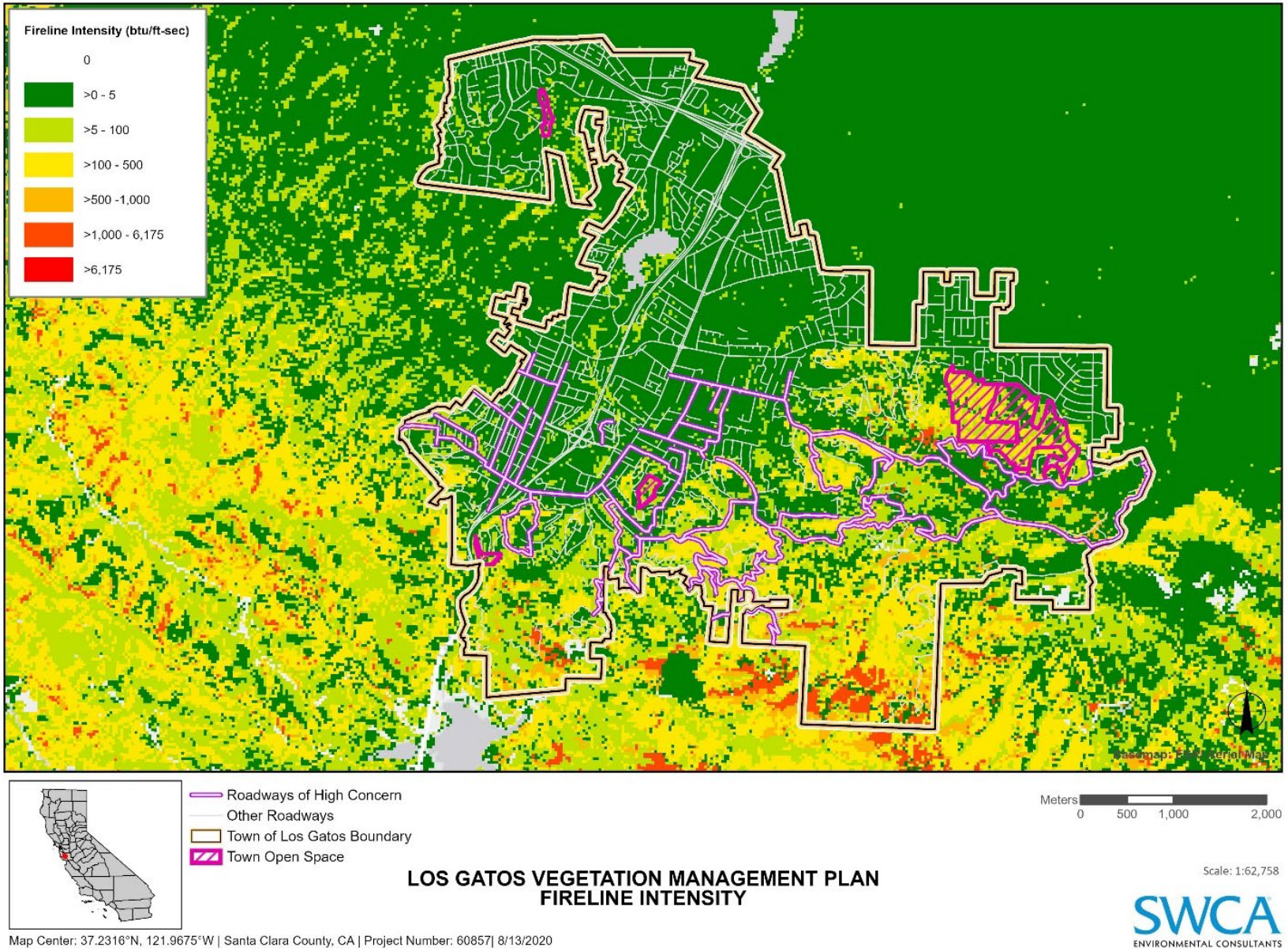


Figure 3-3. Fireline intensity.

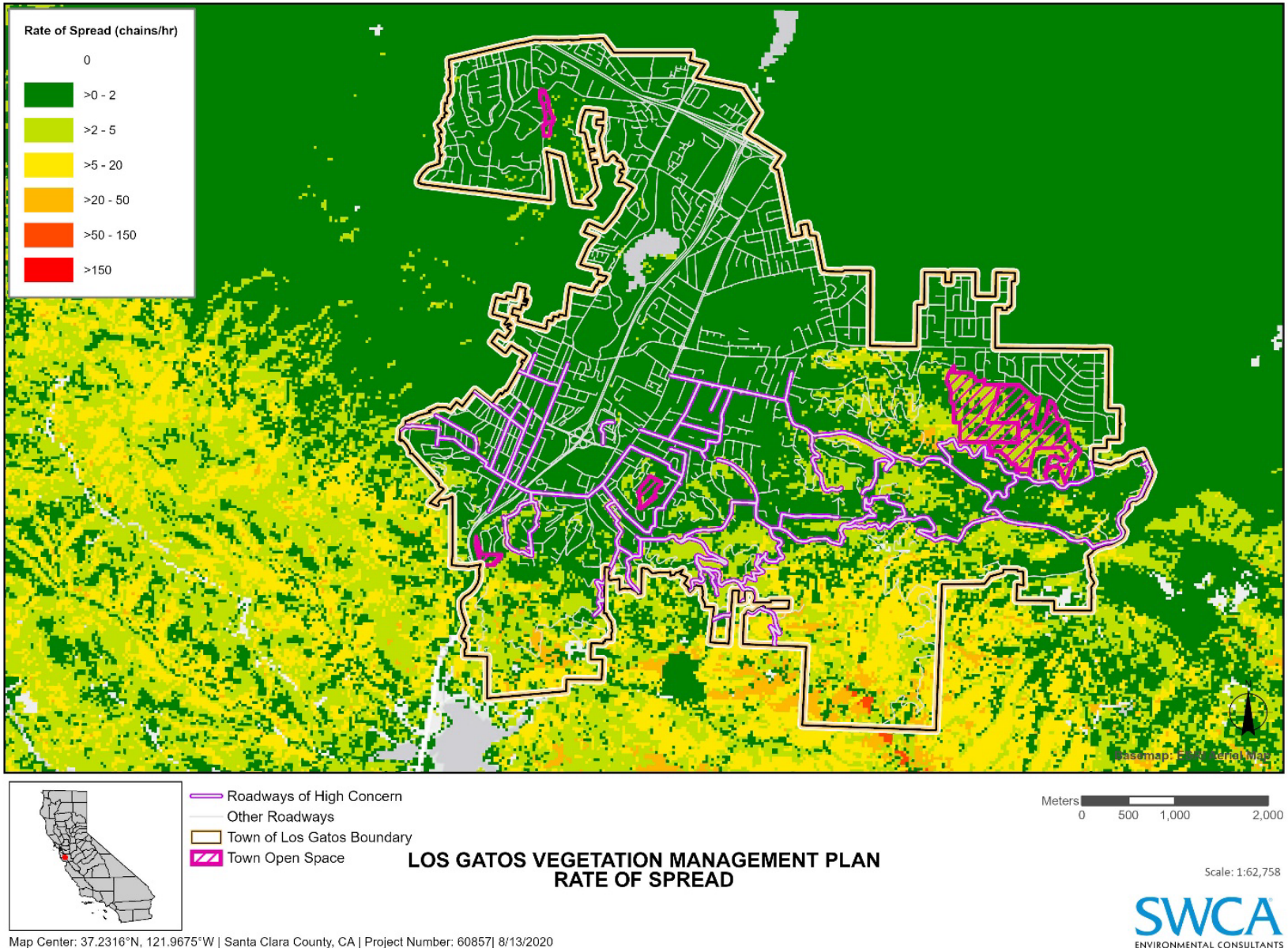


Figure 3-4. Rate of spread.

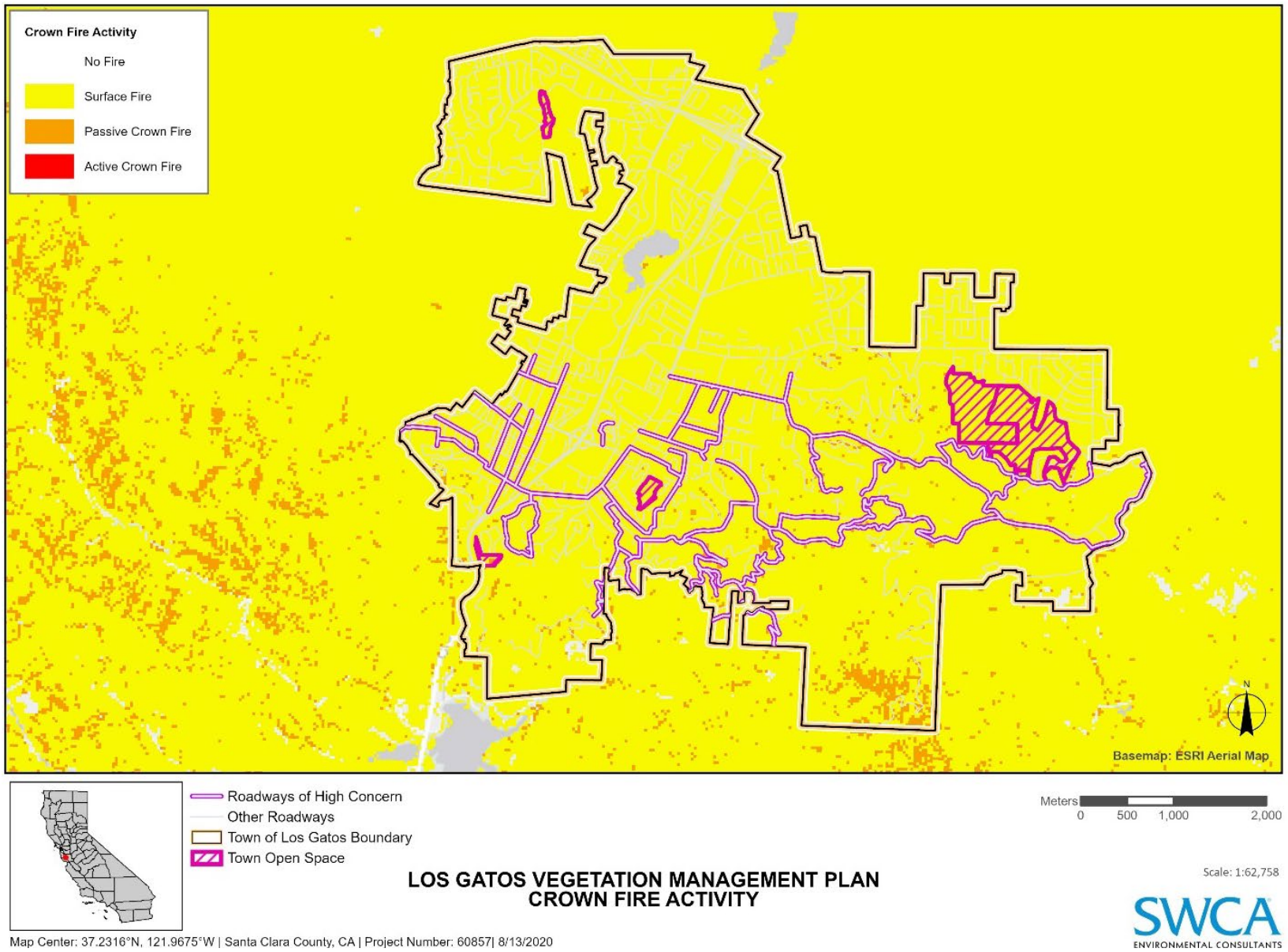


Figure 3-5. Crown fire activity.

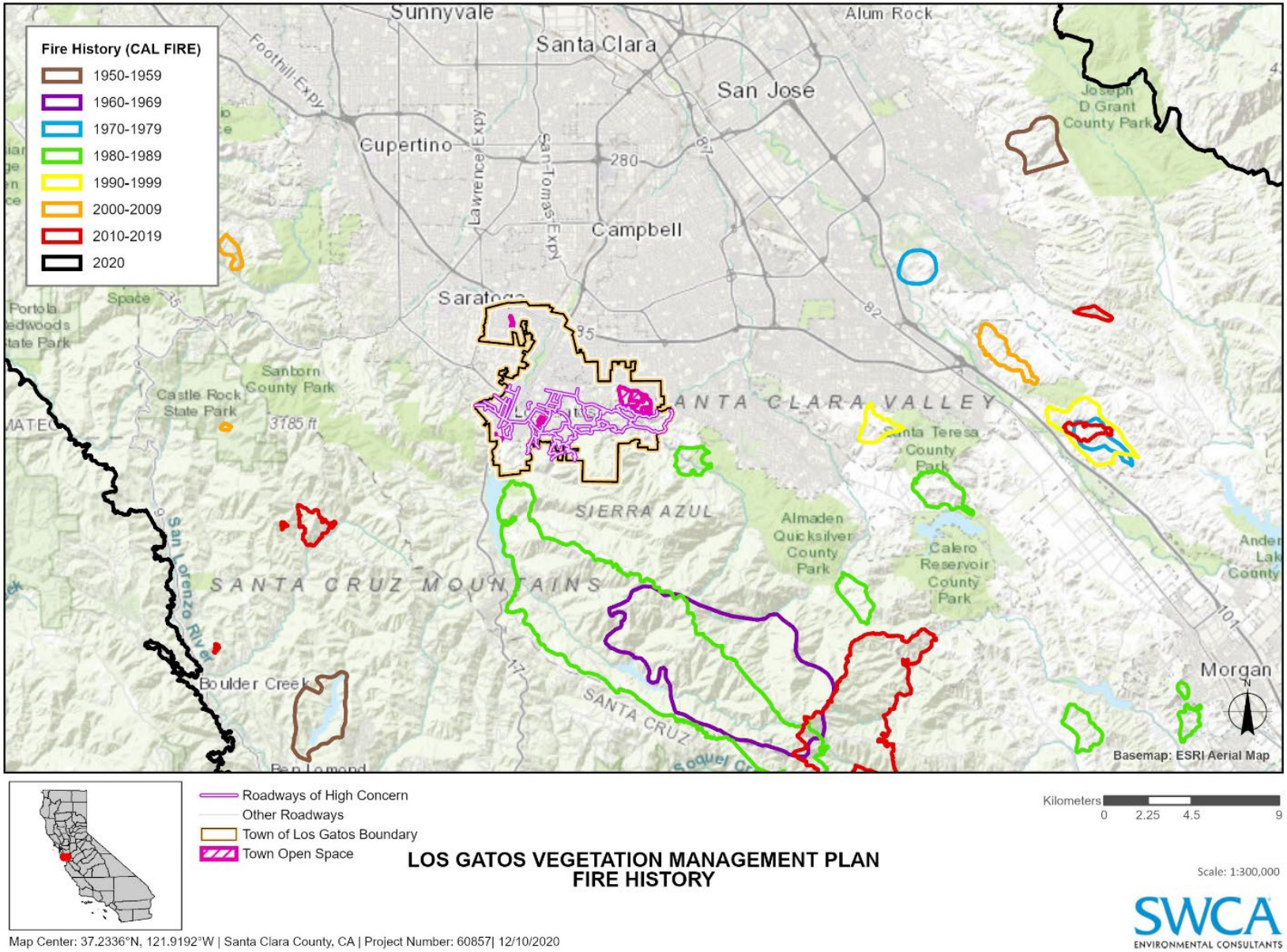


Figure 3-6. Fire history.

4 RULES, REGULATIONS, AND FIRE SAFETY STANDARDS

PRC 4125–4137 directs CAL FIRE to identify and classify all lands within SRAs based on cover, fire risks and hazards, and other criteria. It also allows Counties to assume responsibility for all lands in the County, including SRAs. State law designates all lands within the Town as an LRA for the purposes of wildland fire protection (CAL FIRE 2008). Applicable rules, regulations, and fire safety standards applicable to this VMP follow.

4.1 Federal and International

4.1.1 *Fire Safety Regulations*

4.1.1.1 2018 INTERNATIONAL FIRE CODE

The latest edition of the International Fire Code (IFC) from the International Code Council (ICC) is ICC IFC-2018. It is a model code that presents minimum safety guidelines for new and existing buildings, facilities, storage, and processes. The 2018 IFC addresses fire prevention, fire protection, and life safety, and includes minimum requirements for emergency access routes and defensible space around buildings.

4.1.2 *Healthy Forests Restoration Act*

In 2003 the U.S. Congress recognized widespread declining forest health and increased wildfire risk nationwide by passing the Healthy Forests Restoration Act (HFRA), and President Bush signed the act into law (Public Law 108–148, 2003). The HFRA was revised in 2009 to address changes to funding and provide a renewed focus on wildfire mitigation (H.R. 4233 - Healthy Forests Restoration Amendments Act of 2009). The HFRA expedites the development and implementation of hazardous fuels reduction projects on federal land and emphasizes the need for federal agencies to work collaboratively with communities. A key component of the HFRA is the development of CWPPs, which facilitates the collaboration between federal agencies and communities in order to develop hazardous fuels reduction projects and place priority on treatment areas identified by communities in a CWPP.

CWPPs are composed of three minimum requirements, which are intended to foster communication among the public, government entities, and private organizations as they work towards a common vision of wildfire risk mitigation. These requirements are:

1. Collaboration: Local and State government representatives, in consultation with federal agencies or other interested groups, must collaboratively develop a CWPP.
2. Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuels reduction and treatments; furthermore, the plan must recommend the types and methods of treatment that will protect at-risk communities and their essential infrastructures.
3. Treatments of Structural Ignitability: A CWPP must recommend measures that communities and homeowners can take to reduce the ignitability of structures throughout the area addressed by the plan.

4.1.3 *Disaster Mitigation Act of 2000*

The Disaster Mitigation Act of 2000 requires all States to develop disaster mitigation plans. In response to this law, California developed the 2018 California State Hazard Mitigation Plan (SHMP) (California

Office of Emergency Services [OES] 2018). States that develop an approved Enhanced State Plan, which includes California, can increase the amount of funding available through the Hazard Mitigation Grant Program. The Disaster Mitigation Act has also established new requirements for local hazard mitigation plans.

4.1.4 *Natural Resources Regulations*

4.1.4.1 FEDERAL ENDANGERED SPECIES ACT

The federal Endangered Species Act (FESA) of 1973 (United States Code [USC] Title 16, Sections 1531–1544), as amended, protects plants, fish, and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries). Section 9 of the FESA prohibits the "take" of listed fish and wildlife, where "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (Code of Federal Regulations [CFR] Title 50, Section 17.3). For plants, this statute prohibits removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in knowing violation of State law (16 USC 1538).

The FESA allows for issuance of incidental take permits to private parties either in conjunction with a Habitat Conservation Plan (HCP) or as part of a Section 7 consultation (which is discussed in the following paragraph). Under Section 10 of the FESA, a private party may obtain incidental take coverage by preparing an HCP to cover target species within a project area, identifying impacts to the covered species, and presenting the measures that will be undertaken to avoid, minimize, and mitigate such impacts.

Under Section 7 of the FESA, federal agencies are required to consult with the USFWS and/or NOAA Fisheries, as applicable, if their actions—including permit approvals or funding—may affect a federally listed species (including plants) or designated critical habitat. If a project is likely to adversely affect a species, the federal agency will initiate formal consultation with the USFWS and/or NOAA Fisheries and issue a biological opinion as to whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or adversely modify critical habitat (adverse modification). As part of the biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided that the action will not jeopardize the continued existence of the species or adversely modify designated critical habitat.

4.1.5 *Migratory Bird Treaty Act*

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, kill . . . possess, offer for sale, sell . . . purchase . . . ship, export, import . . . transport or cause to be transported . . . any migratory bird, any part, nest, or eggs of any such bird" except as otherwise permitted under the regulations (16 USC 703). The word "take" is defined by regulation as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50 CFR 10.12). The definition of "take" does not include the broader terms of "harass" or "harm" that have been found to prohibit incidental takes under the ESA. A December 22, 2017, memorandum from the USDOI Office of the Solicitor (USDOI 2017) clarified that the prohibitions of take under the MBTA apply only to "affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs." An April 11, 2018 memorandum from the USFWS provided guidance to "clarify what constitutes prohibited take" (USFWS 2018). The USFWS memo stated that the "take of birds, eggs or nests" was prohibited only when the purpose of the activity was to conduct take but was not prohibited when the purpose of the activity was not to conduct take. On

January 7, 2020, the USFWS published the final rule formalizing this interpretation of the MBTA. As a result, the MBTA is currently limited to purposeful actions, such as directly and knowingly removing a nest to construct a project, hunting, and poaching and not to actions resulting in incidental take. Currently, the Biden administration is taking several steps to undo the rule; this rule should be monitored closely as it may change again soon.

4.1.6 *Clean Water Act*

The purpose of the Clean Water Act (CWA) (33 USC 1251 et seq.) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Waters of the United States include rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). USACE issues permits for work in wetlands and other waters of the United States based on guidelines established under Section 404 of the CWA. Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States, including wetlands, without a permit from USACE. USEPA also has authority over wetlands and may, under Section 404(c), veto a USACE permit. Section 401 of the CWA requires all Section 404 permit actions to obtain a State Water Quality Certification or waiver from the Regional Water Quality Control Board.

4.2 State of California

4.2.1 *Fire Safety Regulations*

4.2.1.1 2019 CALIFORNIA FIRE AND BUILDING CODE

California law established a classification of FHSZs for wildland areas in the 1980s. Under PRC 4201–4204 and Government Code 51175–51189, CAL FIRE is mandated to identify FHSZs statewide. These are areas of significant fire hazard based on fuels, terrain, weather, and other relevant factors. In SRAs, CAL FIRE has mapped three hazard ranges—moderate, high, and very high. In LRAs, the law only requires identification of VHFHSZ. The FHSZ maps were last updated by CAL FIRE in 2007. The maps are the basis of legal requirements affecting property owners in SRAs, VHFHSZs in LRAs, and other fire-prone areas zoned by local government. The updated FHSZs influence choice of construction materials and techniques for new buildings in the WUI (CALI 1995).

4.2.1.2 2019 DEFENSIBLE SPACE LAWS (PRC 4291–4299; AMENDED 2018)

Defensible space requirements around structures in fire-prone areas are defined in PRC 4291–4299. Minimum requirements include maintenance of defensible space in a 100-foot buffer around a structure, but not beyond the property line, and states that "fuels shall be maintained in a condition so that wildfire burning under average weather conditions would be unlikely to ignite the structure." It also states that the "intensity of fuels management my vary within the 100-foot perimeter, the most intense being within the first 30 feet around the structure." It also recognizes that more rigorous requirements may be enacted by local jurisdictions (CALI 2020).

4.2.1.3 FIRE PROTECTION AND DEFENSIBLE SPACE (PRC 4125–4137)

PRC 4125–4137 directs CAL FIRE to identify and classify all lands within SRAs based on cover, fire risks and hazards, and other criteria. In addition, it directs CAL FIRE to identify VHFHSZ within the LRA and allows Counties to assume responsibility for all lands in the County, including SRAs.

State law designates all lands within the Town as an LRA for the purposes of wildland fire protection (CAL FIRE 2008). Areas within the Town are required to maintain defensible space as outlined in Government Code 51175–51189 as incorporated into Los Gatos Municipal Code, Chapter 9, Fire Prevention and Protection (see below) (Town of Los Gatos 1996). As a result, all fire apparatus access roads are required to have an unobstructed width of no less than 20 feet, exclusive of shoulders, or as required by fire department access road standards, and an unobstructed vertical clearance of 13 feet, 6 inches. In addition, all areas within 10 feet of fire apparatus roads and driveways are required to be cleared of non-fire-resistant vegetation growth (CALI 2019).

4.2.1.4 2018 CALIFORNIA STATE HAZARD MITIGATION PLAN

The SHMP represents the State's primary hazard mitigation guidance document. Chapter 8, Fire Hazards: Risks and Mitigations, identifies wildfire hazards, discusses the difference between wildfires and WUI fires, discusses current wildfire hazard mitigation efforts and legislation, and identifies additional wildfire hazard mitigation opportunities. Chapter 8 of the SHMP discusses Community Assistance Grant programs administered by CAL FIRE, as well as several other assistance programs for fire-prone communities including Firewise, FEMA-funded fire hazard mitigation grants and projects, and other wildfire hazard mitigation opportunities. Chapter 10 of the SHMP includes information on Fire Management Assistance grants and other State and federal funding opportunities for fire management programs such as this VMP (Cal OES 2018).

4.2.1.5 EXECUTIVE ORDERS

Former Governor Jerry Brown proclaimed a State of Emergency related to the occurrence of extensive tree mortality throughout California on October 30, 2015. Under this proclamation, Governor Brown directed CAL FIRE to complete specific tasks and acknowledged the partnerships that other agencies must have with CAL FIRE to achieve certain goals related to removing dead and dying trees. As part of this emergency proclamation, State agencies, utilities, and local government were ordered, to the extent required by their existing responsibilities to protect the public health and safety, to undertake efforts to remove dead or dying trees in high-hazard zones[6] that threaten powerlines, roads, and other evacuation corridors; community infrastructure; and other existing structures. In addition, incidental vegetation (e.g., shrubs that restrict access for safe and efficient removal of dead and dying trees) were also identified for removal, as necessary.

Govern Newsom also proclaimed a State of Emergency on March 22, 2019, to protect California's most vulnerable communities from wildfire. Time-saving waivers of administrative and regulatory requirements to protect public safety and allow for action to be taken to begin to strategically address community vulnerability and wildfire fuel buildup was provided. The following Executive Orders (EOs) were also issued as part of these emergency proclamations.

4.2.1.5.1 EO B-42-17

On September 1, 2017, Governor Brown issued an EO to bolster California's response to unprecedented tree die-off by expediting the removal of millions of dead and dying trees across the State. This EO allowed licensed timber operators with a C-61/D-49 classification to perform tree removal that previously required a tree service contractor's license (Executive Department State of California 2017).

[6] High-hazard zones are the areas identified by CAL FIRE, the CNRA, Caltrans, and the CEC as areas of the State that represent high-hazard zones for wildfire and falling trees.

4.2.1.5.2 EO B-52-18

On May 10, 2018, Governor Brown issued an EO as a response to the changing environmental conditions and the increased wildfire risk to California citizens. The EO mandates a substantial increase in the pace and scale of vegetation treatments in California to reduce wildfire risk. As part of this EO, the Governor called for reduced regulatory barriers for forest health and fuel reduction projects, including working with the California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), and California Coastal Commission to facilitate permitting and reduced liability and financial/permitting assistance for landowners. This EO also called for increased education to private landowners and other interested parties on forest restoration, fuels reduction project development, and permitting (Executive Department State of California 2018).

4.2.1.5.3 EO N-05-19

On January 9, 2019, Governor Newsom issued an EO directing CAL FIRE to recommend immediate-, medium-, and long-term actions to help prevent destructive wildfires. An emphasis was made on taking immediate actions to protect vulnerable populations. Recognizing a backlog in fuels management, the EO called for a strategic approach to focus actions on California's most vulnerable communities (Executive Department State of California 2019).

4.2.1.6 2019 BILLS RELATED TO VEGETATION MANAGEMENT AND WILDFIRE IN CALIFORNIA

Assembly Bill (AB) 38 requires new homes to be built to fire resistance standards and older homes to be retrofitted. It also requires the OES and CAL FIRE to develop and administer a comprehensive wildfire mitigation program to encourage cost-effective structure hardening and retrofitting to create fire-resistant homes, businesses, and public buildings. The law requires the State Fire Marshal to identify building retrofits and structure hardening measures, and CAL FIRE to identify defensible space, vegetation management, and fuel modification activities, that are eligible for financial assistance under the program. AB38 was approved and passed by Governor Newsom on October 2, 2019 (CALI 2019a).

Senate Bill (SB) 190 includes a specific requirement to develop best models for defensible space and additional standards for home hardening and construction materials to increase the resilience of communities. This bill would require the Office of the State Fire Marshal to develop, in consultation with representatives from federal, State, and local fire services; local government; building officials; utility companies; the building industry; insurers and insurance research organizations; and the environmental community, a model defensible space program to be made available for use by a city, County, or city and County in the enforcement of the defensible space provisions. The bill would set forth required components of the program and would require the model defensible space program to be updated when the guidance documents specified above are substantially updated, as provided. SB190 was approved and passed by Governor Newsom on October 2, 2019 (CALI 2019b).

4.2.2 *Natural Resources Regulations*

4.2.2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA (PRC 21000 et seq.) was established by the State legislature to inform both State and local governmental decision makers and the public about significant environmental effects of proposed activities (including impacts on biological resources), to identify ways to avoid or reduce significant adverse effects on the environment, and to disclose the reasons why a project is approved if significant environmental impacts would result.

4.2.2.2 CALIFORNIA ENDANGERED SPECIES ACT

Sections 2050–2098 of the California Fish and Game Code (the California Endangered Species Act [CESA]) prohibit the take of State-listed endangered and threatened species unless specifically authorized by the CDFW. The State definition of "take" is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so. The CDFW administers the CESA and authorizes take through permits or memorandums of understanding issued under Section 2081 of the CESA, or through a consistency determination issued under Section 2080.1. Section 2090 of the CESA requires State agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

4.2.2.3 FULLY PROTECTED SPECIES UNDER CALIFORNIA FISH AND GAME CODE

The California Fish and Game Code designates certain fish and wildlife species as "fully protected" under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). Fully protected species may not be taken or possessed at any time, and no permits may be issued to project proponents for incidental take of these species.

4.2.2.4 CALIFORNIA SPECIES OF SPECIAL CONCERN

Species of Special Concern (SSC) is a category conferred by the CDFW to fish and wildlife species that meet the State definition of threatened or endangered, but have not been formally listed (e.g., federally or State-listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. SSC is an administrative classification only, but these species should be considered "special-status" for the purposes of the VMP.

4.2.2.5 CALIFORNIA NATIVE PLANT PROTECTION ACT

The California Native Plant Protection Act (NPPA; California Fish and Game Code Sections 1900–1913) and the Natural Communities Conservation Planning Act provide guidance on the preservation of plant resources. Vascular plants that have no designated status or protection under federal or State endangered species legislation but are listed as rare or endangered by the California Native Plant Society (CNPS) are defined as follows:

1. Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
2. Rank 1B: Plants rare, threatened, or endangered in California and elsewhere.
3. Rank 2A: Plants presumed extirpated in California, but common elsewhere.
4. Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
5. Rank 3: Plants about which more information is needed – a review list.
6. Rank 4: Plants of limited distribution – a watch list.

Generally, plants with California Rare Plant Ranks (CRPR) 1A, 1B, 2A, 2B, or 3 are considered to meet the criteria for endangered, threatened, or rare species as outlined by Section 15380 of the State CEQA Guidelines. Additionally, plants with CRPR 1A, 1B, 2A, 2B, or 3 also meet the definition of Section 1901, Chapter 10 (NPPA), and Sections 2062 and 2067 (CESA) of the California Fish and Game Code.

4.2.2.6 PORTER-COLOGNE WATER QUALITY ACT

The State Water Resources Control Board (State Board) and the nine RWQCBs have jurisdiction over all surface water and groundwater in California, including wetlands, headwaters, and riparian areas. The State Board or applicable RWQCB must issue waste discharge requirements for any activity that discharges waste that could affect the quality of waters of the State.

4.2.2.7 LAKE AND STREAMBED ALTERATION AGREEMENT UNDER CALIFORNIA FISH AND GAME CODE

In addition to listed and special-status species, the CDFW regulates activities under California Fish and Game Code Sections 1600–1616 that require a streambed alteration agreement for impacts to waters of the State. California Fish and Game Code Section 1602 requires an entity to notify the CDFW prior to commencing any activity that may do one or more of the following:

- Substantially divert or obstruct the natural flow of any river, stream, or lake.
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake.
- Deposit debris, waste, or other materials that could pass into any river, stream, or lake.

4.3 County of Santa Clara

4.3.1 *Santa Clara County Operational Area Hazard Mitigation Plan*

Adopted in 2017, the County mitigation plan includes risk assessments, mitigation measures, funding, and coordination measures for plan implementation (County of Santa Clara Office of Emergency Services 2017). It focuses on nine Santa Clara County communities, including the Town. The plan follows the planning guidance of FEMA's Community Rating System to maximize the planning benefit for the nine communities in the Operational Area participating in that program. It also focuses on cost effectiveness, as required under FEMA mitigation grant programs, and public engagement.

4.3.2 *Santa Clara County Fire Department Road Standards*

The Santa Clara County Fire Department access road standards also include the following requirements:

- The minimum clear width of fire department access roads shall be 20 feet. Modifications to the design or width of a fire access road, or additional access road(s) may be required when the fire code official determines that access to the site or a portion thereof may become compromised due to emergency operations or nearby natural or manmade hazards (e.g., flood-prone areas, railway crossings, bridge failures, hazardous material-related incidents, etc.).
- The width of secondary access roads may be reduced to less than 20 feet provided turnouts are installed adjacent to the roadway every 500 feet with a minimum dimension of 10 feet wide and 40 feet long or as otherwise determined by the fire code official.
- Vertical clearance over required vehicular access roads and driveways shall be 13 feet, 6 inches (Santa Clara County Fire Department 2009).

4.4 Town of Los Gatos

4.4.1 *Town of Los Gatos Municipal Code, Chapter 9. Fire Prevention and Protection*

Article III, Uniform Fire Code, adopts the 2019 California Fire Code and 2018 International Fire Code in the Town's municipal code with some amendments. In particular, Section 503.2.1 of the Town's municipal code identifies standards for the required unobstructed width and vertical clearance for access roads, Section 4907.2, Defensible Space Fuel Modification, identifies parameters for achieving acceptable defensible space around buildings, and Section 4709.3, Defensible Space Along Property Lines, identifies responsibility for maintaining 100 feet of defensible space across property lines. The Municipal Code identifies the following zones of defensible space:

- Maintain defensible space of 100 feet from each side and from the front and rear of any building or structure, but not beyond the property line except as provided by law. The 100 feet of defensible space should be segregated into the following zones:
    - New construction must create a noncombustible area a minimum of 5 feet from structures.
    - Maintain an effective defensible space by removing and clearing away flammable vegetation and other combustible materials from areas within 30 feet of buildings or structures.[7]
    - Maintain an additional reduced fuel zone of 70 feet from all buildings and structures with an emphasis on vertical and horizontal separation of fuels/vegetation. Distances beyond an additional 70 feet may be required when the Fire Chief or his/her designee, determines that due to steepness of terrain or other conditions, 70 additional feet is insufficient.[8]
- Clear areas within 10 feet of fire apparatus access roads and driveways of non-fire-resistive vegetation growth.[9]
- When an occupied building is less than 100 feet from a property line and combustible vegetation on an adjacent parcel presents a fire hazard for the occupied building as determined by the Fire Chief or his/her designee then the owner of the adjacent parcel where the hazard exists shall be responsible for fuel management, including removal to the satisfaction of the Fire Chief or his/her designee.
- When the Fire Chief or his/her designee determines defensible space to be inadequate the Town Council is authorized to instruct the Fire Chief or his/her designee to give notice to the owner of the property upon which conditions regulated by Sections 4907.2 and 4907.3 exist to correct such conditions. If the owner fails to correct such conditions, the Town Council is authorized to cause the same to be done and make the expense of such correction a lien upon the property where such conditions exist.

[7] Exception: When approved by the Fire Chief or his/her designee, single specimens of trees, ornamental shrubbery, or similar plants used as ground covers, provided that they do not form a means of rapidly transmitting fire from the native growth to any structure.

[8] Exception: When approved by the Fire Chief or his/her designee grass and other vegetation located more than 30 feet from buildings or structures and less than 18 inches in height above the ground need not be removed where necessary to stabilize the soil and prevent erosion.

[9] Exception: Single specimens of trees, ornamental vegetative fuels, or cultivated ground cover, such as green grass, ivy, succulents, or similar plants used as ground cover, provided they do not form a means of readily transmitting fire.

4.4.2 Town of Los Gatos 2020 General Plan Safety Element

The Los Gatos 2020 General Plan Safety Element (Town of Los Gatos 2020b) contains the following goals, policies, and actions that apply to fire safety and vegetation management:

- **Goal SAF-2.** To incorporate fire safety precautions as an integral consideration in planning development.
- **Goal SAF-3.** To reduce the potential for injuries, damage to property, economic and social displacement, and loss of life resulting from fire hazards.
    - **Policy SAF-3.1.** Minimize exposure to wildland and urban fire hazards through rapid emergency response; proactive code enforcement; public education programs; use of modern fire prevention measures; quick, safe access for emergency equipment and evacuation; and emergency management preparation.
    - **Policy SAF-3.5.** Control excessive buildup of flammable vegetative material.

4.4.3 Los Gatos Hillside Specific Plan

Chapter 5, Safety, of the Los Gatos Hillside Specific Plan (Town of Los Gatos 1978) identifies the high fire hazard and combustibility of vegetation in the hillside areas of the Town. It addresses requirements for adequate water supply and minimum fire protection standards.

4.4.4 Town of Los Gatos Tree Protection Ordinance

This ordinance was adopted because the Town is forested by many native and non-native trees and contains individual trees of great beauty. The community benefits from preserving the scenic beauty of any tree listed in the Town, preventing erosion of topsoil, providing protection against flood hazards and risk of landslides, counteracting pollutants in the air, maintaining climatic balance, and decreasing wind velocities. The Town regulates the removal of trees in order to retain as many trees as possible. While trees provide multiple benefits, this ordinance also acknowledges that a portion of the Town is located in a VHFHSZ as defined by CAL FIRE and the associated wildfire threat that exists for the community.

Chapter 29 of the Town's Municipal Code contains standards for tree protection. This ordinance protects specified species and sizes of tree from removal or pruning of more than 25 percent of any protected tree without first obtaining a permit. The ordinance excepts the following species and allows them to be removed or severely pruned without Town approval or the issuance of a tree removal permit:

- A fruit or nut tree that is less than 18 inches in diameter (57 inches in circumference).
- Any removal or maintenance of a tree to conform with implementation and maintenance of Defensible Space per Chapter 9 – Fire Prevention and Protection with the exception of the following trees:
    - All trees of the following species that have an 8-inch or greater diameter (25-inch circumference) on developed residential property:
        - Blue oak (*Quercus douglasii*);
        - Black oak (*Quercus kellogii*);
        - California buckeye (*Aesculus californica*);
        - Pacific madrone (*Arbutus menziesii*);

  - Heritage trees;[10] and
  - Large protected trees.

- Any of the following trees that are less than 24 inches in diameter (75 inches in circumference):
  - Black acacia (*Acacia melanoxylon*);
  - Tulip tree (*Liriodendron tulipifera*);
  - Tree of heaven (*Ailanthus altissima*);
  - Blue gum eucalyptus (*Eucalyptus globulus*);
  - Red gum eucalyptus (*E. camaldulensis*);
  - Other eucalyptus (*E.* spp., hillsides only);
  - Palm (except *Phoenix canatiensis*); and
  - Privet (*Ligustrum lucidum*).

5 MANAGEMENT PLANS AND PROGRAMS

There are a number of management plans and programs that specify, discuss, and define defensible space and vegetation management techniques and requirements that are relevant to the Town's VMP and planning within the VHFHSZ. These plans and programs were consulted during the VMP development, but this VMP stands independently of these plans and programs. Relevant recommendations from these plans and programs were incorporated into the VMP, as appropriate.

5.1 County of Santa Clara

5.1.1 *Santa Clara County Community Wildfire Protection Plan*

A CWPP was prepared for the County of Santa Clara (County of Santa Clara 2016). Annex 9 of the CWPP (updated in 2019) addressed specific wildlife prevention and mitigation for the Town.

5.1.2 *Santa Clara County Fire Department Brush Abatement Program*

The Santa Clara County Fire Department manages and implements a hazardous brush abatement program for hillside areas within its jurisdictional boundaries. The brush abatement program entails inspections of hillside properties by fire crews beginning early April each year. If properties are found to not be in compliance with the regulations found in the California Fire Code relative to vegetation clearance, they are given notice of the violation. If compliance is still not achieved by approximately the end of June each year, a contractor is authorized to perform the necessary work. The costs associated with the abatement work are then placed on the property tax bill for that parcel.

5.1.3 *Santa Clara County Weed Abatement Program*

The Santa Clara County Consumer and Environmental Protection Agency Weed Abatement Program collaborates with City's and Town's to inspect parcels that pose a risk to the public and do not meet

[10] The Director, Director's designee, or deciding body shall approve a protected tree removal permit, severe pruning permit, or pruning permit for Heritage trees or large protected trees if a tree is dead, severely diseased, decayed, or disfigured to such an extent that the tree is unable to recover or return to health and structurally sound condition and/or the removal of the tree is necessary to confirm with the implementation and maintenance of Defensible Space per Chapter 9 of Town Code.

minimum fire safety standards. Similar to the Brush Abatement Program, if parcels are declared a fire risk the parcel owner is given notice of the violation. If compliance standards are not met, the County contractors can perform the abatement work and include an additional fee in the property tax statement.

5.1.4 *Santa Clara County Operational Area Hazard Mitigation Plan*

The Santa Clara County Operational Area Hazard Mitigation Plan identifies the issues and estimates losses and risk associated with wildfire in the County. This plan identifies the following issues associated with wildfire the relate to vegetation management:

- Public education and outreach to people living in or near the fire hazard zones should include information about and assistance with mitigation activities such as defensible space, and advance identification of evacuation routes and safe zones; and
- Vegetation management activities. This would include enhancement through expansion of the target areas as well as additional resources.

5.2 Town of Los Gatos

5.2.1 *Be Wildfire Ready Website*

This website has a thorough description and discussion of the Town's defensible space guidelines, including describing the three defensible space zones, providing details of tree and plant spacing for defensible space, providing contacts for free property inspections, providing a list of fire-resistant vegetation, and detailing tips to work with neighbor across property lines. The website can be found at https://www.losgatosca.gov/2581/Be-Wildfire-Ready.

5.3 Other Related Plans and Programs

5.3.1 *National Cohesive Wildland Fire Management Strategy*

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) is the overarching wildfire management strategy for the country and includes the Phase III Western Regional Action Plan. The national goal is "To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire" (National Strategy 2014).

The primary national goals identified to achieve this vision are:

- Restore and maintain landscapes: Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.
- Fire-adapted communities: Human populations and infrastructure can withstand a wildfire without loss of life and property.
- Wildfire response: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

For more information on the Cohesive Strategy, visit: https://www.forestsandrangelands.gov/strategy/documents/strategy/CSPhaseIIINationalStrategyApr2014.pdf.

5.3.2 National Fire Plan

The National Fire Plan was established by Executive Order in 2000, following a landmark wildland fire season and addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. It provides technical, financial, and resource guidance and support for wildland fire management across the United States. Communities across the nation that are considered to have a WUI have been identified; this list was subsequently published in the Federal Register.

5.3.3 California State Hazard Mitigation Plan

The SHMP names earthquakes, flood, and fire (particularly WUI fire) as the top three sources of hazard to California. The SHMP was revised in 2018, and since its previous revision in 2013, destruction from catastrophic wildfire events in 2017 and 2018 has caused wildfire hazard to emerge as an annual threat roughly comparable to floods. Hazard from wildfire and flooding is surpassed only by that from catastrophic seismic events.

5.3.4 Governor Newsom's Strike Force

Governor Newsom established a strike force during his State of the State address on February 12, 2019. The strike force was tasked with developing a comprehensive strategy to address the catastrophic wildfires on the State's electric utilities. In addition, the strike force also looked at ways to reduce the severity of wildfires through continued investments in fire mitigation, vegetation management, and other strategies to reduce fuels. In April 2019, the strike force released a report called Wildfires and Climate Change: California's Energy Future. This report provides a roadmap for addressing catastrophic wildfires, including recommendations for catastrophic wildfire prevention and emergency response, mitigation of climate change through clean energy policies, improved forest and vegetation management, acceleration of fuel reduction projects on both public and private lands, fair allocation of catastrophic wildfire damages, a more effective California Public Utilities Commission (CPUC), and accountability for PG&E to prioritize safety (Governor Newsom's Strike Force 2019).

5.3.5 California Strategic Fire Plan

The 2019 California Strategic Fire Plan includes goals to improve CAL FIRE's core capabilities, enhance CAL FIRE's internal operations, ensure health and safety of their employees, and build an engaged, motivated, innovative workforce. As part of improving their core capabilities, the Strategic Fire Plan includes an objective to proactively reduce wildfire threats through prescribed fire use and fuels reduction programs and public education in the importance of maintaining defensible space in the SRA. It also includes measures to increase by 20% the acreage of projects implemented under the California Forest Improvement Program and implement fuels reduction projects on at least 50,000 acres annually (California SFP 2019).

5.3.6 California Vegetation Treatment Program

The CalVTP, developed by CAL FIRE, is a critical component of the State's multi-faceted strategy to address California's wildfire crisis. The CalVTP defines the vegetation treatment activities and associated environmental protections to reduce the risk of loss of lives and property, reduce fire suppression costs, restore ecosystems, and protect natural resources as well as other assets at risk from wildfire. The CalVTP supports the use of prescribed burning, mechanical treatments, hand crews, herbicides, and prescribed herbivory as tools to reduce hazardous vegetation around communities in the WUI, to construct fuel breaks, and to restore healthy ecological fire regimes.

CAL FIRE has the primary responsibility for implementing proposed CalVTP vegetation treatments, though many State, regional, and local agencies could also employ the CalVTP to implement vegetation treatments if their projects are within the scope of the CalVTP. The CalVTP will allow CAL FIRE, along with other agency partners, to expand their vegetation treatment activities to treat up to approximately 250,000 acres per year, contributing to the target of 500,000 annual acres of treatment on non-federal lands as expressed in EO B-52-18.

5.3.7 *Fire Hazard Planning – General Plan Technical Advice Series*

This document is part of a technical series created by the State OPR. It provides information and examples to assist local jurisdictions in designing a fire hazard element in a local general plan.

5.3.8 *SR-17 Shaded Fuel Break Project*

The SR-17 Shaded Fuel Break Project was part of a larger plan to target evacuation routes in California's WUIs. The SR-17 Shaded Fuel Break Project created a 6.5-mile, 494-acre shaded fuel break along both sides of SR-17 from the Town to the Santa Clara/Santa Cruz County boundary.

5.3.9 *Midpeninsula Open Space Draft Wildfire Resiliency Plan*

The 2020 Midpeninsula Open Space Draft Wildfire Resiliency Plan includes plans for treatments in each of its open space areas. Under the draft plan, treatments in St. Joseph's Hill Open Space Preserve would include 200-foot-wide fuel breaks and potential Fuel Reduction Areas for ecosystem resilience. Treatments in Sierra Azul Open Space would include 200-foot-wide fuel breaks, potential Fuel Reduction Areas for ecosystem resilience, eucalyptus and acacia removal, and fuel breaks designed to accommodate smaller Wildland Type 3 fire engines. Treatments in El Sereno Open Space would include 200-foot-wide and $\leq$30-foot-wide fuel breaks; various emergency staging areas, emergency landing zones, and other fire management areas; and eucalyptus and acacia removal (Midpen 2020d, 2020e).

6 PUBLIC ENGAGEMENT

The Town has conducted a public and stakeholder engagement effort to support the development of this VMP. The engagement activities were conducted to give the public opportunities to provide input and feedback to the Town and the VMP development team through meetings and social media platforms and to provide the public with information on VMP development and implementation.

The target audience for public engagement efforts included the Town residents (including hillside residents), Town planning officials, Complete Streets, Town Transportation Commission, Town Parks Commission, local stakeholder organizations, and general public. Project information was distributed through emails, postcards, social media, a dedicated project website, and public meetings/workshops. Social media platforms included Nextdoor, Facebook, and Instagram. Postcards were mailed to all properties abutting roads or other areas where vegetation management might occur. Public feedback was collected through email, an online comment form, and hand-written and verbal comments provided at public meetings. One workshop/meeting was conducted on June 10, 2021 subsequent to draft VMP development. All stakeholder and public comments received were catalogued and addressed by the Town and/or in this VMP.

In addition to the public engagement process, a Wildfire Ad Hoc Committee was developed, which included Mayor Marcia Jensen, Vice Mayor Barbara Spector, Assistance Fire Chief Brian Glass, Parks and Public Works Director Matt Morley, Assistant Town Manager Arn Andrews, and Community

Members Brad Gordon and Rob Stump. Meetings were held on October 21, October 29, November 9, and November 16, 2020. The Ad Hoc Committee worked together to develop the Wildfire Ad Hoc Committee Report, which was approved by the Town Council on December 1, 2020.

7 EMERGENCY PARTNERSHIPS

A partial list of governmental and private entities with vegetation management responsibilities in the Town follow (Town of Los Gatos 2020e):

- **Santa Clara Fire District:** Santa Clara County Fire Department is an all-risk fire department and provides fire suppression inclusive of structure and vegetation/wildland fire mitigation, technical rescue operations, emergency medical services (EMS), hazardous materials (HazMat) mitigation, fire prevention, community education and risk reduction services (CERRS), disaster preparedness, and community emergency preparedness and service responses.
- **Pacific Gas and Electric Company (PG&E):** PG&E provides electricity to the Town, and controls rights-of-way necessary to maintain overhead transmission and distribution lines, many of which run through the WUI areas. The Town collaborates with PG&E to treat vegetation in the WUI along PG&E's electric transmission line right-of-way to increase power reliability and reduce ignition potential and resulting wildland fire hazard.
- **Santa Clara County Firesafe Council:** The Town supports and collaborates with the Santa Clara Firesafe Council. The Firesafe Council is a non-profit organization that provides resources to coordinate public and private landowners in Santa Clara County to reduce the threat of wildfire. This organization provides information regarding chipping programs, defensible space mitigation, forest health issues, and much more. They also offer public meetings and forums to support wildfire awareness.
- **Santa Clara County Parks:** Periodically, Santa Clara County Parks makes use of prescribed burns to manage non-native vegetation, reduce fuel loading, and promote biodiversity and native vegetation, and also provides training in conducting managed burns and in wildfire fighting techniques and principles.
- **West Valley Cities:** The West Valley Cities of Monte Sereno and Saratoga share with the Town a large number of VHFHSZ. Because wildfire extends across community borders, an incident in one jurisdiction can be expected to spread to neighboring jurisdictions. Communication between West Valley cities and coordination of wildfire prevention strategies is critical to the prevention of wildfire.
- **Midpen:** Midpen is an independent Special District that manages 26 Open Space Preserves, containing nearly 65,000 acres of public land. In the Town, Midpen manages and maintains significant land holdings along the Town's southern border. Wildland fire prevention, preparedness, and response are all critical components of Midpen's ongoing land stewardship which is largely accomplished through the management of vegetation within its preserves in order to reduce the risk and severity of wildfire, with a focus on ecological health and wildland fire resilience.
- **County Roads, Santa Clara Valley Water District, and Caltrans:** These regional governmental partners each have properties and rights-of-way within and/or adjacent to the Town. These agencies must meet a shared specification for roadside fuel reduction and support safety in general.
- **San Jose Water Company:** San Jose Water Company is an investor-owned public utility and is one of the largest urban water systems in the United States, serving over 1 million people in the

greater San Jose metropolitan area. It maintains critical infrastructure in Town essential to fire suppression and manages watershed lands near the Town.

8 PLAN AREA RESOURCES

This section highlights the biological and community resources within the VMP Area. Potential impacts to sensitive resources were considered as part of this VMP and during the selection of treatment recommendations, BMPs, and avoidance/minimization measures to prevent impacts to sensitive species, habitats, and cultural artifacts. Potential impacts to resources will be evaluated further in the VMP's Initial Study/Mitigated Negative Declaration (IS/MND).

8.1 Biological Resources

A review of the Town of Los Gatos 2020 General Plan (Town of Los Gatos 2020a) and California Natural Diversity Database (CNDDB) search was conducted to determine if special-status species are present within or adjacent to the VMP Area. Special-status species are defined as federally and state-listed endangered or threatened species of plant or animal, and non-listed species otherwise protected by federal and/or state statutes. Within the Town, five special-status plant and five special-status animal species were identified to have potential to occur in the VMP Area. These are identified below and listed in Tables 8-1 and 8-2, respectively.

8.1.1 *Vegetation Communities*

The VMP Area is dominated primarily by urban land, hardwood woodland, and herbaceous and shrub cover. Urban land is present throughout the VMP Area and concentrated mainly around roadways and in gently sloping and flat areas. As the terrain steepens, urban development mostly consists of homes, infrastructure, and developed parks surrounding open space and undeveloped park boundaries. Oak woodland is present throughout the VMP Area but dominates in the foothills and canyons along the southern Town boundary along with other hardwood woodland species, described in more detail below. California oak woodland is a sensitive vegetation community. Herbaceous and shrub species are interspersed in understories and canopy openings throughout the southern portion of the VMP Area. Vegetation communities and individual species observed in the at each location in the VMP Area, including the roadways and open space/undeveloped park areas, are described in more detail below.

8.1.1.1 ROADWAYS

Priority roadways range in vegetation depending on terrain and slope but are overall consistent in terms of dominant species. The canopy is primarily composed of native California tree species including oak woodland (*Quercus* spp.), California bay (*Umbellularia californica*), buckeye, and California walnut (*Juglans californica*). Eucalyptus (*Globulus* spp.) is also present on many roadway shoulders and medians. Acacia (*Acacia* spp.), privet (*Lingustrum* sp.), cotoneaster (*Cotoneaster franchetti*), and broom occupy the understory and occur in dense clusters in hillside areas. In general, areas where these species were observed in high densities were considered to be high priority due to the highly flammable nature of these species. In more developed and urban areas, landscaping and ornamental species are present. Oleander (*Nerium oleander*) occurs in multiple areas in large, dense shrubs. Conifers including redwoods, Douglas fir (*Pseudotsuga menziesii*), and pines (*Pinus* spp.) are interspersed and located alongside roadways at lower elevations where temperatures are cooler, and fog regularly occurs. Native shrub species, including California sage scrub and coyote brush (*Baccharis pilularis*), occur throughout the roadway VMP area but are most prevalent in the foothills. Riparian species, including sycamore, willow (*Salix* spp.), and California walnut occur along streams and in riparian corridors. In areas where there are

gaps in the canopy, invasive species including broom occur in dense stands. Woody slash and debris are common in densely vegetated areas.

8.1.1.2 SANTA ROSA OPEN SPACE

The Santa Rosa Open Space has a canopy primarily composed of oak woodland forest, including valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), and California buckeye, with an understory dominated by non-native annual grasslands, including slender oat (*Avena barbata*), and California natives, including coyote brush, poison oak (*Toxicodendron diversilobum*), California sage (*Artemisia californica*), elderberry (*Sambucus nigra*), California rose (*Rosa californica*), and snowberry (*Symphoricarpos albus*). Dominant invasive species include Italian thistle (*Carduus pycnocephalus*), star thistle (*Centaurea solstitalis*), stinkwort (*Ditrichia graveolens*), and cotoneaster. Several eucalyptus (*Eucalyptus* spp.) trees and ornamental tree species were observed adjacent to the Santa Rosa Open Space. There are areas of canopy connectivity across fire roads, mostly composed of oaks, areas with dense understories, and areas of minor powerline entanglement. Woody slash and debris were observed stockpiled in concentrated areas. These woody slash and debris areas are currently removed but may also be chipped and left in place as part of this VMP.

8.1.1.3 HEINTZ OPEN SPACE

The Heintz Open Space is located west of the Santa Rosa Open Space and is dominated by oak woodland and California buckeye. Vegetation is overall consistent with the Santa Rosa Open Space, as described above. Areas of canopy connectivity occur within this open space and will require maintenance for fire truck access.

8.1.1.4 LA RINCONADA PARK

An ephemeral creek runs through the center of La Rinconada Park. Valley oak and coast live oak dominate along the riparian area which bisects the park. The understory is sparse and contains invasive species including English ivy (*Hedera helix*), French broom (*Genista monspessulana*), acacia, and privet near the southern park boundary. Large patches of ivy were dominant at the northern boundary adjacent to the public tennis courts.

8.1.1.5 NOVITIATE PARK

Los Gatos Creek borders the western boundary of Novitiate Park and is dominated by California bay , coast live oak, and sycamore. A dense understory of French broom along the eastern park boundary and an infestation of Italian thistle along the northern park boundary are present within this park. Coast live oak savannah and non-native annual grassland is consistent throughout the area with elderberry and poison oak interspersed towards the center of the park. Excess woody debris and slash occupy areas of the understory in northern and western portions of the park.

8.1.1.6 WORCESTER PARK

Worcester Park is dominated primarily by coast live oak woodland. A dense understory composed of French broom, olive (*Olea europaea*), elderberry, ivy, Italian thistle, tree of heaven, and woody debris is interspersed. A small irrigation-fed seep with hydrophytic vegetation including nut sedge (*Cyperus eragrostis*) occurs on the western park boundary. Sparse areas of ivy, vinca (*Vinca major*), and acacia occur throughout the park and may require management to prevent future infestations. Dense mats of English ivy and broom are growing along the fence on the western edge of the park in the understory and will require management.

8.1.2 *Streams and Water Resources*

The Town contains several creeks, ponds, and reservoirs. The natural hydrology of the area has been altered over time due to urban development and flood control infrastructure. Creeks within the Town include a mixture of perennial and ephemeral creeks, including the Guadalupe River, Los Gatos Creek, Ross Creek, and Smith Creek. Los Gatos and Smith Creeks flow south to north. The Guadalupe River and Ross Creek flow southwest to northeast. All drainages in the VMP Area enter San Francisco Bay. The Vasona Reservoir is the largest open water habitat within the Town (Town of Los Gatos 2010). Los Gatos Creek is one of the major creeks in the VMP Area, flowing south to north into and out of the Vasona Reservoir. Los Gatos Creek, Ross Creek, and Guadalupe Creek all run adjacent to or intersect priority roadways. East and West Main Street runs adjacent to Los Gatos Creek. Forrester Road and Kennedy Road are adjacent to Ross Creek, and Hicks Road runs adjacent to Guadalupe Creek. Bachman Avenue, Foster Road, Blackberry Hill Road, Shannon Road, Reservoir Road, and Manzinita Avenue all run adjacent to or contain unnamed water features. In addition, La Rinconada Park, Novitiate Park and Santa Rosa Open Space are adjacent to and or contain ephemeral riparian features. Novitiate Park is bisected by Los Gatos Creek and Santa Rosa Open Space and La Rinconada Park both contain unnamed water features identified by the National Wetland Inventory (NWI) as stream/river and lake/pond resources.

Riparian areas along perennial and intermittent streams are typically not subject to intense wildfires due to the moisture content of the associated vegetation. Wildfires in riparian areas can cause a drastic decrease in water quality and habitat quality. Vegetation located along streams and waterways plays an important role in regulating water quality, preventing erosion, and providing wildlife habitat for aquatic and terrestrial species throughout the watershed. Due to the expansive ecosystem services riparian vegetation provides, it is critical that vegetation management activities adjacent to or in these habitat areas minimize and or avoid potential impacts. No chemical treatments are permitted adjacent to stream and water resources and additional BMPs will be implemented to reduce impacts. Practices to avoid and or minimize impacts to waters associated with vegetation management activities can be found below in Section 11, Practices to Avoid or Minimize Impacts.

8.1.3 *Special-Status Plant Species*

The following special-status plant species have potential to occur or are known to occur within the VMP Area and are described in more detail in Table 8-1:

- Loma prieta hoita (*Hoita strobilina*)
- Most beautiful jewel flower (*Streptanthus albidus*)
- Robust monardella (*Monardella villosa* ssp. *villosa*)
- Western leatherwood (*Dirca occidentalis*)
- Woodland woollythreads (*Monolopia gracilens*)

Practices to avoid and or minimize impacts to special-status plants are included in Section 11, Practices to Avoid or Minimize Impacts.

Table 8-1. Special-Status Plant Species Evaluated for Potential Occurrence

Species Name[1]	General Habitat Description[2]	Legal Status Federal/State/ CRPR Status[3,4]	Rationale for Potential Occurrence
Loma prieta hoita (*Hoita strobilina*)	Perennial herb endemic to California that occurs in chaparral, cismontane woodland, and riparian woodland. Elevation: 1–95 meters. Blooming period: May–July.	1B.2	**Potential to Occur:** Suitable habitat exists in the VMP Area. Six CNDDB occurrences recorded (2002, 2009, 2014, 2018) approximately 0.36 mile southwest of the nearest VMP location.
Most beautiful jewel flower (*Streptanthus albidus*)	Annual herb endemic to California that occurs in chaparral, valley grassland, and foothill woodland habitats. Elevation: 0–207 meters. Blooming period: April–September.	1B.2	**Unlikely to Occur:** Suitable habitat exists in the VMP Area but is limited to the hills above Lexington Reservoir. Two CNDDB occurrences recorded (1995, 2001) approximately 0.3 mile southwest of the nearest VMP location.
Robust monardella (*Monardella villosa* ssp. *villosa*)	Perennial herb endemic to California that occurs in chaparral and foothill woodland. Elevation: 0–240 meters. Blooming period: June–August.	-	**Potential to Occur:** Suitable habitat exists in the VMP Area. There are no recorded CNDDB occurrences in the VMP Area; however, this species has been identified as known to occur in the Town's General Plan.
Western leatherwood (*Dirca occidentalis*)	Shrub endemic to California that occurs in chaparral, foothill woodland, mixed evergreen forest, closed-cone pine forest, north coastal coniferous forest, and wetland riparian habitat. Elevation: 25–425 meters. Blooming period: January–March (or April).	1B.2	**Potential to Occur:** Suitable habitat exists in the VMP Area. There are no recorded CNDDB occurrences in the VMP Area. However, this species has been identified as known to occur in the Town's General Plan.
Woodland woollythreads (*Monolopia gracilens*)	Annual herb that occurs in broad leafed upland forest openings, chaparral openings, cismontane woodland, and north coast coniferous forest openings. Elevation: 100–1,200 meters. Blooming period: February–July.	1B.1	**Potential to Occur:** Suitable habitat exists in the VMP Area. Three CNDDB occurrences recorded (2018) approximately 0.25 mile south of the nearest VMP location.

[1] List of plant species based on CNPS and CNDDB results from searches of Los Gatos, California U.S. Geological Survey (USGS) 7.5-minute quadrangle and the Town of Los Gatos General Plan.

[2] Habitat associations and blooming periods based on the Jepson Online Interchange for California Floristics (queried in July 2020).

[3] Listing status based on CNDDB and CNPS data (queried in July 2020).

[4] **California Rare Plant Ranking:** 1B = Plants rare, threatened, or endangered in California and elsewhere
CRPR Threat Ranks: 0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); 0.2 = Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); 0.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat)
Potential for Occurrence Ratings:
Absent: Suitable habitat does not exist in the VMP Area, the species is restricted to or known to be present only within a specific area outside of the VMP Area.
Unlikely to Occur. The species is not likely to occur in the VMP Area based on the following considerations: lack of suitable habitat and features that are required to satisfy the life history requirements of the species or presence of invasive species that inhibit survival or occupation.
Potential to Occur. There is a possibility that the species can be found in the VMP Area based on the following conditions: the VMP Area falls within the range of the species, suitable habitat is present, but no records of sighting are located within or near (2 miles) the VMP Area, or the records are old and unreliable, and it is undetermined whether the habitat is currently occupied.
Likely to Occur. The species has a strong likelihood to be found in the VMP Area on the following considerations: records of occurrence have been documented within or near (2 miles) the VMP Area, the VMP Area falls within the range of the species, suitable habitat is present, but it is undetermined whether the habitat is currently occupied.
Present: Reconnaissance-level, focused, or protocol-level surveys documented the occurrence or observation of a species in the VMP Area.

8.1.4 *Special Status Animal Species*

The following special-status animal species have potential to occur or are known to occur within the VMP Area and are described in more detail in Table 8-2:

- Western pond turtle (*Emys marmorata*),
- Santa Cruz black salamander (*Aneides flavipunctatus niger*),

- Steelhead (*Oncorhynchus mykiss irideus* pop. 8)
- California red-legged frog (*Rana draytonii*)
- Foothill yellow-legged frog (*Rana boylii*)
- Pallid bat (*Antrozous pallidus*)

Practices to avoid and or minimize impacts to special-status animals are included in Section 11, Practices to Avoid or Minimize Impacts.

Table 8-2. Special-Status Animal Species Evaluated for Potential Occurrence

Species Name[1]	General Habitat Associations	Legal Status Federal/State/ Other[2]	Rationale for Potential Occurrence
Fish			
Steelhead – Central California Coast Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus*)	Occurs in clear, cool water with abundant in-stream cover, well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio. Requires cool, deep pools with overhead cover to protect from predators.	FT/--/--	**Potential to Occur:** The closest recorded CNDDB occurrence is approximately 0.1 mile from the nearest roadway. This species has recorded occurrences in Guadalupe Creek, which runs adjacent to Shannon and Hicks Roads and Los Gatos Creek near Vasona Reservoir, which runs alongside the Santa Cruz Highway adjacent to Novitiate Park. Supporting tributaries include Alamitos, Hicks, and Pheasant Creeks.
Amphibians			
California red-legged frog (*Rana draytonii*)	Inhabits permanent and temporary pools, streams, freshwater seeps, and marshes in lowlands and foothills occurring from sea level to 6,500 feet. Uses adjacent upland habitat for foraging and refuge. Breeds during the wet season from December to March. Lay between 300 and 4,000 eggs in a large cluster that are attached to plants near the water surface. Eggs hatch after about 4 weeks and undergo metamorphosis in 4–7 months.	FT/SSC/--	**Potential to Occur:** Suitable habitat exists in the VMP Area. There are no recorded CNDDB occurrences in the VMP Area. However, this species has been identified as known to occur in the Town's General Plan and has been observed in Los Gatos Creek.
Foothill yellow-legged frog (*Rana boylii*)	Found in or near rocky streams and rivers with open, sunny banks in forest, chaparral, and woodland habitats occurring from sea level to 6,000 feet. Breeds from April to early July in streams or rivers. Lays between 300 to 2,000 eggs in a large cluster on the downstream side of rocks in slow-moving water. Eggs hatch after 5–37 days and undergo metamorphosis in 3–4 months.	--/SSC/--	**Potential to Occur:** Suitable habitat exists in the VMP Area. There are no recorded CNDDB occurrences in the VMP Area; however, this species has been identified as known to occur in the Town's General Plan.

Species Name[1]	General Habitat Associations	Legal Status Federal/State/ Other[2]	Rationale for Potential Occurrence
Santa Cruz black salamander (*Aneides flavipunctatus niger*)	Occurs in mixed deciduous woodland, coniferous forest, and coastal grasslands. Usually found under rocks, near streams, in talus, under damp logs, and in soils along wet streams. Terrestrial species that forage during wet nights and stay underground during dry weather. Breeds between July and August laying between 8–25 eggs below ground. May remain streamside year-round.	--/SSC/--	**Unlikely to Occur.** Three CNDDB occurrences (1931, 1973, 1985) with no new occurrences recorded within 1 mile of the VMP Area. The closest recorded CNDDB occurrence is approximately 0.86 mile south of the nearest VMP location along the Lexington Reservoir. The parcels separating the occurrence from the VMP Area are disked and contain steep terrain.
Reptiles			
Western pond turtle *(Emys marmorata)*	Occurs in permanent and intermittent rivers, creeks, small lakes or ponds, marshes, irrigation ditches, and reservoirs. Basks on land, logs, branches, or boulders in and around water. Can migrate more than 0.5 mile. May return to the same site each year during their overwintering period. Breeds from April to May but can be year-round. Leave aquatic habitat to travel upland to nests and lay eggs. Nests in sandy banks near water or in fields with sunny openings within a few hundred feet from water. Forages and feeds in aquatic habitats only.	--/SSC/--	**Potential to Occur**. The closest recorded CNDDB occurrence is approximately 0.5-mile from the nearest priority roadway, and 1.25 miles from La Rinconada Park. Four CNDDB occurrences (1998 and 2001) are recorded near the Vasona Reservoir and County Park. Suitable habitat exists near La Rinconada Park at the La Rinconada Golf Course and Country Club in the existing ponds, but the Reservoir is separated by two major roadways.
Mammals			
Pallid bat (*Antrozous pallidus*)	Occurs in grasslands, shrublands, woodlands, and forests in semi-arid and arid landscapes. Most common in open, dry habitats with rocky outcroppings for roosting. Day roosts in caves, crevices, mines, and hollow trees. Night roosts in open sites such as open buildings. Forages at ground level with open vegetation. Breeds from October to February with litters between 1–3.	--/SSC/--	**Potential to occur:** The closest recorded CNDDB occurrence is approximately 0.5 mile from the nearest VMP location at Santa Rosa Open Space. Suitable habitat occurs on-site. One CNDDB occurrence (2004) was recorded from nearby roosting site in a barn, which has since been developed and the species removed. Suitable habitat occurs in the VMP Area and it is possible that this species could roost and forage within open space areas.

Source: CalFish 2020, Cal Herps 2020, Center for Biological Diversity, Calflora, and the California Native Plant Society.

[1] List of animal species based on CNDDB searches of the Los Gatos, California USGS 7.5-minute quadrangle and Town of Los Gatos General Plan.

[2] Listing status based on CDFW CNDDB State & Federally Listed Endangered & Threatened Animals of California List, August 2019; and CDFW Special Animal List, July 2020.

[3] **Status Codes:** -- = no status, FT = Federally Listed Threatened, SSC = California Species of Special Concern.
Potential for Occurrence Ratings:
Absent: Suitable habitat does not exist in the VMP Area, the species is restricted to or known to be present only within a specific area outside of the VMP Area.
Unlikely to Occur. The species is not likely to occur in the VMP Area based on the following considerations: lack of suitable habitat and features that are required to satisfy the life history requirements of the species; presence of barriers to migration/dispersal; presence of predators or invasive species that inhibit survival or occupation; or lack of hibernacula, hibernation areas, or aestivation areas on site.
Potential to Occur. There is a possibility that the species can be found in the VMP Area based on the following conditions: the VMP Area falls within the range of the species, suitable habitat is present, but no records of sighting are located within or near (2 miles) the VMP Area, or the records are old and unreliable, and it is undetermined whether the habitat is currently occupied.
Likely to Occur. The species has a strong likelihood to be found in the VMP Area on the following considerations: records of occurrence have been documented within or near (2 miles) the VMP Area, the VMP Area falls within the range of the species, suitable habitat is present, but it is undetermined whether the habitat is currently occupied.

8.2 Cultural Resources

Cultural resources can be buildings, structures, archaeological finds or sites, or resources important to Native American tribes (tribal cultural resources). CEQA codifies historical resources, unique archaeological resources, human remains, and tribal cultural resources. Resources that meet these definitions are considered part of the environment and are subject to review under CEQA. Although the VMP is not a CEQA document, it is subject to CEQA review, and resources identified as being present in the VMP will be required to be analyzed in the future CEQA document. The following analysis shows the effort made to identify the potential of cultural resources occurring in the VMP Area. Recommendations to reduce potential impacts to cultural resources are included in Section 11, Practices to Avoid or Minimize Impacts.

8.2.1 *Cultural Resources Context*

The land surrounding the VMP Area is in the traditional territory of the Ohlone (or Costanoan as they were known by the Spanish) Native American tribe. Costanoan is derived from the Spanish word Costanos meaning “coast people” and has come to denote a language family consisting of eight similar languages that are distinguished from one another by their distinctive dialects. Linguistic history indicates that the Costanoan/Ohlone migrated from the San Joaquin-Sacramento Delta River System into the San Francisco Peninsula during the Middle/Late Transition Period (1,000–750 B.C.). The Ohlone lived in tribelets or nations that had distinct dialects, were autonomous, and were territorially separated from each other. Each tribelet consisted of one or more permanent villages, with various seasonal temporary encampments located throughout their territory for the gathering of raw material resources, hunting, and fishing. The Ohlone lived in extended family units in domed dwellings constructed from tule, grass, wild alfalfa, and ferns. The subsistence practices included the consumption of plant resources such as acorns, buckeyes, and seeds that were supplemented with the hunting of elk, deer, and waterfowl as well as fishing. The Costanoan peoples practiced controlled burning on an annual basis throughout their territory as a form of land management to ensure plant and animal yields for the coming year.

The first Europeans to reach the San Francisco area were Spanish explorers in 1769 as part of the Portolá expedition. In 1774 the de Anza expedition had set out to convert the Native American tribes to Christianity, resulting in the establishment of (among others) Mission Santa Clara de Asís (founded in 1777) and Mission la Exaltacion de la Santa Cruz (founded in 1791). In this period the El Camino Real became a heavily traveled route between the 21 California Missions. This route led to the establishment of inns and roadhouses to serve travelers along the way. In this historic period, the Ohlone people were subjugated and absorbed into the mission system for compulsory baptism and conversion to Christianity that resulted in the loss of their freedom of movement, their culture, and customs.

In 1840, the Mexican government granted a land patent for a 6,600 acre rancho to Sebastian Peralta and Jose Hernandez. Los Gatos was originally named La Rinconada de Los Gatos (Cat’s Corner) by early settlers due to the screams of mountain lions prowling in the night. In 1868, 100 acres of the rancho was selected as a town site. The Town was incorporated in 1887, and by 1890 the Town’s population had grown to 1,652. When the first General Plan was adopted in 1963, the Town had grown to an area of approximately 4,000 acres, or 6.3 square miles, with a population in excess of 11,750. By 1971, the Town had grown to an area of 9 square miles with a population of 24,350. In 1984, Los Gatos covered ap-proximately 10 square miles and had a population of 27,820 persons. Today, the Town population is estimated to be 30,391 in a 14 square mile area. While most of the growth through the 1970's was due to new development, most of the growth in the 1980's and 1990's was due to annexations, in-fill development and changing demographics.

The Town originally developed at a distance from other population centers and evolved as an independent community having residential, commercial, and industrial areas. The economics of the Town have

changed from the wheat farming, milling, logging, orchard and cannery businesses in the 19th and early 20th centuries to the suburban, high tech, visitor destination businesses of today. The railroad also played a major role in the growth and development of the Town, Los Gatos was either the terminus of the railroad or the transition point from standard to narrow gauge at more than one time during the railroad's operation. The climate and easy access by rail from San Francisco made Los Gatos an early tourist destination.

By the 21st century, the Town is closely linked with the Silicon Valley technology development, and itself contains many technology based business. Los Gatos contains a mix of residential, commercial, and light industrial uses, and still had a thriving tourism business.

8.2.2 *Cultural Resource Search*

SWCA performed a California Historical Resources Information System (CHRIS) search through the Northwest Information Center (NWIC), which was returned to SWCA on September 18, 2020. The search area included the five open space areas/undeveloped park areas (Cultural Impact Area) and a 0.25-mile buffer (Study Area) around the five open space areas. The roadway portions of the VMP were deemed to have little potential for cultural discovery, based on the developed, manicured, and disturbed nature of roadside areas and the limited excavation (if any) planned for the roadside vegetation management. A CHRIS search was not performed for these areas.

8.2.3 *CHRIS Search Results*

8.2.3.1 RESOURCES

The search identified no cultural resources within the Cultural Impact Area, and two resources within the Study Area. The two resources are summarized in Table 8-3 and described in more detail below.

Table 8-3. Previously Recorded Cultural Resources within 0.25 mile of the Cultural Resource Study Area

Resource Number	Resource Name	Resource Type	Period	Approximate Proximity to Cultural Impact Area
P-43-001265	55 Whitney Avenue	Building	Historic	Within 0.16 miles of Worcester Park
P-43-001273	Los Gatos Reservoir	Building, Structure, Site	Historic	Within 0.25 mile of Novitiate Park

Resource P-43-001265 is a single-story private residence built between 1921 and 1922 by Helena M. Gerdes, a resident of San Francisco, in the Town. Although listed as a resource on the CHRIS search, the property is not considered eligible for inclusion on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). The resource is not listed on the Town's local historic register.

Resource P-43-001273 is a historic reservoir and associated structures. The reservoir is a gunite-lined, almost 2-million-gallon, natural earthen reservoir, supported by wooden posts and braces. It ceased function in 1991 and is not used for water storage. Both the reservoir and associated structures have had many repairs and upgrades since its original construction in 1871. The property does not possess any characteristics that would require inclusion in the CRHR or NRHP. The property is not considered

eligible for inclusion on the CRHR or the NRHP. The resource is not listed on the Town's local historic register.

The NWIC search indicated that six cultural resources studies have been previously conducted within the records search area. These are detailed in Table 8-4 and described in more detail below.

Table 8-4. Previous Cultural Resources Investigations within the Cultural Resources Study Area and a 0.25-miles radius

Report Number	Author / Company	Report Title	Year Published	Approximate Proximity to Cultural Impact Area
S-004240	Joseph C. Winter	Archaeological Resources and Impact of Ten Proposed Town of Los Gatos Projects	1974	0.25 miles from Worcester Park*
S-004375	Miley Paul Holman / Adan E. Treganza Anthropology Museum, San Francisco State University	An archaeological reconnaissance of the proposed area for development on the lands of Bacigalupi in southwest Los Gatos, Santa Clara County (letter report)	1976	Partially within Santa Rosa Open Space*
S-004679	Robert Cartier / Archeological Resource Management	Archeological Evaluation of Parcel APN 537-19-1 & 537-27-8, off Shannon Road in Los Gatos	1979	Partially within Santa Rosa Open Space*
S-004734	Walter J. Wood / Archaeological Planning Collaborative	Archaeological Records Search and Reconnaissance Survey, Worcester Park, Los Gatos, CA	1979	Partially within Novitiate Park*
S-026184	Robert R. Cartier / Archaeological Resource Management	Cultural Resource Evaluation of Three Treatment Plants for the Santa Clara Valley Water District	2002	Within 0.01 miles of La Rinconada Park*
S-043646	Historic Resource Associates	Cultural Resources Study of the East Leigh PG&E Project, Clearwire Site No. CA-SJC0170, West of Leigh Avenue, Los Gatos, Santa Clara County, California 95032	2010	Partially within Santa Rosa Open Space*

*see description below for additional locational information.

Report S-004240 included multiple areas, most of which are not within the boundaries used for the cultural record search and are mostly in the Town's downtown area. No prehistoric archaeological material was discovered in any area surveyed. However, one parcel is located mostly within the current Belgatos Park and partially overlaps into the Santa Rosa Open Space boundary used for the cultural resources records search. This parcel was surveyed as part of the report and had test pits dug. No prehistoric archaeological material was discovered although historic fill and old foundations were noted as being present in the parcel.

Report S-004375 was conducted on a 156-acre parcel, in land comprising the modern-day Santa Rosa Open Space, and almost entirely exceeds the project boundary of the Santa Rosa Open Space. The report included details of a pedestrian survey, which failed to discover archaeological resources, as well as a cultural resources records search, which only identified archaeological resources adjacent to Guadalupe Creek. The report author, Miley Holman, indicated that construction activities were unlikely to discover archaeological resources, although it was still considered a possibility.

Report S-004679 included an area partially within the Santa Rosa Open Space portion of the VMP Area. No resources were found through a cultural resources records search in the vicinity of the area. The pedestrian survey did not discover any archaeological resources.

Report S-004734 encompasses the eastern portion of Worcester Park. The report shows that a cultural resources records search discovered a single historic site, approximately 0.75 mile away from the report location, and two sites around 1 mile north of the report location. The report stated that two potentially prehistoric finds were discovered during a pedestrian survey: faunal bone and associated fragments were discovered in association with modern debris (including charcoal briquettes and aluminum foil). The second artifact, considered potentially prehistoric, was a large fragment of an abalone shell, also found in association with historic debris (including bottles, terracotta flowerpots, and porcelain fragments).

Report S-026184 is a report encompassing three separate areas. One area is adjacent to La Rinconada Park. Although mapping by the NWIC shows a very slight overlap, this is likely due to a minor mapping error, and the report itself notes that its boundaries are adjacent to La Rinconada Park. The report showed that a cultural resources records search found no cultural resources within 0.5 mile of the site, and that a pedestrian survey did not find any evidence of historic or prehistoric finds.

Report S-043646 is mapped as slightly overlapping the northern extent of the Santa Rosa Open Space boundary. However, the report describes and shows a location to the north of the Santa Rosa Open Space, with no overlap. Regardless, the report did not identify any historical or archaeological resources within its boundaries.

8.2.4 *Historic Map, Aerials, and Documentation*

Examination of historic aerials (1948 – 2020), historic U.S. Geological Survey (USGS) topographic maps (1897 – 2018), and associated documentation is summarized below. The summary only includes the areas within the Cultural Impact Study Area.

Heintz Open Space Area was partially a former apricot orchard, which was established in the 1950s. Some buildings are mapped as being within the former orchard area which are not extant on modern maps. The remaining area has never been developed, although has been extensively used as an open space area with numerous trails.

Novitiate Park was once part of the Novitiate Fathers' 8-acre vineyard. The land has never been developed and no evidence of buildings can be seen on USGS topo maps dating back to 1916, or an aerial photography dating back to 1948. The land has since been restored to a ‘natural’ state.

Rinconada Park is a manicured park, featuring a forested area adjacent to a creek. The area has not been developed, although a trail has been developed through it, and evidence of tree management can be seen over time on historic maps, suggesting the area has been modified.

Santa Rosa Open Space was partially a former apricot orchard, which was established in the 1950s. Some buildings are mapped as being within the former orchard area which are not extant on modern maps. The remaining area has never been developed, although has been extensively used as an open space area with numerous trails.

Worcester Park formerly contained orchard land, based on aerial photography from the 1940s and 50s. It was primarily cleared land with few natural trees. It has since been transformed into a manicured urban park with multiple trails.

8.2.5 *Historic Registers*

There are no listed historic resources within the VMP Area on the local Town Historic Inventory, CRHR, or NRHP. Five Views: An Ethnic Historic Site Survey for California, also failed to reveal any known sites within the VMP Area.

8.3 Public Services

Emergency services are provided to the VMP Area by the Santa Clara County Central Fire Protection District and the Los Gatos-Monte Sereno Police Department. The Santa Clara County Fire Department provides fire suppression and rescue services (Santa Clara County Fire Department 2020a, 2020b). In addition, the Fire Prevention Division provides a comprehensive fire and life safety educational program within the Town. The Los Gatos-Monte Sereno Police Department supports emergency preparation and response and works closely with federal, State, and local agencies in the event of a wildfire or other disaster.

There are three fire stations that serve the Los Gatos WUI:

- Los Gatos Fire Station, 306 University Avenue, Los Gatos, is staffed by eight on-duty personnel and has the following vehicles: Engine 83 (3), Rescue 83 (4), and Battalion 83 (1).
- Shannon Fire Station, 16565 Shannon Road, Los Gatos, is staffed by three on-duty personnel and has the following vehicles: Engine 82 (3), Engine 382 (select call), Utility 82 (Select Call), Decon trailer (Select Call), and Wood 782 trailer (Select Call).
- Winchester Fire Station, 15850 Winchester Boulevard, Los Gatos, is staffed by four on-duty personnel and has the following vehicles: Truck 85 (4), and Urban Search and Rescue 85 (Select Call) (Santa Clara County Fire Department 2020b).
- The Los Gatos-Monte Sereno Police Department is located at 110 East Main Street, Los Gatos. Services and information available on their website include information for alerts (Alert SCC and Nixle), general preparedness, natural disasters, Community Emergency Response Team (CERT), and links to other emergency services (Los Gatos-Monte Sereno Police Department 2020).

9 VEGETATION MANAGEMENT TREATMENTS AND TREATMENT ACTIVITIES

9.1 Treatment Types

The CalVTP identifies three treatment types—WUI fuel reduction, fuel breaks, and ecological restoration—to modify fire behavior through strategic removal or modification of vegetation. Consistent with the CalVTP, the Town will implement two of these treatment types—WUI fuel reduction fuel breaks—for the Open Space VMP to strategically reduce the likelihood of a ground fire increasing in intensity and help firefighters more easily contain a wildfire. These treatments are described in more detail in the following sections.

9.1.1 *WUI Fuel Reduction*

The focus of WUI fuel reduction treatments is to strategically reduce vegetation density and remove fuel to directly protect communities from wildfires originating in adjacent open space areas and protect open space areas from wildfire starting in or near development. These treatments also serve as emergency access points and staging areas for firefighters and equipment and reduce flammable vegetation along emergency evacuation routes for the community. Considerations for WUI fuel reduction treatments should include fuel hazard load, topography, human exposure, and proximity to residences and other structures. WUI fuel reduction should also address areas where habitat degraded by infestation of non-native plant species and in need of fuel reduction. Activities implemented within the WUI fuel reduction treatment type would occur within the 100-foot defensible space requirements on Town-owned open

space, as well as within the open space areas and undeveloped parks to reduce the overall risk of ignition and slow the rate of wildfire if it occurs within the Town. Appendix C identifies the specific areas where WUI fuel reduction (i.e., defensible space and fuel reduction area treatments) and non-native species removal will occur within the Open Space VMP Area.

9.1.2 *Fuel Breaks*

Fuel breaks are established in strategic areas where flammable vegetation can be modified to reduce fire spread to structures and/or natural resources and provide a safer location for firefighters to fight wildfires. This treatment type can be used in combination with other treatment types to increase effectiveness. Ultimately, fuel breaks assist active wildfire suppression efforts by slowing or stopping wildfire spread, including when extreme wind and weather conditions occur. Fuel breaks should consider topography, fuel characteristics, fire regimes, and expected weather conditions. In most cases, fuel breaks occur along strategic topographic locations, adjacent to public roadways, and adjacent to trails, but they could also occur next to areas naturally low in fuel (e.g., rocky outcrop areas) or high moisture content (e.g., waterbodies). The width of a fuel break varies by location, vegetation, and topography.

There are two types of fuel break treatment types: non-shaded fuel breaks and shaded fuel breaks. Non-shaded fuel breaks are typically created where there is a natural change in vegetation type, such as from forest to grassland. Heavy equipment is typically used to remove all vegetation from this type of fuel break, although manual removal or prescribed burning may be used on slopes steeper than 50–60 percent. Shaded fuel breaks are used in forest settings. The tree canopy is thinned to reduce the potential for crown fire to move through the canopy, but large trees remain. The shade of the retained canopy helps reduce regrowth of shrubs and sprouting hardwoods. Shaded fuel breaks are used instead of non-shaded fuel breaks in areas where habitat needs to be retained for sensitive species, there is potential for erosion, there is potential for visual impacts, or the fuel type allows this type of treatment. For the purpose of this VMP, shaded fuel breaks will be the main treatment type. Shaded fuel breaks in the VMP will be 100-feet wide and will be located along open space/undeveloped park boundaries, and along fire roads and trails. Appendix C identifies areas where shaded fuel breaks will be utilized within the Open Space VMP Area.

9.2 Treatment Activities

Vegetation management techniques are methods and techniques used to remove vegetation and reduce fuel loads. The goal of vegetation management is to reduce the risk of a ground fire. Methods include biological, hand, mechanical, and chemical treatments. Vegetation management techniques and treatment options have been selected for Roadway VMP Area and Open Space VMP Area with the intent of avoiding and minimizing impacts to sensitive resources. Effective treatment options should be selected based on the type, density, and location of vegetation and fuel loads. Treatment types are in accordance with CalVTP guidelines and recommendations. As described in Section 9.1, Treatment Types, WUI fuel reduction and shaded fuel breaks will be implemented for this VMP. Fuel reduction will consist of vegetation removal and maintenance to prevent and slow the spread of wildfire from open space/undeveloped parks to urban/developed areas and vice versa. The WUI fuel reduction and fuel break treatment types would be implemented using various treatment activities. The following treatment activities can be used to create both WUI fuel reduction and shaded fuel breaks. Specific treatment activities that can be employed in each Open Space VMP Area are identified in Appendix G.

The Town will work with qualified and trained private contractors including arborists and wildland fire specialists annually to inspect and clear vegetation within the open space areas/undeveloped parks and along roadways. The treatment activities identified in this VMP should be implemented by the Town and/or contractors and monitored for effectiveness. Personal protective equipment (PPE) should be worn at all times while performing activities. PPE includes, but is not limited to, eyewear, long sleeves and

pants, hardhats, and ankle or steel-toed boots. Snake chaps and other protective measures may be required in areas with rattle snakes, poison oak, or bees. Examples of the types of treatment activities that will occur as part of this VMP are listed below.

9.2.1 *Grazing or Prescribed Herbivory*

Grazing or prescribed herbivory involves using livestock, such as cattle, goats, sheep, or horses, to reduce understory and herbaceous fuel loads. Livestock consume grasses, forbs, and emerging trees and shrubs that contribute to the overall hazardous fuel load. Livestock do not effectively create fuel breaks; this treatment should be used to maintain vegetative growth to reduce fuel loads in grasslands, in brushlands, and beneath tree canopies. Livestock can also be used to remove non-native species infestations.

Grazing typically occurs late in spring when certain vegetation growth starts to slow and continues through the late summer. Some livestock are better suited to specific habitat and terrain types. For the open space areas/undeveloped parks, goats are the recommended livestock choice due to their ability to traverse a diverse range of terrains; consume large areas of vegetation including woody shrubs, vines, and trees over a short time-period; and remove materials up to 6 feet above the ground.

It is important that livestock are managed and remain only in designated grazing areas, which may require a herder, fencing, mineral block, and/or watering site. A site-specific grazing management plan should be prepared and implemented by a qualified contractor to prevent grazing or disturbance of sensitive resources. This grazing plan should clearly identify livestock containment methods such as portable or fixed fencing and or herders, as well as timing of grazing activities, and movement of grazing animals to new locations. A target vegetation removal goal should also be identified in the grazing management plan to determine the amount of vegetation (usually expressed in pounds per acre) to prevent overgrazing. Grazing does not need to occur on an annual basis for hazardous fuel reduction if the goal is to simply maintain fuel load in a specific area. If the goal is to reduce fuels, then grazing should occur on an annual basis and can be adjusted as needed. Consultation with a Certified Rangeland Manager is advised when conducting prescribed herbivory.

9.2.2 *Mechanical Treatments*

Mechanical treatments involve the use of heavy machinery or equipment rather than hand or manual equipment to remove or alter vegetation and woody debris. Generally, this treatment option is used to create fire roads and or breaks. Grading, mowing, disking, cutting, masticating, and grubbing are all examples of mechanical treatments. Mechanical treatments can be used on all vegetation types. However, access for machinery needs to be considered (e.g., slope, terrain, vegetation, seedbed preparation and revegetation needs, climate conditions, soil) before implementing this treatment type. Some areas may require more than one type of machinery to operate at once. For example, one machine may be cutting or removing vegetation and placing it in a stockpile for another machine to then chip in place or haul off-site. Vegetation removed during mechanical treatment would be disposed of by one or a combination of the following methods: lopping debris to a specified maximum length and scattering it within the treatment boundary to a specified depth to reduce flame lengths in the event of a wildfire, piling and leaving piles for wildlife habitat, chipping and blowing chips onto the ground as mulch or into piles for later removal, cutting large woody material into lengths for firewood, removing large wood material by hand, or hauling off-site to an appropriate facility.

This treatment option works best in areas with one uniform vegetation type. Operators of heavy machinery and equipment do not have the same ability as hand removal treatments to selectively remove species. However, it is possible with guidance for machinery to navigate around sensitive areas. Operators should be specifically trained to operate heavy machinery and supervised while conducting vegetation removal to limit impacts. Examples of heavy machinery and equipment include bobcats, chippers,

tractors, and mowers. Mechanical treatments require ongoing monitoring and maintenance since residual weed or shrub seed in the soil or resprouting of shrubs may revegetate treated areas with undesired plants. Most mechanical treatment occur in late spring, summer, or fall.

9.2.3 *Manual Treatments*

Manual treatment involves the use of hand tools and hand-operated power tools to cut, clear, or prune herbaceous or wood species. Hand removal is an effective but labor-intensive treatment option. Activities include hand pulling, trimming, pruning, cutting, and removal of trees, shrubs, or dead vegetation using only your hands or handheld equipment. Hand tools including shovels, wrenches, chainsaws, handsaws, pruning shears, trimmers, weed whackers, and loppers are used to trim and remove vegetation. This treatment requires less ground disturbance than mechanical treatment. Hand removal is a good treatment technique in areas with a vegetation mosaic, meaning multiple vegetation types in one area, where removal needs to be more selective. Solarizing and mulch application can also be placed on top of vegetation to reduce or stop growth through a combination of heat and lack of sunlight. These methods can take anywhere between 2 weeks and 6 months to treat vegetation, depending on the type and size of the vegetation and the treatment area size. This treatment option is most effective for spot treatments, not for widespread infestations. Vegetation that accumulates during manual treatments would be disposed of as described above for mechanical treatments.

9.2.4 *Herbicide Treatments*

Herbicides are chemicals that damage or kill plants and can be classified by their mode of action that interfere with plant metabolism in different ways. Herbicides include growth regulators, amino acid inhibitors, grass meristem destroyers, cell membrane destroyers, root and shoot inhibitors, and amino acid derivatives. Herbicide treatments are also either selective (i.e., they kill only a specific type of plant) or non-selective (i.e., they kill any type of plant). There are multiple factors to consider before applying herbicide treatments. These factors include the type or species of plant, life stage of the species, size, density, and location. Herbicide treatments are only suited for specific vegetation types and densities. For example, larger species in low densities that are more difficult to remove, such as eucalyptus, could be treated with herbicides as secondary spot treatments while broom species that generally occur in high densities should be removed using hand tools, such as a broom wrench. Application of herbicide treatments directly on plant tissues is one of the most effective methods. All herbicide treatments must be conducted from the ground and no aerial applications would be allowed as part of this VMP. Herbicide application is typically performed by hand and can include sponging, spraying (e.g., backpack hand applicator, boom sprayers), hand placement of pellets, or dusting chemicals onto targeted vegetation.

Herbicide treatments are optional as part of the Open Space VMP, on an as-needed basis, but are not to be used as part of the Roadway VMP or in areas with sensitive biological resources, including riparian habitat. Consistent with the CalVTP, this VMP would allow for the use of the following herbicides in the open space/undeveloped parks areas: borax (tetraborate decahydrate), clopyralid (monethanolamine salt), glyphosate (ispropylamine salt, potassium salt, dimethylamine salt, diammonium salt), hexazinone, imazapyr (isopropylamine salt), sulfometron methyl, triclopyr (butoxyethyl ester and triethylamine salt), nonylphenol 9 ethoxylates (NP9E), cleantraxx (penoxsulam and oxyfluorfen), velpar (hexazinone), and indaziflam.

Herbicide treatments can be highly effective in reducing the number of live species but require extra measures, such as training and certification to handle chemicals/pesticides, equipment, and storage. Certification is required to apply herbicides in the State of California through the California Department of Pesticide Regulation and requires the certified party to obtain appropriate PPE, including, but not limited to, masks or respirators, safety goggles, gloves, protective clothing, hard hats, and boots. In

addition, after herbicide application, dead species still need to be removed so that dry woody debris does not add to fuel loads. Herbicide treatments require ongoing monitoring and maintenance. Herbicide treatments must be performed in accordance with federal and State regulations by a licensed Pest Control Advisor.

10 VEGETATION MANAGEMENT AND MAINTENANCE STANDARDS AND AREAS

10.1 Vegetation and Maintenance Standards

Vegetation management for wildfire hazard reduction is an ongoing, cyclical process. Given the dynamic nature of vegetation, a single management prescription cannot be assigned to any location and be effective in perpetuity. Additionally, management prescriptions intended for initial treatments may differ from those intended for future maintenance of the same area. As a result, the management and maintenance standards presented in this section have been broken down by the Roadway VMP Area and Open Space VMP Area, as well as specific vegetation types known to occur within the overall VMP Area. In addition, certain vegetation community/land cover types found in the VMP Area (i.e., urban) do not present a wildfire hazard due to noncombustible condition and are not included in this VMP.

Vegetation management treatments outlined in the previous section should be selected based on the needs of each VMP location as conditions change over time. The management and maintenance standards outlined in this section are intended to modify fuel arrangements to reduce the potential for ignitions, rapid fire spread, crown fires, and extreme fire behavior in accordance with State and local regulations. These standards have ultimately been developed to reduce fuel loads, eliminate ladder fuels, disrupt the horizontal continuity of vegetation, remove non-native species, minimize ignition potential, and prioritize retention of non-combustible plants.

10.1.1 *Roadway VMP Standards*

The Town will work with private contractors annually to inspect and clear vegetation along the roadways. Clearing activities along the roadways will include the following management standards:

- Cutting back or removing vegetation and tree limbs that encroach into the roadway to create at least 20 feet of horizontal clearance.
- Removing low hanging tree limbs that extend over the roadway to create at least 13 feet, 6 inches of vertical clearance.
- Removing all non-fire-resistant vegetation located within 10 feet of the roadways. Vegetation to be removed includes, but is not limited to, combustible vegetation such as eucalyptus (*Eucalyptus* spp.) trees, acacia (*Acacia* spp.) trees, scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), and toyon (*Heteromeles arbutifolia*).
- Creating vertical spacing between trees and shrubs by removing vegetation that provides ladder fuels such as low branches and other understory shrubs within 10 feet of the roadways and at least 13 feet, 6 inches vertically above the roadways.
- Removing tree limbs and low branches to 6–10 feet above ground on mature trees along the edge of roadways, at least 13 feet, 6 inches above road surfaces, and at least 10 feet from the edges of the roadways.
- Removing trees that are on steep slopes leaning at angles that could fall and block a roadway.

- Redwoods should be left in place unless thinning of small saplings is required.
- Mowing groundcover, such as grasses, to achieve a height of 4 inches or less within 10 feet of the roadways.
- Remove vegetation entangled in overhead wires. The Town is not responsible for directly removing vegetation from overhead wires.[11] However, any required removal of vegetation entangled in overhead wires will be coordinated with PG&E. Vegetation currently encroaching on overhead wires and/or not completely cleared from danger of entanglement should be trimmed by PG&E so that vegetation does not encroach on overhead wires.

10.1.2 *Open Space VMP Standards*

The Town will work with private contractors annually to inspect and clear vegetation (as needed) within the Town-owned open space and undeveloped park areas. Clearing activities in these areas will include the following management standards:

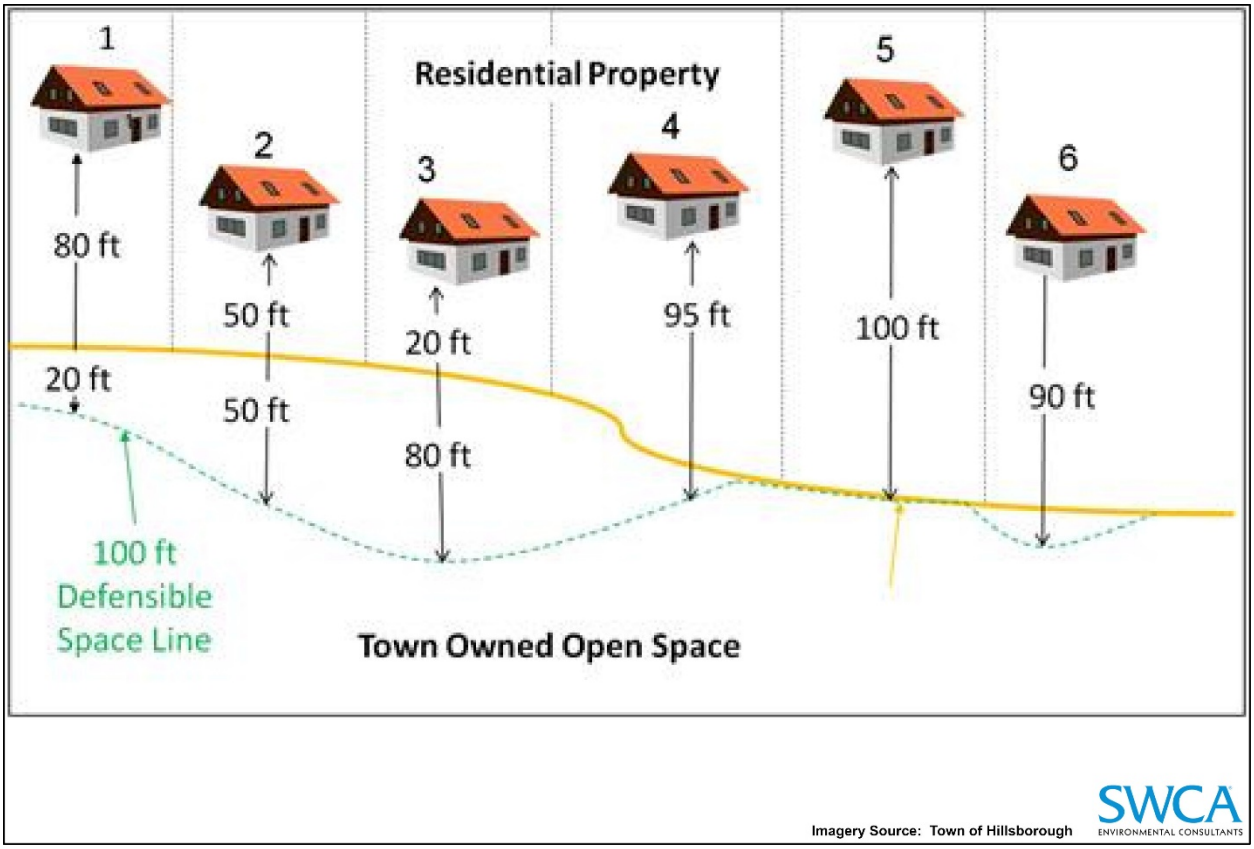
- Establish a defensible space zone around buildings on adjacent private properties. The Town will remove or treat vegetation on identified Town-owned property within 100 feet of adjacent buildings to create a 100-foot defensible space perimeter. The Town will not remove or treat any vegetation on private property as part of this project (Figure 10-1). [12] Defensible space areas on Town-owned open spaces areas/undeveloped parks are shown in Appendix C.
- Within 30 feet of a habitable structure on Town-owned properties, grasses (annual or perennial), weeds, and thistles will be treated such that heights do not exceed 3 inches. Grasses will not be pulled from the ground to avoid soil erosion. [13]
- Beyond 30 feet of a habitable structure, grasses (annual or perennial), weeds, and thistles will be treated such that heights do not exceed 18 inches.
- All dead trees and dead or dying ground cover, brush/scrub, twigs, branches, limbs, vines, or other vegetation will be removed from within the 100-foot defensible space area. Defensible space areas on Town-owned open spaces areas/undeveloped parks are shown in Appendix C.
- Dead trees will strategically be removed from open spaces areas outside the 100-foot defensible space area within the areas identified as fuel reduction area and shaded fuel break in Appendix C.
- Dead or dying growth will be strategically removed from brush/scrub and trees from open space areas outside the 100-foot defensible space area within the areas identified as fuel reduction area and shaded fuel break in Appendix C.
- Dead or dying ground cover, woody slash and debris, brush/scrub, twigs, branches, limbs, vines, or other vegetation will strategically be removed from open space areas outside the 100-foot defensible space area within the areas identified as fuel reduction area and shaded fuel break in Appendix C. Alternatively, any removed wood could be chipped and spread on-site as mulch.
- Areas within the shaded fuel break and fuel reduction areas identified in Appendix C will be thinned by removing trees and shrubs or chipping them and spreading them on-site as mulch.

[11] The Town and/or its contractors must remain a minimum of 10 feet from energized conductors and cannot remove any vegetation that is entangled in overhead wires. Removal of vegetation entangled with overhead wires will be coordinated with PG&E. The Town and/or contractors will also coordinate with PG&E where vegetation treatment creates risk of limbs falling onto wires and lane/road closures for vegetation management activities. Private contractors will prune the balance of any trees partially pruned by PG&E outside of the 10-foot safety zone.

[12] Requirements for private properties in the VHFHSZ not included in the VMP are outlined in Section 10.3 of this VMP.

[13] Cut grass may be left on the ground surface to protect soil as long as it does not exceed 6 inches in height.

Treatments for these areas should follow standards discussed in Section 10.1.3, Standards for Vegetation Communities Within the VMP Area, for the appropriate vegetation community.

- Non-native/invasive species will be removed and hauled off site. Treatments within these areas should follow standards for invasive species discussed in Section 10.1.3, Standards for Vegetation Communities Within the VMP Area. Areas where non-native/invasive species removal is recommended are identified in Appendix C.
- Eucalyptus and acacia trees will be removed. Areas where eucalyptus and acacia were observed in the Open Space VMP Area are identified in Appendix C.
- 

Source: May and Associates 2008

Figure 10-1. 100-foot defensible space line on Town-owned property.

10.1.3 *Standards for Vegetation Communities Within the VMP Area*

The following section describes specific treatment standards for vegetative fuels present within the VMP Area. All vegetation removed from VMP management areas should be chipped in place and spread as mulch or transported and disposed of in accordance with Town codes and standards. All treatment activities will follow the appropriate recommendations for fuel reduction according to vegetation type within the VMP open space/undeveloped park areas, consistent with CalVTP and Cal Fire recommendations. Avoidance and minimization measures (AMMs) and BMPs are listed in Section 11, Practices to Avoid or Minimize Impacts. Photographs for identification of each vegetation type are provided in Appendix G.

10.1.3.1 GRASSLAND/HERBACEOUS

Grassland and certain herbaceous species are flash fuels with quick ignition, burn, and dispersal rates. Non-native annual grassland and herbaceous understories are present throughout the Open Space VMP area. Recommendations for grassland/herbaceous areas follow:

- In areas where grassland transitions to woodland habitat, a fuel break should be maintained to prevent ignition of surrounding vegetation. A minimum break of 10 feet of horizontal distance should be maintained between grassland and woodland habitat.
- Woody slash and debris created by dead herbaceous vegetation should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris.
- Cut grass must be removed if it exceeds 6 inches of vertical height. If it is below 6 inches in height, grass cuttings can be left in place to protect ground soils from erosion.
- Grazing is allowed in this habitat and can occur year-round in certain areas, although it is recommended and most effective in late spring through late summer. Grazing should follow the grazing plan provided by the hired grazing management company.

10.1.3.2 CHAPARRAL/SCRUB

Chaparral, scrub, and brush occur throughout the VMP Area and include species like California sage scrub and coyote brush. This vegetation type generally occurs in dense clusters with some tree species interspersed. Recommendations for chaparral/scrub areas follow:

- Dead and dying debris should be cut and trimmed or removed. Roots can be left in place in order to maintain soil stability if necessary.
- All vegetative debris should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris.
- If trees are growing among this community, a minimum distance of 3 times the height of the scrub should be cleared between the lowest lying branches and the chaparral/scrub species (Figure 10-2).
- Horizontal separation should be 2 to 3 times the height of the chaparral/scrub (Figure 10-3).

10.1.3.3 OAK WOODLAND

Oak woodland dominates the VMP Area and includes a combination of coast live oak, valley oak, California bay, buckeye, and walnut. As previously mentioned, this is a sensitive vegetation community and work in this habitat type should be minimal and conducted in accordance with AMMs and BMPs outlined in Section 11, Practices to Avoid or Minimize Impacts. Canopies in this community are intermittent to continuous. In areas with breaks in the canopy understories are generally composed of grassland and brush and scrub species. Recommendations for oak woodland areas follow:

- In canopy breaks, maintain a vertical distance of 3 feet between surface fuels and low-lying tree branches (Figure 10-2). In areas where shrubs and scrub occupy the understory, a horizontal distance of at least three times the size of the scrub should be maintained, as shown in Figure 10-3. If grassland or herbaceous fuels are present in understories, a minimum distance of three times the vertical height of surface fuels should be maintained.
- Duff and leaf litter should not exceed 3 feet above ground level.

- If highly flammable species (Section 10.4.2) are present in oak woodland habitat, they should be removed and hauled off-site.
- Only shaded fuel breaks or thinning will be used in oak woodland and will not remove more than 20 percent of oak woodland vegetation (i.e., if the oak woodland covers 100 acres, no more than 20 acres will be converted to thin or create the shaded fuel break).

10.1.3.4 ACACIA, EUCALYPTUS & PRIVET

Acacia and eucalyptus are highly invasive and highly flammable species that contains flammable resins and oils. This species occurs throughout the VMP Area in small, concentrated stands mostly along roadways and adjacent to private properties. Recommendations for acacia areas follow:

- Pull seedlings and small saplings by hand or with a weed wrench. Thin dense clusters and maintain 10 to 20 horizontal feet, depending on the slope, between mature trees (Figure 10-3).
- Regulate and control stump sprouts, resprouts, and sapling growth using hand pulling for saplings and resprouts and chemical treatments for stumps.
- A minimum vertical distance of 3 times the height of resprouts and saplings shall be cleared between the lowest lying branches and any scrub species (Figure 10-2).
- Cut and treat larger sapling and mature tree species with herbicides.
    - Drill and inject with herbicide in applicable areas. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts.
- Acacia and eucalyptus can be chipped in place so long as no plant material is left adjacent to sensitive riparian features and does not cover other plants.

10.1.3.5 TREE OF HEAVEN

Tree of heaven is a highly invasive and flammable species that is commonly found in disturbed areas and along riparian corridors within the VMP Area. Recommendations for tree of heaven areas follow:

- Pull seedlings and small saplings while soils are moist and loose. Remove taproots by digging around the base of the plant to remove all roots and prevent resprouts.
- Cut the stems of mature trees at the beginning of spring and once more in June or July to reduce seed production and deplete energy reserves.
- Cut and treat trunks or stems of large trees (i.e., greater than 4-inches diameter at breast height [dbh]) with chainsaws and apply herbicides.

10.1.3.6 BROOM SPECIES

Broom is common in VMP Area understories and can grow in grasslands, scrub, and woodland habitats. Recommendations for tree of heaven areas follow:

- Pull shrubs by hand using a weed wrench.
- Cut shrubs to just above ground level using loppers or brush cutters during the dry season in areas sensitive to ground disturbance.

10.1.3.7 ENGLISH IVY

English Ivy is a woody vine generally found in moist areas with dense canopies and good shade cover. Recommendations for English ivy areas follow:

- Pull vines climbing trees and on the ground by hand or using rakes.
- Cut stems with pruners or loppers and dig up roots using shovels to prevent resprouts.
- Utilize prescribed herbivory, as appropriate, to remove ivy.

10.1.3.8 ITALITAN THISTLE

Italian thistle is an invasive species commonly found in disturbed areas, grasslands, and in riparian areas. This species occurs in concentrated patches throughout the VMP Area. Recommendations for Italian thistle areas follow:

- Smaller infestations can be removed by hand by pulling, digging, and cutting. Digging may be restricted in areas that contain sensitive habitat including riparian, chaparral, and oak woodland especially in areas upslope of aquatic resources and in areas with steep slopes due to the high level of soil disturbance.
- Pull plants by hand once the plant has bolted but prior to flower production.
- Cut plants by hand or brush cutters before the thistle flowers and again in early summer to reduce energy reserves. This treatment is best used in the dry season when soils are hard and hand pulling is more difficult.
- Graze infestations in the early spring when individual plants are approximately 4 to 6 inches high. Grazing should continue for about 2 to 3 weeks, or in coordination with the contracted grazing manager.
- Treat plants with herbicides in mid-spring before they spread seed. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts.

10.1.3.9 RIPARIAN WOODLAND

Riparian woodlands generally contain dense canopies with intermittent to continuous understories. Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. Riparian areas are sensitive and vegetation management activities should be minimal to protect and avoid impacts to sensitive resources per the AMMs and BMPs in Section 11, Practices to Avoid or Minimize Impacts. Recommendations for riparian areas follow:

- Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel.
- Target climbing and ladder fuels, such as poison oak and giant reed (*Arundo donax*). Three feet of separation should be maintained between surface fuels and low-lying canopy branches.
- Remove highly flammable species (Section 10.4.2).
- Monitor canopy continuation and connectivity. In areas with gaps in the canopy, understory growth, including ladder fuels, is more prevalent. These gaps, if present, should maintain 3 times the vertical distance of the height of surface fuels which should be trimmed or removed to ensure no highly flammable pockets of dense vegetation forms (Figure 10-2).

10.1.4 *Plant and Tree Spacing*

The Town's Be Wildfire Ready website explains plant and tree spacing for 100-foot defensible space requirements as follows:

> For vertical spacing remove all tree branches at least 6 feet from the ground. If there is a shrub near the tree, the branch clearance needs to be 3 times the height of the shrub. *Example: A 5-foot shrub is growing near a tree. 3×5 = 15 feet of clearance needed between the top of the shrub and the lowest tree branch.*

Horizontal spacing between shrubs and trees depends on the slope of the land and the height of the shrubs or trees. The website contains a chart to determine spacing distance (Town of Los Gatos 2020).

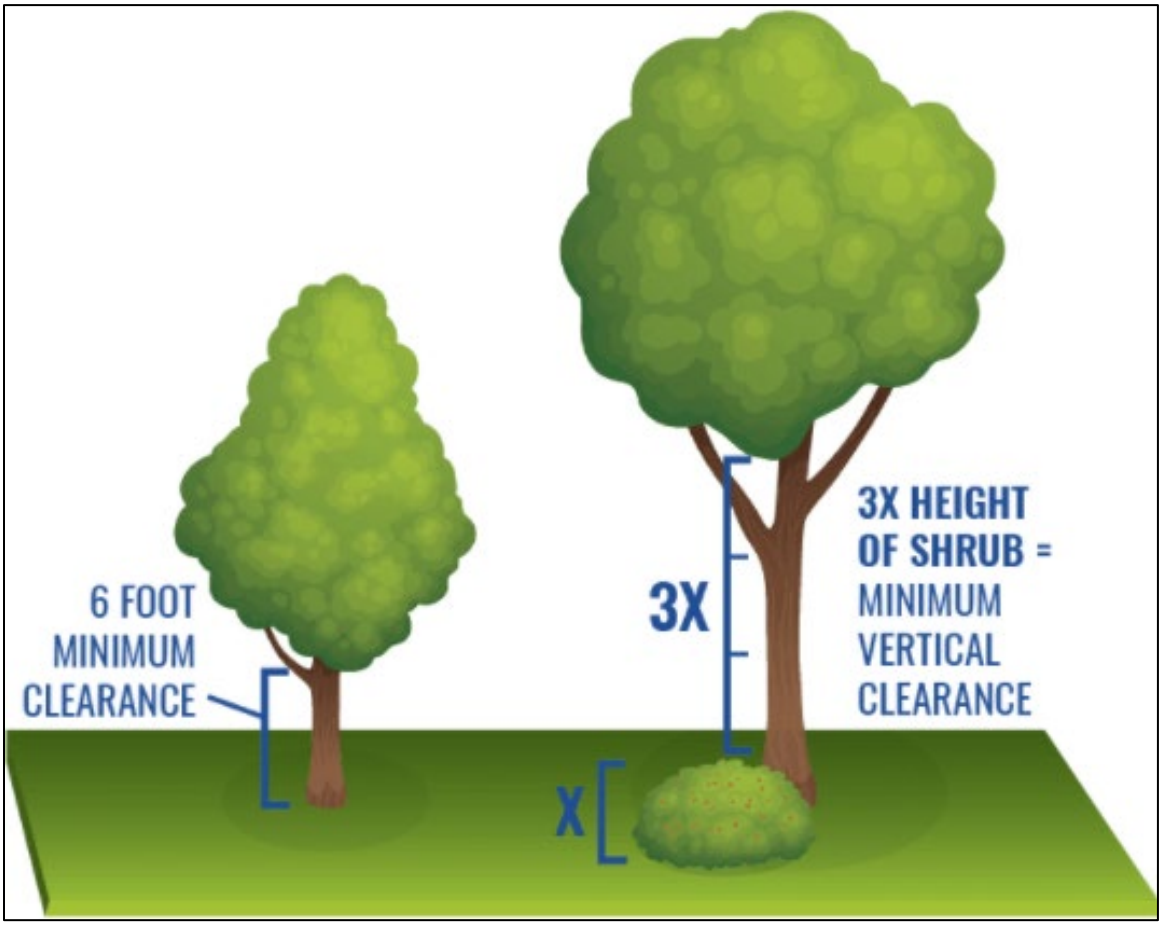


Figure 10-2. Vertical spacing for trees and shrubs.

Horizontal spacing of trees and shrubs is dependent on the slope of the land and the height of the trees, as shown in Figure 10-3:

- On flat to mild slopes (0 to 20 percent), trees should be spaced at least 10 feet apart and shrubs should be spaced at twice their height.
- On mild to moderate slopes (20 to 40 percent) trees should be spaced 20 feet apart and shrubs should be spaced at four times their height.

- On moderate to steep slopes (over 40 percent), trees should be spaced at least 30 feet apart and shrubs should be spaced at six times their height.

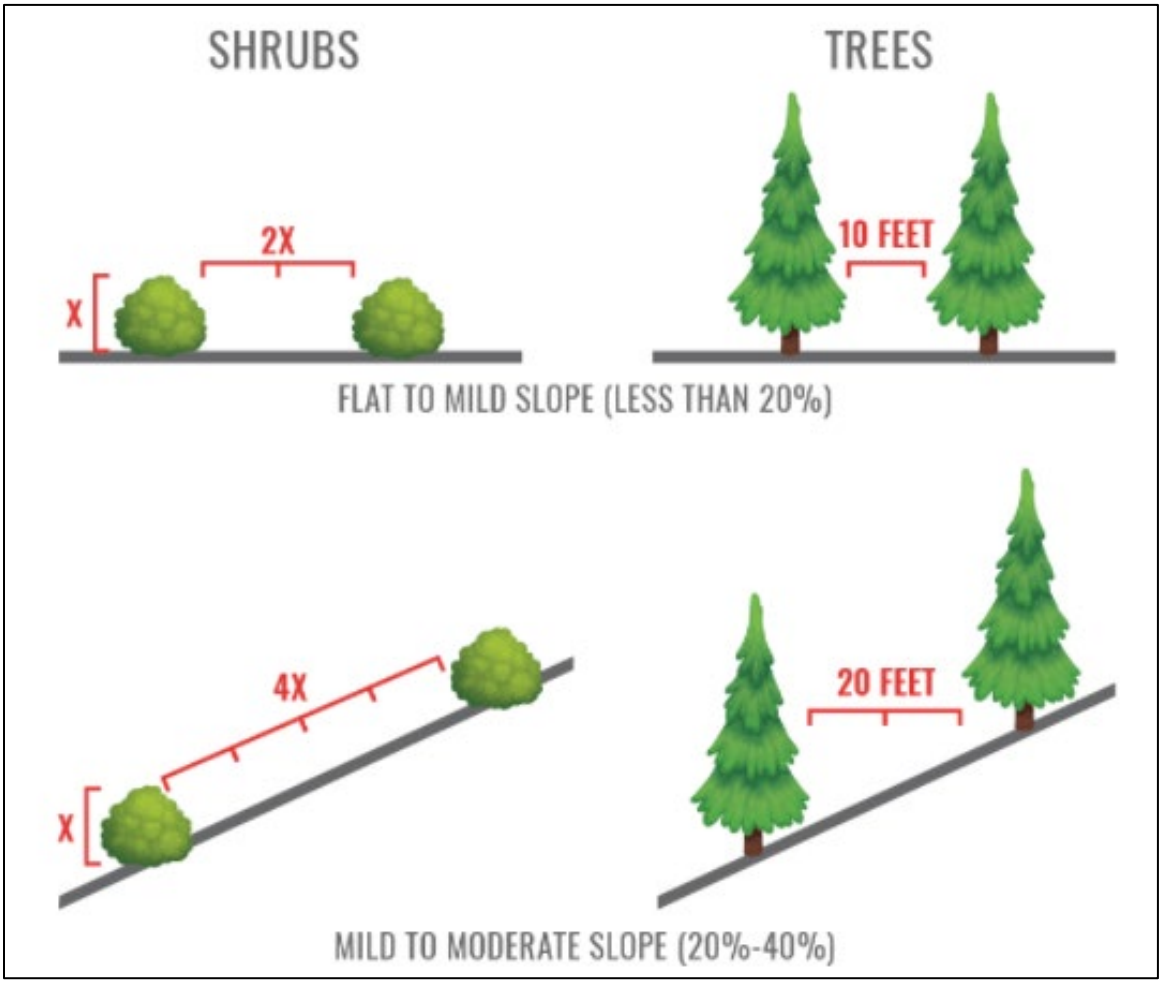


Figure 10-3. Horizontal spacing for trees and shrubs on flat to moderate slopes.

10.2 Area-Specific Wildfire Risk and Treatments

As previously mentioned, this VMP is consistent with the CalVTP created by CAL FIRE. CalVTP separates the state into ecoregions and treatable landscapes. The VMP Area is part of the 261A Central California Coast Ecoregion. Ecoregions are generally characterized as areas with similar or recurring patters of physical and biological characteristics that may include geology, soils, geomorphology, hydrology, climate, vegetation types, animal species composition, biodiversity, and land use history (CalVTP 2019a). This method helps identify the range of biological resources and sensitive biological resources near or adjacent to implementation areas, provides a relevant scale for analyzing potential impacts, and demonstrates that potentially affected resources and impacts of treatments were considered prior to implementation. The following section describes wildfire hazards, if present, and specific treatment activities for the Roadway VMP and Open Space VMP in accordance with CalVTP treatment standards.

10.2.1 *Roadways*

Roadway VMP Standards should be applied to all roadways, as appropriate. Roadway designations vary depending on a range of factors. Priority level 1 designated roadways have the highest overall fire risk. These roadways were selected based on vegetation density, slope, presence of highly flammable species, proximity to roadways, emergency access, and powerline entanglement. Slopes along roadways ranged from gentle to moderate with 1 to 37 percent slopes. Priority level 1 roadways are also designated evacuation routes. Some of these roadways include Foster Road, Kennedy Road, Shannon Road, and Twelve Oaks Road. Foster Road, for example, contained a dense understory with areas of acacia, privet, and broom, all of which are highly invasive and flammable species. In addition, this roadway also contained areas of powerline entanglement, which pose risks for ignition. Foster Road also runs adjacent to an ephemeral stream and sensitive riparian areas, which generally contain dense areas of vegetation adjacent to the roadway. In general, these roadways contained steep slopes, high vegetation fuel content, potential for ignition due to utility entanglement, and required management to provide safe evacuation access for residents and emergency personnel.

Priority level 2 roadways included portions of Francis Oak Way, Foster Road, Tourney Road, Eugenia Way, and Suview Drive. These roadways were generally less densely vegetated, containing some areas of dense woodland with pockets of highly flammable and invasive vegetation. These roadways were identified as high priority roadways by the Town and as possible routes that may require management for emergency access. These roadways also include arterial and collector streets. Francis Oak Way was designated priority level 2 because it contained some canopy entanglement as well as areas of broom infestation. Lower portions of the roadway contained developed understories, pockets of oleander, and limited utility entanglement. Areas of coyote brush scrub occur at the upper portions of this roadway. These roadways were similar to priority roadways but contained less overall vegetative fuel. Powerline and utility entanglement were also less common and would be less likely to result in ignition. These roadways vary in topography and terrain but generally contained gentle to moderate slopes.

Priority level 3 roadways have the least wildfire risk. These areas were generally characterized by gently sloping, urban streetscapes with mostly ornamental, landscaped vegetation. Some powerline and utility entanglement occurs but is less risky due to a lower density of fuels. Vegetation in these areas is usually well maintained and does not encroach on roadways or pose a serious wildfire threat. These roadways are generally adjacent to Town center with wide streets and sidewalks. Priority level 3 roadways are not being examined as part of this VMP but will require inspections every few years to ensure wildfire standards are met and overall risk remains low.

10.2.2 *Santa Rosa/Heintz Open Space*

The Santa Rosa/Heintz combined open space areas will require a combination of fuel modification treatments and treatment activities to manage wildfire risk, including grazing or mowing, creating shaded fuel breaks adjacent to the open space boundary and along trails and fire roads, and pruning and thinning of trees and shrubs to reduce ladder fuels. Appendix C shows the areas within Santa Rosa and Heintz Open Spaces for each treatment type. Appendix G summarizes the treatment activities, timing, and standards for each open space area.

The Santa Rosa Open Space is designated as priority level 1. It is one of the steepest and largest open space areas in the Open Space VMP Area along with the Heintz Open Space, which sits due west of Santa Rosa Open Space. Sixty-one percent of slopes are categorized as gently sloped (0 to 20 percent sloped) and 39 percent are categorized as moderately steep (20 to 40 percent sloped). Both the size and steepness of slopes in this open space area create a high wildfire risk. Although the vegetation is well managed in most areas, there are areas of canopy connectivity, stockpiled woody debris, dense understories, and

minor powerline entanglement. All these factors contribute to a high wildfire risk. In general, the steeper the slope the greater the rate of wildfire spread, as flames from below heat and dry fuels above, making them more available for combustion. Strong winds funneled through the hillside could cause a wildfire to spread at a more rapid rate through open space area towards residences and other infrastructure, which is most dense north and south of the open space boundary. Neighboring properties contain ornamental and landscaped vegetation, including eucalyptus trees, which are highly flammable. These properties also need management to reduce wildfire risk in the area and should follow guidelines in Section 10.3, Requirements for Private Properties in the VHFHZ not included in the VMP Area. Fuels in the Santa Rosa Open Space are predicted to burn with flame lengths in an excess of 12 feet and rates of spread of 20 chains/hour or higher. Under these conditions, suppression strategies would be limited to indirect attack and use of mechanized equipment. Santa Rosa Open Space is also difficult for emergency and fire access because of the scale and steeply sloped fire roads that weave through the open space. If a wildfire were to occur, it may take longer for response teams to access the site and contain the fire.

The Heintz Open Space is designated as priority level 1. It has similar conditions to the Santa Rosa Open Space. The two open spaces are connected and are both steeply sloped. Within the Heintz Open Space 54 percent of slopes are categorized as gently sloped and 46 percent are categorized as moderately steep. It is very likely that if a wildfire were to start in one of the open spaces, it would easily spread to the other. Due to the overall aspect of both the Santa Rosa and Heintz Open Space areas, vegetation and ground warming from prolonged sun exposure could also cause wildfire to spread upslope more quickly than it would in flatter, cooler areas. Canopy connectivity and proximity and density of residences and infrastructure surrounding the open space area also contribute to the high-risk designation of this open space. Heintz Open Space is also subject to strong winds, which could cause rapid and unpredictable wildfire dispersion. Flame length and rate of spread are within Heintz Open Space are also consistent with the Santa Rosa Open Space. These factors create additional constraints for fire response teams. This area is more difficult for emergency and fire access because of the scale and steeply sloped fire roads that weave through the open space. Just as in the Santa Rosa Open Space, if a wildfire were to occur, it may take longer for response teams to access the site and contain the wildfire.

10.2.3 *La Rinconada Park*

La Rinconada Park will require a combination of fuel modification treatments and treatment activities to manage wildfire risk, including grazing or mowing, creating shaded fuel breaks adjacent to the park boundary and along trails and fire roads, pruning and thinning of trees and shrubs to reduce ladder fuels, and removing invasive species. Appendix C shows the areas within La Rinconada Park for each treatment type. Appendix G summarizes the treatment activities, timing, and standards this area. Standards for riparian and oak woodland for pruning and reducing ladder fuels along Scott Creek should be followed, as detailed in Section 10.1.3, Standard for Vegetation Communities Within the VMP Area. Invasive plants, including ivy, broom, acacia, and privet, should be managed, and AMMs and BMPs for ephemeral/intermittent drainages should be implemented, as seen in Section 11, Practices to Avoid and Minimize Impacts.

La Rinconada Park has a low wildfire risk and priority level of 3 making it the lowest priority area of the Open Space VMP. This park is mostly flat with 90 percent of slopes categorized as gently sloped and 10 percent moderately sloped. This park is adjacent to the La Rinconada Country Club and golf course to the east, which is dominated by irrigated and regularly mowed turf, which acts as a fuel break. In addition, approximately 70 percent of the western park boundary is also composed of mowed turf, which also acts as a fuel break. Although there are highly flammable species present, they are currently only present in low quantities and do not pose a serious threat. These species should be removed to maintain a low wildfire risk but are not a high priority at this time. Since La Rinconada Park is small and flat, meaning that it would likely have a slower dispersal rate and overall risk. Fuels are predicted to burn with flame

lengths of 0-4 feet and rates of spread of 0-2 chains/hour. Under these conditions, multiple wildfire suppression strategies are readily available, including direct attack. Adjacent multi-lane roadways also provide easy access for emergency vehicles.

10.2.4 *Worcester Park*

Worcester Park will require a combination of fuel modification treatments and treatment activities to manage wildfire risk, including grazing or mowing, creating shaded fuel breaks adjacent to the park boundary and along trails and fire roads, pruning and thinning of trees and shrubs to reduce ladder fuels, and removing invasive species. Appendix C shows the areas within Worcester Park for each treatment type. Appendix G summarizes the treatment activities, timing, and standards this area. Standards for fuel reduction within Oak Woodland habitat should be followed, as detailed in Section 10.1.3, Standard for Vegetation Communities Within the VMP Area. Ladder and surface fuels should be reduced and invasive plants, including dense broom, ivy, vinca, Italian thistle, acacia, and tree of heaven, should be managed.

Worcester Park is a priority level two, moderate risk park within the VMP Area. The park is gently sloping with 99 percent of slopes categorized as gently sloped and 1 percent moderately sloped. Concentrated areas of highly flammable vegetation and woody debris are interspersed in the understory. Almost the entire park boundary is surrounded by high-density residences and other infrastructure. This park is small and gently sloped and will likely have a slow a wildfire dispersal rate and low overall risk. Fuels predicted to burn with flame lengths of 0-4 feet, with small pockets with potential to burn with 8 feet flame lengths, and rates of spread of 0-5 chains/hour or higher. Under these conditions, suppression strategies include direct attack, with some indirect attack. Access for fire response via fire roads, trails or adjacent roadways allows for prompt containment of the fire. In addition, adjacent multi-lane roadways provide easy access for emergency vehicles and large apparatus.

10.2.5 *Novitiate Park*

Novitiate Park will require a combination of fuel modification treatments and treatment activities to manage wildfire risk, including grazing or mowing, creating shaded fuel breaks adjacent to the park boundary and along trails and fire roads, pruning and thinning of trees and shrubs to reduce ladder fuels, and removing invasive species. Appendix C shows the areas within Novitiate Park for each treatment type. Appendix G summarizes the treatment activities, timing, and standards this area.

Novitiate Park is a moderate-risk park within the VMP Area. This park contains 83 percent gently sloped and 17 percent moderately steep slopes along the northern portions of the park boundary. Overall, vegetation is dense but well maintained except for a dense area of French broom along the eastern park boundary. In addition, excess fuels, including woody debris and slash, are present in the understory and require management. This park is small and gently sloped and will likely have a slow a wildfire dispersal rate and low overall risk. Fuels are predicted to burn with flame lengths of 0-4 feet and rates of spread of 0-5 chains/hour or higher. Under these conditions, suppression strategies include direct attack, with some indirect attack. This park is also an accessible area to emergency vehicles, although the streets are narrow and often congested with cars from park users.

10.3 Defensible Space Requirements for Private Properties in the VHFHSZ not Included in the VMP Area

In addition to the areas that are included in the VMP, approximately one quarter of the Town's residents are located in the WUI. The Town had approximately 3,091 residences with an estimated 6,800 residents located in the WUI in 2018 (Town of Los Gatos 2020e). This VMP does not include vegetation

management activities on private property; however, Chapter 9 of the Los Gatos Municipal Code contains vegetation management requirements for all public and private lands in the VHFHSZ. The Town's Municipal Code requires that property owners maintain defensible space within 100 feet of any structures. Defensible space is defined in three zones, each with its own vegetation management requirements as shown in Figure 10-4 and described below.

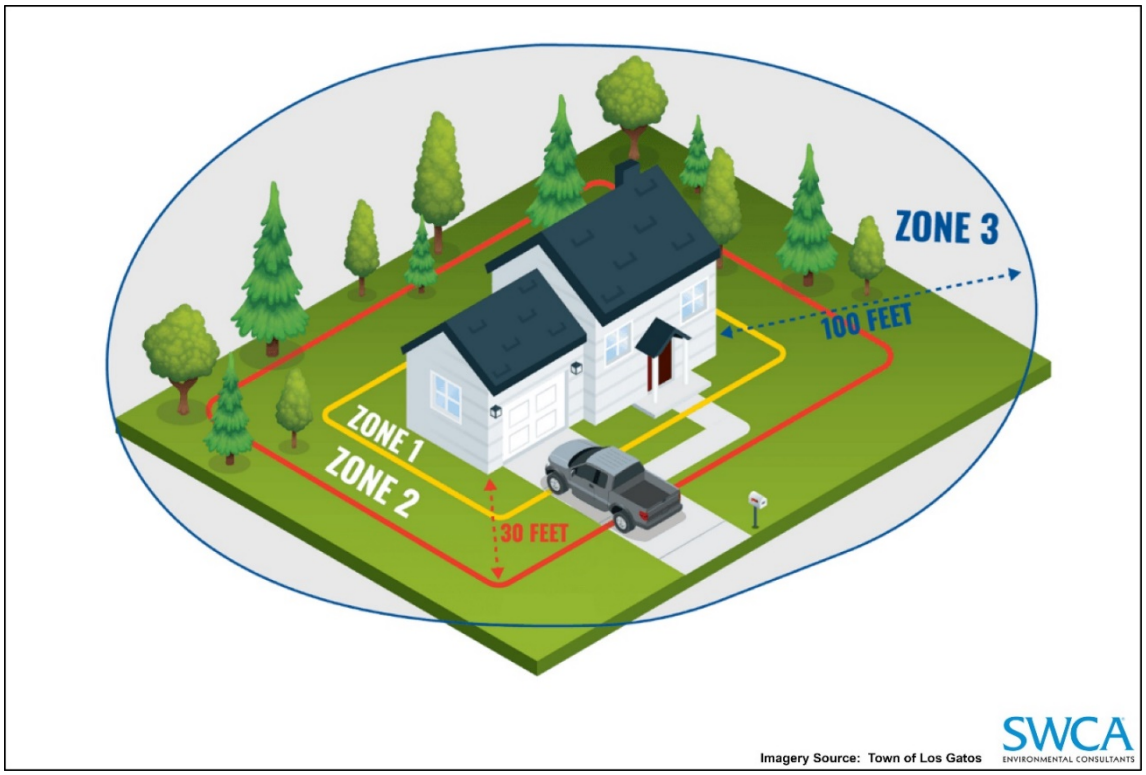


Figure 10-4. Defensible space zones.

10.3.1 *Zone 1 Extends 0 to 5 Feet Out: The Noncombustible Zone*

- Remove all plants and vegetation, especially those touching your home.
- Clean roofs and gutters of dead leaves, debris, and pine needles that could catch embers.
- Move any flammable material away from wall exteriors—mulch, flammable plants, leaves and needles, and firewood piles—anything that can burn. Remove anything stored underneath decks or porches.

10.3.2 *Zone 2 Extends 5 to 30 Feet Out: The Clean and Green Zone*

- Remove all dead plants, grass, and weeds (vegetation).
- Remove dead or dry leaves and pine needles from your yard, roof, and rain gutters.
- Remove branches that hang over your roof and keep dead branches 10 feet away from your chimney.
- Create a separation between trees, shrubs and items that could catch fire, such as patio furniture, wood piles, swing sets, etc.

10.3.3 *Zone 3 Extends 30 to 100 Feet Out: The Reduced Fuel Zone*

- Create horizontal spacing between shrubs and trees.
- Create vertical spacing between grass, shrubs, and trees.
- Dispose of heavy accumulations of ground litter/debris.
- Remove dead plant and tree material.
- Remove small conifers growing between mature trees.
- Remove vegetation adjacent to storage sheds or other outbuildings within this area.
- Trees 30 to 60 feet from the home should have at least 12 feet between canopy tops.

10.4 Maintenance and Future Assessments

This section outlines the components of evaluating, prioritizing, and planning vegetation management actions to be conducted in the VMP Area. While this section identifies preparation of an annual work plan to address vegetation management needs, regular and routine field inspections by Town staff and/or contractors may necessitate modifications to the annual work plan.

10.4.1 *Field Assessments*

Field assessments of vegetation conditions in the VMP Area will be conducted by Town staff and/or contractors annually in the spring months to inform the annual work plan development process by identifying the anticipated level of effort necessary to treat the vegetation in the VMP Area and identifying the treatment activities that will be used.

10.4.2 *Treatment Timing*

The timing of vegetation treatments is important to achieve the appropriate vegetation management standards. Given the variable nature of vegetation through changes in weather and season, the schedule of the treatment may often be just as important as the type of treatment selected. For example, treatments in grasslands typically take place when grass cures or dries out. Cutting grass too early will be ineffective as the grass typically grows back, effectively negating the treatment. Conversely, cutting grass too late will leave the grass in a hazardous condition during periods of high fire danger. Vegetation treatments also need to be conducted when the weather is not too dry or windy, as some treatment techniques (e.g., mechanical treatments) have the potential to ignite wildfires.

Treatment timing will also be considered to avoid or minimize impacts to special-status plant and animal species. It is likely that there will be some periods at some locations when vegetation management activities need to be avoided (e.g., avian nesting season). Specific BMPs associated with avoiding sensitive species are included in Section 11, Practices to Avoid or Minimize Impacts. Timing treatments to either control or avoid the spread of high fire risk plants, such as broom or pampas (*Cortaderia selloana*)/jubata grass (*C. jubata*) or insect pests is also critical. For example, treatments performed when plants have set or are setting seed will allow for greater seed dispersal. Treatment timing should take advantage of differences in the timing of seeding of fire-resistant plant species and avoid periods when invasive or pyrophytic species are in seed. In addition, tree limbing should occur in the winter months when trees are less susceptible to diseases. Scars from branch and limb removal can heal better during the winter months when the species is more dormant. Appendix G summarizes recommended treatment timing/schedule for vegetation communities and non-native species, including highly flammable species

(i.e., acacia, English ivy, eucalyptus, French broom, grass species, Italian thistle, privet, and tree of heaven).

10.4.3 *Annual Work Plan Development*

The Town and/or contractors will prepare annual vegetation management work plans based on site-specific conditions observed during the field assessments described above. The work plans will review vegetation management activities from the past year, potentially re-evaluate priorities, and may suggest future modifications to the VMP through adaptive management strategies. The plan will identify vegetation treatment activities, which areas or properties should be treated, implementation timing, resource needs and availability, funding sources, and monitoring/tracking needs. This process will also involve preparing bid specifications, advertising bids, and evaluating and selecting contractors. As stated previously, the Roadway VMP process has already begun implementation for the year 2020, but this will need to be repeated in subsequent years. The Open Space VMP process will begin in 2021 and will need to be repeated annually within the 100-foot defensible space area and every 3 years within the other open space areas in subsequent years.

This VMP includes an adaptive management component. The annual work plan is intended to be an internal, working document that may be modified throughout the year. Modifications to the annual work plan may be necessary due to various factors, including field conditions, vegetation growth, contractor or crew completion rates, funding, staff and resource availability, and emergency conditions.

11 PRACTICES TO AVOID OR MINIMIZE IMPACTS

11.1 Avoidance and Minimization Implementation

Table 11-1 outlines practices intended to avoid and minimize potential impacts to sensitive resources associated with implementation of vegetation treatment or removal.

Table 11-1. Site- and Work-Specific Avoidance and Minimization Measures

ID #	Avoidance and Minimization Measure	Applicable to: Roadway	Applicable to: Open Space
General Measures			
1	The boundaries of the treatment area and protected resources will be clearly defined on maps and with highly visible flagging or other clear, existing landscape demarcations (e.g., edge of a roadway) prior to beginning any treatment to avoid disturbing the resource. “Protected Resources” refers to environmentally sensitive places within or adjacent to the treatment areas that would be avoided or protected to the extent feasible during planned treatment activities to sustain their natural qualities and processes. This work will be performed by a qualified person, as defined for the specific resource (e.g., qualified Registered Professional Forester or biologist).	X	X
2	During project activities, all trash that may attract predators shall be properly contained, removed, and disposed of regularly. Following vegetation management activities, trash and debris shall be removed from work areas.	X	X
Visual Resources Measures			
3	All treatment-related materials, including vehicles, vegetation treatment debris, and equipment, will be stored outside of the viewshed of public trails, parks, recreation		X

ID #	Avoidance and Minimization Measure	Applicable to: Roadway	Applicable to: Open Space
	areas, and roadways to the extent feasible. Materials staging and storage areas will be located outside of the viewshed of public trails, parks, recreation areas, and roadways to the extent feasible.		
4	Sufficient vegetation within, at the edge of, or adjacent to treatment areas will be preserved to screen views from public trails, parks, recreation areas, and roadways as reasonable or appropriate for vegetation conditions.	X	X
5	When possible, project activities will ensure that fuel breaks or tree removals are blended into the surrounding environment.	X	X
Air Quality Measures			
6	Idling of construction vehicles and equipment shall be minimized to no more than 3 minutes to the extent feasible. Construction foremen shall include briefing crews on vehicle use as part of pre-construction site meetings. These briefings shall include discussion of “common sense” vehicle use.	X	X
7	To minimize dust control during vegetation management activities, the following measures will be implemented: a. Speed limits will be limited to 15 miles per hour on unpaved areas. b. If the use of unpaved roads creates excessive dust, water trucks will be used, as necessary. c. Visible dust, silt, or mud tracked-out on to public paved roadways will be removed.		X
Cultural Resource Measures			
8	A cultural resources records search was completed for the Town and resources were not found in areas that will be impacted by the project. In addition, only minimal soil disturbance is expected as part of the project. Cultural and paleontological resource impacts are not anticipated. If during any phase of the project, cultural and/or paleontological resources or human remains are discovered, work will be stopped until the find has been evaluated and the potential significance determined by a qualified professional archaeologist and an appropriate course of action has been recommended.	X	
9	Cultural research will be conducted prior to implementing treatments as part of a cultural resource investigation. The purpose of this research is to properly inform survey design, based on the types of resources likely to be encountered within the treatment area, and to be prepared to interpret, record, and evaluate these findings within the context of local history and prehistory. The qualified archaeologist and/or archaeologically trained resource professional will review records; review study maps; read pertinent ethnographic, archaeological, and historical literature specific to the area being studied; and conduct other tasks to maximize the effectiveness of the survey.		X
10	An archaeologically trained resource professional and/or qualified archaeologist will conduct a site-specific survey of the treatment area. The survey methodology (e.g., pedestrian survey, subsurface investigation) depends on whether the area has a low, moderate, or high sensitivity for resources, which is based on whether the records search, pre-field research, and/or Native American consultation identifies archaeological or historical resources near or within the treatment area. A survey report will be completed for every cultural resources survey completed.		X
11	If during any phase of the project, cultural and/or paleontological resources or human remains are discovered, work will be stopped until the find has been evaluated and the potential significance determined by a qualified professional archaeologist and an appropriate course of action has been recommended.		X
12	A training will be conducted for all crew members and contractors implementing treatment activities on the protection of sensitive archaeological, historical, or tribal cultural resources. Workers will be trained to halt work if archaeological resources are		X

ID #	Avoidance and Minimization Measure	Applicable to: Roadway	Applicable to: Open Space
	encountered on a treatment site and the treatment method consists of physical disturbance of land surfaces (e.g., soil disturbance).		
Biological Resources Measures			
13	Project activities will be designed to avoid significant effects on special-status species that are listed as rare, threatened, or endangered under federal law or are listed as rare, threatened, endangered, candidate, fully protected, or species of special concern under State law. A desktop review of the CNDDB and USFWS Information for Planning and Consultation System has been conducted and a reconnaissance survey of the roadways and parks was completed by SWCA in June and July 2020. a. A qualified biologist will be retained to conduct a training to field personnel on sensitive habitat and species prior to vegetation management work. The training will include the identification, relevant life history information, and avoidance of pertinent special-status species; identification and avoidance of sensitive natural communities and habitats with the potential to occur in the treatment area; impact minimization procedures; and reporting requirements. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during treatment activities to leave the area unharmed and when it is necessary to report encounters to a qualified biologist. b. A qualified biologist will be engaged prior to all work to review the work locations. The biologist will be retained to survey the project area for special-status plant and wildlife species if work occurs adjacent to suitable habitat. All surveys will be conducted in the appropriate season. c. A qualified biologist will be retained to conduct a nesting bird survey if work occurs during the nesting bird season (generally March 1 through September 15). If a nesting bird is found, the biologist will provide measures to avoid impacting the species, such as implementing an appropriate no disturbance buffer. d. A qualified biologist will be retained to conduct surveys for roosting bats prior to any tree trimming or tree removal. If a roosting bat is found, the biologist will provide measures to avoid impacting the species, such as an appropriate no disturbance buffer or exclusion.	X	X
14	If special-status wildlife is encountered during project activities, it will be unharmed, it will be allowed to leave the area on its own volition, or the appropriate regulatory agency (i.e., CDFW or USFWS) will be contacted to determine the appropriate action to relocate the species.	X	X
15	If sensitive natural communities are determined to be present in the treatment area as part of Measure 13, a qualified biologist will perform a protocol-level survey following the CDFW “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities” of the treatment area prior to the start of treatment activities to map sensitive natural communities and sensitive habitats in the treatment area.		X
16	Treatments in chaparral habitats will implement the following in consultation with a qualified biologist: a. Develop a treatment design that avoids conversion of the chaparral vegetation alliance, including evaluating and determining the appropriate spatial scale at which the proponent would consider the chaparral alliance converted. Demonstrate with substantial evidence that the habitat function of chaparral would not be converted. Consideration of factors such as site hydrology, erosion potential, suitability of wildlife habitat, spatial needs of sensitive species, presence of sufficient seed plants and nurse plants, light availability, and edge effects may inform the determination of an appropriate spatial scale. b. Maintain a minimum percent cover of mature native shrubs within the treatment area to maintain habitat function. Mature native shrubs that are retained will be distributed contiguously or in patches within the stand. If the stand consists of multiple age classes, patches representing a range of		X

ID #	Avoidance and Minimization Measure	Applicable to: Roadway	Applicable to: Open Space
	middle to old age classes will be retained to maintain and improve heterogeneity, to the extent needed to avoid vegetation conversion.		
17	To minimize impacts to natural resources, the area of ground disturbance will be limited to the minimum footprint necessary to meet the goals and objectives of vegetation management activities.	X	X
18	Project activities will be conducted to avoid introducing or spreading invasive plant species. The following are California Invasive Plant Council (CAL-IPC) BMPs to prevent the spread of invasive species (CAL-IPC 2012): a. Provide prevention training to staff and contractors prior to starting work. b. Schedule activities to minimize potential for introduction and spread of invasive plants. c. Designate waste disposal areas for invasive plant materials and contain invasive plant material during transport. d. Plan travel routes to avoid areas infested with invasive plants. e. Clean tools, equipment, vehicles, and animals before transporting materials and before entering and leaving worksites. f. Clean clothing, footwear, and gear before leaving infested areas. g. Carry portable cleaning tools that can be used without water. h. Prepare worksites to limit the introduction and spread of invasive plants. i. Minimize soil and vegetation disturbance. j. After activities, monitor worksites for invasive plants. k. Prevent invasive plant contamination of project materials when stockpiling and during transport.	X	X
19	Prevent the risk of pathogens spread in sensitive natural communities by implementing the following BMPs: a. Include training on *Phytopthora* diseases and other plant pathogens in the worker awareness training. b. Clean and sanitize vehicles, equipment, tools, footwear, and clothes before arriving at a treatment site or a site where contamination is a risk. c. Minimize soil disturbance as much as possible by limiting the number of vehicles, avoiding off-road travel as much as possible, and limiting use of mechanized equipment. d. Minimize movement of soil and plant material within the site, especially between areas with high and low risk of contamination. e. Clean soil and debris from equipment and sanitize hand tools, buckets, gloves, and footwear when moving from high-risk to low-risk areas or between widely separated portions of a treatment area. f. Follow the procedures listed in Guidance for plant pathogen prevention when working at contaminated restoration sites or with rare plants and sensitive habitat (Working Group for *Phytoptheras* in Native Habitats 2016).		X
20	If temporary fencing is used for prescribed herbivory, it will be wildlife friendly and a qualified biologist will review and approve the design prior to installation.		X
Aquatic Resources Measures			
21	If work will impact riparian vegetation, the Town will consult the CDFW and RWQCB, as appropriate.	X	X
22	Vegetation within a riparian area will not be removed for roadway work. Only trimming will occur in these areas above and adjacent to roadways.	X	
23	Herbicides will not be used as part of the Roadway VMP.	X	

ID #	Avoidance and Minimization Measure	Applicable to: Roadway	Applicable to: Open Space
24	Treatments in riparian habitats will be designed to retain or improve habitat functions by implementing the following: a. Retain at least 75% of the overstory and 50% of the understory canopy of native riparian vegetation within the limits of mapped riparian habitat (see Measure 15). Native riparian vegetation will be retained in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of treatment activities. b. Limit treatments to removal of uncharacteristic fuel loads (e.g., removing dead or dying vegetation), trimming/limbing of woody species as necessary to reduce ladder fuels, and select thinning of vegetation to restore densities that are characteristic of healthy stands of the riparian vegetation types characteristic of the region. This includes hand removal (or mechanized removal where topography allows) of dead or dying riparian trees and shrubs, invasive plant removal, selective thinning, and removal of encroaching upland species. c. Limit removal of large, native riparian hardwood trees (e.g., willow, ash, oak, maple, alder, sycamore, cottonwood). d. Fell removed trees away from adjacent streams or waterbodies and pile outside the mapped riparian area. e. Avoid removing vegetation that could reduce stream shading and increase stream temperatures. f. Limit ground disturbance to the minimum necessary to implement effective hazardous fuel reduction.		X
25	Herbicide use in riparian areas associated with the Open Space VMP will be applied by hand application only. Only herbicides approved for aquatic environments will be used.		X
26	Herbicide application will occur outside the wet season (generally November 1 through April 14) when seasonal streams are low flow or dry.		X
27	Herbicide treatments must be performed in accordance with federal and State regulations by a licensed Pest Control Advisor. Applicators will follow all herbicide label requirements and refer to all other BMPs regarding mandatory measures to protect sensitive resources and employee and public health during herbicide application.		X
28	No work will occur in standing water associated with a stream or creek in the VMP Area.	X	X
29	During VMP implementation, fuel and hazardous materials will be kept at 100 feet from waterbodies to provide protection from accidental leaks or spills.	X	X
30	All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 100 feet from potentially jurisdictional drainages.	X	X
31	Prior to the onset of work, the Contractor shall ensure that there is a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills, and of the appropriate measures to take should a spill occur.	X	X
32	Soil and trimmed or chipped vegetation will not be placed where it could enter a waterbody or cover vegetation.	X	X
33	If grazing occurs adjacent to riparian features, livestock will be excluded from the area using exclusion fencing or methods approved by the project biologist and grazing manager.		X
Geology/Soils Measures			
34	Suspend mechanical treatments, prescribed herbivory, and herbicide treatments if the National Weather Service forecast is a “chance” (30% or more) of rain within the next 24 hours. Activities that cause soil disturbance may resume when precipitation stops		X

ID #	Avoidance and Minimization Measure	Applicable to: Roadway	Applicable to: Open Space
	and soils are no longer saturated (i.e., when soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur).		
35	Heavy equipment operations will not be conducted on slopes greater than 50 percent or in any slide or unstable areas.	X	X
36	Limit heavy equipment use in areas that could cause soil disturbance or compaction when soils are wet and saturated to avoid compaction and/or damage to soil structure.		X
37	Erosion control measures will be installed, as necessary to minimize erosion, according to manufacturer's specifications. Appropriate erosion control measures include, but are not limited to, the following: • silt fences • straw bale barriers • brush or rock filters • storm drain inlet protection • sediment traps • sediment basins • erosion control blankets and mats • soil stabilization (e.g., tackified straw with seed, jute, or geotextile blankets, broadcast and hydroseeding) Erosion control measures will be inspected prior to the rain season and immediately repaired, as necessary. All temporary construction-related erosion control methods (e.g., silt fences) shall be removed at the completion of the project.	X	X
Noise Measures			
38	Per the Town of Los Gatos Noise Ordinance (Section 16.20.035), vegetation management activities will be limited to the hours between 8:00 a.m. and 6:00 pm Monday through Friday, and 9:00 a.m. to 4:00 p.m. on Saturday (Town of Los Gatos 1991).	X	X
39	All power equipment and power tools will be used and maintained according to manufacturer specifications. All diesel- and gasoline-powered equipment will be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.		X
Traffic Control Measures			
40	Prepare and implement a Traffic Control Plan to describe procedures to guide traffic (e.g., signage, flaggers), safeguard construction workers, provide safe passage of traffic, and minimize traffic impacts, as necessary, through the duration of the vegetation management project. Coordinate with work with local emergency services providers, as necessary, to ensure that emergency vehicle access and response is not impeded.	X	X
Public Health and Safety Measures			
41	The project will maintain fire-safe working conditions BMPs. These will include: a. All work vehicles will be required to carry fire suppression equipment. Workers will be trained in the use of equipment for incipient stage fire suppression. b. No smoking is allowed in any areas of vegetation management activities along Town roadways or in Town open spaces or parks. All vehicle parking will be restricted to paved or graveled surfaces. c. Require spark arrestors on all off-road equipment. d. Monitor weather and fire danger on a daily basis. During Red Flag Warnings, a crew member will be assigned to fire watch for each separate and distinct active work area.	X	X

11.2 Long-Term and Program-Level Measures for Sensitive Resources

Table 11-2 outlines practices intended to identify new sensitive resources and ensure sensitive resources are protected.

Table 11-2. Program-Level Avoidance and Minimization Measures

ID #	Avoidance and Minimization Measure
L1	Check perimeters of open space for invasive species infestations from neighborhood backyard gardens, neighbor trespass, fuel and firebreak buffers, inadvertent dumping, trash, irrigation runoff, pesticide drift from neighbors (annually).
L2	Check for new federal and State species listings from USFWS and CDFW (annually).
L3	Ongoing training about sensitive species and site maintenance (annually).
L4	Provide basic educational materials (brochures, handouts) on invasive plant control efforts (boot cleaning procedures, appropriate “do’s” and “don’ts” around weed infestations, how to handle green waste, etc.) (annually).

12 PLAN IMPLEMENTATION

The following section describes the methods and recommendations for implementing this vegetation management plan over the 10-year VMP timeline.

12.1 Roles and Responsibilities

The Town and/or designated contractors and consultants will be responsible for implementing this VMP and will be responsible for the following:

- Performing routine field assessments to determine where vegetation management action is required.
- Developing annual work plans and budgets.
- Creating a priority approach to vegetation management based on observations during routine field assessments.
- Hiring contractors to conduct priority and necessary vegetation management.
- Monitoring vegetation management techniques and treatments for effectiveness.
- Ensuring that AMMs and BMPs are correctly installed and implemented.
- Monitoring treated properties following vegetation management actions to ensure that treatment standards have been achieved.

12.2 Timeline

The potential for wildfire to spread from roadside vegetation to adjacent properties, open space areas, or vice-versa is very high. Immediate implementation of this VMP is necessary to protect the Town and the Town’s residents and infrastructure (County of Santa Clara 2019). Planning and scheduling are crucial parts of this VMP and will be ongoing throughout the vegetation management process based mainly on the results from field assessments described in Section 10.4.1, Field Assessments. The schedule will also

be affected by the timing of treatments (Appendix G), which have been selected to produce the most effective results. Most treatments will occur in the spring and summer months, so planning will need to occur in the winter or early spring.

The Town will communicate vegetation management activities to local park and open space stakeholder groups to coordinate scheduling and contractor access. When possible, the Town may recruit local volunteer and stakeholder groups to perform some or all vegetation management actions at specific locations. The Town will still be responsible for monitoring these locations and for prioritizing wildfire management goals. The Town is ultimately responsible for the implementation, scheduling, and execution of vegetation management in a timely and efficient manner that reduces wildfire risk in accordance with this VMP.

12.3 Monitoring and Reporting

As part of this VMP, the Town and/or hired consultants or contractors will be responsible for inspecting and monitoring the results of vegetation management activities and treatments. In addition, the Town will be responsible for producing an annual report summarizing the monitoring results over the course of the year. The annual report should include, at a minimum, a summary of VMP activities for that calendar year including what vegetation management activities occurred and in which locations, success criteria and vegetation standards, overall monitoring results, and management recommendations for the following management year. The individual components of the report will include:

- Introduction
- Responsible Parties
- Monitoring Methods: quantitative and qualitative methods should be discussed in this section. Methods for data collection and photo point locations should also be included.
- Success Criteria: normally expressed per acre successfully treated.
- Monitoring Results
- Adaptive Management and Future Recommendations
- Conclusion

The annual report will discuss if there are any issues with vegetation management and or treatments, if there is a need for follow-up treatments, if post-management BMPs are needed, and to determine if treatments are successful or if future treatments need to be adjusted or altered. Monitoring of vegetation management should be ongoing and include pre-treatment, post-treatment, and routine data collection visits.

12.4 Adaptive Management

The purpose of this VMP is to provide guidance, recommendations, and goals for vegetation management within the VMP Area. An integral part of this VMP is adaptative management strategies that will need to be assessed and implemented on an annual basis. Field monitoring and assessments will be necessary not only to monitor vegetation success, but also to monitor the effects of treatments on soils, slopes, and areas surrounding managed plan areas. Important aspects to consider include success of treatments, if additional BMPs or avoidance measures should be implemented, if vegetation management is having an effect on sensitive resources and if the timing, duration, or frequency of treatments needs to be altered. These are some of the factors that need to be observed and documented during monitoring. In addition, notes should

be made if vegetation management activities occur outside of the purview of this VMP that may affect wildfire safety, such as surrounding areas or neighbors clearing vegetation.

12.5 Implementation Costs

Estimated costs to implement the Roadway VMP are provided in Table 12-1. Estimated costs to implement the Open Space VMP are provided in Table 12-2.

12.6 Project Prioritization

Priority areas have been identified and are listed in the Table 12-2. Priority management areas are organized by designation (Open Space VMP or Roadway VMP) and by priority level (1, 2, and 3). Please see Appendix B for all roadway priority designations.

12.6.1 *Roadways*

The Town has identified three priority levels of roadways where vegetation management for wildfire risk reduction is of utmost concern. These levels are based on VMAL, which are defined by the amount of vegetation encroachment into and along the edges of the roadway. Specifically, these VMAL levels are defined as:

- VMAL 1: High level of encroachment of roadside vegetation: Typically includes areas of dense continuous native woodland vegetation with canopy overhanging the roadway. Vegetation often entangled in overhead wires. Pockets of dense flammable non-native invasive vegetation (e.g., acacia, broom) in the understory on hillslopes adjacent to roadways.
- VMAL 2: Moderate encroachment of roadside vegetation: Some areas of dense native woodland as in VMAL1. Additional areas of native scrub vegetation on open hillsides with non-native annual grasses. Pockets of dense flammable non-native invasive vegetation (e.g., acacia, broom) in the understory on hillslopes adjacent to roadways.
- VMAL 3: Minimal encroachment of roadside vegetation: Urban streetscape within the WUI that contains irrigated ornamental/landscaped non-native vegetation. VMAL 3 roads are typically adjacent to the Town center with wide streets and sidewalks. Vegetation often entangled in overhead wires at point of connection to adjacent structures.[14]

Based on these VMAL designations and an updated fuel model and hazard assessment, the Town has prioritized project roadways into three levels as follows:

- Priority Level 1: Priority level 1 roadways include evacuation routes within the Town with VMAL 1 and VMAL 2 designations. Vegetation management along these roads is essential to ensuring emergency vehicles can access locations along these roads and ensuring the safety of residents as they evacuate in the event of a wildfire.
- Priority Level 2: Priority level 2 roadways include roadways identified by the Town as high-priority roadways that are not specifically identified as evacuation routes but may require improvements to allow safe and efficient emergency vehicle access and resident evacuation and have been identified as VMAL 1 and VMAL 2. These roads need work to meet the Los Gatos Municipal Code and other relevant requirements and ensure the safety of Town residents in the

[14] VMAL 3 roads outside the WUI were removed from the project since these roads generally meet the Los Gatos Municipal Code and other relevant requirements and are not expected to require vegetation maintenance to ensure the safety of Town residents and emergency vehicles can access locations along the roadways in the event of a wildfire.

Table 12-1. Cost Estimates for the Roadway VMP Landscapers/Contractors

Town of Los Gatos Roadway Vegetation Management - Ballpark Cost Estimate							
Road Name[2]	Priority Level	VMAL	Approx. Mileage	Miles/Day[3]	Estimated Days	Daily Rate[4]	Estimated Cost
Foster Road	1	1	0.23	0.125	1.86	$3,500	$6,517
Kennedy Road	1	1	1.56	0.125	12.50	$3,500	$43,747
Shannon Road	1	1	1.33	0.125	10.62	$3,500	$37,180
Arnerich Road	1	2	0.96	0.250	3.83	$3,500	$13,399
Blackberry Hill Road	1	2	0.38	0.250	1.52	$3,500	$5,337
Cleland Avenue	1	2	0.21	0.250	0.85	$3,500	$2,967
Fairview Avenue	1	2	0.11	0.250	0.43	$3,500	$1,507
Foster Road	1	2	0.05	0.250	0.22	$3,500	$756
Francis Oaks Way	1	2	0.54	0.250	2.17	$3,500	$7,604
Hicks Road	1	2	0.81	0.250	3.24	$3,500	$11,350
Kennedy Road	1	2	0.51	0.250	2.05	$3,500	$7,162
Kimble Avenue	1	2	0.41	0.250	1.63	$3,500	$5,697
Larga Vista Drive	1	2	0.33	0.250	1.32	$3,500	$4,609
Manzanita Avenue	1	2	0.27	0.250	1.09	$3,500	$3,826
Oak Hill Way	1	2	0.49	0.250	1.98	$3,500	$6,918
Paseo Carmelo	1	2	0.07	0.250	0.27	$3,500	$953
Ravinia Way	1	2	0.09	0.250	0.37	$3,500	$1,281
South Kennedy Road	1	2	0.34	0.250	1.37	$3,500	$4,782
Santa Rosa Drive	1	2	0.45	0.250	1.82	$3,500	$6,368
Shannon Road	1	2	1.03	0.250	4.14	$3,500	$14,475
Twelve Oaks Road	1	2	0.45	0.250	1.81	$3,500	$6,351
Wood Road	1	2	0.61	0.250	2.45	$3,500	$8,585
Foster Road	2	1	0.75	0.125	6.03	$3,500	$21,103
Suview Drive	2	1	0.67	0.125	5.38	$3,500	$18,832
Top of the Hill Court	2	1	0.49	0.125	3.95	$3,500	$13,820
Top of the Hill Road	2	1	0.26	0.125	2.08	$3,500	$7,264
Aztec Ridge Drive	2	2	0.15	0.250	0.61	$3,500	$2,149
Blackberry Hill Road	2	2	0.81	0.250	3.23	$3,500	$11,311
College Avenue	2	2	0.42	0.250	1.67	$3,500	$5,853
Cross Road	2	2	0.07	0.250	0.27	$3,500	$941
Cypress Way	2	2	0.54	0.250	2.15	$3,500	$7,518
Eugenia Way	2	2	0.20	0.250	0.81	$3,500	$2,850
Francis Oaks Way	2	2	0.14	0.250	0.58	$3,500	$2,016
Hicks Road	2	2	0.16	0.250	0.63	$3,500	$2,191
Johnson Avenue	2	2	0.12	0.250	0.47	$3,500	$1,654
Kennedy Road	2	2	0.10	0.250	0.40	$3,500	$1,392
Kimble Avenue	2	2	0.08	0.250	0.34	$3,500	$1,188
Larga Vista Drive	2	2	0.11	0.250	0.45	$3,500	$1,573
Mireval Road	2	2	0.15	0.250	0.59	$3,500	$2,071
South Kennedy Road	2	2	0.16	0.250	0.66	$3,500	$2,308
Shady Lane	2	2	0.29	0.250	1.15	$3,500	$4,022
Shannon Road	2	2	0.25	0.250	1.00	$3,500	$3,517
Sky Lane	2	2	0.17	0.250	0.69	$3,500	$2,406
Teresita Way	2	2	0.19	0.250	0.77	$3,500	$2,708
Tourney Road	2	2	0.25	0.250	1.01	$3,500	$3,535
Twelve Oaks Road	2	2	0.23	0.250	0.94	$3,500	$3,286
Wooded View Drive	2	2	0.59	0.250	2.36	$3,500	$8,253
SubTotal - Priority 1			*11.26*		*57.53*		*$201,372*
SubTotal - Priority 2			*7.38*		*38.22*		*$133,763*
SubTotal			**18.64**		**95.75**		**$335,135**
Contingency - 30%							**$100,540**
Grand Total							**$435,675**

1 - All estimates are preliminary in nature and subject to change, given that the actual work and time required for each roadway will vary.

2 - A limited number of roadways are divided into separate segments based upon their Priority and Vegetation Management Actions Levels (VMAL's).

3 - Miles / Day estimates are based upon VMAL's and associated density of vegetation (1/8 mile per day for VMAL 1 and 1/4 mile per day for VMAL 2).

4 - Daily Rate estimate is based upon a crew size of four and all required limbing and chipping equipment.

5- In the event that a larger crew size is utilized, the daily rate and miles / day would increase and the estimated days to complete the work would decrease.

Table 12-2. Cost Estimates for the Open Space VMP Landscapers/Contractors

Town of Los Gatos Open Space Vegetation Management - Ballpark Cost Estimate				
Area	**Treatments / Actions**	**Acreage**	**Rate/Acre**	**Estimated Cost**
Santa Rosa Open Space Preserve - High Risk Priority 1				
Defensible Space	*Mechanical (Cutting)*	3.83	$4,400	$16,852
Shaded Fuel Break	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	32.40	$4,400	$142,560
Fuel Reduction Area	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	33.55	$4,400	$147,620
Invasive Species Removal	*Manual, Mechanical,Chemical*	0.25	$6,063	$1,516
Mowing/Grazing	*Mechanical, Prescribed Herbivory/Grazing*	6.13	$2,500	$15,325
Pre-Construction	*Project Workplan, Biological Review*	76.16	$350	$26,656
Project Management	*Project Management*	76.16	$235	$17,898
Subtotal, Santa Rosa				**$368,426**
Heintz Open Space Preserve - High Risk Priority 1				
Defensible Space	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	2.04	$4,400	$8,976
Shaded Fuel Break	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	26.67	$4,400	$117,348
Fuel Reduction Area	*Mechanical (Cutting)*	49.10	$4,400	$216,040
Mowing/Grazing	*Mechanical, Prescribed Herbivory/Grazing*	10.29	$2,500	$25,725
Pre-Construction	*Project Workplan, Biological Review*	88.10	$350	$30,835
Project Management	*Project Management*	88.10	$235	$20,704
Subtotal, Heintz				**$419,628**
Novitiate Park - Moderate Risk Priority 2				
Defensible Space	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	2.27	$4,400	$9,988
Shaded Fuel Break	*Mechanical (Cutting)*	1.77	$4,400	$7,788
Fuel Reduction Area	*Mechanical (Cutting)*	0.18	$4,400	$792
Invasive Species Removal	*Manual, Mechanical,*Chemical*	7.90	$6,063	$47,898
Mowing/Grazing	*Mechanical, Prescribed Herbivory/Grazing*	4.58	$2,500	$11,450
Woody Slash & Debris Removal	*Mechanical*	1.29	$2,500	$3,225
Pre-Construction	*Project Workplan, Biological Review*	17.99	$350	$6,297
Project Management	*Project Management*	17.99	$235	$4,228
Subtotal, Novitiate				**$91,665**
Worcester Park - Moderate Risk Priority 2				
Defensible Space	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	2.90	$4,400	$12,760
Shaded Fuel Break	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	4.82	$4,400	$21,208
Fuel Reduction Area	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	2.33	$4,400	$10,252
Invasive Species Removal	*Manual, Mechanical,*Chemical*	3.01	$6,063	$18,250
Mowing/Grazing	*Mechanical, Prescribed Herbivory/Grazing*	0.38	$2,500	$950
Woody Slash & Debris Removal	*Mechanical*	1.25	$2,500	$3,125
Pre-Construction	*Project Workplan, Biological Review*	14.69	$350	$5,142
Project Management	*Project Management*	14.69	$235	$3,452
Subtotal, Worcester				**$75,138**
La Rinconada Park - Low Risk Priority 3				
Defensible Space	*Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing*	0.83	$4,400	$3,652
Shaded Fuel Break	*Mechanical (Cutting)*	6.84	$4,400	$30,096
Fuel Reduction Area	*Mechanical (Cutting)*	0.80	$4,400	$3,520
Invasive Species Removal	*Manual, Mechanical,Chemical*	0.48	$6,063	$2,910
Mowing/Grazing	*Mechanical, Prescribed Herbivory/Grazing*	0.29	$2,500	$725
Pre-Construction	*Project Workplan, Biological Review*	9.24	$350	$3,234
Project Management	*Project Management*	9.24	$235	$2,171
Subtotal, La Rinconada				**$46,309**
Subtotal, All Open Space Areas				**$1,001,166**
Contingency - 30%				**$300,350**
Grand Total				**$1,301,515**

Notes:

1 - All estimates are preliminary in nature and subject to change, given that the actual work and time required for each open space area will vary.

2 - The total area of the town-owned Open Space Area boundaries is 193.91 acres, but the total treatment area in this table is estimated to be approximately 206 acres due to overlapping treatments that have been prescribed in certain locations within the Open Space Areas.

3 - Rate/Acre estimates are based upon the Open Space Vegetation Management Costing Worksheet (Town of Los Gatos, 2020). Defensible Space, Shaded Fuel Break, and Fuel Reduction Areas will require both tree trimming and mechanical removal (or grazing) of understory vegetation as needed.

4 - As described in the VMP, Defensible Space and Shaded Fuel Break vegetation management areas near adjacent structures should be prioritized during the initial fuel reduction activities associated with the project.

5 - Chemical treatments - Restrictions apply in riparian habitat. Seasonal and quantitative restrictions may apply to sensitive habitats. Nesting bird season occurs from March through August. See AMMs.

6 - Annual Maintenance Costs are not included and have been estimated to be approximately $60,387 per year by the Town of Los Gatos.

event of a wildfire. Priority level 2 roadways also include arterial and collector streets with VMAL 1 and VMAL 2 designations.

- Priority Level 3: Priority level 3 roadways have minimal vegetation encroachment that could increase the intensity of a wildfire and/or increase wildfire spread. Priority level 3 roadways have been identified as any roads that are within the WUI with a VMAL 3 designation. These roads generally meet Los Gatos Municipal Code and other requirements and are not expected to need immediate or regular routine vegetation maintenance to meet requirements. These roads should be inspected every few years to ensure they do not need vegetation maintenance to comply with fire requirements, such as the Los Gatos Municipal Code.

12.6.2 *Open Space/Undeveloped Park Areas*

The Town has identified three priority levels for the Open Space VMP where vegetation management for wildfire risk reduction is of utmost concern based on the following criteria:

- Priority Level 1: High level of risk associated with vegetation within 100-foot defensible space zone adjacent to residential areas. Open Space VMP Area includes areas of dense native woodland vegetation on moderately steep slopes (20–40 percent). Limited firebreaks along adjacent roads and within open space. Ladder fuels present and some pockets of dense flammable non-native invasive vegetation (e.g., acacia, broom) in the understory on hillslopes. Fuels are predicted to burn with flame lengths in excess of 12 feet and rates of spread of 20 chains/hour or higher. Under these conditions, suppression strategies are limited to indirect attack and use of mechanized equipment. Since there is limited access for fire response, immediate containment of the fire would be delayed, threatening large wildfire growth.
- Priority Level 2: Moderate level of risk associated with vegetation within 100-foot defensible space zone. Open Space VMP Area includes some areas of dense native woodland as in priority level 1 with slopes ranging from gentle to moderate. Minor small pockets of dense flammable non-native invasive vegetation (e.g., acacia, broom) in the understory on hillslopes. Includes other areas within the open space that present high risk outside of the defensible space zone (e.g., grassland). Fuels are predicted to burn with flame lengths of 0 - 4 feet and rates of spread of 0 - 5 chains/hour or higher. Under these conditions, suppression strategies are somewhat limited, but can include direct attack. Access for fire response via fire roads, trails, or adjacent roadways allows for prompt containment of the fire.
- Priority Level 3: Minimal level of risk associated with vegetation within 100-foot defensible space zone. Open Space VMP Area includes limited areas of dense native woodland vegetation on generally flat ground with minor areas of gentle slopes (0–20 percent). Area is surrounded by turf or roads that act as a fuel break. Area is typically adjacent to the Town center with wide streets and sidewalks offering easy access for both residents and emergency vehicles. Fuels are predicted to burn with flame lengths of 0 - 4 feet and rates of spread of 0 - 2 chains/hour. Under these conditions, multiple suppression strategies including direct attack are readily available. Direct access for wildfire response through surface roadways allows for immediate containment of the wildfire.

Table 12-3. Summary of Priority Projects

Location	Priority Level
Open Space VMP Areas	
Santa Rosa Open Space	1
Heintz Open Space Preserve	1
La Rinconada Park	3
Novitiate Park	2
Worcester Park	2
Roadway VMP Area	
Foster Road	1
Kennedy Road	1
Shannon Road	1
Arnerich Road	1
Blackberry Hill Road	1
Cleland Avenue	1
Fairview Avenue	1
Foster Road	1
Francis Oaks Way	1
Hicks Road	1
Kennedy Road	1
Kimble Avenue	1
Larga Vista Drive	1
Manzanita Avenue	1
Oak Hill Way	1
Paseo Carmelo	1
Ravinia Way	1
South Kennedy Road	1
Santa Rosa Drive	1
Shannon Road	1
Twelve Oaks Road	1
Wood Road	1
Foster Road	2
Suview Drive	2
Top of the Hill Court	2
Top of the Hill Road	2
Aztec Ridge Drive	2
Blackberry Hill Road	2
College Avenue	2
Cross Road	2
Cypress Way	2

Location	Priority Level
Eugenia Way	2
Francis Oaks Way	2
Hicks Road	2
Johnson Avenue	2
Kennedy Road	2
Kimble Avenue	2
Larga Vista Drive	2
Mireval Road	2
South Kennedy Road	2
Shady Lane	2
Shannon Road	2
Sky Lane	2
Teresita Way	2
Tourney Road	2
Twelve Oaks Road	2
Wooded View Drive	2

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APPENDIX A1

Santa Clara County Community Wildfire Protection Plan

ANNEX 9. TOWN OF LOS GATOS

The Town of Los Gatos is located at the base of the Sierra Azules in the southwestern portion of the County, where the Santa Clara Valley meets the lower slopes of the Santa Cruz Mountains. Los Gatos encompasses a wide variety of terrain, ranging from flat topography at the edge of the valley floor to densely wooded hillsides. Both the valley and hillsides are interspersed with creeks, streams and riparian habitat. The sharp contrast between the valley floor and the hillsides provides the town's picturesque background. The population is estimated to be 30,391 in a 14-square-mile area.

ORGANIZATION AND JURISDICTION

The Town of Los Gatos is governed by a publicly elected city council and has authority for General Plan land use planning, code adoption, and permit processing. The Town of Los Gatos does not have a city fire department; Los Gatos is within the Central Fire Protection District.

State law designates all lands within the city limits of Los Gatos as a Local Responsibility Area (LRA) for purposes of wildland fire protection. Most state fire prevention and defensible space laws do not apply within LRAs. Recent legislation requires state review and input on General Plan Safety Element updates where wildland fire is a hazard (Government Code Section 65040.20).

Fire protection services for Los Gatos are provided by Santa Clara County Central Fire Protection District (dba Santa Clara County Fire Department), including emergency's in State Responsibility Areas (SRAs) in unincorporated areas of the wildland urban interface (WUI), adjacent to Los Gatos. To determine LRAs and SRAs of the community, please visit:

http://www.firepreventionfee.org/sraviewer_launch.php

PLANNING TEAM PARTICIPATION

The Los Gatos community is represented on the Core Team by representatives of the Santa Clara County Fire Department. The community has been engaged in the Community Wildfire Protection Plan (CWPP) planning process through two rounds of workshops that have been held in Cupertino and Redwood Estates and focus on the Los Gatos, Cupertino, and surrounding WUI communities.

LAND USE PLANNING, GENERAL PLAN, BUILDING CODES, AND LOCAL HAZARD MITIGATION PLANS

Authority and jurisdiction for approving the General Plan and elements, and determining land use, community design, and building code adoption rests with the Los Gatos Town Council. The Local Hazard Mitigation Plan (LHMP) identifies hazards that exist in Los Gatos that create risk to citizens and properties in Los Gatos. WUI fires are a real and present danger to the western portions of Los Gatos. This CWPP identifies several goals related to functions the Town of Los Gatos has the authority to undertake.

This CWPP may serve as basis for the WUI fire component for LHMP, General Plan, or General Plan element updates.

SUMMARY

Los Gatos is listed as a Community at Risk from wildfires on the Federal and/or California Fire Alliance list of Communities at Risk in Santa Clara County.

Wildfires occur in the vicinity of Los Gatos and present a danger to people and properties within the town.

Mitigations can reduce the risk of injury and damage. Some mitigations are solely the responsibility of property owners, other mitigations require neighborhood level action, and some require town government action.

WUI AREA DESCRIPTION

WUI AREA DEFINED

The Los Gatos WUI planning area includes primarily Very High Fire Hazard Severity Zone areas on the southern side of Los Gatos (Figure 9.1). The WUI area is best described as a wildland-urban intermix with homes scattered amongst wildland fuels.

FIRE HISTORY

For fire history information, please see Figure 3.5 in the main CWPP document.

HAZARDOUS FUEL CHARACTERISTICS

The Los Gatos planning area comprises a range of vegetation communities that differ depending upon elevation, precipitation, and slope. Chaparral vegetation is often found on south facing slopes, where winter precipitation is relatively high, but dry summers are common. The chaparral will have long flame lengths under either moderate or extreme weather scenarios. The nature of these fuels is to burn quickly and intensely. Oak woodlands, comprised of a variety of oak species are also interspersed throughout as well as mixed conifer comprising knob cone pine and grey pine. A fire in either the mixed conifer or hardwood would likely be a surface fire with patches of active behavior and fairly low rates of spread. However, active fire behavior is possible in this vegetation type under extreme weather conditions, especially where there is high surface loading. Coastal coniferous forest communities such as redwoods and Douglas fir are located at lower elevations where precipitation is high, fog is common, and temperatures are moderate. Fire spread is generally limited in this fuel type; however, given the right combination of weather conditions, surface fire can be expected to burn uphill. Areas with increased fuel loading from dead and down materials may experience crowning under the right conditions. The varied vegetation composition result in the Los Gatos WUI comprising a range of wildfire hazard.

For fuel model information, please refer to Section 4.6.3 and Figure 4.3 in Chapter 4 of the main CWPP document.

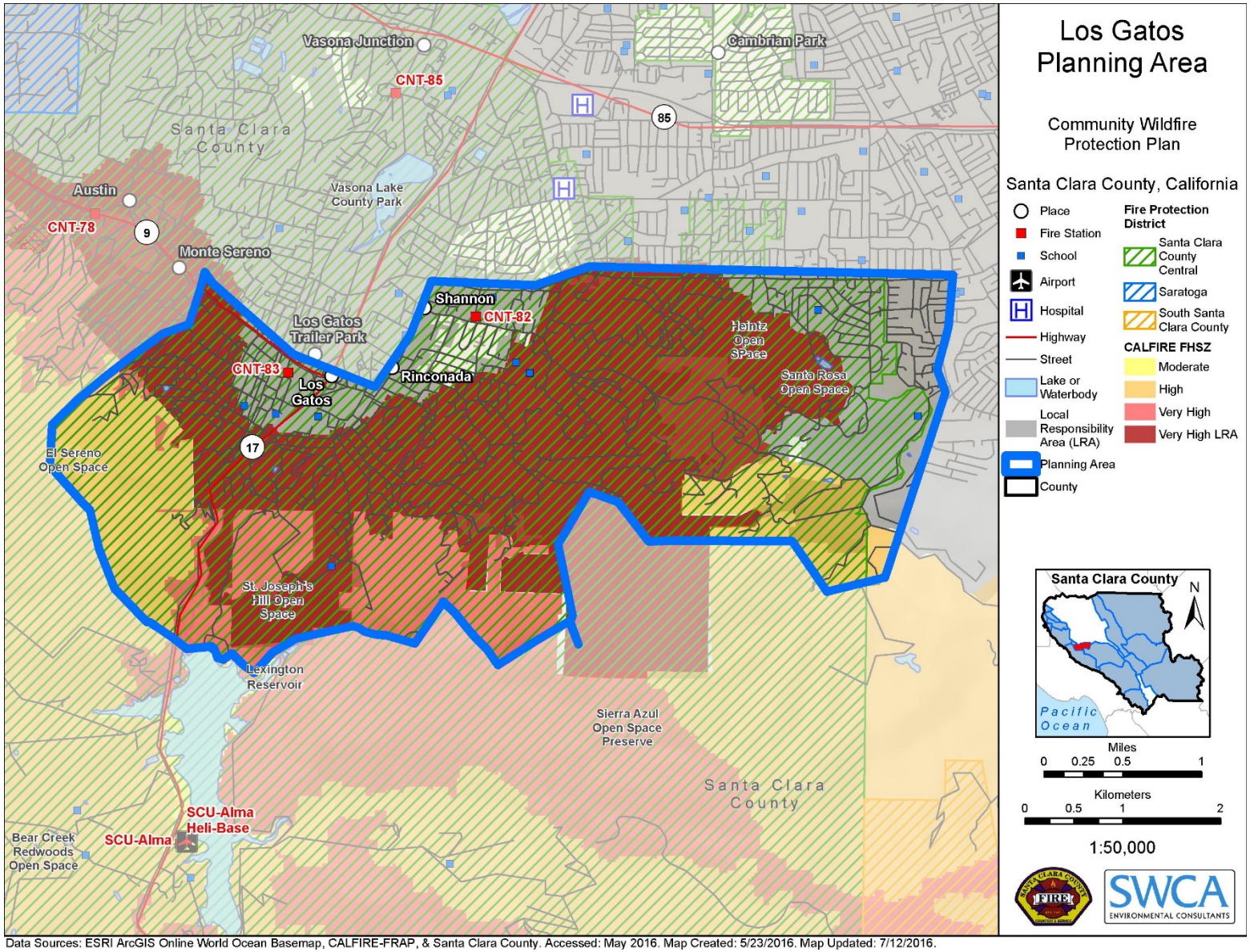


Figure 9.1. Los Gatos planning area.

NEIGHBORHOOD AND STRUCTURAL CHARACTERISTICS

The foothills above Los Gatos (Figure 9.2) are characterized by steep, winding, and narrow roads that pose potential ingress and egress problems for emergency response and evacuations. Some areas may be subject to slow response times for emergency response due to the distance from the nearest fire station and road conditions. Some homes have minimal turnaround space, posing a concern to emergency responders due to potential entrapment. There are a number of dead end roads and narrow driveways.

Most homes have moderate defensible space (at least 30 feet) but some homes do not meet the necessary 70- to 100-foot space. Homes are inspected by Santa Clara County Fire Department (SCCFD) personnel at least every three years. Most homes have non-combustible siding, but the majority have combustible decks and fencing that comes into contact with wildland fuels. Some homes have wood shake roofs which put the property and neighborhood at risk. Many subdivisions are managed by homeowner associations (HOAs), which provide a conduit for fire prevention and public education and outreach messages regarding structural ignitability and defensible space. A large number of 7A compliant new build properties (Figure 9.3) are interspersed with older properties, many are on large lots with good separation and have well maintained yards. Many homes are landscaped by contracted landscape companies, outreach regarding defensible space and non-flammable landscape vegetation could be targeted at those companies. Vulnerable populations, such as retirement homes, are a concern to fire department personnel, due to evacuation concerns along narrow roads. Defensible space in these areas is a priority, particularly where vegetation is close to the property (Figure 9.4).

Many homes are located upslope from thick scrub fuels, with continuous canopies. Homes are located on steep slopes with often minimal set-back from the slope. Topography is a concern due to the influence steep slopes have on potential fire behavior.

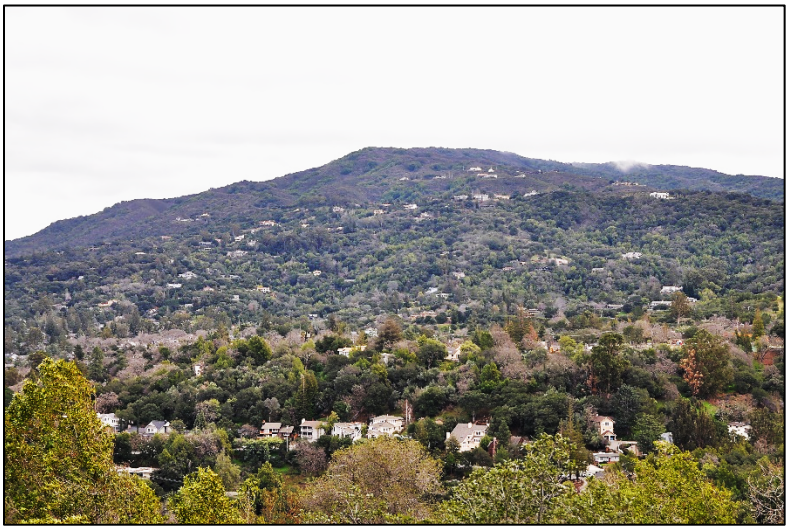


Figure 9.2. Overview of Los Gatos WUI community.



Figure 9.3. New build property, built to 7A compliance.



Figure 9.4. Eucalyptus close to units in a retirement community in hills above Los Gatos.

EMERGENCY RESPONSE CAPACITY

Fire suppression for the Los Gatos WUI area is provided by:

- Santa Clara County Central Fire Protection District:
    - Los Gatos Fire Station, 306 University Ave, Los Gatos
    - Shannon Fire Station, 16565 Shannon Rd, Los Gatos
    - Winchester Fire Station, 14850 Winchester Blvd, Los Gatos

PUBLIC EDUCATION AND OUTREACH PROGRAMS

Santa Clara County Fire Department, Fire Prevention Division provides a comprehensive fire and life safety educational program within Los Gatos. More information can be found on its website:

http://www.sccfd.org/community-education/overview

The Santa Clara County Fire Safe Council is actively involved in the Los Gatos and surrounding communities. (http://www.SCCFireSafe.org). This organization provides information regarding chipping programs, defensible space mitigation, forest health issues, and much more. They also offer public meetings and forums to support wildfire awareness.

The Town of Los Gatos provides comprehensive emergency preparedness information on its website: http://www.town.los-gatos.ca.us/57/Emergency-Preparedness. In addition the Town has an active CERT program: http://www.town.los-gatos.ca.us/152/CERT-Emergency-Management

POLICIES, REGULATIONS, ORDINANCES, AND CODES

Buildings within the Town of Los Gatos would be subject to the Municipal Code of Los Gatos. Chapter 9 Fire Protection and Prevention outlines codes and ordinances pertaining to wildfire.

https://www2.municode.com/library/ca/los_gatos/codes/code_of_ordinances?nodeId=CO_CH9FIPRPR

In particular Section 4907.1 General. Defensible space will be maintained around all buildings and structures in SRA as required in Public Resources Code (PRC) 4290 and "SRA Fire Safe Regulations" California Code of Regulations, Title 14, Division 1.5, Chapter 7, Subchapter 2, Section 1270.

In addition buildings and structures within the Very High Fire Hazard Severity Zones of an LRA shall maintain defensible space as outlined in Government Code 51175 - 51189 and any local ordinance of the authority having jurisdiction.

Refer to Chapter 49 of the California Fire Code as amended and adopted by the Town of Los Gatos for all of the requirements for Wildland Urban Interface Fire Areas in the Town.

HAZARD ASSESSMENT

Community hazard assessments include ratings of community conditions compared to best practices for WUI fire mitigation. Community hazard ratings include consideration of applicable state codes, local ordinances, and recognized best practices guidelines.

The National Fire Protection Association Standard 1144 (NFPA 1144) defines WUI hazards and risks at the community and parcel level. This plan utilizes components of NFPA 1144, California laws and local ordinances to evaluate neighborhood WUI hazard and risk. California PRC 4290 and 4291 sections address best practices WUI community design and defensible space standards.

The NFPA 1144 community risk assessment completed for the Los Gatos Hills Community assigned the WUI community a risk rating of High with a score of 89 (<40= low, >40 = moderate, >70 = High, >112 = Extreme) see tabulated list below. Factors that contributed to the risk are illustrated below. Averages are taken across the community for each of these parameters.

Parameter	Condition	Rating
Access	Two roads in and out but access still concern	+/-
	Narrow road width	-
	Surfaced road with greater than 5% grade	+
	Poor fire access, dead end spurs, lack turnaround	-
	Street signs are present, some are non-reflective	+/-
Vegetation	Adjacent fuels: Medium	+/-
	Defensible space: >30 feet < 70 feet around structure	+/-
Topography within 300 feet of structure	21%–30%	-
Topographic features	Moderate to high concern	+/-
History of high fire occurrence	Low	+
Severe fire weather potential	Low	+
Separation of adjacent structures	Good separation	+
Roofing assembly	Class C	-
Building construction	Combustible siding and deck	-
	Building set back <30 feet to slope	-
Available fire protection	Water: hydrants present with variable pressure	+
	Response: Station <5 miles from structure	+
	Internal sprinklers: some newer 7A compliant homes	+/-
Utilities	One above and one below ground	+/-
Risk Rating- High (89)		

In addition to the on-the-ground hazard assessment, the CWPP also includes a Composite Fire Risk/Hazard Assessment, which uses fire behavior modelling to determine potential fire behavior and is based on fuel characteristics, topography, weather, and fire history. The Composite Risk/Hazard Assessment for the planning area is shown in Figure 9.5. For more information on the methodology for this assessment please refer to Section 4.6.1 in Chapter 4 of the CWPP.

PARCEL LEVEL ASSESSMENT

A model for determining parcel level risk and effect of mitigations has been developed through this CWPP project. The model can use information available through public record for basic analysis but can be further refined with a site visit with property owner for a thorough analysis of risk score. The County will be seeking funding to fully implement this parcel level assessment in the future. The goal is for the property owner to be able to use this analysis to determine the most effective steps they can take to reduce their risk. For more information refer to Chapter 4 in the countywide CWPP document.

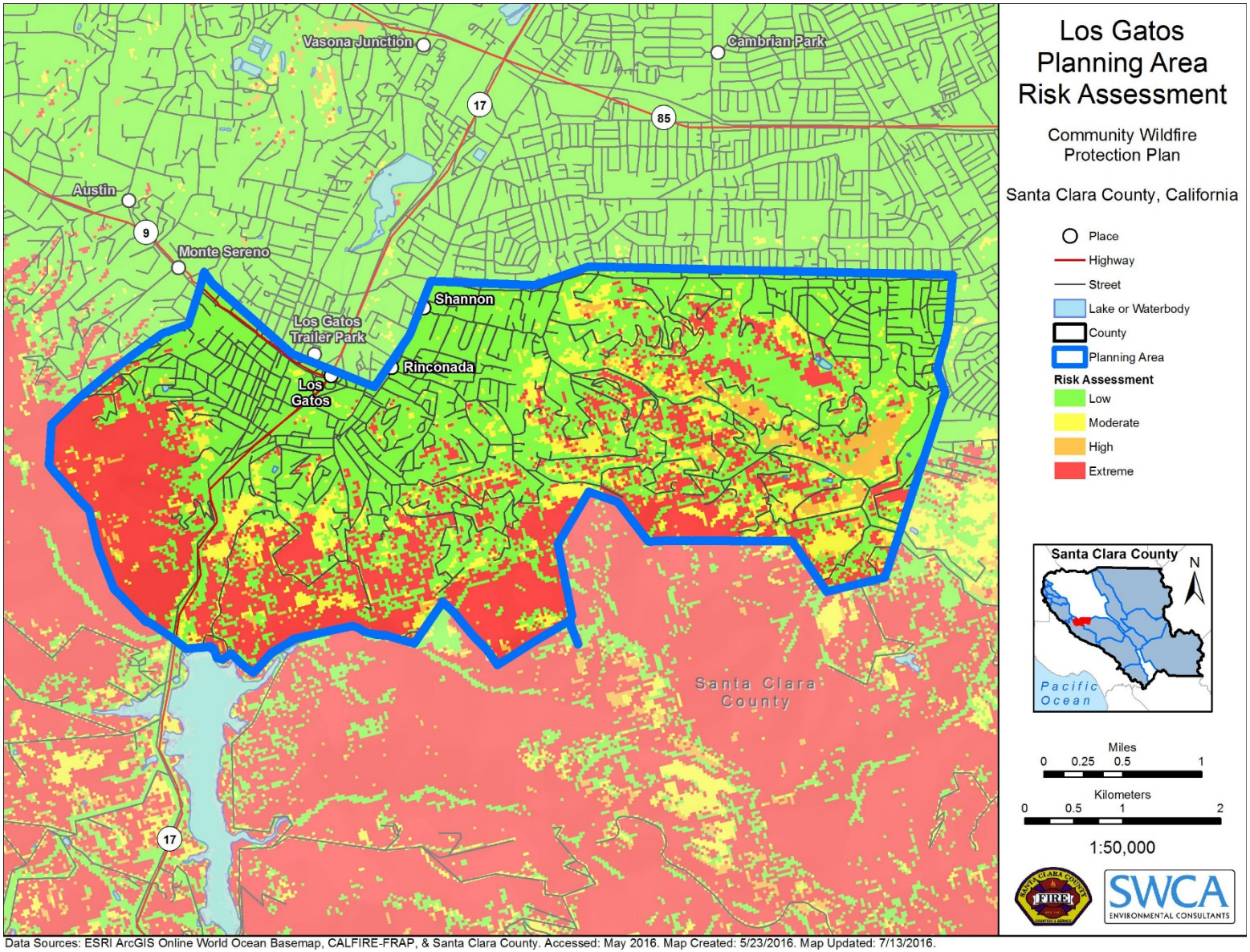


Figure 9.5. Composite Risk and Hazard Assessment for Los Gatos WUI community.

IDENTIFY CRITICAL INFRASTRUCTURE AND COMMUNITY VALUES AT RISK

Critical utility infrastructure such as, electric power supply lines, substations, and natural gas lines are essential to supply to residents and businesses for services that in some cases are critical to health and life safety. In many parts of the project area, electric power is needed to power pumps for the domestic water supply, and to provide heating and lighting. Wildfire is a significant threat to the electric utility supply.

The project area has several watersheds that are community values at risk. Watersheds need to be protected and maintained from catastrophic wildfire damage in order to prevent erosion, sedimentation and water contamination (Taylor et al. 1993). Long-term issues resulting from damage to watersheds would be increased run off, poor soil retention, and decreased water quality.

The WUI area surrounding Los Gatos is comprised of open space areas, including El Sereno Open Space, St. Josephs Hill Open Space, Heintz Open Space, Sierra Azul Open Space and Santa Rosa Open Space. These open space areas are valued for recreational use and for their natural resources.

Other community values at risk include: life safety, homes and property values, infrastructure, recreation and lifestyle, wildlife habitat, watershed protection, and environmental resources and commercial business, for example, a number of wineries/vineyards are located in the interface, including, the Testarossa Winery, McCarthy Family Estate Vineyards, La Rusticana D'Orsa Vineyard, and Perrucci Family Vineyard.

MITIGATION PROJECTS AND PRIORITIZATIONS

The following project matrices have been developed by the CWPP working group to guide specific project goals implementations for the Town of Los Gatos (Table 9.1–Table 9.5). The matrices below are tiered to the strategic goals presented in the body of the CWPP through project IDs in the first column of each matrix. The matrices are broken down into projects for addressing public education and outreach, reducing structural ignitability, improving fire response capability, and reducing hazardous fuels.

Table 9.1. Recommendations for Public Outreach and Education in the Los Gatos Planning Area

ID LG	Project	Presented by	Target Date	Priority (1,2,3)	Resources Needed	Serves to
Strategic Goal: EO1- Educate citizens on how to achieve contemporary WUI code compliance in retrofits/cost: benefit ratio. Provide workshops and/or demonstration site. and EO5- Emergency preparedness meetings. Use American Red Cross volunteers and other preparedness experts. Attend community functions and hold special meetings to provide guidance for creating household emergency plans. Use Ready, Set, Go! program.						
LG-EO1.1	Wildfire Preparedness and WUI Code workshops	FireSafe Councils, County Fire, CAL FIRE	Within 2 years	1	Workshop expenses, personnel Workshop venues Demonstration site Strategize on avenues for engaging the public.	Increase compliance with County code. Reduce fire risk level for individual parcels and community as a whole.
Strategic Goal: EO3- Organize a community group made up of residents and agency personnel to develop materials and communicate relevant defensible space messages. Could coordinate with fire departments or Fire Safe Council.						
LG-EO3.1	Form community working group for defensible space outreach	FireSafe Council, fire departments, local residents, Eagle Scouts, High School Community Volunteer Program	Within 1 year	1	Funding to help cover costs of materials (green waste removal or chipper) and participation. Hire contractor trained in defensible space practices.	Engage diverse stakeholders in reaching out to community members and encourage defensible space practices. Empower homeowners to make affordable and effective changes to reduce the vulnerability of individual homes.
Strategic Goal: EO4- Information dissemination Develop a local newspaper column that provides fire safety information, promotional information for volunteer fire departments, fire announcements, and emergency planning.						
LG-EO4.1	Develop content and disseminate information that provides fire safety information, fire announcements, and emergency planning.	Town Los Gatos	Within 1 year	1	Content to be provided by fire departments, local residents, Santa Clara County FireSafe Council and the Town.	Protect communities and infrastructure through increasing public awareness and providing medium for information regarding emergency fire response.
Strategic Goal: EO10- Insurance Services informational meetings						
LG-EO10.1	Outreach to the community to schedule an Insurance Services informational meeting. Invite Insurance Services representatives to speak to groups regarding ways to improve insurance ratings in the community.	Insurance Services in conjunction with SCCFSC	Within 2 years	2	Resources provided by Insurance Services. Venue provided by SCCFD fire department.	Communities can learn how to improve their insurance ratings, which will reduce insurance costs in their community by implementing wildfire prevention measures.
Strategic Goal: EO11- Increase signage/replace or augment existing signage.						

ID LG	Project	Presented by	Target Date	Priority (1,2,3)	Resources Needed	Serves to
LG-EO11.1	Increase signage/replace or augment existing signage. Use existing signage to spread fire prevention message along highways and in public open space areas (trailheads, info kiosks) to reduce human ignitions. Promote the use of existing electronic signs at firehouses and other locales to display fire prevention information, safety messages, and fire danger rating linked to safety actions.	County Fire	Within 2 years	2	Mostly existing signs and posting sites, people to post and update signs. Replace, or augment the existing Smokey Bear signs with electronic Fire Danger Warning Signs that are solar powered, LED displays (visible day & night), and accessible and programmable through an internet website.	Protect communities and infrastructure by raising awareness of local citizens and those traveling in the area about actions that can prevent fire.

Table 9.2. Recommendations for Reducing Structural Ignitability in the Los Gatos Planning Area

ID	Project	Presented by	Programs Available	Description	Priority (1,2,3)	Timeline
Strategic Goal: SI1: Retrofit/Eliminate flammable roofs						
LG-SI1.1	Identify all wood shake-roofed properties within planning area and target homeowners with outreach on retrofitting roofs.	City and County Planning in conjunction with County Fire and municipalities. Town of Los Gatos	FEMA and other grants	Explore elimination of flammable roofs through attrition or potential Town Code modification	1	5 years
Strategic Goal: SI5- Adopt landscape standards for recommended plant landscape materials						
LG-SI5.1	Adopt landscape standards for recommended plant landscape materials	FireSafe Councils to lead	Research Firewise plants suitable for the region. Develop plant list, poster materials and research demonstration site. Firewise Communities USA: www.firewise.org	Educate property owners, landscape firms and landscape architects in appropriate ornamental plantings, mulches, and landscape design/ maintenance in WUI areas.	3	Next 2 years
Strategic Goal: SI6- Develop landscape contractor maintenance program for "Right Plant-- Right Place" and maintenance						
LG-SI6.1	Develop landscape contractor non-flammable plant list.	FireSafe Councils to lead in cooperation with local Home Owner Association	Firewise Communities USA: www.firewise.org	Educate property owners, landscape firms and landscape architects in appropriate ornamental plantings, mulches, and landscape design/ maintenance in WUI areas. Work with HOA.	2	Next 2 years
Strategic Goal: SI8- Interactive tool for citizens to use on line, ID their property and what hazard/risks exist and mitigations they can apply to improve their survivability						
LG-SI8.1	Work with County Fire to develop parcel level application of CWPP risk assessment using Interra software.	Santa Clara County Fire Department with revised Interra contract	Interra	County Fire to pursue funding to increase contract provisions with Interra to provide public facing tool. Simplify tool and provide easy to follow instructions. Could develop YouTube informational video	1	Next 3 years
Strategic Goal: SI11- Implement spring community yard clean-up days. In combination with FireSafe Council chipper program.						
LG-SI11.1	Implement community work day to encourage yard clean-up and defensible space maintenance	County Fire, CAL FIRE, FireSafe Council and the Town	FireSafe Council chipping program Ready, Set, Go CAL FIRE	A community-led day of yard clean-up with fire mitigation in mind would encourage large numbers within the community to carry-out mitigation measures and implementation of defensible space.	2	Next 2 years

ID	Project	Presented by	Programs Available	Description	Priority (1,2,3)	Timeline
Strategic Goal: SI12- Assess and improve accessibility to property Weekend program to inform homeowners about emergency response access						
LG-SI12.1	Institute a weekend program to inform homeowners about emergency response access.	Fire departments, Fire Marshal	Firewise	Inform homeowners about the importance of keeping driveways accessible to fire trucks and emergency responders.	1	Within 1 year

Table 9.3. Recommendations for Improving Firefighting Capabilities in the Los Gatos Planning Area

ID	Project Description	Fire Department/Agency	Benefits of the Project to the community	Timeline	Priority (1,2,3)	Resources/funding sources available
Strategic Goal: FC2- Define Safe Refuge Areas and establish maintenance program in WUI areas where fire behavior and evacuation timing is problematic.						
LG-FC2.1	Define and delineate spatially Safe Refuge Areas and establish maintenance program in WUI areas where fire behavior and evacuation timing is problematic.	County Fire/CAL FIRE/FireSafe Councils	Provides safety measure for residents of rural areas in event that evacuation is limited. Provides for firefighter safety by creating escape route.	2 year	1	Grants: FEMA, CA FSC, DHS
Strategic Goal: FC5- Develop WUI preplans and accompanying evacuation plans for all WUI areas in Santa Clara County using standardized format						
LG-FC5.1	Develop WUI preplans and accompanying evacuation assessment plan for Los Gatos WUI	County Fire/CAL FIRE/FireSafe Council and the Town	Helps fire response agencies understand geographic area evacuations. Helps identify areas where mitigation measures are needed to facilitate safe evacuation. Helps establish consistent model across all agencies.	1 year	1	Grants: FEMA, CA FSC, DHS
Strategic Goal: FC8: Where road systems are antiquated and do not provide for proper evacuation or two way flow, require removal of obstructions or upgrade to minimum 2 lanes road system over time						
LG-FC8.1	Address poor road access issues - develop long-term plan for road improvements and prioritized routes for evacuation.	County Planning, Town Planning and Public Works	Addresses evacuation concerns of residents living in areas with poor ingress/egress. Provides for improved response capabilities and reduces risk that responding emergency vehicles will conflict with evacuation of residents.	2 years	1	Homeowner Associations, Road Associations, County Service Areas
Strategic Goal: FC11- Investigate and potentially install Fire Detection Robots to alert departments of a fire start in remote areas.						
LG-FC11.1	Investigate installation of fire detection robots on open space lands adjacent to Los Gatos.	County Fire	Uses technology for single-tree wildfire detection solution that help forestry agencies and fire protection professionals manage the risks of fire damage cost-effectively.	Within 2 years	1	Private companies provide robotic technology
Strategic Goal: FC14- Where possible encourage sharing of water sources in areas where residential water supplies may be low or non-existent during periods of drought or when wells/springs have run dry						
LG-FC14.1	Address water shortage concerns-particularly at high elevations by following the model currently under way by Loma Prieta Fire Department.	fire agencies, local community organizations, local water purveyors	Encouragement and assistance from FireSafe Council can provide a catalyst for action.	1–5 years	1	County Fire

ID	Project Description	Fire Department/Agency	Benefits of the Project to the community	Timeline	Priority (1,2,3)	Resources/funding sources available
Strategic Goal: FC15- Where Open Space and Park Agencies establish trail head parking areas, operating facilities such as horse stables and camping areas that will increase public access add large capacity water tanks and hydrants for wildfire protection.						
LG-FC15.1	Installation of water tanks on Open Space property for fire suppression purposes.	MROSD	Alleviates public and agency concern for limited water supply in remote areas.	Within 5 years	3	This could eventually be amended into the building code for Santa Clara County.

Table 9.4. Fuel Reduction Treatment Recommendations in the Los Gatos Planning Area

ID	Project Description	Location and Responsible Party	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/funding sources available
Strategic Goal: FR1- Incorporate single track trails into fire defense system where practical								
LG-FR1.1	Fire Safe Council to continue community outreach to prioritize treatments along existing trails that could help to provide a more substantial fuel break and break up the continuity of fuels.	Open space lands: Trails that run adjacent to community	Detailed analysis would be needed in development of treatment location to ensure protection of natural resources.	Provide access when fires occur to reduce spread Enhance Community fire defense by breaking up fuel continuity.	Ongoing-LONG RANGE	1	Regular monitoring to determine project success in reducing fuel loading and enhanced access.	Grants: CA FSC; California Forest Improvement Program (CFIP); Natural Resource Conservation Service (NRCS), FEMA, Green House Gas Reduction Fund (GHGRF)
Strategic Goal: FR7- Develop roadside fuel treatment program, including suite of methods available and sustainability mechanism								
LG-FR7.1	Implement roadside brushing/mowing throughout community to increase buffer from wildfire ignitions and provide for safe evacuation. Community members to approach SCCFSC to identify roadside fuel treatment priorities and seek funding to implement.	County and city road agencies; private road associations, PG&E, Cable and Phone companies. Led by SCCFSC.	Determine suite of treatment methods allowed and restriction for roadside hazard reduction including mowing, mastication, chemical, plantings, mulching, etc. Develop treatment plan and rotation schedule for roadside treatments, focusing of primary evacuation or access/egress corridors.	Reduce fuel loading around roads and highways to ensure safe passage of vehicles in event of evacuation and reduce unplanned ignitions from vehicles and highway users.	Within 2 years	1	Regular maintenance schedule should be implemented to ensure clearance levels are maintained. Develop standards for road crews.	Grants: Federal Emergency Management Agency (FEMA), California Fire Safe Council (CA FSC), Department of Homeland Security (DHS)
Strategic Goal: FR9- Establish assistance program for hazardous fuel reduction for physically or fiscally challenged parcels								
LG-FR9.1	Establish assistance program for hazardous fuel reduction and defensible space for elderly or physically challenged individuals within Los Gatos	Los Gatos neighborhood groups, HOAs.	Identify barriers to achieving parcel level defensible space and establish assistance program of resources: education, consulting, guidance, people, funding.	Ensure that individual properties with poor property hygiene do not put adjoining properties at risk in event of wildfire. For residents who are not capable of implementing good property hygiene.	Within 2 years	2	Establish levels of participation by assistance type	Grants: CA FSC; CFIP; NRCS, FEMA, GHGRF

ID	Project Description	Location and Responsible Party	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/funding sources available
Strategic Goal: FR 11- Create Sustainable programs for creating Defensible Space at the parcel Level.								
LG-FR11.1	Create Sustainable programs for creating Defensible Space at the parcel Level within Los Gatos	Home Owner, FireSafe Councils, Home Owner Associations, SCCFD, Administrators for SRA fee distributions.	Example projects - Curbside green waste pickup programs, community chipping piles, drive-up chipping, on site chipping.	Ensure that defensible space actions are sustained in all communities	Within 1 year	1	Regular maintenance schedule should be implemented to ensure clearance levels are maintained.	Grants: CA FSC; CFIP; NRCS, FEMA, GHGRF

Table 9.5. Recommendations for General Planning Projects in Town of Los Gatos

ID	Project Description	Method	Timeline for Action	Priority (1,2,3)	Monitoring/Sustainability	Resources/Funding Sources Available
Strategic Goal GP1: Ensure project sustainability.						
LG- GP1.1	The CWPP serves as the wildfire component of Los Gatos LHMP and General Plan - Safety and other element amendments.	Work with city planning to identify timeline for incorporation in next LHMP update. Explore having the strategic-level CWPP incorporated into the Safety Element of the General Plan when the safety element is next revised.	Next 5 years	2	The core group of stakeholders would need to ensure that the document is kept relevant in that time and position it for incorporation.	Internal funding
LG- GP1.2	Ensure project sustainability.	Have a target date for updating the datasets used in the risk assessment model and re-running the model. Establish trigger points for updating CWPP. Make contact with Santa Clara County Fire Department to note your interest in participating in the project and identify CWPP meeting schedule.	Annually	1	Establish annual oversight of the CWPP and project status. Get buy-in from Core Team members for long-term commitment to CWPP review.	Internal funding
LG- GP1.3	Designate a member to the Countywide CWPP Core Team for CWPP updates.	Identify staff and convene a kickoff of the working group and identify tasks and goals for CWPP updates.	Meet quarterly	1	Commit to attendance at one CWPP meeting annually.	Internal funding
LG- GP1.4	Develop methods for sustainability of hazardous fuel reduction.	Develop options for Town Council to evaluate sustainable hazardous fuel maintenance funding	As needed	2	Enactment of policy.	Internal funding
Strategic Goal G24: Parcel Level Defensible Space Inspection Task Force						
LG-GP2.1	Join countywide task force to do parcel level inspection work to enhance model; utilize portable data collection and ArcGIS as analysis tools.	Carryout parcel level assessments to enhance risk assessment model components at a finer scale. Add data to model and re-run as necessary.	2 years	1	Set target number of parcels to be assessed each year. Review number of parcels assessed each year at annual CWPP meeting.	Internal funding
Strategic Goal GP3: Develop countywide standard and method for continued data gathering and risk analysis.						
LG-GP3.1	Use a countywide standard and method for continued data gathering and risk analysis.	Conduct funding to purchase a commercial application, such as Fulcrum, that provides a standard data collection platform that could be used on a smart phone/tablet.	2 years	1	Annual review of progress as part of Core Team.	California Fire Safe Council clearinghouse grants; internal funding

ID	Project Description	Method	Timeline for Action	Priority (1,2,3)	Monitoring/Sustainability	Resources/Funding Sources Available
Strategic Goal GP5: Add hyperspectral and LiDAR imaging to periodic aerial photography flights.						
LG-GP5.1	Seek LiDAR and hyperspectral imagery for aerial photography of Los Gatos.	Work in conjunction with the City Planning, County Assessor, or others to add additional sensing cameras to aerial photo flights. Hyperspectral and LiDAR can provide in depth identification and analysis of hazards and risks.	1–3 years	1	Periodic new flights to update data sets.	Grants: Federal Emergency Management Agency, Department of Homeland Security, Greenhouse Gas Reduction

APPENDIX A2

Santa Clara County Community Wildfire Protection Plan
Annex 9 – Los Gatos

Santa Clara County
Community Wildfire Protection Plan

Prepared for

Santa Clara County

Prepared by

SWCA Environmental Consultants

August 2016

SANTA CLARA COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN

Prepared for

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August 2016

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The Santa Clara County Community Wildfire Protection Plan (CWPP) acknowledges the efforts of the CWPP Core Team, who without their ongoing contributions, expertise and commitment to wildfire preparedness in Santa Clara County, this CWPP would not have been developed.

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SIGNATORY PAGE

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EXECUTIVE SUMMARY

Wildfire continues to be a threat to communities across the United States; in the last few years, most western states have experienced the largest wildfires in their histories. Wildfires with a broad range of sizes and locations have destroyed hundreds of homes; the cost to suppress wildfires across the nation typically exceeds one billion dollars annually.

In recognition of this threat, many communities have worked to develop Community Wildfire Protection Plans, bringing together many stakeholders to develop strategies to mitigate the occurrence and effects of wildfire. Several communities in Santa Clara County have developed such plans, demonstrating an awareness and concern for wildfire hazard which should be applauded.

Because wildfires often threaten areas much larger than individual communities, it is critically important that planning for the occurrence of wildfire occurs within communities and between communities. In recognition of the advantages of a broader scope of wildfire preparation, multi-jurisdictional agencies, organizations, and residents have joined together to develop this plan, the Santa Clara County Community Wildfire Protection Plan (CWPP). This larger scale of planning increases the level of coordination and cooperation among stakeholders which can lead to broader and more efficient wildfire risk mitigation measures. For example, the CWPP can serve as the wildfire component within the Safety Element of the Santa Clara County General Plan; can help prioritize and strengthen requests for competitive funding grants to reduce hazardous fuels; and can facilitate the adoption of common standards for defensible space across Santa Clara County. Good ideas can be more readily shared with all communities within the County, greatly facilitating public education outreach efforts.

This CWPP is a countywide strategic plan with goals for creating a safer wildland urban interface community, accompanied by report annexes that address specific issues and projects by jurisdiction and stakeholder organizations to meet the strategic goals.

The purpose of the CWPP is to assist in protecting human life and reducing property loss due to wildfire throughout the planning area. The plan is the result of a community-wide wildland fire protection planning process and the compilation of documents, reports, and data developed by a wide array of contributors. This plan was compiled in 2015-2016 in response to the federal Healthy Forests Restoration Act (HFRA) of 2003. The CWPP meets the requirements of the HFRA by:

1) Having been developed collaboratively by multiple agencies at the state and local levels in consultation with federal agencies and other interested parties.[1]
2) Prioritizing and identifying fuel reduction treatments and recommending the types and methods of treatments to protect at-risk communities and pertinent infrastructure.
3) Suggesting multi-party mitigation, monitoring, and outreach.
4) Recommending measures and action items that residents and communities can take to reduce the ignitability of structures.

[1] There is limited presence of federal land management agencies in Santa Clara County; Bureau of Land Management and Department of Defense lands.

5) Facilitating public information meetings to educate and involve the community to participate in and contribute to the development of the CWPP.

The planning process has served to identify many physical hazards throughout the planning area that could increase the threat of wildfire to communities. The public also has helped to identify community values that it would most like to see protected. By incorporating public and Core Team[2] input into the recommendations, treatments are tailored specifically for the planning area so that they are sensitive to local residents' concerns. The CWPP emphasizes the importance of collaboration among multi-jurisdictional agencies in order to develop fuels mitigation treatment programs to address wildfire hazards.

Santa Clara County has a very strong team of career and volunteer firefighters, who work arduously and cooperatively to protect the life and property of the citizens, but these resources can be severely stretched if property owners do not take on some of the responsibility of reducing fire hazards in and around their own homes and business properties. Without reduction of fire hazards by property owners before a fire occurs, it may be impossible for firefighters to safely defend structures when wildfire threatens an area. A combination of property owners and community awareness, public education, agency collaboration, and fuel treatments are necessary to fully reduce wildfire risk.

It is important to stress that this document is an initial step in educating the public and treating areas of concern, and should serve as a tool to accomplish these tasks. The CWPP should be treated as a live document to be updated approximately every two years. The plan should be revised to reflect changes, modifications, or new information that may contribute to an updated CWPP. These elements are essential to the success of mitigating wildfire risk throughout the planning area and will be important in maintaining the ideas and priorities of the plan and the communities in the future.

This CWPP is a large document because wildfire affects a very complex array of county and city governments, urban and rural communities, many fire departments and jurisdictions, and a broad range of public and private land conservation and resource management entities with varied missions. Wildfire is a significant risk to public health and safety, economies, infrastructure, and irreplaceable cultural and natural resources. Wildfire behavior is itself highly complex, and mitigation of its risk requires careful and coordinated planning be done by all of these stakeholders. Weaknesses in planning, preparedness, communication, prevention, and operations are readily exploited by fast moving, high intensity wildfire.

The CWPP therefore contains a wealth of information for government, agency, and community planning activities. This plan may serve as the wildfire basis for future updates of Local Hazard Mitigation Plans, providing a much greater level of detail on wildfire issues and solutions than is often found in such plans. It also provides information that may be used by communities as they develop and update their own CWPPs, facilitating this important work by providing "lessons learned" and a wide variety of data gained by others previously engaged in this process.

[2] Core Team, comprised of representatives of Santa Clara County organizations, serves as CWPP project strategic guidance team.

Santa Clara County will continue to grow and change, and the nature and risk of wildfire will continue to evolve as well. This will occur not only due to local issues, such as new developments near the wildland urban interface, but also because of large-scale factors such as climate change. This CWPP is a critically important part of an ongoing process that will enable the residents of Santa Clara County to meet the current and future challenge of wildfire. The CWPP is presented in two component parts:

1. An overarching strategic section that identifies countywide issues and common strategies.

2. Organizational "annexes" by separate jurisdictions that provide detail and specific tasks to achieve the common strategic section.

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DOCUMENT NAVIGATION

STRATEGIC COUNTYWIDE DOCUMENT

This CWPP document is organized into 7 main chapters that describe overarching county level wildfire risk and hazard and recommendations for improved wildfire preparedness at the county level. This overarching document should be considered a strategic level plan for Community Wildfire Protection.

- **Chapter 1:** provides an overview of the planning area and the planning process for the CWPP.
- **Chapter 2:** outlines community characteristics that relate to wildfire risk and hazard including climate and weather, vegetation, and population.
- **Chapter 3:** describes the fire environment including the description of the Wildland Urban Interface and fire response.
- **Chapter 4:** describes development of the wildfire hazard/risk assessment that is broken down into a county scale, community scale and parcel scale assessment.
- **Chapter 5:** describes existing and proposed community outreach that is integral to improving wildfire preparedness.
- **Chapter 6:** lays out mitigation strategies that could be applied to address wildfire hazard and risk and is broken down into general planning projects, public education and outreach, structural ignitability, fire response capacity and hazardous fuel reduction projects.
- **Chapter 7:** provides recommended monitoring and evaluation strategies to help identify needed updates to the document.
- **Appendixes:** in order to improve the functionality of the main document, some detailed information is provided in separate appendixes and referenced in the text.

AGENCY/COMMUNITY ANNEXES

In addition to the strategic countywide document are individual agency or community level annexes that are organized by jurisdiction. These annexes provide more specific wildfire mitigation projects that were developed through collaboration with the Core Team and the public. These annexes form the legs of the strategic document and provide projects that could be implemented at the community level, but that are tiered to the countywide strategic goals. The annexes can be updated separately from the main document providing greater utility for agencies to make changes to their project lists. For a full list of the Annexes please see the Table of Contents below.

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ACRONYMS AND ABBREVIATIONS

ATV	All-terrain vehicle
BTU	British Thermal Unit
CAL FIRE	California Department of Forestry and Fire Protection
CEQA	California Environmental Quality Act
CERT	Community Emergency Response Team
CFIP	California Forest Improvement Program
CHR	Community Hazard Rating
CMR	Community Mitigation Rating
CVARs	Community Value at Risk
CWPP	Community Wildfire Protection Plan
DHS	Department of Homeland Security
EQ	Earthquake Clearing House
FD	Fire Department
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FPD	Fire Protection District
FRA	Federal Responsibility Area
FRCC	Fire Regime Condition Class
GHGRF	Green House Gas Reduction Fund
GIS	Geographic Information System
H	High
HFRA	Healthy Forest Restoration Act
HIZ	Home Ignition Zone
HOA	Homeowner Association
IBHS	Insurance Institute for Business & Home Safety
IMMS	Integrated Maintenance Management System
ISO	Insurance Services Office
KML	Keyhole Markup Language
LHMP	Local Hazard Mitigation Plan
LiDAR	Light Detection Ranging
LRA	Local Responsibility Area
M	Medium
MROSD	Midpeninsula Regional Open Space District
NFPA	National Fire Protection Association
NPS	National Park Service
NRCS	Natural Resource Conservation Service
OSA	Santa Clara Valley Open Space Authority
PG&E	Pacific Gas and Electric Company
PMR	Parcel Mitigation Rating
PRC	Public Resources Code
SAF	Society of American Foresters
SCCFD	Santa Clara County Fire Department
SCVHA	Santa Clara Valley Habitat Agency
SCVWD	Santa Clara Valley Water District
SHMP	State Hazard Mitigation Plan
SJWC	San Jose Water Company
SRA	State Responsibility Area
TCS	Total Community Score
VFD	Volunteer Fire Department
VH	Very High
VMP	Vegetation Management Plan
WRCC	Western Regional Climate Center
WUI	Wildland Urban Interface

1 OVERVIEW OF COMMUNITY WILDFIRE PROTECTION PLAN

1.1 NEED FOR COMMUNITY WILDLIFE PROTECTION PLAN/ CAL FIRE SANTA CLARA UNIT PLAN

Fire has been a component of California's natural history for millennia, with fires caused by both lightning and by Native Americans a common occurrence in most parts of the state. In some vegetation types, frequent fires resulted in a mosaic of burned areas of various ages, with the more recently burned areas tending to impede the spread of new fires (Stephens and Sugihara 2006). Many native plant species have adapted to periodic fires. Fire was used by Native Americans for a variety of purposes, as well as by settlers, ranchers, and loggers. There are very few areas in the state that were not, and continue to be, affected by fire.

The influence and effects of fire have changed as attempts were made to suppress it, with the consequent accumulation of more continuous and dense wildland fuels as historic burn mosaics were lost. More continuous fuels have led to larger, more intense wildfires, which are increasingly difficult and expensive to suppress, especially during periods of very dry and/or windy fire weather or episodes of widespread lightning activity, such as those that occurred in northern California in 2008, which started many fires in Santa Clara County. Either condition can quickly overwhelm local, state, and federal firefighting resources.

The combination of increasing development in or near wildlands, the accumulation of wildland fuels, dry fire seasons, and rugged terrain has resulted in significant risk due to wildfire to communities located in or near the wildland urban interface (WUI). Such destructive wildfires may be very large, such as the 273,246-acre Cedar fire in San Diego County that destroyed 2,820 structures with 15 fatalities in 2003. Others can be relatively small, such as the 1,520-acre Tunnel fire (Oakland Hills) in Alameda County, which destroyed 3,380 homes with 25 fatalities in 1991, or the 3,007-acre Croy fire in Santa Clara County, which burned 300 structures in 2002.

California has experienced a WUI fire problem for nearly a century. The 1923 Berkeley Hills fire and 1961 Bel Air fire clarified the disastrous role poorly designed communities with flammable construction and especially wooden shake shingle roofs play in fire losses in developed areas. Localized efforts to address WUI fires met with mixed success. In 1991 the California legislature passed Fire Safe legislation that established the first combined land use, construction, and defensible space standards that applied statewide. Ironically, shortly after the Fire Safe legislation was law, California experienced the Oakland Hills Tunnel fire, the most devastating WUI fire in state history.

Wildfires can also damage watersheds and cause significant erosion and loss of water quality. Sensitive species habitat can be damaged or destroyed, or overrun with invasive species. The economic loss can be enormous as tourism and recreational values are impacted. Social sense of well-being is affected by concern of impact of WUI fires in neighborhoods. Smoke can cause significant safety and health issues, with many sensitive individuals requiring medical treatment.

It has become increasingly apparent that the mitigation of wildfire risk requires much more than a simple reliance on suppression response. Thoughtful planning, conducted as a collaborative effort by the many people and organizations affected by wildfire, is required to develop and implement short- and long-term solutions and strategies. The CWPP process is a means by which many individuals and organizations can come together in a structured format to do this.

While several communities in Santa Clara County have already developed such plans, this is the first effort to develop a CWPP at the county level. It is expected this CWPP will facilitate even broader involvement from many stakeholders in the development of strategies to mitigate common wildfire risk. These strategies can be used by other communities as they develop their own CWPPs in the future, as well as by local governments as they plan for future development through land use planning or promulgate new codes and ordinances for greater resilience to the impact of wildfire.

1.1.1 Components of Community Wildfire Protection Plan/CAL FIRE Santa Clara Unit Plan

Nationally, the 2000 fire season triggered great interest by the federal government in the wildfire issue. In 2003 the U.S. Congress recognized widespread declining forest health and increased wildfire risk nationwide by passing the Healthy Forests Restoration Act (HFRA), and President Bush signed the act into law (Public Law 108–148, 2003). The HFRA was revised in 2009 to address changes to funding and provide a renewed focus on wildfire mitigation (H.R. 4233 - Healthy Forest Restoration Amendments Act of 2009). The HFRA expedites the development and implementation of hazardous fuels reduction projects on federal land and emphasizes the need for federal agencies to work collaboratively with communities. A key component of the HFRA is the development of CWPPs, which facilitates the collaboration between federal agencies and communities in order to develop hazardous fuels reduction projects and place priority on treatment areas identified by communities in a CWPP. A CWPP also allows communities to establish their own definition of the WUI. In addition, communities with an established CWPP are given priority for funding of hazardous fuels reduction projects carried out in accordance with the HFRA.

CWPPs are composed of three minimum requirements, which are intended to foster communication among the public, government entities, and private organizations as they work towards a common vision of wildfire risk mitigation. These requirements are:

1. **Collaboration**: Local and state government representatives, in consultation with federal agencies or other interested groups, must collaboratively develop a CWPP.
2. **Prioritized Fuel Reduction**: A CWPP must identify and prioritize areas for hazardous fuels reduction and treatments; furthermore, the plan must recommend the types and methods of treatment that will protect at-risk communities and their essential infrastructures.
3. **Treatments of Structural Ignitability**: A CWPP must recommend measures that communities and homeowners can take to reduce the ignitability of structures throughout the area addressed by the plan.

The area covered by a CWPP usually includes communities or parts of communities. This CWPP is developed at the Santa Clara County level and therefore addresses these requirements with a greater variety of participants than the community plans that have been previously completed. As a result, information associated with these requirements will be accessible to other communities in the county as they prepare their CWPPs, as well as providing a higher overview of wildfire issues, concerns, and risk reduction solutions throughout the county. The expectation is a set of common countywide strategic goals accompanied with specific target projects at the community level to achieve those goals.

Information from the Santa Clara County CWPP will also assist Santa Clara County and cities in the development of their General Plans and Local Hazard Mitigation Plans (LHMPs). The mandatory Safety Element found in the General Plan, for example, can draw information and guidance directly from the Santa Clara County CWPP. Land use planning that incorporates provisions for fire-resilient design in WUI areas has been shown to dramatically improve public safety and reduce fire losses[3]. Guidance on this planning process is described in the 2003 edition of *Fire Hazard Planning* (State of California, Governor's Office of Planning and Research, General Plan Technical Advice Series, November 2003, 21 pp.).

CWPPs alone provide no authority to enforce findings and conclusions; their value is in the collaboratively developed information and recommendations that can identify and guide activities that mitigate wildfire risk and hazard. The Santa Clara County CWPP can be used by government entities as a reference to guide land use planning and promulgate codes and ordinances in response to its recommendations.

1.1.2 COMMUNITIES AT RISK

The California Fire Alliance and federal list of communities at risk from wildfires include 14 communities in Santa Clara County: Cupertino, East Foothills, Gilroy, Lexington Hills, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Palo Alto, San Jose, San Martin, Saratoga and Stanford. Some of these communities have developed a CWPP or Fire Management Plan, such as Lexington Hills, East Foothills, and Palo Alto. The Croy Area CWPP includes parts of Gilroy, Morgan Hill, and San Martin.

Wildland Urban Interface Fire Hazard and Environment

On the national level, following the establishment of the National Fire Plan via Executive Order due to the 2000 national wildfire season, work throughout the country was undertaken to identify areas at high risk from wildfire; this work would be used to identify the location of hazardous fuel reduction projects designed to reduce this risk. Communities across the nation that are considered to have a WUI have been identified; this list was subsequently published in the *Federal Register*.

California law established a classification of fire hazard severity zones (FHSZs) for wildland areas in the 1980s. FHSZ ratings include factors for weather, vegetation type, topography, predicted fire behavior, ember production, and other factors to rank areas for potential likelihood and severity of wildland fires. The FHSZ rating impacts the nature of community design and building construction in State Responsibility Areas (SRAs) (areas that receive wildland fire protection

[3] *Megafires: The Case for Mitigation*, Institute for Business and Home Safety, 2008.

directly by the California Department of Forestry and Fire Protection [CAL FIRE]). As a result of the 1991 Oakland Hills Tunnel fire, the legislature also required applying the FHSZ rating system to cities in California with WUI fire areas.

In response, CAL FIRE developed a state list of communities at risk. This work included ranking fuel hazard based on vegetation types and associated fire behavior; assessing the probability of a large, damaging fire; and defining areas with sufficient housing density to create a WUI protection situation. This facilitates the identification of locations most at risk from wildfire and therefore in greatest need of hazardous fuels reduction projects, public education on wildfire risk and fire prevention, and improvements in the ignition resistance of structures.

From this work, as previously noted, 14 communities at risk have been identified. Very high wildfire risk conditions are particularly evident along the eastern side of the county, as well as along the southwestern portion from Los Gatos to Gilroy. Current conditions and patterns of fuels, fire behavior, fire weather, and density of structures indicate that these communities are at a significant risk from damaging wildfire, even during relatively short periods of high fire danger (Figure 1.1). The CWPP process is designed to focus on these areas within the county most at risk from wildfire.

The names of the communities at risk create some confusion about the boundaries defined by the name. For the purposes of this CWPP we define the boundaries of the various communities to include all WUI areas at risk from wildfire in the vicinity of the place name. For example, the Saratoga community at risk includes unincorporated Santa Clara County in the hills adjacent to Saratoga, and the Lexington Hills community at risk is larger geographically than the place defined by the US Census.

1.1.3 JURISDICTIONAL COMPLEXITY

Santa Clara County has a complex arrangement of public and private fire protection organizations that provide preparedness planning and response to wildland fires and other emergencies. These organizations deserve commendation for the level of cooperation and coordination they employ to deliver high level of fire protection to Santa Clara County in a complicated jurisdictional environment. For purposes of wildland fire protection, California law segregates lands within the state into three categories for jurisdictional and financial responsibility (Figure 1.2): 1) Federal Responsibility Areas (FRAs), wherein a federal government agency has jurisdiction for wildland fire protection on federally owned land; 2) SRAs wherein CAL FIRE has jurisdiction for wildland fire protection on all lands within this zone whether public or private ownership; and 3) Local Responsibility Area (LRAs), wherein neither the federal government nor the state have jurisdiction for wildland fire protection. All lands within an incorporated city, whether wildland or not, are designated LRAs by California law. Separate from jurisdiction for wildland fire protection is the jurisdiction for "all hazard" fire/rescue emergencies (structure fires, vehicle fires, vehicle accidents, rescues, medical emergencies, etc.). All hazard response is usually the jurisdictional responsibility of a local government organization. When land development occurs and population increases, a WUI fire protection situation is created. Local government (county, special district, or city) is responsible for delivering all hazard fire protection. Where SRA designated lands are involved, there can be dual, or layered, responsibility for delivering fire protection to the community. This layering occurs in the unincorporated areas of the Central Fire Protection District,

Los Altos Hills County Fire Protection District, and South Santa Clara County Fire Protection District. Additionally, there are private, not for profit volunteer fire companies volunteer fire companies (Spring Valley, Casa Loma, Uvas, and Stevens Creek) in SRA that, while having no governmental jurisdiction, are actively involved in planning and response to emergencies in their communities.

Areas of the east county, portions of Almaden Valley and the Stanford University campus, are not within the normal response jurisdiction of any local fire agency (fire protection district, county service area, or county department (see Figure 1.2). Since these are unincorporated areas, the County Board of Supervisors has ultimate responsibility for provision of local fire protection and administration of building/fire codes. General Plan, local hazard mitigation planning, and land use development are also the responsibility of the County Board of Supervisors. Absent other agreement, the South Santa Clara County Fire Protection District, the Central Fire Protection District, or CAL FIRE will normally respond as a Good Samaritan to all hazard emergencies in these areas with no local government fire organization.

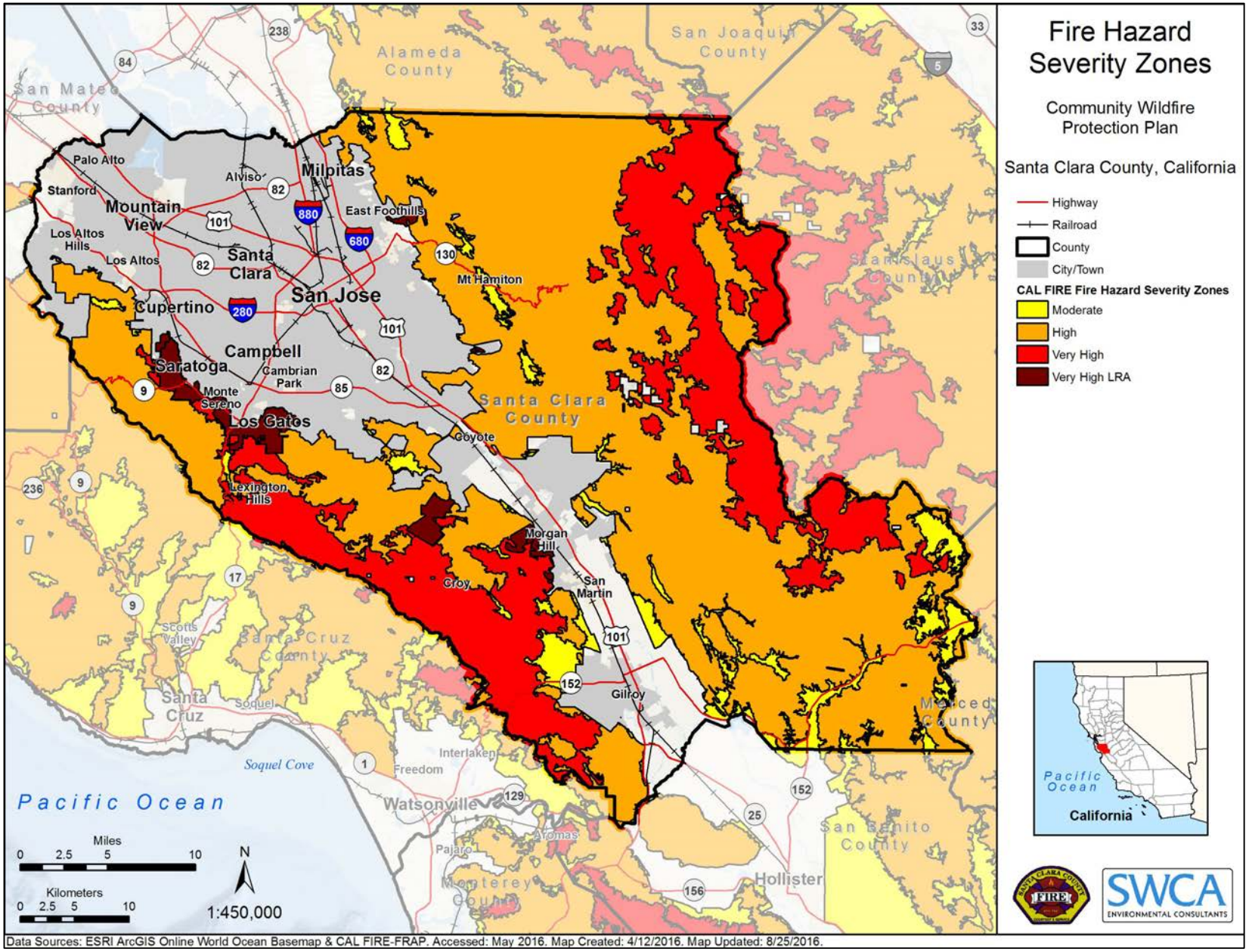


Figure 1.1. Fire hazard severity zones.

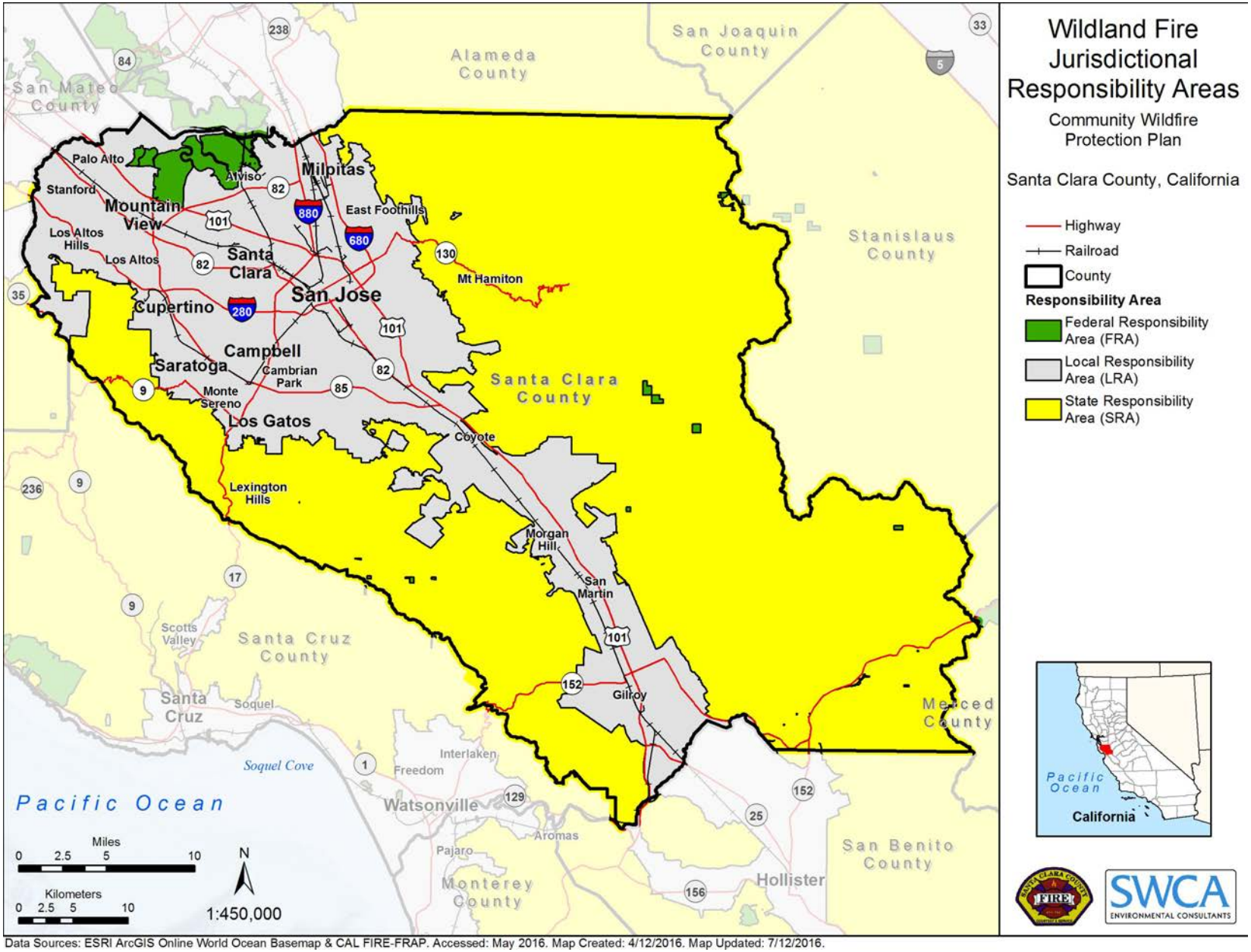


Figure 1.2. Response jurisdictions

1.1.4 POLICIES, LAWS, ORDINANCES, CODES, PLANS, AND PROGRAMS IN PLACE

The complex nature of wildfire management, and the mitigation of risk associated with it, is reflected in the many policies, plans, and laws that have been developed in response.

California state laws and local ordinances at county, city, and district levels address the WUI fire problem. Laws address land use planning and wildfires through various codes. State law related to wildfire, WUI fires, and model building and fire codes are primarily found in the Public Resources Code (PRC), the Health and Safety Code and the Government Code

State law[4] defines areas in California that are wildland and the responsibility for fire protection related to those lands. Additionally, the probable fire severity of these areas is defined and determined by building codes and fire-resistant design standards that were in place at the time of construction.

Land use planning contains the ultimate long range solution to the WUI fire problem. New communities can be designed to be resilient to the impact of wildland fire when Fire Safe community[5] components are factored into design. Fire agencies and other stakeholders input into the General Plan process can establish a strong blueprint for a fire-resilient community.

State legislation passed in 2012[6] directs CAL FIRE to review all proposed subdivisions and amendments to local General Plans and Safety Elements.

1.1.5 FEDERAL MEASURES TO FACILITATE WILDFIRE PLANNING AND PREPARATION

The National Fire Plan established the collaborative approach to be used at all levels to develop risk reduction solution. It was followed by *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Comprehensive Strategy*, with updates in 2002 and 2006. In 2003, the HFRA was passed into law, which emphasized the development of CWPPs and the implementation of hazardous fuel reduction projects.

In 2014, the final stage of a national strategy for wildfire was issued, entitled *The National Strategy: The Final Phase in the Development of the National Cohesive Wildland Fire Management Strategy*. California is in the Western Region of this plan, which notes that steep terrain, invasive species, access limitations, climate change, heavy fuel loads, and an expanding WUI underlie four broad areas of risk: risk to firefighters and civilian safety, ecological risks, social risks, and economic risks. The solution requires a collaborative effort with many stakeholders to improve landscape resiliency and community adaptation to wildfire.

[4] Public Resources Code 4125.
[5] Fire Safe Community Design Standards (Public Resources Code 4290).
[6] California Government Code Sections 66474.02, 65302, and 65302.5.

1.1.6 STATE OF CALIFORNIA MEASURES TO FACILITATE WILDFIRE PLANNING AND PREPARATION

In similar acknowledgement of the escalating risk of wildfire, the State of California also issued several documents to assist in wildfire planning and preparation, detailed in the following sections.

Statewide Hazard Mitigation Plan

The State of California Multi-Hazard Mitigation Plan, revised in 2013, considers wildfire along with floods and earthquakes to be the three primary hazards faced by California (California Governor's Office of Emergency Services 2013). Chapter 5.4 describes wildfire hazards, vulnerabilities, and risk assessment. The document in particular notes the importance of Senate Bill 1241, which was passed in 2012, and mandates wildfire planning responsibilities by local agencies through requirements regarding:

1. wildfire updates to General Plans;
2. mandatory findings for subdivision approvals in SRAs and very high FHSZs; and
3. California Environmental Quality Act (CEQA) checklist updates for wildfire safety.

As a result, local General Plans must contain a review of local fire hazards; goals, policies, and objectives for protection of the community from wildfire; implementation measures; and reference to any previously adopted fire safety plan that meets Senate Bill 1241's goals.

California Strategic Fire Plan

In 2010, the State Board of Forestry and Fire Protection issued the California Strategic Fire Plan, a statewide fire plan developed in concert between the State Board of Forestry and Fire Protection and CAL FIRE. Goals included improved availability and use of information on hazard and risk assessment, land use planning, development of shared vision in plans such as CWPPs, establishment of fire resistance in assets at risk, shared vision among fire protection jurisdictions and agencies, levels of suppression, and post-fire recovery.

In support of this plan, several policies are noted, including creation of defensible space, improving home fire resistance, fuel hazard reduction that creates resilient landscapes and protects wildland and natural resources, adequate and appropriate fire suppression, and commitment by individuals and communities to wildfire prevention and protection through local planning.

The California Strategic Fire Plan's several objectives are as follows: the state will produce tools such as updates to the CAL FIRE very high FHSZ maps, fire history, and data on values and assets at risk; assist government bodies in the development of a comprehensive set of wildland and WUI protection policies; identify minimum key components necessary to achieve a fire safe community; coordinate CAL FIRE Unit Fire Plans with CWPPs; improve regulatory effectiveness, compliance monitoring, and reporting pursuant to PRC 4290 and 4291; and participate in public education efforts concerning regulation, prevention measures, and preplanning.

CAL FIRE Santa Clara Unit Fire Plan

The Santa Clara Unit of CAL FIRE provides fire protection to many areas within Santa Clara County, as well as to Contra Costa, Alameda, and the western portions of San Joaquin and Stanislaus counties. The 2015 CAL FIRE Santa Clara Unit Fire Plan uses the Seven Strategic Goals and Fire Plan Framework identified in the California Strategic Fire Plan and translates them into work to be done within its area of responsibility. Tactically, the Santa Clara Unit has an objective of keeping all wildland fires to 10 acres or less. Strategically, the primary goal of wildland fire protection in the unit is to safeguard the wide ranges of values found within the unit from the effects of wildfire.

The Santa Clara Unit employs multiple programs to accomplish this goal, including development of pre-fire management tactics, fire prevention, a defensible space inspection (LE-100) program for fire safe clearance around structures, information and education programs, and the Vegetation Management Program (VMP) to reduce hazardous fuels and achieve natural resource management goals with within an SRA.

Local Hazard Mitigation Plan

In 2005, the Association of Bay Area Governments adopted *Taming Natural Disasters: A Multi-Jurisdictional Local Government Hazard Mitigation Plan for the San Francisco Bay Area*. This plan addresses methods to mitigate the risk from several types of hazards on eight commitment areas (infrastructure, health, housing, economy, government services, education, environment, and land use). The 2005 plan was updated in 2010 with the participation of 116 cities, counties, and special districts. This update was supported by numerous regional and sub-regional workshops, forums, and public outreach campaigns, and further enhanced both the consistency in approach to hazard mitigation planning and the participation rate of local jurisdictions

In response, Association of Bay Area Governments counties, including Santa Clara County, have developed an LHMP as an annex to the Association of Bay Area Governments plan. The LHMP also has mitigation strategies for several of these commitment areas.

Many of the mitigation strategies identified have been, or can be, used in CWPPs, and the responsible entities are also identified. Items include ensuring reliable sources of water for existing and new developments, developing defensible space programs, providing adequate access roads that meet California Fire Code standards, tying public education on defensible space with a defensible space ordinance and field enforcement, adopting or amending California Building and Fire Codes, and expanding VMPs.

1.1.7 OUTCOMES OF A CWPP

Building Collaboration

The underlying theme of these various plans, and in particular CWPPs, is collaboration among the many stakeholders affected by wildfire. Chief among the components of collaboration is public education to provide not only information concerning the risk of wildfire but also to let stakeholders know about opportunities to participate in the management and mitigation of wildfire risk. CWPPs are often referred to as "living documents" because of the importance of revisiting and updating these documents periodically as new issues arise and results from recommendations

in the CWPP, such as hazard reduction projects, develop. The value of the CWPP is ultimately to provide a framework for collaboration between the public, governments, agencies, and other entities affected by wildfire, so that they can discuss and jointly develop solutions and strategies for its management and mitigation. Specific CWPP topics requiring a collaborative effort include:

Risk Assessment

The purpose of developing the risk assessment model described in this document in Section 4 is to create a unique tool for evaluating the risk of wildland fires to communities within the WUI areas of the planning area. Although many definitions exist for hazard and risk, for the purpose of this document these definitions (that are consistent with state hazard mitigation planning and state standards) include:

- **Risk = Hazard – Mitigations**
- **Risk** is essentially a measurement of the potential consequences of the hazard occurring, in this case a wildfire burning through the WUI community.
- **Hazards** are those existing bio-physical factors that, when combined, present a threat.
- **Mitigations** are actions taken to reduce the hazard or risk in order to reduce the unwanted consequences of the WUI fire.

The risk assessment is twofold and combines a geographic information system (GIS) model of hazard and risk (Composite Risk/Hazard Assessment) and an on-the-ground assessment of community hazards and values at risk.

From these assessments, land use managers, fire officials, planners, and others can begin to prepare strategies and methods for reducing the threat of wildfire, as well as work with community members to educate them about methods for reducing the damaging consequences of fire. The fuels reduction treatments can be implemented on both private and public land, so community members have the opportunity to actively apply the treatments on their properties, as well as recommend treatments on public land and private land that they use or care about.

Insurance Implications in Wildland Urban Interface Areas

Insurance companies are reducing their exposure to catastrophic losses. It is commonplace for California property owners in WUI areas to be denied insurance coverage from their preferred provider, including renewals of existing policies. Property owners are left with a search for a willing insurance company or at last resort turning to the California FAIR Plan[7], which will assure coverage, but at extraordinary premiums.

Insurance companies often rely upon organizations such as Insurance Services Office, Inc. (ISO) to assist in the evaluation of risk, such as from wildfire. For example, ISO/Verisk Analytics uses a program called FireLine to provide scores used to analyze wildfire risk at the individual address level. Scores are derived from three components: fuel, slope, and firefighter access.

[7] California FAIR Plan Property Insurance: cfpnet.com.

There are a number of important implications for homeowners in WUI areas in the County:

Fire insurance policies will be issued or denied based on factors evaluated by insurance companies, evidenced by the fact that many insurance companies in the County are denying coverage in WUI areas. The result of this action by the major insurance companies have reduced the capacity of the industry to accommodate the market demand and the price of coverage is rising as a direct result. There are insurance companies that are taking on this risk by charging higher rates, reducing fire peril coverage, and or increasing the deductibles. This results in the consumer taking on more risk by paying more and having higher deductibles. Alternatively, some homeowners find they cannot afford coverage if they can find it and forego obtaining fire insurance policies entirely.

Fuel and access can be modified as a result of projects identified in a CWPP and therefore affect insurance policies and premiums. Properties currently insured in the WUI are inspected periodically for defensible space, site hygiene and maintenance. Upon inspection if there are issues raised, the policyholder is informed and required to make changes prior to the next renewal. Because many insurance companies are no longer taking on new business in these WUI areas, a lapse in policy as a result of a failed insurance inspection can be a significant vulnerability to homeowners, providing motivation for good property hygiene, defensible space and structural maintenance.

Areas identified by insurance companies as exposed to wildfire risk should be noted by stakeholders as another source of information, which can also be used to identify and prioritize risk reduction work.

Mitigation Strategies

The CWPP process identifies many types of mitigation strategies, including hazardous fuel modification, defensible space, signage, public education prevention messages, improved road access, water supply, and building materials and design. It should be noted that while all mitigation strategies will be useful, some will be a more important factor in preventing destruction of a home.

An examination of the factors leading to an assignment of extreme risk to a parcel or area can help identify which ones provided the most weight to the rating and, therefore, which factors are in most need of mitigation strategies. For example, the presence or absence of a wood roof is often a determining factor in home survivorship during wildfire incidents, and therefore this factor is given much weight in the development of risk score ratings.

Policies, Codes, and Ordinance Changes

Mitigation strategies must include monitoring and follow-up, and often require the development of codes, ordinances, and enforcement. Codes and ordinances help define the type and level of work needed to mitigate wildfire risk. A policy of creation of defensible space needs to have a definition of the amount of vegetation clearance. As noted in the state's General Guidelines for Creating Defensible Space (2006), this definition can change periodically, as was the case with the revision of PRC 4291, which increased the defensible space distance from 30 to 100 feet.

Outreach and Education

The CWPP process is designed to enhance outreach and education on the wildfire situation to the general public, local governments and agencies that may be unaware of the steps they can take to mitigate the risk of wildfire. The collaborative effort encouraged during the construction, review, and approval of a CWPP continues into the future as lessons learned from activities identified in the Santa Clara County CWPP are translated into more specific activities at the community and city level. Outreach increases the number of partners in this work; education promotes a more common understanding of the causes and nature of wildfire risk and increases general knowledge of the best practices to mitigate it.

Collaboration on outreach is important because each entity involved in mitigating the risk of wildfire has a different role and can provide a different approach to messaging. For example, CAL FIRE inspectors wear uniforms, actively educate property owners on importance of defensible space, and additionally have the authority to issue citations to property owners who do not clear their defensible space. However, they cannot require someone to clear defensible space based on changes recommended in the latest science if the current code does not reflect those changes, nor can they require property owners to clear defensible space for their neighbor whose home is near the property line. Fire Safe Council coordinators have the flexibility to address these limitations by providing non-threatening guidance to residents who are out of compliance, encouraging adoption of cutting-edge recommendations that are not yet codified, and assisting in outreach to neighbors to encourage voluntary participation in community-wide defensible space strategies.

Structural Ignitability

As noted in the 2015 CAL FIRE Santa Clara Unit Fire Plan, page 14, "in some instances due to the size, speed, and intensity of the fire, or the building materials and surrounding vegetation, structures can ignite and potentially be destroyed before emergency responders can arrive. In order for a structure to survive it must be able to avoid ignition."

Structural ignitability, and responsibility of property owners in reducing this risk factor, is discussed in detail by Cohen (2008). Cohen notes that "the continued focus on fire suppression largely to the exclusion of alternatives that address home ignition potential suggests a persistent inappropriate framing of the WUI fire problem in terms of the fire exclusion paradigm."

Reinhardt et al. (2008) state that "destruction (of homes) in the WUI is primarily a result of the flammability of the residential areas themselves, rather than the flammability of the adjacent wildlands." The dwelling's materials and design within 100 feet determine home ignition potential (also referred to as the home ignition zone). Therefore, if large flames are not causing home ignition, then the cause is often relatively low intensity flames contacting the base of the home, and/or direct firebrand ignitions. Consequently, Cohen believes that the presence or absence of fuels in the immediate surroundings of the home, and its construction materials, will determine ignition potential. Therefore, the authority and responsibility for reducing structural ignition potential of existing buildings belongs to the property owner. Fire agencies can help educate property owners on the need and methods for reducing structural ignition potential.

Community design and WUI building code standards adopted by local agencies can serve to reduce ignitability of new structures. However, code revisions tend to lag a long time behind research

findings, and new codes generally do not apply to older structures. This is why the public education component of CWPPs is so vital to the mitigation of wildfire risk. An ideal goal to reduce structural ignitability is to educate and facilitate the voluntary modification of existing buildings to comply with both current WUI building codes, as well as the latest recommendations from fire science experts.

Emergency Response and Evacuation

During wildfire events, the routes emergency responders take to the fire are often the same routes being used by residents fleeing from the fire. Other residents may be trying to return to their homes for children or pets. Roads may be too narrow to accommodate two-way traffic of responders and evacuees. Routes may be blocked by fallen trees, spot fires, smoke, downed power lines, traffic congestion, or vehicle accidents. Road names and home addresses may be too indistinct to locate, confusing, or missing. Safe areas and evacuation centers may be unknown to residents, or if there are multiple centers, uncertainty within a family separated by the fire may occur over which one should be used.

Evacuation may be urgent, confusing and disorderly, particularly in "No Notice" events during the early part of wildfire response where information about the fire is limited. Law enforcement officers may not be readily available in sufficient numbers, and incident management may be juggling both fire suppression and life safety without enough resources to accomplish both.

The possibility of fatal entrapments exists, and therefore planning for the sudden occurrence of a fire under extreme conditions is a vital part of plans develop by local jurisdictions, as well as families. The CWPP will describe many actions that will improve the ability of firefighters to more quickly and efficiently access areas threatened by fire, as well as mobilize law enforcement to assist in providing the public with methods for safer evacuation.

Particular attention must be paid during the development of a CWPP to the location of locked gates, which will slow, and possibly block, the use of evacuation routes. Likewise, overgrown evacuation routes with high fuel loading near the road edge may be unusable due to intense heat and long flame lengths, falling trees and power poles, or other hazards that an active fire can create and may lead to fatal results. The CWPP should designate certain roads as evacuation routes and contain a clear description of responsibilities and procedures to unlock gates during evacuations, and prioritize preparing those routes for use during an active fire by implementing roadside fuel reduction projects.

Prioritize Fuel Reduction

CWPPs provide stakeholders not only the opportunity to identify fuel reduction projects but also to assign priorities to them. While it is true that communities with an established CWPP are given priority for federal funding of hazardous fuels reduction projects carried out in accordance with the HFRA, a collaboratively developed list of such projects is simply more efficient in terms of planning, funding, and execution given the large amount of fuels reduction that could be done across Santa Clara County. Speaking with one voice will carry more weight in the competitive environment of funding for wildfire hazard and fuel reduction projects; collaboration for projects should include Fire Safe Councils at the state, county, and community levels.

The purpose of any fuels reduction treatment is to protect life and property by reducing the potential for and outcome of catastrophic wildfire, as well as to restore landscapes to a sustainable and healthy condition. Moderating extreme fire behavior, reducing structural ignitability, creating defensible space, providing safe evacuation routes (Figure 1.3), and maintaining all roads for firefighting access are methods of fuels reduction likely to be used around communities located in a WUI zone. Use of multiple treatment methods often magnifies the benefits.

It should be noted this CWPP is a countywide policy level document. Therefore, fuel reduction projects will be described in general detail; more specific projects will be essentially "legs" to the CWPP, as jurisdictions identify and tailor projects to their specific needs over the coming years and as part of the CWPP update process.

Fuel reduction projects may have the potential to impact the environment both during implementation, as well as through longer-term maintenance of the projects. The protection of sensitive habitats, and the use of CEQA to analyze potential site-specific effects, will be part of the work done within this more specific "leg" of the process.



Figure 1.3. Evacuation route markers in the Aldercroft Heights neighborhood developed and installed by the local road association.

1.2 CWPP PLANNING PROCESS

The Society of American Foresters (SAF), in collaboration with the National Association of Counties and the National Association of State Foresters, developed a guide entitled *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (SAF 2004) to provide communities with a clear process to use in developing a CWPP. The guide outlines eight steps for developing a CWPP and has been followed in preparing the Santa Clara County CWPP:

Step One: Convene Decision-makers. Form a Core Team made up of representatives from the appropriate local governments, local fire authorities, and state agencies responsible for forest management.

Step Two: Involve Federal Agencies. Identify and engage local federal representatives and contact and involve other land management agencies as appropriate.

Step Three: Engage Interested Parties. Contact and encourage active involvement in plan development from a broad range of interested organizations and stakeholders.

Step Four: Establish a Community Base Map. Work with partners to establish a base map(s) defining the community's WUI and showing inhabited areas at risk, wildland areas that contain critical human infrastructure, and wildland areas at risk for large-scale fire disturbance.

Step Five: Develop a Community Risk Assessment. Work with partners to develop a community risk assessment that considers fuel hazards; risk of wildfire occurrence; homes, businesses, and essential infrastructure at risk; other Community Values at Risk (CVARs); and local preparedness capability. Rate the level of risk for each factor and incorporate this information into the base map as appropriate.

Step Six: Establish Community Priorities and Recommendations. Use the base map and community risk assessment to facilitate a collaborative community discussion that leads to the identification of local priorities for treating fuels, reducing structural ignitability (Appendix A), and other issues of interest, such as improving fire response capability. Clearly indicate whether priority projects are directly related to the protection of communities and essential infrastructure or to reducing wildfire risks to other community values.[8]

Step Seven: Develop an Action Plan and Assessment Strategy. Consider developing a detailed implementation strategy to accompany the CWPP (detailed in annexes to the CWPP), as well as a [9]monitoring plan that will ensure its long-term success.

Step Eight: Finalize Community Wildfire Protection Plan. Finalize the CWPP and communicate the results to community and key partners.

[8] Detailed project planning and prioritization should be completed at the direction of the Core Team during revisions of jurisdictional annexes and updates to the strategic document. The scale of the Santa Clara County CWPP did not allow for the detail necessary for project-specific planning and it is acknowledged by Core Team members that this work will be completed over the coming years as the CWPP is revisited or as specific project funding allows.

1.2.1 PLANNING TEAM/CORE TEAM

The Core Team reflects the variety of stakeholders affected by wildfire. Members include:

- Ken Kehmna — Fire Chief, Santa Clara County Fire Department
- John Justice — Deputy Chief, Santa Clara County Fire Department
- Tom Lausten — Area Superintendent, Midpeninsula Regional Open Space District (MROSD)
- Mark Roberts — Fire Captain, San Jose Fire Department
- Doug Schenk — GIS Analyst, Santa Clara County
- Ed Orre — Unit Forester, CAL FIRE
- Anne Rosinski — Senior Engineer Geologist, California Geological Survey
- Jim Wollbrinck — Manager Security and Business Resiliency, San Jose Water Company
- Randy Houston — Water Maintenance Manager, San Jose Water Company
- Gary Sanchez — Director, Santa Clara Fire Safe Council; Agent, State Farm Insurance
- Patty Ciesla — Programs Manager, Santa Clara Fire Safe Council
- Derek Neumann — Field Operation Manager, Open Space Authority
- Dwight Good — Fire Marshal, CAL FIRE/Morgan Hill
- Rick Parfitt — Resident, Lexington Hills
- Robert Durr — Lieutenant, Santa Clara County Sheriff's Department
- Jeffrey McCoy — Administrative Sergeant, Santa Clara County Sheriff's Department

1.2.2 RESEARCH CURRENT CONDITIONS

The CWPPs that have been developed in the last few years, such as the Lexington Hills, East Foothills, and Croy CWPPs, and the Palo Alto Fire Management Plan, describe in detail the conditions found in these specific areas. The detailed conditions described in these documents can also represent to a significant degree current conditions in other areas within the county that have not developed a CWPP. The CAL FIRE Santa Clara Unit Fire Plan addresses wildfire conditions, patterns, and suggested mitigations in the SRA of the county.

General findings and recommendations in these plans include:

- Wildfires will reoccur in areas where vulnerable and valuable assets exist.
- Firefighting resources are significant, but access to specialized resources such as hand crews are limited.
- Reliable sources of water for fire suppression need to be ensured.
- Diverse construction types include high hazard residences.

- Narrow roads (Figure 1.4), unmarked dead-ends, and lack of turnarounds are a concern.
- Evacuation of some areas is a concern.
- Fuel reduction is key to reducing risk, with a commitment to long-term maintenance.
- Reducing structural ignitability is key to reducing loss of life, injury, and property damages.
- Community education and outreach about the importance of defensible space and community mitigations is a critical need.

Because these findings and recommendations are present in previous planning documents, an examination of which of these issues have been effectively addressed, and which have tended to be more difficult to resolve, would be a valuable undertaking by the Core Team and others to ensure that this CWPP builds on, and enhances, previous and future wildfire risk mitigation work. This CWPP can also focus on the issues that have been more difficult to resolve, using its broader stakeholder coalition to provide more emphasis and support for resolution of such issues. The Core Team should consider these issues during future CWPP revisions and updates.



Figure 1.4. Narrow one-lane roads are common in communities throughout the county, which is a concern for emergency response, as well as evacuation.

1.2.3 COMMUNITY OUTREACH

Using social media, such as Facebook, and other outreach means, several community workshops were held to make presentations and to discuss the wildfire situation in Santa Clara County and to provide an opportunity for the public and other stakeholders to present their concerns and thoughts on wildfire risk mitigation.

Community Workshops

The first round of workshops occurred in Morgan Hill (February 17, 2016), San Jose East Foothills (February 18, 2016), Cupertino (February 22, 2016), and Redwood Estates (February 23, 2016), followed by a second round of workshops in Milpitas (May 2, 2016), Morgan Hill (May 3, 2016), Redwood Estates (May 4, 2016) (Figure 1.5), and Cupertino (May 10, 2016). These meetings will be followed by a public review period of the draft CWPP from May 2 to 16, 2016.



Figure 1.5. Community workshop at Redwood Pavilion.

Notes from the community workshops are included in Appendix B. The following bulleted list outlines some of the main concerns that residents voiced during the workshops:

- Enforcement of codes are needed to ensure defensible space and weed abatement requirements are followed.
- Narrow roads and poor access putting property at risk.
- Improvements to hydrant network and available water supply are needed.
- Pre-attack planning needed to identify evacuation concerns.

- Fuel loading on public lands is too high and more fuel treatments are needed.
- Sustainability of fuel treatment is a problem, need more regular maintenance.
- Evacuation routes for some communities are blocked by locked gates.
- Evacuation routes for some communities are on poorly maintained roads sometimes unpassable without 4 × 4 drive vehicles.
- Prescribed burning is supported and encouraged where ecologically appropriate on public lands.
- Need a central location for wildfire preparedness information/literature that is tailored to the community.
- Building codes are hard to navigate and some place unreasonable restrictions on property development.
- New development is occurring in areas that have limited water supply, putting residents at risk.
- Roads agencies (California Department of Transportation [Caltrans], County Roads and Airports, etc.) need to be a partner in fuel treatment actions.
- Communities support development of Firewise Communities status.
- Residents support the assertion that roof retrofits are needed throughout the country to remove all wood shake shingle roofs.
- Tree mortality is a significant problem throughout the County and there needs to be an easier way to deal with tree removal.
- Roadside thinning is needed in many neighborhoods in order to improve access and evacuation route viability.
- Public land managers need to work with adjacent private property owners to ensure appropriate defensible space can be implemented across property lines.
- Major highways (e.g., Highway 17) are a source of ignitions and should be a major focus of roadside fuel treatments (Figure 1.6).
- Engagement of adjacent counties is critical for wildfire preparedness, fuel treatment development, and evacuation planning.
- More unified planning by agencies is needed.
- Maintenance and improvements to private roads to improve ingress and egress is a concern throughout the County.
- Defensible space and plant flammability could be tackled through education of landscape companies.
- Insurance companies are pulling out of some WUI areas.



Figure 1.6. Roadside treatments completed by the County Roads and Airports Department in Lexington Hills help provide a buffer to vehicle ignitions, as well as protecting an essential evacuation route.

Community Survey

A custom community survey was developed for the CWPP in order to gather the perspectives of Santa Clara County residents on wildfire risk and hazard within their community. The objective of the survey was to ensure that the Core Team had a clear idea of the range and prevalence of activities and concerns across the county. Responses from the survey help identify areas of particular concern to residents, ascertain residents' priorities for actions to reduce wildfire hazard, identify mitigation activities residents are undertaking, and determine what tools residents need in order to undertake further mitigation actions.

The results of the survey are presented in Section 4.9.1.

Social Media

A Facebook profile was developed for the CWPP in order to inform the public about upcoming events, review periods, and announcements, and to provide an avenue through which the public could provide additional input. The Facebook page has 132 followers.

1.2.4 STAKEHOLDER ORGANIZATION OUTREACH

The value of any CWPP depends on its identification and outreach to the many stakeholders affected by wildfire. The Core Team represents a broad cross section of such organizations; a variety of means was used to notify and provide invitation to stakeholders to participate in this process.

The Core Team is itself the nucleus of stakeholder outreach via the many contacts possessed by members of this team, both to inform stakeholders and to bring stakeholder concerns and ideas to

the Core Team as it developed the CWPP. In support of this process, the Core Team met on December 1, 2015, and January 28, February 24, April 4, May 10, and June 20th, 2016. In addition, a workshop was convened on May 9, 2016, to provide an opportunity for agency representatives to discuss project ideas and fuel treatment locations with the CWPP Team.

A contact list for Core Team members is included in Appendix C. These Core Team representatives were selected by the Santa Clara County Fire Department and the CWPP Team to represent the key agencies involved in fire management in the county. During the CWPP planning process it was identified that law enforcement involvement was integral to the development of mitigation measures for hazard and risk reduction, particularly evacuation. As such, two sheriff department representatives were encouraged to join the Core Team. Other agencies that were not part of the Core Team but could contribute important information to the document were invited to attend the agency workshop on May 9, 2016.

It should be noted that engagement of stakeholders did vary during the planning process as schedules prevented some Core Team members attending all meetings. It is also acknowledged by the Core Team that future revisions to the CWPP should include additional collaboration from some under-represented entities who have a responsibility for fuel reduction and/or fire management in the County. The lack of participation by these entities weakens the application of the CWPP in terms of implementation of recommended projects. The Core Team committed to improving participation moving forward as outlined in Table 5.3 in Section 6. Furthermore, continued engagement by the Core Team is necessary in order to move forward specific project recommendations that have been developed at a conceptual level in this document and annexes. It is anticipated this will occur over the coming months and years as this live document is reviewed and revised.

1.3 PROJECT AREA

This CWPP is developed at the Santa Clara County, rather than community or city, level. It integrates information from the CAL FIRE Santa Clara Unit Fire Plan and Santa Clara County community CWPPs developed in the last few years, provides new information on the wildfire situation at the County level, and describes risk reduction strategies identified and prioritized by many community stakeholders, which can be applicable at both a countywide and local scale. The Santa Clara County CWPP can also be used to coordinate risk reduction planning with other neighboring counties threatened by wildfire, such as Santa Cruz, San Mateo, Alameda, San Benito, and other counties, with which Santa Clara County shares contiguous wildland fuels and similar wildfire issue.

1.3.1 WILDLAND URBAN INTERFACE PLANNING ZONES

The WUI is composed of both interface and intermix communities and is defined as areas where human habitation and development meet at the edge of, or are inserted in the interior of areas dominated by, wildland fuels (U.S. Department of the Interior and U.S. Department of Agriculture 2001:752–753). Interface areas include housing developments that meet or are in the vicinity of continuous vegetation and consist of less than 50% vegetation. Intermix areas are those areas where structures are scattered throughout a wildland area of greater than 50% continuous vegetation and fuels and meet or exceed a minimum of one house per 40 acres. Depending on the

surrounding fuel conditions, topography, and present structures, wildland areas of up to 1.5 miles from structures may be included in the WUI (Stewart et al. 2007).

The WUI creates an environment in which fire can move readily between structural and vegetative fuels, increasing the potential for wildland fire ignitions and the corresponding potential loss of life and property. Human encroachment upon wildland ecosystems within recent decades is increasing the extent of the WUI in Santa Clara County and is therefore placing people and structures at risk and having a significant influence on wildland fire management practices. Combined with the collective effects of aggressive suppression policies, resource management practices, land use patterns, climate change, invasive species infestation and insect and disease infestations, the expansion of the WUI into areas with high fire risk has created an urgent need to modify land use, fire management practices, and policies and to understand and manage fire risk effectively in the WUI (Pyne 2001; Stephens and Ruth 2005).

A CWPP offers the opportunity for collaboration of policy makers and land managers to establish a definition and a boundary for the local WUI; to better understand the unique resources, fuels, topography, and climatic and structural characteristics of the area; and to prioritize and plan fuels treatments and community mitigations to mitigate for fire risks. At least 50% of all funds appropriated for projects under the HFRA must be used within the WUI area.

1.4 ORGANIZATION INVOLVEMENT

This CWPP is designed to be a strategic policy level document that is signed by designated signatory organizations, with each specific organization's strategies and projects as separate "legs." The CWPP policy level document fosters a long term WUI strategy and describes guiding principles at the county level, while at the same time allowing organizations to do periodic updates and develop policies, ordinances, and fuel projects without requiring all CWPP signatories to sign off on the local plans. A long-term goal of the CWPP is the adoption of strategic goals into the Safety Element of city and county General Plans and LHMPs, giving more weight to the CWPP's recommendations, such as code changes and ordinances.

1.4.1 SIGNATORY ORGANIZATIONS

Signatory organizations and advisory organizations included in project development are listed in Appendix C.

1.4.2 GRANT FUNDING SOURCES

Support for this work comes from a wide variety of sources listed in Appendix D.

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2 COMMUNITY CHARACTERISTICS AND DEMOGRAPHICS

2.1 LOCATION AND GEOGRAPHY

> *The County of Santa Clara, also referred to as "Silicon Valley", is unique because of its combination of physical attractiveness and economic diversity. With its numerous natural amenities and one of the highest standards of living in the country, the county has long been considered one of the best areas in the United States in which to live and work.* (County of Santa Clara 2016)

Santa Clara County encompasses 835,449 acres (1,305 square miles), is located at the southern end of the San Francisco Bay (Santa Clara County General Plan 2015), and comprises the fertile Santa Clara Valley, which is fringed on the east by the Diablo Range and on the west by the Santa Cruz Mountains. The northwestern portion of the county comprises the Baylands, salt evaporation ponds, salt marsh, and wetlands. The county enjoys a Mediterranean climate, staying temperate year round, staying warm and dry through late spring, summer, and early fall. Precipitation ranges from an average 12 inches in downtown San Jose to more than 60 inches in the Santa Cruz Mountains. The Santa Clara Valley is generally divided into two geographic regions, the North Valley and the South Valley. The predominantly urban North Valley houses approximately 90% of the county's residents and 13 of its 15 cities (Santa Clara Valley Habitat Agency 2012). The South Valley is primarily rural, with the exception of Morgan Hill, Gilroy, San Martin (unincorporated community), and scattered low-density residential areas.

Until the mid-twentieth century, orchards and other agriculture dominated the area, but in recent decades the valley has been transformed into "Silicon Valley," a global center for high-tech development resulting from the 1990s internet boom. Since that time the county has seen extensive population growth, focused mostly in the North Valley cities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, Santa Clara, Saratoga, and Sunnyvale; nearly 92% of the county population lives in its cities (U.S. Census Bureau 2014). The county has the largest population of any of the nine Bay Area counties, and it provides more than 25% of all jobs in the Bay Area (Santa Clara Valley Habitat Agency 2012).

Although the population is expected to continue to grow, the rate of growth is projected to slow (Santa Clara Valley Habitat Agency 2012). Recognizing the population boom in the 1970s, Santa Clara County implemented policies to help curtail potential sprawl and protect the county's natural resources. Policies were enacted that focused growth inside of cities, controlling sprawl into unincorporated areas of the county. At the same time, the MROSD, Santa Clara County Parks, and the Santa Clara Valley Open Space Authority began acquiring undeveloped land in the foothills for a permanent greenbelt of wildlands.

Santa Clara County's General Plan includes many measures to address land use issues involving the rural unincorporated areas of the county over which Santa Clara County has direct land use authority. Policy direction is to maintain the scenic rural character of these areas and to promote conservation and productive use of their natural resources for agriculture, ranching, watershed, public recreation, and wildlife habitat (Santa Clara Valley Habitat Agency 2012).

The county has a rich culture and many community facilities and attractions that serve the residents and attract visitors, including museums and art galleries, performing arts venues, educational facilities, cultural and recreational opportunities, vineyards, orchards, and abundant natural resources.

2.2 CLIMATE AND WEATHER PATTERNS

Santa Clara County has a Mediterranean climate, with most precipitation occurring during the winter months and virtually no precipitation from spring through autumn (Santa Clara Valley Habitat Agency 2012). Annual rainfall averages are variable, depending on topography and local orographic and rain shadow effects; due to the large extent of the County weather data is shown in Figure 2.1–Figure 2.7, and Table 2.1 from various communities. The Santa Cruz Mountains typically have the highest precipitation totals (40–60 inches/year) compared to the relatively dry Santa Clara Valley where the city of San Jose has average totals of 12 inches. The Diablo range, though drier than the Santa Cruz Mountains, experiences greater precipitation than the adjacent valley, with totals ranging from 20 to 30 inches a year, especially at higher elevations. Various microclimates also occur in the county; for example, canyon areas of north-facing hill slopes and streams with less direct sunlight will have lower evapotranspiration, greater ambient soil moisture, and generally more moderate cooler temperatures due to higher moisture content and greater shading (Santa Clara Valley Habitat Agency 2012).

The topography of Santa Clara County, coupled with the proximity to the Pacific Ocean, greatly influences wind patterns. The prevailing flow along the Santa Clara Valley is roughly parallel to the valley's northwest-southeast axis. During the afternoon and early evening, a north-northwesterly sea breeze often extends up Santa Clara Valley, while a light south-southeasterly drainage flow often occurs during late evening and early morning (Santa Clara Valley Habitat Agency 2012). In summer a convergence zone is sometimes observed in the southern end of the Santa Clara Valley between Gilroy and Morgan Hill, when air flowing from the Monterey Bay through the Pajaro Gap gets channeled northward into the south end of the Santa Clara Valley and meets with the prevailing north-northwesterly winds (Santa Clara Valley Habitat Agency 2012). Spring and summer sees the greatest wind speeds, with sometimes strong afternoon and evening winds on summer days. Summer "Diablo Winds" can carry hot, dry air from the Central Valley over the Diablo Range and flow across Santa Clara Valley and then upslope over the Santa Cruz Mountains from a northerly direction towards the Monterey Bay. These winds drove both the Lexington Fire and the Summit Fire.

The United States is experiencing a cycle of the highest average temperatures in recorded history. California shares this phenomenon and is also suffering through an extended 4-year drought pattern that is creating a dramatic change in the health of native vegetation. Tree mortality from drought stress and pests such as bark beetles and the pathogen that causes Sudden Oak Death have increased significantly. Westerling (2016) notes that western forest wildfire activity increased abruptly in the 1980s and appears to be strongly associated with warming and earlier spring snowmelt.

Although this research focused on lightning-caused fires on western federal lands, widespread changes in the patterns and amounts of precipitation will influence wildland fuel availability and wildfire activity in many areas. An increase in wildfire activity, such as due to longer fire seasons

or due to higher rates of fire spread and intensity as a result of changes in fuel types, will spread more thinly the limited number of fire suppression personnel available for structure protection, further highlighting the importance of pre-fire preparation, such as structural defensibility.

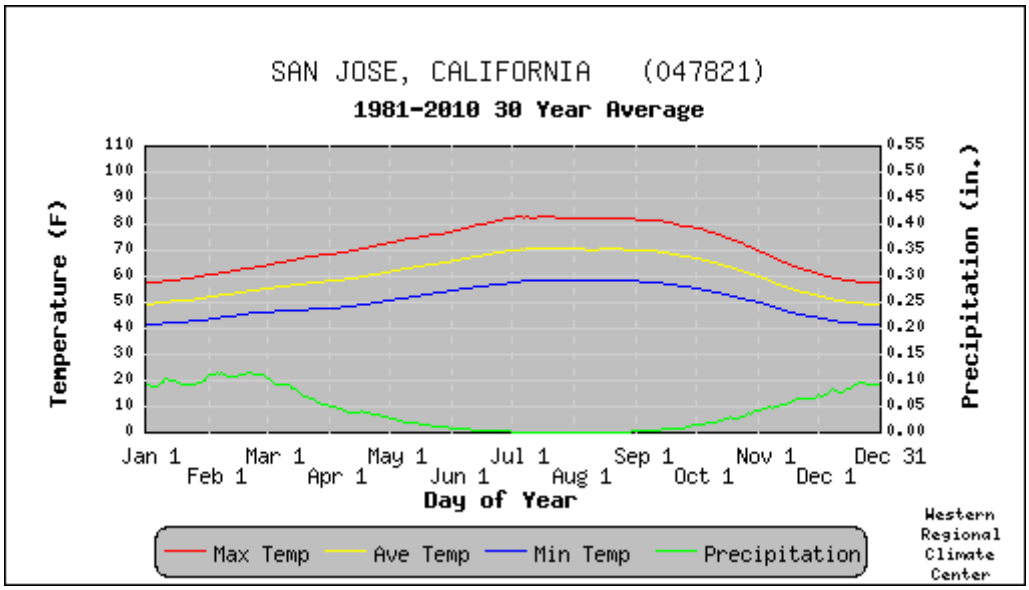


Figure 2.1. 30-year average temperature and precipitation for San Jose, 1981–2010 (Source: Western Regional Climate Center 2016a).

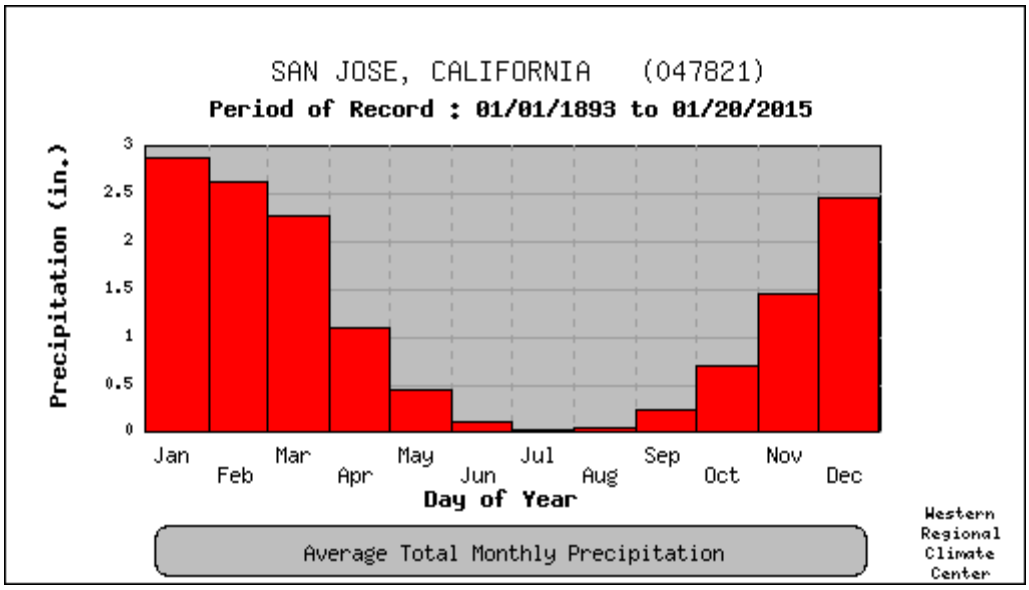


Figure 2.2. Monthly average total precipitation in San Jose (Source: Western Regional Climate Center 2016a).

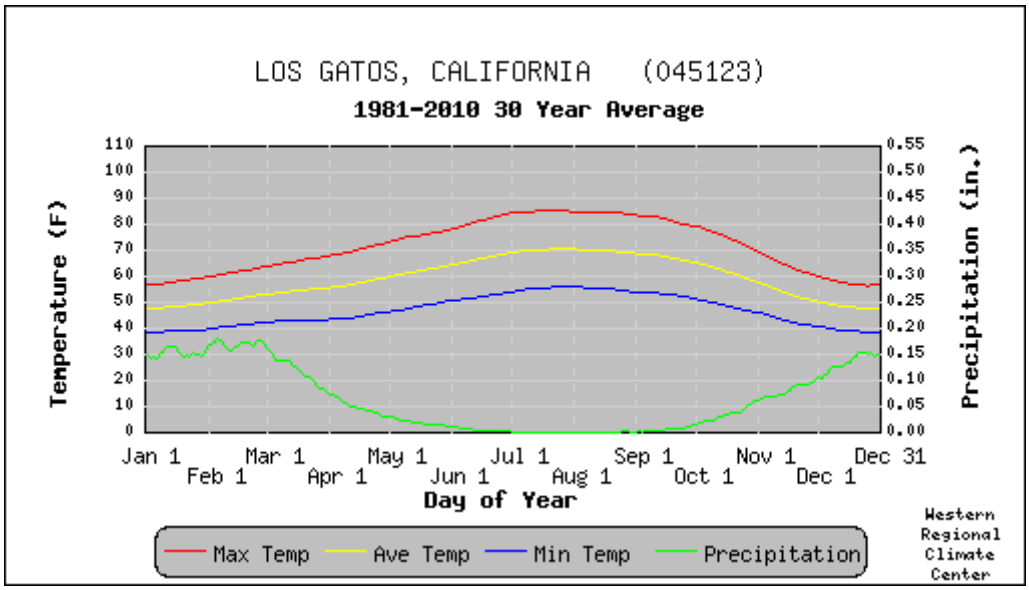


Figure 2.3. 30-year average temperature and precipitation for Los Gatos, 1981–2010 (Source: Western Regional Climate Center 2016b).

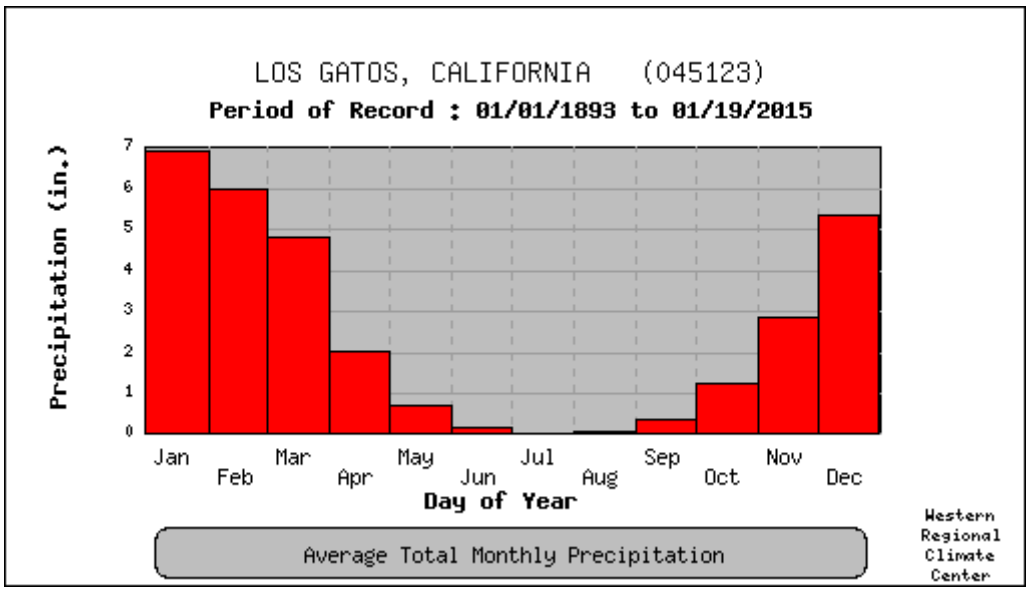


Figure 2.4. Monthly average total precipitation in Los Gatos (Source: Western Regional Climate Center 2016b).

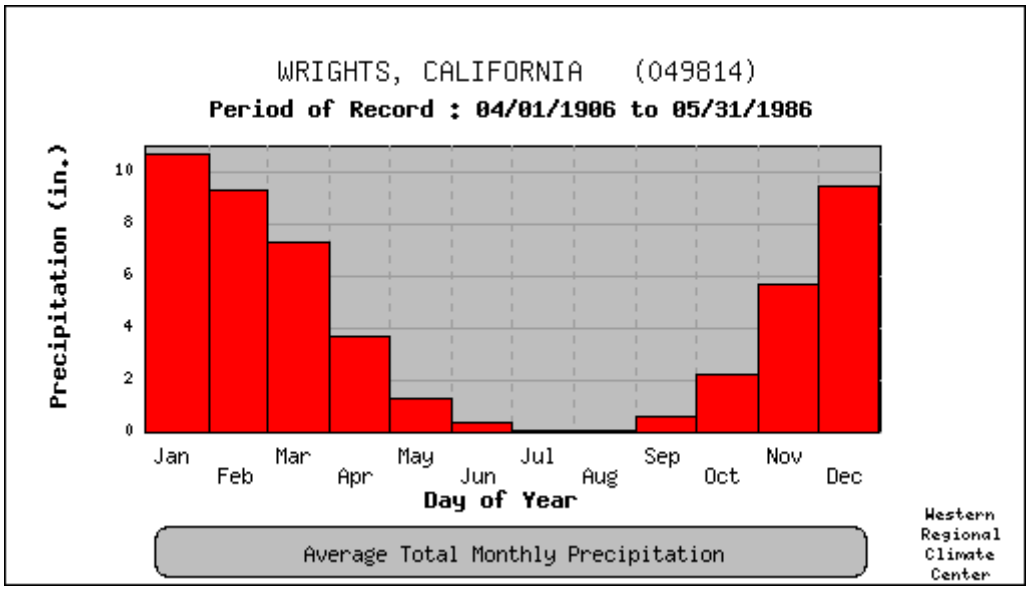


Figure 2.5. Monthly average total precipitation in Wrights (closest station to Summit Road). No temperature data available for period of record (Source: Western Regional Climate Center 2016c).

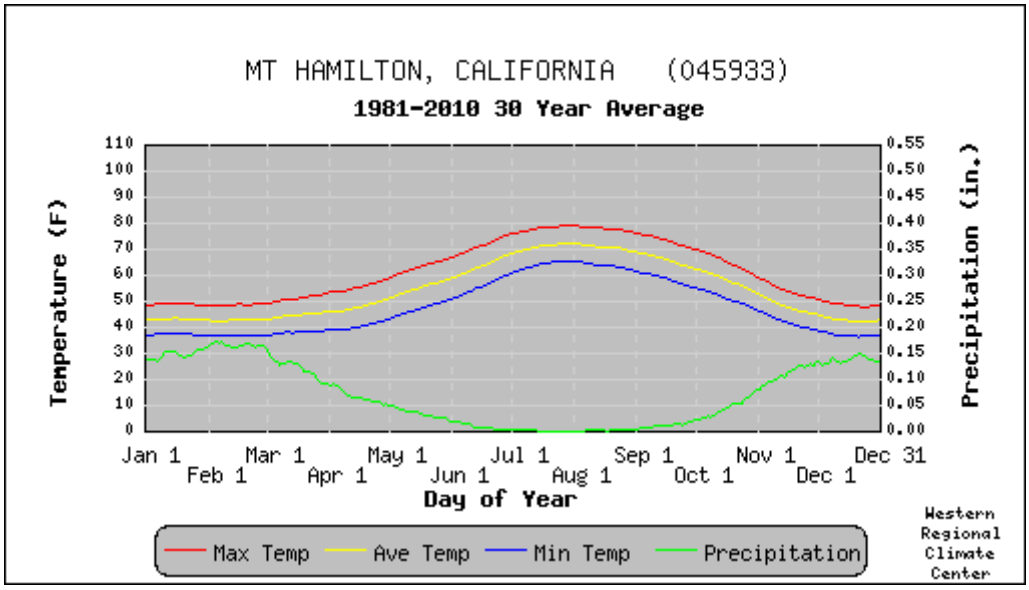


Figure 2.6. 30-year average temperature and precipitation for Mt. Hamilton, 1981–2010 (Source: Western Regional Climate Center 2016d).

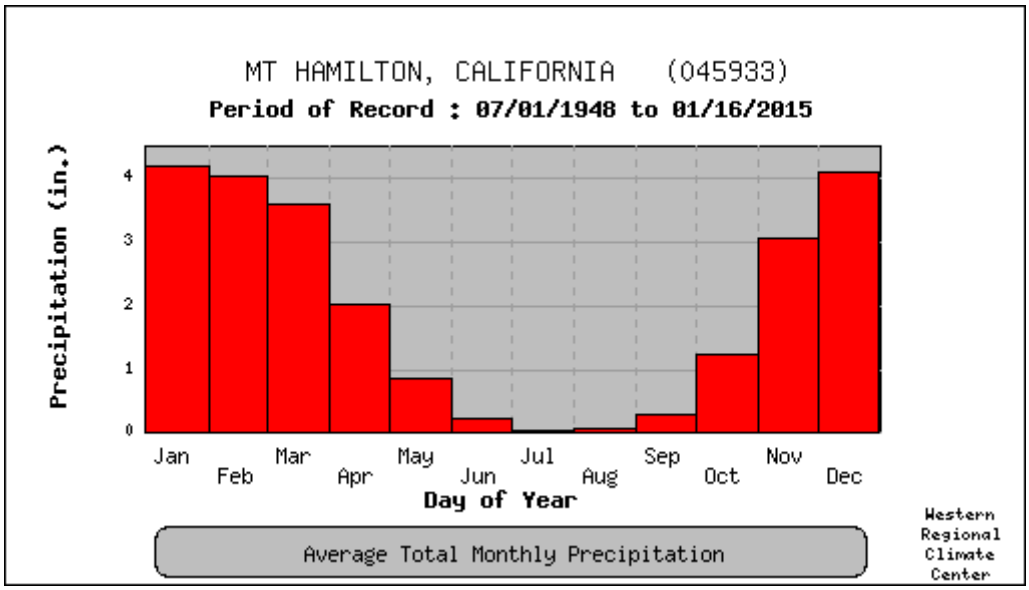


Figure 2.7. Monthly average total precipitation in Mt. Hamilton (Source: Western Regional Climate Center 2016d).

Table 2.1. Climate Averages for Four County Locations, California

Climate Measure	San Jose	Los Gatos	Wrights*	Mt Hamilton
Annual high Temperature	70.8°F	71.3°F	64.8°F	61.4°F
Annual low temperature	48.9°F	46°F	49.6°F	47.1°F
Average temperature	59.8°F	58.6°F	57.2°F	54.3°F
Average annual precipitation	14.58 inches	26.9 inches	46.32 inches	23.63 inches

°F = degrees Fahrenheit.
Source: Western Regional Climate Center 2016 (period of record 1893–2012).
*Wrights is closest station to Summit Road.

2.3 VEGETATION, LAND COVER, AND WILDLIFE

Santa Clara County represents the extremes of the Bay Area region. Due to the variation in topography and soil diversity within the county, there is a wide array of natural community types and subsequently very diverse flora and fauna. The following vegetation descriptions are taken from the Santa Clara Valley Habitat Plan that provides a comprehensive account of the vegetation and habitat within the county (Santa Clara Valley Habitat Agency 2012).

2.3.1 VEGETATION COVER FOR SANTA CLARA COUNTY GRASSLAND

Grassland in Santa Clara County consists of herbaceous vegetation dominated by grasses and forbs. Grassland in the county includes the following land cover types:

- **California annual grassland (non-native)** – found in valley bottoms, lower elevations on the eastern side of the county, and on ridges on dry south- and west-facing slopes.
- **Non-serpentine native grassland (native) –** patchily distributed in the county and generally occurs as small patches within the larger annual grassland complex.
- **Serpentine bunchgrass grassland (native)** – occurs on ultramafic soils derived from serpentinite, limited in extent in the county.
- **Serpentine rock outcrop/barrens (native) –** exposures of serpentine bedrock that typically lack soil and are sparsely vegetated, limited in extent in the county.
- **Serpentine seep** – dry areas where water penetrates the surface and creates a small wetland habitat that supports wetland vegetation.
- **Rock outcrop (non-serpentine)** – rare in the county.

Available research on the distribution of grasslands historically indicates that human use of fire may have had a profound impact on the historic distribution and extent of grasslands. Prior to European settlement, Native American burning helped shape native perennial grasslands in Santa Clara County. Keeley (2002) suggests that dense scrub or chaparral had little value to Native Americans, so they used periodic burning to clear shrubs and provide habitat for fire-tolerant native grasses. Keeley (2002) also implies that the current mosaic of grassland is likely a result of historic vegetation management that favored open grasslands over chaparral. Following European settlement, the combination of livestock grazing, drought, and spread of aggressive grasses and herbs dramatically reduced the abundance of native grasses and the extent of native grasslands throughout California (Bartolome et al. 2007).

Periodic fire is an important influence on the grassland community. Historically and prehistorically, fires from both lightning strikes and human ignition kept woody vegetation from invading grassland (where the soil conditions are appropriate) and converting it to coastal scrub or oak woodland. Prehistoric burning promoted a spatially patchy grasslands in a mosaic with woody vegetation (Keeley 2002). Prior to Native American occupancy and their frequent burning, Ford and Hayes (2007) speculate that many of the grasslands within the range of coyotebrush (*Baccharis pilularis*) would have been brushlands. It is believed that in the absence of frequent extensive fire and moderate or higher intensity livestock grazing, much of the grassland will succeed to northern coastal scrub and eventually mixed woodland, except on the hottest south-facing slopes and shallow soils (Santa Clara Valley Habitat Agency, 2012).

Prescribed burning is considered an important management tool in grasslands and other natural communities (Santa Clara Valley Habitat Agency, 2012); however, such burning is becoming increasingly difficult to implement due to cost, safety concerns from expanding urban and rural development, and difficulty obtaining permits because of air quality concerns. It has not been feasible in most places to burn frequently enough to control the spread of woody species into existing grassland or to reduce the cover of woody vegetation within grasslands because of the

natural resistance and resilience of the woody plants to a single burn (Ford and Hayes 2007). Livestock grazing has continued on most rangelands in Santa Clara County and is regarded as generally beneficial in maintaining suitable habitat conditions for many special-status grassland-dependent species.

Grassland is considered a fire-tolerant community, since the low-intensity prescribed fire moves so quickly that the fire burns only above the lower few centimeters of material, leaving much unburned or only charred on the ground. Immediately following a grassland fire, areas typically see an increase in annual forb germination and flowering and an increase in overall productivity in response to the light and nutrients made available by the removal of the thatch layer during the following growing season (Harrison et al. 2003). In grasslands that are already dominated by non-native annual grasses, non-natives may increase their dominance following fire by outcompeting natives for the newly available space and light. Native grasses may increase their dominance in serpentine grasslands following fire through the same mechanism (Harrison et al. 2003).

2.3.2 CHAPARRAL AND NORTHERN COASTAL SCRUB

Chaparral shrub communities are found in rocky, porous, nutrient-deficient soils and steep slopes throughout Santa Clara County and are dominated by densely packed evergreen woody shrubs, 1.5 to 4 meters tall. Dominant shrubs in this community in Santa Clara County are chamise (*Adenostoma fasciculatum*), manzanita (*Arctostaphylos* spp.), scrub oak (*Quercus berberidifolia*), and ceanothus (*Ceanothus* spp.).

Northern coastal scrub is characterized by low shrubs that are generally more flexible with higher moisture content and thinner stems than the stiff shrubs of chaparral. The plants range from 0.5 to 2 m tall interspersed with openings favored by native bunch grasses. Common plants of coastal scrub include California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), sticky monkey-flower (*Mimulus aurantiacus*), golden yarrow (*Eriophyllum confertifolium*) California melic grass (*Melica californica*).

Native Americans frequently burned shrublands to encourage grass and forb development (Keeley 2002). Plants in the chaparral and northern coastal scrub communities have evolved to persist despite period wildfire; some of the species are dependent on periodic fire for regeneration (Holland 1986; Hanes 1988; Schoenherr 1992).Some chaparral species have fire adaptations such as peeling bark or volatile oils that promote fire (Schoenherr 1992) species like manzanita and ceanothus have adapted to frequent fire by resprouting from basal burls or woody root crowns. Other species have seeds that require fire to initiate growth (U.S. Fish and Wildlife Service 2002; Rundel and Gustavson 2005).

Fire occurrence that is too frequent is also known to lead to the elimination of these communities altogether and promote invasive non-native weeds such as star thistle (*Centaurea solstitialis*) and annual grasses.

Despite the adaptations of many plants to periodic fire intervals, the notion that chaparral “needs to burn” is strongly disputed by some researchers. Several examples of old growth chaparral can be found in Henry Coe State Park and in other areas in the Hamilton Range.

Chaparral is an important refuge for certain sensitive animals; for example, the dusky-footed woodrat (*Neotoma fuscipes*) is a species of special concern in the county, primarily because encroachment by development into the wildlands reduces the amount of suitable habitat available to this small mammal. The wrentit (*Chamaea fasciata*) is a unique bird that depends on the chaparral for its home. It may be the most sedentary bird species in North America, with an average dispersal distance from natal nest to breeding spot of about 0.25 mile (Cornell Lab of Ornithology 2016).

Depending on the specific site, shrublands can have persistent boundaries with grasslands and adjacent woodlands. Herbivory by wildlife such as brush rabbits (*Sylvilagus bachmani*) creates a "scurry line" along the edge of shrubs that tends to prevent either grass or shrub seedlings from reaching maturity. Similarly, white-tailed deer (*Odocoileus virginianus*) tend to favor succulent new growth of many shrub and tree species, and occupy the edges of woodlands while seeking cover, which can reduce sapling success in competing with and overtopping chaparral shrubs.

Sprawl of human habitation in chaparral and shrub communities poses a great threat to both these plant communities and habitable structures. Similar to the various woodlands and forests, buildup of fuel over many years increases the risk of catastrophic fire (U.S. Fish and Wildlife Service 2002). Severe topsoil erosion is also a problem after intense fires, particularly if they burn hot enough to kill the burls and lignotubers of woody chaparral plants (Schoenherr 1992).

2.3.3 OAK WOODLAND

Oak woodlands are a common cover type found in Santa Clara County. A number of oak-dominated woodlands can occur:

- **Valley oak woodland** – common in the valley floors but also along ridge tops.
- **Mixed oak woodland and forest –** most geographically widespread of all oak woodlands in the county.
- **Coast live oak woodland and forest –** commonly found abutting grassland areas.
- **Blue oak woodland –** present in scattered locations mostly in the low to mid-elevation hills on dry or well-drained north- or northeast-facing slopes.
- **Foothill pine-oak woodland –** often occurs along valley floors within chaparral communities in the eastern foothills and also adjacent to other oak land cover types and on serpentine soils.
- **Mixed evergreen forest** – occurs on the west side of the Santa Clara Valley, usually on north-facing slopes.

Oak-dominated woodlands are thought to have been more prevalent in Santa Clara County historically and have become fragmented as a result of urban development and agricultural uses (Grossinger et al. 2006).

Oak woodland is a fire-adapted ecosystem, and fire has likely played a large role in maintaining this community type in the study area. Fire creates the vegetation structure and composition typical of oak woodlands, and this natural community has experienced frequent, low-severity fires that

maintain woodland or savannah conditions. In the absence of fire, the low or open understory that characterizes this land cover type can be lost. Depending on site characteristics closed canopy oak forests can be replaced by shade-tolerant species and conifers if oaks cannot regenerate and compete as shade encroaches. Soil drought may also play a role in maintaining open tree canopy in dry woodland habitat.

Mixed evergreen forests on the northern slopes of the Santa Cruz Mountains are being heavily impacted by drought, Sudden Oak Death, and bark beetle infestations, resulting in widespread die off of certain oak species, tanoak (*Notholithocarpus densiflorus*), and Douglas fir (*Pseudotsuga menziesii*) that leaves large openings in the woodlands, full of hazardous fuels where sunlight penetrates and dries out the ground.

2.3.4 SUDDEN OAK DEATH

A recent influence on oak woodlands is Sudden Oak Death. The disease, first identified in 1995, has since spread to 12 counties and killed hundreds of thousands of oaks. Research indicates that members of the black oak family such as coast live oaks (*Quercus agrifolia*) and black oaks (*Q. velutina*), as well as tanoak, appear to be the most susceptible to this disease (Rizzo et al. 2003). Sudden Oak Death is caused by the water mold pathogen Phytophthora ramorum (*P. ramorum*) and is a serious threat to oak woodlands and mixed evergreen forests in northern California. The pathogen can kill adult oaks and madrone (*Arbutus menziesii*); California bay (*Umbellularia californica*), buckeye (*Aesculus californica*), and maple (*Acer* spp.) host the pathogen without being killed by it. Members of the white oak family such as blue oak (*Quercus douglasii*) and valley oak (*Q. lobata*) have not shown symptoms of the pathogen.

2.3.5 RIPARIAN FOREST AND SCRUB

Riparian areas of Santa Clara County are broken down into the following:

- **Willow riparian forests, woodland, and scrub –** occur in or along margins of active channels on intermittent and perennial streams.
- **Central Californian sycamore alluvial woodland –** generally present on broad floodplains and terraces along Coyote Creek and Pacheco Creek.
- **Mixed riparian woodland and forest** – occur in or along margins of active channels on intermittent and perennial streams.

These vegetation types are found in association with riverine watercourses along streambanks and floodplains and surrounding open water bodies. Much of the existing stream network has been largely developed with human intervention and creation of canals and ditches.

2.3.6 CONIFER WOODLAND

There are three conifer-dominated vegetation communities that occur in Santa Clara County (Santa Clara Valley Habitat Agency 2012):

- **Redwood forest –** coast redwood (*Sequoia sempervirens*) occurring primarily in the Santa Cruz Mountains. Adjacent cover types are mixed oak woodland and mixed evergreen woodland. Occurs in areas that receive substantial rainfall >35 inches per year. Redwood-dominated overstory and tanoak (*Notholithocarpus densiflorus*), madrone, and California bay understory trees; hazelnut (*Corylus cornuta* var. *californica*), thimbleberry (*Rubus parviflorus*), and black huckleberry (*Vaccinium ovatum*) in the shrub layer. In riparian areas, California bay and bigleaf maple (*Acer macrophyllum*) are common, California nutmeg (*Torreya californica*) may occur, and ferns such as sword fern (*Polystichum munitum*) often form a dense layer.
- **Ponderosa pine (*Pinus ponderosa*) woodland –** restricted distribution within the county, only occurring on three high elevation ridges in Henry W. Coe State Park—Pine Ridge, Middle Ridge, and Blue Ridge—and extending downslope into north-facing canyons and valleys.
- **Knobcone pine (*Pinus attenuata*) woodland –** consists of dense stands of knobcone pines that regenerate following fire. Uncommon in the county, occurring only in the Santa Cruz Mountains on ridge top sites, often on serpentine-derived soils. Knobcone pine is an obligate fire-climax species—fire is required to melt the resin that seals the cones, releasing the seed, and fire also creates the bare mineral soil required for the seeds to germinate. Stands of knobcone pine are therefore even-aged, dating back to the last stand-replacing fire.

Prior to European settlement, the Santa Clara Valley supported a mosaic of plant and wildlife communities and the upland regions were heavily forested with redwoods and pine and oak woodlands. In the mid to late 1800s, the foothill forests and woodlands were heavily thinned to support regional population growth.

A major factor influencing the distribution of conifer-dominated land cover types is fire intensity and frequency. The combination of logging and burning at the end of the nineteenth century resulted in the conversion of conifer-dominated forests (redwood and Douglas fir) in the Santa Cruz Mountains to grassland or chaparral and oak-dominated woodlands. Periodic stand-replacing fire is required for the regeneration of knobcone pine woodland.

2.3.7 IRRIGATED AGRICULTURE

This cover type encompasses all areas where the native vegetation has been removed for irrigated agriculture (not including rangeland). The cover types included are:

- **Orchards** – apricot, prunes, and walnuts predominantly.
- **Vineyards –** occur throughout the county but predominantly in the southern portion.
- **Agriculture (developed) –** i.e., greenhouses, nurseries, Christmas tree farms; occurs in small patches throughout the county.
- **Grain, row crops, hay, and pasture –** abundant throughout the Santa Clara Valley south of San Jose.

Father Junípero Serra gave Santa Clara Valley its name when he consecrated the Mission Santa Clara de Asis in 1777 (National Park Service 2006). The establishment of the mission also heralded the beginning of large-scale agriculture in the Santa Clara Valley. Soon, the Guadalupe River dam (located near Mission Santa Clara) was constructed for irrigation of wheat, corn, bean, and other crops. Fruit trees and grapes were also cultivated.

Population growth in the county has been continuous since 1850. In order to facilitate the sustained growth in 1870, Los Gatos Creek was diverted to meet water demands for agriculture. Improved access to railroads also led to increased agricultural production in the county at that time. Agricultural products included carrots, almonds, tomatoes, prunes, apricots, plums, walnuts, cherries, pears, grapes, and lumber for the world market (National Park Service 2006). The rural nature of the Santa Clara Valley lasted through to World War II, after which time the amount of cultivated lands was reduced to make room for urban expansion.

2.3.8 Invasive Non-native Plant Communities

In addition to native grasslands, shrublands, and woodlands, Santa Clara County contains plant communities of species that are not native but exist outside agricultural or developed areas. Scattered non-native escaped plants are not likely to significantly change fire behavior or affect other natural resource values. However, some species can dominate or even completely take over areas, excluding natural vegetation and changing fuel characteristics. Examples of non-native plant communities and invasive species of concern for wildfire include:

- Grassland: wild oats (*Avena* spp.), yellow star thistle, curly dock (*Rumex crispus*)
- Rock outcrops: fennel (*Foeniculum vulgare*), broom species (*Bromus* spp.), cotoneaster (*Cotoneaster* spp.), jubota grass (*Cortaderia jubata*)
- Seeps and riparian: poison hemlock (*Conium maculatum*), teasel (*Dipsacus* spp.), jubota grass, arundo (*Arundo* spp.), Himalayan blackberry (*Rubus armeniacus*), black locust (*Robinia pseudoacacia*)
- Shrublands: French broom (*Genista monspessulana*), Scotch broom (*Cytisus scoparius*), gorse (*Ulex* spp.), fennel
- Mixed oak woodland: Ivy (*Hedera* spp.), locust, privet (*Ligustrum* spp.), acacia (*Acacia* spp.)
- Valley oak woodlands: milk thistle (*Silybum marianum*)
- Mixed evergreen: periwinkle (*Vinca* spp.), English ivy (*Hedera helix*)
- Replacement woodlands: blue gum eucalyptus (*Eucalyptus globulus*), acacia, tree-of-heaven (*Ailanthus altissima*)

Several invasive, non-native plant species are found in riverine land covers within the study area. One of the most prevalent is giant reed (*Arundo donax*), which is often found in large pure stands.

Other invasive, non-native plants potentially found in the study area include blue gum eucalyptus, acacia, fennel, periwinkle, French broom, black locust, English ivy, Algerian ivy (*Hedera canariensis*), cape ivy (*Delairea odorata*), Himalayan blackberry, weeds, curly dock, thistle, blackwood acacia (*Acacia melanoxylon*), tree-of-heaven, glossy privet (*Ligustrum lucidum*), fig, and poison hemlock.

2.3.9 DEVELOPED

A large portion of Santa Clara County is composed of developed lands. Developed land cover types include:

- Urban-suburban
- Rural-residential
- Barren
- Landfill
- Golf courses/urban parks
- Ornamental woodland

Vegetation found in the urban-suburban land cover type is usually in the form of landscaped residences, planted street trees (e.g., elm [*Ulmus* spp.], ash [*Fraxinus* spp.], sweet gum [*Liquidambar* spp.], pine [*Pinus* spp.], palm [Arecaceae]), blue gum eucalyptus, Monterey pine (*Pinus radiata*), and parklands. Most of the vegetation is composed of non-native or cultivated plant species. The major urban-suburban area in the study area is San Jose, located in the northern portion of the Santa Clara Valley. Other urban-suburban areas include areas within Morgan Hill and Gilroy.

2.3.10 STREAMS AND WATERSHEDS

Major streams in the County include the San Francisquito, Matadero, Adobe, Permanente, and Stevens Creeks in the Lower Peninsula watershed to the north; Saratoga, San Tomas Aquino, and Los Gatos Creek in the West Valley watershed; and Coyote Creek, Guadalupe River, Uvas Creek, Llagas Creek, Pajaro River, Pacheco Creek, and their various tributaries. Major watersheds in the County are shown in Figure 2.8.

Visit Santa Clara Valley Water District website for more information on watersheds and creeks in the County: http://www.valleywater.org/Services/WatershedInformation.aspx

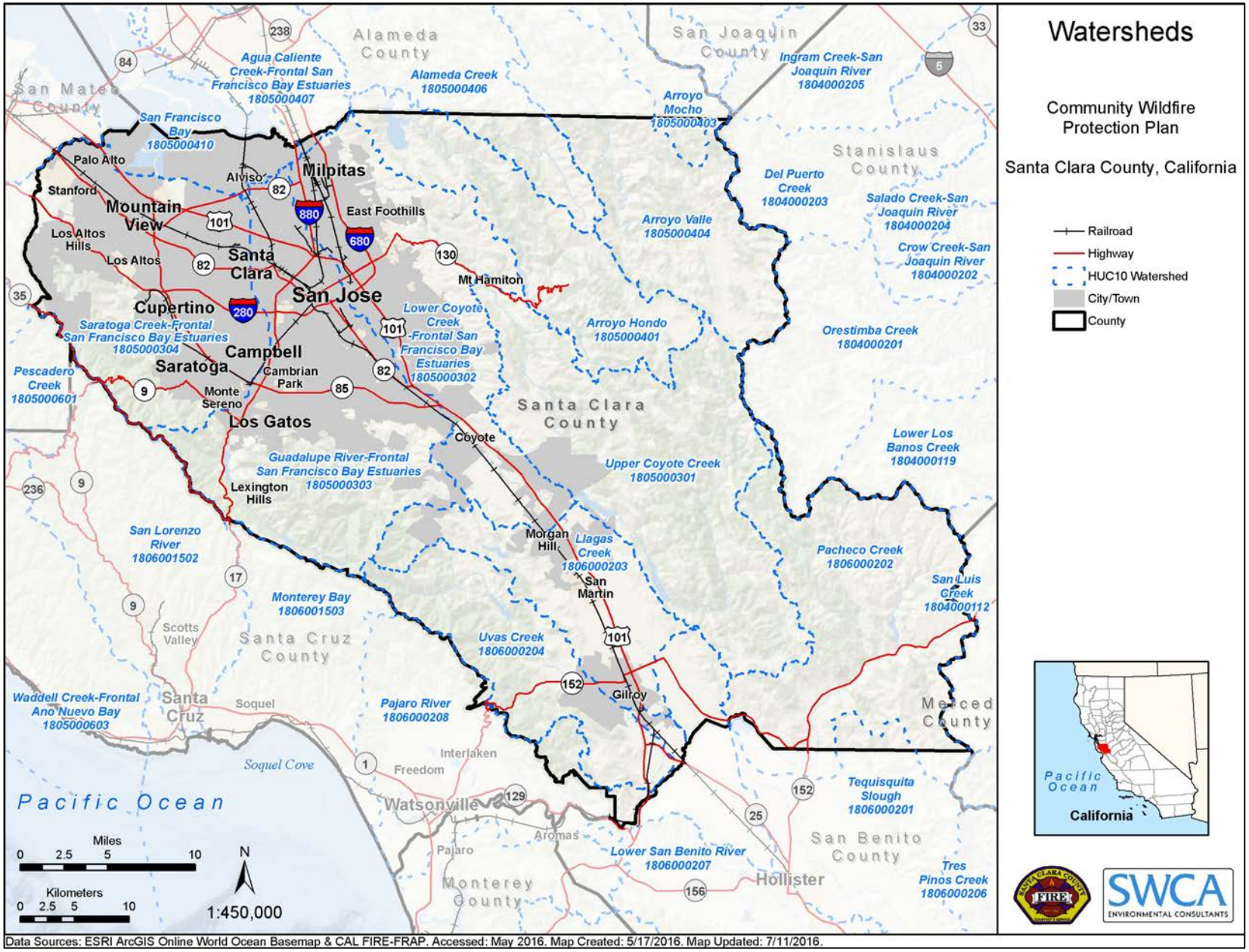


Figure 2.8. Watersheds throughout Santa Clara County.

2.3.11 WILDLIFE

Wildfire management is an important component of wildlife management because of the impacts, both adverse and beneficial, that wildfire can have on wildlife habitat. The focus of most wildlife management is on the preservation of biodiversity and healthy functioning ecosystems; fire management and the application of prescribed fire can play an integral part in the preservation of biodiversity.

Projects to reduce wildfire risk that involve physical changes to the landscape such as creating fuel breaks or modifying vegetation types can have positive or negative impacts on wildlife. These impacts should be evaluated when projects are proposed and plans to implement the projects are developed.

2.4 LAND USE PLANNING

2.4.1 URBAN ENCROACHMENT

Santa Clara County has been a leader in urban planning for decades, starting with the adoption in the early 1970s of the Countywide Urban Development Policies and the use of city USA boundaries. In the 1990s, Santa Clara County and interested cities worked together to adopt urban growth boundaries for several cities, delineating areas intended for future urbanization (Santa Clara Local Area Formation Commission 2015). Though strong efforts have been implemented by many county cities to prevent geographic expansion, many have still accommodated substantial residential growth. The city of Milpitas's population increased by 43% between 1990 and 2015, with no increase in land area, the city of Sunnyvale's population increased by 26% with a less than 5% increase in land area, and the City of Santa Clara by 29% with no increase in land area (Santa Clara Local Area Formation Commission 2015). Table 2.2 shows the population densities of the county's cities.

The WUI is closely inter-related to urban sprawl, which, according to the American Planning Association is characterized by low-density residential and commercial development at the urban fringe (Santa Clara Local Area Formation Commission 2015). Sprawl is often contrasted with "smart growth," which is generally defined as focusing moderate to higher density development near existing infrastructure, especially transit. Smart growth has been promoted throughout the county to counter the effects of urban sprawl on the county's natural resources; this in turn helps to prevent the expansion of the WUI. Because of the economic draw of the Santa Clara Valley, however, reduced expansion has led to housing production being out of pace with the expansive job market. As a result, commuting through the WUI from distant housing in areas such as Santa Cruz County brings wildfire-related concerns with motorist entrapment on highways and increased evacuation concerns due to congestion of arterial roads in the Santa Cruz Mountains.

Table 2.2. Population Densities of Cities within Santa Clara County

Jurisdiction	Population	City Square Miles	Residents per Square Mile
Campbell	41,857	6.09	6,873
Cupertino	59,756	11.32	5,279
Gilroy	53,000	16.56	3,200
Los Altos	30,036	6.52	4,607
Los Altos Hills	8,341	9.00	927
Los Gatos	30,505	11.39	2,678
Milpitas	72,606	13.56	5,354
Monte Sereno	3,451	1.61	2,143
Morgan Hill	41,779	12.91	3,236
Mountain View	77,914	12.20	6,386
Palo Alto	66,912	25.96	2,578
San Jose	1,016,479	180.67	5,626
Santa Clara	120,973	18.18	6,654
Saratoga	30,799	12.78	2,410
Sunnyvale	148,028	22.88	6,470

Source: Department of Finance 2015 Population Estimates, Santa Clara Local Area Formation Commission 2015 City Area Estimates.

2.4.2 Conversion of Historical Summer Vacation Homes

A large number of homes, particularly in the Lexington Basin, originated as summer homes that were built in the last century, that are now being used as full-time residences. Redwood Estates, for example, was established as a summer home community in the mid-1920s designed for wealthy Bay Area residents to escape to the cooler Santa Cruz Mountains during the summer.

Figure 2.9 shows two still captures taken from a real estate promotional video for Redwood Estates filmed in 1926.

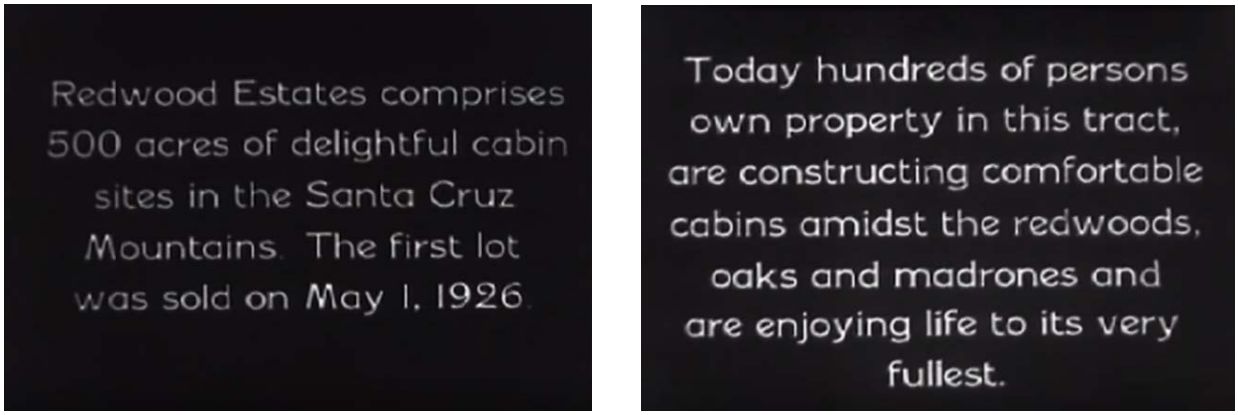


Figure 2.9. Two slides taken from a promotional film created by a real estate company for the Redwood Estates in 1926 (Source: YouTube).

The implication of this twentieth century summer home development to wildfire management is that many of these homes were built in the WUI before WUI codes were enacted and many have structural ignitability issues related to construction materials and close adjacency to neighboring properties.

2.4.3 NON-PERMITTED HOMES

In addition, many homes have been built on parcels without planning permission and as such are not documented in county assessor records, particularly in remote areas in the Lexington Hills and Croy area. This has been an increasing problem in the last decade.

It has become even more alarming as these homes are often combined with cannabis cultivation operations that rely on gas-powered electrical generators to run wells, lights, fans, and other agricultural equipment. Due to the quasi-legal status of these operations, few have been constructed by licensed contractors and many are very deficient in safety considerations. The social culture surrounding these operations is also attractive to people who prepare hash oil and other cannabis derivatives or synthesize methamphetamine. These operations require use of hazardous chemicals that can be highly explosive, such as butane and acetone. Several wildfires have been started by bad wiring, careless use and storage of gasses, and other hazardous activities.

These inhabited and agricultural/industrial structures are a concern for emergency responders, who may legitimately fear for their safety when approaching or entering illegal facilities. In addition, the roads leading to these structures are often substandard, unmarked, and blocked by locked gates without fire access keys. All of these factors create serious concerns around the issue of notifying residents and workers and effectively conducting mandatory evacuations.

2.4.4 GENERAL PLANS/LOCAL HAZARD MITIGATION PLANS

Santa Clara County and Individual City General Plans

The Santa Clara General Plan (Santa Clara County 1994) and individual city General Plans provide a general overview of wildfire hazard in terms of emergency response and direction for local and county hazard planning. The purpose of the General Plan is to guide land use changes in a manner that provides for proper and safe community development. Several "elements" in the General Plan (e.g., safety, housing, circulation, and open space) have a direct relationship to the WUI fire problem. The General Plan can serve to reduce the threat of natural or human-caused disasters by directing land use policies for hazard prone areas (i.e., proper community design, open space land use, and reducing population in areas prone to wildfire). Its policies can direct government agencies to carry out community and agency education programs, alerting citizens and staff as to what to do in the event of an emergency.

The Santa Clara County General Plan identifies that much of the mountainous areas of Santa Clara County are considered "high or extreme fire hazard areas," due to a variety of factors, including:

- climatic factors, such as rainfall, humidity, and wind patterns;
- volume of naturally occurring "fuel" for fires, such as brush, dead trees, and grasses that ignite easily and burn hotly;
- steepness of slopes; and
- inaccessibility and lack of available water supplies for fire suppression.

The following four areas are identified as the main concerns related to wildfire hazard that need to be addressed through policy and planning:

- access issues;
- water supply;
- building requirements; and
- defensible space.

In order to address these concerns, the General Plan identified a series of policies and implementation (also found on page P-23 of General Plan Book B) shown in Appendix E.

Similarly, city General Plans contain information on the wildfire situation and hazard, although the level of detail varies among cities. The Los Gatos 2020 General Plan, for example, lists wildfire-related goals in its Safety Element that are associated with planning for both fire safety and fire risk reduction. These, in turn, are further developed into general policies and actions, many of which are directly related to issues, concerns, and action items developed in greater detail in the CWPP.

Cities within Santa Clara County also have an LHMP, which is an annex to the County's LHMP. The various city LHMPs, following a standard template, discuss the local nature of various hazards, values at risk from these hazards, and actions to take to mitigate this risk. The CWPP is designed to provide more detailed information to these city plans on wildfire mitigation and prevention strategies and hazard reduction projects that have been developed, and will continue to be developed, at a countywide level in a collaborative, interagency, and interdisciplinary process.

2.4.5 SANTA CLARA VALLEY HABITAT PLAN

The Santa Clara Valley Habitat Agency is responsible for administering and implementing the Santa Clara Valley Habitat Plan, a federally approved Habitat Conservation Plan and state approved Natural Communities Conservation Plan. The Habitat Plan provides for the protection and recovery of 18 plant and animal species of special conservation concern e.g., species listed by the federal or state government as threatened or endangered. The jurisdictions participating in the Habitat Plan include the cities of Gilroy, Morgan Hill and San Jose, Santa Clara County, the Santa Clara Valley Transportation Authority and the Santa Clara Valley Water District. Permits are required for discretionary projects affecting habitat and species covered by the Habitat Plan. Fees are collected to compensate for impacts on covered species and habitats. The fees in turn, are used to acquire properties with equivalent habitat to compensate for the losses. These properties become part of the conservation reserve system that will eventually encompass over 46,000 acres of oak woodland, serpentine grassland, annual grassland and other habitat types.

The area covered by the conservation plan is shown in Figure 2.10.

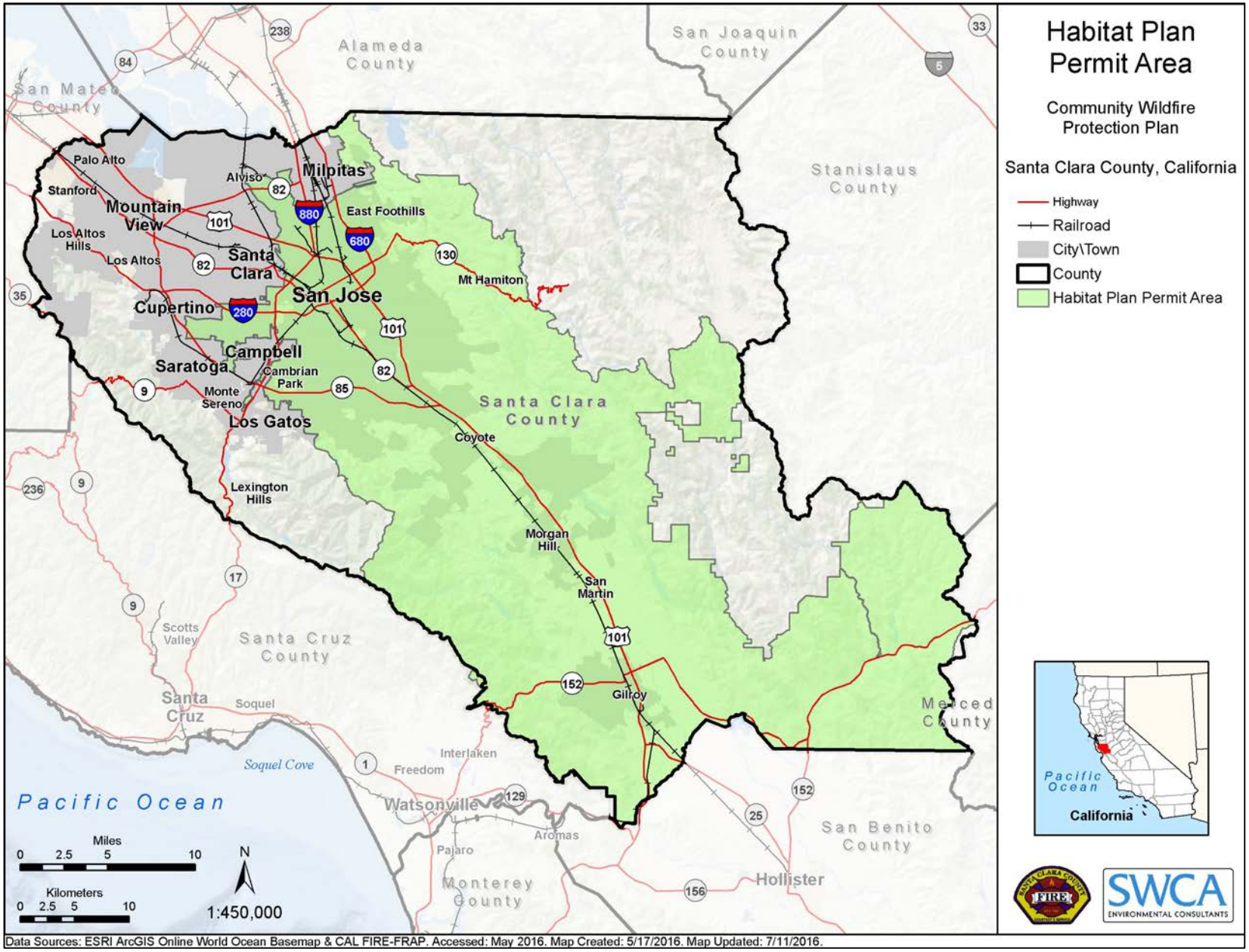


Figure 2.10. Santa Clara Valley Habitat Plan permit area.

The Habitat Plan acknowledges the potential negative impacts of wildfire and associated suppression activities on nearly all of the wildlife and plant species designated for protection. It also acknowledges the potential impacts of measures undertaken to reduce wildfire risks on the same species and their habitats. There is a need to find a balance between habitat management to reduce wildfire risk and preservation of habitat qualities that benefit the protected species. There is also a need to inform wildfire suppression organizations about the resources to be protected in the event of a fire on a conservation reserve.

The Santa Clara Valley Habitat Agency has prepared guidelines for fuel treatments that incorporate the Habitat Plan's requirements for protecting covered habitats and species (Harris 2016). The guidelines will be used to plan fuel treatments within conservation reserves. They may also be used to plan fuel treatments outside of reserves or to place conditions on discretionary projects if fuel reduction is proposed as part of the project. The following projects may be subject to the permit requirements of the Habitat Plan:

- Land development within the Habitat Plan boundaries requiring discretionary approval from participating jurisdictions.
- Vegetation management projects subject to environmental analysis pursuant to the CEQA.
- Vegetation management that is a covered activity under the Habitat Plan such as management within county parks and land managed by the Santa Clara Valley Open Space Authority.

Fuel treatments proposed by the CWPP may be subject to the Habitat Plan permit requirements if they are funded by public agencies such as CAL FIRE or otherwise require discretionary permits from participating jurisdictions. In these cases, planning those treatments to be consistent with the Habitat Agency's guidelines would be advisable. It is the intent of this CWPP that if and when fuel treatments are planned within the conservation plan area and/or within habitats or potentially affecting species covered by the Habitat Plan that those treatments will conform to the degree possible to the recommendations of the Habitat Agency's guidelines (Harris 2016).

The ultimate spatial distribution of conservation reserves cannot be anticipated at this time. The likelihood that a property will be acquired will depend not only on the habitat involved but also on the willingness of the property owner to sell or grant a conservation easement. Some properties, such as some county parks and land owned by the Santa Clara Valley Open Space Authority, have already been enrolled in the conservation reserve system and other properties are currently under consideration for acquisition.

The Habitat Agency intends to aggressively pursue implementing fuel treatments within its conservation reserves. Most County Parks are already being effectively managed to reduce fuels, primarily through grazing and use of prescribed fire, though some, including Mount Madonna and Sanborn Parks, have been identified by the public and Core Team as needing additional fuel management. Depending on where reserves are located there may be opportunities to incorporate them into community fuel breaks planned under the CWPP. This can be facilitated by continued active involvement by the Habitat Agency in the CWPP implementation phase.

2.5 POPULATION

According to Census estimates (U.S. Census Bureau 2014), the population of Santa Clara County is 1,894,605 people, with a 6.3% increase in population from 2010 to 2014. Population density is 1,451 persons per square mile. As of July 2014, there were an estimated 614,714 households in the county, with an average 2.94 persons per household. Almost half (47.3%) of the population aged 25 years or older hold a Bachelor's degree or higher; the tech industry is a considerable employer and draw to the area. According to a 2014 report by the U.S. Conference of Mayors, Santa Clara County was reported to have the highest median household income in the nation at $93,854, compared to $51,939 nationally (U.S. Census Bureau 2014; U.S. Conference of Mayors 2014).

2.5.1 SOCIOECONOMIC COMPONENTS

Historical, Cultural, or Local Icons

There are 107 properties and districts listed on the National Register of Historic Places in Santa Clara County, including five National Historic Landmarks (National Register of Historic Places 2016). Many of these sites are located in the urban areas of the county, but some are located within the WUI, for example, Paul Masson Mountain Winery in Saratoga (built in 1901), the Picchetti Brothers winery southwest of Cupertino (built between 1880 and 1920), and Villa Montalvo in Saratoga (built in 1912). The Lick Observatory, opened in 1888, is located on Mt. Hamilton and operated by the University of California.

Important Economic or Employment Locations

During 2015, total jobs grew by 4.2% in Santa Clara County, as compared to 4.6% in San Francisco-San Mateo, and 2.8% in the East Bay. The pace of annual growth rate was 3.1% in California and 1.9% in the United States (Bay Area News Group 2016). The technology industry is a major employer in the county with more than 6,500 high technology companies, including many of the largest tech companies in the world, among them hardware manufacturers AMD, Cisco Systems, and Intel; computer and consumer electronics companies Apple Inc. and Hewlett-Packard; and internet companies eBay, Facebook, Google, and Yahoo. Most of what is considered to be Silicon Valley is located within Santa Clara County (California Employment Development Department 2016). Many employees of these large tech-based companies choose to locate their homes in the Santa Clara foothills. This has an impact on the WUI due to increased construction pressures and values at risk in the wildland areas and unique concerns such as gated entrances and vegetated landscaping and screening.

Commuter Patterns

With a mean travel time to work of 25.6 minutes (U.S. Census Bureau, 2014), a large majority of the population likely work within the county. However, Santa Clara County also attracts a large number of commuters. Among workers in Santa Clara County, 280,000 live outside the county (Santa Clara Weekly 2015). A 2013 Census Bureau report states that Santa Clara County has among the highest number of commuters (208,965) coming from another county in the nation. Reports in 2013 were that 64,696 workers commute in from Alameda County, 50,215 from San Mateo County, 17,215 from Santa Cruz County, 11,526 from Contra Costa County, and 19,087 from San Francisco County (U.S. Census Bureau 2013). Conversely, 109,287 residents of Santa

Clara County leave the county for work, with 41,522 going to San Mateo County, 38,339 to Alameda County, and 9,570 to San Francisco County (U.S. Census Bureau 2013). Commuter traffic is a huge concern for residents, particularly related to evacuation and ignition concerns along major commuter routes like Highway 17.

2.6 ROADS AND TRANSPORTATION

As outlined in the Santa Clara County General Plan, an adequate transportation system is essential to the county's economy, environment, and overall quality of life (Santa Clara County 1994). The Transportation section of the General Plan provides measures to reduce congestion in the county, improve air quality, encourage compact urban development, and improve social and economic well-being. Specific to the CWPP, roads and transportation are important for evacuation purposes and emergency response, but they also contribute to patterns of ignition, as they bring people in contact with the wildlands. Santa Clara County is currently updating the Circulation and Mobility Element of the General Plan, which will provide updates and policies to support and implement road improvements to the county's expressways and unincorporated road system. Emergency response would be a component of those updates, highlighting the importance of Core Team engagement with County Planners for future revisions. Santa Clara County's main airport is Norman Y. Mineta San Jose International Airport with numerous international connections. Santa Clara Train Station is served by Caltrans and provides service throughout Santa Clara Valley and the Bay Area. The San Jose Diridon Station is the transit hub for Santa Clara County/Silicon Valley. This station serves Altamont Commuter Express (ACE), Amtrak Capitol Corridor, Amtrak Coast Starlight, VTA, Light Rail, Highway 17 Express) and Monterey-San Jose Express. The Santa Clara Valley Transportation Authority operates the regional light rail system connecting towns throughout the valley.

Santa Clara County has an extensive freeway system and separate expressways. The expressways are maintained as county roads, not by Caltrans. The major state highways in the county are U.S. Route 101 that runs through the center of the valley, State Route 17 that runs from San Jose through the Santa Cruz Mountains to Santa Cruz, Interstate 280 that connects San Jose to San Francisco, Interstate 880 that connects San Jose with Oakland to the north, Interstate 680 that connects San Jose to communities to the northeast and State Route 85 (West Valley Freeway) that connects south San Jose to Mountain View and all the West Valley Cities.

There are many arterial roads and highways that are critical to transportation in the WUI. These include Skyline/Highway 35, Summit Road, Junipero Serra Blvd/Foothill Expressway, Blossom Hill Road, Almaden Road, Old Monterey Highway, Page Mill Road, Stevens Canyon Road, Highway 9, Highway 17, Old Santa Cruz Highway, Watsonville Road, Hecker Pass/Highway 152 West, Pacheco Pass/Highway 152 East, and Mt. Hamilton Road/Highway 130. Many subdivisions in the county are located within a private road network. Maintenance of these private roads is a concern for emergency response because poorly maintained roads, steep grades, and unsurfaced routes may be inaccessible to some emergency apparatuses. Some of these communities have a road committee that provides oversight of road conditions.

Rural areas such as Croy and in the Hamilton Range have critical access routes for residents that are on private land and maintenance and improvements are the responsibility of the landowner. Inholdings with access easements on these roads may have limited influence on improving road

conditions or opening locked gates for alternate escape routes if no road association or agreement exists.

2.7 ADJOINING COUNTIES

Santa Clara County shares borders with San Mateo County to the west, Alameda County to the north, Stanislaus and Merced Counties to the east, San Benito County to the south, and Santa Cruz County to the southwest. Many residents of those adjoining counties travel into Santa Clara County for work and leisure, and a large number of residents reside very close to the county boundary and as such wildfire concerns are shared across those county boundaries. Although this document is a countywide CWPP and risk assessment analysis was completed only for lands within the Santa Clara County boundary, the Core Team recognizes that fire does not stop at jurisdictional boundaries. The Core Team is concerned about management of fire and fuels in those boundary areas. Project recommendations included in Section 5 are designed to address specific concerns of both Santa Clara County residents and residents who live close to the county boundary.

3 WILDLAND URBAN INTERFACE ENVIRONMENT AND FIRE HAZARD

3.1 FIRE AND LAND MANAGEMENT POLICY AND RESPONSIBILITY

SRAs are areas in which "CAL FIRE has legal and financial responsibility for wildland fire protections and where CAL FIRE administers fire hazard classifications and building standard regulations" (California Governor's Office of Emergency Services 2013:246). SRAs are county unincorporated areas, are not federally owned, have wildland vegetative cover, have watershed/range/forest value, and have housing densities not exceeding three per acre (California Governor's Office of Emergency Services 2013). There are areas in Santa Clara County that are classified SRAs that also are within the boundaries of a fire protection district (e.g., Saratoga, Central, and South Santa Clara County fire protection districts). In these instances, jurisdiction is shared between the fire district and CAL FIRE. LRAs include land within incorporated cities, cultivated agricultural lands, lands not meeting criteria for SRAs or Federal Responsibility Areas. LRA fire protection is usually performed by city fire departments, fire protection districts, county fire departments, or CAL FIRE under contract to local government. LRAs may include flammable vegetation and the WUI. The local government agency has financial and jurisdictional responsibility for improvement and WUI fire protection (California Governor's Office of Emergency Services 2013).

3.1.1 STATE OF CALIFORNIA

California Department of Forestry and Fire Protection (CAL FIRE)

CAL FIRE assumes fire protection responsibilities on SRAs[10]. In conjunction with this responsibility, the Santa Clara Unit conducts defensible space (LE-100) inspections to educate and enforce property owners on compliance with Section 4291 of the PRC. Under this section, all structures located with the SRA will have clearance of up to 100 feet of flammable vegetation. Otherwise, the Santa Clara Unit has delegated the enforcement of the latest California Building Code standards (California Code of Regulations Title 24, Part 2) to the local authority.

CAL FIRE's mission also includes protecting California's resources, including the health of the state's woodlands and forests. The Board of Forestry and Fire Protection is a government-appointed body within CAL FIRE. It is responsible for developing the general forest policy of the state, determining the guidance policies of CAL FIRE, and representing the state's interest in federal forestland in California. Together, the Board and the Department work to carry out the California Legislature's mandate to protect and enhance the state's unique forest and wildland resources.

The Board is charged with protecting the forest resources of all the wildland areas of California that are not under federal jurisdiction. These resources include major commercial and non-commercial stands of timber, areas reserved for parks and recreation, the woodland, brush-range

9 2013 State of California Multi-Hazard Mitigation Plan
[10] Public Resources Code 4125.

watersheds, and all such lands in private and state ownership that contribute to California's forest resource wealth.

CAL FIRE's Environmental Protection and Regulations Program strives to provide protection to the resources of the state, through its several sub-program areas, to ensure that: state and federal environmental laws are observed; forested landscapes are managed wisely; the State's varied biological resources are enhanced; that water quality is protected and maintained; the State's archeological and historical resources are protected; California's wildlands are managed to minimize and offset climate change effects; the State's vast woody biomass resource is efficiently utilized; and regulations are developed, where necessary, that provide furtherance of the CAL FIRE's mission—to protect the environment.

CAL FIRE enforces the Forest Practice Act laws that regulate logging on privately owned lands in California. This ensures that logging is done in a manner that will preserve and protect our fish, wildlife, forests, and streams. Additional rules enacted by the State Board of Forestry and Fire Protection are also enforced to protect these resources.

Santa Clara County Fire Department

Established in 1947, the Santa Clara County Fire Department has fire and life safety code responsibilities for the communities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno, Saratoga, and all of unincorporated County area. The Fire Chief of the Santa Clara County Fire Department is the County Fire Marshal.

All planned construction projects within the seven cities and towns and the entire unincorporated areas of the County are submitted to the local planning and building departments. Each of these jurisdictions forward the proposed development and building permit applications to Santa Clara County Fire Department's Fire Prevention Division for our review and comments. Prior to the issuance of building permits by the communities served, projects must meet all fire department requirements, including meeting California Building Code Chapter 7A requirements for buildings located in in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area to resist the intrusion of flames or boring embers projected by a vegetation fire. New development also must meet appropriate fire apparatus access and water supply requirements.

Every spring the Santa Clara County Fire Department sends defensible space letters to all residents within the jurisdiction living in locally identified Wildland-Urban Interface Areas and within the SRA of the District. Local engine companies perform field inspections, with follow up inspections from the Fire Prevention Division. Enforcement of defensible space is performed in coordination with each community's code enforcement program.

3.1.2 CITY FIRE DEPARTMENTS

Santa Clara County contains 15 cities (Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale). Most of these communities are also considered to be at risk from wildfire. City fire departments typically work within a mutual aid framework to respond to emergencies in various jurisdictions as the incident evolves. The Milpitas Fire Department, for

example, is able to respond to a wide variety of incidents, as well as enforcing fire and life safety codes, similar to the functions of other city fire departments.

3.1.3 Insurance and Loss Reduction Research Associations

The insurance and fire prevention industries have committed significant resources to studying wildfires and structural ignitions. Their cutting-edge research findings help drive the adoption or modification of new building codes.

National Fire Protection Association

The National Fire Protection Association (NFPA) is a global nonprofit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. Its 300 codes and standards are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation around the world.

The NFPA develops easy-to-use educational programs, tools, and resources for all ages and audiences, including Fire Prevention Week, an annual campaign that addresses a specific fire safety theme. The NFPA's Firewise Communities program encourages local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others in the effort to protect people and property from wildfire risks.

The NFPA is a premier resource for fire data analysis, research, and analysis. The Fire Analysis and Research division conducts investigations of fire incidents and produces a wide range of annual reports and special studies on all aspects of the nation's fire problem.

Insurance Institute for Business and Home Safety

The Insurance Institute for Business & Home Safety (IBHS) is an independent, nonprofit, scientific research and communications organization supported solely by property insurers and reinsurers. The IBHS's building safety research leads to real-world solutions for home and business owners, helping to create more resilient communities. Its mission is to conduct objective, scientific research to identify and promote the most effective ways to strengthen homes, businesses, and communities against natural disasters and other causes of loss.

The IBHS conducts laboratory and field experiments in structural ignitability and has helped develop new guidelines for defensible space zones to emphasize ember resistance and a "home ignition zone."

3.1.4 Fire Safe Councils

Santa Clara County Fire Safe Council

The Santa Clara County Fire Safe Council is a non-profit 501(c)(3) organization that was chartered in 2001 and works countywide with a variety of partners at the federal, state, and local levels. Communities served by the Fire Safe Council include the designated Communities at Risk: Stanford, Palo Alto, Los Altos Hills, Cupertino, Saratoga, Monte Sereno, Los Gatos, Lexington Hills, San Jose, Morgan Hill, Gilroy, East Foothills, and Milpitas, as well as parts of the region near the named communities listed that are also WUI areas with values at risk. The Santa Clara

County Fire Safe Council partners with agencies, jurisdictions, or organizations that share in its mission, which is "mobilizing the people of Santa Clara County to protect their homes, communities and environment from wildfires."

The Santa Clara County Fire Safe Council, as a non-government organization, has no legal authority or responsibility to enforce laws or policies adopted by agencies having jurisdiction. The Fire Safe Council serves its communities in four active program areas: Planning, Community Outreach and Education, Hazardous Fuel Reduction, and Fundraising. Funding for the Fire Safe Council's work is provided by federal, state, and other grants, as well as by the county, cities, fire agencies, and other community partners and individuals. The Council builds its work plan around implementing recommended programs and projects in this CWPP (see Section 6).

The Santa Clara County Fire Safe Council works cooperatively in the region served by the South Skyline Fire Safe Council to support and enhance its work.

South Skyline Fire Safe Council

The South Skyline Fire Safe Council serves communities within San Mateo, Santa Cruz, and Santa Clara Counties, generally along Skyline Boulevard (California Highway 35). The area served in Santa Clara County is from Page Mill Road to Black Road, above Palo Alto, Saratoga, and the western edges of Lexington Hills. Its mission is to "provide education and outreach programs for fire prevention and preparedness to all South Skyline residents within the Council area in order to prevent the loss of lives and reduce losses of personal and public property and natural resources from wildfire." The South Skyline Fire Safe Council is funded through donations and in-kind contributions of time from a committed group of volunteers.

3.1.5 PARKS, OPEN SPACE, AND PROTECTED LANDS

Figure 3.1 shows the open space areas throughout the County.

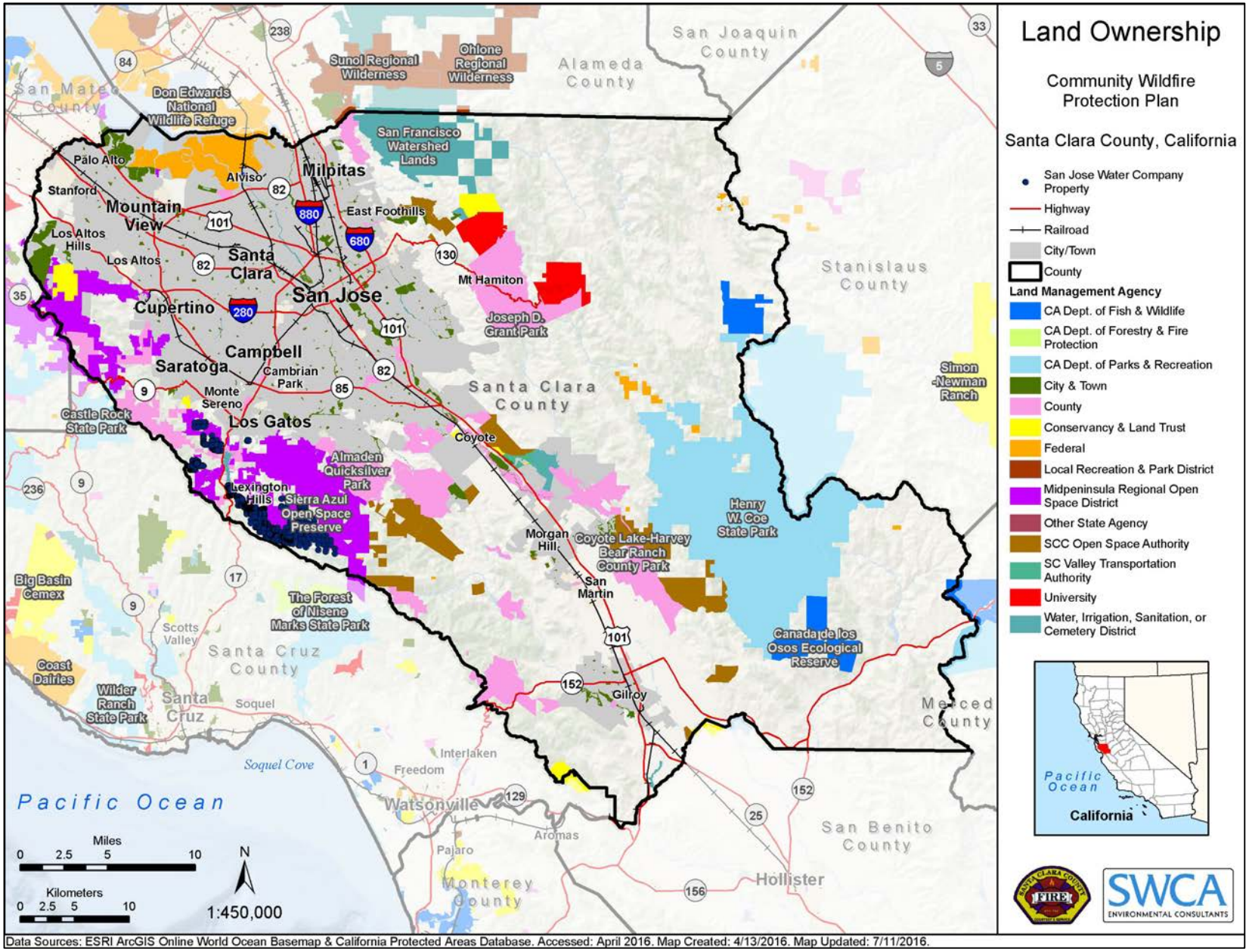


Figure 3.1. Land ownership map showing open space areas throughout the County and beyond County boundaries.

US Fish and Wildlife Service

Don Edwards National Wildlife Refuge is a federally managed property located on the southern end of San Francisco Bay. The refuge comprises a 30,000-acre oasis for millions of migratory birds and endangered species. The refuge, created in 1974, was largely the result of grassroots efforts by the local community to protect the San Francisco Bay ecosystem.

California Department of Parks and Recreation

The California Department of Parks and Recreation manages 280 units. Two of these units are located in Santa Clara County: Martial Cottle State Park, comprising 256 acres of farmland (managed by Santa Clara County Parks Department,) and Henry W. Coe State Park. The Coe unit is the largest state park in northern California at 89,164 acres. It also contains 22,000 acres of designated wilderness; in September 2007, the wilderness area was burned by the 47,760-acre Lick fire. Started by burning debris, the fire cost more than $10 million to suppress and destroyed several structures.

The Coe unit has a highly diverse mixture of vegetation types, ranging from grassland to chaparral to ponderosa pine. Fire is a significant part of the natural history of this area, and in recognition of this, park management has a very active prescribed fire program. For example, in November, 2015, a 630-acre prescribed fire was ignited, with about 300 acres treated within a few days. The prescribed fire was conducted with the support of personnel from California State Parks, CAL FIRE, San Jose City Fire, San Jose State University, and the approval of the Bay Area Air Quality District, illustrating the broad support such programs require.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife manages over one million acres of fish and wildlife habitat in 711 properties around the state, with habitats from every major ecosystem in the state. Within Santa Clara County, the agency manages the 5,800-acre Cañada de los Osos Ecological Reserve, near Henry W. Coe State Park. The property, formally known as the Stevenson Ranch, was acquired by the Nature Conservancy in 2000 and sold to the agency in 2001. The unit has a mix of grasslands, oak and montane woodland, chaparral, and riparian and wetland habitats. Prescription grazing and burning may be employed if the need is determined to exist.

University California Natural Reserve System

The University of California Natural Reserve System encompasses 39 sites covering 756,000 acres of protected natural area throughout California, which is the largest university-administered reserve system in the world. Within Santa Clara County, the Blue Oak Ranch Reserve is located on the slopes of Mt. Hamilton. Covering 3,259 acres, four plant communities are found in the reserve, which are becoming rare in California: valley oak woodland, blue oak woodland, wildflower fields, and native perennial grassland. The Blue Oak Ranch Reserve contains a rich variety of plant families, more than 130 species of birds, and many species of terrestrial and aquatic animals, including the rare river otter (*Lontra canadensis*). Prescribed fire may play a role in facilitating valley oak regeneration, which has become rare.

Santa Clara County Department of Parks and Recreation

Formed in 1956, the Santa Clara Department of Parks and Recreation oversees regional parks usually larger than local neighborhood or community parks, often more than 200 acres. The county park system has expanded to 29 regional parks covering almost 48,000 acres since its first parkland, the 400-acre Stevens Creek County Park, was acquired in 1924. Parklands of significant size in the WUI include:

- Ed Levin County Park
- Joseph D. Grant
- Motorcycle & Field Sports
- Anderson Lake
- Coyote Lake Harvey Bear Ranch
- Mt. Madonna
- Uvas Reservoir
- Uvas Canyon
- Calero
- Almaden Quicksilver
- Santa Teresa
- Lexington Reservoir
- Villa Montalvo
- Sanborn
- Stevens Creek
- Rancho San Antonio

Santa Clara Valley Open Space Authority

The Santa Clara Valley Open Space Authority is an independent special district and not part of county government. Its purpose is to preserve key portions of the natural environment using a variety of tools, including land and easement acquisition, as well as participating in planning and conservation activities. Established in 1993 by the state legislature and Governor Wilson, its jurisdiction is all of Santa Clara County, except Gilroy and lands and communities within the boundaries of the MROSD. The Santa Clara Valley Open Space Authority currently protects approximately 16,000 acres and has three open space preserves that are open to the public:

- Coyote Valley Open Space Preserve
- Rancho Cañada del Oro Open Space Preserve
- Sierra Vista Open Space Preserve

The Santa Clara Valley Open Space Authority participates with the cities of Milpitas, Santa Clara, San Jose, Campbell, and Morgan Hill.

Midpeninsula Regional Open Space District

Founded in 1972, the MROSD is a regional greenbelt system, covering over 60,000 acres in 26 open space preserves in three counties. The district manages a wide variety of vegetation, including chaparral, oak woodlands, fir and redwood forests, riparian corridors, grasslands, and wetlands. Preserve size ranges from 55 to 18,831 acres, with over 220 miles of trails. The Sierra Azul area southeast of Los Gatos is the largest unit in the district. The following preserves are located in Santa Clara County:

- Bear Creek Redwoods Open Space Preserve
- Coal Creek Open Space Preserve
- El Sereno Open Space Preserve
- Foothills Open Space Preserve
- Fremont Older Open Space Preserve
- Los Trancos Open Space Preserve
- Monte Bello Open Space Preserve
- Picchetti Ranch Open Space Preserve
- Rancho San Antonio Open Space Preserve
- Saratoga Gap Open Space Preserve
- Sierra Azul Open Space Preserve
- St Joseph's Hill Open Space Preserve

City Parks and Open Space

Several cities own large parks and open space areas with unmaintained natural wildland environments, including:

- Palo Alto Foothills Park and Arastradero Preserve
- Palo Alto Baylands
- City of San Jose Alum Rock Park

Regional Trail Corridors and Urban Open Space Parks

WUI is a term used to describe human development that is surrounded by natural wildland environment. In Santa Clara County there also exists the converse arrangement: natural wildland environments that remain but have become enveloped by the urban environment. This includes regional trails, creek corridors, and pocket parks that have unmaintained areas with open space characteristics.

There are several long recreational trails that generally follow creek corridors or the South Bay shoreline within Santa Clara County. These trails are typically paved and used for both recreation and commuting by bicycle. When next to creeks, the trail corridor width and natural environment creates areas with WUI characteristics. Creeks are also favored sites for homeless people to establish encampments, which brings risk of wildfire from warming fires and cooking stoves to these areas.

Not all parks within the urban areas of Santa Clara County are maintained with lawns, gardens, hardscapes, or other fire-resistant landscaping. Some parks have areas that are left natural and unmanicured, which creates wildland characteristics and resultant risks of vegetation fires in dry grass, shrubs, and trees that can throw firebrands and threaten adjacent structures.

These ribbons of wildland/creek/trail corridors, as well as urban parks with unmaintained open space characteristics, are often outside designated WUIs or FHSZs, which can complicate things.

A partial list of regional trails with wildland characteristics include:

- Bay Trail
- Penitencia Creek Trail
- Guadalupe River Parkway
- Coyote Creek Trail
- Calero/Los Alamitos Creek Trails
- Los Gatos Creek Trail

See the City of San Jose's list of urban trails at:
http://www.sanjoseca.gov/index.aspx?NID=2700

and Santa Clara County's regional trails system at:
https://www.sccgov.org/sites/parks/PlansProjects/Documents/AlignmentStatus_August18_2015.pdf

A partial list of urban parks with unmaintained natural areas include:

- Hellyer
- Communications Hill
- Martial Cottle
- Lake Cunningham
- Vasona
- Guadalupe River
- Las Animas Veterans Park
- Christmas Hill Park
- Dennis Debell Uvas Creek Preserve
- Byrne Preserve`

3.1.6 WATER PURVEYOR AND WATERSHED MANAGEMENT ORGANIZATIONS

Wildfire can cause serious degradation of both watershed management infrastructure and water quality. Burned watersheds can result in greater runoff, erosion, and sedimentation, with a loss of water quality and increased cost of water treatment. Since heavier amounts of vegetation will burn more severely than lighter wildland fuels, allowing an accumulation of untreated wildland fuels to occur in watersheds and riparian areas can lead to a loss of water quality and significant environmental degradation, which can be very expensive to repair. As is the case with homeowners, risk mitigation is dependent on fuels treatment performed before a wildfire occurs and cannot rely solely on the timely arrival of fire suppression resources.

San Jose Water Company

Founded in 1866, the San Jose Water Company is an investor-owned public utility, serving over one million people in the San Jose metropolitan area. It provides groundwater from more than 100 wells for 40% of its supply and purchases treated water from the Santa Clara Valley Water District for 50% of its supply. An additional 10% of its supply comes from its watershed in the Santa Cruz Mountains, treated at two water treatment plants.

The San Jose Water Company owns extensive watershed lands in the WUI, including upper Los Gatos Creek and a tributary of Saratoga Creek.

Santa Clara Valley Water District

Founded in 1929, the Santa Clara Valley Water District contains 10 reservoirs that impound water from storm runoff, as well importing water from the Sierra Nevada and pumping water from aquifers. The water district manages about 275 miles of creeks in Santa Clara County, or about one-third of the county's 800 miles of creeks and rivers. In partnership with cities and Santa Clara County Parks Department, the water district also provides open space and recreational opportunities at many of its reservoirs and creeks.

San Francisco Public Utilities Commission

The San Francisco Public Utilities Commission–owned watershed lands include the Alameda Watershed, with 13,000 acres in north eastern Santa Clara County.
See http://www.sfwater.org/index.aspx?page=198.

3.1.7 ROADS AGENCIES

Generally roads are maintained primarily to serve the transportation needs of the public, however road rights-of-way include the vegetation adjacent to the pavement, which could be considered a type of wildland to be managed for wildfire prevention. Roadsides are frequently the site of ignition for wildfires, and evacuees may need to use the roadways to leave the area even if the vegetation on both sides of the road is on fire.

In addition, due to the critical importance of roads for providing ingress for firefighting apparatuses while simultaneously evacuating the public, certain factors such as width, grade, and turning radius need to be addressed.

State Highways/Caltrans

Caltrans has specific vegetation management protocols that are found in the Maintenance Manual, (Chapter C2: http://www.dot.ca.gov/hq/maint/manual/maintman.htm). Each district prepares an annual plan for vegetation control (VegCon Plan). The VegCon Plan is part of the Integrated Maintenance Management System (IMMS). This plan will be derived from segment specific decisions that should consider fire risk management, safety, aesthetics, stormwater runoff, environmental laws, and community concerns. The plan is prepared each spring and is the reference document for planning and scheduling maintenance operations and for budget planning.

Additional details on Caltrans vegetation management protocols are provided in Appendix F.

County Roads and Airports

The County's Roads and Airports Department operates and maintains 635 miles of rural and urban roadways in unincorporated areas (https://www.sccgov.org/sites/rda/about/Pages/standards.aspx).

County Roads Standard Specifications state that erosion control and highway planting shall conform to the provisions in Section 20 "Erosion Control and Highway Planting" of the most current edition of the State Standard Specifications.

County Agriculture Weed Abatement

The mission of the Santa Clara County Department of Agriculture Weed Abatement Program is to protect lives, property, and the environment by providing education and hazard abatement for the communities served. The purpose of the Weed Abatement Program is to prevent fire hazards created by vegetative growth and the accumulation of combustible debris through voluntary compliance.

See weed abatement standards at https://www.sccgov.org/sites/wap/Pages/standards.aspx.

The Department of Agriculture's Weed Abatement Program inspects parcels that have been declared a public nuisance and included in the program throughout the year. Abatement work is ordered by an inspector on properties when the minimum fire safety standards have not been satisfied or if the owner has requested that the county contractor perform the necessary work. The abatement charges for any work performed by the contractor and a county administrative fee are included on your property tax statement as a special assessment.

Municipal Roads Departments

Cities with significant road maintenance responsibility in the WUI include Palo Alto, Los Altos Hills, Cupertino, Saratoga, Los Gatos, Monte Sereno, San Jose, Morgan Hill, Gilroy, and Milpitas.

3.2 WILDLAND URBAN INTERFACE

3.2.1 FIRE HAZARD SEVERITY ZONES

CAL FIRE developed the FHSZ rating system in 1973 for agency use in determining resource allocation. FHSZ is a science-based system used to assess wildland areas that scores vegetation, topography, weather, crown fire potential, ember production, and probability of fire occurrence. Possible FHSZ ratings are very high, high, or moderate.

There are areas of very high, high, and moderate FHSZs in the SRAs/unincorporated areas of Santa Clara County, as well as the LRA (see Figure 1.1).

In 1981, California law[11] required formal adoption of FHSZ rankings for all SRAs in order to "reduce the potential intensity of uncontrolled fire that threaten to destroy resources, life or property." In 1992, following the Oakland Hills Tunnel fire, the FHSZ rating mandate was extended to include LRAs. CAL FIRE performs the rating analysis in LRAs and submits its recommendation to the city. The city can choose to adopt the recommendation, modify it, or reject it. There are very high FHSZ areas within cities in the county. It should be noted that for LRAs, the hazard rating actually adopted by local governments may be different from that recommended by the state. Therefore, three layers of hazard are used in this CWPP: CAL FIRE FHSZ recommended (SRA and LRA), FHSZ adopted (SRA and LRA), and locally identified and adopted WUI.

Additionally, the 2013 State of California Multi-Hazard Mitigation Plan notes that Santa Clara County is designated as a high wildfire hazard ranking in LHMPs (California Governor's Office of Emergency Services 2013). The document also notes that the county is designated as high to very high for FHSZs for SRAs.

On September 20, 2005, the California Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Code of Regulations, Title 24, Part 2, known as the 2007 California Building Code. The following is taken from the California Building Code:

> 701A.3.2 New Buildings Located in Any Fire Hazard Severity Zone. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas, any Local Agency Very-High Fire Hazard Severity Zone, or any Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter. New buildings located in any Fire Hazard Severity Zone shall comply with one of the following:
>
> 1. State Responsibility Areas.
>
> *New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas, for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter.*

[11] Public Resources Code 4202

2. Local Agency Very-High Fire Hazard Severity Zone.

New buildings located in any Local Agency Very High Fire Hazard Severity Zone for which an application for a building permit is submitted on or after July 1, 2008, shall comply with all sections of this chapter.

3. Wildland-Urban Interface Fire Area designated by the enforcing agency.

New buildings located in any Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter.

Objective of WUI Fire Area Building Standards

The broad objective of the WUI fire area building standards is to establish minimum standards for materials and material assemblies and provide a reasonable level of exterior wildfire exposure protection for buildings in WUI fire areas. The use of ignition-resistant materials and design to resist the intrusion of flame or burning embers projected by a vegetation fire (wildfire exposure) will prove to be the most prudent effort California has made to mitigate the losses resulting from the state's repeating cycle of WUI fire disasters. CAL FIRE and the Office of the State Fire Marshal revised the mandatory effective date for those areas where local government has responsibility for wildland fire protection (LRAs) to July 1, 2008, to enable local government agencies more time to review and accept the FHSZ maps that will be presented to them formally after the new year.

Adopted WUI Zones (SRAs/LRAs)

At the national level, identification of WUI communities was initiated following the establishment of the National Fire Plan in 2000, with federal, state, and local agencies involved with this process. Delineation of the location of the WUI is a basic step in the identification of areas at most risk from wildfire, which can trigger requirements for the mandatory use of codes associated with building materials and defensible space.

This CWPP follows the pattern of using the adopted WUI areas in the plan development. The Croy CWPP notes that it is entirely within WUI, as well as in SRAs. Additionally, all of the Croy CWPP is within a very high FHSZ. Therefore, if development increases in the Croy area WUI, for example, more residences will be exposed to wildfire risk and therefore be in need of targeted hazard reduction activities and code enforcement to mitigate this risk. Conversely, deficiencies in this mitigation process, including the adoption and enforcement of new and existing fire codes, as well as adjustments in the delineation of the WUI as the result of changing vegetation and community development patterns over time, will likely result in the increasing loss of homes. Figure 3.2 shows the designated WUI areas used in plan development.

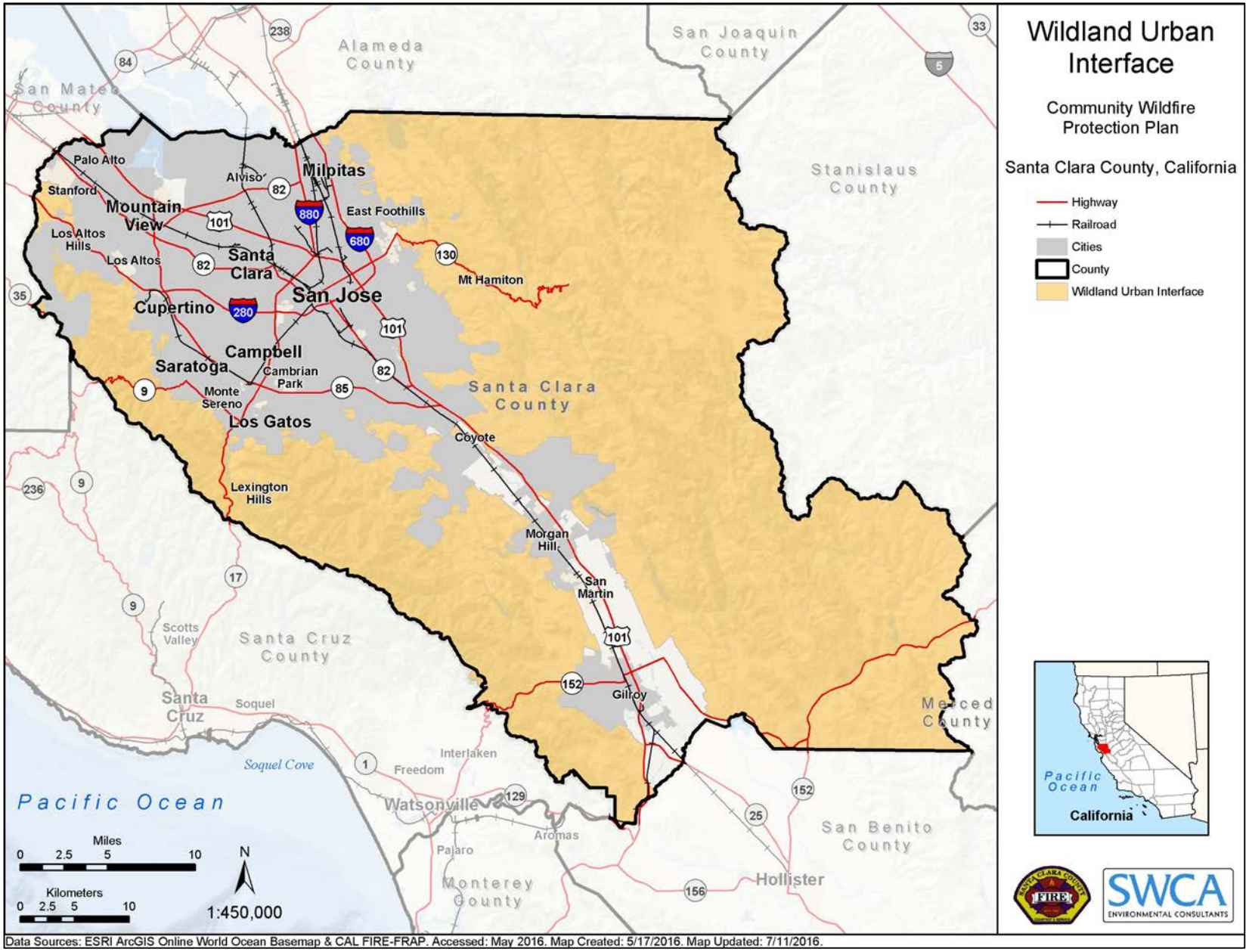


Figure 3.2. WUI areas as designated by state law and local ordinance.

3.3 LAWS, ORDINANCES, STANDARDS, AND CODES FOR FIRE PREVENTION

3.3.1 LAND USE PLANNING

The Santa Clara County Department of Planning and Development provides four areas of service: public information, planning, development review, and zoning enforcement. Its primary function is to plan and regulate land use and development within the unincorporated areas of Santa Clara County. It manages the county's General Plan; the Safety Element within this plan is associated with the mitigation of wildfire risk.

In conjunction with the planning process, the Santa Clara County Office of the County Fire Marshal provides education, plan review, inspection, and code enforcement for the county regarding fire issues. The Fire Marshal is also the Chief of the Santa Clara County Fire Department and is responsible for fire prevention activities in most unincorporated areas of the county. The Fire Marshal's office also reviews and inspects applications for burn permits in unincorporated WUI portions of the county.

Authority for the Fire Marshal is derived from Section A33-47 of the County Code and Section 101 of the California Fire Code. The County Fire Marshal has the authority to make and enforce such rules and regulations for the prevention and control of fire and fire hazards.

3.3.2 BUILDING CODES

As noted by CAL FIRE, California's building codes have two parts relevant to wildfire:

- remove flammable vegetation from around the building; and
- construct the building of fire resistant material.

With regard to clearance, the law requires that homeowners conduct fuels modification to 100 feet or to the property line if this distance is less than 100 feet. This provides both defensible space for firefighters in which to work and protection for the home.

With regard to building codes, standards have been developed to improve the resistance of buildings to ignition from airborne embers. New buildings located in any FHSZ within SRAs (building permit submitted after January 1, 2008), in any LRA-very high FHSZ (building permit submitted after July 1, 2008), or in any WUI fire area designated by the enforcing agency (building permit submitted after January 1, 2008) will comply with all sections of California Code of Regulations Title 24, Part 2, 701A.3.2 (New Buildings Located in Any Fire Hazard Severity Zone).

For LRAs, in which local government has responsibility for wildland fire protection, CAL FIRE provides recommendations for very high FHSZs. Local government, in turn, uses these recommendations to designate very high FHSZs within its jurisdiction. Local government may exclude fire protection requirements prompted by the map designation and may adopt, modify, or deny the very high FHSZ recommendation.

Taken together, these building codes are intended to improve the resilience of a building to ignition from either direct flame contact or from airborne embers. In incidents in which the rate of wildfire spread, and the number of homes at risk from the wildfire, exceeds suppression capacity, this resilience may determine whether the building survives.

3.3.3 RESEARCH AND PROPOSED NEW STANDARDS

IBHS laboratory and field experiments in structural ignitability have helped develop new evidence-based guidelines for defensible space zones to emphasize ember resistance and a "home ignition zone" including a 5-foot non-combustible zone next to the structure. The new guidelines are not yet incorporated into any codes or policies; however, some education and outreach programs are encouraging their voluntary adoption.

3.3.4 WILDLAND URBAN INTERFACE DEFENSIBLE SPACE

The definition of defensible space via state and local codes, its maintenance by homeowners, and enforcement by fire agencies as needed is a common part of wildfire risk mitigation. The California State Board of Forestry issued *General Guidelines for Creating Defensible Space* in 2008, following a change in PRC 4291 that expanded defensible space clearance requirements from 30 to 100 feet around buildings and structures in SRAs.

The guidelines note some aspects about WUI defensible space that are often overlooked:

- Greater defensible space may be needed due to local conditions, such as slope and fuel density.
- Fuel reduction has more to do with disrupting fuel continuity so that the spread of fire is impeded, rather than creating a denuded zone around a home. For example, pruning the lower limbs of trees creates a break between ground fuels and tree canopies, reducing the chances that a fire will move from a ground fire to a crown fire.
- Communities may wish to develop defensible space areas that are greater than 100 feet for even better protection; the code only sets a minimum distance.
- Defensible space also provides a safer environment in which firefighters can work. This environment is more than vegetation clearance; defensible space also involves emergency vehicle access, water supply, and clear street signs and addresses. All of these factors, and many more identified by previous community-level CWPPs, by their presence or absence affects the usefulness of defensible space in structure protection.
- Vegetation fuel reduction projects require compliance with all federal, state, or local environmental protection laws.

3.3.5 FIRE PREVENTION

The prevention of wildfires is a common theme among fire agencies at the federal, state, and local levels. Several methods are generally employed in support of fire prevention programs, including:

- Vegetation management programs are designed to modify fire behavior, which may involve establishing reduced fuel zones, such as fuel breaks and prescribed fire units, to impede the spread of a wildfire and to facilitate access by suppression resources to threatened areas.
- Analysis identifies historic ignition patterns and causes, combined with public education efforts to encourage more care by the public, such as in the use of campfires and cigarettes.
- Fire danger conditions, such as high, very high, or extreme, are often posted on signs throughout an area (Figure 3.3), as well as announced on local news and other social media methods.
- Measures are taken to prevent, detect, and suppress wildfires as early as possible. During periods of high fire danger, fire organizations typically proactively promulgate strategies to reduce ignitions, such as smoking and campfire bans in specific high hazard areas, and adjust fire agency work schedules to increase patrols and hours or days of coverage.
- Volunteers are used to augment fire prevention work. CAL FIRE has used the Volunteers in Prevention program since 1980 to enlist citizens in many fire prevention tasks, including delivering classroom presentations, contacting homeowners about the importance of defensible space, and providing information to the public and media during emergencies. All 21 CAL FIRE units employ this program; Santa Clara County was one of the seven counties targeted for this program, with an objective of a reduction of human-caused wildfires by 10%.



Figure 3.3. Fire preparedness signage is already in place in some areas of the County, but additional signage is recommended.

3.3.6 PRESCRIBED BURNING

Although the focus of wildfire risk mitigation is often on the reduction and removal of vegetation, and the prevention and suppression of wildfire, fire under the right circumstances can be not only a useful tool to reduce hazardous amounts of fuel but also an important factor in wildland ecosystems. Many fire and resource management agencies at the local, state, and federal levels include the use of fire in their programs (Figure 3.4).

The use of prescribed fire has several requirements to be successful, including:

- Planning documents include approval authority, burn objectives, preparation requirements, weather and fuels conditions under which the burn will be performed, operational responsibilities, contingency planning in the event of an escape, and post-burn monitoring to document the attainment of burn objectives and other potential fire effects, such as the occurrence of invasive species.
- Specific attention must to be given to smoke management and weather forecasts concerning smoke direction and atmospheric mixing patterns. Review of prescribed burn plans and smoke management techniques need to be performed by the Bay Area Air Quality Management District. Consultation between the agencies involved with the burn and the air district needs to occur early in the planning cycle, especially with regard to identification of suitable weather periods for the burn to be conducted. Conditions suitable for the fire agency may not be suitable from the perspective of the air district.
- Public education and outreach is vital given the frequent concern by the public over smoke, risk of escape, and post-fire appearance of the burn unit. It is unlikely that all of the public will support the prescribed fire program, but outreach conducted through social media and on-site visits to the post-burn areas as they recover can develop a broad base of support, especially if the fire has stimulated the occurrence of desirable species considered to be rare.



Figure 3.4. Prescribed fire being used to reduce grass loads on public open space land in the County.

More typically, hazardous fuels are managed with a variety of tools, including goats, disking, hand cutting and piling, herbicides, mowing, and weed whips. As is the case with prescribed fire, the need remains to define the objectives of the treatment, measurement to document that the objectives were met, and follow-up monitoring to discover any unexpected deleterious effects on natural resources.

CAL FIRE also has a longstanding cost share program, the VMP that can use prescribed fire and mechanical methods to treat wildland fuels. Private landowners can contract with CAL FIRE to use these tools for hazard reduction and resource management objectives.

Santa Clara County possesses many natural and cultural attributes that are highly valued by the communities. Fuels management programs must be planned and conducted to preserve sensitive resource values while mitigating the risk to them and WUI communities. This is especially true for parks and open space areas enjoyed by so many residents, which are home to a wide variety of plants and wildlife.

3.4 FIRE HISTORY

Santa Clara County has experienced large and destructive fires in the last several years. These include the 1985 Lexington fire, which burned 37 homes, 4,200 acres, and caused $7 million in damage; the 2002 Croy fire, which burned 3,127 acres, 31 homes, caused 13 injuries, and cost $7.5 million to suppress; the 2008 Summit fire which burned 35 homes, 4,270 acres, caused 16 injuries, and cost $16 million to suppress; and the 2009 Loma Prieta fire which burned 669 acres, cost 2.7 to suppress, involved 1,742 firefighters, destroyed one residence and caused four injuries . High fire danger conditions that can support very active fire behavior may be relatively uncommon, but when such conditions occur, they have significant destructive potential. For example, The Summit fire spread by high winds even after six inches of rain had occurred twelve days earlier. Figure 3.5 shows the fire history for the project area.

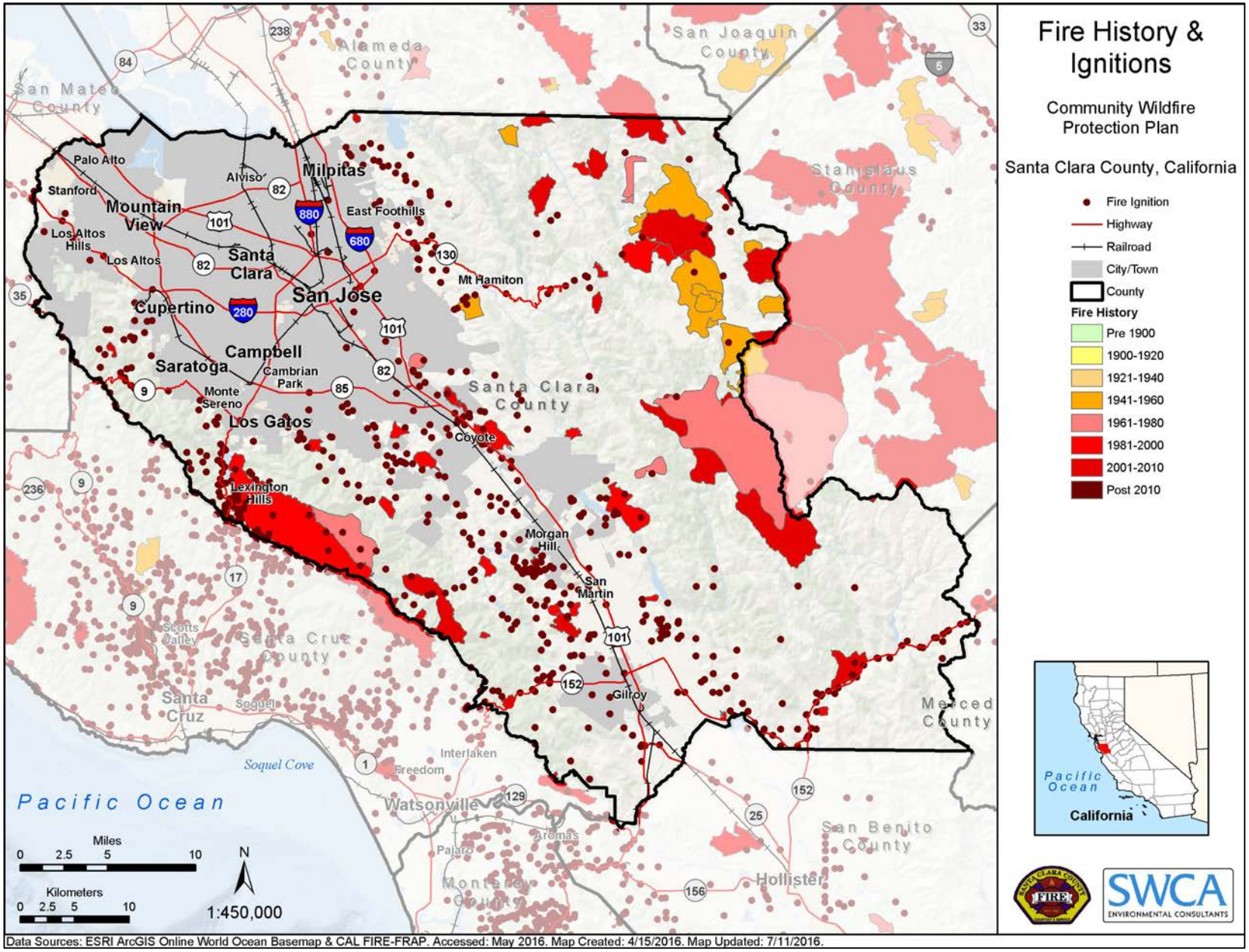


Figure 3.5. Santa Clara County fire history from 1900 to 2015.

3.5 IGNITION HISTORY

An indication of the amount of fire activity in the county relative to the other types of incidents is indicated by the response calls of the Santa Clara County Fire Department. Calls for service in 2015 with regard to fire numbered 540, or 3% of the total. By comparison, Emergency Medical Service calls numbered 10,889, or 62% of the total. Figure 3.5 shows the recorded ignition history for the project area from 1900 to 2015. This dataset contains wildland fires that occurred on SRAs. Only fires whose latitude and longitude could be determined are included. This means that the number of ignition points in this dataset will typically be lower than the absolute number of incidents that occurred.

3.5.1 LOCATIONS

Because lightning is a rare occurrence in the county, wildfires tend to be associated with human locations. Roadsides, power lines, trails, railroads, and other developments can show a concentrated pattern of ignition locations. Because of this pattern, public education fire prevention work may be focused on both types of ignitions, such as campfires or smoking, as well as at specific locations known to have a history of such ignitions. Although the 1985 fire was arson caused, arson is a relatively small source of ignitions, but given the possibility of individuals setting fires under high fire danger conditions, consequences can be catastrophic.

3.5.2 CAUSE TYPES

The Santa Clara Unit of CAL FIRE, which covers an area greater than Santa Clara County, had 174 fires within its Direct Protection Area in 2014. Several categories (playing with fire, 2% of total ignitions; debris burning, 6%; and smoking, 3%) likely reflect the benefits of public education about wildfire prevention. The largest category (undetermined, 44%) illustrates the uncertainty often associated with determining fire cause.

In 2014, no lightning-caused fires occurred in the county. This is typical of coastal areas, with most wildfires associated with human activity. Two of the larger causes of fire in 2014 were vehicles (15%) and electrical power (11%). The latter is especially problematic during periods of high wind activity, with the co-occurrence of such winds causing downed power lines with arcing and rapid rates of spread from the ignition site. Note: 2008 saw an unprecedented amount of dry lightning in Northern California, including the coastal mountain areas of Santa Cruz. On June 21, 2008 lightning ignited the Hummingbird fire that burned 794 acres southwest of Morgan Hill, west of Gilroy and San Martin and threatened 1200 homes.

3.5.3 EXTREME FIRE BEHAVIOR PATTERNS

The largest wildfires in Santa Clara County, much like other coastal counties such as San Diego, Santa Barbara, and Los Angeles, tend to be associated with east wind conditions, also referred to as Santa Ana winds in southern California and Diablo winds in the Bay Area. Such winds tend to be stronger in southern California, in part because topography and orientation of canyons also channels these winds and increases their strength, but also as they are associated with high pressure systems over Sierras and concurrent lows off the coast.

The presence of very low relative humidity, warm to hot temperatures, and strong winds, along with continuous wildland vegetation and moderate to steep topography, can quickly lead to disastrous wildfire behavior even if conditions persist for only a few hours. Spotting behavior is especially active because low relative humidity causes extremely dry, receptive fuels to occur, with spot fires often igniting more than a mile in front of the fire itself.

Suppression operations are further complicated in high winds because air tankers cannot fly safely, winds disperse retardant before it hits the ground, and/or smoke obscures the location of the fire. Therefore, while relatively rare, extreme fire behavior patterns can cause the vast majority of damage and cost associated with the fire season. Moreover, failure to plan and prepare for this type of fire behavior leaves virtually no time to correct defensible space or communication deficiencies.

3.6 FIRE REGIMES

Fire regimes are associated with both the fire cycle and fire behavior of various vegetation types, and the nature of these patterns prior to the onset of wildfire suppression as a reference baseline.

For example, yellow pine forests in the Sierra Nevada are considered to have had a relatively frequent fire cycle historically, perhaps less than 10 to 20 years between fires, and fire behavior that tended to thin understory trees but generally leaving mature trees unharmed. The onset of fire suppression has altered the fire regime, as wildland fuels accumulated in the absence of fire; as fires became less frequent, they also became more intense because of accumulated fuels, damaging and killing even the mature trees.

Associated with the fire regime concept is the Fire Regime Condition Class (FRCC), which indicates the degree of departure from historic characteristics. On a scale of 1 to 3, FRCC ratings are assigned to areas, with a rating of 1 indicating that the area's fire regime is considered to be within its historic range, a rating of 2 indicating moderate alteration, and a rating of 3 indicating substantial alteration because of several missed fire cycles due to suppression. Areas with an FRCC rating of 3 may lack the resilience to recover from wildfire because of unnatural fire severity.

The fire regime in Santa Clara County is considered to have had a moderate fire cycle, with woodlands and forests burning more on the order of 30 to 100 years between fires, affected by site factors such as aspect and position on slope (i.e., upper portion of ridge vs. riparian). The county is generally rated as FRCC 2, indicating some effect on the fire cycle due to fire suppression, but not enough to trigger a risk of loss of ecosystem integrity. Woodlands and shrublands, for example, can be expected to recover following fire, although invasive species may pose a threat in specific areas.

Invasive species in particular can cause a significant shift in the pattern and behavior of wildfires (Klinger et al. 2006). Replacement of woody vegetation by non-native annual grasses, for example, provides a continuous fuel layer of easily combustible fine fuels. This conversion of fuel type, along with other factors such as drought, climate change, and an increasing population which can lead to more human-caused wildfires, can set up a cycle of increasingly frequent wildfires, with a higher risk to public safety, ecosystem integrity, and structures.

3.7 FIRE AND RESPONSE CAPABILITIES

California contains many federal, state, and local fire protection organizations that are well integrated through a variety of mutual aid and fire protection agreements, and are coordinated by organizations such as the California Wildfire Coordinating Group, the Northern and Southern California Geographic Area Coordination Centers, and FIRESCOPE. Agencies such as California Emergency Management, U.S. Forest Service Region 5, and CAL FIRE form the basis for a very substantial wildfire response capacity that can be deployed in wildfire situations throughout the state. California contains what many regard as the strongest wildfire suppression capability in the nation.

3.7.1 RESPONSIBLE WILDFIRE AGENCIES (FEDERAL, STATE, COUNTY, CITIES, DISTRICTS)

- CAL FIRE's Santa Clara Unit covers several counties, including Contra Costa, Alameda, Santa Clara, and the western portions of Stanislaus and San Joaquin Counties. The Santa Clara Unit has auto-aid or cooperative agreements with several local fire protection entities, including the South Santa Clara County Fire District, Santa Clara Fire Department, Gilroy Fire Department, Palo Alto Fire Department, Milpitas Fire Department, San Jose Fire Department, and Morgan Hill Fire Department. The unit is responsible for 1.3 million acres of direct protection area, with a population of 5.5 million people.
- The unit has 12 fire stations (15 engines), one helitack base (one helicopter), and three bulldozers with transport. Four of the unit's battalions are located in Santa Clara County: Battalion One (Morgan Hill), Battalion Two (San Jose), Battalion Three (West Santa Clara County), and Battalion Seven (South Santa Clara County Fire District and Morgan Hill Fire Department).
- Additional CAL FIRE resources located in adjoining counties provide direct wildfire protection in Santa Clara County. The CAL FIRE San Mateo-Santa Cruz Unit to the west has fire stations on the county line near Highways 17, 35 and 9 and is the primary source of fire agency hand crew resources used in Santa Clara County. The CAL FIRE San Benito-Monterey Unit also has fire stations close to the county in Hollister and Aromas, as well as the Hollister Air Attack Base that supports Santa Clara County with fixed wing air tankers and air tactical aircraft. Additional CAL FIRE ground and air resources are available to assist in the county SRA wildland areas.
- There are no federally designated communities at risk within the unit because of the absence of federally managed land with habitable structures. There are, however, 1,327 communities on the California Communities at Risk list, which is managed by the California Fire Alliance. Within Santa Clara County, these include Palo Alto, Stanford, Los Altos Hills, Cupertino, Saratoga, Monte Sereno, Los Gatos, Lexington Hills, San Jose, Morgan Hill, San Martin, Gilroy, East Foothills, and Milpitas. The Santa Clara County Fire Department provides fire protection in the communities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno, Saratoga, and approximately 70 square miles of unincorporated County area. The total response service area covers about 130 square miles with a population of approximately 225,000. The department has 300 employees staffing community education, prevention, investigation, operations,

emergency management, maintenance, and administration. County Fire has three battalions consisting of 15 stations, with 20 front-line and 5 reserve engines. In addition, for wildfire response, the department has five type 3, three type 6 engines and one water tender. Daily emergency response staffing consists of 66 employees, augmented with 30 volunteer firefighters. During fire season, the daily staffing is increased by three to staff a type 3 engine in the north battalion. Additionally, depending on weather, burn indices and red flag warnings, daily operational staffing may be increased to 94 personnel as conditions warrant.

- The cities of Palo Alto, San Jose, Morgan Hill, and Gilroy (all with WUI designated areas) provide their own fire departments, which manage a wide variety of emergency incidents. The San Jose Fire Department, for example, encompasses 33 fire stations that respond to approximately 83,000 calls for service annually. The Palo Alto Fire Department staffs six fire engines, plus a wildland engine company from July to October. The Gilroy Fire Department, with three stations, responded to more than 5,200 calls for service in 2015 in residential, commercial, industrial, and agricultural areas. The Morgan Hill Fire Department, with two stations, is assisted by a local CAL FIRE station located in Morgan Hill.
- Several volunteer fire companies participate in wildfire activities in Santa Clara County. These include the Uvas Volunteer Fire Department (Morgan Hill), the Casa Loma Volunteer Fire Association (Croy area), the Loma Prieta Volunteer Fire and Rescue (Summit area of Lexington Hills) the Spring Valley Volunteer Fire Department (San Jose/Milpitas), and the Stevens Creek Volunteer Fire Department (Cupertino). Volunteer fire companies are private, not for profit-public benefit organizations that provide service to their neighborhoods. Local jurisdictional authority for fire protection resides with a county agency as follows: County of Santa Clara (Spring Valley), South Santa Clara County Fire Protection District (Casa Loma and Uvas), Santa Clara County/Central Fire Protection District (Stevens Creek), and Santa Cruz County (Loma Prieta). The County of Santa Clara provides some fiscal and insurance support for these volunteer fire companies.
- Santa Cruz County Fire Department, Alameda County Fire Department, San Mateo County Fire Department, and other local government fire agencies in adjoining counties are frequently first responders to wildfires in Santa Clara County due to proximity and concern for mutual threat.
- All fire agencies in Santa Clara County participate countywide automatic and/or mutual aid plans for response to incidents outside their own jurisdictions. The County also participates in the California Fire Service and Rescue Emergency Mutual Aid System, which provides a practical and flexible pattern for the orderly development and operation of mutual aid on a voluntary basis between cities, cities and counties, fire districts, special districts, county fire departments, and applicable state agencies.

3.7.2 MUTUAL AID

The wildland fire community is well known for its development of mutual aid agreements at the federal, state, and local levels. Such automatic aid agreements allow for closest forces to respond to an incident as quickly as possible regardless of jurisdiction. Such agreements may also describe how reimbursement will be conducted; state resources responding to wildfires on federal lands

may have their associated costs reimbursed by the responsible federal agency, and the reverse is true for federal resources suppressing a wildfire on state lands.

An example of mutual aid within Santa Clara County is that provided by the South Santa Clara County Fire District. The District is an all-risk emergency response agency. It has automatic aid agreements with Morgan Hill Fire Department, Gilroy Fire Department, Pajaro Valley Fire Protection District, Hollister Fire Department, and San Jose Fire Department. There are many similar agreements across the United States, providing a network of response capabilities for many types of incidents.

For information on fire-fighting resources, including air attack and hand crew resources, please see Appendix G.

3.7.3 EVACUATION RESOURCES

Previous CWPPs developed for communities within the county have noted the difficulty of access and egress of many areas. Terrain, dense vegetation, narrow roads, locked gates, and limited access due to overhanging branches and bridges too weak to support heavy firefighting equipment complicate both planning for emergency response and the actual execution of operations. Since the most dangerous wildfires tend to occur during dry, windy conditions, with rapid fire growth, these factors can cause a dangerous delay in both response by firefighting resources and evacuation by the public, as well as traffic jams on narrow roads.

Law Enforcement

Wildfire response may necessitate the involvement of law enforcement agencies to provide for the safety of life and property during evacuation. Firefighters prioritize protecting human life and will urge people to evacuate from areas threatened by wildfire to reduce the risk of loss of life.

Under California law, the responsibility for evacuation rests with law enforcement. Firefighters do not have the legal authority to order persons to leave their property or to close public roads. Close coordination between law enforcement and fire agencies in planning and implementing evacuations is critical. Most frequently the task is under jurisdiction of the sheriff, who also coordinates all law enforcement mutual aid.

The evacuation process is described in *Santa Clara County Local Fire Service and Rescue Mutual Aid Plan Appendix 13 – Protective Action Guidelines* (revised 2008). A fire checklist is provided that outlines steps to be taken by law enforcement personnel during a wildland fire incident, including situation assessment, establishment of liaison with fire command, and emergency duties to which personnel may be deployed. Duties may include security to prevent looting, perimeter control, evacuation notifications, and maintenance of access route for emergency traffic.

Santa Clara County has also developed the *Operational Area Emergency Operations Plan* (2008), which describes the purpose and history of the statewide mutual aid program. The statewide mutual aid system includes several specific mutual aid systems for fire, rescue, and law enforcement services. As emergency incidents escalate in size and complexity, mutual aid agreements facilitate the acquisition of increased levels of staff in support of various components of the incident, including law enforcement responsibilities.

Due to the wildfire and roadside ignition history in Lexington Hills and the high commute traffic volumes on Highway 17 between Los Gatos and Santa Cruz, compounded by very narrow alternative roads, additional coordination between Santa Cruz County law enforcement agencies and Santa Clara is needed. The county line creates challenges because not only are two County Sheriff's and County Roads Departments involved, but the California Highway Patrol and Caltrans have district boundaries at the county line. Local municipal police departments from Los Gatos and Scotts Valley (Santa Cruz County) may also be engaged in evacuation efforts in the Highway 17 corridor.

Community Emergency Response Teams

Developed by the Federal Emergency Management Agency (FEMA), Community Emergency Response Teams (CERT) assist professional responders in a variety of emergency situations. Training modules are required to be a member of a CERT. FEMA IS-317, Introduction to CERT, provides an online opportunity to learn about the program. To become a CERT volunteer, specific classroom training must be completed. Training may be offered through entities such as emergency management, fire management, or law enforcement agencies. Modules include such topics as animal response, emergency communications, traffic and crowd management, and flood response. Information on the CERT program is available at FEMA.Gov/community-emergency-response-teams.

Road Systems

Roads in the WUI vary in characteristics, but are sometimes unpaved. Private driveways can be mistaken for roads, turnarounds and pullouts are limited, and dead-ends provide particularly dangerous situations for evacuations. Signage can be missing, indistinct, or at risk of combustion. Confusing signage, impeded access due to narrow roads or overhanging vegetation, and the possibility of long driveways being mistaken for evacuation routes were cited in community CWPPs.

People

The safe and efficient evacuation of people from wildfire requires several factors, including:

- Emergency notification methods: Emergency Alert System, email and telephone, television, and public address systems on emergency vehicles. Specifically, Santa Clara County has recently established AlertSCC to provide information and instructions on incidents such as wildfire, as well as post-disaster information on shelters. The system is offered to residents by Santa Clara County and 15 constituent cities. The development of social networking sites such as Facebook, Nextdoor, and Twitter, as well as locally maintained blogs and email distribution lists, is another set of resources that have become highly valued during wildfires in nearby communities. These channels were used with very positive response in the recent Soberanes Fire in Big Sur and Carmel Valley.
- Preplanning by the public about how to evacuate and where to go: Locked gates, poor or missing signage, and conflicts with emergency vehicles driving into the community versus the public trying to leave complicate evacuation. Uncertainty about where to find temporary refuge can cause families to become separated and delay reunions. Some individuals without transportation or with limited mobility may be accidentally left behind.

- Public awareness: These two items will fail to occur throughout communities at risk if the residents are unaware of notification methods, 1) the need for preplanning and 2) what elements preplanning should include. Therefore, public education and outreach on these topics should be part of all efforts conducted by agencies such as fire departments in a wide variety of venues. Given the wide variety of communities, languages, and cultures found within the county, and its broad range of urban to rural settings, a "one size fits all" public awareness program will miss portions of the public.

Horses, Livestock, and Animals

Many rural homes also have horses and other large animals and livestock, and pets are common in homes throughout the county. Evacuation planning often neglects to describe how animals will be evacuated and where they will be taken. The loading of horses, for example, during a fire and smoke situation, and transport of stock vehicles down narrow roads under stressful situations, can be very difficult. Public education could emphasize the need to practice loading horses quickly, for example.

There is also a need to pre-identify where animals can be taken, such as county fairgrounds, for large animal shelter. Similarly, locations where small animals such as dogs and cats picked up in the fire area should also be pre-identified, as well as the lead agencies, such as humane societies, coordinating this work.

The County is fortunate to have the Santa Clara County Large Animal Evacuation Team, which is a volunteer resource of the Office of Emergency Services and available upon request by first responders responsible for emergency incidents. Volunteers are kept up to date with training sessions, including the ICS 100, IS 700, and IS 800 courses. Information on the Santa Clara County Large Animal Evacuation Team is available on its website (http://www.scclaet.org), including the necessary criteria to be a member. A useful document on the website is entitled What Do I Do With My Horse in Fire, Flood, and/or Earthquake?

Other resources for animal evacuation can be found at:

- https://www.bayequest.info/static/evacuation.htm
- http://www.bayequest.info/evacuation.htm
- http://www.equineevac.org/volunteer.shtml
- https://www.sccgov.org/sites/oes/BeforeDisaster/Pages/Caring-for-Livestock---Other-Large-Animals.aspx

3.7.4 WATER AVAILABILITY AND SUPPLY

Water supply is variable around the county and may be provided by hydrants, wells, cisterns, and reservoirs. However, many fire planning documents developed by various entities in the county on the wildfire issue commonly cite water availability as a concern. The 2010 Multi-Jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area, for example, calls for the development of "a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard" (Association of Bay Area Governments, page 1-24). All new structures

in the County are required to have a reliable water supply, whether by a water purveyor or private tanks (Figure 3.6).

Compatibility of cistern connections to fire apparatuses and vegetation clearance to allow fire apparatus to access cisterns are other common water supply issues. However, as was noted previously, homes are more likely to survive a wildfire due to existing fire-resistant building materials and designs, and vegetation clearance around the dwelling, than by a reliance on suppression resources. However, it must be noted that a lack of access to water supply, and roads which are too narrow to allow transport of water by fire apparatus to structures threatened by wildfire, will complicate the suppression of wildfire and the protection of structures.



Figure 3.6. Water storage tanks at the Mountain Winery in Saratoga Hills.

3.8 PUBLIC EDUCATION AND OUTREACH PROGRAMS

Santa Clara County has two very active Fire Safe Councils—the Santa Clara County Fire Safe Council and South Skyline Fire Safe Council that serve at the county and local levels. The websites of the councils contain descriptions of hazard reduction projects accomplished to date, as well as ongoing and future work. The websites do vary in the level of detail provided to the user, as well as the information posted. Some are quite specific on how homeowners can participate in chipping programs, for example. Information on programs such as Ready, Set, Go! To inform homeowners about evacuation preparation also varies among the sites (see www.sccfiresafe.org for an overview).

The fire protection organizations and districts within the county also provide valuable information on fire safety. The CAL FIRE Santa Clara Unit provides public education via school presentations and community meetings, informational flyers, radio and television spots, and one on one contacts

with homeowners. Defensible space (LE-100) inspections are conducted by the unit within SRAs to ensure that homeowners are aware of, and comply with, requirements under Section 4291 of the PRC to have a 100-foot clearance of flammable vegetation around all structures.

The Santa Clara County Fire Department provides services to the cities of Campbell, Cupertino, Los Altos, Los Altos Hills County Fire District, Los Gatos, Monte Sereno, and Saratoga. Its Community Education Services provides public assistance with both specific fire safety topics, as well as helping individuals, communities, and organizations connect to other agencies that can help them. Other local fire departments within the county, such as the Gilroy Fire Department, also have public education programs.

Public education and outreach programs are a common factor in virtually every agency and organization involved with the wildfire issue. One benefit that might be derived from the Santa Clara County CWPP is a comparison of the various messages and methods used to conduct these programs to more commonly use the ones that have been most effective with both general and specific audiences, and to ensure that the quality and quantity of information provided by the various entities meet consistent standards.

4 WUI HAZARD AND RISK ASSESSMENT

There are several components to evaluating hazard and risk from WUI fires. "Hazards" are those existing bio-physical factors that, when combined, present a threat. "Risk" is a measurement of the potential consequences resulting from the hazard occurring. "Mitigations" are actions taken to reduce the hazard or risk in order to reduce the unwanted consequences of the WUI fire. The purpose of the study is to determine what factors are present that create a hazard and how to reduce risk. In this study, the hazard is the flammable vegetation and flammable buildings co-existing in an environmental susceptible to extreme fire behavior. To evaluate the "Risk Score" for a particular community or parcel, we measure hazard minus mitigations (Hazard – Mitigations = Risk), which will provide an estimate of the expected impact of a WUI fire occurring.

4.1 HAZARDS

4.1.1 FLAMMABLE VEGETATION

Native flammable vegetation: California's Mediterranean climate provides growing conditions for plants that are able to sustain long dry summers. Native plant species either are annuals that grow during wet winter and spring then die in summer or perennials with high oil content in order to withstand these annual summer droughts year after year. Many of these plants are also "fire adapted," meaning they expect natural fire to be part of their lifecycle and are resilient. The dead annuals and high oil content perennial plants are typically very flammable during late spring, summer, and fall. The burning intensity of these plants is directly related to ambient weather conditions and local topography.

Flammable ornamental vegetation: Several non-native plant species used in ornamental plantings share drought-tolerant plant characteristics of native plants and can be very flammable. These ornamentals may be as hazardous or even more hazardous than native species in areas that have weather conditions conducive to wildland fire. Similar to flammable native plants, burning conditions of flammable ornamental plants is directly related to ambient weather conditions.

4.1.2 FLAMMABLE BUILT ENVIRONMENT

Buildings in the WUI area are also a type of burnable "fuel." WUI fires, by definition, burn more than vegetation. They endanger people and livestock, and burn homes, businesses, critical infrastructure, and other built improvements. These burning buildings are not just "victims" of the WUI fire, they also contribute dramatically to fire spread. When buildings ignite they burn for an extended period of time and produce massive amount of radiant heat and windblown embers that blow downwind and ignite more vegetation and other buildings.

4.2 RISK

Risk is a measurement of the consequences of a WUI fire occurring and the resultant damage. Risk can include loss of buildings (homes and businesses) and critical infrastructure, impact to socioeconomic factors, or loss of environmentally sensitive species that are not fire adapted. Loss of some features (such as historic sites or critical infrastructure) is deemed unacceptable and merits extraordinary mitigations to reduce risk.

4.3 MITIGATIONS

Many methods are available to mitigate the available burnable fuel hazard, whether buildings or native or ornamental vegetation. Mitigations typically refer to reducing the amount of hazardous vegetation available to burn or the expected intensity of the fire when it does burn. Providing defensible space around structures is one example of reducing the hazard through the mitigation effort of removing and/or thinning of flammable vegetation. Structural mitigations include replacing wooden shake shingle roofs or preventing embers from entering attics through improved vent systems.

4.4 COMPONENTS OF RISK AND HAZARD

4.4.1 COMMUNITY VULNERABILITY

Community vulnerability is a measurement of bio-physical and socioeconomic conditions.

Bio-physical relates to flammable vegetation and buildings, weather, topography, road, and water systems. These factors help determine the level and nature of hazard that exists. Various mitigation methods can be applied to reduce the hazard and make the community safer.

- **Flammable vegetation:** Reducing the loading of hazardous fuels should reduce fire intensity. This can be achieved through communitywide defensible space compliance, proper landscape plantings and maintenance of open space or common owned lands in planned unit developments, and community fuel breaks.
- **Road systems:** Less expensive road system improvements by simple actions such as posting clear road signs, evacuation routes, and addresses can reduce injury. Tourist areas should have very clear signage for road names, evacuation routes, and identification of safe zones. Road systems surfaces are expensive and complicated to improve, widen, pave, and straighten roads. Adding secondary access to dead end/single access roads and road surface improvements may require long-term planning and financing. Coordination with land use planning agencies can help facilitate these improvements when new subdivisions or development occurs.
- **Water systems:** Water availability can have a significant effect on firefighters being able to suppress fires and protect buildings. Community water systems with proper volume in storage is ideal, followed by fire department accessible water tank storage on each parcel, and lastly with scattered water tanks throughout the community. If firefighters must shuttle water back and forth, success rates drop dramatically.
- **Property hygiene:** Property hygiene refers to the presence of clutter, debris piles, firewood stacks, lumber, or other flammables within the 100-foot defensible space zone. If the community characteristics are for generally poor hygiene, the risk of fire spreading is greater. Good hygiene reduces fire spread.

Socioeconomic conditions are circumstances related to the population of WUI areas including residents, visitors, businesses, and livestock.

- **Sense of well-being lost:** Following WUI fire where the community is seriously affected, tourist areas may lose customers for years if visitors believe area is unsafe or scenic beauty is damaged.
- **Community involvement:** When members of the community engage in Fire Safe Councils, Community Emergency Response Team (CERT), or other neighborhood programs, it enhances public education and understanding of the hazard and mitigations to reduce risk.
- **Commercial and retail properties:** Impacts well beyond the loss of the building result when businesses burn. Employees lose jobs, tax revenue is lost, and customers are disadvantaged (sometimes seriously if this was the only service in the area, like the sole grocery store for several miles). It is common for businesses to never return due to economic losses suffered by owners.
- **Critical infrastructure:** Losses of critical infrastructure may have impacts well outside the fire area. For example, a small fire that burns microwave or cellular communications towers may impact customers several miles away. Some communications sites are critical for coordinating public safety other vital services. Electrical grid transmission lines frequently cross wildland areas and fires adjacent to them can cause catastrophic power failures.

4.4.2 EVACUATION COMPLEXITIES

Safe and proper evacuation of people (residents, workers, and visitors), pets, and livestock is a very critical component of WUI fires. Confusing road networks without good signage, narrow roads that do not allow two-way traffic, and dead end roads have contributed to injuries and fatalities of public and responders during WUI fires. Evacuations are the jurisdictional responsibility of law enforcement with assistance from fire and other agencies.

Most WUI fires require immediate "No Notice" evacuations, meaning little or no warning time exists between fire origin and the need for evacuation. There is likely a shortage of public safety responders to assist in the evacuation during early stages of a fire. Notification will be through Reverse 9-1-1 type phone calls or other mass notification systems, and people will need to plan and conduct their own self-evacuation. Carless populations, schools, rest homes, or other non-ambulatory facilities may require significant assistance in evacuation; planning to accommodate these facilities is crucial.

Coordination with Red Cross for shelter for evacuees is important. Many Red Cross shelters do not allow pets, so additional consideration for pet accommodation is necessary.

Livestock presents special evacuation considerations to provide access to livestock trailers entering the fire area while others are trying to evacuate. In addition, there will be a need for a temporary housing location for evacuated livestock and pets.

4.4.3 STRUCTURAL VULNERABILITY

Structures are vulnerable to damage from WUI fires from several sources. Defensible space compliance is very effective in reducing ignition from direct flame contact and radiant heat ignition from burning vegetation.

Most structure ignitions are from flying embers landing on flammable components of the building and setting the building on fire. The single most vulnerable area for flying ember caused ignition is wooden roofs and wooden siding. Flammable vegetation burning adjacent to structures and igniting the building through direct flame contact is the second most common source of ignition. The third source is from radiant heat from burning (vegetation or other burning buildings) close to the structure.

Burning structures can be the most significant flying ember and radiant heat generator. Embers can ignite neighboring structures, or if closer than 30 feet the radiant heat is likely to ignite the adjacent building.

Ignition-resistant building materials and assemblies similar to recommendations in current WUI building codes are most effective in reducing structural ignitions from flying embers and direct flame contact. In California, buildings built in designated SRA and WUI areas after 2008 are required to be built in accordance with California Building Code Chapter 7A, which is designed to prevent ember intrusion into the building envelope (especially attic) and ignition-resistant materials covering outside areas. Older buildings can be retrofitted to approach the same ignition resistance.

Ornamental landscape, particularly in foundation plantings, can expose buildings to ignition. Many ornamental plants are very flammable especially when in flower beds with flammable mulches, which serve as a receptive bed for flying embers. Plants ignite and expose siding and under eave area to direct flame contact.

4.4.4 CRITICAL INFRASTRUCTURE VULNERABILITY

Critical infrastructure is defined as electrical substations and transmission facilities; cellular, television, radio, and telecommunication sites; railroad structures; highway structures; navigation and coordination facilities; and other sites that are crucial to providing and coordinating essential services. Many of these sites are located on vulnerable ridges or mountaintops. Losses are not just the cost of replacing physical facility, but the cost associated with loss of the service, which can be significantly more than the facility costs. Figure 4.1 shows the critical infrastructure for the CWPP area. More detailed descriptions of critical infrastructure are provided in the individual annexes.

4.4.5 COMMUNITY VALUES AT RISK

Every community has features that are significant to that community but may not be important to others. Schools, day care facilities, and other sites that require special attention during evacuation are very susceptible to WUI fires, whether it is something like the only grocery store for miles or the local community cultural icon. Loss of the grocery store inconveniences everyone in the community, not just the business owner. The icon may not be a historical landmark but is very special to the social fabric of the community. Identifying these local important sites and providing special planning or mitigations to avoid losses is crucial to community identity.

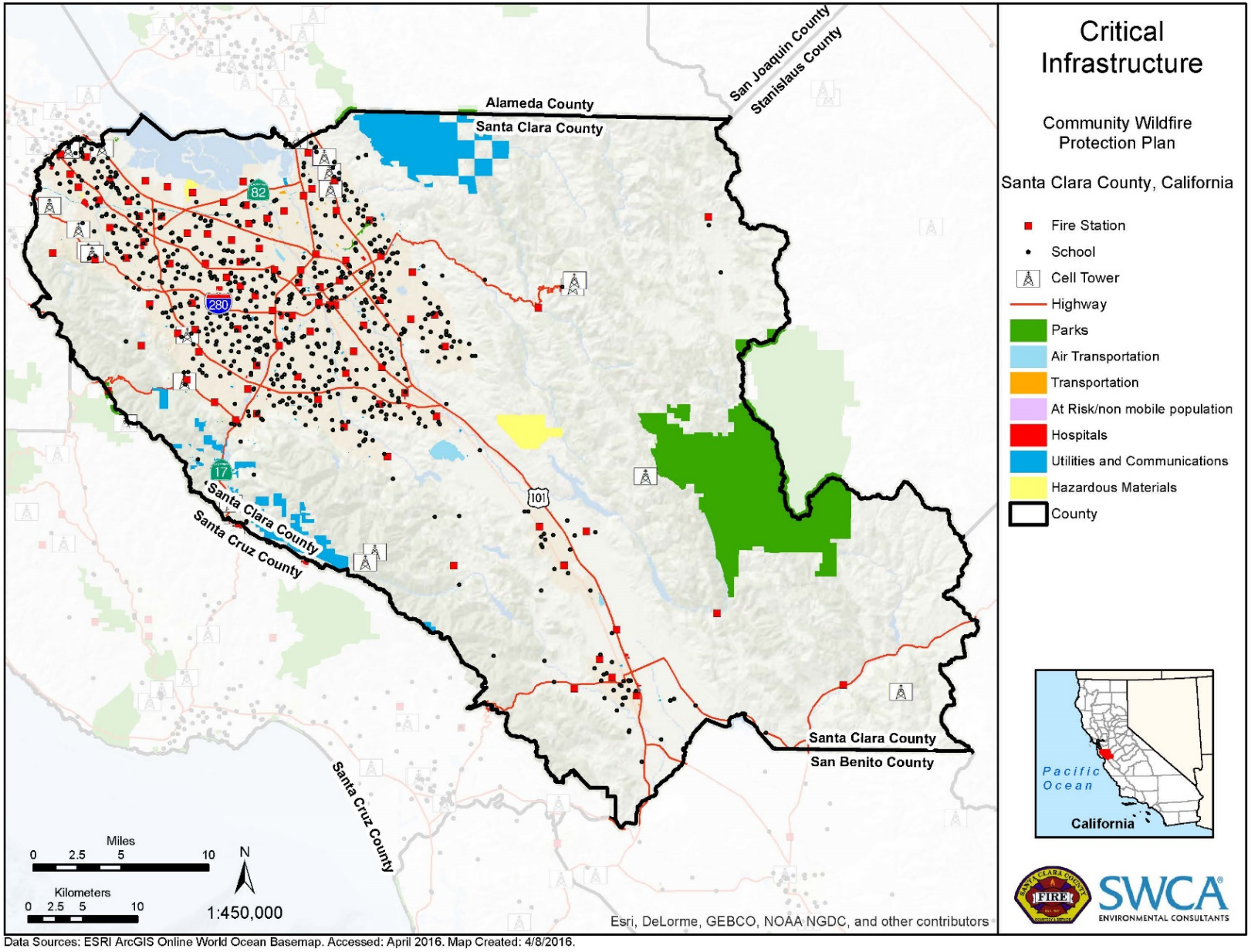


Figure 4.1. Critical infrastructure.

4.5 OVERVIEW AND PURPOSE OF HAZARD AND RISK ASSESSMENT

The purpose of hazard and risk assessment is to measure the potential impact of a WUI fire and what current and possible mitigations may have on the resultant risk. Understanding the probable impact of a WUI fire through examination of existing flammables (vegetation and buildings), weather patterns, and topography that influences fire behavior is essential to identifying the best mitigations to reduce risk. Various WUI fire mitigation methods are available; therefore, the hazard/risk model allows a means to evaluate the community and an individual parcel's vulnerability to the hazard and the effect of mitigation options to reduce the vulnerability.

The model measures several factors that lead to hazard rating and evaluates mitigation factors at the community and parcel level. Evaluating the community, as well as the individual parcel, is essential in determining the total WUI risk. A low overall community hazard rating can be compromised by an outlier individual parcel that has a high hazard/risk score (i.e. the only home with a shake shingle roof in a WUI community). Likewise, a parcel with good mitigations for a low hazard score may still be a high risk if the overall community has a high hazard score (i.e. poor road network or overall poor defensible space compliance). Property owners and agencies can use the assessment model to maximize the effectiveness in reducing overall community and parcel risk by comparing different mitigation techniques.

4.5.1 IDENTIFICATION OF COMMUNITIES AT RISK

Communities at risk were developed based on the California Communities at Risk list, which identifies the following 14 communities.

- Cupertino
- East Foothill
- Gilroy
- Lexington Hills
- Los Alto Hills
- Los Gatos
- Milpitas
- Morgan Hill
- Monte Sereno
- Palo Alto
- San Jose
- San Martin
- Saratoga
- Stanford

The CWPP Core Team developed WUI planning areas based on this list (Figure 4.2).

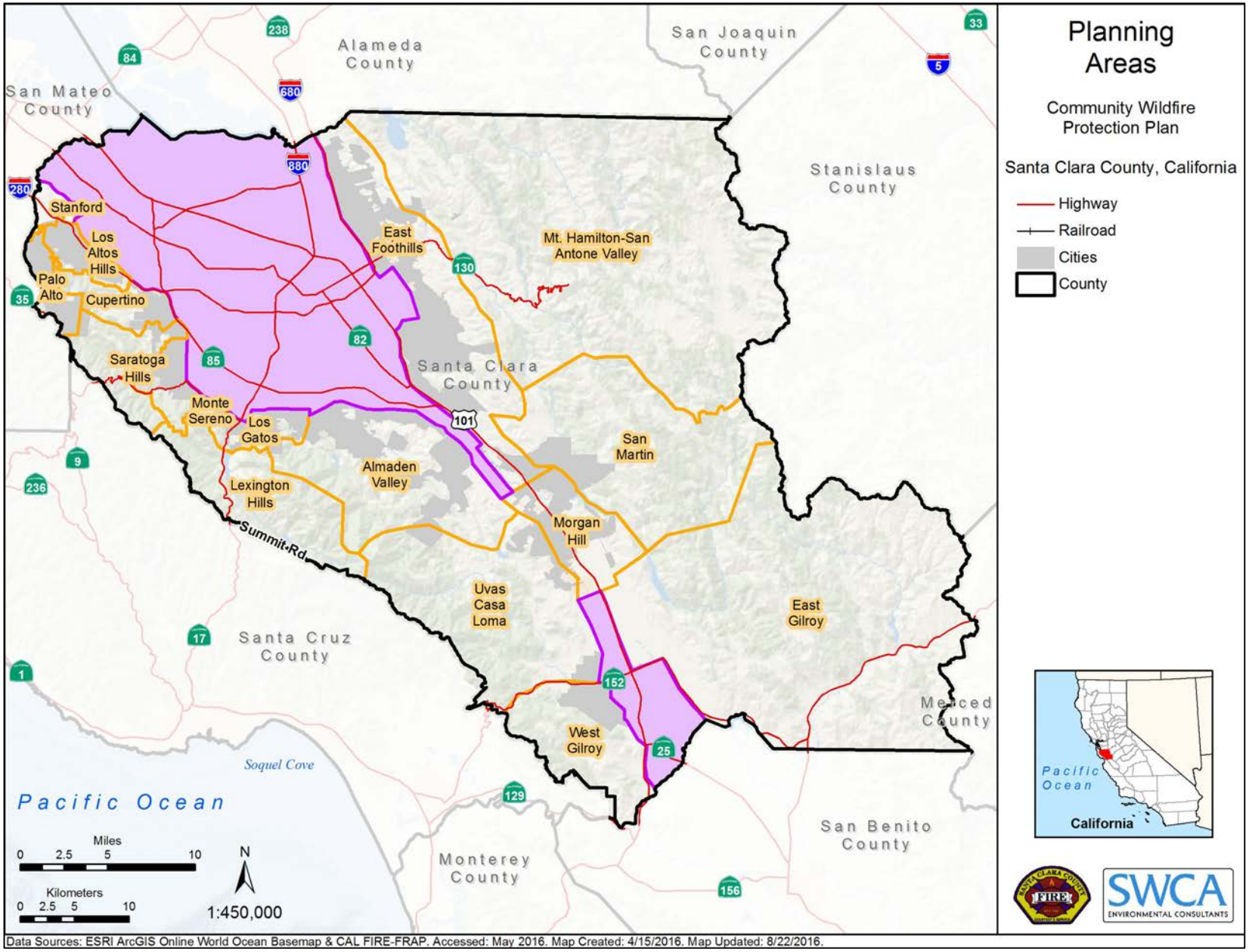


Figure 4.2. WUI planning areas.

4.6 RISK ASSESSMENT OVERVIEW

The risk assessment component of this CWPP was completed in three phases:

1. A countywide scale composite Fire Risk Analysis using fire behavior modeling.
2. A planning area scale on-the-ground assessment of WUI communities using the National Fire Protection Association (NFPA) 1144 Wildland Fire Hazard and Risk Severity Form.
3. A parcel scale risk assessment.

Each of these assessments provides increasing levels of detail from a county scale, to a planning area scale to a parcel level scale, which therefore provides Santa Clara County with a comprehensive assessment of wildfire risk and hazard.

4.6.1 COUNTYWIDE SCALE: COMPOSITE FIRE RISK ANALYSIS

The wildland fire environment consists of three factors that influence the spread of wildfire: fuels, topography, and weather. Understanding how these factors interact to produce a range of fire behavior is fundamental to determining treatment strategies and priorities in the WUI. In the wildland environment, vegetation is synonymous with fuels. When sufficient fuels for continued combustion are present, the level of risk for those residing in the WUI is heightened. Fire spreads in three ways: 1) surface fire spread—the flaming front remains on the ground surface (in grasses, shrubs, small trees, etc.) and resistance to control is comparatively low; 2) crown fire—the surface fire "ladders" up into the upper levels of the forest canopy and spreads through the tops (or crowns) independent of or along with the surface fire, and when sustained is often beyond the capabilities of suppression resources; and 3) spotting—embers are lifted and carried with the wind ahead of the main fire and ignite in receptive fuels; if embers are plentiful and/or long range (>0.5 mile), resistance to control can be very high. Spotting is often the greatest concern to communities in the path of a wildland fire. In areas where homes are situated close to timber fuels and/or denser shrubs and trees, potential spotting from woody fuels to adjacent fuels should be acknowledged.

Treating fuels in the WUI can lessen the risk of intense or extreme fire behavior. Studies and observations of fires burning in areas where fuel treatments have occurred have shown that the fire either remains on or drops to the surface, thus avoiding destructive crown fire. Also, treating fuels decreases spotting potential and increases the ability to detect and suppress any spot fires that do occur. Fuels mitigation efforts therefore should be focused specifically where these critical conditions could develop in or near communities at risk.

Because of the significant variation in weather, topography, and fuels in Santa Clara County, the risk assessment was run using regional weather inputs to take into account these variabilities.

4.6.2 FIRE BEHAVIOR MODELS

For this plan, an assessment of fire behavior has been carried out using well-established fire behavior models: FARSITE, FlamMap, BehavePlus, and FireFamily Plus, as well as ArcGIS Desktop Spatial Analyst tools. Data used in the Composite Risk/Hazard Assessment is largely obtained from LANDFIRE.

LANDFIRE

LANDFIRE is a national remote sensing project that provides land managers a data source for all inputs needed for FARSITE, FlamMap, and other fire behavior models. The database is managed by the U.S. Forest Service and the U.S. Department of the Interior and is widely used throughout the United States for land management planning. More information can be obtained from http://www.landfire.gov.

FARSITE

FARSITE is a computer model based on Rothermel's spread equations (Rothermel 1983); the model also incorporates crown fire models. FARSITE uses spatial data on fuels, canopy cover, crown bulk density, canopy base height, canopy height, aspect, slope, elevation, wind, and weather to model fire behavior across a landscape. In essence, FARSITE is a spatial and temporal fire behavior model. FARSITE is used to generate fuel moisture and landscape files as inputs for FlamMap. Information on fire behavior models can be obtained from http://www.fire.org.

FlamMap

Like FARSITE, FlamMap uses a spatial component for its inputs but only provides fire behavior predictions for a single set of weather inputs. In essence, FlamMap gives fire behavior predictions across a landscape for a snapshot of time; however, FlamMap does not predict fire spread across the landscape. FlamMap has been used for the Santa Clara County CWPP to predict fire behavior across the landscape under extreme (worst case) weather scenarios.

BehavePlus

Also using Rothermel's (1983) equations, BehavePlus is a multifaceted fire behavior model and has been used to determine fuel moisture in this process.

4.6.3 Fire Behavior Model Inputs

Fuels

The fuels in the planning area are classified using Scott and Burgan's (2005) Standard Fire Behavior Fuel Model classification system (Appendix H, Figure 4.3). This classification system is based on the Rothermel surface fire spread equations, and each vegetation and litter type is broken down into 40 fuel models. The general classification of fuels is by fire-carrying fuel type (Scott and Burgan 2005):

(NB) Nonburnable
(GR) Grass
(GS) Grass-Shrub
(SH) Shrub
(TU) Timber-Understory
(TL) Timber Litter
(SB) Slash-Blowdown

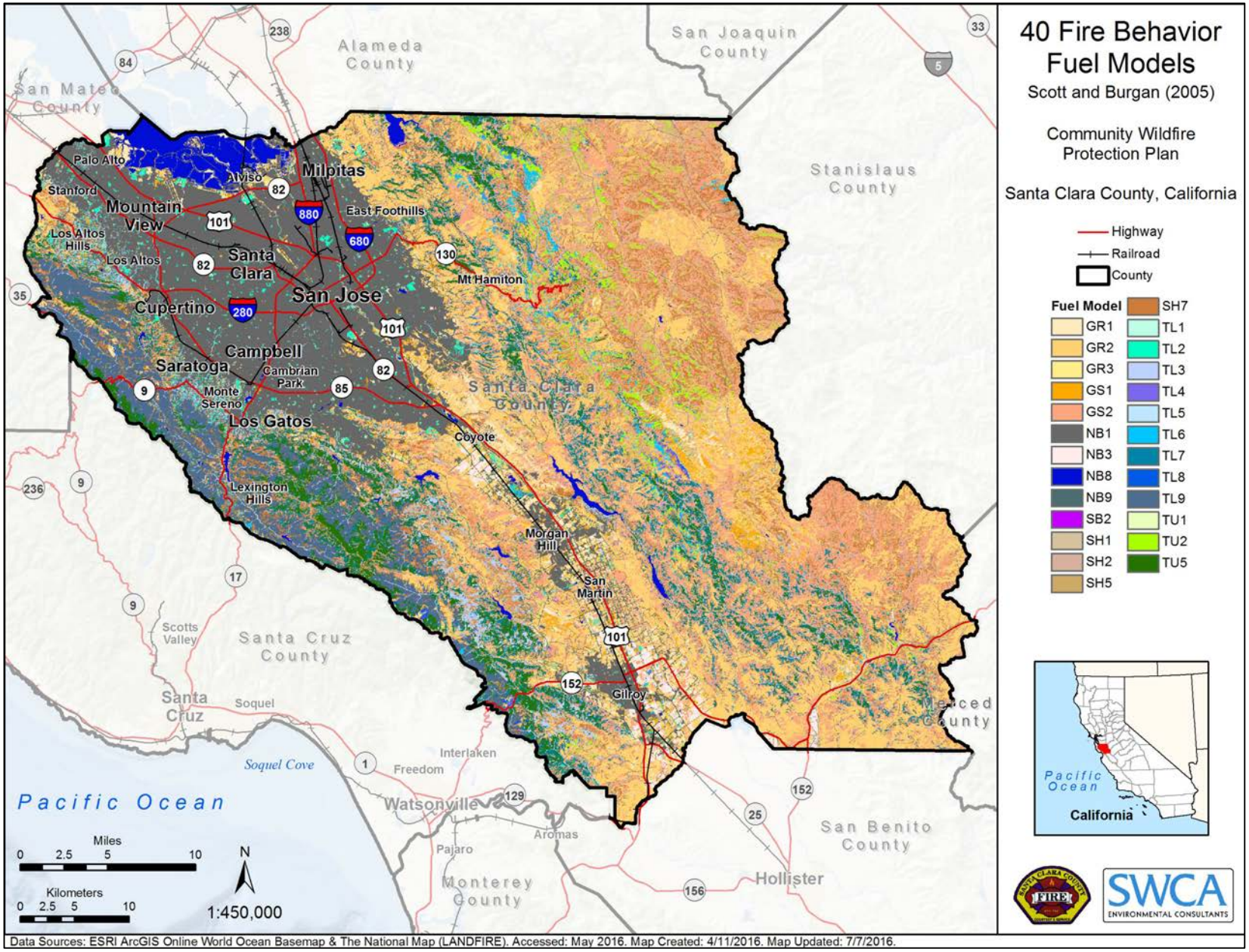


Figure 4.3. Fuel models in the CWPP planning area.

It is important to note that under current fire behavior methodologies, fire behavior simulations run throughout wildland vegetation with urban areas classified as "Non Burnable" under both the 13 Anderson (1982) fire models and the 40 Scott and Burgan (2005) fire models. Research is currently being done to model wildfire in the WUI, and these methodologies require high resolution imagery, 3D Light Detection and Ranging (LiDAR) data, and comprehensive ground surveying of structural materials and defensible space. In the absence of these data, it is possible to model flame height, crown fire activity, and rate of spread in the vegetation surrounding the WUI using FLAMMAP. Figures of predicted rate of spread and flame length are shown below (Figure 4.4 and Figure 4.5).

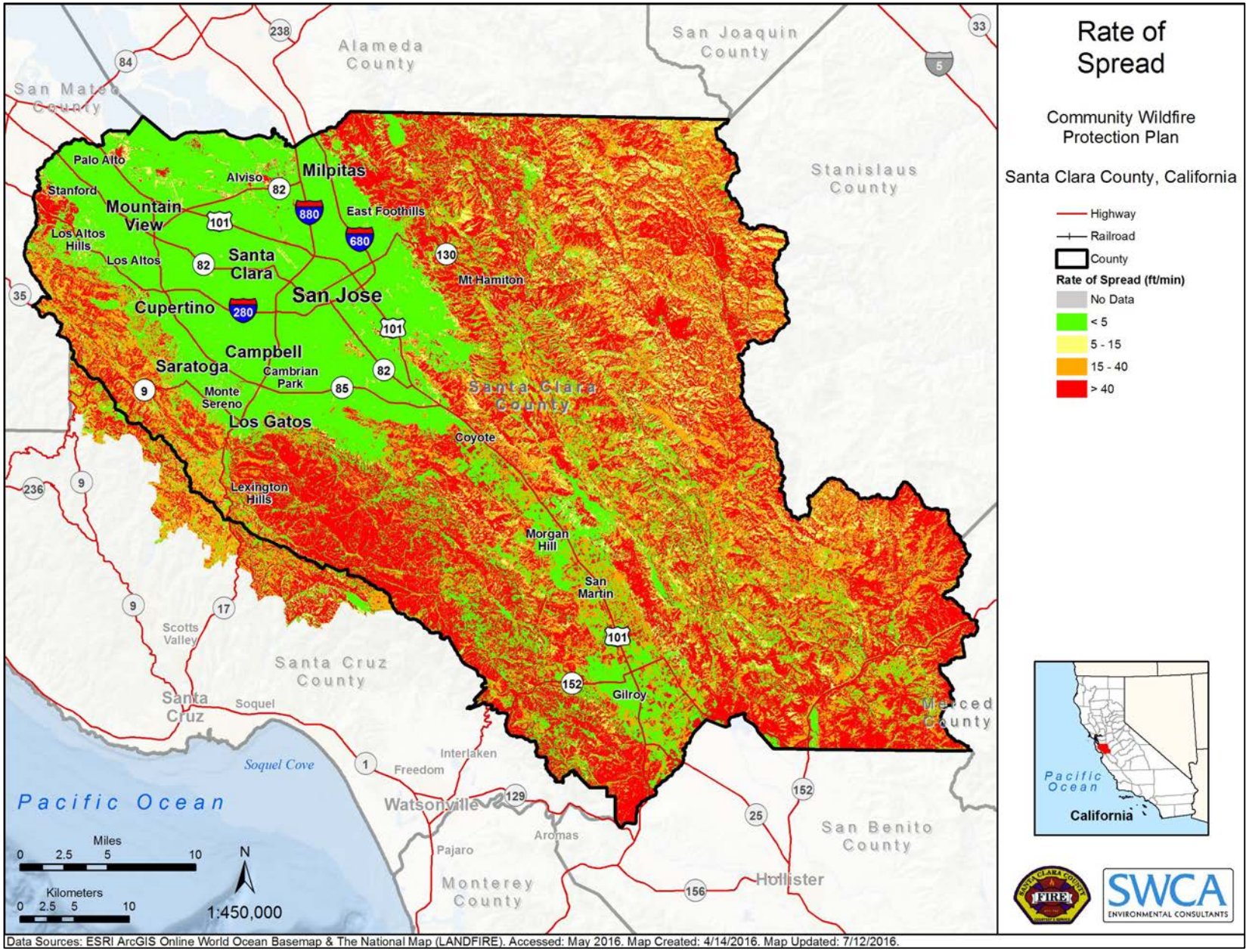


Figure 4.4. Predicted rate of spread using fire behavior modeling.

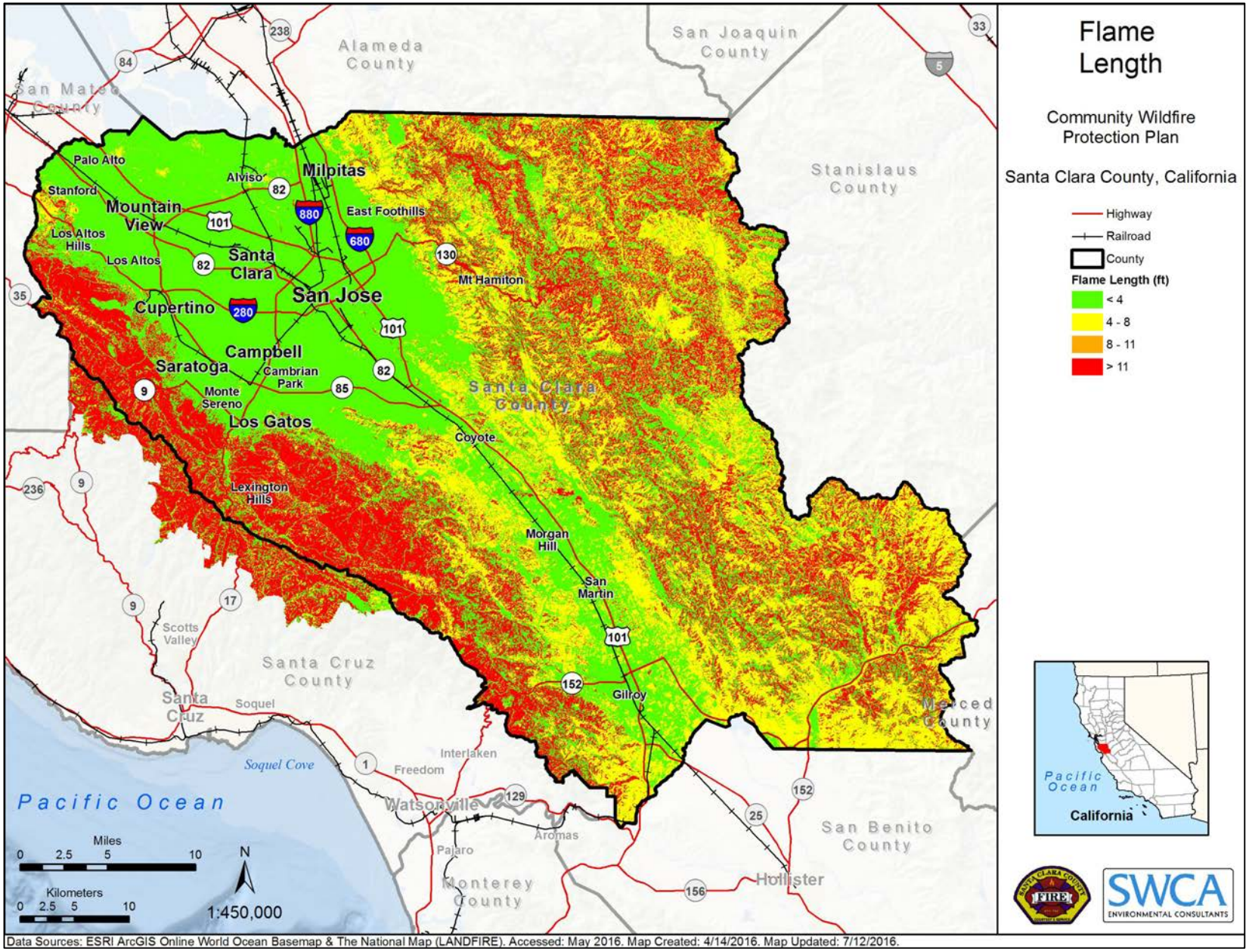


Figure 4.5. Predicted flame length using fire behavior modeling.

Topography

Topography is important in determining fire behavior. Steepness of slope, aspect (direction the slope faces), elevation, and landscape features can all affect fuels, local weather (by channeling winds and affecting local temperatures), and rate of spread of wildfire.

Weather

Of the three fire behavior components, weather is the most likely to fluctuate. Accurately predicting fire weather remains a challenge for forecasters, particularly during drought conditions. As summer winds and rising temperatures dry fuels, conditions can deteriorate rapidly, creating an environment that is susceptible to wildland fire. Fine fuels (grass and leaf litter) can cure rapidly, making them highly flammable in as little as 1 hour following light precipitation. Low live fuel moistures of shrubs and trees can significantly contribute to fire behavior in the form of crowning and torching.

One of the critical inputs for FlamMap is fuel moisture files. For this purpose weather data have been obtained from FAMWEB (National Wildfire Coordinating Group 2012), a fire weather database maintained by the National Wildfire Coordinating Group. Remote automated weather stations were selected that would best represent each of the four geographic areas.

Using an additional fire program (FireFamily Plus) with the remote automated weather station data, weather files that included prevailing wind direction and 20-foot wind speed were created. Fuel moisture files were then developed for downed (1-, 10-, and 100-hour) and live herbaceous and live woody fuels. These files represent weather inputs in FlamMap; 95 to 100 percentile weather is used to predict the most extreme scenarios for fire behavior.

4.6.4 FLAMMAP OUTPUTS

The following is a discussion of the fire behavior outputs from FlamMap.

Flame Length

Figure 4.5 illustrates the flame length classifications for the planning area. Flame lengths are determined by fuels, weather, and topography. Flame length is a particularly important component of the risk assessment because it relates to potential crown fire (particularly important in timber areas) and suppression tactics. Direct attack by hand lines is usually limited to flame lengths less than 4 feet. In excess of 4 feet, indirect suppression is the dominant tactic. Suppression using engines and heavy equipment will move from direct to indirect with flame lengths in excess of 8 feet.

Fireline Intensity

Fireline intensity describes the rate of energy released by the flaming front and is measured in British Thermal Units per foot, per second (BTU/ft/sec). This is a good measure of intensity, and suppression activities are planned according to it. The expected fireline intensity throughout the planning area is similar in pattern to predicted flame length, as fireline intensity is a function of flame length.

Rate of Spread

The Rate of Spread of a fire is the relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area. Usually it is expressed in chains or acres per hour for a specific period in the fire's history. Figure 4.4 illustrates the rate of spread classifications for the planning area.

Crown Fire Potential

Crown fire activity in the planning area is confined to shrub and timber fuels; surface fire activity occurs in the grassland fuels.

Fire Occurrence/Density of Ignitions

Fire occurrence density has been determined by performing a density analysis on fire start locations with ArcGIS Desktop Spatial Analyst (based on Fire History data shown in Figure 3.5 in Section 3.4). The density analysis has been performed over a 5-mile search radius. The fire occurrence density is used to provide information on areas where human- and lightning-ignited fires are prevalent and hence could be more prone to fire in the future.

4.6.5 GEOGRAPHIC INFORMATION SYSTEM OVERLAY PROCESS

The fire behavior parameters described above and the fire occurrence density maps are placed into a GIS Weighted Overlay Model, which "stacks" each geographically aligned dataset and evaluates an output value derived from each cell value of the overlaid dataset in combination with the weighted assessment. The resulting dataset contains only values 1 through 4 (1 = low, 2 = medium, 3 = high, 4 = extreme) to denote fire risk. This ranking shows the relative fire risk of each cell based on the input parameters.

Figure 4.6 is the final composite risk assessment for the planning area; it combines all the fire behavior parameters described above. The risk assessment classifies the County planning area into low, moderate, high, and extreme risk categories. The risk assessment has also been developed on a planning area scale. Maps are provided in the individual planning area Annexes.

Much of the western part of the County is rated as extreme risk/hazard in this assessment. The eastern foothills and valley areas have more varying topography and aspect, which combine to create a patchwork of vegetation types and fuel conditions that result in low through extreme risk/hazard.

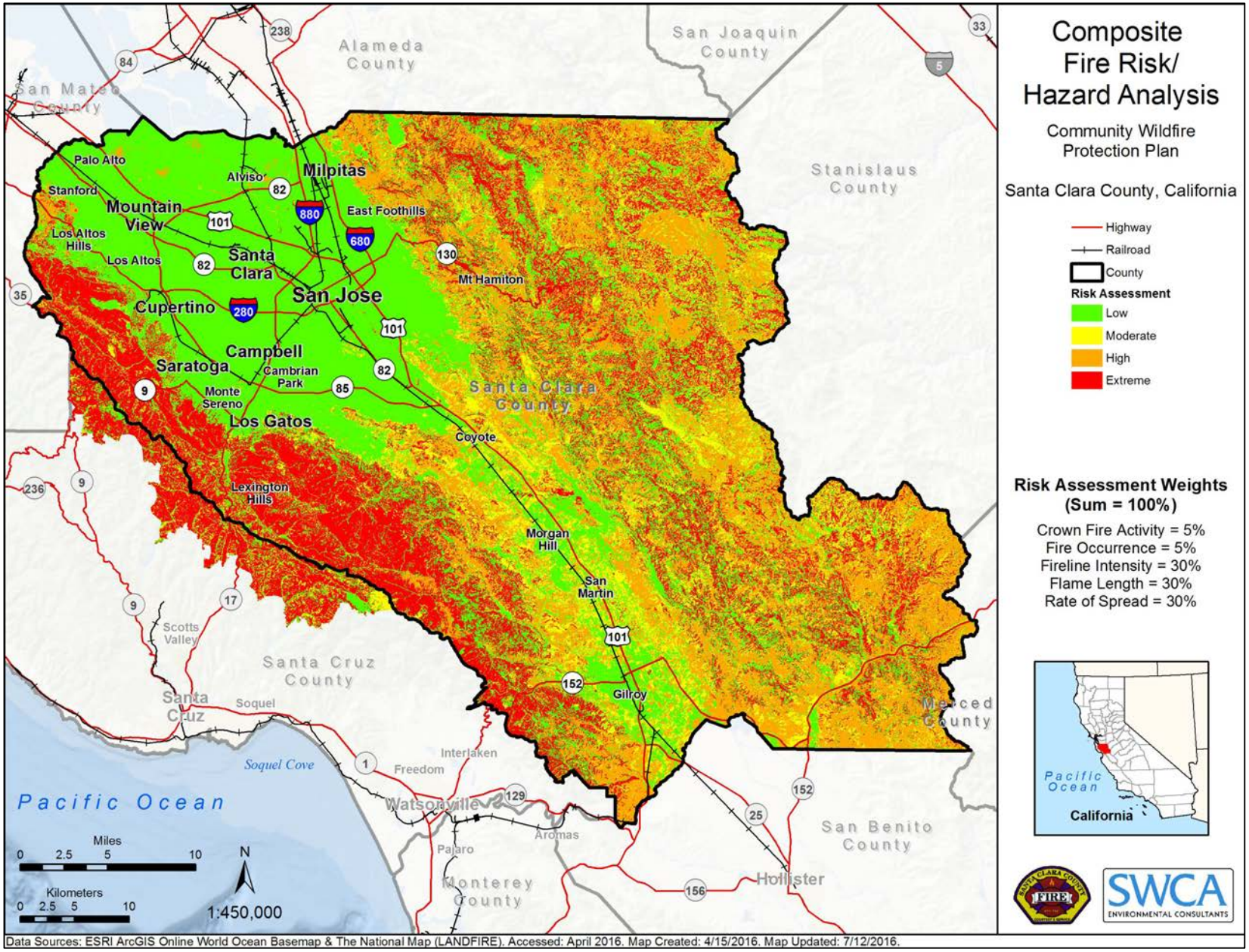


Figure 4.6. Countywide scale composite fire risk/hazard analysis.

4.6.6 PLANNING AREA SCALE: NFPA 1144 WUI ASSESSMENTS

As part of the planning process, the Core Team identified several areas within the planning area boundary that are considered at the greatest risk from wildfire (Figure 4.2). In order to properly assess the hazards in and around these communities, a series of field days was implemented to carry out community assessments.

The assessments were conducted in January and February 2016 with assistance from fire agency staff. The community assessment was carried out using the NFPA Wildland Fire Risk and Hazard Severity Form 1144 (Appendix I). This form is based on the NFPA Standard for Reducing Structure Ignition Hazards from Wildland Fire 2013 Edition. The NFPA standard focuses on individual structure hazards and requires a spatial approach to assessing and mitigating wildfire hazards around existing structures. It also includes ignition-resistant requirements for new construction and is used by planners and developers in areas that are threatened by wildfire and is commonly applied in the development of Firewise Communities (for more information, see www.firewise.org).

The assessments were carried out at the scale of the planning area, with some exceptions where a number of communities within a single planning area exhibited very different hazard features—for example, in the Lexington Hills. Each individual planning area is described in the associated annexes to this document. Each area was rated based on conditions within the community and immediately surrounding structures, including access, adjacent vegetation (fuels), defensible space, adjacent topography, roof and building characteristics, available fire protection, and placement of utilities. Each score was given a corresponding adjective rating of low, moderate, high, or extreme. An example of the assessment form used in this plan can be found in Appendix I. The purpose of the community WUI assessment and subsequent hazard ratings is to identify fire hazard and risks and prioritize areas requiring mitigation and more detailed planning. These assessments should not be seen as tactical pre-suppression or triage plans. The community assessment helps to drive the recommendations for mitigation of structural ignitability, community preparedness, and public education. The assessment also helps to prioritize areas for fuels treatment based on the hazard rating.

The hazard ratings from the community assessment are provided in Table 4.1. This table also includes a summary of the positive and negative attributes of a community as they relate to wildfire risk.

It should be noted that the community assessments are general in nature and are carried out at the community level, not at the parcel or neighborhood level. For more information at the community level, please refer to the appropriate annex. Individual parcel level assessments are not part of this CWPP, just the methodology to conduct those assessments. The parcel level WUI fire risk assessment model provided with this CWPP allows for a micro-level evaluation of site (parcel) hazard and risk. In addition, property owners can make determinations regarding the importance of certain hazard mitigations they can undertake to reduce risk to their property. It is an action item within the CWPP's recommendations that implementation of the parcel level assessment be done as a future project.

Table 4.1. Results of the Community Risk Assessment at the Planning Area

Community/WUI Planning Area	NFPA 1144 Risk Rating	Composite GIS Risk Rating	Positive	Negative
Palo Alto	103 (High)	Moderate	• Surfaced roads and adequate width and turnaround. • Low slope in most areas, some steep sections. • Adjacent wildland to west and north are grass and managed every year by the City of Palo Alto. • Mixed construction- stucco and wood. • Large lot size reducing adjacency issues. • Adequate water supply via hydrants. • Organized homeowner association (HOA) to deliver strong safety message and take action. • Good visible house markers. • Well signposted. • Irrigated lawns and landscaping. • New construction, 7A compliant. • Most homes have Class A roofs. • Community that is active in Santa Clara County Fire Safe Council	• Landscaping concerns due to density of thick junipers and pines in close proximity to homes. • Wildlands to the south are heavy untreated brush. • Power lines above ground. • Homes old enough that there is no requirement for interior sprinklers. • Older homes with single paned windows prone to breaking in wildfire. • Presence of some wood shake roofs put homes and neighborhoods at risk.
Stanford	68 (Moderate)	Moderate	• Adjacent fuels are light. • Surfaced roads and adequate width and turnaround. • Low slope in most areas, some steep sections. • Adjacent wildland to west and north are grass and managed every year by the City of Palo Alto. • Mixed construction- stucco and wood. • Large lot size reducing adjacency issues. • Adequate water supply via hydrants. • Organized HOA to deliver strong safety message and take action. • Good visible house markers. • Well signposted. • Irrigated lawns and landscaping. • New construction, 7A compliant. • Most homes have Class A roofs.	• >30 feet of defensible space around most homes, but <100 feet around many. • Landscaping has some junipers and pines but lower levels than adjacent Palo Alto. • Power lines are above ground. • Homes old enough that there is no requirement for interior sprinklers. • Older homes with single paned windows prone to breaking in wildfire. • Presence of some wood shake roofs put homes and neighborhoods at risk.

Community/WUI Planning Area	NFPA 1144 Risk Rating	Composite GIS Risk Rating	Positive	Negative
Los Altos Hills	88 (High)	Moderate-High	• Los Altos Hills County Fire District jurisdiction. • Good separation of adjacent structures, larger lot sizes. • New construction, 7A compliant. • Hydrants in most but not all areas. • Surfaced roads primarily. • Limited recent fire history. • Open space areas could serve as shelter-in-place in event of evacuation.	• Heavy concentration of eucalyptus trees—treatment program available. • >30 feet of defensible space around most homes, but <100 feet around many. • Some areas have poor yard hygiene. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Single lane, narrow roads in some areas. • Some private roads with poor road maintenance and limited turn around for fire apparatuses. • Narrow gates. • Many old structures with wood shake roofs/siding. • Heavy fuel loading adjacent to homes as a result of thick underbrush and continuity of tree crowns. • CVAR: farm, retirement homes, open space areas, community horse barn.
Cupertino	81 (High)	Moderate – Extreme	• Surfaced roads but some steep routes. • Good visible house markers. • Well signposted. • Surfaced, maintained roads. • Reasonable water supply via hydrants but low pressure in some areas. • Irrigated lawns and landscaping. • Under Santa Clara County Fire Department jurisdiction. • HOAs for some subdivisions that can facilitate community organizing. • New construction, 7A compliant.	• Some heavy fuel loading adjacent to homes as a result of thick underbrush and continuity of tree crowns. • Thick fuels in canyon. • >30 feet of defensible space around most homes, but <100 feet around many. • Steep grades and varied topography. • Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Adjacency of some residential structures. • Some homes >5 miles from fire response could result in slow response time. • Some gated dead-end roads. • Single lane, narrow roads. • Wood shake roofs present. • Propane tanks above ground. • Number of wineries and CVAR. • Heavy population density. • Some homes have limited set-back from slope.

Community/WUI Planning Area	NFPA 1144 Risk Rating	Composite GIS Risk Rating	Positive	Negative
Saratoga	90 (High)	Moderate-Extreme	• Surfaced roads but some steep routes. • Good visible house markers. • Well signposted; however, some signposting needs to be reflective. • Surfaced, maintained roads. • Irrigated lawns and landscaping. • Under Santa Clara County Fire Department jurisdiction. • HOAs for some subdivisions that can facilitate community organizing. • New construction, 7A compliant. • Community that is active in Santa Clara County Fire Safe Council	• Some homes >5 miles from fire response could result in slow response time. • Long windy road with steep grade. • Many dead end roads. • Reasonable water supply via hydrants in lower elevation areas, but hydrants needed at higher elevations. Encourage water tanks outside of urban service area. Some non-standard hydrants are present but need to ensure compatibility with fire department apparatuses. • >30 feet of defensible space around most homes, but <100 feet around many. • Some heavy fuel loading adjacent to homes as a result of thick underbrush, continuity of tree crowns and dead downed fuels. • Thick fuels in canyon. • Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Poor roof construction, wood shake roofs present. • Cultural values at risk- Saratoga old town part of WUI, Montalvo Arts Center. • Mountain winery and concert venue—potential for large number of people to be present—mitigations have been made. • Some homes have limited setback from slope.
Monte Sereno	71 (High)	Moderate-Extreme	• New construction, 7A compliant. • Property owners have implemented some defensible space work and fuel reduction. • Good access on lower slopes. • Good proximity to emergency responders. • Well maintained, surfaced roads. • Irrigated lawns and landscaping. • Reasonable roofing construction. • Under Santa Clara County Fire Department jurisdiction.	• One way in and out. • Long windy road with steep grade. • Confusing road layout. • Limited turn around space for fire access and/or narrow driveways. • Heavy fuel loading adjacent to homes as a result of thick underbrush and continuity of tree crowns. • Reasonable water supply via hydrants in lower elevation areas, but hydrants needed at higher elevations. Encourage water tanks outside of urban service area. • Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Some homes have limited setback from slope. • >30 feet of defensible space around most homes, but <100 feet around many.

Community/WUI Planning Area	NFPA 1144 Risk Rating	Composite GIS Risk Rating	Positive	Negative
Los Gatos	89 (High)	Moderate-Extreme	• Many newer 7A compliant homes. • Good signposting, though some non-reflective. • Less than 5 miles from fire response. • Good yard hygiene for most homes, landscaped yards. • Many larger lots with good separation between structures. • Number of open space areas to break continuity. • Good visible house markers. • Reasonable water supply via hydrants but low pressure in some areas. • HOAs for some subdivisions that can facilitate community organizing.	• Lots of new development. • CVAR: wineries, retirement homes, Sacred Heart Novitiate. • Very narrow, steep, and windy roads and driveways. • No turnaround on many roads and driveways. • Heavy fuel loading adjacent to homes as a result of thick underbrush and continuity of tree crowns. • Topographic concerns, steep grades. • Poor roof materials, some wood shake. • >30 feet of defensible space around most homes, but <100 feet around many. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Narrow or no staging area for apparatuses, would block evacuation routes. • Many dead end spurs.
Redwood Estates	93 (High)	High-Extreme	• Good signage for most roads and marked evacuation routes on signs and road. • Well organized community, active in Santa Clara County Fire Safe Council. • HOA assists with community organizing. • Less than 5 miles from fire response. • Good access to Highway 17 for rapid evacuation.	• Private roads. • Very narrow roads, hard to navigate if unfamiliar with area. • CVAR: store, post office, restaurant pavilion/ community center. • Lot of dead-end spurs. • Older construction but many remodels. • Two main access routes (Summit Road and Highway 17) but access still concern due to potential traffic load in event of closure of either main arteries. • >30 feet of defensible space around most homes, but <100 feet around many. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. There are small lot sizes with homes < 30ft apart. • Narrow or no staging area for apparatuses, would block evacuation routes. • Heavy fuel loading adjacent to homes as a result of thick underbrush, continuity of tree crowns, tree mortality and dead downed fuels. • Topographic concerns, steep grades. • Poor roof materials, some wood shake.

Community/WUI Planning Area	NFPA 1144 Risk Rating	Composite GIS Risk Rating	Positive	Negative
Summit Road	88 (High)	High-Extreme	• Fuel break work has been done in some areas. • Active Santa Clara County Fire Safe Council and South Skyline Fire Safe Council projects. • Signage present regarding fire prevention. • New construction, 7A compliant. • Surfaced and maintained road. • Good separation of adjacent structures, larger lot sizes. • Signposting to visible and reflective.	• No hydrants, but wells available. Drafting is a possibility but need to ensure that option is compatible with fire department apparatuses and equipment. • Poor ingress-egress, narrow, windy road evacuation planning needed. • Hazard trees. • Narrow road. • Topographic concerns of ridge top and steep slopes. • Few passing places on road. • Tree mortality concerns— Sudden Oak Death, bark beetle. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Open space areas adjacent to residential areas with dense forest and heavy fuel loading. • Some homes >5 miles from fire response could result in slow response time. • Geologic/seismic concerns. • Wood shake roofs present. • Aboveground utilities including propane tanks. • CVAR: wineries, Christmas tree farms.
Chemeketa Park	131 (Extreme)	High-Extreme	• Signposting has been updated. • Water supply available (Chemeketa Water Mutual), but rustic. • Redwood is dominant fuel but lots of needle cast and fuel accumulation. • High humidity area due to aspect and elevation. • Community that is active in Santa Clara County Fire Safe Council	• Very narrow roads, hard to navigate if unfamiliar with area. • One ingress/egress point to community. • Non-surfaced roads. • Defensible space < 30 feet around structure. • Topographic concerns, steep grades. • Homes have limited setback from slope. • Most homes have unrated roofs. • Combustible siding and deck. • Extreme difficulty accessing area with large fire apparatuses. • No turn around spaces. • Many homes built not to code. • Poor property maintenance. Continuous vegetation. • Aboveground utilities and propane tanks. • Structure adjacency issues. • Private roads, poorly maintained.

Community/WUI Planning Area	NFPA 1144 Risk Rating	Composite GIS Risk Rating	Positive	Negative
Aldercroft Heights	116 (Extreme)	High-Extreme	• Good signposting and evacuation route marked. • Community that is active in Santa Clara County Fire Safe Council. • Active fuel treatments throughout community, e.g., road brushed. • Good yard hygiene for most properties. • Evacuation route provided with bridge, not rated for engines but facilitates evacuation by residents. • Some newer 7A compliant homes. • Less than 5 miles from fire response.	• Water supply is limited— Sistine to water tank • Extreme difficulty accessing area with large fire apparatuses. • Aboveground utilities and propane tanks. • Private road and water but managed by associations. • Very narrow, steep and windy roads and driveways. • No setback from slope for most homes. • CVAR: cell sites. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Narrow or no staging area for apparatuses, would block evacuation routes. • Evacuation drills needed. • No turnaround. • High elevation, steep vegetated slopes with highly flammable shrub component. • Many homes defensible space < 30 feet around structure. • Poor roof materials, some wood shake. • Topographic concerns, steep grades. • Many dead end spurs.
Morgan Hill (including Holiday Lake Estates and Jackson Oaks)	83 (High)	Moderate-High	• Firewise sign. • Active community in Santa Clara County Fire Safe Council and fire prevention activities. • Open space areas break continuity and active fuel programs. • Surfaced and maintained roads. • Mostly good yard hygiene and maintenance of property • Morgan Hills City Water hydrant system. • Good signage, some non-reflective. • Weed abatement projects in effect. • HOA assists with community organizing. • Majority below ground utilities.	• Dry flammable vegetation type adjacent to homes and below homes on slopes. • Popular with visitors, potential large numbers during summer months. • One road in and out, evacuation concerns. • Narrow roads within residential areas may have limited turnaround space. • Small lots, limited separation between structures. • Some steep driveways. • Some dead-end spurs. • Some wood shake roofs. • One Engine Company close, but other resources are at some distance. • Topographic concerns— significant slope and limited setback for many homes. • Single access subdivisions. • >30 feet of defensible space around most homes, but <100 feet around many due to small lots. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes.

Community/WUI Planning Area	NFPA 1144 Risk Rating	Composite GIS Risk Rating	Positive	Negative
Gilroy	50 (Moderate)	Low-High	• Light fuels. • Open space: Henry Coe Range. • Rolling hills and less extreme grades. • Large lots and good separation. • Good defensible space around most homes, some <100 feet. • Good access. • Maintained roads and plentiful turnaround space. • Good signage. • Low fire occurrence. • Hydrants available but density is low.	• Livestock evacuation concerns. • Gated properties could impede access to emergency responders. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • CVAR: farms, grazing, orchards, vineyards, commercial property. • Some poorly rated roof materials. • Some homes > 5 miles from organized fire response. • Aboveground utilities. • Some oil and gas infrastructure.
Milpitas and East Foot Hills area	68 (Moderate)	Low-High	• Good fire response resources from San Jose Fire Department and CAL FIRE. • Roadside fuel treatments in progress. • Large open space areas break up residential areas. • Good yard hygiene for most homes, landscaped yards. • Non-continuous light fuels. • Sparse population in more rural areas. • Grazing helps in fuel reduction in some areas where appropriate.	• Diverse WUI, from distinct interface with heavily urban area to scattered residences in an intermix. Different planning needed for each type. • Scenic road ways may increase ignition potential—Ignition concerns related to Sierra Road—fireworks etc. • CVAR: Grand View Restaurant, Lick Observatory, Copernicus Peak communications site, Alum Rock Park. • >30 feet of defensible space around most homes, but <100 feet around many. • Mix of construction types. Building construction includes wood siding, wooden decks, and fences that can act as fuses from vegetation to homes. • Wood shake roofs and older construction in some areas. • Many dead-end spur roads. • Topographic concerns, rolling hills and some steep slopes. • Grassland fuels that are highly dynamic and impacted by seasonal climate fluctuations. • Flashy shrub fuels present on slopes below homes. • Slow response times to some more remote homes in the valley. • Improvements to road networks needed. • No distinct neighborhood associations to use to develop common interest for neighborhood level interactions for Firewise or CERT.

Note: some areas were broken down into smaller communities to show variations in hazards.

4.7 PARCEL LEVEL HAZARD/RISK ASSESSMENT MODEL

The parcel level hazard and risk assessment is a project that the County will be moving forward as funds become available. The highest risk areas will be targeted first. The County will work with stakeholders to identify the most efficient and effective procedure for completing parcel level assessments across the County. This process is likely to take several years. The narrative provided here describes the model and the process that can be used to complete parcel level assessments.

The parcel level hazard and risk assessment model has four major components:

1. **Community hazard assessment** examines the current and expected WUI conditions. Factors examined include FHSZ rating, weather conditions of assessment area, history of serious fires, fire ignition patterns and sources, parcel sizes, road network, evacuation factors, available water supply, presence of flammable vegetation, and other factors.
2. **Community mitigations** include community average of year building built (as it relates to whether the structure was built under more stringent WUI building codes), communitywide compliance with defensible space provisions, general property hygiene and community fuel breaks or other fire defense projects, community involvement in fire prevention education and outreach, and other factors.
3. **Parcel mitigations** include primary land use (residential, commercial, infrastructure), year buildings on the parcel were built, setback distance to nearby structures, roof type, siding materials, window type, venting systems, deck materials and ember resistance, defensible space compliance, property hygiene, special needs for evacuation, and other factors.
4. **Special adjustments** include certain parcel level factors such as historical or irreplaceable structures, cultural icons, facilities "too important" to lose, rare/endangered species not fire adapted, or other situations that highlight critical importance of mitigating that parcel.

Properly analyzing these factors also requires identification of WUI fire protection capacity, land management practices, jurisdictions, existing laws, ordinances, regulations, polices, and practices.

The parcel level risk assessment model was developed with the intention that over time a database of assessment data will be built for the County using the model as a framework. In lieu of a full dataset at this time, the model was tested using sample data from across the county. The results illustrate how the model will identify risk spatially and the potential of the model to aid in prioritization of parcel mitigations for risk reduction. For descriptions of each risk factor included in the model please see Appendix J.

4.8 PARCEL LEVEL RISK ASSESSMENT PROCESS

Community hazard – Structural risk assessments are conducted by first examining and scoring the community level hazard. Fire response organizations identify a community of common characteristics and community if interest by creating a GIS polygon that includes all parcels within the community. For GIS analysis and application of Assessors Parcel data, parcels must be fully included or fully excluded from the polygon. Scoring factor evaluations by fire agency personnel

are based on this community polygon. Scores are given for the characteristics of each rating factor:[12] For Descriptions of each rating factor used in the model please refer to Appendix J.

- FHSZ
- Average parcel size
- Distance from flammable vegetation
- Extreme wind patterns
- Ignition history
- Serious fire history
- Road network
- Evacuation time to safe area
- Water supply

Community mitigations – Communitywide mitigations efforts will reduce the hazard score for the entire community. Each mitigation method has a different impact score.

- Average year built
- Fuel modifications/fuel breaks
- Communitywide defensible space compliance
- Average communitywide property hygiene
- Community involvement in Santa Clara County Fire Safe Council/public education programs
- Community recognition as Firewise Community

Parcel mitigations – Parcel owners can significantly improve survivability for their properties by mitigations under their control. The parcel score includes the community hazard score because the parcel cannot separate itself from the surrounding hazard. It is possible for a parcel to have a very good parcel mitigation score, but have a poor overall score because the community has a high hazard rating (poor road network, lack of water, or poor communitywide defensible space compliance can adversely affect the parcel). Conversely, a community can have a good hazard score and the individual parcel can have a poor score; this could be a home with shake shingle roof in a WUI community where all other roofs are non-flammable.

- Property land use
- Year built
- Distance (set back) from nearest adjoining structures
- Roof materials

[12] Other ratings factors (e.g., response time) can be added if deemed important.

- Siding materials
- Exterior window type
- Venting types/screen size
- Deck floor materials, under deck storage, and ember resistance to underdeck area
- Flammable deck/patio furniture
- Defensible space compliance
- Ember/mulch bed proximity
- Property hygiene
- Evacuation assistance need
- Special adjustments for historical, cultural, or local icon(s)
- Special status species

4.8.1 Test Results of Parcel Level Hazard/Risk Assessment Model

The model was tested for six homes across Santa Clara County (Table 4.2). The score comprises of the four ratings, community hazard rating (CHR), community mitigation rating (CMR), total community score (TCS), and parcel mitigation rating (PMR). It is important to note that the scores can be negative (i.e., negative mitigation = increased hazard due to property maintenance). A negative score will increase the overall risk result of the model. As the general premise of the model is Fire Risk = Hazard – Observed Mitigations; if the observed mitigations are negative the overall fire risk will be higher.

Table 4.2. Test Homes for Parcel Level Hazard/Risk Assessment Model

APN	Address_ Num	Address_Street	CHR	CMR	TCS	C_RISK	PMR	Special	Overall	Overall_Risk
55822002	1	Street Address 1	417	-11	428	Extreme	-283	0	711	Extreme
55839041	2	Street Address 2	94	-3	97	High Risk	-311	0	408	Extreme
54441012	3	Street Address 3	111	42	69	Moderate	118	0	-49	Moderate
33630014	4	Street Address 4	41	40	1	Low Risk	105	0	-104	Low Risk
18248011	5	Street Address 5	65	50	15	Moderate	143	0	-128	Low Risk
34256035	6	Street Address 6	65	26	39	Moderate	-233	0	272	Extreme

A major benefit of this model is that the model itself is calculated in a spreadsheet (such as Microsoft Excel), the results of which can then be transferred into ArcGIS using simple "join to table" function. The parcel can then be symbolized to show overall risk. Community Outreach Strategy

Community Outreach is intended to bring awareness of the community of the CWPP process and invite their involvement. Engaging interested parties is critical in the CWPP process; substantive input from the public will ensure that the final document reflects the highest priorities of the local community. A key element in the CWPP process is the meaningful discussions it generates among community members regarding their priorities for local fire protection and forest management (SAF 2004).

The Santa Clara County Fire Department Fire Prevention Bureau, CAL FIRE, municipal fire departments, resource management agencies and Fire Safe councils have been actively engaging communities throughout the county in wildfire prevention education and outreach (see Section 6.3). These current, ongoing programs span CERT programs, free chipping services, distribution of educational material and appearances at local events. In addition, several fire departments have embraced the One Less Spark Fire Prevention campaign, which offers a series of public service announcements aimed at fire prevention. As part of these outreach programs, physical reminders of wildfire prevention and fire safety are provided through signage throughout the county. Signs are used to inform the local population of extreme fire danger and alert them on current conditions. Local media are also engaged in public outreach for wildfire prevention in the area, with local television news stations (KTVU, for example), and local radio stations (KCBS, for example) covering many wildfire issues, particularly during periods of heightened fire risk.

Public involvement in the CWPP planning process has been encouraged through a range of media outlined below.

4.9 COMMUNITY SURVEY, WEBINAR, AND SOCIAL MEDIA

4.9.1 COMMUNITY SURVEY

In order to gather information from the community, an online survey portal was developed with a custom survey designed to gather public attitudes towards wildfire protection and perceived priorities. Dr. Sarah McCaffrey, a U.S. Forest Service Social Scientist, worked with the Core Team to craft questions to tease out attitudes regarding risk perception. The questions helped to identify barriers to taking actions that bolster fire safety, defined what services might best assist the community, and what the communities think of current services and programs. Since community perceptions and needs vary by locality, the survey was geo-tagged to assist agencies on the Core Team in developing more targeted services and programs.

The online survey was also distributed to all Core Team representatives and made available on the Santa Clara County and Fire Safe Council websites. Paper copies were distributed at the second round community workshops, to one of the homeowner associations engaged in the CWPP process, and to the Core Team. The survey and an analysis of the findings are presented in detail in Appendix K. The results of the survey are summarized below. These results have been used to develop mitigation recommendations described in Chapter 6 and in the accompanying annexes to this document, and can be used to develop future project priorities by the community and the local, state, and federal agencies.

Preliminary Survey Results

The following section provides summary analysis of the community survey. This analysis is based upon 87 responses. Much of these findings address results obtained from Lexington Hills residents, who comprised the majority of responses.

- Overall respondents showed high levels of concern about wildfire in the area, with 95% overall indicating they were moderately to extremely concerned.
- Risk to infrastructure is seen as high by residents living in the Lexington Hills with equal significance in addressing critical infrastructure issues.
- Lexington Hills residents have less sense that they can control their risk, which may reflect concerns relating to infrastructure and hazards on Highway 17 voiced by many residents.
- There is a clear sense that it is not easy to reduce personal wildfire risk.
- Approximately half of residents feel that the County is adequately prepared but would like more done.
- Approximately ¾ of residents feel overall that they are adequately or well prepared for wildfire.
- In relation to mitigation measures applied on personal property- ¾ of respondents have carried out vegetation actions within the last 6 months – those activities that require more frequent maintenance (removing dead veg) have larger portions who had completed that maintenance within the past 6 months. In terms of structural resistance – almost all have (or intend to replace) fire resistance roofs, 1/5 of people are not sure whether eaves are screened, and majority who either have not yet done and/or are not planning on doing a) fire resistant siding, b) boxing eaves and c) enclosing underside of decks.
- A large portion of respondents have had a risk assessment completed, with 68% having been completed by the Fire Department.
- Most people understand the role of embers in home destruction.
- Most people do not feel their household needs to make changes for the community to be better protected, but the vast majority agree that the community as a whole needs to take more action.
- Relating to barriers to action:
    - Almost 90% of people agree that they know how to manage vegetation and 60% agree that they know how to make structural changes.
    - Only 1% agree with the statement that preparation is not needed due to insurance (which undermines the notion that insurance is a reason why people don't mitigate).
    - Cost is an issue for approximately one-third.
    - Approximately one-quarter indicate that physical abilities are a barrier to action.
    - Lack of time is a barrier for roughly 30%.
    - Aesthetics is not a barrier as only 5% agree with the statement.
- Approximately 60% of people have a disaster plan – but it is not written down – a higher proportion of Lexington Hills residents have non-written disaster plans.
- Approximately 40% of people have identified a family meeting location- with 50% of Lexington Hills residents.

- Several items indicate that evacuation is a much bigger concern for Lexington Hills residents.
- Respondents had a positive feeling towards fire agencies.
- In relation to mitigation actions to prioritize:
    - High priority is placed on vegetation management on public lands (76%) with lowest priority on prescribed burning. Eastern county residents placed higher priority on grazing and mechanical thinning than western county residents.
    - Helping private property owner mitigate fire risk is a high priority (70%)
    - Animal issues are a high priority for roughly one-third with more emphasis on pets in the western county and more on livestock in eastern county.
    - Protection of values other than homes is higher priority for non LH, in general and for historic structures.
    - Protection of critical infrastructure is high priority for 66% of all respondents.
    - A larger % of non-Lexington Hills residents find a number of activities very acceptable including retrofit ordinances (29% vs. 11), training landscape contractors (55% vs. 30%), and development restrictions (32% vs. 17.5%).

4.9.2 SOCIAL MEDIA

A Facebook page was developed for the CWPP (entitled Santa Clara County Community Wildfire Protection Plan), and the page received 135 "likes." The page includes a description of the planning process and links to the online community survey and other relevant pages for the communities. The page has also been used to announce the two rounds of community workshops to gather input on the plan. The profile page is located here:

- https://www.facebook.com/SantaClaraCountyCWPP/.

4.10 COMMUNITY WORKSHOPS

Due to the varied natural, social composition, and geographic distribution of communities within Santa Clara County, a total of eight community workshops were hosted across the county over two rounds.

The first round of community workshops was held from February 17 to 23, 2016, and focused on the following areas:

February 17 – Morgan Hills, Gilroy, and South County Areas
Hiram Room,
Morgan Hill Community Center,
17000 Monterey Road
Morgan Hill10

February 18 – East Foothills
Berryessa Community Center
3050 Berryessa Road
San Jose

February 22 – Cupertino, Saratoga, and Los Altos Hills (Figure 4.7**)**
Cupertino Community Hall
10350 Torre Avenue
Cupertino

February 23 – Monte Sereno, Los Gatos, and Lexington Hills
Pavilion at Redwood Estates
21450 Madrone Drive
Los Gatos



Figure 4.7. Cupertino community workshop.

The goal of the first round of meetings was to introduce the communities to the CWPP planning process, present the community base maps, identify threats and risks to the area, solicit project ideas, and develop a list of CVARs. The workshops comprised a PowerPoint presentation, plus a series of large format maps that allowed attendees to locate areas of interest and review proposed projects. Additionally, flip charts were used to document ideas and comments that were not geographically based. Input was encouraged by requesting that participants mark up the maps with project ideas. Attendees were invited to meet and discuss the project with agency stakeholders who were also in attendance. Attendees of the meeting were informed on how to provide input through the survey and through the project's Facebook page.

A number of press releases were submitted to publicize the community workshop and inform the public of the planning process. Flyers and posters advertising the meetings were also produced and distributed by the Core Team. Other opportunities to engage specific communities were taken. For example, an article inviting community members of the Lexington Hills was distributed through an electronic and mailed newsletter, and a member of the consulting team attended the annual pancake breakfast for the Spring Valley Volunteer Fire Department. Informational flyers were also distributed at the community workshops, which provided information on the planning process and outreach efforts. A sign-in sheet was distributed at each gathering to collect contact information for residents interested in receiving future project information. As a follow up to the first round of

meetings, pdf versions of all project maps were made available with a solicitation that residents provide annotations to those maps and submit them back to the Core Team. These requests were provided through various channels.

A second round of community workshops was scheduled in May 2016. The second round of workshops was timed to coincide with the release of the draft document. These workshops were publicized through the same channels as the first workshop, including press releases, electronic and hard-copy newsletters. In addition, email list serves were used to inform communities of the workshops. The public was encouraged to review the document and provide comment.

Dates and locations are shown below:

May 2nd – East Foothills
Milpitas Senior Center Auditorium
40 N Milpitas Blvd,
Milpitas

May 3rd – Morgan Hills, Gilroy, and South County Areas
Hiram Room,
Morgan Hill Community Center,
17000 Monterey Road
Morgan Hill

May 3rd – Monte Sereno, Los Gatos, and Lexington Hills
Pavilion at Redwood Estates
21450 Madrone Drive
Los Gatos

May 9th – Cupertino, Saratoga, and Los Altos Hills
Cupertino Community Hall
10350 Torre Avenue
Cupertino

An additional workshop was held for resource management agencies only so these entities could provide specific projects and perspective.

4.11 CURRENT OUTREACH PROGRAMS

4.11.1 SANTA CLARA COUNTY FIRE DEPARTMENT

The Santa Clara County Fire Department offers a comprehensive community education service program throughout the District and within the following seven cities and towns: Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno, and Saratoga. The Community Education Office is staffed with six full-time employees and is delivered through specially trained department personnel and volunteer firefighters. Programs provided include community preparedness, wildland urban intermix/interface preparedness, and CPR.

The Community Education Office helps residents locate programs and services that will help keep them safe, reduce fires and injuries, and improve overall health and wellness. The Community Education Office functions as an information and referral service connecting individuals, organizations, and community audiences to agencies located within Santa Clara County.

The Santa Clara County Fire Department provides WUI inspections to property owners who live in a hillside community in order to provide information on actions property owners can take to minimize fire hazards and maximize fire resistance. For more information on property assessment, please contact the Fire Prevention Division at (408) 378-4010 or visit the website at:

- http://www.sccfd.org/community-outreach-safety-education/community-outreach-safety-education-overview.

Community Emergency Response Teams – The CERT program educates participants about emergency preparedness and provides basic disaster response training to assist others when first responders might not be immediately available to help. Some of the trainings include learning first aid, using a fire extinguisher, and organizing resources. A number of training opportunities are available throughout the county and current information can be found at:

- www.sccfd.org/news-events.

4.11.2 SANTA CLARA COUNTY FIRE SAFE COUNCIL

The Santa Clara County Fire Safe Council works actively in the community and offers a wide range of education and outreach programs as outlined on its website (http://www.sccfiresafe.org/). Below are example education and outreach programs that are available to county residents:

Youth education: The council offers youth targeted wildfire prevention activities and Smokey Bear visits.

Living with fire in Santa Clara County: The Santa Clara County Fire Safe Council provides access to a 20-page homeowner's guide for fire mitigation activities.

100 feet of defensible space: The council provides information regarding defensible space parameters for home defense.

Making your home fire safe: The council provides links to relevant literature and defensible space programs such as Firewise.

Home ignition zone assessments: Council consultants provide on-site risk assessments and provide guidance for actions to reduce vulnerabilities.

Defensible space chipping programs: The Santa Clara County Fire Safe Council has agreements, contributions, and federal grants for:

1. a defensible space chipping program for eligible residents, and

2. a special needs assistance program for seniors and/or others with physical and financial limitations that prevent them from preparing for chipping.

The Santa Clara County Fire Safe Council has a spring chipping program to dispose of brush that has been cleared 100 feet from permanent structures and/or 30 feet from any roadside or driveway used for evacuation purposes. For more information visit:

- http://www.sccfiresafe.org/santa-clara-county-fuel-reduction-programs.

Older adults: The council provides fire safe tips for older adults living in the WUI.

Environment: The council lists information sources regarding wildfires importance in the environment, fire safe planting, and native plants.

Tree and landscape contractor workshops: Workshops to educate professionals who implement defensible space clearing projects.

Website and Facebook updates: The Fire Safe Council is prepared to push information about active wildfires to communities at risk to help spread evacuation warnings if needed.

Additional details on outreach programs are listed in the Fire Safe Council Annex.

For more information on these and other programs, please visit:

- http://www.sccfiresafe.org/education-outreach.

4.11.3 CAL FIRE Santa Clara Unit

The Santa Clara Unit of CAL FIRE provides services to assist in fire prevention. CAL FIRE has a long history of providing fire prevention, fire safety, and natural resource protection education to the citizens and visitors of California. CAL FIRE's Fire Prevention Education programs are spread statewide and come in the form of social media campaigns, school programs, fair exhibits, posters, flyers and thousands of other printed materials, radio and television spots, internet communications, community meetings, and one-on-one contacts with those who live, work, and recreate in wildland areas (CAL FIRE 2016).

Below are example education and outreach programs that are available to Santa Clara County residents:

Information on the Ready, Set, Go! Program: http://www.readyforwildfire.org/

National Fire Prevention Week programs: Held annually in October (October 9–15 in 2016), http://www.nfpa.org/fpw.

Community Fact Sheets for fire prevention:
http://calfire.ca.gov/communications/communications_factsheets

Children focused activities: http://calfire.ca.gov/communications/communications_justforkids

PreventWildfireCA.org programs and literature: http://www.preventwildfireca.org/

4.11.4 FIRE DEPARTMENT ACTIVITIES

Most fire departments (both county and municipal) within Santa Clara County offer fire prevention activities such as station open houses throughout the year in order to engage the local community in the workings of the department and in fire safety and prevention measures. Fire department websites may also offer links to other non-fire agencies that provide information on wildfire preparedness. For example, the American Red Cross (http://www.redcross.org) offers a Wild Fire Safety Checklist, while Pacific Gas and Electric Company (PG&E) (http://pge.com) has developed a Wildfire Safety page.

4.12 FIREWISE COMMUNITIES

Although many residents are familiar with Firewise Communities and the fire management agencies have already implemented Firewise workshops in the past, many others could benefit from greater exposure to this program. Workshops demonstrating and explaining Firewise Communities principles have been suggested to increase homeowner understanding of home protection from wildfire. One goal is for communities to apply to become a Firewise Community, recognized in the state as a shining example for fire prevention. Information about the program is available at http://www.firewise.org/usa/index.htm. The Jackson Oaks community in Morgan Hill is working to obtain Firewise certification. Greater participation by other communities in the county in the Firewise Communities program could improve local understanding of wildfire and, in turn, improve protection and preparedness.

4.13 COMMUNITY ENGAGEMENT STRATEGY

The community outreach strategy provides a way to quantify improvements in community resiliency over time. The strategy includes a way to track the success of community outreach. Follow-up communication with stakeholder affiliations will foster formal and informal collaboration regarding priorities and project nomination.

There are six strategic goals for improving community education and outreach. For each strategic goal a strategy is identified to quantify the success of the project:

Goal	Outreach Strategy to Gauge Success
Educate citizens on how to achieve contemporary WUI code compliance in retrofits/cost: benefit ratio. Provide workshops and/or demonstration site.	Number of workshops and demonstration sites focusing on WUI code compliance and retrofit opportunities. Reduction in scored risk due to structural mitigation measures taken.
Analyze playing with fire ignitions and focus education programs at vicinity schools.	Assess number of ignitions near schools, report on number of presentations at and/or focused on ignitions caused by playing with matches.
Fire agencies establish partnership with San Jose State University (or other colleges) for student intern programs for GIS, plans, weather, environmental reviews, etc.	Collaborative projects, attendance at joint meetings between San Jose State University, number of interns addressing GIS, plans, weather, environmental reviews, etc.
Provide webinars for homeowners to learn about fire safe communities and property.	Number of webinars about fire safe communities and property, and number of viewers.
Some individual communities (for example Jackson Oaks in Morgan Hill) identified a project to establish and support a new Firewise Community	Count the number of Firewise Communities in the county when the CWPP is next updated.
Provide regular CWPP updates and opportunities for agency/community input.	Note the number of organizations, emergency response agencies and resource management agencies, homeowner associates, individual homeowners, and geographic distribution of projects engaged in next CWPP update.

The Fire Safe Council provides a natural framework to facilitate collaboration between fire agencies, land managers, and communities in fuel reduction activities, wildfire mitigation projects, and community education and outreach. Many members of the Core Team are already active participants in this organization. This organization embraces all homeowners, landowners, organizations and agencies in their effort to reduce damage from wildfire and thus their goal is aligned with those expressed in the CWPP. The existing and ongoing community outreach and education programs of the Fire Safe Council and fire agencies throughout the county are tested, well supported, and successful. However, improvements and growth in these programs can bring even greater success.

5 MITIGATION STRATEGIES

Wildfire risk mitigation strategies, followed by the promulgation of associated codes and ordinances, along with public education on these topics, in combination with follow-up inspections and enforcement, are needed to optimize wildfire mitigation work. This CWPP will help provide a countywide overview of what elements this process should contain. It can recognize communities and cities around Santa Clara County that have an effective program and help identify locations in which such a program is deficient or absent. This chapter identifies mitigation strategies for reducing wildfire risk and hazard to Santa Clara County residents.

5.1 CURRENT PUBLIC EDUCATION AND OUTREACH PROGRAMS

5.1.1 SANTA CLARA COUNTY FIRE SAFE COUNCIL

The Santa Clara County Fire Safe Council's education and outreach programs work to motivate and educate individuals, public and private agencies and companies that share a common, vested interest in preventing and reducing losses from wildfires.

Santa Clara County Fire Safe Council programs and projects are focused on protecting the 14 designated communities at risk; it works actively in the community and offers education and outreach programs as outlined on its website (http://www.sccfiresafe.org) Target audiences for outreach include adult and youth residents in the WUI, youth in schools and outdoor education programs, landscaping and tree contractors, businesses and civic organizations with ties to interests at risk from wildfire.

Section 6.3.2 provides more education and outreach programs that are available to county residents.

5.1.2 SOUTH SKYLINE FIRE SAFE COUNCIL

The primary activities of the South Skyline Fire Safe Council are to encourage and assist homeowners to prepare for wildfires, reduce hazardous fuels along roads and trails, coordinate with other fire prevention agencies, and provide fundraising (http://www.southskylinefiresafe.org). Section 6.3.3 provides more education and outreach programs that are available to Santa Clara County residents.

5.1.3 READY, SET, GO!

The Ready, Set, Go! Program, which is managed by the International Association of Fire Chiefs, was launched in 2011 at the WUI Conference. The program seeks to develop and improve the dialogue between fire departments and residents, providing teaching tools for residents who live in high risk wildfire areas—and the WUI—on how to best prepare themselves and their properties against fire threats (Ready, Set, Go! 2016).

The tenets of Ready, Set, Go! As included on the website (http://www.wildlandfirersg.org) are:

Ready – Take personal responsibility and prepare long before the threat of a wildland fire so your home is ready in case of a fire. Create defensible space by clearing brush away from your home. Use fire-resistant landscaping and harden your home with fire-safe construction measures. Assemble emergency supplies and belongings in a safe place. Plan escape routes and make sure all those residing within the home know the plan of action.

Set – Pack your emergency items. Stay aware of the latest news and information on the fire from local media, your local fire department, and public safety.

Go – Follow your personal wildland fire action plan. Doing so will not only support your safety, but will allow firefighters to best maneuver resources to combat the fire.

5.1.4 DEFENSIBLE SPACE

Defensible space is perhaps the fastest, most cost-effective, and most efficacious means of reducing the risk of loss of life and property. The various fire agencies throughout the county have already laid a strong foundation for effective wildfire mitigation by working with county residents regarding wildland fire safety and prevention. Although fire agencies can be valuable in providing guidance and assistance, creating defensible space is the responsibility of the individual homeowner.

The Santa Clara County Fire Department and CAL FIRE provide defensible space recommendations on their websites at:

- http://www.sccfiresafe.org/education-outreach/100-feet-defensible-space
- http://www.fire.ca.gov/communications/communications_firesafety_100feet

A defensible space of 100 feet is required by California State law. Figure 5.1 provides a brief synopsis on the 100-foot defensible space requirement for California residents living in the WUI.



Figure 5.1. Defensible space (Source: Santa Clara County Fire Safe Council 2016).

Effective defensible space consists of an essentially fuel-free zone adjacent to the home, a treated secondary zone that is thinned and cleaned of surface fuels, and (if the parcel is large enough) a transitional third zone that is basically a managed wildland area. These components work together in a proven and predictable manner. Zone 1 keeps fire from burning directly to the home; Zone 2 reduces the adjacent fire intensity and the likelihood of torching, crown fire, and ember production; and Zone 3 does the same at a broader scale, keeping the fire intensity lower by maintaining a more natural, historic condition (Figure 5.2).

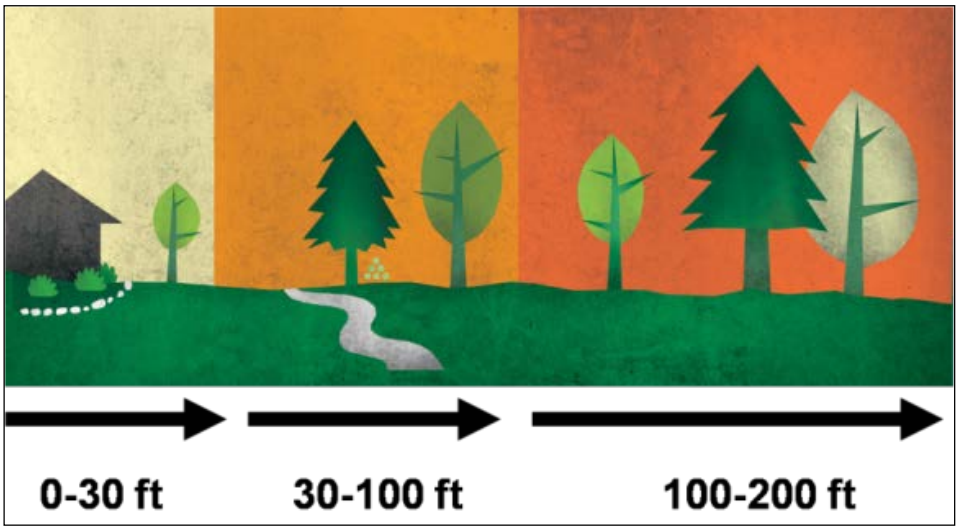


Figure 5.2. Defensible space zones (Source: www.firewise.org).

The Insurance Institute for Home and Business Safety at disastersafety.org provides a recommendation for a 0- to 5-foot non-combustible zone. This recommendation is reflected in defensible space guidelines provided in Appendix A of this document and is shown in Figure 5.3 below.



Figure 5.3. IBHS defensible space guidelines.

It should be emphasized that defensible space is just that—an area that allows firefighters to work effectively and with some degree of safety to defend structures. While defensible space may increase a home's chance of surviving a fire on its own, a structure's survival is not guaranteed, with or without firefighter protection. Nevertheless, when these principles are consistently applied across a neighborhood, everybody benefits.

Specific recommendations should be based on the particular hazards adjacent to a structure such as slope steepness and fuel type. Local fire authorities or CAL FIRE should be contacted if a professional assessment seems warranted. Firewise guidelines are an excellent resource, but creating defensible space does not have to be an overwhelming process. Assisting neighbors may be essential in many cases. Homeowners should consider assisting the elderly, sharing ladders for gutter cleaning, and assisting neighbors with large thinning needs. Adopting a phased approach can make the process more manageable and encourage maintenance (Table 5.1).

Table 5.1. Example of a Phased Approach to Defensible Space

Year	Project	Actions
1	Basic yard cleanup (annual)	Dispose of clutter in the yard and under porches. Remove dead branches from yard. Mow and rake. Clean off roofs and gutters. Remove combustible vegetation near structures. Coordinate disposal as a neighborhood or community. Post 4-inch reflective address numbers visible from road.
2	Understory thinning near structures	Repeat basic yard cleanup. Limb trees up to 6–10 feet. Trim branches back 15 feet from chimneys. Trim or cut down brush. Remove young trees that can carry fire into forest canopy. Coordinate disposal as a neighborhood or community.
3	Understory thinning on private property along roads and drainages	Limb trees up to 6–10 feet. Trim or cut down brush. Remove young trees that can carry fire into forest canopy. Coordinate disposal as a neighborhood or community.
4	Overstory treatments on private property	Evaluate the need to thin mature or diseased trees. Prioritize and coordinate tree removal within neighborhoods to increase cost effectiveness.
5	Restart defensible space Treatment cycle	Continue the annual basic yard cleanup. Evaluate need to revisit past efforts or catch those that were bypassed.

5.2 CURRENT STRUCTURAL IGNITABILITY REDUCTION PROGRAMS

5.2.1 DEFENSIBLE SPACE ENFORCEMENT

The Santa Clara County Fire Department carries out defensible space assessments of homes within their jurisdiction that fall within the designated WUI of the communities they serve. The assessments are carried out on a rotation. The department sends mailings to each identified residence prior to fire season, announcing the measures that the resident should take in implementing defensible space practices. State law requires a defensible space of 100 feet around homes and all accessory structures in the very high FHSZ and on all identified properties in the SRA. The Santa Clara County Fire Chiefs Association has developed a list of required and recommended preventative measures that are included in the mailing:

Enforced Safety Measures:

A. Create 100 feet of defensible space around home. To accomplish this, create a Green Zone by clearing flammable vegetation 30 feet around structures. Additionally create a Reduced Fuel Zone for remaining 70 feet or to your property line.
B. Clear ornamental shrubs and trees of dead leaves and branches.
C. Remove all pine needles and leaves from roofs, eaves, and rain gutters.
D. Trim tree limbs 10 feet from chimneys or stovepipes and remove dead limbs that hang over rooftops.
E. Cover chimney outlets or flues with a ½-inch mesh spark arrestor.
F. Post a clearly visible house address, using at least 4-inch high numbers, for easy identification.

Additional Recommended Measures:

- Trees 18 feet or taller should be limbed up 6 feet from the ground.
- Stack woodpiles a minimum of 30 feet from buildings, fences, and combustible materials.
- Clear vegetation and other flammable materials from underneath decks. Enclose elevated desks with fire resistive materials.
- If you have any trees near power lines, please contact PG&E at 1-800-PGE-5000 for a free inspection. State law requires vegetation clearance from electrical lines. For more information, visit http://www.PGE.com. In most cases, PG&E will remove the tree at no cost to you.
- The Santa Clara County Fire Safe Council offers defensible space chipping Programs to assist homeowners, including special programs for qualified low-income seniors and disabled homeowners. For more information, visit http://www.sccfiresafe.org.

Santa Clara County fire personnel carry out the inspections beginning in the spring each year. For those properties that are non-compliant, the department will advise the property owner that work is necessary in order to be in compliance with the applicable regulations. Residents who are unable to complete the measures due to physical disabilities, etc., are asked to contact the department. The resident is welcomed to complete the necessary work him or herself or use a contractor. Follow-up inspections are completed early summer on those properties that did not meet the Enforced Safety Regulations (see above) during the first inspection. If residents do not comply with items A, B, C, and D of the Enforced Safety Regulations, the compliance work is completed by an authorized contractor of the relevant municipality, and the charges for the service are applied to the next property tax bill for the property.

5.2.2 HOME IGNITION ZONE ASSESSMENTS

The Santa Clara County Fire Safe Council offers on-site assessments of structural ignitability and home ignition zone vulnerabilities to residents in its service area. This program brings consultants to see the home and yard in person and to go over checklists and recommendations to reduce the risk of the structure being ignited from flying embers, as well as flames in the yard and neighboring structures.

The assessment is based on NFPA's 1144 Standard for Reducing Structure Ignition Hazards from Wildland Fire.

5.3 RESPONSE AND EVACUATION PROGRAMS

5.3.1 WILDLAND URBAN INTERFACE PRE-PLANS AND EVACUATION GUIDES

The 2015 CAL FIRE Santa Clara Unit Fire Plan identifies a number of pre-fire projects within the county for the period of 2015–2018 (CAL FIRE 2015: Appendix A). The Santa Clara County CWPP was identified as a project for 2016. Pre-fire projects include VMPs at Henry Coe, defensible space projects for Santa Clara County communities at risk, and defensible space and fuel break projects for the Santa Cruz Mountains. Further the pre-fire projects include a Santa Clara Unit Incident Pre Attack and Evacuation Plan.

Pre-response and evacuation planning is identified in the CAL FIRE Santa Clara Unit Fire Plan (CAL FIRE 2015) for a number of communities and open space areas, including Pacheco Pass, Henry Coe Park, Mt. Hamilton, Lexington Basin, Saratoga, Los Altos, Stevens Canyon, and Montevina Road. Collaborative work has also been underway with the South Skyline Fire Safe Council in Santa Cruz County along Skyline Road (Highway 35) including fuel modification work to maintain an evacuation route between Santa Clara and Santa Cruz Counties.

The goal of the pre-response and evacuation plans would be to provide new personnel, CAL FIRE Emergency Command Center staff and incident management teams with the location of strategic control points and access into remote SRA land.

Many communities have already been the focus of pre-planning efforts, including the Holiday Lakes/Jackson Oaks communities where a pre-response and evacuation plan was completed in January 2016.

CAL FIRE highlights the importance of working in cooperation with the Santa Clara County Fire Safe Council, local law enforcement, and other local cooperators to develop evacuation plans and fire plans for communities at risk susceptible to a major incident.

5.3.2 COLLABORATION WITH LAW ENFORCEMENT

Collaboration with law enforcement is integral in fire management in the county as highlighted in the CAL FIRE Santa Clara Unit Fire Plan (CAL FIRE 2015:44). Two members of the County Sheriff's Department are included on the Core Team to provide input on law enforcement issues, such as citations, fire investigations, evacuation, and processing criminal complaints.

5.3.3 COMMUNITY SIGNAGE

Fire prevention signs can be useful media through which to share with the public the current fire danger. Sign messages should be adjusted regularly to reflect seasonal changes and deliver fresh messages. Signs are currently located at:

- The CAL FIRE Alma Helitack Base on Santa Cruz Highway
- Dunne Hill Fire Station
- Strategic locations in Morgan Hill
- Summit Road/Loma Prieta

5.4 CURRENT HAZARDOUS FUEL MITIGATION PROGRAMS

5.4.1 SANTA CLARA COUNTY LOCAL HAZARD MITIGATION PLAN

The Santa Clara County LHMP was updated in 2011 (Santa Clara County 2011). This countywide CWPP was identified in Chapter 7 of the LHMP as a mitigation objective for Santa Clara County. The following information was taken and modified from the revised LHMP.

Chapter 4 of the LHMP provides information on the wildfire hazard, including fire hazard threat zones. The LHMP identifies the WUI as one of the most significant threats in Santa Clara County. The plan notes that the California Fire Alliance "Communities at Risk List" identifies the communities of Cupertino, East Foothills, Gilroy, Lexington Hills, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Palo Alto, San Jose, San Martin, Saratoga, and Stanford at high risk of damage from wildfire. The LHMP includes annexes for each community. Wildfire hazard is identified consistently in these annexes as a primary hazard concern for each community.

Primary mitigation actions identified in the LHMP for WUI mitigation areas included:

- Develop the county-wide CWPP:
    - Create defensible programs on a county-wide basis.
    - Organize and mobilize the volunteer workforce for wildfire mitigation projects.
- Implement a county-wide public education campaign.
- Address the needs of individual homeowners, e.g., grants to replace roofs and free chipping services.
- Prepare tactical information database and accurate maps ready for Incident Commanders to access when necessary, e.g., evacuation planning.
- Establish a county-wide Wildfire Mitigation Task Force to study the problem and coordinate efforts.
- Establish a cohesive funding strategy.
- Consider road improvement as a potential mitigation project to be scoped for evacuation and emergency response access.

- Research and evaluate best practices.
- Address open space with a county-wide strategy. For example, address a 5- to 10-year plan for fire breaks in these areas. Integrate the LHMP with the Open Space District.

This CWPP is designed to support the General Plan and the LHMP, providing additional detailed assessment of wildfire threat and mitigation strategies. One of the main purposes of this CWPP is to provide information that can be incorporated into the General Plan and LHMPs when these documents are revised, with particular use in the Safety Element.

Fuels should be modified with a strategic approach across the project area to reduce the threat that high intensity wildfires pose to lives, property, and other values. Pursuant to these objectives, the CWPP contains recommendations developed in the context of existing and planned fuels management projects. These recommendations initially focus on areas adjacent to structures (defensible space), then near community boundaries (fuel breaks, cleanup of adjacent open spaces), and finally in the wildlands beyond community boundaries (larger-scale forest health and restoration treatments). A common focus of fuels treatment is to reduce brush, diseased trees, dead fuels, and immature trees in favor of healthy, more mature trees and shrubs.

While not necessarily at odds with one another, the emphasis of each of these treatment types is different. Proximate to structures, the recommendations focus on reducing fire intensity consistent with Fire Safe and code standards. Further into open space areas, treatments will tend to emphasize the restoration of historic conditions and general forest health. Cooperators in fuels management should include federal, state, and local agencies, as well as interested members of the public.

Fire management cannot be a one-size-fits-all endeavor; this plan is designed to be flexible. Treatment approaches and methods will be site-specific and should be adapted to best meet the needs of the landowner and the resources available. Moreover, each treatment recommendation should address protection of CVARs, protection of people, critical infrastructure, cultural icons, economic engines, and threatened and endangered species. It is the intent of this plan to be an evolving document that will incorporate additional areas of the CWPP planning area as they change in risk category over time.

5.4.2 FUEL BREAKS, AND ROADSIDE TREATMENTS

After defensible space, the next location priority for fuels treatments is where the community meets the wildland. This may be the outer margins of a town or an area adjacent to open spaces such as a park. Fuel breaks are strips of land where natural vegetation fuels have been modified or reduced to limit the fire's ability to spread rapidly and generate large amounts of embers.

Fuel modifications can include removing dead trees, branches, and downed logs; reducing the amount of deep duff such as needles, leaves, and twigs; mowing or plowing grasses; and pruning or thinning living trees and shrubs. Fuel breaks can be underneath trees where they are called shaded fuel breaks, or out in the sunlight, such as through chaparral, shrublands, or grasslands.

Fuel breaks are typically at least 75 feet wide and can be as much as 200 feet wide, however they retain some vegetation within the fuel break and its habitat values. They should not be confused

with fire breaks, which are areas where vegetation and organic matter are removed down to mineral soil.

Fuel breaks may be created to provide options for suppression resources, opportunities to introduce prescribed fire, or to create a zone where crown fire will be forced to the ground where it is more easily contained.

In some cases, fuel breaks may be created by treating vegetation along roadsides where the road is located on a ridge or other geographic feature that helps interrupt wildfire growth. The road surface is included in the width of the fuel break, which can be on one or both sides of the road.

Another type of roadside treatment is evacuation route clearance and thinning. This treatment generally is more modest than a fuel break and is used in locations where fire may easily cross the road, such as where the road traverses a slope, or where homes, fencing and other features prevent full-width fuel break clearing.

Evacuation route treatments include removing weak trees that lean into or over the road, pruning branches high and wide enough to ensure fire engine and truck passage, and then mowing grasses, removing or thinning shrubs and small trees, removing dead branches, trees and logs, and removing low branches on larger living trees to clear ladder fuels next to the road. Where roads are narrow, bulges and turnouts are cleared to help provided places to pass. Generally evacuation route treatments extend 6 to 30 feet from both road edges.

Evacuation route treatments make the road safer to use during a wildfire, even when it is burning next to the road, by keeping flame lengths low and the fire on the ground instead of in the crown of the trees, which reduces heat, and by reducing the likelihood of burning trees and utility poles falling into and blocking the roadway. They also help responding fire apparatuses pass evacuating residents.

Evacuation routes that have been treated are also less likely to be sites of fire starts from vehicle fires, sparking trailer chains, burning cigarettes, or similar causes.

The Fire Safe Council has a robust fuel break and evacuation route vegetation treatment program that it coordinates with private landowners, parks and open space managers, and roads departments. Funding for these treatments comes from federal, state, county, and local sources, as well as road associations, utilities, and other corporate or private grants. CAL FIRE also provides in-kind support through the use of conservation/fire crews to provide manual treatments at low cost, which extends grant funds to treat more ground.

5.4.3 LARGER-SCALE TREATMENTS

Farther away from WUI communities, the emphasis of treatments often becomes broader. While reducing the buildup of hazardous fuels remains important, other objectives are often included, such as restoration of historic conditions and forest health. Wildfires frequently burn across jurisdictional boundaries, sometimes on landscape scales. As such, these larger treatments need to be coordinated on a strategic level. This requires coordination between projects and jurisdictions, as is currently occurring throughout Santa Clara County and with adjacent counties. Land managers have carried out numerous fuels reduction projects across the planning area and region

and have ongoing projects planned on public lands that are designed to reduce hazardous fuels to protect communities and resources (see Annexes).

5.4.4 VEGETATION MANAGEMENT PROGRAM

CAL FIRE's VMP is a formal cost-sharing program that applies prescribed fire and various mechanical treatment methods to reduce wildland hazardous fuels and to achieve other natural resource management goals within SRAs (CAL FIRE 2015). The Santa Clara Unit has a long history of partnering under such agreements with local landowners to reduce hazardous fuels, improve range and wildlife habitat, and maintain natural ecosystems dependent upon periodic fires. Vegetation management focuses on the volume, structure, and distribution of vegetation on a landscape. Fuel treatments mainly focus on only the surface and ladder fuels.

The Santa Clara Unit currently has several VMP projects in the planning and operational stages. These projects have range, watershed, and wildlife habitat improvement as the primary goals—for example, the Isabel Ranch, Henry Coe State Park, and Grant Ranch County Park and other eastern Santa Clara County burns (CAL FIRE 2015).

The CAL FIRE Santa Clara Unit Fire Plan identifies the following priority areas for VMP projects:

- VMP projects where property owners meet the criteria for a cost share agreement and have a signed agreement with CAL FIRE;
- areas with high hazardous fuel loading near WUI zones;
- areas with no recent fire history;
- areas with protected species requiring burning for habitat improvement; and
- areas needing improvement to range capacity or hydrologic production.

5.4.5 METHODS AND SELECTION OF FUEL REDUCTION TREATMENTS

Strategic timing and placement of fuels treatments is critical for effective fuels management practices and should be prescribed based on the conditions of each particular treatment area. Some examples of this would be to place fuel breaks in areas where the fuels are heavier and in the path of prevailing winds and to mow grasses just before they cure and become flammable. Also, burning during the hotter end of the prescription is important since hotter fires are typically more effective at reducing heavy fuels and shrub growth. In areas where the vegetation is sparse and not continuous, fuels treatments may not be necessary to create a defensible area where firefighters can work. In this situation, where the amount of fuel to carry a fire is minimal, it is best to leave the site in its current condition to avoid the introduction of exotic species.

Several fuel reduction treatment methods are commonly used, including manual treatments, mechanized treatments, and prescribed fire (Table 5.2). This brief synopsis of treatment options is provided for general knowledge; specific projects will require further planning. The appropriate treatment method and cost will vary depending on factors such as the following:

- Diameter of materials
- Proximity to structures
- Acreage of project
- Fuel costs
- Steepness of slope
- Area accessibility
- Density of fuels
- Project objectives

It is imperative that long-term monitoring and maintenance of all treatments is implemented. Post-treatment rehabilitation such as seeding with native plants and erosion control may be necessary.

Table 5.2. Summary of Fuels Treatment Methods

Treatment	Comments
Machine mowing	Appropriate for large, flat, grassy areas on relatively flat terrain.
Brush mastication	Brush species (oak in particular) tend to re-sprout vigorously after mechanical treatment. Frequent maintenance of treatments are typically necessary. Mastication tends to be less expensive than manual (chainsaw) treatment and eliminates disposal issues.
Timber mastication	Materials up to 10 inches in diameter and slopes up to 30% can be treated. Eliminates disposal issues. Environmental impact of residue being left on site is still being studied.
Feller-buncher	Mechanical treatment on slopes more than 30% or of materials more than 10 inches in diameter may require a feller-buncher rather than a masticator. Costs tend to be considerably higher than masticator.
Manual treatment with chipping or pile burning	Utilizing hand crews cutting with chain-saws. Requires chipping, hauling, pile burning of slash in cases where lop and scatter is inappropriate. Pile burning must comply with smoke management policy.
Prescribed fire	Can be very cost effective. Ecologically beneficial. Can be used as training opportunities for firefighters. Prescribed fires help local populations get familiar with fire and foster trust and support May require manual or mechanical pretreatment. Carries risk of escape, which may be unacceptable in some WUI areas. Unreliable scheduling due to weather and smoke management constraints.
Thinning and prescribed fire combined	Can be used in areas where fuel loading is too high to implement prescribed fire without pre-treatment. Ecologically beneficial. Can create fuel breaks to reduce risk of escape.

Mechanized Treatments

Mechanized treatments include mowing, mastication (ground-up timber into small pieces), and whole tree felling. These treatments allow for more precision than prescribed fire and are often more cost effective than manual treatment.

Mowing, including all-terrain vehicle (ATV) and tractor-pulled mower decks, can effectively reduce grass fuels adjacent to structures and along highway rights-of-way and fence lines. For heavier fuels, a number of different masticating machines can be used, including drum- or blade-type masticating heads mounted on machines and ranging in size from a small skid-steer to large front-end loaders. Some masticators are capable of grinding standing timber up to 10 inches in diameter. Other masticators are more effective for use in brush or surface fuels. Mowing and mastication do not actually reduce the amount of on-site biomass, but alter the fuel arrangement to a less combustible profile.

In existing fuel break areas maintenance is crucial especially in areas of encroaching shrubs or trees. In extreme risk areas more intensive fuels treatments may be necessary to keep the fire on the ground surface and reduce flame lengths. Within the fuel break, shrubs should be removed, and the branches of trees should be pruned from the ground surface to a height of 4 to 8 feet, depending on the height of the fuel below the canopy, and thinned with a spacing of at least two to three times the height of the trees to avoid movement of an active fire into the canopy.

Mechanical shears mounted on feller bunchers are used for whole tree removal. The stems are typically hauled off-site for utilization while the limbs are discarded. The discarded material may be masticated, chipped, or burned in order to reduce the wildfire hazard and to speed the recycling of nutrients.

Manual Treatments

Manual treatment refers to crew-implemented cutting with chainsaws. Although it can be more expensive than mechanized treatment, crews can access many areas that are too steep or otherwise inaccessible with machines. Treatments can often be implemented with more precision than prescribed fire or mechanized methods allow. Merchantable materials and firewood can be removed while non-merchantable materials are often lopped and scattered, chipped, or piled and burned on site. Care should be exercised to not increase the fire hazard by failing to remove or treat discarded material in a site-appropriate manner.

Prescribed Burning

Prescribed burning is also a useful tool to reduce the threat of extreme fire behavior by removing excessive standing plant material, litter, and woody debris while limiting the encroachment of shrubby vegetation. Where possible, prescribed fire could occur on public lands since fire is ecologically beneficial when applied to fire-adapted vegetation communities and wildlife habitat.

Prescribed burning should only be implemented by properly qualified personnel. All prescribed fire operations will be conducted in accordance with federal and state laws and regulations. Public safety would be the primary consideration in the design of any prescribed burn plan so as to not negatively impact the WUI. Pre-fire vegetation sampling would be carried out during planning to ensure resource protection. The areas to be burned would occur within fuel breaks or appropriate fire lines. Agency use of prescribed fire on public lands would be carried out within the confines of the agency's fire management planning documents and would require individual prescribed burn plans that are developed for specific burn units and consider smoke management concerns and sensitive receptors within the WUI.

Following any type of fuels reduction treatment, post-treatment monitoring should continue to ensure that management actions continue to be effective throughout the fire season. Vegetation can change rapidly in response to drought or moisture from year to year and during the course of the season, so fuels treatments should be adjusted accordingly.

Thinning and Prescribed Fire Combined

Combining thinning and prescribed fire can be the most effective treatment (Graham et al. 2004). In forests where fire exclusion or disease has created a buildup of hazardous fuels, prescribed fire cannot be safely applied and pre-burn thinning is required. The subsequent use of fire can further reduce residual fuels and reintroduce this ecologically imperative process.

Management of Non-native Plants

Fuel treatment approaches should always consider the potential for introduction or proliferation of invasive non-native species as a result of management actions. Several non-native plants present significant fire hazards and will spread in fuel reduction areas when other vegetation is removed. When feasible fuel reduction projects should attempt to permanently remove scotch and French broom, eucalyptus trees and acacia trees. Eradication can be achieved by manual pulling and/or herbicide use followed up with long term monitoring of the seed bank and re-sprouts.

5.4.6 FUEL BREAKS

Fire behavior in the CWPP planning area has been modeled using FlamMap (Section 4.6.4). This assessment provides estimates of flame length and rate of spread; the information should be used by land managers when prescribing treatments. Land managers are cautioned, however, that fuel breaks will not always stop a fire under extreme fire behavior or strong winds; these should only be seen as a mitigating measure and not a fail-safe method for fire containment.

Within a fuel break, shrubs should be removed where they would generate high severity fire behavior. It is not possible to provide a standard treatment prescription for the entire landscape because fuel break dimensions should be based on the local fuel conditions and prevailing weather patterns. For example, in some areas, clearing an area too wide could open the landscape to strong winds that could generate more intense fire behavior and/or create wind throw.

Strategic placement of fuel breaks is critical to prevent fire from moving from wildland fuels into adjacent neighborhoods. A fuel break of 100 to 300 feet in shrubland should modify fire behavior significantly enough to allow suppression by firefighters. It is important to note, however, that shrub fuels are often replaced by grassland fuels in shrubland fuel breaks; flame lengths and rates of spread could be faster in these grassland fuels, but fireline intensity (heat produced per fireline foot per second) will be reduced, allowing more effective suppression. For effective management of most fuels, fuel breaks should be prescribed based on the conditions in each particular treatment area. Some examples of this would be to place fuel breaks in areas where fuels are heavier or in areas with easy access for fire crews. In areas where the vegetation is discontinuous, fuel treatments may not be necessary. In this situation it is best to leave the site in its current condition to avoid the introduction of more flammable, exotic species, which may respond readily following disturbance.

Sustainability Challenge

Well-managed fuels reduction projects often result in ecological benefits to wildlife and watershed health. Simultaneously, planning and resource management efforts should occur when possible while reducing fuels to ensure that the land remains viable for multiple uses in the long term.

Fuel break and fuel treatment utility is contingent upon regular maintenance, as regrowth in a treated area can quickly reduce its effectiveness. Input provided during public outreach activities identified a need for maintenance of existing fuel breaks that have become overgrown. Maintenance of existing breaks could be more cost efficient than installation of new features.

The effectiveness of any fuels reduction treatment will increase over time with a maintenance and monitoring plan. Monitoring will also ensure that objectives are being met in a cost-effective manner. For information on monitoring and sustainability for CWPP projects, please see Section 6.

5.5 PRIORITIES, RECOMMENDATIONS, AND ACTION ITEMS

This section outlines recommended projects for mitigation of fire risk at a strategic countywide level. These projects could be implemented or adopted across the county and multiple jurisdictions. They are designed to be general in nature in order to allow for them to be applied across multiple jurisdictions for agencies that may have very different goals and missions. Since many recommend large-scale actions, they should be considered long-term goals used to help direct fire management over a period of years to possibly decades. More specific goals are provided in the individual agency annexes. Some of these agency goals may tier from these strategic level recommendations.

5.5.1 GENERAL PLANNING PROJECT RECOMMENDATIONS

Table 5.3 describes general planning projects that could be applied countywide to assist in the mitigation of wildfire hazard and risk.

5.5.2 RECOMMENDATIONS FOR PUBLIC EDUCATION AND OUTREACH

Needs for public education and outreach have been emphasized throughout the Santa Clara County CWPP process by all participating parties. The Core Team has consistently commented on the need for better education of the public for fire preparedness, and discussions with community members during public outreach have indicated that, although most people are aware of the danger of wildland fire in their community, many could be better informed of effective mitigation options. Many long-time residents of the county have grown up with wildfire; however, it is important to continually raise awareness of fire risk and improve fire education (Winter and Fried 2000; McCaffrey 2004).

As discussed further in Section 6.4, the Firewise Communities program and other similar fire prevention outreach programs provide extensive educational literature on fire prevention activities that homeowners and communities can engage in to reduce their wildfire risk and hazard. Other methods to improve public education could include using existing signage to indicate fire danger level (low, moderate, high, extreme); increasing awareness about fire department response and fire department resource needs; providing workshops at demonstration sites showing Firewise

Communities landscaping techniques or fuels treatment projects; organizing community cleanups to remove green waste; publicizing availability of government funds for thinning; and, most importantly, improving communication between homeowners and local land management agencies to improve and build trust, particularly since the implementation of fuel treatments and better maintenance of existing treatments has been identified repeatedly by the public as a needed action to reduce risk and often the public are ill-informed of the hazard mitigation actions that land managers are applying in areas adjacent to homes. Table 5.4 provides strategic level recommendations for public education and outreach that can be applied at the county level and tiered from for agencies and communities (Annexes).

Table 5.3. General Planning Project Recommendations

ID	Project Description	Method	Timeline for Action	Priority (1,2,3)	Monitoring/Sustainability	Resources/Funding Sources Available
GP1	Ensure project sustainability.	• Have a target date for updating the datasets used in the risk assessment model and re-running the model. • Establish trigger points for updating CWPP. • Use Mello-Roos Community Facility Districts for new subdivision for sustainable hazardous fuel maintenance.	Annually	1	Establish annual oversight of the CWPP and project status. Get buy-in from Core Team members for long term commitment to CWPP review.	Refer to Appendix D
GP2	Form a task force to do parcel level inspection work to enhance model; utilize portable data collection and ARCGIS as analysis tools.	• Must have agency link to be accepted by the public. Agency responsibility would fall to the County Fire Department. • Carryout parcel level assessments to enhance risk assessment model components at a finer scale. • Add data to model and re-run as necessary.	2 years	1	Set target number of parcels to be assessed each year. Review number of parcels assessed each year at annual CWPP meeting.	Refer to Appendix D
GP3	Use a countywide standard and method for continued data gathering and risk analysis.	• Conduct funding to purchase a commercial application such as Fulcrum that provides a standard data collection platform that could be used on a smart phone.	2 years	1	Annual review of progress as part of Core Team.	Refer to Appendix D

ID	Project Description	Method	Timeline for Action	Priority (1,2,3)	Monitoring/Sustainability	Resources/Funding Sources Available
GP4	Improve partnerships across county boundaries.	• Work with adjacent counties where there are shared risks and shared resources to ensure defensible space requirements (Appendix L) and egress routes are both implemented maintained on both sides of the county line. • Work with Santa Cruz County to establish a Santa Cruz County Fire Safe Council. • Increase partnerships with Santa Cruz agencies and other adjacent county agencies, and use existing relationships with the Santa Clara County Fire Safe Council. • Provide community workshops that address cross-jurisdictional boundary concerns.	Next 2 years	1	Revisit success within a year by assessing project partnerships established across county boundaries	Refer to Appendix D
GP5	Add hyperspectral and LiDAR imaging to periodic aerial photography flights.	• Work in conjunction with the County Assessor or other agency that acquires aerial photography of county and add additional sensing cameras to flights to acquire analysis data. • Hyperspectral and LiDAR can provide in depth identification and analysis of hazards and risks.	1–3 years	1	Periodic new flights to update data sets.	Grants: FEMA, Department of Homeland Security SRA, GHGR
GP6	Continue support for and possible expansion of the Early Warning Wildfire Detection Camera System.	• Review current established systems and assess public support. • Install additional systems as support increases. • Identify highest risk areas and most suitable vegetation and terrain for installation.	1–5 years	1	The technology for early warning detection cameras is continually being developed. All future plans should be adjusted as appropriate based on planned improvements to the system.	Ongoing funding is available from Verizon, CAL FIRE in Sacramento (the Loma Prieta Tower), University of California Lick/Santa Cruz, and several local homeowner associations

ID	Project Description	Method	Timeline for Action	Priority (1,2,3)	Monitoring/Sustainability	Resources/Funding Sources Available
GP7	The CWPP serves as the wildfire component of LHMP and General Plan Safety and other element amendments.	• Work with county and city planning to identify timeline for incorporation. • Aim to have the CWPP incorporated into the Safety Element of the General Plan when the safety element is next revised. Getting it into the General Plan is equivalent to getting the CWPP adopted.	Next 5 years	2	The Core Group of stakeholders would need to ensure that the document is kept relevant in that time and position it for incorporation.	Refer to Appendix D
GP 8	Ensure ongoing refinement of mitigation strategies	• Convene working groups at the community level to review and refine * mitigations maps * fuels treatment project specifications and priorities * other mitigation projects and programs details and priorities	Upon adoption of final CWPP	1	Form local CWPP review teams and establish local review process	Refer to Appendix D
GP 9	Increase stakeholder involvement in future revisions to the CWPP and annexes and encourage more long term participation and commitment by stakeholders and entities tasked with emergency management and resource management.	• Determine which entities were under-represented in current CWPP planning process and seek commitment from those entities in future revisions to the CWPP. • Establish a schedule for CWPP updates- i.e. annually for annexes and every 5 years for strategic document.	Immediate review of collaboration and annual meeting of stakeholders	1	Form County wide CWPP review team and establish an annual review process	Refer to Appendix D

Table 5.4. Recommendations for Public Outreach and Education

ID	Project	Presented by	Target Date	Priority	Resources Needed	Serves to
EO1	Educate citizens on how to achieve contemporary WUI code compliance in retrofits/cost: benefit ratio. Provide workshops and/or demonstration site.	Fire Safe Councils, County Fire, CAL FIRE	Within 2 years	1	• Workshop expenses, personnel • Workshop venues • Demonstration site • Strategize on avenues for engaging the public. Be opportunistic- engage residents following a local wildfire or at existing well-attended events- i.e. annual BBQ, Pancake Breakfasts, Open days offered by Fire Departments.	Increase compliance with County code. Reduce fire risk level for individual parcels and community as a whole.
EO2	Analyze playing with fire ignitions and focus education programs at vicinity schools.	County Fire, CAL FIRE, municipal fire departments, Fire Safe Council	Within 1 year	1	• School liaison • Materials for presentations • Personnel • Video processing, could utilize You Tube platform • Could be a college student project	Adds to existing programs provided by County Fire and Fire Safe Council targeted at school age children. Reduces number of ignitions.
EO3	Organize a community group made up of residents and agency personnel to develop materials and communicate relevant defensible space messages. Could coordinate with fire departments or Fire Safe Council. Possibility to coordinate actual implementation of defensible space and slash clear-up with the local Eagle Scout group or high school volunteers.	Fire Safe Council, fire departments, local residents, Eagle Scouts, High School Community Volunteer Program	Within a year	1	• Funding to help cover costs of materials (green waste removal or chipper) and participation. • People trained in defensible space practices.	Engage diverse stakeholders in reaching out to community members and encourage defensible space practices. Empower homeowners to make affordable and effective changes to reduce the vulnerability of individual homes. Melds fuel reduction project with outreach and education program.

ID	Project	Presented by	Target Date	Priority	Resources Needed	Serves to
EO4	Media involvement. Develop a local newspaper column that provides fire safety information, promotional information for volunteer fire departments, fire announcements, and emergency planning.	Agency Public Information Officers, Emergency Manager, Commission	Within 1 year	1	• Columns, information, and articles to be provided by fire departments, city, county, state representatives.	Protect communities and infrastructure through increasing public awareness and providing a channel for information regarding emergency fire response.
EO5	Emergency preparedness meetings. Use American Red Cross volunteers and other preparedness experts. Attend community functions and hold special meetings to provide guidance for creating household emergency plans. Use Ready, Set, Go! program.	American Red Cross, city, county, state personnel, Fire Safe Council	Within 1 year	1	• Written materials- could use existing literature.	Improve preparedness by facilitating the communication between family members and neighbors about what procedures to follow in the event of a wildfire.
EO6	Work with Caltrans to install or utilize existing electronic message signs on major highways to notify public of extreme fire danger.	County, Caltrans	Within 1 year	1	• Funds for new sign installing and/or maintenance of existing signs.	Inform residents, commuters and tourists of extreme fire danger in order to reduce accidental ignitions and encourage pre-planning.
EO7	Plan livestock evacuation routes and inform communities. Work with emergency management officials to plan evacuation routes for residents with livestock and then hold community meetings to disseminate to the public.	Emergency management officials, livestock agencies/ civic groups	Within 2 years	1	• GIS software or maps- coordinate with EQ Clearing House- GIS sharing.	Protect communities, livestock and infrastructure through increased awareness.

ID	Project	Presented by	Target Date	Priority	Resources Needed	Serves to
EO8	Provide webinars for homeowners to learn about Fire Safe communities and property.	County Fire, CAL FIRE, municipal fire departments, Fire Safe Councils	Within 2 years	2	• Workshop expenses • Personnel • Workshop venues • Video processing • Could be a college student project	Increase reach for public education and outreach. Provide access to information to residents who don't typically attend in-person meetings or workshops. Provide a consistent and standard message to residents. Improve individual adoption of action sot reduce structural ignitability.
EO9	Targeted wildfire info workshops. Review existing programs (Ready, Set, Go!; Firewise) for suitability of existing fire prevention workshops and where necessary fund development of unique adapted presentations to highlight how a fire might affect particular groups in the community.	Active local residents, Fire Safe Council	Within 1 year	1	• Funding for research, writing, and presentation of detailed information on how large-scale wildfire would affect the target audience and the measures that could be taken to reduce the threat.	
EO9.1	Targeted wildfire education materials. Review existing programs (Ready, Set, Go!; Firewise) for suitability of existing fire prevention materials and where necessary fund development of unique adapted materials to highlight how a fire might affect particular groups in the community.	Active local residents, Fire Safe Council	Within 1 year	1	• Flyers could be sent out with utility bills or other community mailings. • Consider "Simtable" use for visualizing various emergency scenarios for residents/HOA leaders and agency personnel.	Deliver a clear and consistent message that impacts of wildfire are far-reaching and that it is in the best interest of a diverse set of stakeholders to become involved in planning and preparing for fire. Bring cutting-edge research findings and recommendations into outreach materials to supplement requirements as in adopted codes.

ID	Project	Presented by	Target Date	Priority	Resources Needed	Serves to
EO10	Insurance Service Office informational meetings: Invite Insurance Services Office representatives to speak to groups regarding ways to improve insurance ratings in the community.	Insurance Services Office in conjunction with local volunteer fire departments	Within 2 years	2	• Resources provided by Insurance Services Office. Venue provided by fire department.	Communities can learn how to improve their insurance ratings, which will reduce insurance costs in their community by implementing wildfire prevention measures.
EO11	Increase signage/replace or augment existing signage. Use existing signage to spread seasonally adjusted fire prevention message along highways and in public open space areas (trailheads, info kiosks) to reduce human ignitions. Promote the use of existing electronic signs at firehouses and other locales to display fire prevention information, safety messages, and fire danger rating linked to safety actions.	County Fire	Within 2 years	2	• Mostly existing signs and posting sites, people to post and update signs. • Replace, or augment the existing Smokey Bear signs with electronic Fire Danger Warning Signs that are solar powered, LED displays (visible day & night), and accessible and programmable through an internet website.	Protect communities and infrastructure by raising awareness of local citizens and those traveling in the area about actions that can prevent fire.
EO12	Promote and increase the use of prescribed burning as a fuels reduction method. Gain public support for using prescribed burns to reduce fuel loads and to improve ecosystem health through a pilot burn project and demonstration site. Consider developing informational material for distribution at natural areas or via email distribution lists.	CAL FIRE/ Midpeninsula/ Santa Clara Valley Open Space Authority	Within 2 years	2	• Prescribed burn prescription, type-6 engines, hand crews, equipment. • Research and costs of producing1, printing, and distributing paper informational flyer.	Protect communities and infrastructure by reducing fuel loads.

ID	Project	Presented by	Target Date	Priority	Resources Needed	Serves to
EO13	Implement Firewise Communities programs. Work with communities to participate in Firewise Communities and prepare for fire events. Hold Firewise booths at local events for example during the October Fire Awareness Week each year.	Fire Safe Council, CAL FIRE, County Fire	Within 2 years	2	• Firewise Communities educational materials.	Protect communities and infrastructure through increased awareness and defensible space.
EO14	Fire agencies establish partnership with San Jose State University (or other colleges) for student intern programs for GIS, plans, weather, environmental reviews, etc. GIS work should be in conjunction with the EQ Clearinghouse and Exchange Core.	County Fire Department	Within 2 years	3	• Admin costs • Liaison	Provides resources for agencies to implement projects in the CWPP. Improves technical capabilities of Agencies to run fire modelling programs and train staff in modelling protocols. Engages students in real-life training opportunities. Assist Fire Safe Council with GIS needs

5.5.3 RECOMMENDATIONS FOR ACTIONS TO REDUCE STRUCTURAL IGNITABILITY

Table 5.5 provides a list of strategic level recommendations to reduce structural ignitability that should be implemented throughout Santa Clara County. Reduction of structural ignitability depends largely on public education that provides homeowners the information they need to take responsibility for protecting their own properties. It is important to note that no two properties are the same. Homeowners and communities are encouraged to research which treatments would have the most effect for their properties. Owners of properties on steep slopes, for example, should be aware that when constructing defensible space they have to factor in slope and topography, which could require extensions to the conventional 30/100-foot recommendations. A number of educational programs are now available to homeowners through programs like Ready, Set, Go! (http://www.wildlandfirersg.org) and Firewise (Appendix A) contains a simplified list of steps to take to protect property from wildfire by reducing structural ignitability, developed by the IBHS (http://www.disastersafety.org).

Table 5.5. Recommendations for Reducing Structural Ignitability

ID	Project	Presented by	Programs Available	Description	Priority (1-3)	Timeline
SI1	Retrofit/Eliminate flammable roofs	County Planning in conjunction with County Fire and municipalities	FEMA grants	Require elimination of all flammable roofs through attrition or time deadline	1	By 2030
SI2	Identify all WUI areas (including FHSZ VH, H, and M in LRA and SRA); standardize regulations/standards/codes in all WUI areas	County Fire and municipalities		Make all WUI building codes, defensible space and other prevention regulations standard across all jurisdictions. Data Should be shared via the EQ Clearinghouse and Exchange Core	1	2020
SI3	Encourage/require retrofit to achieve contemporary WUI codes when remodeling beyond 50 %	County Planning (through General Plan and Fire Safety Elements) in conjunction with County Fire and municipalities.		Require or encourage gradual updating of existing structures to the standards identified in the most contemporary WUI codes though remodels or owner interest Acknowledge that some codes cannot be met on existing parcels.	2	Adopt ordinances by 2020
SI4	Adopt common defensible space standards throughout the county	County Fire, CAL FIRE, Municipal Fire Departments		Make all WUI building codes, defensible space and other prevention regulations standard across all jurisdictions	1	Next 3 years
SI5	Adopt landscape guidelines for recommended plant landscape materials	Fire Safe Councils to lead	Research Firewise plants suitable for the region. Develop plant list, poster materials and research demonstration site. Firewise Communities USA: www.firewise.org	Educate property owners, landscape firms and landscape architects in appropriate ornamental plantings, mulches, and landscape design/ maintenance in WUI areas.	3	Next 2 years

ID	Project	Presented by	Programs Available	Description	Priority (1-3)	Timeline
SI6	Develop landscape contractor maintenance program for "Right Plant--Right Place" and maintenance Consider consulting with the California Native Plant Society and wildlife biologists to create an area that is sensitive-plant and animal friendly. These practices include no heavy pesticide use, limiting soil erosion, and a focus on using native plants.	Fire Safe Councils to lead	Firewise Communities USA: www.firewise.org	Educate property owners, landscape firms and landscape architects in appropriate ornamental plantings, mulches, and landscape design/ maintenance in WUI areas.	2	Next 2 years
SI7	Promote Firewise Community recognition program countywide; consider SCL amendments to Fire wise; partner with CERT and Neighborhood Watch. NOTE: Linked to EO 13	Fire Safe Councils to lead in conjunction with Santa Clara County Fire Department, Municipal Fire Departments	Firewise Communities USA: www.firewise.org	Educate and outreach to bring communities into Firewise recognition programs.	2	Next 3 years
SI8	Interactive tool for citizens to use on line, ID their property and what hazard/risks exist and mitigations they can apply to improve their survivability	Santa Clara County Fire Department with revised Interra contract	Interra	Pursue funding to increase contract provisions with Interra to provide public facing tool. Simplify tool and provide easy to follow instructions. Could develop YouTube informational video.	1	Next 3 years
SI9	Create a countywide defensible space ordinance for parcels below certain size acreage (parcel size: i.e. 2 acres?) to address unmaintained vacant lot concerns. Could be tied to County weed abatement program	Santa Clara County Fire Department, Municipal Fire Departments, CAL FIRE		To assure defensible space in WUI will be maintained; require property clear or agencies will clear and assess property owner. Link to enforcement of weed abatement.	1	Next 2 years

ID	Project	Presented by	Programs Available	Description	Priority (1-3)	Timeline
SI10	Public education program for embers and problems associated with embers, property hygiene, defensible space	County Fire, Municipal Fire Departments, CAL FIRE, Fire Safe Councils	Ready, Set, Go! Program: www.wildlandfirersg.org. Institute for Business and Home Safety NFPA: www.nfpa.org, Fire Adapted Communities	Educate property owners on best methods to reduce ember intrusion. Could utilize you tube informational video of college student project.	1	Next 2 years
SI11	Implement spring community yard clean-up days. In combination with Fire Safe Council chipper program.	County Fire, Municipal Fire Departments, CAL FIRE, Fire Safe Councils	Fire Safe Council chipping program Ready, Set, Go CAL FIRE	A community led day of yard clean-up with fire mitigation in mind would encourage large numbers within the community to carry-out mitigation measures and implementation of defensible space.	2	Next 2 years
SI12	Assess and improve accessibility to property Weekend program to inform homeowners about emergency response access	Fire departments, Fire Marshal		Inform homeowners about the importance of keeping driveways accessible to fire trucks and emergency responders.	1	Within 1 year
SI13	Consider and explore potential for development of a certificate of compliance program for home owners that implement and maintain Defensible Space. Work with Insurance companies to determine if such a program could be viable.	County Fire, Insurance industry	No known existing program.	Insurance companies carry out assessments of policy holder properties to ensure defensible space parameters have been met. There may be a possibility to combine the assessments carried out by County Fire and CAL FIRE with insurance standards in order to incentivize defensible space practices in the WUI.	3	Next 5 years

ID	Project	Presented by	Programs Available	Description	Priority (1-3)	Timeline
SI 14	Develop building/general contractor education program for "Reducing Structural Ignitability." Consider consulting with Santa Clara County Contractors and California State Fire Marshal to create an educational program for contractors doing new construction and remodeling on how to reduce structural ignitability.	Fire Safe Councils to lead	California State Fire Marshal's Office: Firewise Communities USA: www.firewise.org	Educate property owners, architects and contractors in appropriate building designs/ maintenance in WUI areas.	2	Next 2 years

Below is a list of action items that could be implemented by all Santa Clara County residents. The list is broken into items based on cost/effort.

5.5.4 Action Items for Homeowners to Reduce Structural Ignitability

Low or No Cost Investment (<$50)

- ✓ Regularly check fire extinguishers and have a 100-foot hose available to wet perimeter.
- ✓ Maintain defensible space for 30 feet around home. Work with neighbors to provide adequate fuels mitigation in the event of overlapping property boundaries.
- ✓ Make every effort to keep lawn mowed and green during fire season.
- ✓ Screen vents with non-combustible meshing with mesh opening not to exceed nominal ¼-inch size.
- ✓ Ensure that house numbers are easily viewed from the street.
- ✓ Keep wooden fence perimeters free of dry leaves and combustible materials. If possible, non-combustible material should link the house and the fence (Figure 5.4).
- ✓ Keep gutters free of vegetative litter. Gutters can act as collecting points for fire brands and ashes.
- ✓ Store combustible materials (firewood, propane tanks, grills) away from the house; in shed, if available.
- ✓ Clear out materials from under decks and/or stacked against the structure. Stack firewood at least 30 feet from the home, if possible.
- ✓ Reduce your workload by considering local weather patterns. Determine the prevailing wind direction in your area and work from that edge of your property first before working around to cover the entire area.
- ✓ Seal up any gaps in roofing material and enclose gaps that could allow fire brands to enter under the roof tiles or shingles.
- ✓ Remove flammable materials from around propane tanks.



Figure 5.4. Home in WUI on steep slope with wooden fence attached to property.

Minimal Investment (<$250)

- ✓ When landscaping in the Home Ignition Zone (HIZ) (approximately 30 feet around the property), select non-combustible plants, lawn furniture, and landscaping material. Combustible plant material like junipers and ornamental conifers should be pruned and kept away from siding. If possible, trees should be planted in islands and no closer than 10 feet to the house. Tree crowns should have a spacing of at least 18 feet when within the HIZ. Vegetation at the greatest distance from the structure and closest to wildland fuels should be carefully trimmed and pruned to reduce ladder fuels, and density should be reduced with approximately 6-foot spacing between trees crowns (Figure 5.3).
- ✓ Box in eaves, attic ventilation, and crawl spaces with non-combustible material.
- ✓ Work on mitigating hazards on adjoining structures. Sheds, garages, barns, etc., can act as ignition points to your home.
- ✓ Enclose open space underneath permanently located manufactured homes using non-combustible skirting.
- ✓ Clear and thin vegetation along driveways and access roads so they can act as a safe evacuation route and allow emergency responders to access the home.
- ✓ Purchase or use a National Oceanic and Atmospheric Administration weather alert radio to hear fire weather announcements.

Moderate to High Investment (>$250)

- ✓ Construct a non-combustible wall or barrier between your property and wildland fuels. This could be particularly effective at mitigating the effect of radiant heat and fire spread where 30 feet of defensible space is not available around the structure.
- ✓ Construct or retrofit overhanging projections with heavy timber that is less combustible.
- ✓ Replace exterior windows and skylights with tempered glass or multilayered glazed panels.
- ✓ Invest in updating your roof to non-combustible construction. Look for materials that have been treated and given a fire-resistant roof classification of Class A. Wood materials are highly combustible unless they have gone through a pressure-impregnation fire-retardant process.
- ✓ Construct a gravel turnaround in your driveway to improve access and mobilization of fire responders.
- ✓ Treat construction materials with fire-retardant chemicals.
- ✓ Install a roof irrigation system.
- ✓ Replace wood or vinyl siding with nonflammable materials.
- ✓ Relocate propane tanks underground.

5.5.5 RECOMMENDATIONS FOR COMMUNITY/FIREFIGHTER PREPAREDNESS

Educating the public to reduce its dependence on fire departments for fire protection is essential because these resources are often stretched thin during fire season and many residences are located at some distance from emergency response. Table 5.6 provides strategic level recommendations for improving firefighting capabilities. Many of these recommendations are general in nature because they are applicable across departments. Departments should work together in implementing these actions and provide feedback to other fire chiefs on funding and grant successes, this way each department benefits from a lessons learned approach.

Table 5.6. Recommendations for Improving Firefighting Capabilities

ID	Project Description	Fire Department/Agency	Benefits of the Project to the community	Timeline	Priority (1-3)	Resources/funding sources available
FC1	Review minimum requirement of 5,000 gallon of water storage at single parcel developments where no community water system exists. Incorporate map component and utilize EQ Clearing House GIS Exchange Core.	County Fire/CAL FIRE/Fire Safe Councils/Municipal Fire Departments	Alleviates public and agency concern for limited water supply in remote areas. Improve fire-fighting capability. Enhances firefighter safety. Enhances protection of life and property.	2 years	2	Requires local fire code and land development amendments
FC2	Define Safe Refuge Areas and establish maintenance program in WUI areas where fire behavior and evacuation timing is problematic. Incorporate map component and utilize EQ Clearing House GIS Exchange Core.	County Fire/CAL FIRE/Fire Safe Councils/Municipal Fire Departments, MERC and other groups that maintain evacuation centers.	Provides safety measure for residents of rural areas in event that evacuation is limited. Provides for firefighter safety by creating escape route.	2 year	1	Grants: SRA, FEMA, CA Fire Safe Council, DHS
FC3	Identify carless population/evacuation assistance needed locations. Establish registry in cooperation with emergency management agencies. Incorporate map component and utilize EQ Clearing House GIS Exchange Core.	County Fire/CAL FIRE/Fire Safe Councils/Municipal Fire Departments Emergency Management Agencies	Aids in safe evacuation of residents, those with evacuation assistance needs	2 year	1	FEMA, DHS

ID	Project Description	Fire Department/Agency	Benefits of the Project to the community	Timeline	Priority (1-3)	Resources/funding sources available
FC4	Require evacuation time modeling for all WUI areas. Establish benchmark s time standard for evacuation. Requires amendment to planning conditions and/or land use ordinances.	County Fire/CAL FIRE/Fire Safe Councils/Municipal Fire Departments	Existing road networks are set and would be extremely costly to mitigate. Modelling evacuation would help fire response agencies pre-plan for evacuations. Helps identify areas where additional mitigation measures are needed to facilitate safe evacuation.	1 year	1	Developers fund studies for new developments. County Fire seek funding to fund studies of existing communities.
FC5	Develop WUI preplans and accompanying evacuation plans for all WUI areas in Santa Clara County using standardized format.	County Fire/CAL FIRE/Fire Safe Councils/Municipal Fire Departments	Helps fire response agencies pre-plan for evacuations. Helps identify areas where mitigation measures are needed to facilitate safe evacuation. Helps establish consistent model across all agencies.	1 year	1	Grants: SRA, FEMA, CA Fire Safe Council, DHS
FC6	Create secondary accesses in communities that have single access and poor road systems. Require major coordination with planning agencies and governing bodies for land use changes or retrofit requirements.	County Fire/CAL FIRE/Fire Safe Councils/Municipal Fire Departments Land Use Planning agencies Governing bodies	Alleviates evacuation concerns of residents living in areas with poor ingress/egress. Provides for improved response capabilities and reduces risk that responding emergency vehicles will conflict with evacuation of residents.	2 years	1	Homeowner Associations, Road Associations, County Service Areas
FC7	Obtain additional helicopters/air resources for suppression.	County Fire/CAL FIRE/Fire Safe Councils/Municipal Fire Departments	Provides back-up to on-the-ground resources. Improves suppression capabilities in inaccessible areas where use of ground resources would threaten firefighter safety. Improves response time to aid in protection of life and property.	5 years	2	Refer to Appendix D

ID	Project Description	Fire Department/Agency	Benefits of the Project to the community	Timeline	Priority (1-3)	Resources/funding sources available
FC8	Where road systems are antiquated and do not provide for proper evacuation or two way flow, require removal of obstructions or upgrade to minimum 2 lanes road system over time.	County Planning	Alleviates evacuation concerns of residents living in areas with poor ingress/egress. Provides for improved response capabilities and reduces risk that responding emergency vehicles will conflict with evacuation of residents.	2 years	1	Homeowner Associations, Road Associations, County Service Areas
FC9	Where possible encourage setting up water sources with multiple uses (e.g. fire suppression and wildlife water, cattle water, etc.).	Fire Safe Councils working with communities.	Provides for use of livestock and wildlife water tanks that could be utilized for fire protection.	1 year	3	Refer to Appendix D
FC10	Investigate potential for use of drones to assess and monitor wildfire.	County Fire	Drones could be a useful tool for the monitoring of wildfire in areas with limited access but future research is needed to fully assess their utility and application. The fire departments could launch a pilot study to determine effectiveness of the tool.	Within 3 years	3	Refer to Appendix D
FC11	Investigate and potentially install Fire Detection Robots to alert departments of a fire start in remote areas.	County Fire	Uses technology for single-tree wildfire detection solution that help forestry agencies and fire protection professionals manage the risks of fire damage cost-effectively.	Within 2 years	1	Private companies provide robotic technology i.e.: Insight Robotics http://www.insightrobotics.com/solutions/wildfire-detection Wildland Detection Systems http://www.wildlandsystems.com/ Fire Alert MK1 http://vigilys.com/technology/firealert/

ID	Project Description	Fire Department/Agency	Benefits of the Project to the community	Timeline	Priority (1-3)	Resources/funding sources available
FC12	Implement County wide program to replace existing house number markers with reflective markers that meet consistent standard.	County Fire	Improves fire response times and assists out-of-town responders who are not familiar with the local area, especially at night. Would need funding to implement program. Could consider private contributions.	Within 1 year	1	Santa Clara County Fire Safe Council
FC13	Develop a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard.	County Fire, CAL FIRE, Fire Safe Council, San Jose Water and other local water purveyors	Improve fire-fighting response if water is more readily available or closest locations could be identified on a GIS map on a tablet/computer.	Within 2 years	1	County Fire
FC14	Where possible encourage sharing of water sources in areas where residential water supplies may be low or non-existent during periods of drought or when wells/springs have run dry.	fire agencies, local community organizations, local water purveyors	Encouragement and assistance from Fire Safe Council can provide a catalyst for action. Example: Loma Prieta Fire Department is providing small grants to home owners to purchase and install additional water tanks on private residential lots where a reliable supply of water exists. These tanks then provide water for adjacent properties where a well or spring may be seasonal or dry	1-5 years	1	County Fire
FC15	Add large capacity water storage tanks and hydrants where open space and park agencies establish trail head parking areas, operating facilities such as horse stables and camping areas.	County Fire, CAL FIRE, open space organizations	Alleviates public and agency concern for limited water supply in remote areas.	Within 5 years	3	County Fire NRCS, SRA fees, GHGR grants

5.5.6 RECOMMENDATION FOR FUELS REDUCTION PROJECTS

The purpose of any fuels reduction treatment is to protect life and property by reducing the potential for catastrophic wildfire, as well as to restore landscapes to a sustainable and healthy condition. Fuels should be modified with a strategic approach across the planning area to reduce the threat that high intensity wildfires pose to lives, property, and other values. Pursuant to these objectives, recommendations have been developed in the context of existing and planned fuels management projects.

Table 5.7 summarizes the types of treatments recommended throughout the planning area. The majority of the treatments are focused on high or extreme risk areas, as defined by the Composite Risk/Hazard Assessment, Core Team collaboration, and public input. Many of these treatment recommendations are general across the communities because similar conditions and concerns were raised for all communities that border wildland areas. Table 5.7 addresses the requirement for an action plan and assessment strategy by providing monitoring guidelines and a timeline for implementation. This timeline is obviously dependent on available funding and resources, as well as environmental compliance parameters for treatments on public lands.

The treatment list is by no means exhaustive and should be considered purely a sample of required projects for the future management of the planning area. Many projects may be eligible for grant funds available from federal and/or state sources. For a list of funding sources please refer to Appendix D.

Fire management cannot be a one-size-fits-all endeavor; this plan is designed to be flexible. Treatment approaches and methods will be site-specific and should be adapted to best meet the needs of the landowner and the resources available. Moreover each treatment recommendation should address protection of CVARs, particularly the protection of threatened and endangered species. It is the intent of this plan to be an evolving document that will incorporate additional areas of the CWPP planning area as they change in risk category over time.

Table 5.7. Fuel Reduction Treatment Recommendations

ID	Project Description	Location and Responsible Party	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/funding sources available
FR1	Incorporate trails into fire defense system where practical.	Santa Clara County and other SF Bay area counties. MROSD; County Parks, Open Space Authority, CA State Parks, Palo Alto Parks, San Jose Parks, and other municipal park agencies.	Strategic plan to incorporate fire defense improvements on open space properties. Detailed analysis would be needed in development of treatment location to ensure protection of natural resources. Should incorporate a map component and use the Earthquake Clearinghouse exchange core to facilitate project development.	Provide access when fires occur to reduce spread. Enhance Community fire defense.	Ongoing-LONG RANGE	1	Regular monitoring to determine project success in reducing fuel loading and enhanced access.	Grants: SRA, CA Fire Safe Council; CFIP; NRCS, FEMA, GHGRF Fund sustainability efforts through the property owner/manager, or local/state agency that is the responsible party.
FR2	Evaluate existing fire roads for use as fuel breaks/fuel reduction areas as appropriate.	Open Space Authority, MROSD, , State Parks, County Parks, Palo Alto Parks, San Jose Parks, and other municipal parks that bound up to the WUI.	Maintain road width trails for fire and park patrol vehicles where possible to facilitate access. Use trails as fuel breaks. Should incorporate a map component and use the Earthquake Clearinghouse exchange core to facilitate project development.	Protect life and property by improving access for emergency vehicles to open space areas and WUI areas adjacent to open space.	Within 2 years	1	Regular maintenance schedule should be implemented to ensure clearance levels are maintained.	Refer to Appendix D

ID	Project Description	Location and Responsible Party	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/funding sources available
FR3	Encourage continued grazing in parks and open space for grass/light fuel maintenance.	County Parks, MROSD, Open Space Authority, State Parks, water company/district properties	Utilize browsing as fuel reduction and maintenance technique, especially adjacent to WUI areas.	Reduce fuel loading of fine fuels that could increase wildfire spread to WUI areas.	Ongoing	2	Regular monitoring needed to ensure against environmental damage and invasive species.	Grants: SRA, CA Fire Safe Council; CFIP; NRCS, FEMA, GHGRF
FR4	Encourage use of prescribed fires where ecologically sound and feasible.	All jurisdictions where appropriate	Utilize prescribed burn planning that follows agency and regulator protocols. Closely follow plan prescriptions.	Reduce fuel loading of fine fuels and understory species to mitigate potential for intense fire behavior in the event of an unplanned ignition.	Ongoing	1	Regular monitoring needed to ensure against environmental damage and invasive species into burned areas. Monitoring to determine project success in reducing fuel loading.	Grants: CAL FIRE VMP program, SRA, CA Fire Safe Council, CFIP, NRCS
FR5	Land management agencies partner for clarity of prescribed fire use that is complementary to Greenhouse Gas Reduction plan of CA Air Resources Board.	MROSD; County Parks, Open Space Authority, CA State Parks, Palo Alto Parks, San Jose Parks, and other municipal park agencies; private rangeland owners	Establish prescribed burning program in partnership with Bay Area Air Quality Management District. Develop prescribed burning community of interest/council.	Open dialogue with APCD Educate public Encourage landowners Provide expertise	ongoing	3	Regular monitoring to determine project success in reducing fuel loading through prescribed burning.	Grants: CAL FIRE VMP program, SRA, CA Fire Safe Council, CFIP, NRCS

ID	Project Description	Location and Responsible Party	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/funding sources available
FR6	Adopt common power line clearance standards for WUI in LRA and SRA.	County in conjunction with utility companies.	Compare power line clearance ordinances in all local WUI jurisdictions. Coordinate with power utility providers to understand impacts and legal pathways. Where necessary adopt local ordinances consistent with intent of CA Public Resources Code sections. Utilize EQ Clearing House exchange core to facilitate project development.	Reduce fuel loading around critical utility infrastructure. Reduce potential for fire starts from downed lines and line strikes.	Within 2 years	1	Regular maintenance schedule should be implemented to ensure clearance levels are maintained.	CA Public Resources Code and Office of Administrative Law for guidance. Funding needs to be determined after impact assessment
FR7	Develop roadside fuel treatment program, including suite of methods available and sustainability mechanism.	All jurisdictions where appropriate;;;; Caltrans, County and city road agencies; private road associations, PG&E, cable and phone companies	Determine suite of treatment methods allowed and restriction for roadside hazard reduction including mowing, mastication, chemical, plantings, mulching, etc. Develop treatment plan and rotation schedule for roadside treatments, focusing of primary evacuation or access/egress corridors.	Reduce fuel loading around roads and highways to ensure safe passage of vehicles in event of evacuation and reduce unplanned ignitions from vehicles and highway users.	Within 2 years	1	Regular maintenance schedule should be implemented to ensure clearance levels are maintained. Develop standards for road crews.	Grants: SRA, CA Fire Safe Council; CFIP; NRCS, FEMA, GHGRF

ID	Project Description	Location and Responsible Party	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/funding sources available
FR7			Develop map that highlights critical routes. Track with the Earthquake Clearinghouse exchange core.					
FR8	Develop list of fuel treatment methodologies with cost per acre/day (other metric) that can be used for hazardous fuel treatment.	Fire Safe Council	Educational tool for land /property owners re: various methods, techniques, and cost for various fuel treatments. Cost estimator for project management and grant applications. Pros/cons/restrictions on use of various techniques.	Provide residents with a usable list that helps them to prioritize treatments and plan their defensible space projects.	Within 1 year	1	Monitor effectiveness of different treatment approaches and implement adaptive approach for updating the list depending on uptake of various methods.	NPS, U.S. Forest Service, CAL FIRE, PG&E resources of techniques in use and cost/benefit
FR9	Establish assistance program for hazardous fuel reduction for physically or fiscally challenged parcels.	Throughout all jurisdictions in the County	Identify barriers to achieving parcel level defensible space and establish assistance program of resources: education, consulting, guidance, people, and funding. Establish subsidy or other assistance programs.	Ensure that individual properties with poor property hygiene do not put adjoining properties at risk in event of wildfire. For residents who are not capable of implementing good property hygiene.	Within 2 years	2	Establish levels of participation by assistance type	Grants: SRA, CA Fire Safe Council; CFIP; NRCS, FEMA, GHGRF

ID	Project Description	Location and Responsible Party	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/funding sources available
FR10	Develop agency partnership to establish creation of hand crew for fire hazard reduction- need not be a fire crew.	County Fire, CAL FIRE, County Sheriff, CCC,	Establish a local based crew for use in fire defense improvement work throughout the county. Can be through private resources, contract with CCC, or Sheriff.	Primary purpose is to carry out CWPP objectives	Within 3 years	2	Monitor cost effectiveness through benefit cost ratio approach	Grants: SRA, CA Fire Safe Council; CFIP; NRCS, FEMA, GHGRF
FR11	Create Sustainable programs for creating defensible space at the parcel level.	Home Owner, Fire Safe Councils, Home Owner Associations, Local fire Departments, Administrators for SRA fee distributions, etc.	Example projects - Curbside green waste pickup programs, community chipping piles, drive-up chipping, on site chipping.	Ensure that defensible space actions are sustained in all communities	Within 1 year	1	Regular maintenance schedule should be implemented to ensure clearance levels are maintained.	Grants: SRA, CA Fire Safe Council; CFIP; NRCS, FEMA, GHGRF
FR12	Integrate LHMP with all Parks and open space areas.	County Planning	Outlined in LHMP as a primary WUI mitigation action. Refer to LHMP. Chapter 7, page 7-10.	Address open space areas with a countywide strategy in order to protect life safety.	Within 5 years	2	Annual review of status	County funding

Proposed fuel treatments on private and public lands in the planning area are described and illustrated in the CWPP Annexes. Note that any potential treatments included in this document and annexes are conceptual and have not been field verified for viability and in some cases would have to undergo the environmental compliance process to assess their impacts on natural and cultural resources. The best type of fuels treatment for each area would be determined during this process, which incorporates thorough public scoping.

Note: Although fuel treatments are designed to help to mitigate high intensity fire behavior and allow firefighters access for suppression efforts, no fuel treatments suggested here can be 100% guaranteed to protect life and property, particularly when environmental conditions are primed to create catastrophic fire behavior.

6 MONITORING AND EVALUATION STRATEGY

All stakeholders and signatories to this CWPP desire worthwhile outcomes. We also know that risk reduction work on the ground, for the most part, is often not attainable in a few months—or even years. The amount of money and effort invested in implementing a plan such as this requires that there be a means to describe, quantitatively or qualitatively, if the goals and objectives expressed in this plan (and other approved plans within Santa Clara County) are being accomplished according to expectations.

This section will present a suite of *recommended* CWPP monitoring strategies intended to help track progress, evaluate work accomplished, and assist planners in adaptive management.

Strategies outlined in this section take into account several variables:

- Do the priorities identified for treatment reflect the goals stated in the plan? For example, do projects for fuels reduction along public roads meet objectives for safe evacuation routes in identified high risk areas? Monitoring protocols can help address this question.
- Can there be ecological consequences associated with fuels work? We may be concerned about soil movement and/or invasive species encroachment post-treatment. Relatively cost-effective monitoring may help clarify changes.
- Vegetation will grow back. Thus, fuel break maintenance and fuels modification in both the home ignition zone and at the landscape scale all require periodic assessment. Monitoring these changes can help decision makers identify appropriate treatment intervals.
- What can a monitoring plan do to assist the Core Team/decision makers in assessing the extent to which the CWPP prevention and outreach program objectives are being met? Tracking program benefits in a qualitative way can increase understanding and support from communities.
- As the CWPP evolves over time, there may be a need to track changes in policy, codes, requirements, stakeholder changes, and levels of preparedness. These can be significant for any future revisions and/or addendums to the CWPP.

Table 7.1 identifies recommended monitoring strategies, both quantifiable and non-quantifiable, for assessing the progress of the CWPP action plan. It must be emphasized that these strategies are 1) not exhaustive (new strategies and protocols can evolve with new CWPP action items) and 2) dependent on available funds and personnel to implement them.

Table 6.1. Recommended Monitoring Strategies

Strategy	Task/Tool	Lead	Remarks
Photo record (documents pre- and post-fuels reduction work, evacuation routes, workshops, classes, field trips, changes in open space, treatment type, etc.)	Establish field global positioning system (GPS) location; photo points of cardinal directions; keep photos protected in archival location	Core Team member	Relatively low cost; repeatable over time; used for programs, and tracking objectives
Number of acres treated (by fuel type, treatment method)	GPS/GIS/fire behavior prediction system	Core Team member	Evaluating costs, potential fire behavior
Number of home ignition zones/defensible space treated to reduce structural ignitability	GPS	Home-owner	Structure protection
Number of residents/citizens participating in any CWPP projects and events	Meetings, media interviews, articles	Core Team member	Evaluate culture change objective
Number of homeowner contacts (brochures, flyers, posters, etc.)	Visits, phone	Agency representative	Evaluate objective
Number of jobs created	Contracts and grants	Core Team member	Evaluate local job growth
Education outreach: number, kinds of involvement	Workshops, classes, field trips, signage	Core Team member	Evaluate objectives
Emergency management: changes in agency response capacity	Collaboration	Agency representative	Evaluate mutual aid
Codes and policy changes affecting CWPP	Qualitative	Core Team	CWPP changes
Number of stakeholders	Added or dropped	Core Team	CWPP changes
Wildfire acres burned, human injuries/fatalities, infrastructure loss, environmental damage, suppression and rehabilitation costs	Wildfire records	Core Team	Compare with 5- or 10-year average

6.1 IDENTIFY TIMELINE AND OPPORTUNITIES FOR UPDATING THE CWPP

The CWPP, as an evolving document, will be reviewed annually by the Core Team. The Core Team should decide the most effective way to accomplish this task, given the varying interests represented and personnel time constraints. An example would be canvassing each member for input, generating a list of priority recommendations. Topics may include, but not be limited to, action items and priorities, budgets, changes in agency policies, laws and ordnances affecting safety and fire management operations, new fuels projects, and other modifications to the existing CWPP.

The CWPP review could include a meeting open to the public and affected CWPP municipalities and jurisdictions. Recommendations would be presented, input solicited, and results in the form of documented changes will be attached as amendments to the CWPP.

A primary purpose of the CWPP review and update will be to engage additional parties and stakeholders in the CWPP planning process. Many stakeholders may not have been identified during the first iteration of this Santa Clara County CWPP. Annual reviews and updates provide for engagement of additional entities so that the document can serve a wider network of land management agencies and provide opportunities for increased collaboration across the County. The CWPP Core Team should continue to outreach to interested stakeholders and invite them to be part of the Core Team.

A formal revision to this CWPP should be made on the fifth anniversary of signing and every 5 years following.

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Santa Clara County
Community Wildfire Protection Plan
Appendices

Prepared for

Santa Clara County

Prepared by

SWCA Environmental Consultants

August 2016

SANTA CLARA COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN

APPENDICES

Prepared for

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APPENDIX A.
TOP TEN WAYS TO PROTECT YOUR PROPERTY FROM WILDFIRE

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1. MAINTAIN DEFENSIBLE SPACE (0–5 FEET)

Use noncombustible materials such as gravel, brick, or concrete in this critical area adjacent to your home.

2. REDUCE SIDING RISKS

Maintain 6-inch ground-to-siding clearance, and consider noncombustible siding.

3. CLEAN DEBRIS FROM ROOF

Regularly remove debris from your roof, since debris can be ignited by wind-blown embers.

4. USE A CLASS A ROOF COVERING

Class A fire-rated roofing products offer the best protection for homes.

5. CLEAN OUT GUTTERS REGULARLY

Keep debris out of gutters since debris can be ignited by wind-blown embers. If used, gutter covers should be noncombustible.

6. REDUCE FENCE RISKS

Burning fencing can generate embers and cause direct flame contact to your home. Use noncombustible fences and gates.

7. KEEP EMBERS OUT OF EAVES AND VENTS

Use ⅛-inch mesh to cover vents, and box-in open eaves to create a soffited eave.

8. PROTECT WINDOWS

Use multi-pane, tempered glass windows, and close them when a wildfire threatens.

9. REDUCE DECK RISKS

At a minimum, use deck boards that comply with California requirements for new construction in wildfire-prone areas, remove combustibles under deck, and maintain effective defensible space.

10. MAINTAIN DEFENSIBLE SPACE (5–30 FEET)

Remove shrubs under trees, prune branches that overhang your roof, thin trees, and remove dead vegetation. Move trailers/RVs and storage sheds from area, or build defensible space around these items.

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APPENDIX B.
COMMUNITY WORKSHOP NOTES

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MORGAN HILLS COMMUNITY WORKSHOP - 2/17/16

STRUCTURAL IGNITABILITY

- Group responded they were not enthusiastic about an ordinance requiring retrofit of wooden roofs; however when asked if they would support it if there were grant dollars available they like the idea.

FIRE RESPONSE CAPABILITY

- City of Gilroy Fire Marshal is interested in becoming engaged in process
    - Area west of Gilroy near Gilroy Gardens amusement park is now annexed into Gilroy and has extensive WUI issues.
- Morgan Hill volunteer program that knows who has what skills, equipment, etc.
- In the case of a fire, the neighborhood program would know who is in each house and can assist in evacuation.

FUEL REDUCTION

- Dwight Good, Morgan Hill Fire Marshal and Chair of Northern California Fire Prevention Officers WUI Committee.
    - There is interested in adopting ordinances in LRA that mirror SRA ordinances, such as power line clearance standards.
    - Conducting research into mulch fires and flammability of materials.
- Land ownership
    - Dealing with private lands, may run into problems, i.e. running fuel breaks that cross over multiple land ownerships
- Grants
    - Look at the available grants and their requirements
    - Grant source may condition what can be done and where it can be done
        - Federal grants cannot be spent on federal land
        - SRA grants can only be spent in the SRA (state responsibility area
        - Greenhouse gas grant can be used anywhere
        - Must identify the project, method and conditions and then match it up with a grant source
    - What grants can be used in easements?
        - CWPP will be broad to allow for ideas that are developed as time progresses and will still fall under an existing grant
        - FEMA grants are for pre-disaster mitigation, but will fund wood shingle roof replacement
        - State clearinghouse grants will open up soon for about 45 days
        - Make the project fit the grant

PUBLIC OUTREACH AND EDUCATION

- Jackson Oaks neighborhood is poised to be a Firewise Community, Holiday Lakes next door is also a good opportunity for Firewise.
- Member of Jackson Oaks neighborhood also expressed interest in becoming first Firewise Community in county.
- Critical assets, i.e. losing the only employer in the area.
- Livestock evacuation concerns. Representative from Map Your Neighborhood stated that Morgan Hill South County has animal evacuation group.
- Want to see protection of environmentally sensitive areas?
    - This is part of the planning process
    - Methods used will depend on the sensitivity of the areas
- Holiday Lakes neighborhood- older community, shake roofs, 20-30's cabins, old dying trees.

BERRYESSA COMMUNITY WORKSHOP - 2/18/16

STRUCTURAL IGNITABILITY

- What measures can be taken in new developments?
- Shake shingle roofs
    - Quite a lot of shake shingle roofs.
    - Grants are available for retrofit, but need a CWPP before eligible for a grant.
- Develop rules for new areas, so that new communities can be built to reduce fires. Area is east of cities of Milpitas and San Jose and includes many parks/open space lands there is a pretty distinct interface between housing and open space. Several areas where one side of road is intense urban development (50 x 100 foot residential lots) and across road is open space with for sale signs (which undoubtedly will be on path to become urbanized as soon as sale closes escrow. Urban sprawl)
- Close openings into buildings where embers can enter – big impact, low money
- Improve poor road networks – big money
- Gary Sanchez, Fire Safe Council is also a State Farm Insurance agent that says they are backing out of the WUI area fire insurance world to reduce their exposure to catastrophic losses. He himself has a property in town of Twain Harte that he has difficulty in selling and others can't buy because cannot get home through escrow due to lack of insurance availability.

FIRE RESPONSE CAPABILITY

- Jerry Spencer (Chief) and Rick Smith (Chair of Board of Directors of volunteers) from Spring Valley Volunteer Fire attended. Jerry is also President of Fire Safe Council. Close working relationship with San Jose, Cal Fire, Santa Clara County Fire, Milpitas, protect for protection area is about 200 square miles of unincorporated area east of the city of San Jose and Milpitas. They are an un-official non-government entity operating as a Volunteer Fire Company laws. Most of the area is under Santa Clara County Fire jurisdiction; some is Cal Fire (wildland fire during fire season only). Hold pancake breakfast as fundraiser in March. They asked for additional maps reflecting the area east of Ed Levine Park to Alameda County line and south to Alum Rock park.
- Small attendance, few citizens and San Jose Fire Division Chief and engine company from local fire station.
- Spring Valley Volunteer Fire has 2 facilities, one is off of Calaveras Road near Ed Levine Park (all resources are designated 902; Engine 902, Water Tender 902, etc.). Spring Valley's other location resources are designated 901.

FUEL REDUCTION

- Consider educating landscape contractors on proper methods, proper plants, all things that reduce exposure to ignitions
- Grazing has mutual benefit for landowners of reducing fine fuels.
- Prescribed burning could be used:
    - Air pollution component piece of it – could the community live with it?
    - Would City/County Ordinances even allow it?
- Ed Orre says that a new Forester position with CAL FIRE is being added to staff in Santa Clara Unit to coordinate regional CFIP (CA Forest improvement Program). There are considerable CFIP dollars (from Greenhouse Gas funds) available for grants to forest land owners but has not been utilized in Santa Clara much in past.
- Several areas of roadside in the east foothills area are treated with chemicals for fire hazard reduction. Not sure if this is sanctioned, or wildcard action by property owners. Ed Orre believes it is authorized.

PUBLIC OUTREACH AND EDUCATION (INCLUDING COMMUNITY VALUES AT RISK)

- Are there fire wise communities?
    - None in Santa Clara County
    - Insurance companies are starting to recognize fire wise communities, while at the same time refusing to write fire policies for WUI communities.
- No distinct neighborhood associations to use to develop common interest for neighborhood level interactions for Firewise or CERT.

- Sierra Vista park is SCL county open space day use area and they allow grazing and maintain some of their trails as 2 tracks for fire vehicle access and fuel breaks, trail system is part of BAY AREA RIM TRAIL and could be used as fire defense system.
- Joseph Grant Park is very large County park that includes historic ranch house and camping. Originally a Spanish Land Grant cattle ranch. They allow grazing and are open to prescribed burning.
- Grand View restaurant is an example of a local icon (famous favorite restaurant) located in the WUI. Losing it would be both an economic loss and loss of a region wide landmark/icon.
- Major concern: Lick Observatory on Mount Hamilton is a historic world class astrophysical research facility managed by Univ of CA –Santa Crus but has fallen into some disrepair due to lack of funds. Highly exposed in WUI area and is irreplaceable.
- Copernicus Peak (near Lick Observatory is a major mountaintop communications site).
- Alum Rock Park is a San Jose City Park that is one way in/out; significant day use.

CUPERTINO COMMUNITY WORKSHOP - 2/22/16

STRUCTURAL IGNITABILITY

- Group was supportive of replacing wood roofs by 2015 (in fact some said it ought to occur by 2025).
- Two Public Safety Commissioners from City of Cupertino discussed their interests after presentation. They are very interested in learning more about comparing fire regulations in city with those outside city.
- Attendees would be supportive of an ordinance requiring removal of flammable roofs.
- Attendees were also interested in Cupertino becoming a Firewise Community.
- Attendees want development restrictions in high hazard areas.

FIRE RESPONSE CAPABILITY

- Is there good water supply?
    - For some communities yes, other communities water supply problems will be identified in the CWPP.
    - This County is very fortunate to have robust aerial support- a CAL FIRE helicopter.
- Fire-fighting capability- how robust are our emergency responders?
    - Dan- This County has great mutual aid plan for shared response.
- Why are the County Sheriff's not part of this process? Fire risk is influenced by heavy recreation, fireworks, lack of enforcement. The Sheriff's department can enforce these activities but the fire department cannot.

- Winds and fire behavior:
    - Diurnal winds- blow up drainage all day, switch at night.
    - Where the topography aligns, there is more of a north wind issue.

FUEL REDUCTION

- Tree surgeon- Does work in the Cupertino interface taking out large, dead trees and doing hazardous fuel reduction for private, commercial and municipalities. He has noticed a huge increase in the number of dead trees as a result of drought and insect/disease. Many of his clients don't have the finances to do the necessary tree removal work that is needed. Much of the work is complicated by proximity to homes and hazards in the removal of the trees. He asked if there were any funding sources to support this work for residents?
    - FEMA funds possible- if it fits their criteria
    - State Greenhouse Gas Reduction grants. Grant cycle begins in July. Several millions of dollars available. Would need a community/agency etc to be grant recipient, not for individual residents- potential to work with the Fire Safe Council's. Bring project ideas to them and they could assist with the grant application.
    - Local funds from municipalities may be available- approach the city/town and explain the concern, highlighting the public safety concerns of standing dead trees and potential failure onto properties, power lines etc.
    - Power line grants- removal of trees that would impact power lines.
    - Check the www.fire.ca.gov website for list of grant opportunities.
    - Check California Tree Mortality Task Force. http://www.fire.ca.gov/treetaskforce/
- Mountain winery- flammable brush component above the winery. Fuel break will make a considerable difference in the mitigation of fire behavior in that area.
- Los Altos Hills County Fire District- do their own hazard tree removal and brush clearance.
- Cristo Rey Area-
    - Had fire 2 years ago. Grass fire- lots of fine fuels, potential for spread to wooded areas.
    - Rancho San Antonio Park- County Park- high grass fuels loads. Need County Parks to put in fuel break along boundary line to protect homes adjacent to park.

PUBLIC OUTREACH AND EDUCATION (INCLUDING COMMUNITY VALUES AT RISK)

- Putting more area into WUI maybe not the most effective approach. This puts restrictions on homeowners, they are required to follow more building codes, it impacts their insurance premiums, puts a financial burden on the homeowner, instead we should focus more on firefighting capabilities, water supply, local defensible space ordinances, restrictions on landscaping materials, good property hygiene…. etc?

  - Dan- some areas are legally adopted as WUI others are not. The state might identify an area as WUI but local delineations may better represent the WUI. We want to make sure we are looking at this from a local level.

- A long-term resident of the Cupertino west foothills area- concern about development in the area, relating development to concerns of fire hazard and risk- He stated that lots were being broken up into smaller parcels and the density of the development could not be sustained with the available water supply. The resident stated that there should be development restrictions in high hazard areas.
- De Anza Oaks subdivision-
  - Gated town home subdivision in Cupertino- off of Stevens Creek Boulevard and Ridgeway Drive.
  - Access issues- one way in and out.
  - 600+ residents
  - 211 units
  - Narrow single lane street
  - Interface area
  - Fire department are already visiting to meet residents and discuss concerns on March 3rd.
  - No safety zone
  - Pedestrian tunnel for ingress/egress but only one road in and out.
  - HOA
- Blackberry Park
  - Homes in interface with the east side of Blackberry Park
  - Homes right up against thick wildland fuels.
  - Lots of dead standing trees.
  - No treatments have been done.
  - Topography issues, steep slopes below homes.
- Canyon Vista
  - Gated community
  - Evacuation concerns,
  - Thick fuels.
- Community values at risk
  - Adobe Creek Lodge- retirement home
  - Horse Barn- Los Altos Hills – shelter in place
- Oak Valley
  - Lots of homes needing roof replacement.

LEXINGTON HILLS COMMUNITY WORKSHOP ---- 2/23/16

STRUCTURAL IGNITABILITY

- Develop and stage multi-use water tanks in the back country- for use by fire departments and wildlife.
- Wood shake roofs are the "biggest problem".
- Information sought by residents on what plants to prioritize for treatment/removal. What plants are particularly flammable/volatile?
- Section in CWPP needs to address wiring, generators, propane, narrow roads- fire code enforcement needed.

FIRE RESPONSE CAPABILITY

- Ask Caltrans to take their flares with them when they leave the accident scene.
- Some way to broadcast Reverse 911- i.e. sirens, early warning system.
- Interface with agencies for evacuation routes and evacuation drills.
- Fire Safe Councils role, during and after a fire, needs to be planned now during emergency and recovery from fire event.
- Where are Caltrans? Why are they not at the table?
- Redwood Estates has good firefighting response capabilities due to location of resources in the community and the nearby CAL FIRE heli base.
- Response times are a concern for some residents in the Lexington Basin- i.e. Gist Road/Black Road. Over 20 minutes response time.
- Water supply is a concern for homes along Summit Road. Some homes have ponds and tanks. Problem with the Fire Departments not having the correct fittings to be able to draft from tanks. More hydrants needed on Summit Road
- Need more hydrants on Summit Road.
- There are some residents on Summit Road who are willing to provide space for extra water storage.
- Mutual aid and coordination between fire agencies is far superior to what existed in 1985 during Lexington fire. Resources were bought in from all over the State during the fire, with structural crews fighting in the WUI with very little wildland experience.
- CWPP Team met for a pre-meeting with Santa Cruz county volunteer fire fighters regarding their experiences during the Lexington fires.
- Water supply was major complication during Lexington fire.

FUEL REDUCTION

- Ask/demand that the PGE Contractors who clear branches from PGE lines take all wood with them which they have cut.
- Moody Gulch: County of Santa Clara should be asked to chip all dead trees and brush from their land which abuts Lee Drive and Rose Court (Redwood Estates).
- Need additional road maintenance to enhance emergency access on private, dirt, steep, narrow roads. How to pay for costs? Road Associations?
- Drought induced mortality of trees a concern.
- Utilize CA Conservation Corp for fire mitigation and prevention work within community.
- Problems with medical marijuana groves in some areas- wildfire risk. Bear Canyon Fire 9/10/15- in grow area in Santa Cruz County.
- Fire Safe Council has a chipper program- residents have to fill out application. Residents would like to see improvements to the application program to include an acknowledgement that the application has been received and a target date for implementation. Resident was concerned that many people treat property and brush piles often sit on property for many weeks while they wait for the chipper.

PUBLIC OUTREACH AND EDUCATION (INCLUDING COMMUNITY VALUES AT RISK)

- Loma Prieta School- Is a Red Cross Evac Center and only school in the area- 40 acre site, water storage- but additional storage needed, beds and cots. Important to keep facility safe. Implement fuel break treatments on campus- possible CDCR crews.
- Escape route signage needed. Where are escape routes, need to analyze if they are sufficient, what are the fuel loads, are there locked gates, are there weight limits.
- Could implement an annual tour of evacuation routes and water supplies- i.e. community evacuation drill.
- Need to identify and protect environmentally sensitive areas.
- Recognition that there are many residents from Santa Cruz County present.
- Much concern about risk of ignitions along Highway 17 and concerns regarding evacuation in the event that Highway 17 is closed. Residents wrote a letter to the State and many agencies for the risk to be addressed. Concern that Highway 17 is flanked by lands with absentee landowners and treatments have not been carried out.
    - Santa Clara County Fire are aware of the concerns and it is being addressed. Patty from Fire Safe Council is point of contact, funding is being sought to carryout treatments along the corridor.
    - CWPP can identify the project in the plan.
    - Concern that CALTRAN are not actively engaged in this process. They have been invited to the Core Team.

        - Suggested education needed for Caltrans on appropriate treatment methods- i.e. mowing.
    - Update and maintenance of the CWPP is important- 5 year update schedule, but have stakeholders meet every year to keep the plan active.
    - The Lexington Basin CWPP will be folded into the County level plan.
    - The Lexington Hills community should consider pursuit of Firewise Community certification.
    - The 2009 CWPP – A lot of projects have been completed but the risk/hazard has not been altered significantly.
    - Lots of neighborhood interaction and community level engagement happens across both sides of the ridge/county line.

MILPITAS COMMUNITY WORKSHOP - 5/2/16

STRUCTURAL IGNITABILITY

- Insurance companies are pulling out of many WUI areas, should trigger people to take action on defensible space and fire-safe retrofits.
- WUI pamphlets don't show what is really going on in the community, not really applicable to these communities. Need tailored literature.
- Enforcement of codes are needed, many people are doing whatever they want and there is no enforcement.
- More weed abatement measures are needed/more enforcement needed.
- People need to mow their properties more often.
- Lack of law enforcement in areas. Many burned out cars.
- Open space technicians- don't have fire equipment in their trucks to suppress fire starts.
- Lots of dilapidated properties. Why are they not torn down if they are against code? Codes are fire related but also could be covered by public nuisance code.
- Many residents know they are out of code but they don't care.
- Approach should be to file a complaint to the City/County, the jurisdictions will be held to doing something. If they don't then contact elected officials. Need a project to provide the approach that homeowners can take to enforce their neighbors to clean-up yards.

FIRE RESPONSE CAPABILITY

- Felter Road- narrow road, no trucks can access the area. One lane road and 4 x 4 only.
- Lack of funds to widen road.
- Access issues prevents further building and development.
- No patrolling by fire departments.

- No defensible space ordinance assessments. San Jose FD responsible for the assessments. Need to implement more and more frequently.
- CAL FIRE are implementing inspections via seasonal staff this summer.
- Fire Safe Council can implement inspections. They cannot provide enforcement but can provide education. Fire Safe Council will need funding to be able to carry out those programs. Could identify as a project in the plan. Resident argued that enforcement is needed, without teeth people will not comply.
- Concerns regarding illegal occupation of derelict properties.
- Project idea to map stock ponds that could be used for fire suppression. KML with potential locations.
- Installation of dry hydrants needed.
- Pre attack plans needed to identify water sources. Tier from strategic goals.
- Need guidance on what is a good tank for drafting and for water storage.
- Need multiple use water supplies. Suppression tanks that double as wildlife troughs and cattle waterers. Need an alternative to metal water tanks and attachments due to liming problem with guzzler.

FUEL REDUCTION

- Homeowners along Felters Road and others have been doing their own spraying of roadsides to reduce fuel load.
- Mowing- short timeline – if too dry then is a risk of ignition, too wet too green.
- Long-term treatments are needed with more regular frequency.
- Grazing is effective and economical and can be more long lasting.
- Residents felt that there was an under appreciation of grazing on public lands. Resistance by open space jurisdictions to do enough grazing.
- KML added-Identified some evacuation routes where roadside treatments are needed to provide a safe buffer. – Cherry Flat Falls Road would be a potential evacuation route but it is in need of maintenance to make it useable. – Quimby Road as an alternative access route to Mt. Hamilton.
- KML added- Quimby Road- CVAR- utility lines, telecommunication lines.
- KML added- Staging Area- could be a staging area and communication site for incident command station- large open grazed field.
- Grazing has mutual benefit for landowners of reducing fine fuels.
- Prescribed burning should be encouraged.
- Poison oak disposal a problem. Patty provided a remedy, to leave to dry out 1st year after cutting and then the Fire Safe Council will chip in the second year once dried out.

PUBLIC OUTREACH AND EDUCATION (INCLUDING COMMUNITY VALUES AT RISK)

- KML added- Camera installation encouraged to detect wildfire.
- Need better education for reducing vandalism- lack of rangers on open space properties to enforce fire safety. Needs to coincide with Sheriff's Department.
- Historical properties exist on Grant Ranch- irreplaceable.
- Water tank on Grant Ranch- needs to be protected and repaired.
- KML added – fireworks problem- identified location on Sierra Rd. Need signage and education.
- Need a one-stop-shop for fire preparedness information. Resident noted that they need to do a lot of research to find a full list of measures that the resident can take to reduce wildfire risk and hazard, would be good to have all that information in one place. Fire Safe Council project?
- Resident raised concern about a lack of flexibility with building codes, putting restrictions on development- Could look into Alternative Means of Compliance.

MORGAN HILLS COMMUNITY WORKSHOP - 5/3/16

STRUCTURAL IGNITABILITY

- There are some adjacency concerns with small lots, increases structural ignitability.
- County Roads needs to be a partner in evacuation route maintenance and surfacing.
    - Priority should be given to identified evacuation routes, including surfacing but also maintenance of the ROW and brush clearing. Should consider maintenance frequency- current frequency may not be sufficient to maintain appropriate clearance for evacuation purposes.
    - Should look at usage as a way to prioritize road maintenance.
    - Review equipment for County Roads- is equipment creating effective fuel break width?
    - Identify a liaison for County Roads and Airports to attend Fire Safe Council meetings on regular basis.
- Residents would like to see a checklist be developed that would identify actions residents can take to mitigate wildfire hazard and risk; should be tailored to the community.

FIRE RESPONSE CAPABILITY

- Water delivery distribution projects are needed.
- Thomas Grade- evacuation route- has been re-surfaced to make it useable.
- Pressure would build along E. Dunne during potential evacuation if an alternative evacuation route is not available. Need to identify alternative route for Jackson Oaks and

Holiday Lakes- potential to utilize trails through open space areas- identified via KML at meeting. Could tier from strategic goal for improvements to two track trails.

- Fire history- many fires in the eastern area of the County and few fire resources.
- Evacuation- need to consider the time it takes to evacuate from special population centers like a retirement home and from carless residents.
- Morgan Hill has a CAL FIRE response plan (poster and public brochure) to inform the public as well as an evacuation plan brochure. Similar planning should be developed for all communities.

FUEL REDUCTION

- More vegetation management is needed in open space areas- fuel breaks could be funded by Park Charter funds.
- Master Plan for County Parks- when scheduled for revision- should acknowledge the fire risk to communities and identify WUI related fuel treatments. The Strategic Plan is in need of revision, could have a project idea to consider wildfire risk in the Master Plan.

PUBLIC OUTREACH AND EDUCATION

- Jackson Oaks neighborhood is poised to be a Firewise Community, Holiday Lakes next door is also a good opportunity for Firewise.
    - Jackson Oak has completed the following fire preparedness activities to date:
        - 2 educational fire preparedness events.
        - Videotaped HOA board meetings and the fire educational events and provided to community- lots of interest.
        - Working with Morgan Hill City to improve water delivery to the community.
        - Sought improvements to Thomas Grade as alternative evacuation route- road has already been re-surfaced.
        - Engaging local schools in a project to paint street signs with reflective paint for improved visibility.
        - Identified debris and leaf litter was gathering on river rock verges and creating a wildfire hazard, the community are working with street cleaning contractors to identify a solution for reducing accumulation of leaf litter along river rock verges.
        - Identified that there are a number of residents that would need assistance to complete and maintain sufficient defensible space. They will be holding a community event to help address those concerns.
        - Investigating the potential for development of a tree farm to be situated on site with the intent to grow low flammability trees to replace flammable species currently used in landscaping. Residents would be given two new low flammability trees in return for bringing in one dead tree.

        - Implementing on-going chipper program.
    - Jackson Oaks are actively pursuing Firewise status and are interested in becoming a demonstration community to surrounding areas to highlight the importance of being Firewise. They will embrace Firewise signposting and showcasing the community's achievements.

NEW ALMADEN

- Specific concerns relating to New Almaden:
    - Historic buildings and Nationally Registered Landmarks- irreplaceable community values at risk.
    - Restrictions on Firewise type retrofits because of historic status- i.e. wooden shiplap siding. The County are reasonable in their application of the guidelines however if the retrofit is for fire safety standards. Could utilize composite siding for example. Need an education component to educate homeowners in the community on how to be fire safe while still meeting the County standards.
    - Tree ordinance- protection of large trees- in some cases this creates a fire hazard. Need to look into easing of tree ordinance where removal could reduce wildfire risk.
    - More vegetation management is needed in open space areas.
    - Access is poor along Bertram Road- narrow road would be blocked by a fire truck. Need to consider ways to improve emergency access.
    - Community is surrounded by open space and contiguous fuels.
    - Could work with Valley Water to make a shaded fuel break along the Alamaden-Callero Canal which backs to Bertram Road homes.
    - Community is active in wildfire preparedness through activity on the Fire Safe Council.
    - Annual chipping program through Fire Safe Council.
    - Good water supply in the community.
    - Good fire response to community.
    - Falls within the SRA- have a 100ft defensible space mandate however structure separation makes 100ft defensible space difficult to implement.
    - Water District needs to be part of defensible space solution due to their adjacency to many private parcels.

LEXINGTON HILLS COMMUNITY WORKSHOP ---- 5/4/16

STRUCTURAL IGNITABILITY

- What to do about your neighbor who isn't doing fire mitigation on their property? Voiced by other residents- provide the recommended approach- file a complaint…..
    - Weed abatement program
    - Complaint to County

- Mid-Pen has a policy to allow adjacent land owners to enter property to carryout defensible space actions.
- Santa Clara Water District- friendly neighbor policy to do work to provide defensible space.
- County Parks- case-by-case basis for defensible space projects for adjacent structures.
- SRA fees being used to do fire prevention work.
- Public want a list of homeowner actions that they can do to reduce wildfire risk- refer to literature and the fire department. Also the CWPP will provide a list of actions.

FIRE RESPONSE CAPABILITY

- Highway 17 project will help provide evacuation route with moderated fuels.
- Concern still about Caltrans involvement- Caltrans are working with Fire Safe Council on the Highway 17 project.
- Interface with agencies for evacuation routes and evacuation drills.
- Redwood Estates has good firefighting response capabilities due to location of resources in the community and the nearby CAL FIRE heli base.
- Response times are a concern for some residents in the Lexington Basin.
- Water supply is a concern for homes along Summit Road. Some homes have ponds and tanks.

FUEL REDUCTION

- Highway 17 project.
- KMLs added during meeting.

PUBLIC OUTREACH AND EDUCATION (INCLUDING COMMUNITY VALUES AT RISK)

- Aldercroft Heights-
    - Access issues
    - Parking issues
    - CERT Team needed for the community to plan evacuation routes, with Road Association as leader. Residents need to be educated in evacuation so that they know what to expect from the fire department and sheriff's department.
    - 'Map your Neighborhood' - MYN provides a step-by-step process that neighbors work on together to prepare their neighborhoods for disasters. Neighborhood leaders or "organizers" complete a two hour FREE "Become a MYN Organizer" program that gives them the materials and skills to reach out into their neighborhoods and implement the MYN program- http://cope-preparedness.org/map-your-neighborhood-myn

- Lexington Hills- no unified evacuation planning has been done with all agencies. Part of the Highway 17 project is to set up a meeting with the unified agencies- element will include evacuation planning and signage.
- Evacuation of Santa Cruz residents should be included in this document. Address concerns of residents in the 95033 zip code.
- Identify a goal to expand upon the annex for Lexington Hills and Skyline areas to provide more detailed planning for Santa Cruz.
- Need to develop a Santa Cruz Fire Safe Council.
- Soquel-San Jose Road (AKA Old San Jose Road) – evacuation concerns.

CUPERTINO COMMUNITY WORKSHOP - 5/9/16

STRUCTURAL IGNITABILITY

- New developments in the WUI a concern, especially related to evacuation and traffic concerns.
- County planning department have been made aware of the access concerns in many WUI communities. Difficulty with many roads being private.
- Fire Department inspections- could the fire department be used in education of public? They already do a lot of that- CAL FIRE seasonal inspectors have been hired for summer inspections and could provide education element. The County does annual inspections- often during the day so their interaction with residents is limited.
- Community workshops on weekends or evenings can be a good way to reach the public about defensible space rules in the WUI. Up against problems of poor attendance.
- Resident offered to provide advice and instruction to her neighbors- could team with the Fire Safe Council to carryout neighborhood level assessments and "teach your neighbor" type approach to education. Utilize the Firewise model of community engagement and education.
- Bohlman Road- isolated community- would be a good focus for neighborhood level education efforts.
- Fire Safe Council offer home assessments – have to find sustainable funding for the program. Fire Safe Council almost exclusively grant funded.
- Question on funding and tax contributions- SRA fee can fund some fire preparedness activities in the SRA areas. Tax dollars pay for County Fire Prevention Division activities, including WUI defensible space assessments.
- Investigate a project to encourage undergrounding of utility lines in Saratoga- PG&E spend a lot of time and resources in tree trimming- investigate cost effectiveness of undergrounding lines to reduce the need to tree trim along the ROW.
    - Could target undergrounding to areas of high wind and high risk rated areas.

  - Combine undergrounding with any road widening projects- more "bang for the buck".

FIRE RESPONSE CAPABILITY

- Many private roads within Saratoga that need significant maintenance to make them suitable evacuation routes. Could there be a way to prioritize roads for transfer to public ownership- City or County?
- Problem of narrow access roads crossing private road. Minimal funds or commitment to maintain the road- i.e. exit to Montalvo crosses a private road portion. Could consider a Mello Roos district to fund road improvements. Need to encourage preventative proactive measures to avoid having to take reactive measures post fire.

PUBLIC OUTREACH AND EDUCATION (INCLUDING COMMUNITY VALUES AT RISK)

- Question of how to get projects in the matrix:
  - Public welcome to contribute project ideas, every reasonable and relevant project could be included.
  - Priority rating is based upon input from the Core Team and consideration of the impact of the project and the degree to which it could mitigate wildfire hazard for the largest portion of the community. Fire Safe Council are contributing to this process through their knowledge of the community and involvement with the agencies in hazardous fuel reduction projects.
  - Public are invited to review the document during the public review period.
- Utilize NextDoor for announcing review period for the Draft and other CWPP announcements.

FUEL REDUCTION

- Need standards for fire resistance landscaping.
- Problem of tree ordinances and tree removal.
- Problem of Tree City USA- encouraging the planting of trees that may or may not be fire resistant. Need to develop a fire resistant vegetation list to landscapers and to the City.
  - 'Selec Tree' application which helps to identify appropriate trees for your region, weather and fire hazard. https://selectree.calpoly.edu/
  - Consider as an update to the Safety Element- a change to the tree ordinance that aligns more with fire safe practices.
- Provide homeowners with alternatives to fire prone landscaping- issue of mulch as ember receptor.
- Consider development of a demonstration site for fire safe landscaping that would be in-keeping with the Tree City USA program.

- Review and consider development of a tree list as developed by Diablo Fire Safe Council that would be appropriate for conditions in the County.
- Develop a fire safe education program for landscaping crews.
- Target the source- require fire safe tags for nursery trees and landscape vegetation.
- Encourage the use of prescribed fire on open space properties that meets multiple objectives- invasive species management, fuels reduction, wildlife habitat improvements.
- Implement public outreach program to educate the public on prescribed burning and smoke considerations.
- Develop a program to target removal of non-native species that increase fire risk and hazard- i.e. eucalyptus.

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APPENDIX C.
SIGNATORY AND ADVISORY ORGANIZATIONS AND CORE TEAM LIST

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SIGNATORY ORGANIZATIONS

- **Santa Clara County Fire Safe Council**
- **County of Santa Clara**
    - Central Fire Protection District/Santa Clara County Fire Department
    - South Santa Clara County Fire Protection District
- **State of California**
    - CAL FIRE
- **Town/Cities**
    - Palo Alto
    - Los Altos Hills
    - Cupertino
    - Saratoga
    - San Jose
    - Monte Sereno
    - Los Gatos
    - Morgan Hill
    - Gilroy
    - Milpitas
- **Independent Special Districts**
    - Saratoga Fire Protection District/Santa Clara County Fire
    - Midpeninsula Regional Open Space District

ADVISORY ORGANIZATIONS

- **County of Santa Clara**
    - County Parks
    - Open Space Authority
- **State of California**
    - California Department of Parks and Recreation

PLANNING TEAM/CORE TEAM

The Core Team reflects the variety of stakeholders affected by wildfire. Members include:

- Ken Kehmna — Fire Chief, Santa Clara County Fire Department
- John Justice — Deputy Chief, Santa Clara County Fire Department
- Tom Lausten — Area Superintendent, Midpeninsula Regional Open Space District
- Mark Roberts — Fire Captain, San Jose Fire Department
- Doug Schenk — GIS Analyst, Santa Clara County
- Ed Orre — Unit Forester, CAL FIRE
- Anne Rosinski — Senior Engineer Geologist, California Geological Survey
- Jim Wollbrinck — Manager Security and Business Resiliency, San Jose Water Company
- Randy Houston — Water Maintenance Manager, San Jose Water Company
- Gary Sanchez — Director, Santa Clara Fire Safe Council
- Patty Ciesla — Programs Manager, Santa Clara Fire Safe Council
- Derek Neumann — Field Operation Manager, Open Space Authority
- Dwight Good — Fire Marshal, CAL FIRE/Morgan Hill
- Rick Parfitt — Resident, Lexington Hills
- Robert Durr — Lieutenant, Santa Clara County Sheriff's Department
- Jeffrey McCoy — Administrative Sergeant, Santa Clara County Sheriff's Department

APPENDIX D.
FUNDING SOURCES

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- **Federal or national organizations**
    - Bureau of Land Management
    - U.S. Fish and Wildlife Service
    - U.S. Forest Service
    - National Fire Plan via the California Fire Safe Council Grants Clearinghouse
    - Natural Resources Conservation Service
    - U.S. Department of Homeland Security
    - Federal Emergency Management Agency
    - National Fire Protection Association-Firewise Communities programs
- **State organizations**
    - CAL FIRE
    - California Air Resources Board
    - California Office of Emergency Services
    - California Department of Agriculture
    - California Natural Resources Agency
    - California Department of Water Resources
- **Local organizations that have provided funding:**
    - Santa Clara County Water District
    - Santa Clara County Fire District
    - San Jose Water Company
    - Pacific Gas and Electric Company
    - Aldercroft Heights Water District
    - State Farm Insurance
    - Cities of Saratoga and Palo Alto
    - Saratoga Fire District

The Santa Clara County Fire Safe Council has agreements, contributions, and grants for defensible space chipping for eligible residents, as well as a Special Needs Assistance Program for seniors and/or others with physical and financial limitations to assist them with preparations for chipping.

For 2016, the eligible communities at risk from wildfire are Cupertino, East Foothills, Gilroy, Lexington Hills, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Palo Alto, San Jose, San Martin, Saratoga, Stanford, and adjacent WUI areas in the county. There are more wildfire risk reduction projects than there is the available funding to do them.

This CWPP can facilitate the identification of the highest priority countywide projects as developed by a broad stakeholder coalition, which increases the competitive strength of grant requests. Follow-up monitoring of the results of hazardous fuel reduction work can demonstrate to funding sources the value of such work, as well as to make the general case that project funding allocated to Santa Clara County is a good investment.

STATE AGENCY FUNDING

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE)

Forestry Assistance Programs

CAL FIRE administers several state and federal forestry assistance programs with the goal of reducing wildland fuel loads and improving the health and productivity of private forest lands and expanding and improving management of trees and related vegetation in urban communities across California. The **Forest Stewardship Program** and **California's Forest Improvement Program** (CFIP) offer cost-share opportunities to assist individual landowners with land management planning, conservation practices to enhance wildlife habitat, and practices to enhance the productivity of the land. The Urban Forestry Program provides technical expertise and grants to create and maintain sustainable urban forests. Utilizing experts in forest pests and diseases, the **Forest Health Management Program** provides information to landowners and makes recommendations to the Board of Forestry regarding the health of California's forests. The **L.A. Moran Reforestation Center** specializes in cone processing and seed storage providing a vital, long-term depository for private and corporate landowners for their future seedling needs.

Source: California Forest Improvement Program (CFIP)
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website: http://calfire.ca.gov/resource_mgt/resource_mgt_forestryassistance_cfip
Qualifying organizations: Public and private forest landowners, especially forested watershed owners such as water purveyors and open space agencies.
Match requirement: Yes
Annual funding: FY 2016-- $3,465,000 for CFIP cost share grants

Description: The purpose of the CFIP is to encourage private and public investment in, and improved management of, California forest lands and resources. This focus is to ensure adequate high quality timber supplies, related employment and other economic benefits, and the protection, maintenance, and enhancement of a productive and stable forest resource system for the benefit of present and future generations.

The program scope includes the improvement of all forest resources including fish and wildlife habitat, and soil and water quality. Cost-share assistance is provided to private and public ownerships containing 20 to 5,000 acres of forest land. Cost-shared activities include management planning, site preparation, tree purchase and planting, timber stand improvement, fish and wildlife habitat improvement, and land conservation practices.

Grants can fund the full-suite of CFIP activities: Plans, site preparation, planting, pre-commercial thinning, pruning, follow-up, release and conservation practices; e.g. forest road repair and upgrading, if it protects, maintains, or enhances fish and wildlife habitat.

Source: Urban and Community Forestry
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website: **http://calfire.ca.gov/resource_mgt/resource_mgt_urbanforestry**
Qualifying organizations: Public and private forest landowners, especially forested watershed owners such as water purveyors and open space agencies. Fire Safe Councils.
Match requirement: Yes
Annual funding: Funding through Greenhouse Gas Reduction Fund-AB32

Under the authority of the Urban Forestry Act (PRC 4799.06 - 4799.12) the Urban & Community Forestry Program works to expand and improve the management of trees and related vegetation in communities throughout California.

The mission of the California Department of Forestry and Fire Protection's Urban Forestry Program is to lead the effort to advance the development of sustainable urban and community forests in California. Trees provide energy conservation, reduction of storm-water runoff, extend the life of surface streets, improve local air, soil and water quality, reduce atmospheric carbon dioxide, improve public health, provide wildlife habitat and increase property values. In short, they improve the quality of life in urban environments which, increasingly, are where Californians live, work, and play.

Grants are offered for activities such as tree planting, municipal tree inventories and management plans, urban forest educational efforts, and innovative urban forestry projects. These grants can be utilized to assist communities throughout California advance their urban forestry efforts.

California's State Urban Forestry Program also works with CAL FIRE's Fire Prevention Program in advocating fire-safe landscaping for homeowners and communities. Landscape design, tree selection and especially maintenance are critical elements in reducing the spread of fire and the risk to adjacent buildings. Even well-designed landscapes can become hazardous if not properly maintained. The program encourages compliance with the 100-foot defensible space requirement for communities in the urban wildland interface areas (PRC 4291) and offers suggestions for types of trees, landscape designs and pruning methods to assist homeowners in meeting that standard.

Source: Pest Management Program
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website: **http://calfire.ca.gov/resource_mgt/resource_mgt_urbanforestry**
Qualifying organizations: Public and private forest landowners, especially forested watershed owners such as water purveyors and open space agencies. Fire Safe Councils.
Match requirement: Yes
Annual funding: Funding through Greenhouse Gas Reduction Fund-AB32

Forest pests (insects and diseases) annually destroy 10 times the volume of timber lost due to forest fires. Native bark beetles took hold in Southern California forests following severe drought years and caused unprecedented tree mortality. The introduced Pitch Canker Disease has attacked Monterey pine along the central coast. Sudden Oak Death, caused by *Phytophthora ramorum*, has been found in 14 counties in California and has killed thousands of oaks. CAL FIRE's forest pest specialists help protect the state's forest resources from native and introduced pests, conduct

surveys and provide technical assistance to private forest landowners, and promote forest health on all forest lands.

Source: Forest Legacy Program
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website:http://calfire.ca.gov/resource_mgt/resource_mgt_forestryassistance_legacy
Qualifying organizations: Public and private forest landowners, especially forested watershed owners such as water purveyors and open space agencies. Fire Safe Councils.
Match requirement: Yes
Annual funding: Funding through Greenhouse Gas Reduction Fund-AB32, gifts, donations, federal grants and loans, other appropriate funding sources.

The purpose of the Forest Legacy Program is to protect environmentally important forestland threatened with conversion to non-forest uses, such as subdivision for residential or commercial development. Protecting forests will ensure California's forests continue to be a significant carbon storage "sink" by avoiding conversion to non-forest uses that will result in GHG emissions rather than carbon sequestration. To help maintain the integrity and traditional uses of private forestlands, the Forest Legacy Program promotes the use of permanent conservation easements. These easements provide a new approach, a new tool, with which the federal government, in cooperation with state and local agencies, private organizations, and individuals can preserve the rich heritage of private forests.

The "Legacy" program as administered by CAL FIRE is comprised of two separate but complementary programs: the Federal Forest Legacy Program and the California Forest Legacy Program. Below is a brief overview of the programs.

THE FEDERAL PROGRAM

The federal Forest Legacy (16 U.S.C. Sec. 2103c) program was part of the 1990 Federal Farm Bill. It recognized that private forestland owners were facing increased pressure due to greater population densities and users demands, to convert their forestlands to other uses, such as housing subdivisions, rural lots and vineyards. Furthermore, forestland provides a wide variety of products and services including fish and wildlife habitat, aesthetic qualities, timber and recreation opportunities. Good stewardship of privately held forest lands requires a long-term commitment that can be fostered through a partnership of local, state and Federal government efforts.

The objective of the Federal Forest Legacy Program is to identify and protect environmentally important forestlands that are threatened by present or future conversion to non-forest uses. Priority is to be given to lands that can be effectively protected and managed and that have important scenic, recreational, timber, riparian, fish and wildlife, threatened and endangered species, and other cultural and environmental values.

Project costs covered by the Federal Legacy grants include interests in lands (including actual purchase price), appraisals, land surveys, closing costs, establishing baseline information, title work, purchase of title insurance, conservation easement drafting and other real estate transaction expenses. Also included are funds expended to facilitate donations of land or interests in lands to a qualified and willing done for Program purposes. For outright donations of a conservation easement or land, Federal funds may not be used to pay for an appraisal since the Forest Service

does not need a determination of fair market value. **Federal funds are limited to 75% of the value of the conservation easement with the remaining portion contributed by non-federal matching funds. Landowner contributions may be part of the match.**

THE STATE PROGRAM

The Forest Legacy Program Act in 2000 and 2007 allowed the Department of Forestry and Fire Protection to accept lands and interests in lands and to encourage the long-term conservation of productive forest lands by providing an incentive to owners of private forest lands to prevent future conversions of forest land and forest resources through the use of conservation easements. Eligible properties may be "working forests," where forestland is managed for the production of forest products and traditional forest uses are maintained. These forest uses will include both commodity outputs and non-commodity values. The purpose of these easements is to maintain these forests intact to provide such traditional forest benefits as timber production, wildlife habitat, watershed protection and/or open space. These forests remain in private ownership, except for the restrictions on development or other uses conveyed by the conservation easement to the agency selected by the landowner.

In both programs the involvement by private landowners is voluntary. In 2000, the Governor signed into law SB1832, the California Forest Legacy Act. This law allows the California Department of Forestry and Fire Protection to acquire conservation easements, and permit Federal, State agencies, local governments and nonprofit land trust organizations to hold conservation easements acquired pursuant to the California Forest Legacy Program.

Source: CA Forest Stewardship Program
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website: http://calfire.ca.gov/foreststeward/
Qualifying organizations: Public and private forest landowners, especially forested watershed owners such as water purveyors and open space agencies. Fire Safe Councils.
Match requirement: Yes
Annual funding: Funding through Greenhouse Gas Reduction Fund-AB32, gifts, donations, federal grants and loans, other appropriate funding sources.

The **California Forest Stewardship Program** was created to encourage good stewardship of California's private forestland. The program provides technical information and assistance to landowners to promote sound forest management, and assists communities in solving forest-related issues. The California Forest Stewardship Program is a collaborative project of the California Department of Forestry and Fire Protection (CAL FIRE) and USDA Forest Service. The Placer Resource Conservation District (RCD), UC Cooperative Extension Forestry, Northern California Society for American Foresters, Natural Resource Conservation Service (NRCS), and many other organizations and agencies are partners in projects and programs sponsored and supported by the California Stewardship Program.

Source: Vegetation Management Program
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website: http://calfire.ca.gov/resource_mgt/resource_mgt_vegetation
Qualifying organizations: Public and private forest landowners, especially forested watershed owners such as water purveyors and open space agencies. Fire Safe Councils.
Match requirement: Yes
Annual funding: Environmental License Plate Fund

The Vegetation Management Program (VMP) is a cost-sharing program that focuses on the use of prescribed fire, and some mechanical means, for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands. The use of prescribed fire mimics natural processes, restores fire to its historic role in wildland ecosystems, and provides significant fire hazard reduction benefits that enhance public and firefighter safety.

VMP PROGRAM GOALS (Board of Forestry and Fire Protection)

The goal of the Chaparral Management Program is to reduce the chance of large, damaging wildfires by reducing fire hazards on wildland in California. This includes three broad goals:

1. Reduction of conflagration fires.
2. Optimization of soil and water productivity.
3. Protection and improvement of intrinsic floral and faunal values.

VMP allows private landowners to enter into a contract with CAL FIRE to use prescribed fire to accomplish a combination of fire protection and resource management goals. Implementation of VMP projects is by CAL FIRE Units. When approved as a VMP project, CAL FIRE assumes the liability for conducting the prescribed burn.

Source: Greenhouse Gas Reduction Fund (GGRF)
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website: http://www.fire.ca.gov/grants/grants
Qualifying organizations: Public agencies, private landowners, not for profits, Fire Safe Councils.
Match requirement: Yes
Annual funding: Air Resources Board Cap and Trade Auction proceeds-AB 32

Assembly Bill 32 Overview

The passage of AB 32, the California Global Warming Solutions Act of 2006, marked a watershed moment in California's history. By requiring in law a sharp reduction of greenhouse gas (GHG) emissions, California set the stage for its transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing climate change, and does so in a way that aims to improve the environment and natural resources while maintaining a robust economy.

CAL FIRE has received funding from the Greenhouse Gas Reduction Fund (GGRF) for forestry projects which reduce or avoid GHG emissions. The funding is authorized by SB 862, Greenhouse gases: emissions reduction. Funds are available for projects to:

- Improve forest health
- Reduce wildfire vegetation (fuel) hazards
- Increase carbon sequestration in conifer forests and implement research projects on Demonstration State Forests
- Reforest degraded lands
- Establish and improve urban and community forests
- Conserve forestland by avoiding conversion to other uses
- Develop programmatic timberland environmental impact reports
- Utilize forest biomass

The goal for all projects is to ensure California's forests continue to be significant carbon storage "sinks" and to reduce or avoid GHG emissions due to pest damage, wildfires, and loss of forest tree cover from development to non-forest uses.

Applicants must demonstrate reduction of greenhouse gases as a result of implementing the proposed project.

To meet these goals, CAL FIRE will issue grants, cost share agreements, expand technical assistance, conduct research, and implement projects. Several Programs will be used to deliver funds for projects:

- Urban and Community Forestry
- Fuels Reduction
- Reforestation Services
- Forest legacy Program
- Forest Pest Control
- Forest Practice Program
- Demonstration and research forests

FIRE HAZARD REDUCTION

Source: State Responsibility Area Fire Prevention Fund (SRAFPF) Grant Program Greenhouse Gas Reduction Fund (GGRF)
Agency: California Department of Forestry and Fire Protection (CAL FIRE)
Website: http://www.fire.ca.gov/grants/grants
Qualifying organizations: Public agencies, private landowners, not for profits, Fire Safe Councils.
Match requirement: Yes
Annual funding: Air Resources Board Cap and Trade Auction proceeds-AB 32

Description: The State Responsibility Area Fire Prevention Fund (SRAFPF) Grant Program has funds available for projects that reduce the wildfire threat to habitable structures in State Responsibility Areas (SRA). Projects funded by the SRAFPF will reduce the risk of fire ignition and spread in and adjacent to communities, educate owners of habitable structures about wildfire

risks, or allow for strategic, long-term planning to reduce the risk of wildfire to communities in the SRA throughout the State.

Project Types and Activities - Qualifying projects and activities include those related to hazardous fuel reduction, fire prevention planning, fire prevention education and training that reduce the risk and potential impact of wildfire on habitable structures in the SRA.

FEDERAL AGENCY FUNDING

Source: California Grants Clearinghouse, CA Fire Safe Council
Agency: Principally USFS, administered by CA Fire Safe Council, Inc.
Website: http://www.cafiresafecouncil.org/grants-clearinghouse/
Qualifying organizations: Local Fire Safe Councils, public organizations, not for profits

Description: Federal funds grant administered by the CA Fire Safe Council with the purpose of reducing the risk of Wildland Urban Interface fires. Projects are limited to maximum of $200,000. Organizations submit a project single application that is reviewed by federal agencies (USFS, BLM, FWS, etc.) for award consideration and funding.

USDA-Natural Resources Conservation Service

The Agricultural Management Assistance (AMA) helps agricultural producers use conservation to manage risk and solve natural resource issues through natural resources conservation. NRCS administers the AMA conservation provisions while the Agricultural Marketing Service and the Risk Management Agency implement other provisions under AMA.

The Conservation Stewardship Program (CSP) helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns. Participants earn CSP payments for conservation performance—the higher the performance, the higher the payment.

Source: Conservation Innovation Grants (CIG)
Agency: National Resource Conservation Service
Website: http://www.nm.nrcs.usda.gov/programs/cig/cig.html
Qualifying organizations: Individuals, legal entities, Indian Tribes, or joint operations engaged in agricultural production on eligible land

Description: CIG State Component. CIG is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program (EQIP) funds are used to award competitive grants to non-federal governmental or nongovernmental organizations, tribes, or individuals. CIG enables the Natural Resources Conservation Service (NRCS) to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches to address some of the nation's most pressing natural resource concerns. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with federal, state, and local regulations. The NRCS administers the CIG program. The CIG requires a 50/50 match between the agency and the applicant. The CIG

has two funding components: national and state. Funding sources are available for water resources, soil resources, atmospheric resources, and grazing land and forest health.

The Environmental Quality Incentives Program (EQIP) provides financial and technical assistance to agricultural producers in order to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion and sedimentation or improved or created wildlife habitat.

Source: Air Quality Initiative
Agency: National Resource Conservation Service
Website: http://www.nm.nrcs.usda.gov/programs/cig/cig.html
Qualifying organizations: Individuals, legal entities, Indian Tribes, or joint operations engaged in agricultural production on eligible land

The NRCS Environmental Quality Incentives Program (EQIP) Air Quality Initiative provides financial assistance to implement conservation practices that address air resource issues for designated locations throughout the nation. Agricultural atmospheric related concerns include greenhouse gas emissions, ozone precursors, volatile organic compounds, airborne particulate matter, and some odor-related volatile compounds. For more information about agricultural air quality concerns, see the Air Quality topic.

Source: National Air Quality Site Assessment Tool
Agency: National Resource Conservation Service
Website: http://www.nm.nrcs.usda.gov/programs/cig/cig.html
Qualifying organizations: Individuals, legal entities, Indian Tribes, or joint operations engaged in agricultural production on eligible land

The National Air Quality Site Assessment Tool (NAQSAT) has been developed for the voluntary use of livestock producers and their advisors or consultants. It is intended to provide assistance to livestock and poultry producers in determining the areas in their operations where there are opportunities to make changes that result in reduced air emissions. Air emissions research from livestock production systems is increasing every year. NAQSAT is based on the most accurate, credible data currently available regarding mitigation strategies for air emissions of ammonia, methane, volatile organic compounds, hydrogen sulfide, particulates, and odor.

USDA- Forest Service grants and agreements

Source: **Landscape Scale Restoration,** Western Forestry Leadership Coalition
Agency: USFS, administered by Western Forestry Leadership Coalition (WFLC)
Website: **http://wflccenter.org/documents/2016/04/western-lsr-guidance-fy2017.pdf**
Qualifying organizations: State foresters submit applications on behalf of local organizations in a competitive system

Description: Federal funds grant administered by the Western Forestry Leadership Coalition of the seventeen (17) western states with the purpose of restoring natural areas at the landscape scale. Projects are limited to maximum of $300,000 and each state is limited to number of submittals. Local organizations submit their application to CAL FIRE who prioritizes them and submits as a state application to WFLC for award determination.

Source: **Wildland Urban Interface Grants,** Western Forestry Leadership Coalition
Agency: USFS, administered by Western Forestry Leadership Coalition
Website: http://wflccenter.org/state-private-forestry/
Qualifying organizations: State foresters submit applications on behalf of local organizations in a competitive system

Description: Federal funds grant administered by the Western Forestry Leadership Coalition of the seventeen (17) western states with the purpose of reducing the risk of Wildland Urban Interface. Projects are limited to maximum of $300,000 and each state is limited to number of submittals. Local organizations submit their application to CAL FIRE who prioritizes them and submits as a state application to WFLC for award determination.

Source: Federal Excess Personal Property
Agency: USFS
Website: http://www.fs.fed.us/fire/partners/fepp/

Description: The Federal Excess Personal Property (FEPP) program refers to Forest Service-owned property that is on loan to State Foresters for the purpose of wildland and rural firefighting. Most of the property originally belonged to the Department of Defense (DoD). Once acquired by the Forest Service, it is loaned to State Cooperators for firefighting purposes. The property is then loaned to the State Forester, who may then place it with local departments to improve local fire programs. State Foresters and the USDA Forest Service have mutually participated in the FEPP program since 1956.

Source: Title III Rural School Funds
Agency: USDA Forest Service
Website: http://www.fs.usda.gov/main/pts/countyfunds

Description: The Secure Rural Schools Act (SRS Act) was reauthorized by section 524 of P.L. 114-10 and signed into law by the President on April 16, 2015. This reauthorization extended the date by which title III projects must be initiated to September 30, 2017, and the date by which title III funds must be obligated to September 30, 2018. Counties seeking funding under Title III must use the funds to perform work under the Firewise Communities program.

Counties applying for Title III funds to implement Firewise activities can assist in all aspects of a community's recognition process, including conducting or assisting with community assessments, helping the community create an action plan, assisting with an annual Firewise Day, assisting with local wildfire mitigation projects, and communicating with the state liaison and the national program to ensure a smooth application process. Counties that previously used Title III funds for other wildfire preparation activities such as the Fire Safe Councils or similar would be able to carry out many of the same activities as they had before. However, with the new language, counties would be required to show that funds used for these activities were carried out under the Firewise Communities program.

Source: Volunteer Fire Assistance
Agency: U.S. Forest Service
Website: http://www.fs.fed.us/fire/partners/vfa/

Description: U.S. Forest Service funding will provide assistance, through the states, to volunteer fire departments to improve communication capabilities, increase wildland fire management training, and purchase protective fire clothing and firefighting equipment. For more information, contact your state representative; contact information can be found on the National Association of State Foresters website.

Source: The National Fire Plan (NFP)
Website: http://www.forestsandrangelands.gov/

Description: Many states are using funds from the NFP to provide funds through a cost-share with residents to help them reduce the wildfire risk to their private property. These actions are usually in the form of thinning or pruning trees, shrubs, and other vegetation and/or clearing the slash and debris from this kind of work. Opportunities are available for rural, state, and volunteer fire assistance.

US Department of Interior- Fish and Wildlife Service

Source: Rural Fire Assistance (RFA)
Agency: USDI – U.S. Fish and Wildlife Service
Website: http://www.nifc.gov/rfa.

Description: The RFA program provides funds for RFDs that Protect rural, wildland-urban interface communities; play a substantial cooperative role in the protection of federal lands; are cooperators with the Department of the Interior (USDI) managed lands through cooperative agreements with the USDI, or their respective state, tribe or equivalent; are less than 10,000 in population. The required cost share amount for the recipient RFD will not exceed 10 percent of the amount awarded. The RFD must demonstrate the capability to meet cost share requirements Cooperator contribution may be contributed as in-kind services. Cooperator contribution may exceed, but not amount to less than 10 percent. Examples of in-kind services may include but are not limited to: facility use incurred by and RFD for hosting training courses, travel and per diem costs incurred by an RFD when personnel attend training courses, and administration costs related to purchasing RFA equipment and supplies. Finding or in-kind resources may not be derived from other federal finding programs.

US Department of Homeland Security

Source: Fire Prevention and Safety Grants (FP&S)
Agency: DHS
Website: http://www.firegrantsupport.com/fps/

Description: The FP&S are part of the Assistance to Firefighters Grants and are under the purview of the Office of Grants and Training in the DHS. FP&S offers support to projects that enhance the safety of the public and firefighters who may be exposed to fire and related hazards. The primary goal is to target high risk populations and mitigate high incidences of death and injury. Examples of the types of projects supported by FP&S include fire-prevention and public-safety education campaigns, juvenile fire-setter interventions, media campaigns, and arson prevention and awareness programs. In fiscal year 2005, Congress reauthorized funding for FP&S and expanded the eligible uses of funds to include firefighter safety research and development.

Source: Staffing for Adequate Fire and Emergency Response (SAFER)
Agency: DHS
Website: http://www.firegrantsupport.com/safer/

Description: The purpose of SAFER grants is to help fire departments increase the number of frontline firefighters. The goal is for fire departments to increase their staffing and deployment capabilities and ultimately attain 24-hour staffing, thus ensuring that their communities have adequate protection from fire and fire-related hazards. The SAFER grants support two specific activities: (1) hiring of firefighters and (2) recruitment and retention of volunteer firefighters. The hiring of firefighters activity provides grants to pay for part of the salaries of newly hired firefighters over the five-year program. SAFER is part of the Assistance to Firefighters Grants and is under the purview of the Office of Grants and Training of the DHS.

Source: Funding for Fire Departments and First Responders
Agency: DHS, U.S. Fire Administration
Website: http://www.usfa.dhs.gov/fireservice/grants/

Description: Includes grants and general information on financial assistance for fire departments and first responders. Programs include the Assistance to Firefighters Grant Program, Reimbursement for Firefighting on Federal Property, State Fire Training Systems Grants, and National Fire Academy Training Assistance.

Source: Predisaster Mitigation Grant Program
Agency: Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA)
Website: http://www.fema.gov/government/grant/pdm/index.shtm

Description: The DHS includes FEMA and the U.S. Fire Administration. FEMA's Federal Mitigation and Insurance Administration is responsible for promoting predisaster activities that can reduce the likelihood or magnitude of loss of life and property from multiple hazards, including wildfire. The Disaster Mitigation Act of 2000 created a requirement for states and communities to develop predisaster mitigation plans and established funding to support the development of the plans and to implement actions identified in the plans. This competitive grant program, known as

PDM, has funds available to state entities, tribes, and local governments to help develop multi-hazard mitigation plans and to implement projects identified in those plans.

Private Organizations and Associations

Source: Firewise Communities
Agency: Multiple
Website: http://www.firewise.org

Description: The Wildland/Urban Interface Working Team (WUIWT) of the National Wildfire Coordinating Group is a consortium of wildland fire organizations and federal agencies responsible for wildland fire management in the United States. The WUIWT includes the U.S. Forest Service, Bureau of Indian Affairs, BLM, U.S. Fish and Wildlife Service, National Park Service, FEMA, U.S. Fire Administration, International Association of Fire Chiefs, National Association of State Fire Marshals, National Association of State Foresters, National Emergency Management Association, and National Fire Protection Association. Many different Firewise Communities activities are available help homes and whole neighborhoods become safer from wildfire without significant expense. Community cleanup days, awareness events, and other cooperative activities can often be successfully accomplished through partnerships among neighbors, local businesses, and local fire departments at little or no cost. The Firewise Communities recognition program page (http://www.firewise.org/usa) provides a number of excellent examples of these kinds of projects and programs.

The kind of help you need will depend on who you are, where you are, and what you want to do. Among the different activities individuals and neighborhoods can undertake, the following actions often benefit from some kind of seed funding or additional assistance from an outside source:

- Thinning/pruning/tree removal/clearing on private property—particularly on very large, densely wooded properties
- Retrofit of home roofing or siding to non-combustible materials
- Managing private forest
- Community slash pickup or chipping
- Creation or improvement of access/egress roads
- Improvement of water supply for firefighting
- Public education activities throughout the community or region

Some additional examples of what communities, counties, and states have done can be found in the National Database of State and Local Wildfire Hazard Mitigation Programs at http://www.wildfireprograms.usda.gov. You can search this database by keyword, state, jurisdiction, or program type to find information about wildfire mitigation education programs, grant programs, ordinances, and more. The database includes links to local websites and e-mail contacts.

Source: Ready-Set-Go Grants
Website: http://www.wildlandfirersg.org/

Description: Mitigation Grants: The grants are awarded in quantities of up to $5,000 to assist departments and emergency service agencies in the purchase or rental of equipment or other costs to implement or enhance community fuels mitigation programs within their jurisdiction. Applications should be submitted by July 31, 2016.

Outreach Grants: The grants are awarded in quantities of up to $1,000 to assist departments and emergency service agencies with the cost of outreach materials and events to promote community wildfire readiness and preparedness. Applications should be submitted by July 31, 2016.

APPENDIX E.
GENERAL PLAN POLICIES AND IMPLEMENTATION GUIDELINES TO ADDRESS WILDFIRE HAZARD.

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STANDARD PLANNING FRAMEWORK

The following information outlines the standard planning framework that most municipalities must adhere to for their General Plan and Municipal Codes.

THE GENERAL PLAN[1]

Counties and cities have the authority to determine land use development through state required land use General Plans that serve as their land use ordinance.

The General Plan is a community's blueprint for future development. It describes a community's development goals and policies. It also is the foundation for land use decisions made by the planning commission, city council, or board of supervisors. The General Plan is the basis for all local land use decisions. Zoning, subdivisions, and public works projects can only be approved when they are consistent with the General Plan. A General Plan consists of at least two parts. It must contain a written text describing the community's goals, objectives, and policies for development. It must also contain a map (or maps) and diagrams illustrating the generalized distribution of land uses, the road system, environmental hazard areas, the open space system, and other policy statements that can be illustrated (Government Code Section 65302). The maps and diagrams must work together with the written portions of the plan to establish a clear view of the community's future. The WUI fire problem and mitigation efforts to reduce injury and losses must be addressed when planning land development.

The General Plan must contain at least seven components (called *mandatory elements*) (Government Code Section 65302). Additional optional elements, may be adopted as well.

The Seven Mandatory Elements

1. **Land use element** designates the general location and density of housing, business, industry, open space, public buildings and grounds, waste disposal facilities, and other land uses.
2. **Circulation element** identifies the general location and extent of existing and proposed major roads, transit routes, terminals, and public utilities and facilities. It must correlate with the land use element.
3. **Housing element** assesses current and projected housing needs for all economic segments of the community and region. It identifies local housing policies and the programs that implement those policies.
4. **Conservation element** addresses the conservation, development, and use of natural resources, including water, forests, soils, rivers, and mineral deposits.
5. **Open space element** details plans and measures for preserving open space for natural resources, outdoor recreation, public health and safety, and agriculture.
6. **Noise element** identifies and appraises noise problems within the community and influences the distribution of land uses.

[1] *California Planning Guide: An Introduction to Planning in California.* December 2005 Edition.

7. **Safety element** establishes policies to protect the community from natural and human-made hazards (e.g., seismic, geologic, flood, wildfire, and toxic materials hazards).

Other Components of Land Use Planning

Localized plans and processes that allow for more detail germane to the circumstances for a specific development support the General Plan. The local details must be consistent with the General Plans' overarching blueprint.

Community Plans

A community plan focuses planning efforts on a smaller area or neighborhood. A community plan is part of the local General Plan. It addresses issues pertinent to a particular area or community within the city or county and supplements the policies of the General Plan. Accordingly, it must be consistent with the General Plan in all respects.

Specific Plans

A specific plan implements, but is not technically a part of, the local General Plan. Specific plans describe allowable land uses, identify open space, and detail infrastructure availability and financing for a portion of the community. In some jurisdictions, specific plans also take the place of zoning. These specific plans must be consistent with the General Plan. In turn, zoning, subdivision, and public works decisions must comply with the provisions of the specific plan. Specific plans are adopted and amended in the same manner as General Plans.

ZONING

The distribution of residential, commercial, industrial, and other zones must be based on the pattern of land uses established by the community's General Plan. Zoning maps illustrate how all uses are distributed geographically. Zoning is adopted by ordinance and carries the weight of local law. The zoning ordinance regulates land uses within the community. It assigns each piece of property to a zone that describes the rules under which that land may be used. These classifications, such as "R-1" for single-family residences or "C-1" for neighborhood commercial uses, cover in specific terms the range of uses that are allowed in the General Plan.

Overlay Zones

Overlay zones provide an additional layer of standards. They are often set up to protect natural and cultural areas, such as historic districts, residential enclaves, wetlands, water fronts, and scenic views.

Subdivisions

In general, land cannot be subdivided in California without local government approval. Dividing land for sale, lease, or financing is regulated by local ordinances based on the state Subdivision Map Act (commencing at Government Code Section 66410). The local General Plan and the zoning, subdivision, and other ordinances govern the design of the subdivision, the size of its lots, and the types of improvements that will be required as conditions of approval.

Subdivision approval is conditioned upon the sub-divider providing public improvements, such as streets, drainage facilities, water supplies, or sewer lines to serve the subdivision. They may also be required to dedicate park land to the community. These improvements must be installed or secured by bond before the city or county will grant final map approval and allow the subdivision to be recorded in the county recorder's office.

State legislation passed in 2012[2] now requires mandatory findings be made before approval can be granted to a proposed subdivision in an area located within an SRA or a locally adopted very high FHSZ, specifically 1) that the design and location of the subdivision are consistent with applicable regulations adopted by the State Board of Forestry and Fire Protection pursuant to PRC Sections 4290 and 4291, 2) that structural fire protection and suppression services will be available for the subdivision, and 3) that, to the extent practicable, ingress and egress for the subdivision meet the regulations regarding road standards for fire equipment access adopted pursuant to PRC Section 4290 and any applicable local ordinance.

Community Facilities District Act (Mello-Roos Act)

Community facility districts are a form of financing used by cities, counties, and other similar districts in order to fund services or large-scale products in that district, such as provision of fire service, maintenance of facilities, or construction of schools or roads. In order to be able to use this kind of financing, the voters in the district must approve the formation of a Mello-Roos district by a vote (two-thirds must be in favor of the decision). Once the district has decided to become a Mello-Roos district, the money spent to finance these projects is repaid by the property owners through taxes.

Community facilities districts can be used to provide sustainable funding for hazardous fuel reduction projects or other community fire programs. The establishment of a community facility district can be a condition of the subdivision approval.

The processes above establish community infrastructure, open space, road networks, parcel layout and density, design standards, and other factors. Building and fire codes regulate the construction of the structures following compliance with the land use planning conditions.

Building and Fire Codes

California model building and fire codes have chapters that specifically address construction standards in the WUI. These more restrictive codes address building components that reduce the ignition vulnerability of structures.

Once an area is designated for development through the General Plan and specific plan processes, a property owner can apply for a building permit. At this point, fire agency input is restricted to the specific parcel being built and application of the current building and fire codes.

[2] 2012 Senate Bill 1241-Goverment Code 65040 and Public Resources Code 21083.01

Sustainability of Wildland Urban Interface Defensible Space

State[3] and local laws provide standards for maintenance of defensible space around existing structures. Defensible space standards include reduction of flammable vegetation adjacent to structures.

RURAL HILLSIDE ORDINANCE THAT RELATE TO DEVELOPMENT IN THE WILDLAND URBAN INTERFACE

Excerpts taken from the General Plan:

- R-HS 22 – Adequate access and water supplies for fire safety shall be required for all new development, including building sites, subdivisions, and clustered development.
- R-HS 23 – Areas for which inadequate access is a general concern, either due to lack of secondary access, dead-end roads of excessive length, and substandard road design or conditions, should be examined to determine if there are means by which to remedy the inadequacies. Such means may include:
    - a. specific local area circulation plans to establish alternative access;
    - b. specific roadway improvements to remedy hazardous situations, financed by those most benefited by the improvements; and
    - c. traffic routing and controls to discourage the use of such roads by non-residents.
- R-HS 24 – Dead-end roads shall not be extended unless in the judgment of the Fire Authority; such extensions will serve to reduce the risks from fire hazards in the affected area.
- R-HS 25 – High intensity uses, such as theaters, motels, restaurants, schools, etc., and uses requiring the handling, transfer, storage, or disposal of significant amounts of flammable or hazardous materials shall be allowed only in areas having year-round fire protection and adequate water supply systems.
- R-HS 26 – For communities in areas of high or extreme fire hazard that have developed under development densities greater than generally allowed under current General Plan policies, water systems with hydrants should be provided wherever feasible.
- R-HS 27 – Santa Clara County should encourage the use of fire-retardant building materials and landscaping not already required by Santa Clara County development and building codes when new development and rebuilding are proposed in areas of high or extreme fire hazard.
- R-HS 28 – Development projects shall be reviewed by the Santa Clara County Fire Marshal's Office for safety code compliance and should also be referred if necessary to the appropriate fire protection authority or district for further review and recommendations.

[3] Public Resources Code 4291.

APPENDIX F.
CALTRANS VEGETATION MANAGEMENT GUIDELINES

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C2.06.1 Minimum Vegetation Control: Reduction of Chemical Use

Management decisions should identify the minimum vegetation control necessary to ensure adequate safety and system preservation. Decisions should take future needs and resources into consideration, as well as addressing short-term needs.

Long-term conditions most likely will require physical changes such as hardscaping or structural control methods to the pavement edge. These changes should be anticipated, documented and discussed with your District Landscape Specialist and Landscape Architect to ensure they are considered when the highway is reconstructed or rehabilitated. Refer to this manual, section E.12.7 for more information on structural weed control.

Short-term decisions should ensure that vegetation control is planned with chemical reduction goals in mind. The level of vegetation control should reflect an appropriate management decision that minimizes risks to safety requirements, visibility, fire risk, or the integrity of structural surfaces. When considering fire reduction strategies, the key is to assess the risk of fire starts in the right of way and the consequences of that fire escaping to surrounding terrain. Proper fire risk management cannot guarantee elimination of all fires. However, it should recognize the likelihood that a fire may start; the risk to people, property and the environment; and the difficulty of controlling fires.

C2.06.2 Fire Risk

A site specific fire risk plan is prepared by the District Landscape Specialist for the Deputy District Director, Maintenance. This plan establishes specific fire control measures for road edges, while considering the likelihood of a fire occurring and the consequences of a fire to the roadside and to adjacent properties.

Fire potential varies with the type of roadside vegetation and the configuration of the pavement edge. For example, grasses on a cut slope with a dike at its base are less likely to be ignited by a cigarette or spark than grasses on a flat traversable roadside. Similarly, perennial or low growing annual grasses present fewer fire risks than tall annual grasses.

The chance and consequences of a fire escaping vary widely with conditions. The consequences of fire spreading to an adjacent forest may be more serious than fire spreading to desert, chaparral or grasslands. Likewise, the consequences of a roadside fire where there is a containment barrier such as a frontage road or sound wall are less than if the fire can spread unimpeded into adjacent terrain.

The VegCon Plan must consider fire risk in sufficient detail to reflect changing vegetation types along highway edges, differing adjacent land uses, highway configurations, and annual rainfall impacting expected vegetation growth which may increase/decrease fire risk, and urban interface. Refer to District VegCon Plan in IMMS.

C2.11 Vegetation Control of Specific Areas

Vegetation control considerations should include:

(A) Traversable Slopes (4:1 and flatter)

(1) A control strip up to eight (8) feet wide for maintenance along the paved shoulder edge of both two lane and multi-lane roadways should be considered. Wider strips may be dictated by extreme fire control needs.

C2.08.1: Natural and Biological Controls

If it is determined that chemical means of control are best for controlling vegetation, districts must carefully plan their programs. This section provides a list of considerations for planning chemical vegetation control.

(A) Considerations in the Planning Stage

Districts should consider the following when planning their chemical vegetation control programs:

(1) Determination of the problem and the final desired result.
(2) What types of vegetation need to be controlled.
(3) The soil
    (a) Types
    (b) Slope grade in the target area.
(4) The area's rainfall and climate.
(5) Whether vegetation removal will be selective or non-selective.
(6) Whether a goal is growth regulation rather than elimination of vegetation.
(7) Determine if there is a need for fuel load reduction for fire prevention.

C2.26.6 Chemical Brush Control

Growth regulators may be used to maintain brush at a desired size.

Use selective translocating herbicides to control new brush growth annually or when needed. Do not spray large vegetative woody brush material before mowing, leaving the material to become an unsightly fire hazard. Small re-growth under 12 inches in height may be sprayed without further removal.

APPENDIX G.
FIRE FIGHTING RESOURCES

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AIR ATTACK RESOURCES

CAL FIRE staffs 12 air attack bases and 10 helitack bases throughout the state. Santa Clara County contains the CAL FIRE Alma Super Huey helitack base at Lexington Reservoir near Los Gatos. The closest air tankers are from the CAL FIRE air tanker base at the Hollister airport just south of the county line in San Benito County. There are two S2-T air tankers and an OV-10 Air Tactical Coordination aircraft assigned to the Hollister air base. Flight time after takeoff is 5 to 10 minutes to most areas in the county.

CAL FIRE's aviation fleet is composed of 23 S2-T 1,200-gallon air tankers, 12 Super Huey helicopters, and 15 OV-10 air tactical planes. The next closest air tankers to Santa Clara County are from CAL FIRE air bases in Columbia, Santa Rosa, Grass Valley, Fresno, and Paso Robles with flight times of 20 to 45 minutes. The fleet may be repositioned as fire activity and weather patterns change around the state.

Additional aviation resources may be provided by the federal government as fire activity and locations evolve during the fire season. As is the case with other types of suppression resources, competition for their use will occur during periods of widespread wildfire activity around the state.

HAND CREW RESOURCES

Within Santa Clara County, no jurisdiction contains hand crews such as Interagency Hotshot Crews, which are usually found within the federal fire agencies, such as the Bureau of Land Management and U.S. Forest Service. CAL FIRE does have access to state Type 1 fire hand crews based in Santa Cruz and Monterey Counties. These CAL FIRE hand crews comprise inmates from the California Department of Corrections and Rehabilitation. There are more than 200 CAL FIRE/ California Department of Corrections and Rehabilitation hand crews in California, which will respond as needed to Santa Clara County.

The California Conservation Corps (CCC) has a work center in Santa Clara County and receives partial funding from SRA fees. These are not fire going crews, but can be used for hazardous fuel reduction project work.

With state prison inmate realignment legislation, County Sheriff's across California are exploring cooperative agreements with fire agencies to utilize county jail inmates on hand crews for community benefit projects. Some of these agreements are with CAL FIRE and some are with other fire agencies.

There are private landscape maintenance crews available that can perform hazardous fuel reduction work.

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APPENDIX H.
SANTA CLARA FUEL MODELS

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Table G.1. Fuel Models Present in Santa Clara County

Fire Behavior Fuel Model	Corresponding fuel model number	Description
NB1	91	Urban
NB3	93	Agriculture
NB8	98	Water
NB9	99	Barren
GR1	101	Short, sparse dry climate grass is short, naturally or heavy grazing, predicted rate of fire spread and flame length low
GR2	102	Low load, dry climate grass primarily grass with some small amounts of fine, dead fuel, any shrubs do not affect fire behavior
GR3	103	Low load, very coarse, humid climate grass continuous, coarse humid climate grass, any shrubs do not affect fire behavior
GS1	121	Low load, dry climate grass-shrub shrub about 1 foot high, grass load low, spread rate moderate and flame length low
GS2	122	Moderate load, dry climate grass-shrub, shrubs are 1–3 feet high, grass load moderate, spread rate high, and flame length is moderate
SH1	141	Low load dry climate shrub, woody shrubs and shrub litter, fuelbed depth about 1 foot, may be some grass, spread rate and flame low
SH2	142	Moderate load dry climate shrub, woody shrubs and shrub litter, fuelbed depth about 1 foot, no grass, spread rate and flame low
SH3	143	Moderate load, humid climate shrub, woody shrubs and shrub litter, possible pine over story, fuel bed depth 2–3 feet, spread rate and flame low
SH5	145	High load, humid climate grass-shrub combined, heavy load with depth greater than 2 feet, spread rate and flame very high
SH6	146	Low load, humid climate shrub, woody shrubs and shrub litter, dense shrubs, little or no herbaceous fuel, depth about 2 feet, spread rate and flame high
SH7	147	Very high load, dry climate shrub, woody shrubs and shrub litter, very heavy shrub load, depth 4–6 feet, spread rate somewhat lower than SH6 and flame very high
TU1	161	Low load dry climate timber grass shrub, low load of grass and/or shrub with litter, spread rate and flame low
TU2	162	Moderate load, humid climate timber-shrub, moderate litter load with some shrub, spread rate moderate and flame low
TU5	165	Very high load, dry climate shrub, heavy forest litter with shrub or small tree understory, spread rate and flame moderate
TL1	181	Low load compact conifer litter, compact forest litter, light to moderate load, 1–2 inches deep, may represent a recent burn, spread rate and flame low
TL2	182	Low load broadleaf litter, broadleaf, hardwood litter, spread rate and flame low
TL3	183	Moderate load conifer litter, moderate load conifer litter, light load of coarse fuels, spread rate and flame low
TL4	184	Small downed logs moderate load of fine litter and coarse fuels, small diameter downed logs, spread rate and flame low
TL5	185	High load conifer litter, light slash or dead fuel, spread rate and flame low
TL6	186	Moderate load broadleaf litter, spread rate and flame moderate
TL7	187	Large downed logs, heavy load forest litter, larger diameter downed logs, spread rate and flame low
TL8	188	Long needle litter, moderate load long needle pine litter, may have small amounts of herbaceous fuel, spread rate moderate and flame low
TL9	189	Very high load broadleaf litter, may be heavy needle drape, spread rate and flame moderate
SB2	202	Moderate load activity fuel or low load blowdown, 7–12 trees/acre, 0- to 3-inch-diameter class, depth about 1 foot, blowdown scattered with many still standing, spread rate and flame low

Source: Scott and Burgan 2005; LANDFIRE 2012.

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APPENDIX I.
NATIONAL FIRE PROTECTION ASSOCIATION 1144 WILDFIRE RISK AND HAZARD SEVERITY FORM

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Means of Access						
Ingress and Egress	**Points**					
2 or more roads in and out	0					
One road in and out	7					
Road Width						
> 24 ft	0					
> 20 ft < 24 ft	2					
< 20 ft	4					
Road Conditions						
Surfaced road, grade < 5%	0					
Surfaced road, grade > 5%	2					
Non-surfaced road, grade < 5%	2					
Non-surfaced road, grade > 5%	5					
Other than all season	7					
Fire Access						
< 300 ft with turnaround	0					
> 300 ft with turnaround	2					
< 300 ft with no turnaround	4					
> 300 ft with no turnaround	5					
Street Signs						
Present – reflective	0					
Present – non-reflective	2					
Not present	5					
Vegetation (fuel models)						
Predominant veg						
Light – 1,2,3	5					
Medium – 5,6,7,8,9	10					
Heavy – 4,10	20					
Slash – 11,12,13	25					
Defensible Space						
> 100 ft around structure	1					
> 70 ft < 100 ft around structure	3					
> 30 ft < 70 ft around structure	10					
< 30 ft around structure	25					
Topography Within 300 ft of Structures						
Slope						
< 9%	1					
10% to 20%	4					
21% to 30%	7					
31% to 40%	8					
>41%	10					
Additional Rating Factors (rate all that apply)						
Additional Factors						
Topographic features	0-5					
History of high fire occurrence	0-5					
Severe fire weather potential	0-5					
Separation of adjacent structures	0-5					
Roofing Assembly						
Roofing						
Class A	0					
Class B	3					
Class C	15					
Unrated	25					

Building Construction						
Materials (predominant)						
Non-combustible siding, eaves, deck	0					
Non-combustible siding/combustible desk	5					
Combustible siding and deck	10					
Building Set-back						
> 30 ft to slope	1					
< 30 ft to slope	5					
Available Fire Protection						
Water Sources						
Hydrants 500 gpm < 1000 ft apart	0					
Hydrants 250 gpm < 1000 ft apart	1					
Non-pressurized > 250 gpm/2 hrs	3					
Non-pressurized < 250 gpm/2hrs	5					
Water unavailable	10					
Organized Response						
Station < 5 mi from structure	1					
Station > 5 mi from structure	3					
Fixed Fire Protection						
NFPA sprinkler system	0					
None	5					
Placement of Gas and Electric Utilities						
Utilities						
Both underground	0					
One above, one below	3					
Both above ground	5					

Totals for Home or Subdivision					

Hazard Rating Scale
< 40 Low
> 40 Moderate
> 70 High
> 112 Extreme

APPENDIX J.
DESCRIPTION OF FACTORS INCLUDED IN THE PARCEL LEVEL MODEL

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The following are the map-able Santa Clara County risk factors. The description of each risk factor includes examples of how it can influence the possible damage from a WUI fire. The descriptions offer background so that a stakeholder can weigh the relative importance of each factor.

Certain factors are so critical (Category 1 factors) that the presence of that factor will automatically escalate the score to Extreme. An example of a Category 1 Extreme factor is a road network that has structures that are either inaccessible or has one lane (no passing roads). No other mitigations can offset this factor; only fixing the critical factor will remove the Category 1 score.

Fire Hazard Severity Zone – The FHSZ rating score (moderate, high, very high) for a community includes factors of vegetation fuel type and arrangement, weather, topography, crown fire, spotting distance, and probability of ignition. FHSZs are rated based on a "normally severe fire weather day," which are conditions that routinely present for that community area. The higher the rating, the greater probability of a serious fire.

Fire history – Prior occurrence of serious fires in the past is an excellent indicator of potential of a repetitive fire.

Fire ignitions – The presence and frequency of fire ignitions in the area, including cause, are important to evaluating potential for ignition of a serious fire. Ignition type patterns may lead to mitigation strategies to reduce ignitions or consequences of those ignitions.

Fire behavior – Fire intensity is closely linked to damage because higher temperatures and length of time burning are more apt to ignite structures or become lethal to living things. Fast fire spread rates challenge fire containment. When fires "torch," embers are produced, which may start new fires far ahead of the main fire challenging fire containment.

Extreme wind patterns – Wind is the single most important factor for fire spread. Winds stronger than 20 miles per hour significantly spread ground fires faster, cause ground fires to become crown fires, and/or cause windblown embers to ignite spot fires far out ahead of the main fire. Winds that routinely exceed 30 miles per hour assure windblown embers and fire behavior that is too intense for ground crews to attack and severely limit effectiveness of aircraft operations.

Vegetation types –Type of vegetation (natural and ornamental) influences fire behavior, since some types burn more quickly and/or hotter. Different vegetation types also are easy or hard to manage. Unmanaged vegetation is often more hazardous.

Slope/Aspect – Steeper slopes pose challenges for containment because firefighter access is difficult, and more preheating occurs with steeper slopes. The orientation of the slope to the sun also affects the fuel moisture and heat; western and southern aspects are generally hotter and drier.

Proximity to flammable wildland vegetation – Areas farther away from flammable vegetation are much less likely to incur damage, unless embers are part of the fire behavior causing new spot fires to ignite. WUI communities with expanses of flammable vegetation between the parcels have greater probability of fire spread between buildings.

Community fire breaks – The presence of fire or fuel breaks (areas of no/thinned fuel) typically aids fire response by offering a safer location to position resources.

Property land use – Land uses of various types (infrastructure, residential, commercial, industrial, hazardous materials, or agriculture) present different consequences if burned. Some losses (e.g., critical infrastructure) may create widespread impacts even far outside the fire area. Hazardous materials facilities and critical infrastructure are Category 1 land uses.

Special adjustments – Certain properties are of such importance that loss is unacceptable: cultural icons, historical buildings, local feature not acceptable to lose, rare/endangered natural resources not fire adapted.

Road network – Road networks are essential to successful access and egress for responders entering the community while residents may be evacuating. Roads too narrow to allow two-way traffic can be disastrous. Steep, windy roads may be inaccessible to large fire equipment. Dead-end roads also present particular problems for fire responders and evacuees of getting cut off from the single escape route. Single lane roads with no passing or inaccessible roads are Category 1 factors.

Evacuation time to safe area – The amount of time required to get to a place of safety when evacuating an area is an important factor in citizen safety. Carless and non-ambulatory populations are Category 1 factors.

Parcel size – Parcels smaller than 0.25 acre present greater chances of fires spreading from building to building, rated at community average and individual parcel level.

Year built – The year of construction can influence the design and construction type of structures. Structures built prior to the passage of the 2007 California Building code generally have more features that make them easier to ignite: overhanging wood decks, single-paned windows, wood roofs, wood siding, unprotected eaves, and open vents, for example. This factor is rated at community on average age level and specific age at parcel level.

Building separation – When buildings are closer than 20 feet there is a high probability that radiant heat from a fire in an adjoining structure will ignite the neighboring building.

Roof material – This is one of the most important hazard factors. Wood roofs are associated with ignition, structure loss, and source of windblown embers, while structures with non-flammable roofs usually have higher survival rates during a wildfire. Wood roofs are a Category 1 factor.

Siding materials – Untreated wooden siding such as shingles or bare wood are more vulnerable to ignition than stucco or other ignition resistant material. Untreated wood siding is a Category 1 factor.

Window types – Double panes windows are more ignition resistant than single pane.

Venting systems – Embers can enter buildings and ignite contents through improper size screens in venting systems for attics, underfloor crawl space, and roof gable ends.

Deck materials – The flammability of deck materials, flammability of under deck storage, and ember resistance of deck enclosures, as well as flammability of deck/patio furniture and distance from building, can be a critical factor.

Ember beds adjacent to buildings – Presence of mulch beds can receive embers immediately adjacent or close proximity to buildings.

Defensible space – Having defensible space is usually associated with higher structure survival rates during a wildfire; this is rated at the community level and the individual parcel level. The quality and distances of defensible space from structures matters. Firefighters have more opportunities to fight fire around the structure and the heat from burning materials is reduced when defensible space is present. Lack of any defensible space is a Category 1 factor.

Property hygiene – The presence of flammable materials (wood piles, debris piles, abandoned vehicles, etc.) inside the defensible space zone may contribute to ignition from flying embers and spread of fire. This is rated at the community and parcel levels.

Homeowner participation in education/mitigation – Informed and involved homeowners typically are willing to manage their own properties to lower their risk due to their increased knowledge and heightened sense of responsibility. Community member participation in Santa Clara County Fire Safe Council, community recognition as a Firewise Community or attendance at wildfire community education forums is an excellent indicator of citizens' WUI fire preparedness.

Water sources/hydrants – The use of water greatly aids the extinguishments of a fire, thereby containing it and limiting damage. The total abundance, accessibility, and proximity to the fire are important factors. Community water systems with fire hydrants versus individual water storage tanks at parcel level or scattered water tanks throughout community.

Response time – Shorter response times are associated with reduced damage because containment and suppression can start earlier when the fire is smaller.

Wildland pre-plan – Fire response may be more efficient in locations that have a pre-plan for wildfire due to increased knowledge regarding expected fire behavior, fire breaks, water sources, access, and communications.

Position of structure on slope – Because fires on the lower portions of a slope pre-heat fuels above it, structures on the top of slopes often ignite more easily than those at the bottom of a slope. Firefighter access is also influenced by a structure's position on the slope since structures at the top of a slope may be harder or take longer to reach.

Sensitivity to special/valued habitat – Fuel management may be restricted in areas requiring extra precautions that increase management costs. Or regulations may prohibit all work. Unmanaged fuels may be areas of increased fuel accumulation and hazard.

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APPENDIX K.
RESULTS OF COMMUNITY SURVEY

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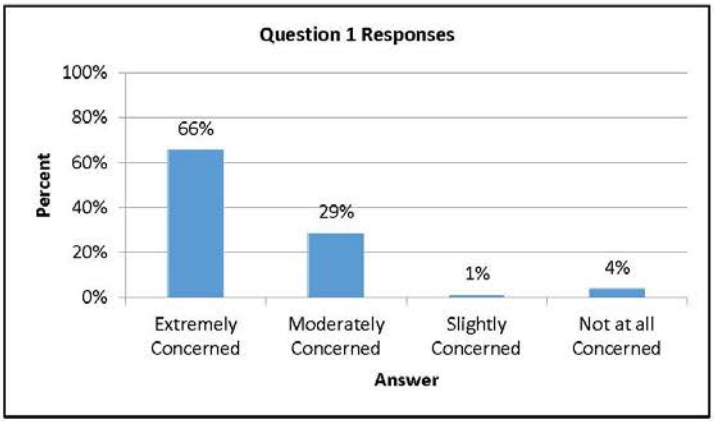
Below is summary of key findings for the Santa Clara County CWPP survey questions. We received responses from 87 residents, many of whom were located in the Lexington Hills. Given the strong response of Lexington Hills (and nearby Santa Clara County) residents, both in the community forums and in the survey, a basic assessment outlined in the blue text below was made of how this group differed from respondents from other areas. Overall, there were few clear differences; areas of potential difference are noted below. The graphs shown below show general findings across all groups.

An important caveat needs to be made about interpreting the findings below. The nature of recruitment—via list serves, etc.—means that this survey does not provide a representative sample of Santa Clara County residents. Results are more likely to reflect the interested public—those who actively seek out information or involvement in wildfire matters. Thus responses are likely to be skewed toward higher levels of concern, knowledge, and preparedness in relation to wildfire. That said, results were not strikingly different from findings from studies that used more random (therefore, more likely to be representative) survey sample methods.

Risk Perception

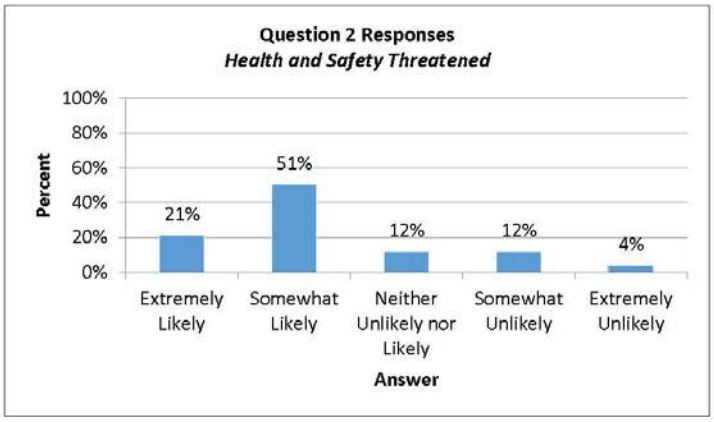
1. **How concerned are you about wildfire in your area?** (Please circle the number that best represents your level of concern).

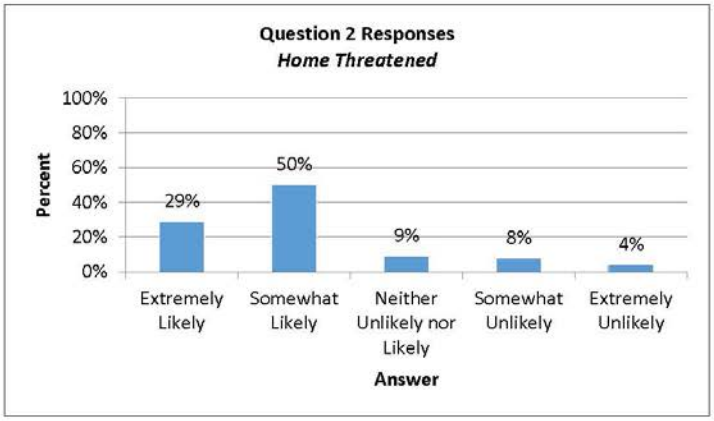
Not at all concerned	Slightly concerned	Moderately concerned	Extremely concerned
1	**2**	**3**	**4**

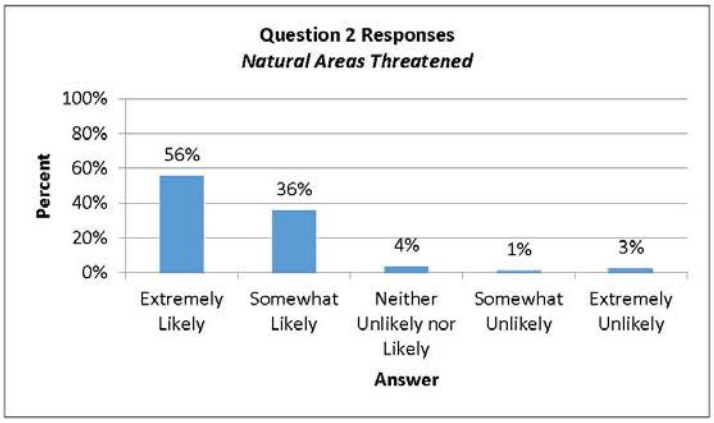


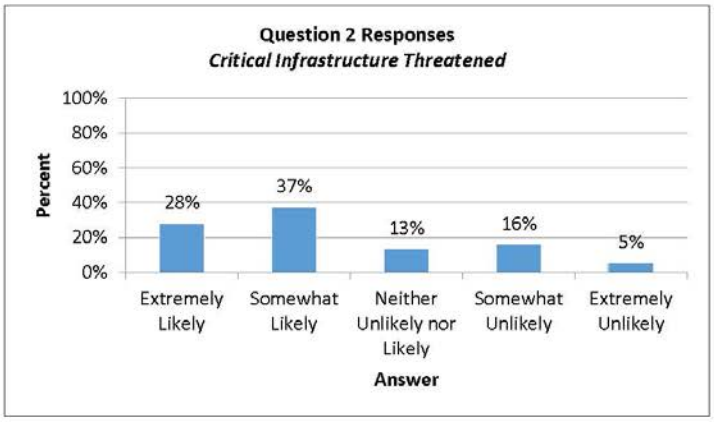
2. **How likely do you think it is that each of the following will occur *during the next 5 years* as a result of a wildfire in your area?** (Please circle only one number in each row.)

	Extremely Unlikely	Somewhat Unlikely	Neither Unlikely nor Likely	Somewhat Likely	Extremely Likely
My family's health and safety will be threatened	**1**	**2**	**3**	**4**	**5**
My home will be threatened.	**1**	**2**	**3**	**4**	**5**
Natural areas that I care about will be threatened.	**1**	**2**	**3**	**4**	**5**
Critical infrastructure (e.g., schools, grocery stores, water supply) will be threatened.	**1**	**2**	**3**	**4**	**5**


Question 2 Responses
Health and Safety Threatened
Percent
100%
80%
60%
40%
20%
0%
21%
51%
12%
12%
4%
Extremely Likely
Somewhat Likely
Neither Unlikely nor Likely
Somewhat Unlikely
Extremely Unlikely
Answer


Question 2 Responses
Home Threatened
Percent
100%
80%
60%
40%
20%
0%
29%
50%
9%
8%
4%
Extremely Likely
Somewhat Likely
Neither Unlikely nor Likely
Somewhat Unlikely
Extremely Unlikely
Answer

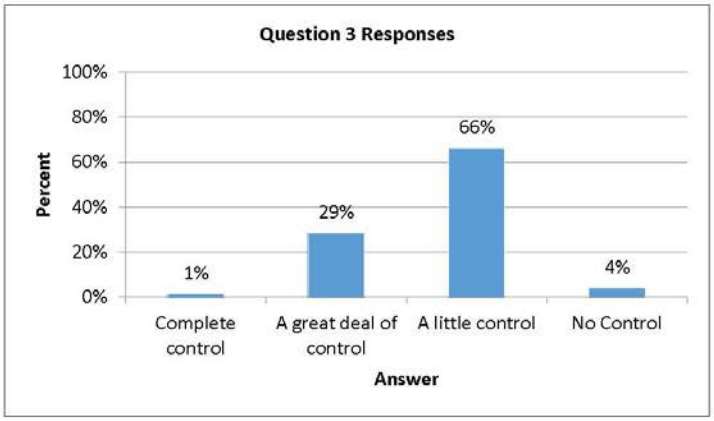

Question 2 Responses
Natural Areas Threatened
Percent
100%
80%
60%
40%
20%
0%
56%
36%
4%
1%
3%
Extremely Likely
Somewhat Likely
Neither Unlikely nor Likely
Somewhat Unlikely
Extremely Unlikely
Answer



Q1–Q2: Overall respondents showed high levels of concern about wildfire in the area, with 95% overall indicating they were moderately to extremely concerned: Lexington Hills tended more toward extreme concern, while non-Lexington Hills residents were roughly equally split between moderate and extreme concern. The answers to assessments of likelihood of certain impacts from wildfire clearly demonstrate how assessments change based on specific scale. Half felt it was somewhat likely their family or home might be threatened, while more than half felt that natural areas were extremely likely to be threatened. Little difference was seen between locations for these three measures. However Lexington Hills perceived the likelihood of critical infrastructure being threatened as higher, with more than three-quarters of Lexington Hills indicating it was somewhat to extremely likely, versus 39% of non-Lexington Hills residents.

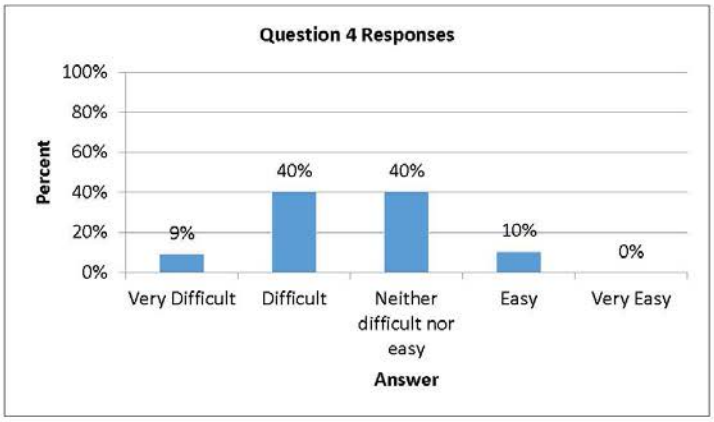
3. **How much control do you have over your risk from wildfire?** (Please circle only one number.)

No Control	A little control	A great deal of control	Complete control
1	**2**	**3**	**4**



4. **Reducing my personal wildfire risk is** (Please circle only one number.)

Very difficult	Difficult	Neither difficult nor easy	Easy	Very easy
1	**2**	**3**	**4**	**5**



Q3–Q4: These questions provide some evidence for why individuals may not undertake mitigation measures. **Overall, two-thirds felt they had little control over their wildfire risk, although a larger portion of non-Lexington Hills respondents felt they had a great deal of control compared to Lexington Hills respondents (42% vs. 23%).** Both groups had similar responses in relation to how easy it was to reduce their personal risk, with 40% indicating it was difficult and 40% indicated it was neither difficult nor easy.

Homeowner Mitigation Actions

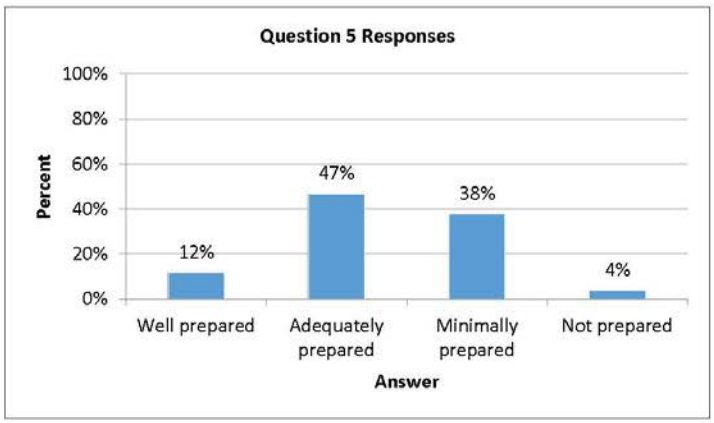
5. In relation to wildfire, I feel Santa Clara County is (Please check only one)**:**

_____ = Well prepared for a fire

_____ = Adequately prepared but would like more done

_____ = Minimally prepared

_____ = Not at all prepared



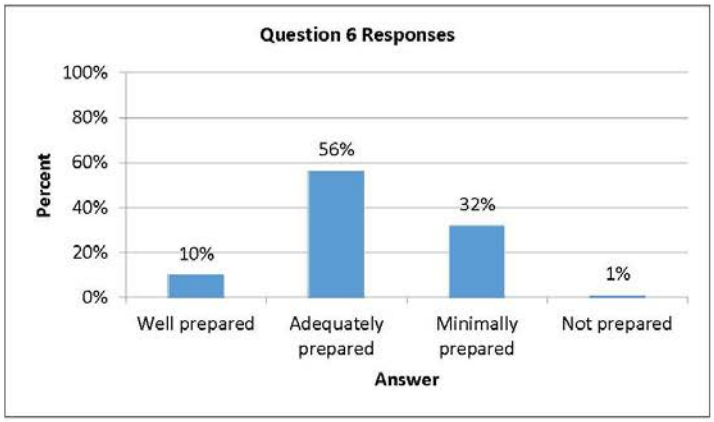
6. **In relation to wildfire, I feel <u>my property and family</u> are** (Please check only one):

   _____ = Well prepared for a fire

   _____ = Adequately prepared but would like to do more

   _____ = Minimally prepared

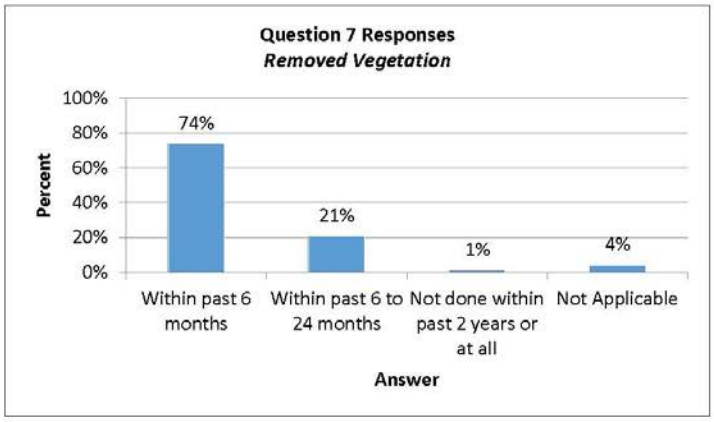
   _____ = Not at all prepared

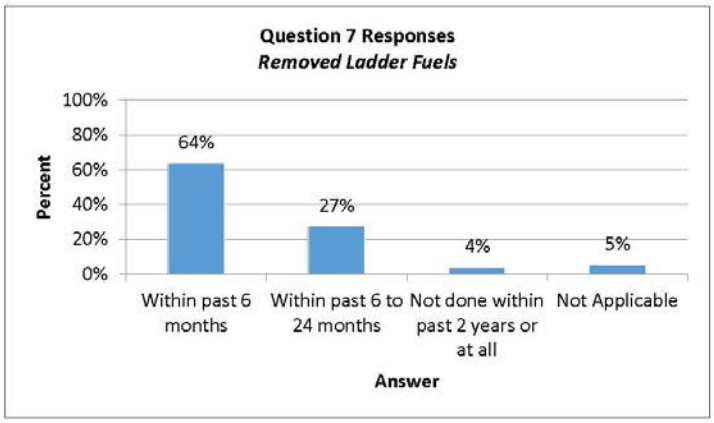


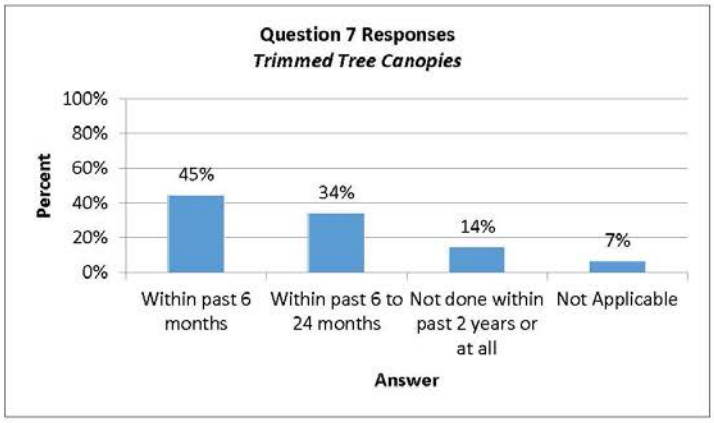
Q5–Q6: **Roughly half of respondents felt the County and their property and family were adequately prepared but could do more**, with slightly lower numbers feeling the County was adequately prepared.

7. **Please indicate which, if any, of the following actions you have taken to <u>manage the vegetation</u> around your home.** (Please circle only one response in each row.)

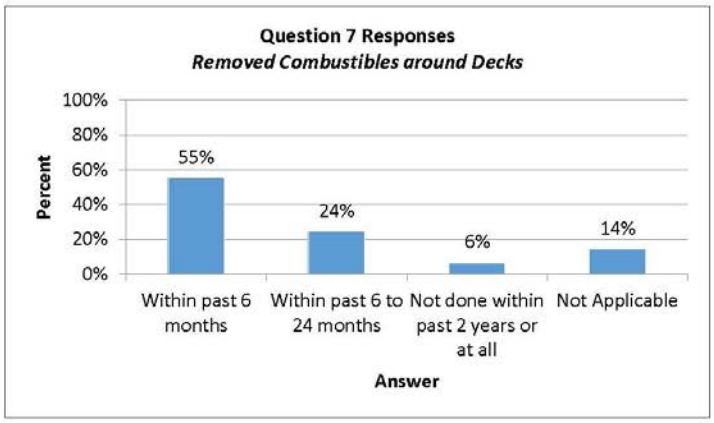
Action	Have done within past 6 months	Have done within past 6 to 24 months	Have not done within past 2 years or at all	Not applicable to my home
Removed dead or dying vegetation around my home	**1**	**2**	**3**	**4**
Removed "ladder fuels" (low-level vegetation that allows the fire to spread from the ground to the tree canopy)	**1**	**2**	**3**	**4**
Trimmed tree canopies to keep their branches a minimum of 10 feet from structures and other trees	**1**	**2**	**3**	**4**
Removed leaf litter (dry leaves/pine needles) from yard, roof ,and rain gutters	**1**	**2**	**3**	**4**
Removed combustible material and vegetation from around and under decks	**1**	**2**	**3**	**4**
Removed or pruned vegetation near windows	**1**	**2**	**3**	**4**

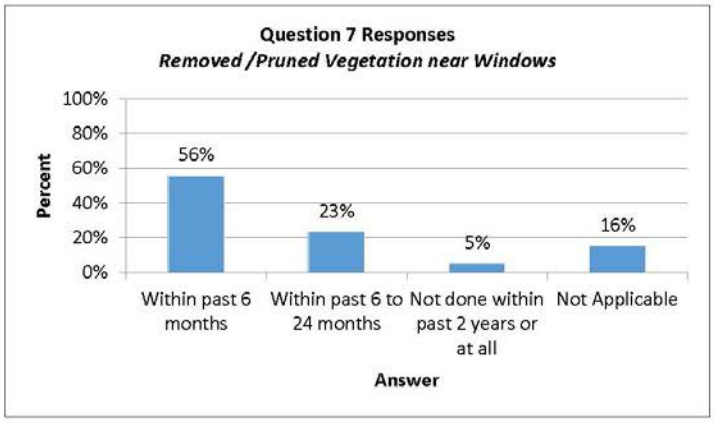

Question 7 Responses
Removed Vegetation
Percent
100%
80%
60%
40%
20%
0%
74%
21%
1%
4%
Within past 6 months
Within past 6 to 24 months
Not done within past 2 years or at all
Not Applicable
Answer


Question 7 Responses
Removed Ladder Fuels
Percent
100%
80%
60%
40%
20%
0%
64%
27%
4%
5%
Within past 6 months
Within past 6 to 24 months
Not done within past 2 years or at all
Not Applicable
Answer


Question 7 Responses
Trimmed Tree Canopies
Percent
100%
80%
60%
40%
20%
0%
45%
34%
14%
7%
Within past 6 months
Within past 6 to 24 months
Not done within past 2 years or at all
Not Applicable
Answer

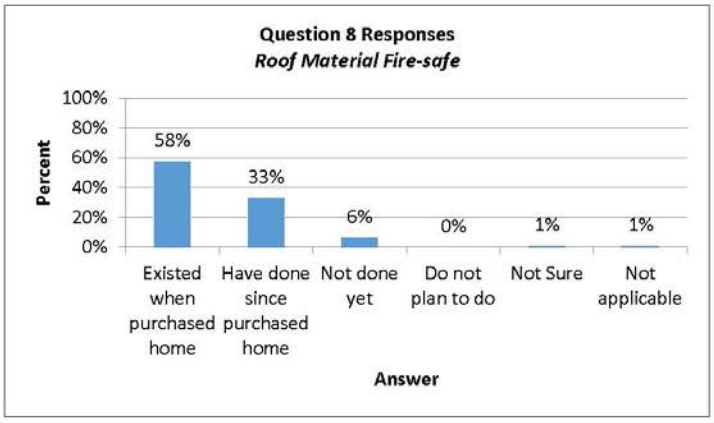


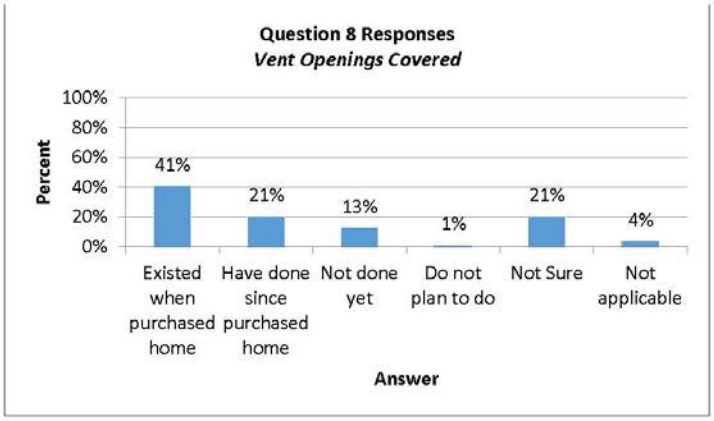


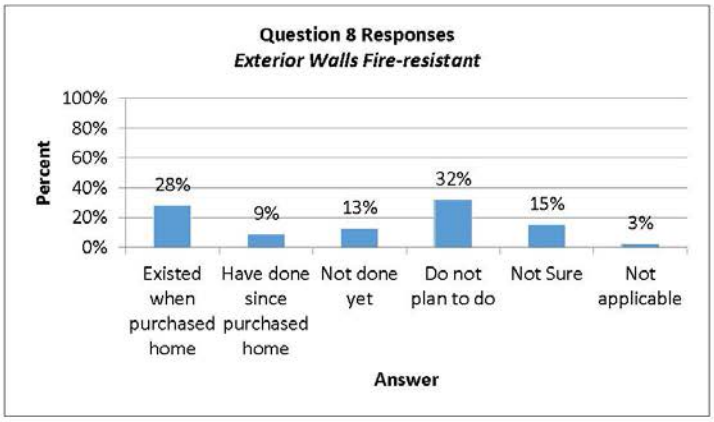


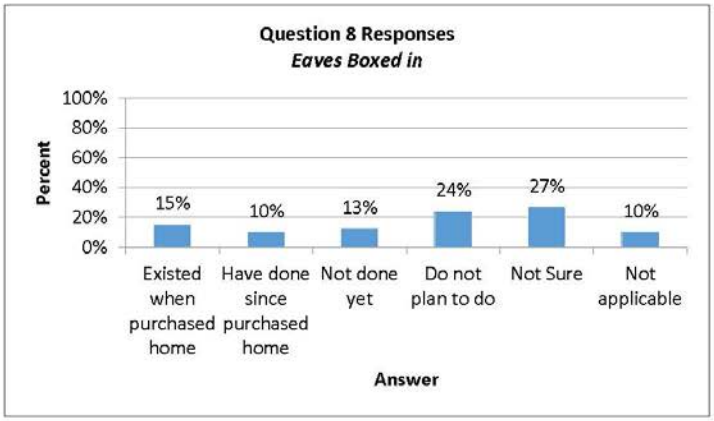
8. **For each structural element, please indicate the response that best indicates the status of whether your home does or does not have that element in place.** If you are unsure whether or not your house has a certain feature, please indicate not sure. (For each feature below, please circle only one response in each row.)

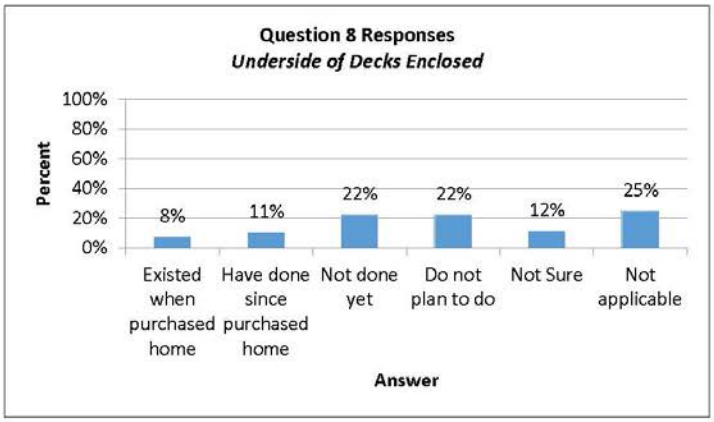
Structural Element	Existed when I purchased the home	Have done since purchased	Haven't done yet but plan to in future	Do not plan to do	Not applicable to my home	Not sure
Roof is made of fire-safe material such as composition (e.g. asphalt, metal)	**1**	**2**	**3**	**4**	**5**	**6**
All vent openings are covered with 1/8-inch mesh (or smaller) that is not plastic or fiberglass	**1**	**2**	**3**	**4**	**5**	**6**
Exterior walls are covered with or made of fire-resistant materials	**1**	**2**	**3**	**4**	**5**	**6**
Eaves are boxed in with non-combustible material	**1**	**2**	**3**	**4**	**5**	**6**
Underside of decks are enclosed with fire-resistant materials	**1**	**2**	**3**	**4**	**5**	**6**






Question 8 Responses
Exterior Walls Fire-resistant
Percent
100%
80%
60%
40%
20%
0%
28%
9%
13%
32%
15%
3%
Existed when purchased home
Have done since purchased home
Not done yet
Do not plan to do
Not Sure
Not applicable
Answer


Question 8 Responses
Eaves Boxed in
Percent
100%
80%
60%
40%
20%
0%
15%
10%
13%
24%
27%
10%
Existed when purchased home
Have done since purchased home
Not done yet
Do not plan to do
Not Sure
Not applicable
Answer


Question 8 Responses
Underside of Decks Enclosed
Percent
100%
80%
60%
40%
20%
0%
8%
11%
22%
22%
12%
25%
Existed when purchased home
Have done since purchased home
Not done yet
Do not plan to do
Not Sure
Not applicable
Answer

Q7–Q8: **Results indicate that the vast majority of respondents have undertaken mitigation measures.** In terms of vegetation actions, two-thirds have removed dead or dying vegetation, ladder fuels, and leaf litter within the past 6 months, and all but roughly 10% have done so within the past 2 years. More than 75% had removed vegetation near windows and from under and around decks, and trimmed tree canopies within the past 2 years. Little difference was seen between the two location groups.

For structural changes, the results are more mixed and suggest several areas where improved (e.g., more specific info re-effectiveness of an action) outreach might help. People clearly understand the importance of appropriate roofing: 92% had fire-safe roofs and 6% planned to. Responses specific to vent openings and boxed eaves are less clear with around a quarter of respondents unsure whether their home had each item, suggesting they may not understand what these actions look like. However, 75% had covered their openings or planned to. In comparison, around one-quarter did not plan to box their eaves. One-third did not plan to cover their exterior walls with fire-resistant material, not surprising given the likely cost of such an action. Response on enclosing decks were highly varied with a quarter indicating it did apply to their home (this was the only apparent difference between locations, as more non-Lexington Hills respondents indicated it did not apply to their property [37% vs. 19%]). Of those with decks, 16% were not sure, and 30% indicated they did not plan to enclose.

9. **Has your home had a wildfire risk assessment?** _____ = Yes _____ = No

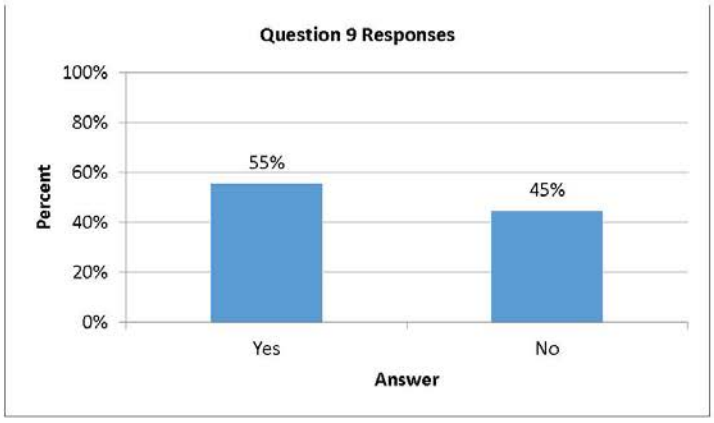
If yes, who completed the assessment?

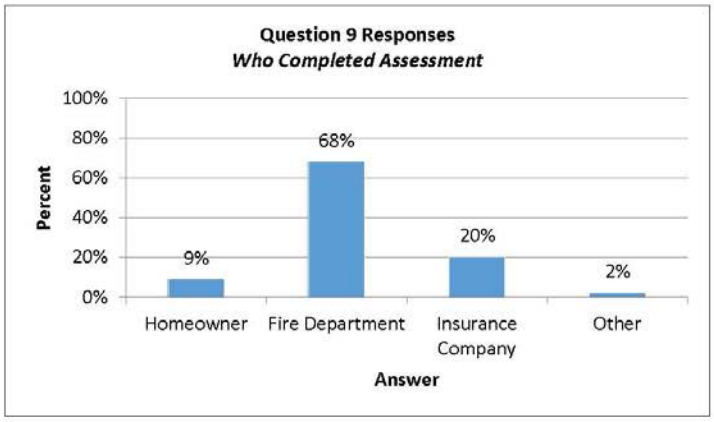
_____ = Homeowner

_____ = Fire Department

_____ = Insurance Company

_____ = Other Who? _____

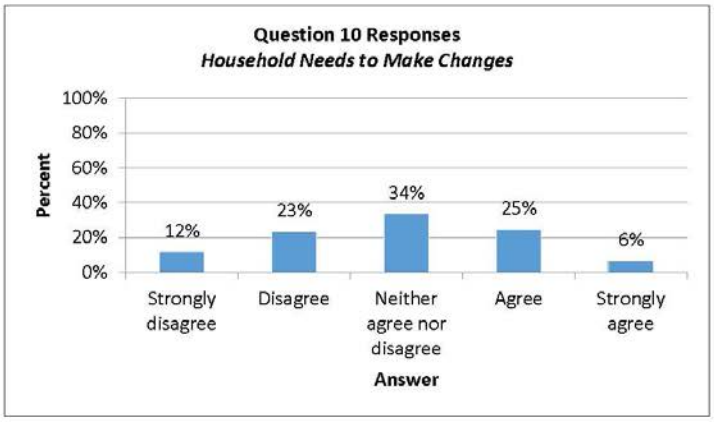


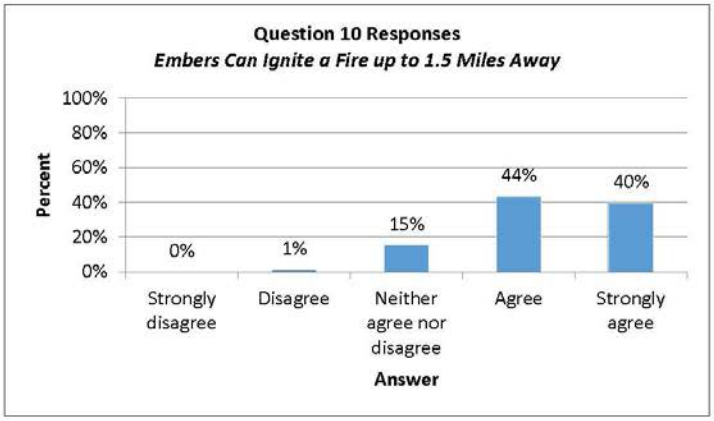


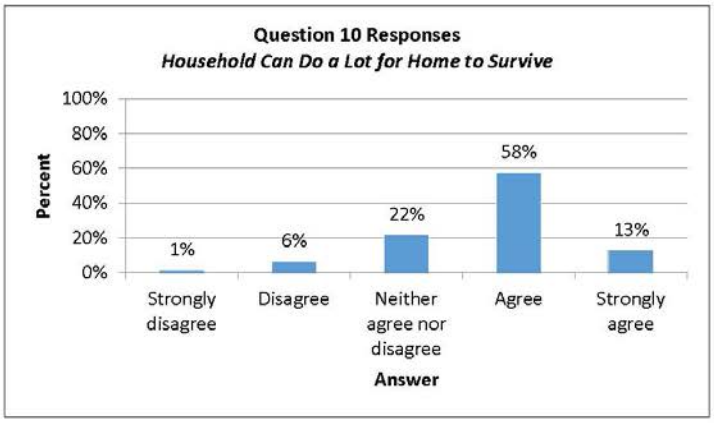
Q9: **Slightly more than half indicated their home had had a wildfire risk assessment**. Two-thirds of these (68%) were conducted by the fire department, although a larger percentage of Lexington Hills indicated the fire department than the non-Lexington Hills group (73% vs. 54%). Non-Lexington Hills were more likely to have done the assessment themselves (27% vs. 3%).

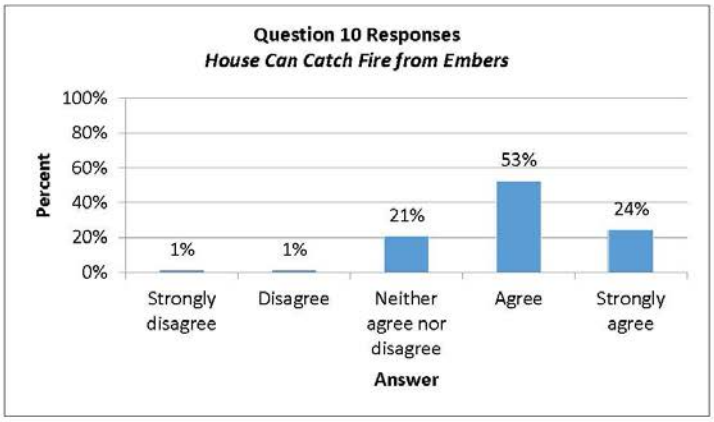
10. **Please indicate how strongly you agree or disagree with the following statements.** *(Please circle only one response in each row)*

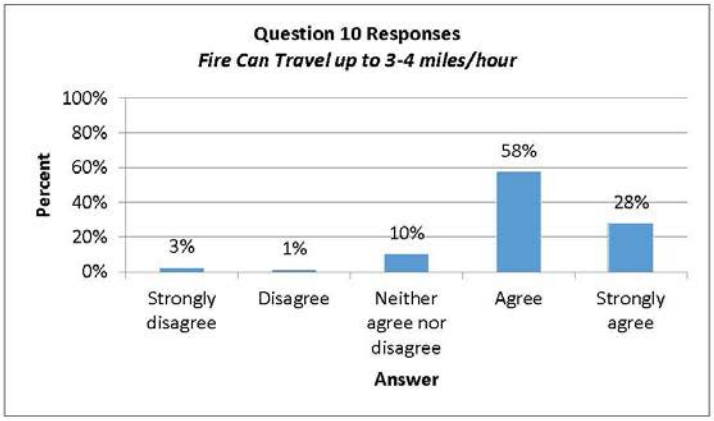
Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
My household needs to make changes to this property for my community to be better protected	1	2	3	4	5
Embers can ignite a fire up to 1.5 miles from the fire front	1	2	3	4	5
The members of my household can do a lot to increase the likelihood of our home surviving a wildfire	1	2	3	4	5
In a wildfire, most houses catch on fire as a result of embers	1	2	3	4	5
In bad conditions, a fire in my area can travel up to 3–4 miles/hour	1	2	3	4	5
My community as a whole needs to take more action to be protected from wildfire	1	2	3	4	5

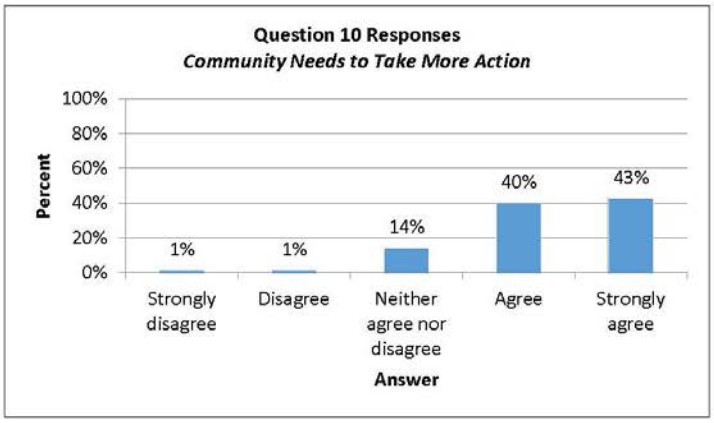

Question 10 Responses
Household Needs to Make Changes
Percent
100%
80%
60%
40%
20%
0%
12%
23%
34%
25%
6%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer


Question 10 Responses
Embers Can Ignite a Fire up to 1.5 Miles Away
Percent
100%
80%
60%
40%
20%
0%
0%
1%
15%
44%
40%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer


Question 10 Responses
Household Can Do a Lot for Home to Survive
Percent
100%
80%
60%
40%
20%
0%
1%
6%
22%
58%
13%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer


Question 10 Responses
House Can Catch Fire from Embers
Percent
100%
80%
60%
40%
20%
0%
1%
1%
21%
53%
24%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer

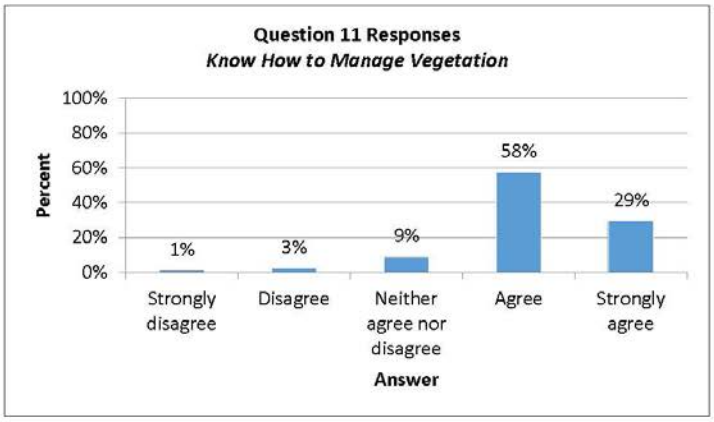

Question 10 Responses
Fire Can Travel up to 3-4 miles/hour
Percent
100%
80%
60%
40%
20%
0%
3%
1%
10%
58%
28%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer

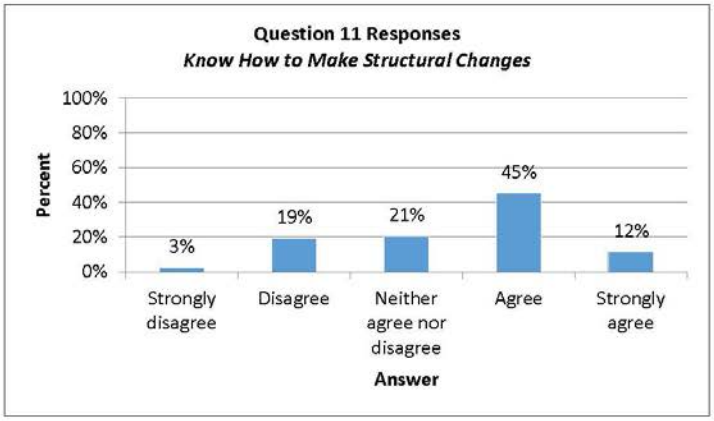

Question 10 Responses
Community Needs to Take More Action
Percent
100%
80%
60%
40%
20%
0%
1%
1%
14%
40%
43%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer

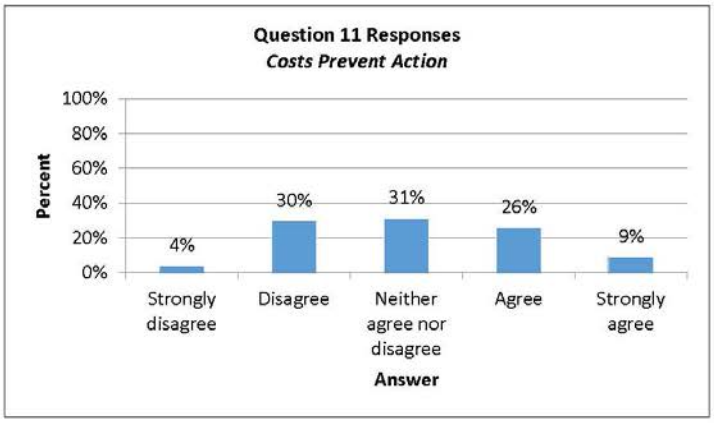
Q10: Responses on beliefs are encouraging, as only a very small portion (less than 7%) disagreed and around 75% agreed at some level with statements about the role of embers, how fast a fire can travel, views of their household ability to increase house survival, and community need to take more action. The one exception was the first question about household needing to make changes to help the community be better prepared for wildfire, which had more mixed response. Roughly a third agreed with the statement, one-third disagreed, and one-third was essentially neutral. That almost a third of respondents disagreed with the idea that their household needs to make changes for the community to be better protected could be interpreted in two ways: 1) they feel they have already done what they can (which may be reasonable given response to Q7 and Q8), or 2) they don't feel their property has much impact on overall community being protected. There were few clear differences between the groups. The only two items were: 1) 87% of Lexington Hills agreed that most houses catch on fire from embers, while 42% of non-Lexington Hills were neutral on the topic, and 2) almost half of Lexington Hills strongly agreed their community as a whole needs to take more action compared to only 25% of the non-Lexington Hills group.

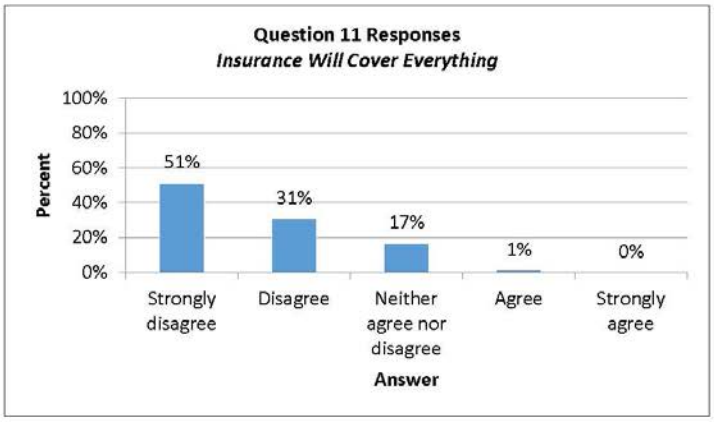
11. **The following statements reflect reasons why someone may or may not prepare their home or property to mitigate their wildfire risk. Please rate to what extent you agree or disagree with the following statements as they relate to why you have or have not mitigated your wildfire risk.** (Please circle only one number in each row.)

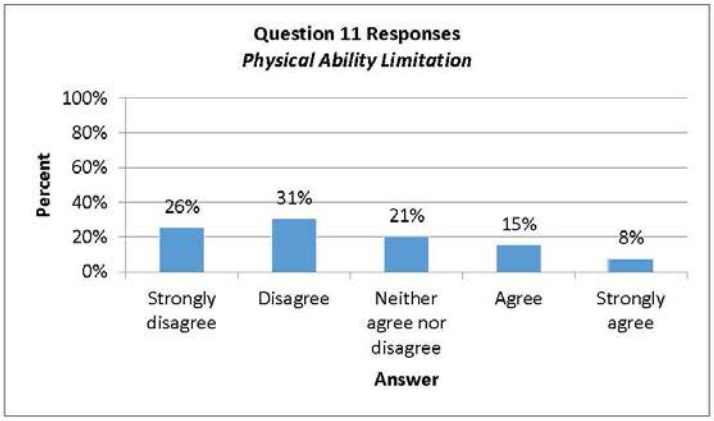
Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I know how to manage the vegetation around my home to decrease risks from wildfire.	1	2	3	4	5
I know how to make structural changes to my home to decrease risks from wildfire.	1	2	3	4	5
The cost of preparing my home or property prevents me from taking action.	1	2	3	4	5
There is no need to prepare my home or property because I have insurance that will cover any potential damage.	1	2	3	4	5
My physical abilities make it difficult to prepare my home or property.	1	2	3	4	5
It is difficult to find the time to prepare my home or property.	1	2	3	4	5
Neighborhood rules and programs require me to prepare my home.	1	2	3	4	5
The recommended changes to my home or property interfere with how I want my property to be.	1	2	3	4	5

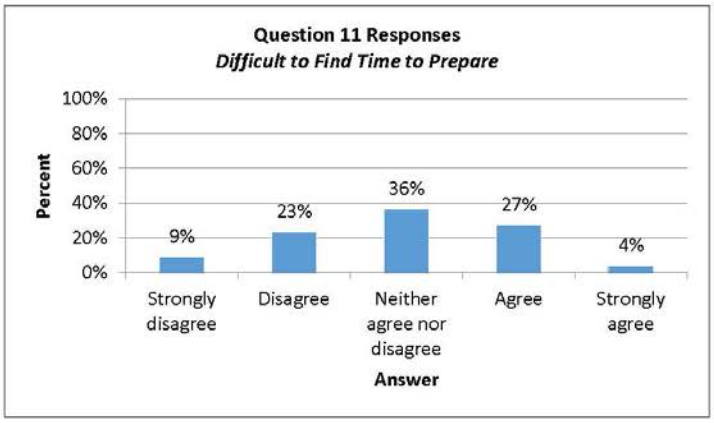

Question 11 Responses
Know How to Manage Vegetation
Percent
100%
80%
60%
40%
20%
0%
1%
3%
9%
58%
29%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer

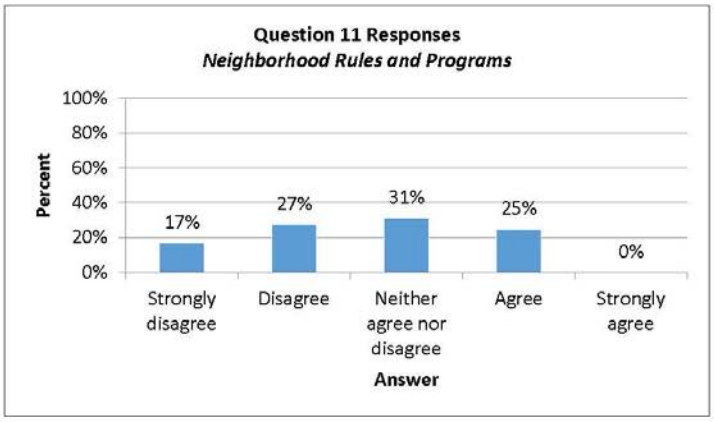

Question 11 Responses
Know How to Make Structural Changes
Percent
100%
80%
60%
40%
20%
0%
3%
19%
21%
45%
12%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer

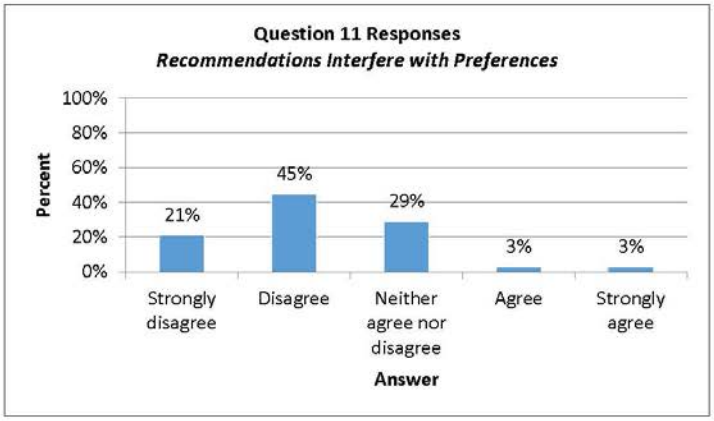

Question 11 Responses
Costs Prevent Action
Percent
100%
80%
60%
40%
20%
0%
4%
30%
31%
26%
9%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer


Question 11 Responses
Insurance Will Cover Everything
Percent
100%
80%
60%
40%
20%
0%
51%
31%
17%
1%
0%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer


Question 11 Responses
Physical Ability Limitation
Percent
100%
80%
60%
40%
20%
0%
26%
31%
21%
15%
8%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer


Question 11 Responses
Difficult to Find Time to Prepare
Percent
100%
80%
60%
40%
20%
0%
9%
23%
36%
27%
4%
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Answer



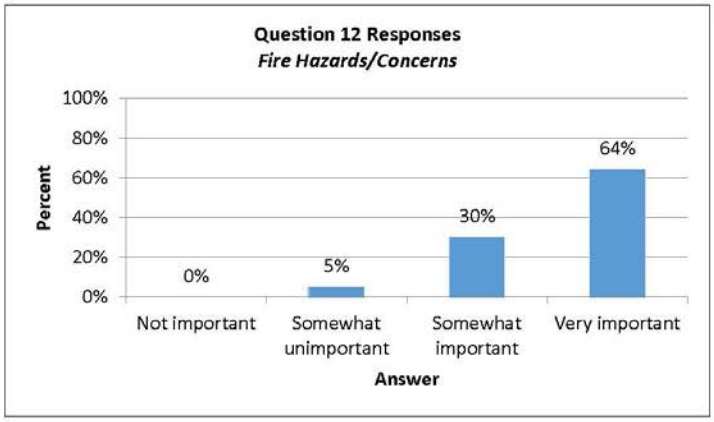


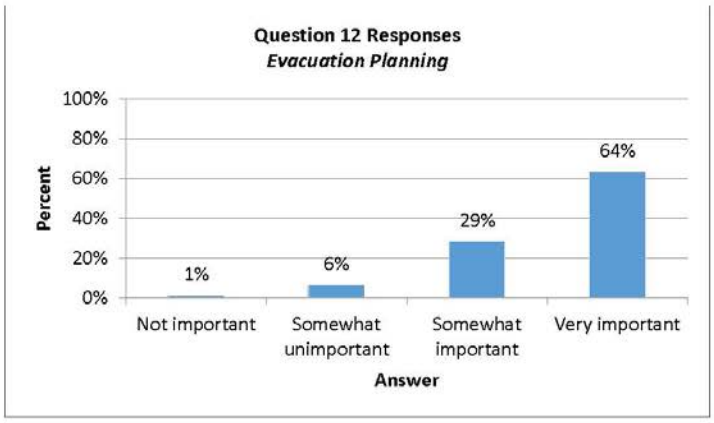
Q11: Response about reasons why someone might or might not mitigate on their property are by and large encouraging, as they indicate that the majority know what to do, that two of the excuses believed to be reasons why individuals don't mitigate do not in fact hold, and that there is not a clear resource barrier. **Just under 90% agreed that they knew how to manage the vegetation around their home. There is less knowledge about structural changes; only 57% agreed they knew how to make structural changes and 22% disagreed with the statement. These lower numbers again suggest that there is room for improving outreach information related to structural changes.** The trope that insurance is an excuse for not mitigating does not hold up with only 1% agreeing with the statement and 82% disagreeing. Similarly, only 6% agreed that aesthetics were a reason for not doing anything while two-thirds disagreed with the statement. Rules and programs appear to be an incentive for only a minority with one-quarter agreeing with the statement and no one strongly agreeing with it. In terms of resource constraints, roughly one-third indicated that cost and time were a concern and one-quarter indicated that physical abilities were an issue.

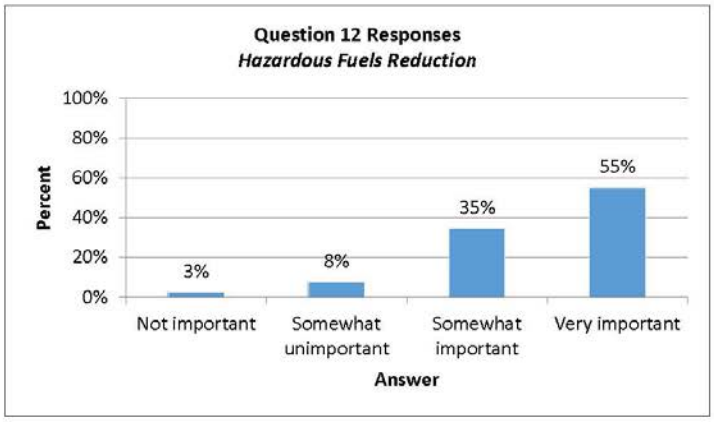
The only apparent differences between groups were that a larger percentage of Lexington Hills agreed that cost was an issue (42% vs. 21%) and disagreed (61% vs. 46%) that physical ability made it difficult.

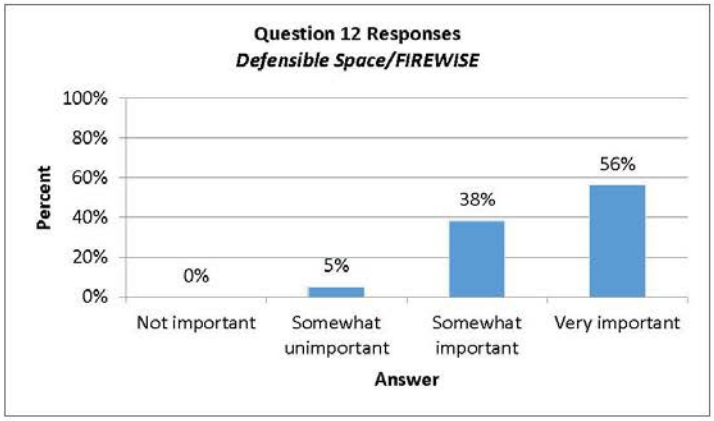
12. **How important is it to you to receive information on the following topics in relation to the wildfire risk in Santa Clara County??** Circle the number to indicate how much you **want** this information.

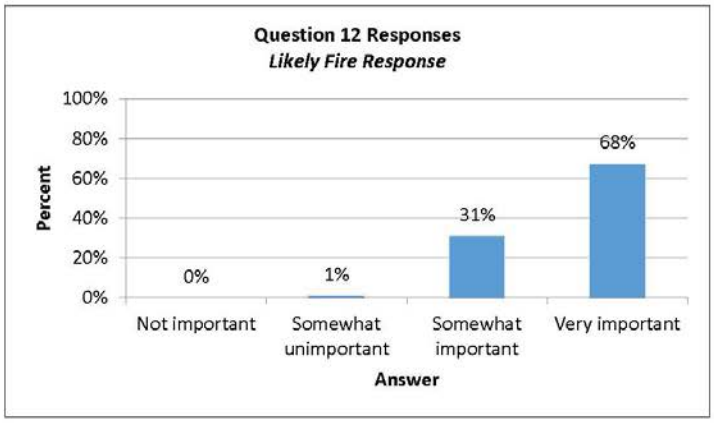
Information About:	Not important	Somewhat unimportant	Somewhat important	Very important
Fire hazards/concerns	1	2	3	4
Evacuation planning	1	2	3	4
Hazardous fuels reduction on public lands (mechanical thinning and/or prescribed burning)	1	2	3	4
Likely fire response	1	2	3	4
Defensible space/FIREWISE	1	2	3	4
Grant funding to assist me/my community with mitigation measures	1	2	3	4
Water supply improvements	1	2	3	4

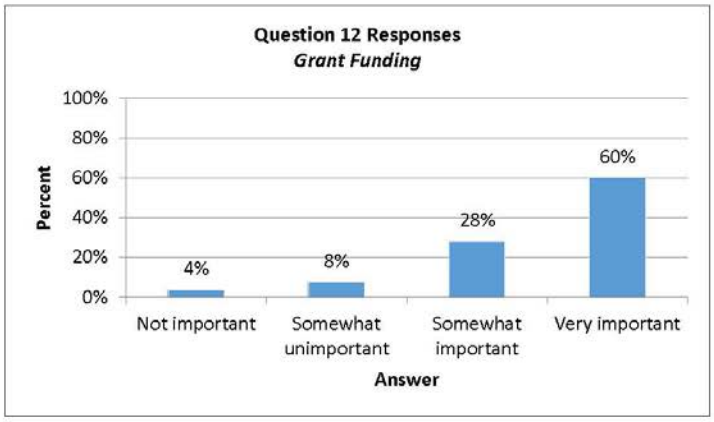


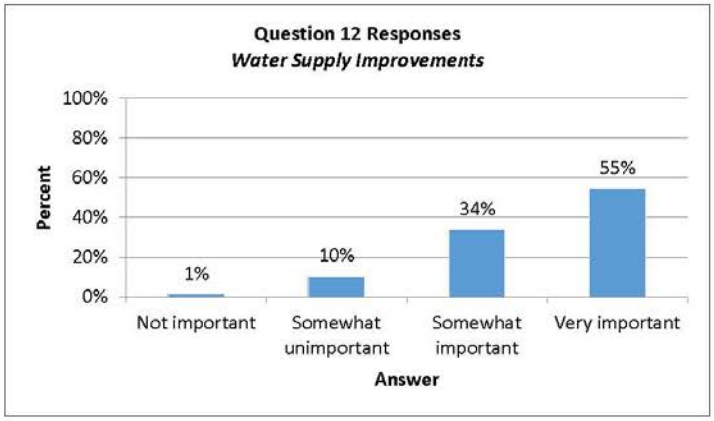



Question 12 Responses
Hazardous Fuels Reduction
100%
80%
60%
40%
20%
0%
Percent
3%
8%
35%
55%
Not important
Somewhat unimportant
Somewhat important
Very important
Answer


Question 12 Responses
Defensible Space/FIREWISE
100%
80%
60%
40%
20%
0%
Percent
0%
5%
38%
56%
Not important
Somewhat unimportant
Somewhat important
Very important
Answer


Question 12 Responses
Likely Fire Response
100%
80%
60%
40%
20%
0%
Percent
0%
1%
31%
68%
Not important
Somewhat unimportant
Somewhat important
Very important
Answer



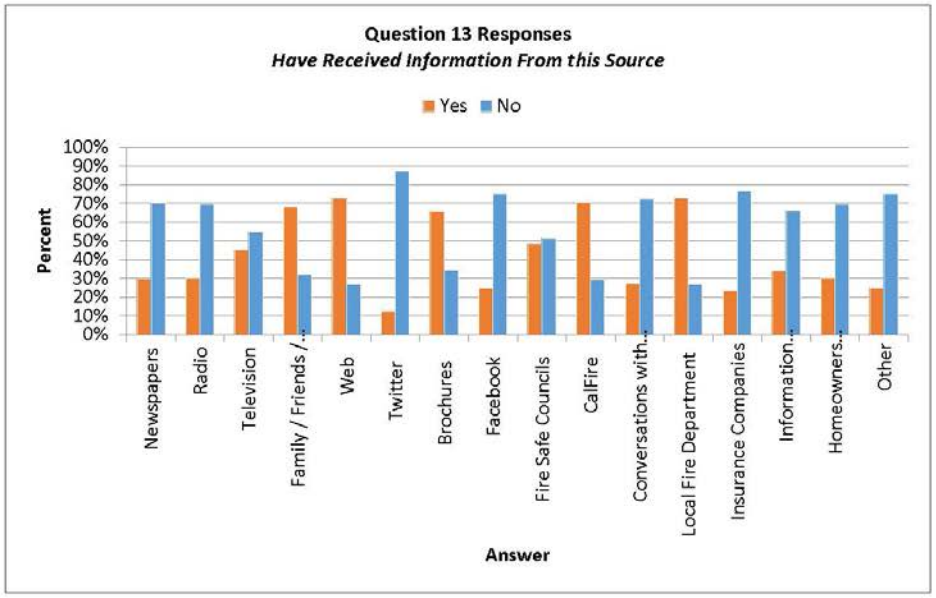


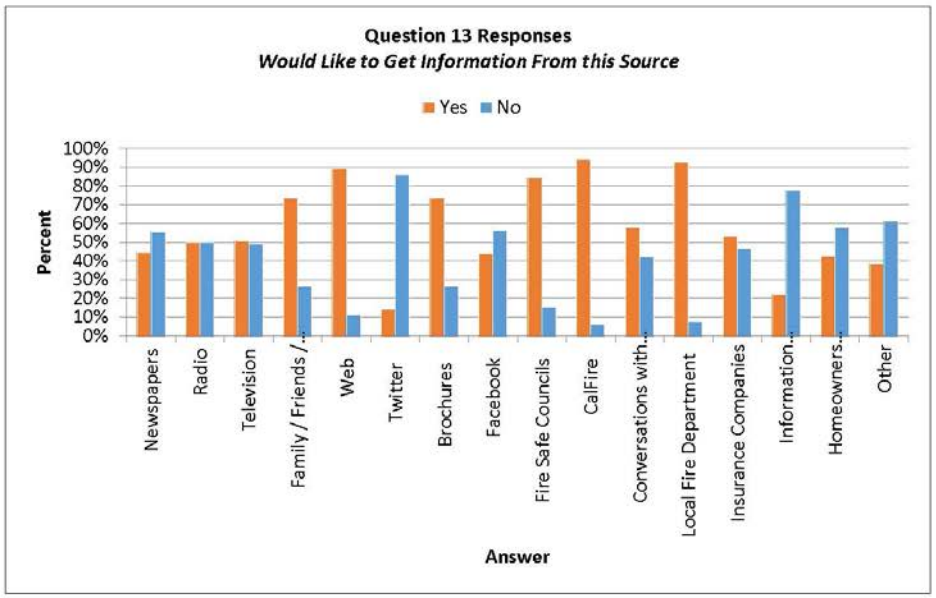
Q12: Results indicate that respondents want information on all the topics in the list. **Overall, the majority indicated that every topic was very important to them, with the three largest percentages information about likely fire response (68%), fire hazards/concerns (64%), and evacuation planning (64%).** For all categories, 12% or less indicated the information was either somewhat unimportant or not important. Larger portions of Lexington Hills respondents rated information on three topics as very important compared to non-Lexington Hills: evacuation planning (72% vs. 46%), grant funding (67% vs. 46%), and water supply improvement (62% vs. 37%) information.

13. **People receive information about fire management from various sources. First indicate whether you have received information about wildfire from this source. Then please indicate where you would like to get your wildfire information.**

Information Source	Have received wildfire Information from this source (*Circle choice*)	Would like to get information from this source (*Circle choice*)
Newspapers	No / Yes	No / Yes
Radio	No / Yes	No / Yes
Television	No / Yes	No / Yes
Family/Friends/Neighbors	No / Yes	No / Yes

Information Source	**Have received wildfire Information from this source (*Circle choice*)**	**Would like to get information from this source (*Circle choice*)**
Web	No / Yes	No / Yes
Twitter	No / Yes	No / Yes
Brochures	No / Yes	No / Yes
Facebook	No / Yes	No / Yes
FireSafe Councils	No / Yes	No / Yes
CALFIRE	No / Yes	No / Yes
Conversations with local government representative (county, city, etc.)	No / Yes	No / Yes
Local fire department	No / Yes	No / Yes
Insurance companies	No / Yes	No / Yes
Information billboard/kiosk	No / Yes	No / Yes
Homeowners association	No / Yes	No / Yes
Other _____	No / Yes	No / Yes

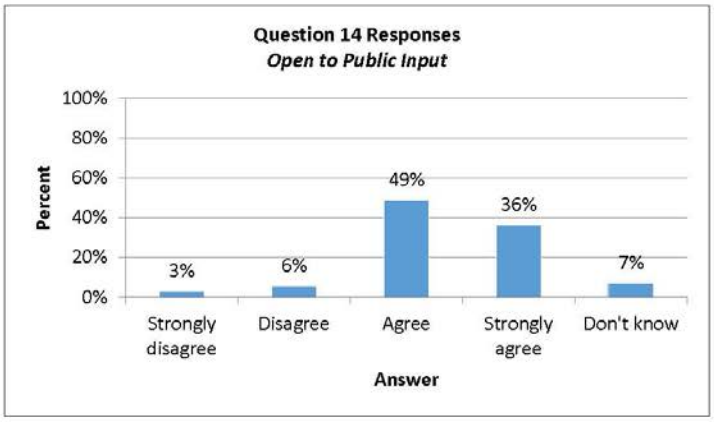


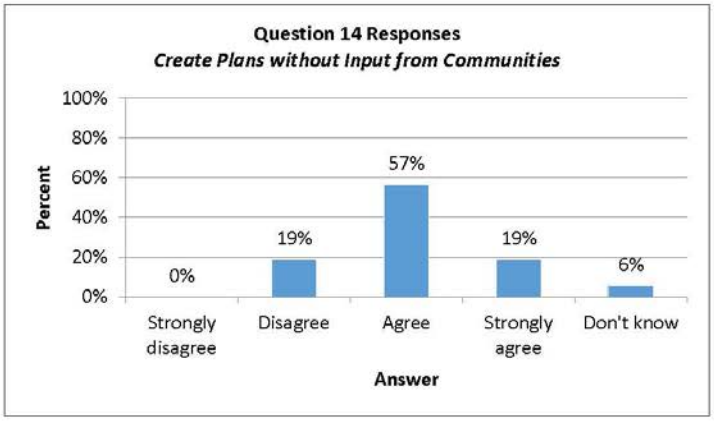


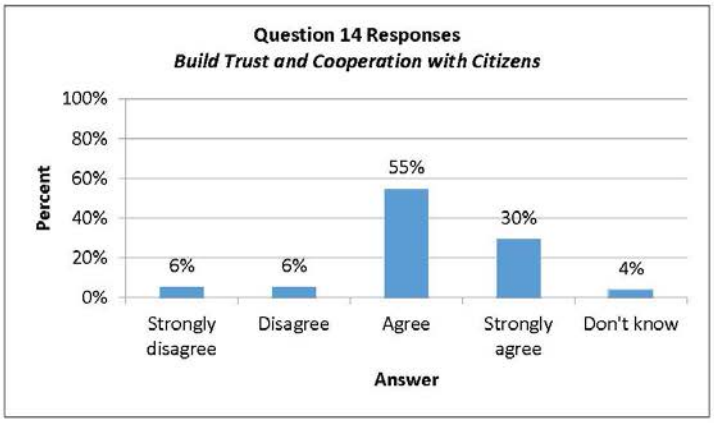
Q13: The main trends in information sources by and large support existing research of where people get information and what sources people tend to prefer getting fire information from. Every information source but one (information billboard/kiosk) did show a larger percentage who would like to get information from that source than had received information from it. Mass media (newspapers, radio, and TV) is not a key source of fire information, nor is it a source with a big unmet demand. **Fire agencies (CALFIRE and local fire departments) are the main sources of information (71% and 73%) and where more 90% want to get their fire information.** Social media (Facebook and Twitter) is not a major information source (less than 25%), nor is there a high desire to get fire information from that source (less than 45%). **There is evidence that there is room to improve outreach with the non-Lexington Hills group as it tended to have a lower percentage that received information from most sources (particularly brochures, FireSafe Councils, CALFIRE, and local fire departments) than the Lexington Hills group, but exhibited similar level of desire to get information from the source as the Lexington Hills group.**

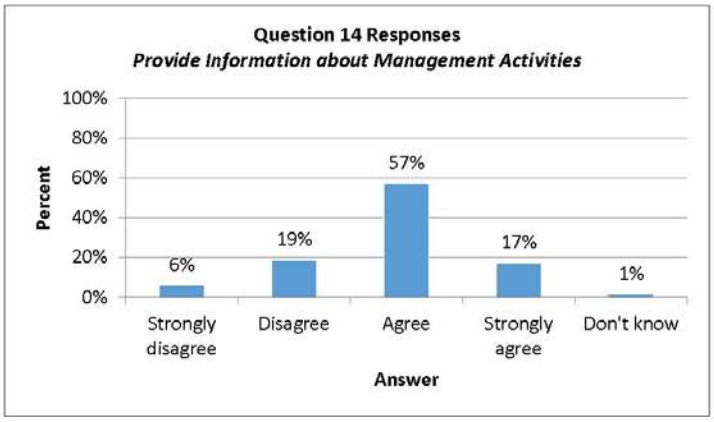
14. **Please give us your opinion about how the fire agencies in your area interact with the local community.**
Circle the best response for each statement.

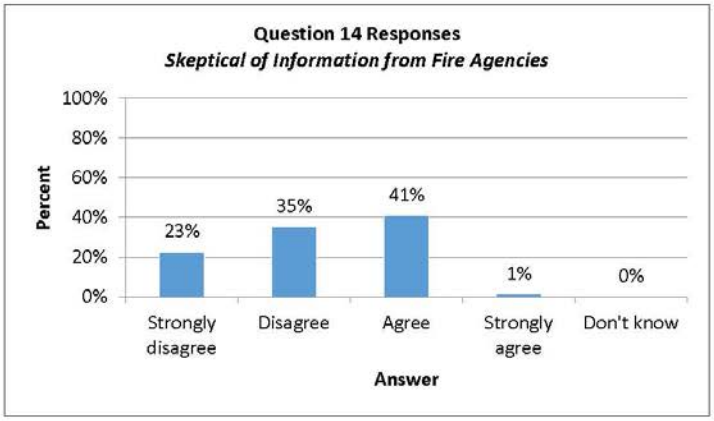
Opinion	Strongly disagree	Disagree	Agree	Strongly agree	Don't know
The agencies are open to public input and uses it to shape management decisions.	1	2	3	4	5
Agency managers usually create plans without input from local communities.	1	2	3	4	5
Agency managers build trust and cooperation with local citizens.	1	2	3	4	5
Managers do a good job of providing information about management activities.	1	2	3	4	5
I am skeptical of information from fire agencies.	1	2	3	4	5
There are adequate opportunities for citizens to participate in the local agency planning process.	1	2	3	4	5

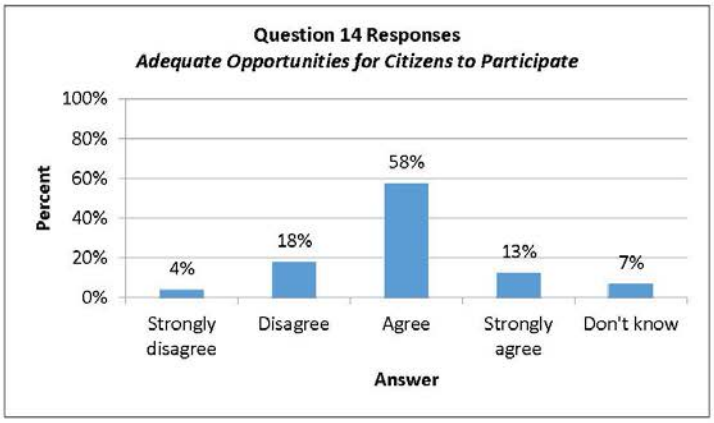

Question 14 Responses
Open to Public Input
100%
80%
60%
40%
20%
0%
Percent
3%
6%
49%
36%
7%
Strongly disagree
Disagree
Agree
Strongly agree
Don't know
Answer


Question 14 Responses
Create Plans without Input from Communities
100%
80%
60%
40%
20%
0%
Percent
0%
19%
57%
19%
6%
Strongly disagree
Disagree
Agree
Strongly agree
Don't know
Answer


Question 14 Responses
Build Trust and Cooperation with Citizens
100%
80%
60%
40%
20%
0%
Percent
6%
6%
55%
30%
4%
Strongly disagree
Disagree
Agree
Strongly agree
Don't know
Answer


Question 14 Responses
Provide Information about Management Activities
100%
80%
60%
40%
20%
0%
Percent
6%
19%
57%
17%
1%
Strongly disagree
Disagree
Agree
Strongly agree
Don't know
Answer


Question 14 Responses
Skeptical of Information from Fire Agencies
100%
80%
60%
40%
20%
0%
Percent
23%
35%
41%
1%
0%
Strongly disagree
Disagree
Agree
Strongly agree
Don't know
Answer

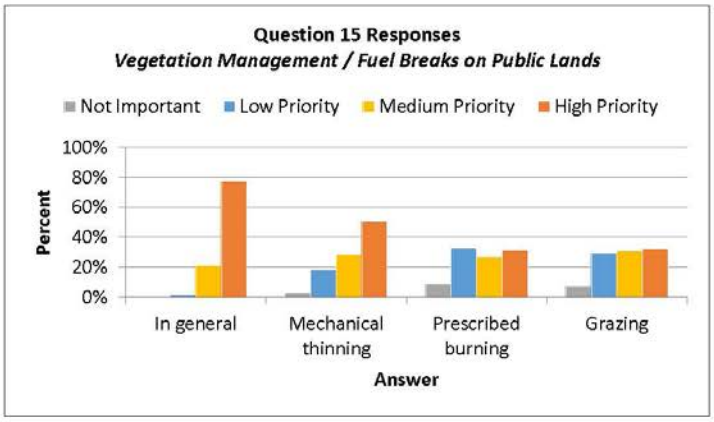

Question 14 Responses
Adequate Opportunities for Citizens to Participate
100%
80%
60%
40%
20%
0%
Percent
4%
18%
58%
13%
7%
Strongly disagree
Disagree
Agree
Strongly agree
Don't know
Answer

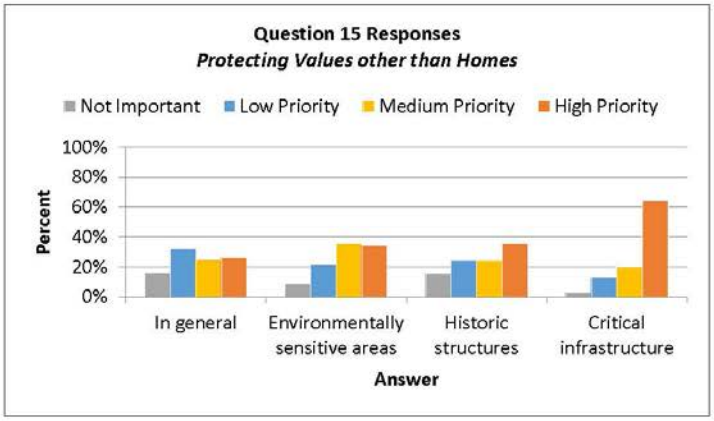
Q14: Views of agencies are generally positive, although occasionally a bit contradictory. On the positive side, **85% agreed that agencies were open to public input and that managers build trust and cooperation with local citizens.** Further, a bit under three-quarters agreed that managers do a good job of providing information about management activities and that there are adequate opportunities for citizen participation. **On the negative side, 75% agreed that managers usually create plans without input from local communities.** This seeming contradiction may simply reflect that citizens don't inherently see the latter as a negative or that overall they do not feel the need to contribute but feel that if they wanted to they could provide input. More interesting and harder to interpret is that 42% were skeptical of information from agencies.

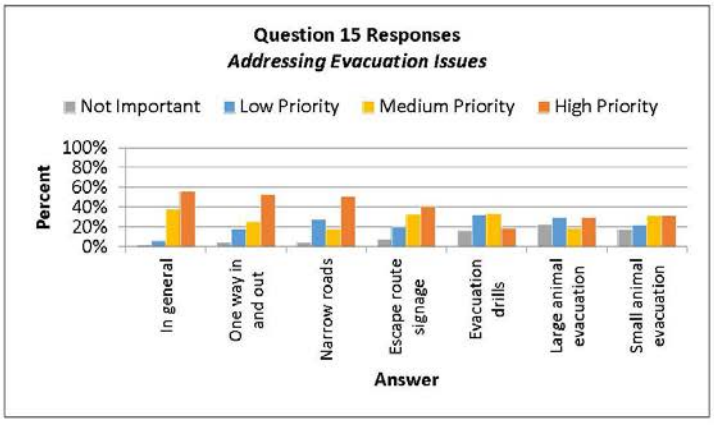
There is a **slight tendency for slightly less positive views by the non-Lexington Hills group.**

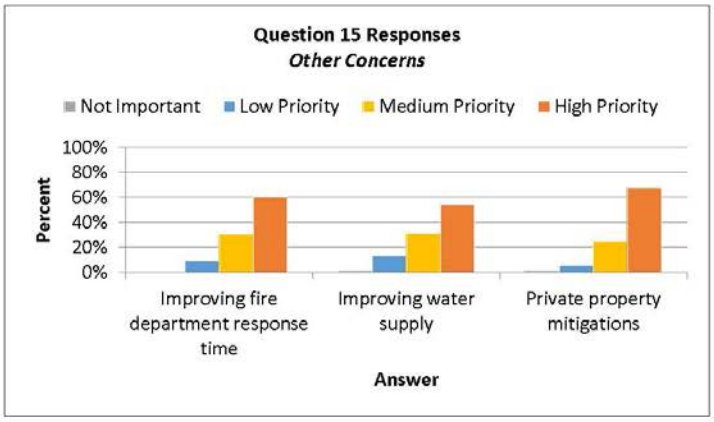
15. **Recognizing that there are trade-offs in what can be accomplished given existing resources, how high a priority do you put on addressing the following concerns in relation to mitigating the wildfire risk?** Circle the best response for each statement.

Concern	Not Important	Low priority	Medium priority	High priority
Vegetation management/fuel breaks on public lands (in general)	1	2	3	4
Mechanical thinning	1	2	3	4
Prescribed burning	1	2	3	4
Grazing	1	2	3	4
Improving fire department response time	1	2	3	4
Improving water supply	1	2	3	4
Helping private property owners mitigate fire risk on their property	1	2	3	4
Addressing evacuation issues (in general)	1	2	3	4
Evacuation: one way in and out	1	2	3	4
Evacuation: narrow roads	1	2	3	4
Escape route signage	1	2	3	4
Evacuation drills	1	2	3	4
Large animal evacuation concerns (horse, cattle, etc.)	1	2	3	4
Small animal evacuation concerns	1	2	3	4
Protection of specific values other than homes (in general)	1	2	3	4
Environmentally sensitive areas	1	2	3	4
Historic structures	1	2	3	4
Critical infrastructure	1	2	3	4


Question 15 Responses
Vegetation Management / Fuel Breaks on Public Lands
Not Important
Low Priority
Medium Priority
High Priority
100%
80%
60%
40%
20%
0%
Percent
In general
Mechanical thinning
Prescribed burning
Grazing
Answer


Question 15 Responses
Protecting Values other than Homes
Not Important
Low Priority
Medium Priority
High Priority
100%
80%
60%
40%
20%
0%
Percent
In general
Environmentally sensitive areas
Historic structures
Critical infrastructure
Answer


Question 15 Responses
Addressing Evacuation Issues
Not Important
Low Priority
Medium Priority
High Priority
100%
80%
60%
40%
20%
0%
Percent
In general
One way in and out
Narrow roads
Escape route signage
Evacuation drills
Large animal evacuation
Small animal evacuation
Answer



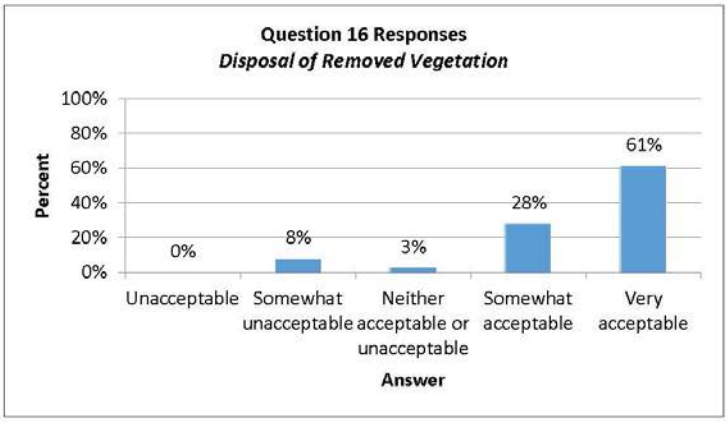
Q15: In terms of priorities, four items had at least 60% indicate it was a high priority: vegetation management on public lands (in general) (77%), helping private property owners mitigate (68%), protecting critical infrastructure (64%), and improving fire department response time (60%). Four additional items had a majority indicate they were a high priority: addressing evacuation issues in general (56%), improving water supply (54%), and two specific evacuation concerns—one way in and out (53%) and narrow roads (51%). The remaining items had less than a majority indicate they were a high priority: escape route signage (41%), protection of environmentally sensitive areas (34%) and historic structures (36%), small (31%) and large (30%) animal evacuation concerns, and evacuation drills (19%). Only two items, general vegetation management on public lands and improving fire department response time, had no one indicate it was not important.

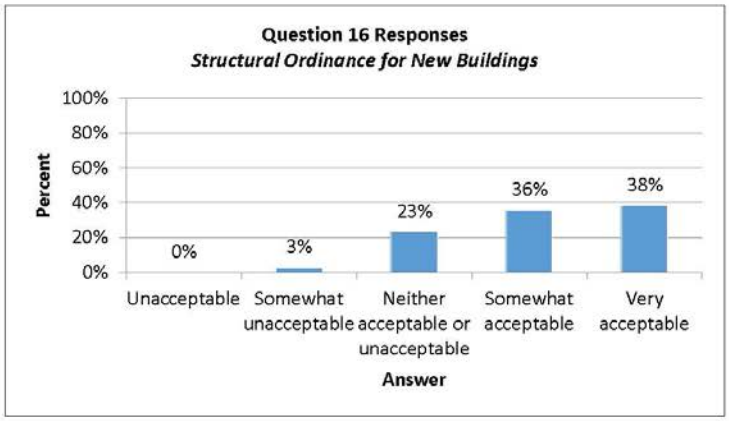
Although vegetation management on public lands had the largest percent indicate it was a high priority, what those activities should be is less clear, with ranges of prioritization for each of the three specific activities. Mechanical thinning appears to be a slightly higher priority with 51% indicating it was a high priority, 28% indicating it was a medium priority, 18% a low priority, and 3% saying it was not important. Both prescribed burning and grazing had a bit under 10% rate each as not important with the remainder of responses fairly equally split between low, medium, and high priority.

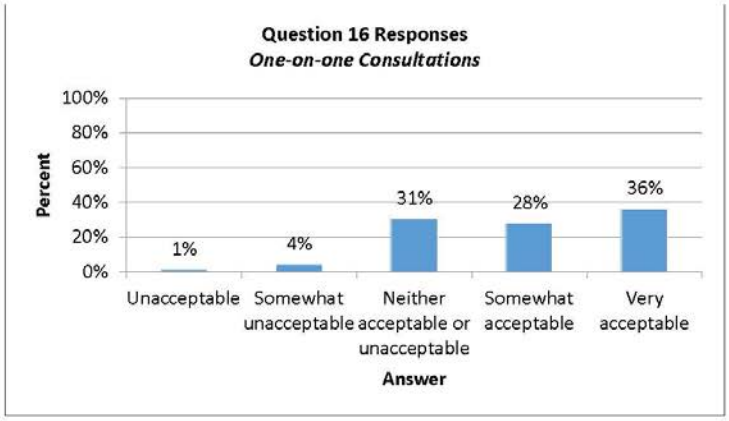
Evacuation issues appear to be more of a concern for the Lexington Hills group with larger percentage indicating several evacuation items were a high priority, including evacuation concerns in general (65% vs. 37%), one way in and out (66% vs. 29%), narrow roads (63% vs. 26%), and escape route signage (49% vs. 25%). Although not a strong trend, small animal evacuation concerns appear to be slightly more important to the Lexington Hills group (36% vs. 21%), while large animal evacuation concerns were a higher priority for more of the non-Lexington Hills group (37%) than the Lexington Hills group (25%). **Protecting values other than homes was rated a high priority by a larger percentage of the non-Lexington Hills group (41% vs. 20%), particularly protecting historic structures (50% vs. 28%).** Improving fire department response time also had a higher percentage of non-Lexington Hills indicate it was a high priority (70% vs. 56%). Finally, although there was some sense from the community forums that critical infrastructure might be a bigger concern to the Lexington Hills group, there was no clear distinction.

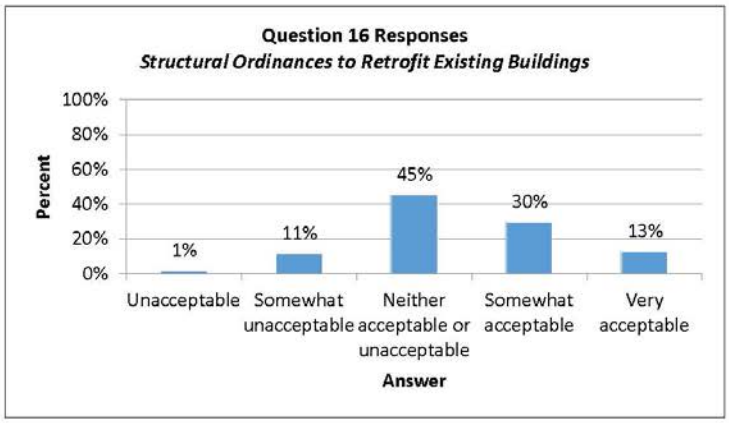
16. How acceptable do you find each of the following practices?

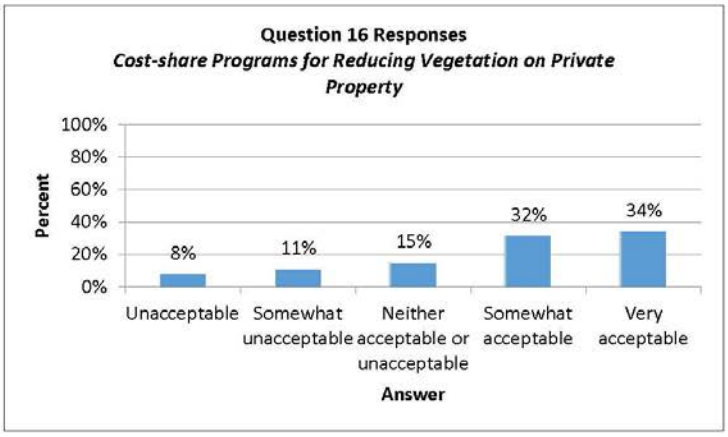
Practice	Unacceptable	Somewhat unacceptable	Neither acceptable or unacceptable	Somewhat acceptable	Very acceptable
Programs to assist with disposal of removed vegetation (chipping, etc.)	1	2	3	4	5
Structural ordinances for new buildings	1	2	3	4	5
One on one consultations	1	2	3	4	5
Structural ordinances to retrofit existing buildings	1	2	3	4	5
Cost-share programs for reducing vegetation on private property (e.g., tree removal)	1	2	3	4	5
Vegetation management ordinances	1	2	3	4	5
Cost-share programs for structural changes	1	2	3	4	5
Training landscape contractors on fire resistant methods/plants	1	2	3	4	5
Development restrictions in high hazard areas	1	2	3	4	5

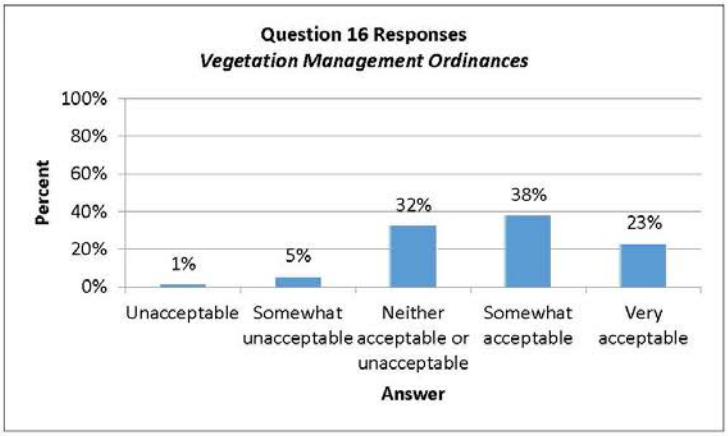


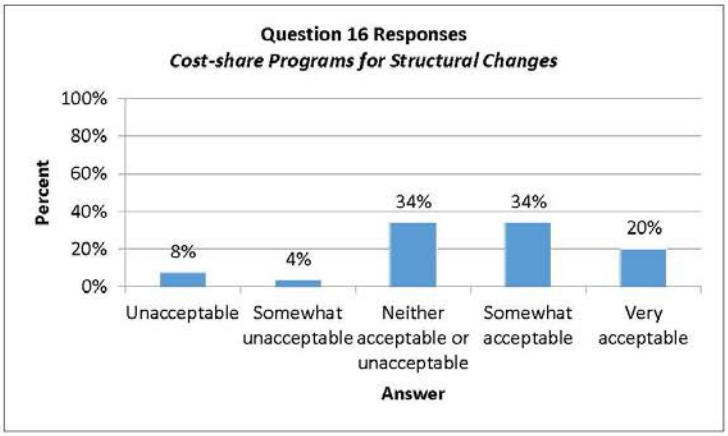

Question 16 Responses
Structural Ordinance for New Buildings
100%
80%
60%
40%
20%
0%
Percent
0%
3%
23%
36%
38%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer

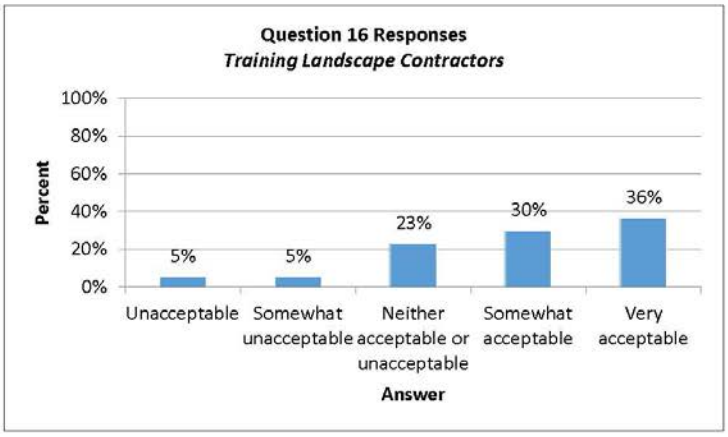

Question 16 Responses
One-on-one Consultations
100%
80%
60%
40%
20%
0%
Percent
1%
4%
31%
28%
36%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer

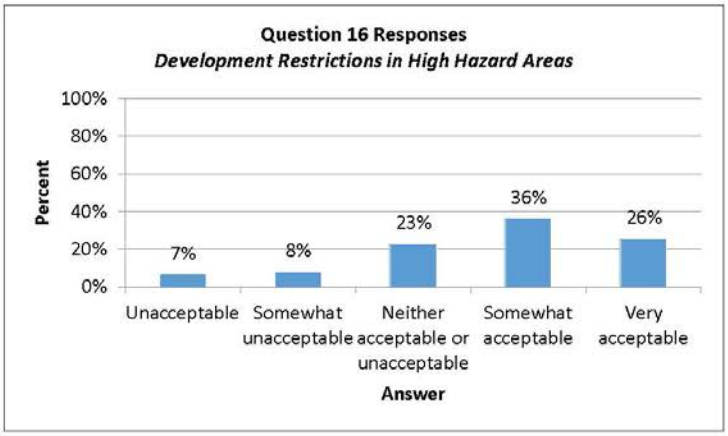

Question 16 Responses
Structural Ordinances to Retrofit Existing Buildings
100%
80%
60%
40%
20%
0%
Percent
1%
11%
45%
30%
13%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer


Question 16 Responses
Cost-share Programs for Reducing Vegetation on Private Property
Percent
100%
80%
60%
40%
20%
0%
8%
11%
15%
32%
34%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer


Question 16 Responses
Vegetation Management Ordinances
Percent
100%
80%
60%
40%
20%
0%
1%
5%
32%
38%
23%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer

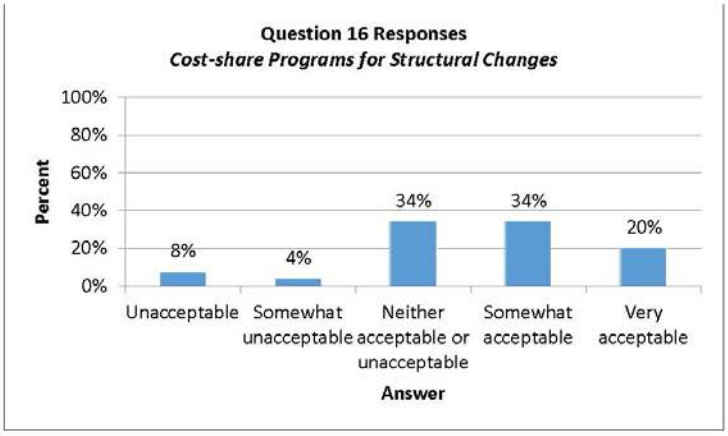

Question 16 Responses
Cost-share Programs for Structural Changes
Percent
100%
80%
60%
40%
20%
0%
8%
4%
34%
34%
20%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer

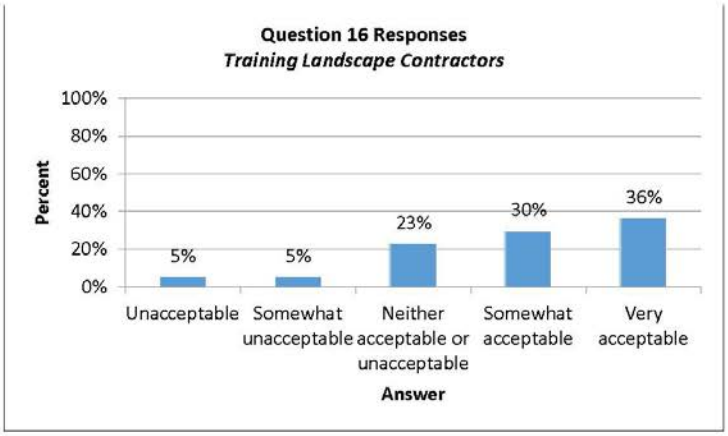


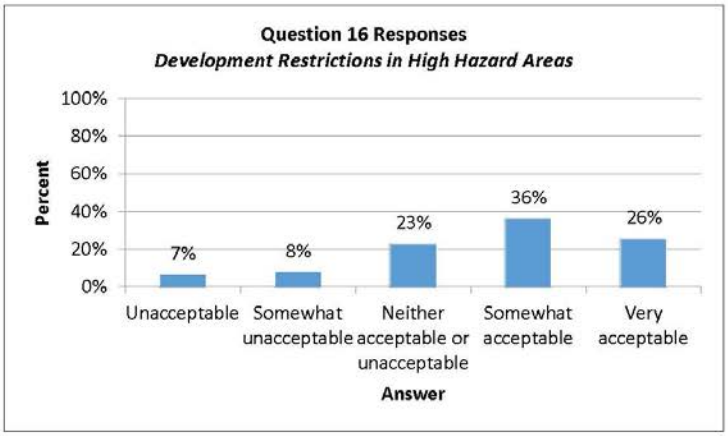


Q16: Overall, there was good support for every item in the list.* All of the items had less than 20%, indicating it was somewhat to completely unacceptable. **Support was strongest for programs to assist with disposal of removed vegetation with 61% indicating this was very acceptable.** For the remainder of the items, the responses tended to be split between neutral to very acceptable. For all but one item, the majority indicated the item was somewhat to very acceptable. The one item where less than a majority (39%) found acceptable was structural ordinances to retrofit existing buildings, with 45% indicating they found it neither acceptable nor unacceptable. The non-Lexington Hills group were somewhat less accepting of two actions with 22% finding retrofitting structural ordinances somewhat unacceptable (vs. 6%) and 26% feeling cost-share programs for reducing vegetation on private property were somewhat to entirely unacceptable (vs. 16%). It is worth noting that the majority found development restrictions in high hazard areas somewhat to very acceptable and only 15% found them to be somewhat to very unacceptable.

*Note there were no data related to cost-share programs for structural changes.


Question 16 Responses
Cost-share Programs for Structural Changes
100%
80%
60%
40%
20%
0%
Percent
8%
4%
34%
34%
20%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer


Question 16 Responses
Training Landscape Contractors
100%
80%
60%
40%
20%
0%
Percent
5%
5%
23%
30%
36%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer


Question 16 Responses
Development Restrictions in High Hazard Areas
100%
80%
60%
40%
20%
0%
Percent
7%
8%
23%
36%
26%
Unacceptable
Somewhat unacceptable
Neither acceptable or unacceptable
Somewhat acceptable
Very acceptable
Answer

Q16: Overall, there was good support for every item in the list.* All of the items had less than 20%, indicating it was somewhat to completely unacceptable. **Support was strongest for programs to assist with disposal of removed vegetation with 61% indicating this was very acceptable.** For the remainder of the items, the responses tended to be split between neutral to very acceptable. For all but one item, the majority indicated the item was somewhat to very acceptable. The one item where less than a majority (39%) found acceptable was structural ordinances to retrofit existing buildings, with 45% indicating they found it neither acceptable nor unacceptable. The non-Lexington Hills group were somewhat less accepting of two actions with 22% finding retrofitting structural ordinances somewhat unacceptable (vs. 6%) and 26% feeling cost-share programs for reducing vegetation on private property were somewhat to entirely unacceptable (vs. 16%). It is worth noting that the majority found development restrictions in high hazard areas somewhat to very acceptable and only 15% found them to be somewhat to very unacceptable.

*Note there were no data related to cost-share programs for structural changes.

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APPENDIX L.
DEFENSIBLE SPACE REQUIREMENTS IN THE COUNTY ORDINANCE CODE

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Sec. B7-13. - Chapter 49 Amendments.

Chapter 49 of the California Fire Code is amended as follows:

(a)

Section 4902 (Definitions) is amended to modify the definition of "Wildland-Urban Interface Fire Area" to read as follows:

Wildland-Urban Interface Fire Area is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, and areas designated by the County to be at a significant risk from wildfires. The Wildland-Urban Interface Fire Area shall be defined as all unincorporated areas within the County of Santa Clara as set forth and delineated on the map entitled "Wildland-Urban Interface Fire Area" adopted by the Board of Supervisors, which map and all notations, references, data and other information shown thereon is hereby adopted and made part of this chapter. The map shall be on file in the Office of the Fire Marshal.

(b)

Section 4906.2 is amended to read as follows:

4906.2 Application. Buildings and structures located in the following areas shall maintain the required hazardous vegetation and fuel management:

1.

All unincorporated lands designated by the State Board of Forestry and Fire Protection as State Responsibility Areas (SRA) including:

1.1.

Moderate Fire Hazard Severity Zones

1.2.

High Fire Hazard Severity Zones

1.3.

Very-High Fire Hazard Severity Zones

2.

Land designated as a Very-High Fire Hazard Severity Zone or as a Wildland-Urban Interface Fire Area by the County.

(c)

Section 4907.1 is amended to read as follows:

4907.1 General. Defensible space shall be maintained around all buildings and structures in State Responsibility Area (SRA) as required in Public Resources Code 4290 and "SRA Fire Safe Regulations" California Code of Regulations, Title 14, Division 1.5, Chapter 7, Subchapter 2, Section 1270 and this section.

Buildings and structures within the Very-High Fire Hazard Severity Zones of a Local Responsibility Area (LRA) shall maintain defensible space as outlined in Government Code sections 51175 to 51189 and this section.

Defensible space shall be provided around water tank structures, water supply pumps and pump houses.

Persons owning, leasing, controlling, operating or maintaining buildings or structures in the Wildland-Urban Interface Fire Area Zone and persons owning, leasing or controlling land adjacent to such buildings or structures, shall at all times:

1. Maintain an effective defensible space by removing and clearing away flammable vegetation and combustible growth from areas within distances of such buildings or structures as outlined below:

Fire Hazard Severity Zone	Distance
Very High	50 feet
All others	30 feet

- *Exception:* Single specimens of trees, ornamental shrubbery or similar plants used as ground covers, provided that they do not form a means of rapidly transmitting fire from the native growth to any structure.

2. Maintain additional effective defensible space by removing brush, flammable vegetation and combustible growth located 30 feet to 100 feet (9,144 mm to 30,480 mm) when required by the fire code official due to steepness of terrain or other conditions that would cause a defensible space of only 30 feet (9,144 mm) to be insufficient.

   Exception: Grass and other vegetation located more than 30 feet (9,144 mm) from buildings or structures and less than 18 inches (457 mm) in height above the ground need not be removed where necessary to stabilize the soil and prevent erosion.

3. Remove portions of trees, which extend within 10 feet (3,048 mm) of the outlet of a chimney.

4. Maintain trees adjacent to or overhanging a building free of deadwood; and

5. Maintain the roof of a structure free of leaves, needles or other dead vegetative growth.

6. Remove flammable vegetation a minimum of 10 feet around liquefied petroleum gas tanks/containers.

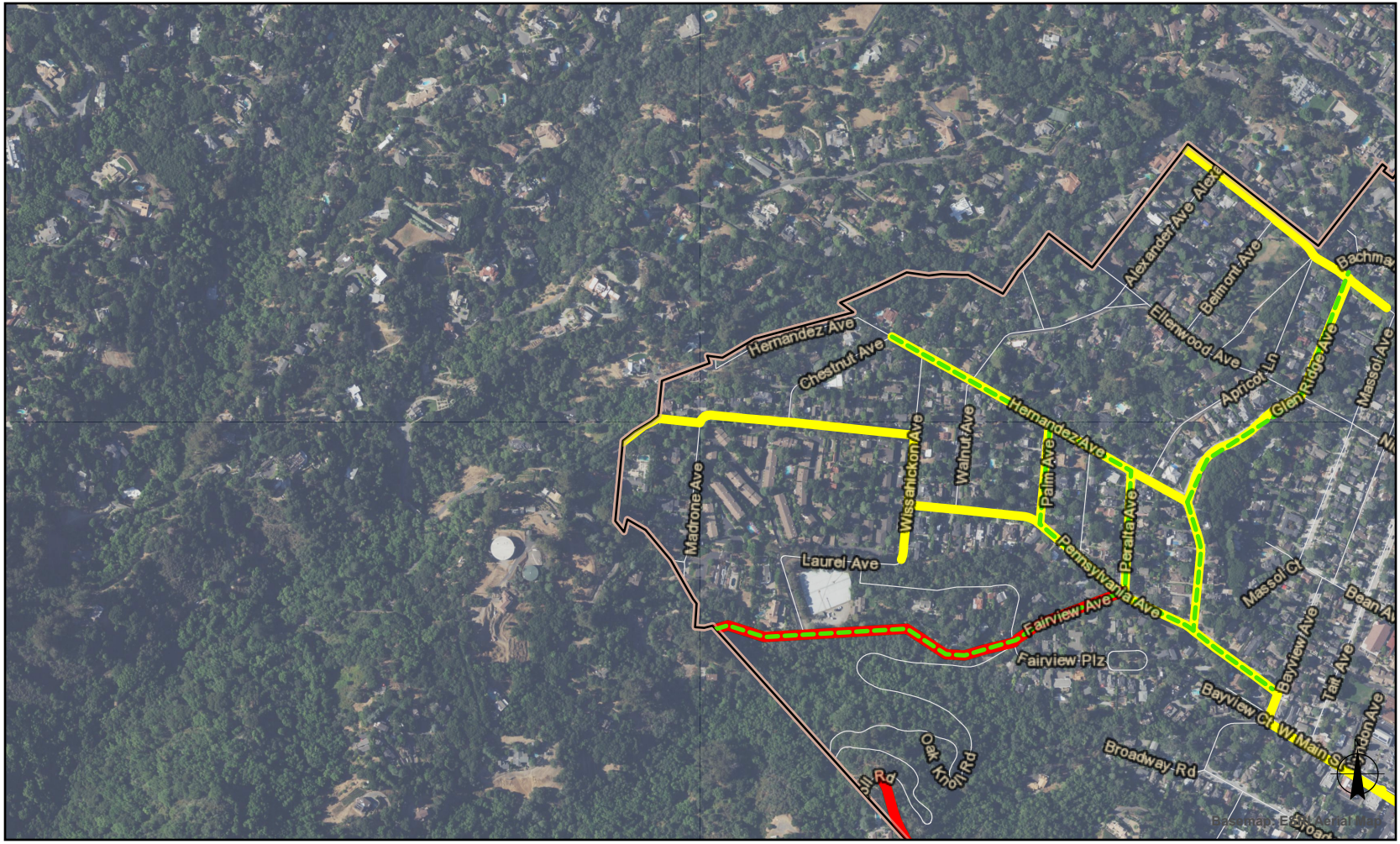
7. Firewood and combustible materials shall not be stored in unenclosed spaces beneath buildings or structures, or on decks or under eaves, canopies or other projections or overhangs. The storage of firewood and combustible material within the defensible space shall be located a minimum of 30 feet (6,096 mm) from structures and separated from the crown of trees by a minimum horizontal distance of 15 feet (4,572 mm).

   Exception: Firewood and combustible materials not for consumption on the premises shall be stored as approved by the fire code official.

8.	Clear areas within 10 feet (3,048 mm) of fire apparatus access roads and driveways to of non-fire-resistive vegetation growth. Exception: Grass and other vegetation located more than 30 feet (9,144 mm) from buildings or structures and less than 18 inches (457 mm) in height above the ground need not be removed where necessary to stabilize the soil and prevent erosion.

APPENDIX B

VMP Area Roadway Mapbook



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

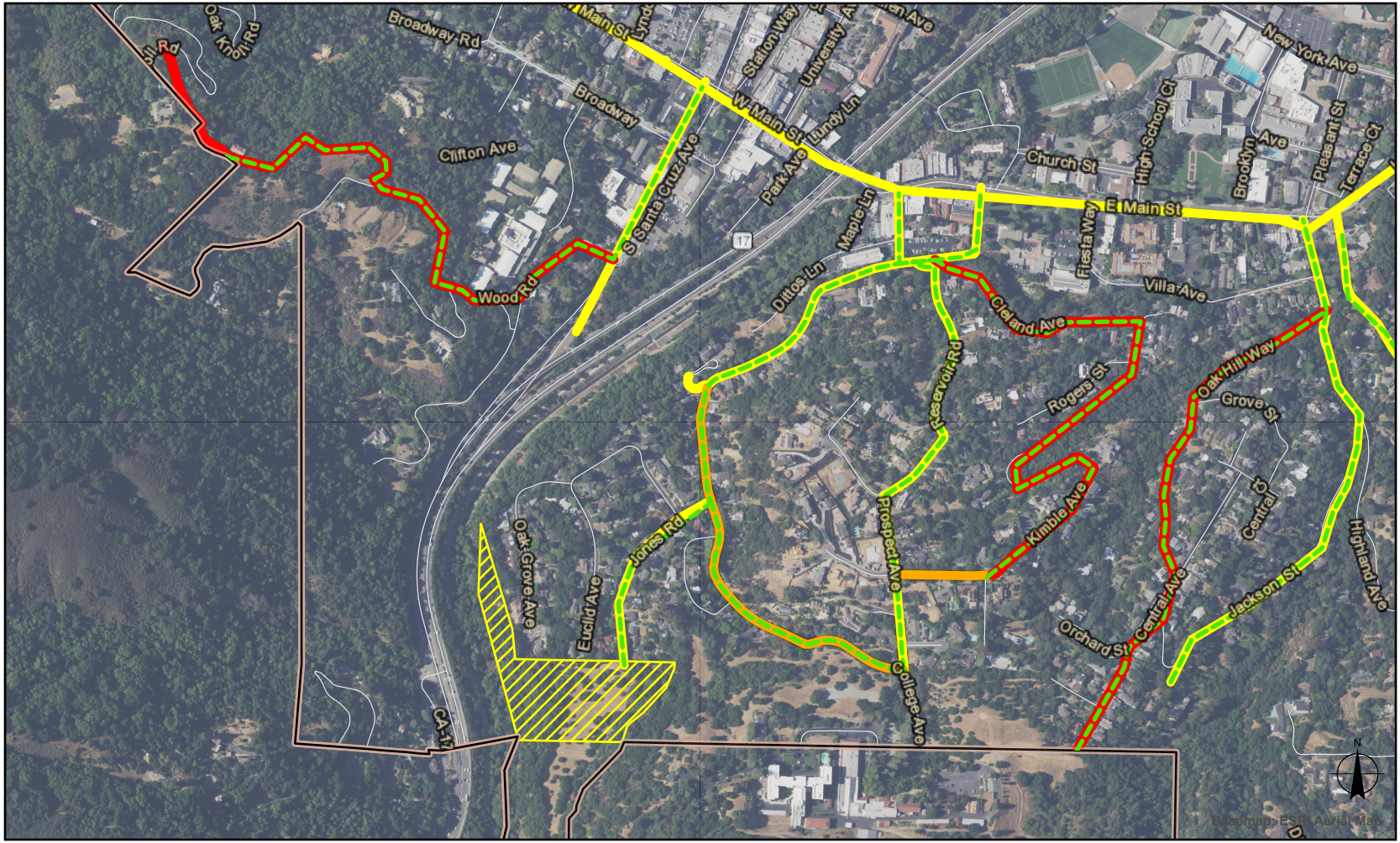


Meters
0 87.5 175

Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2274°N, 121.9958°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

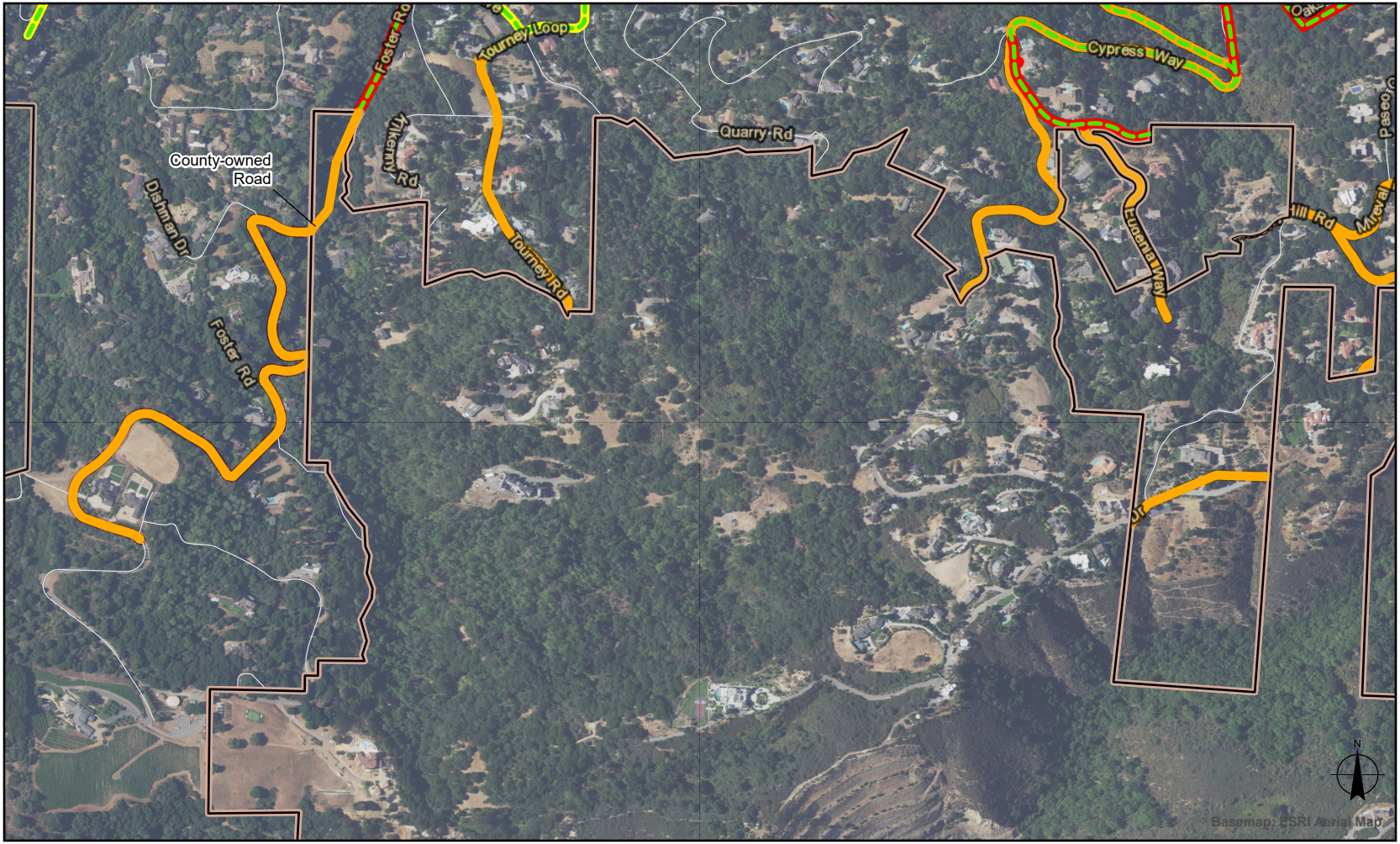
Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

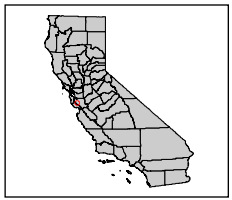
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Scale: 1:9,000

Map Center: 37.2183°N, 121.9841°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020

SWCA ENVIRONMENTAL CONSULTANTS





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

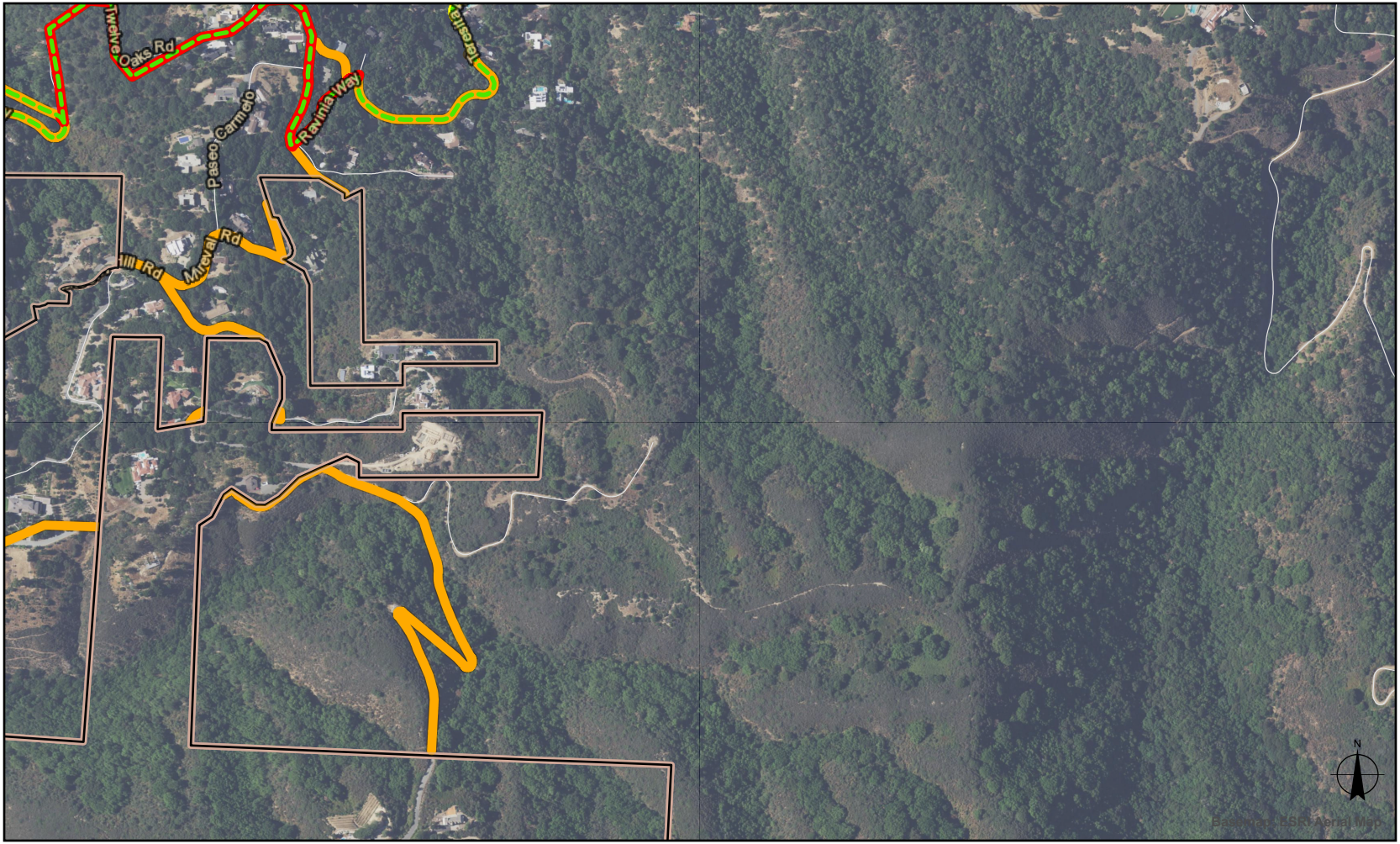


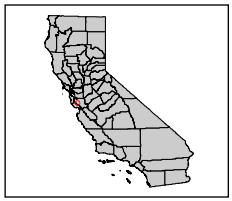
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2103°N, 121.9656°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
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Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

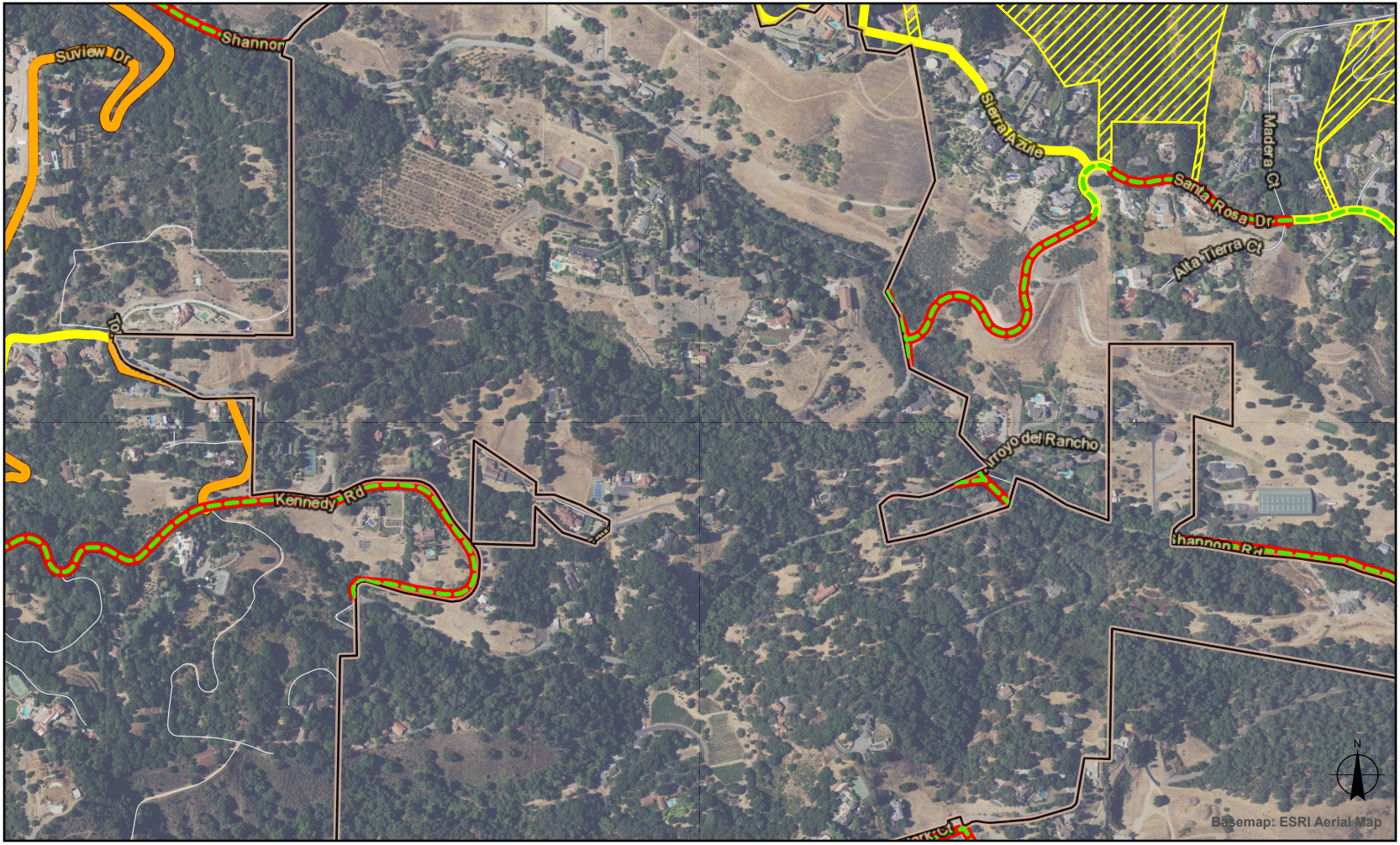


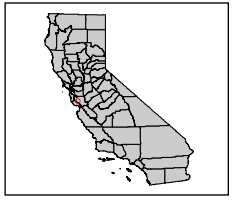
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2113°N, 121.9469°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

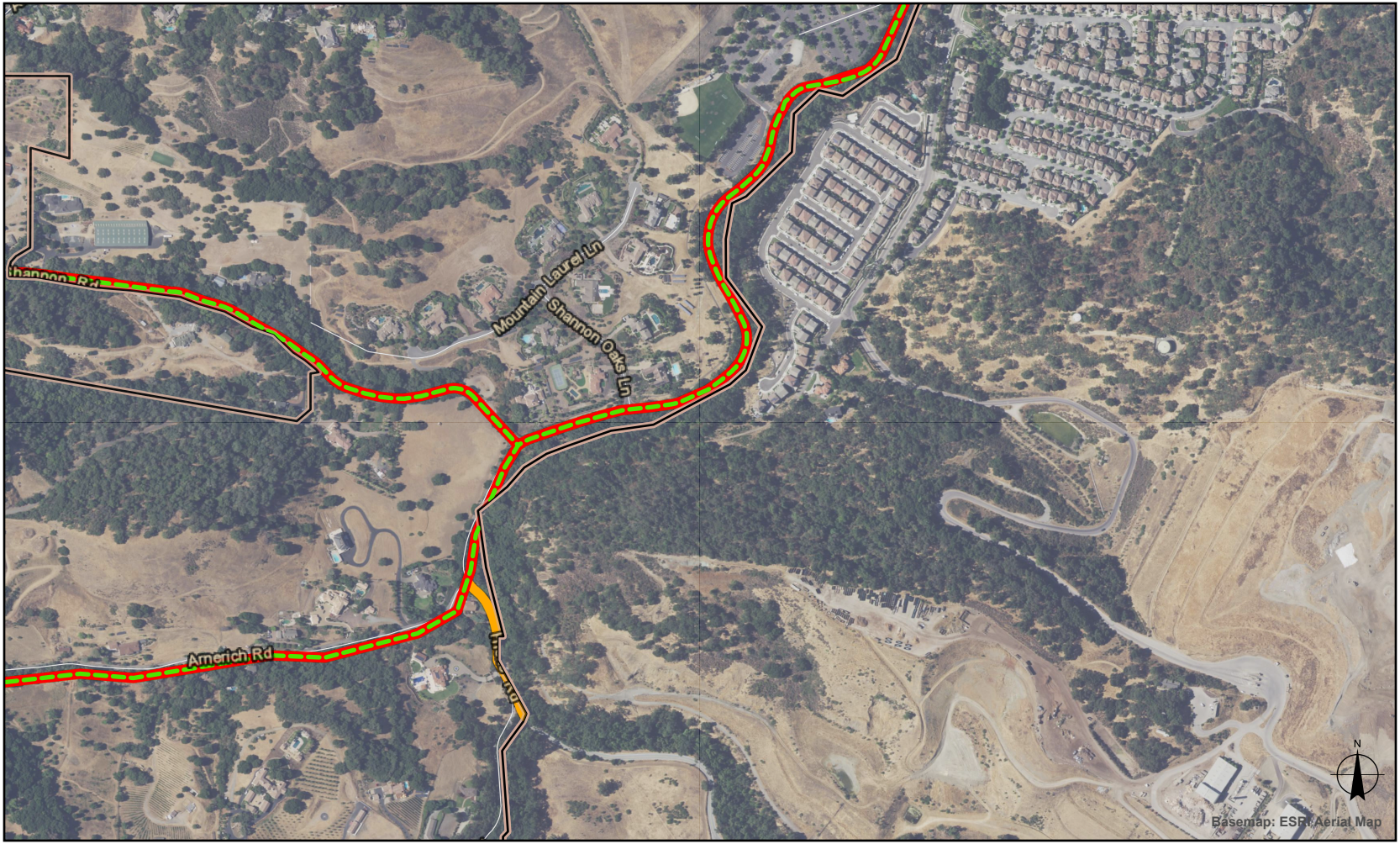


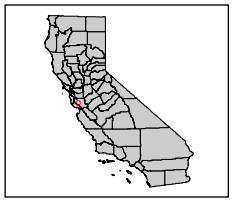
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2205°N, 121.9285°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

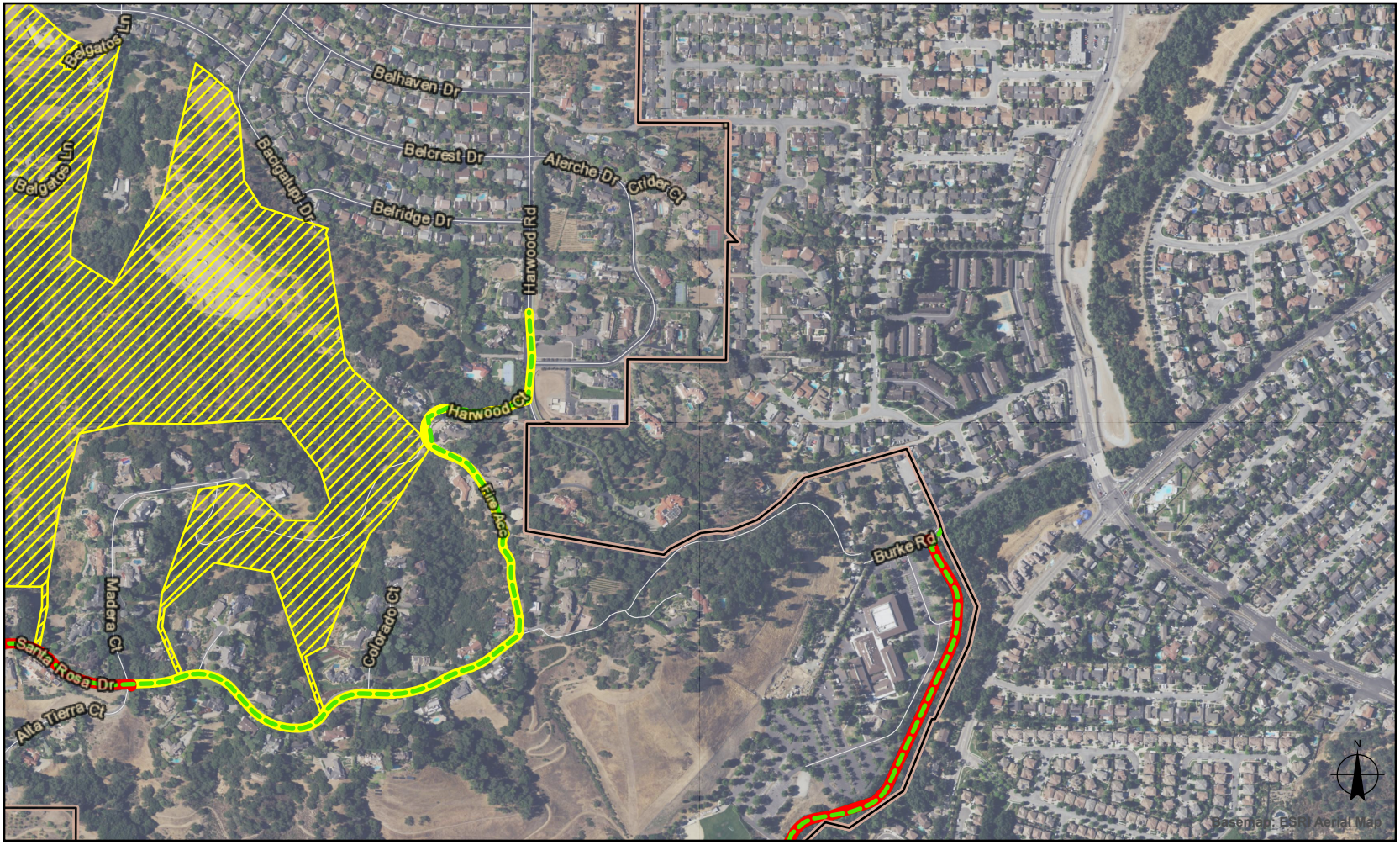


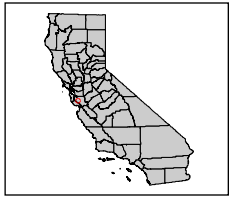
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2174°N, 121.9098°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
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Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

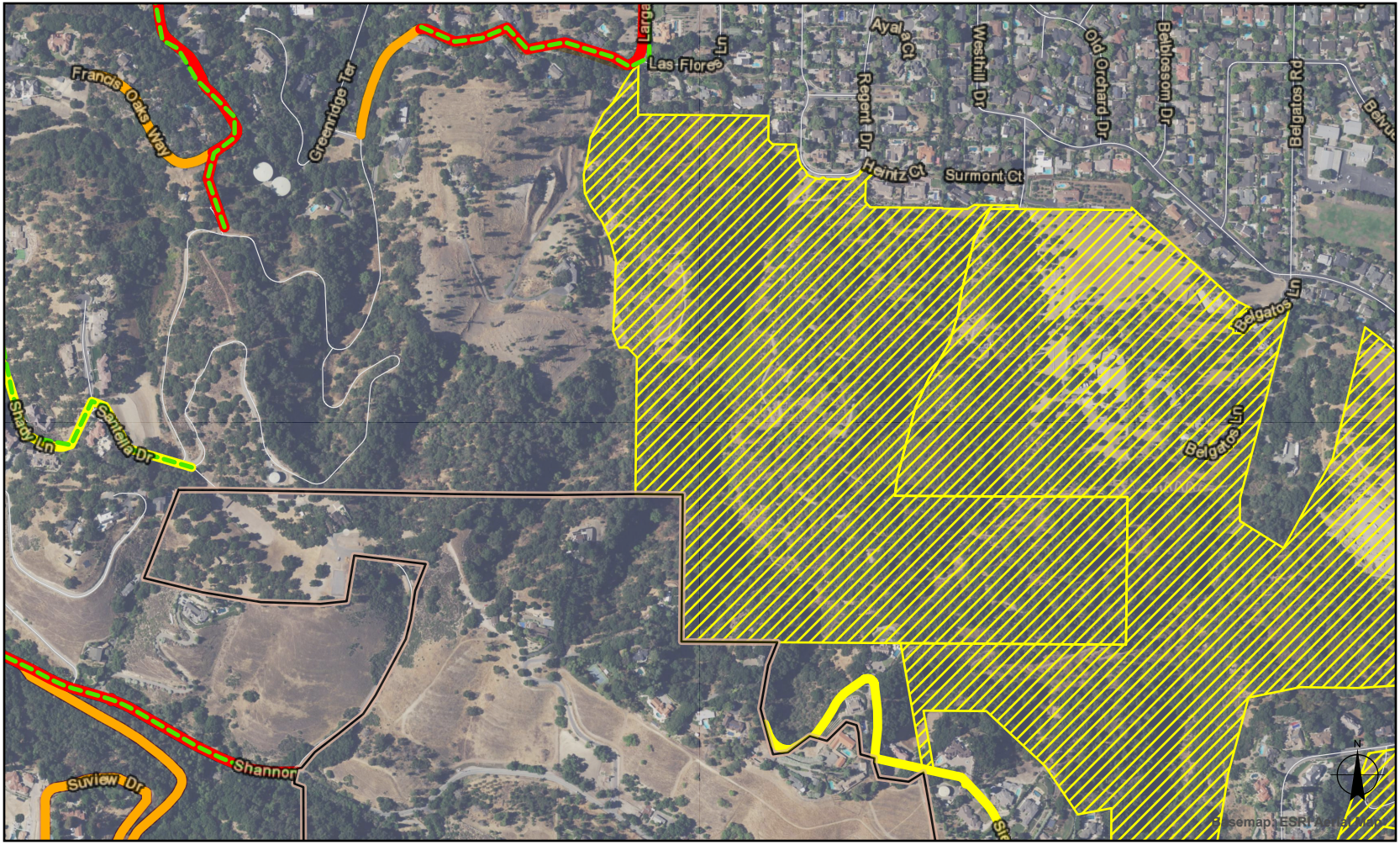


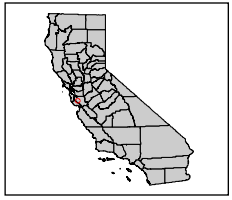
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2268°N, 121.9101°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

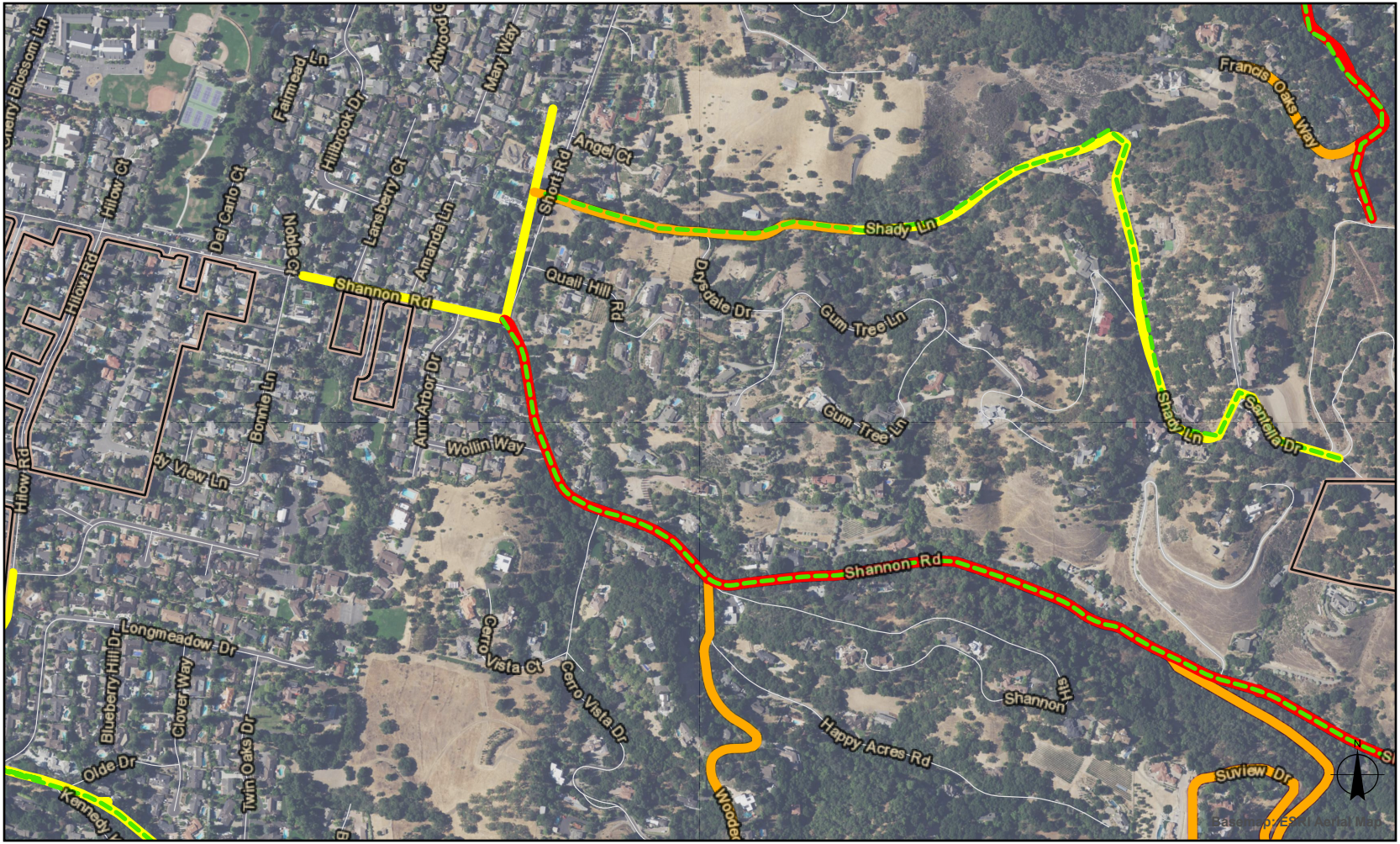


Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

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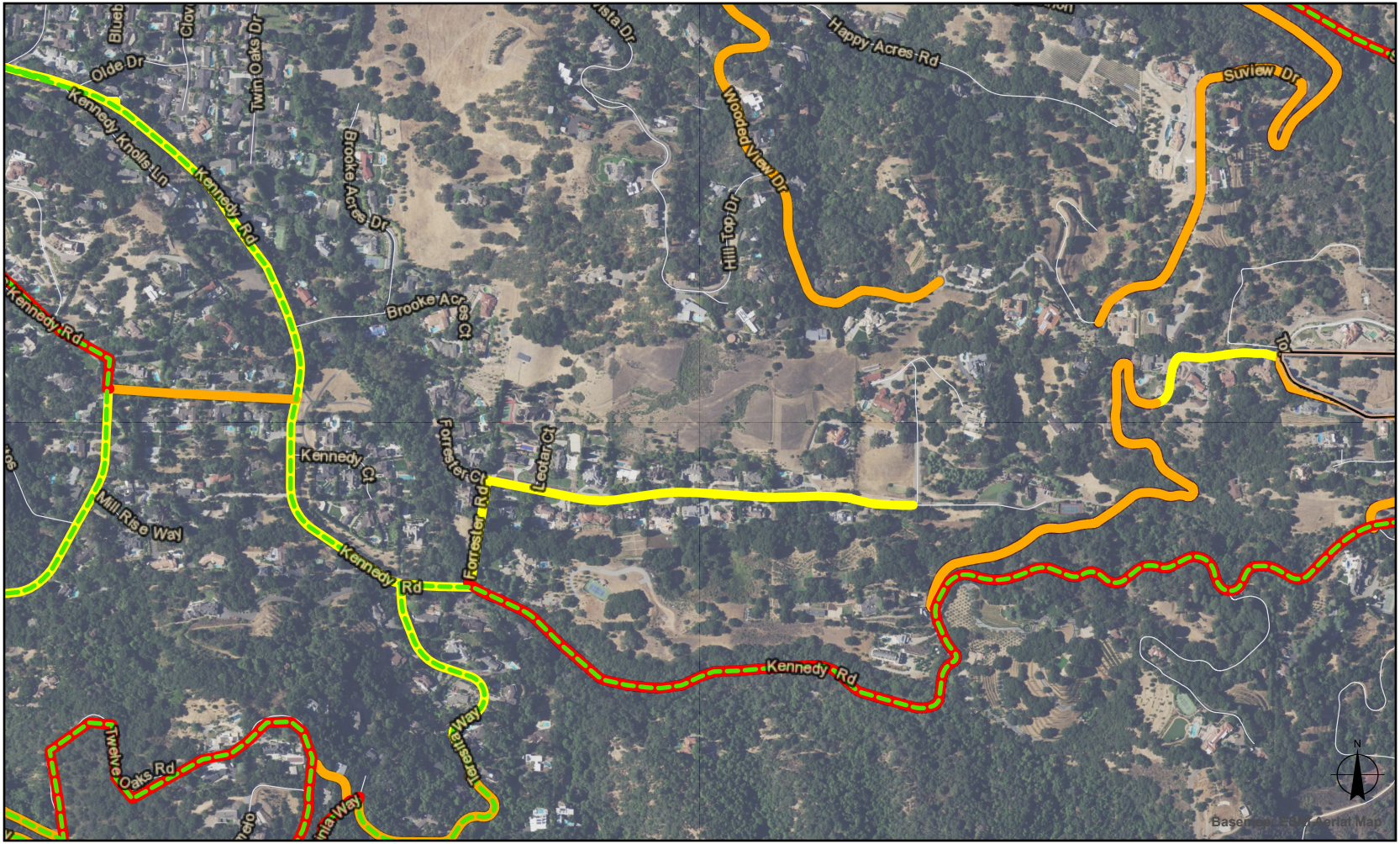


Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

Map Center: 37.2294°N, 121.9472°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020

SWCA ENVIRONMENTAL CONSULTANTS



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

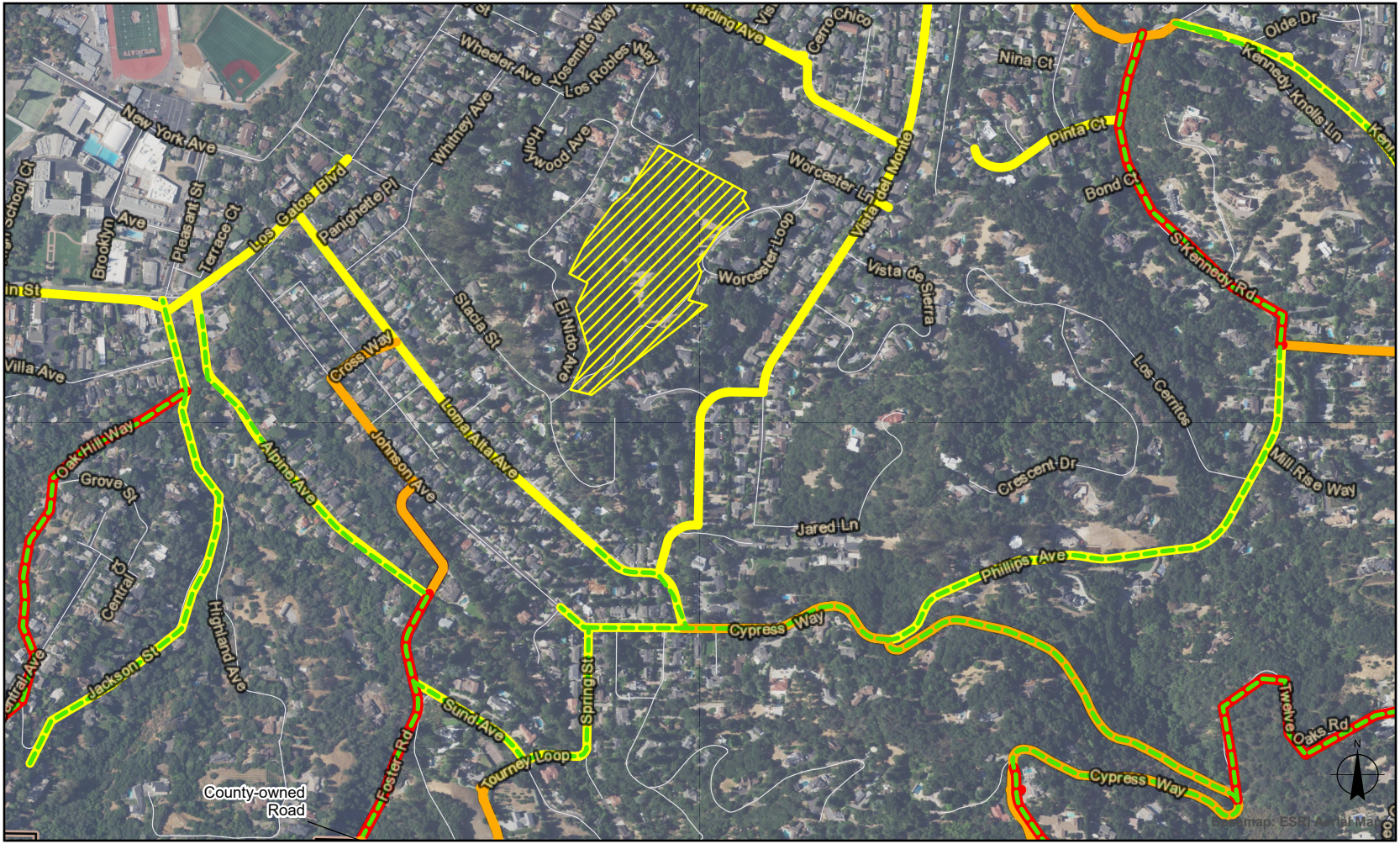


Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2205°N, 121.9471°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

Meters
0 87.5 175

Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2196°N, 121.9659°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

Meters
0 87.5 175

Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.229°N, 121.966°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

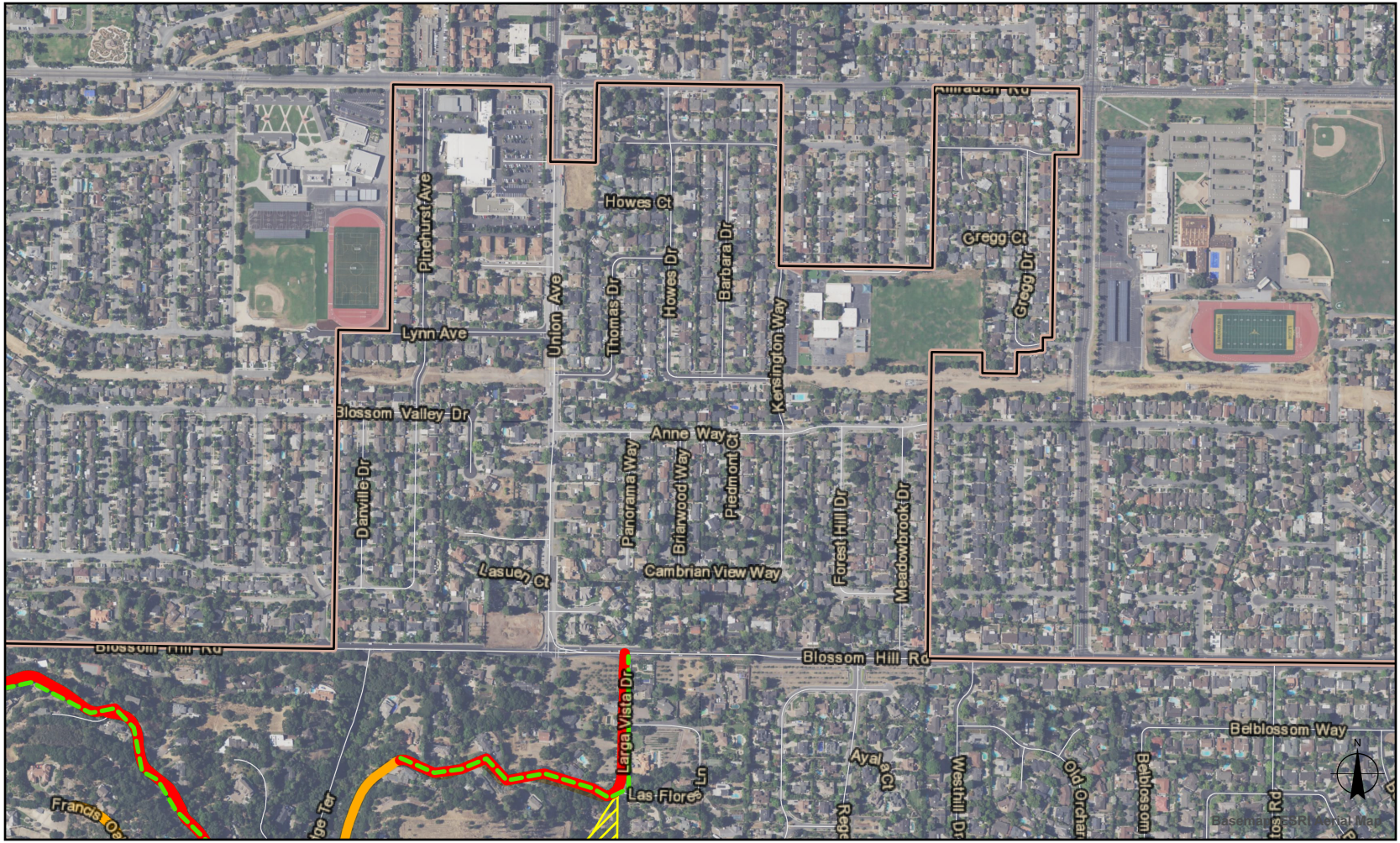
Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

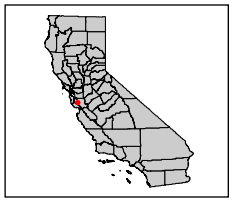
Meters
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Scale: 1:14,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2304°N, 121.9812°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)



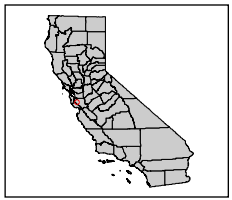
Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2391°N, 121.9288°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

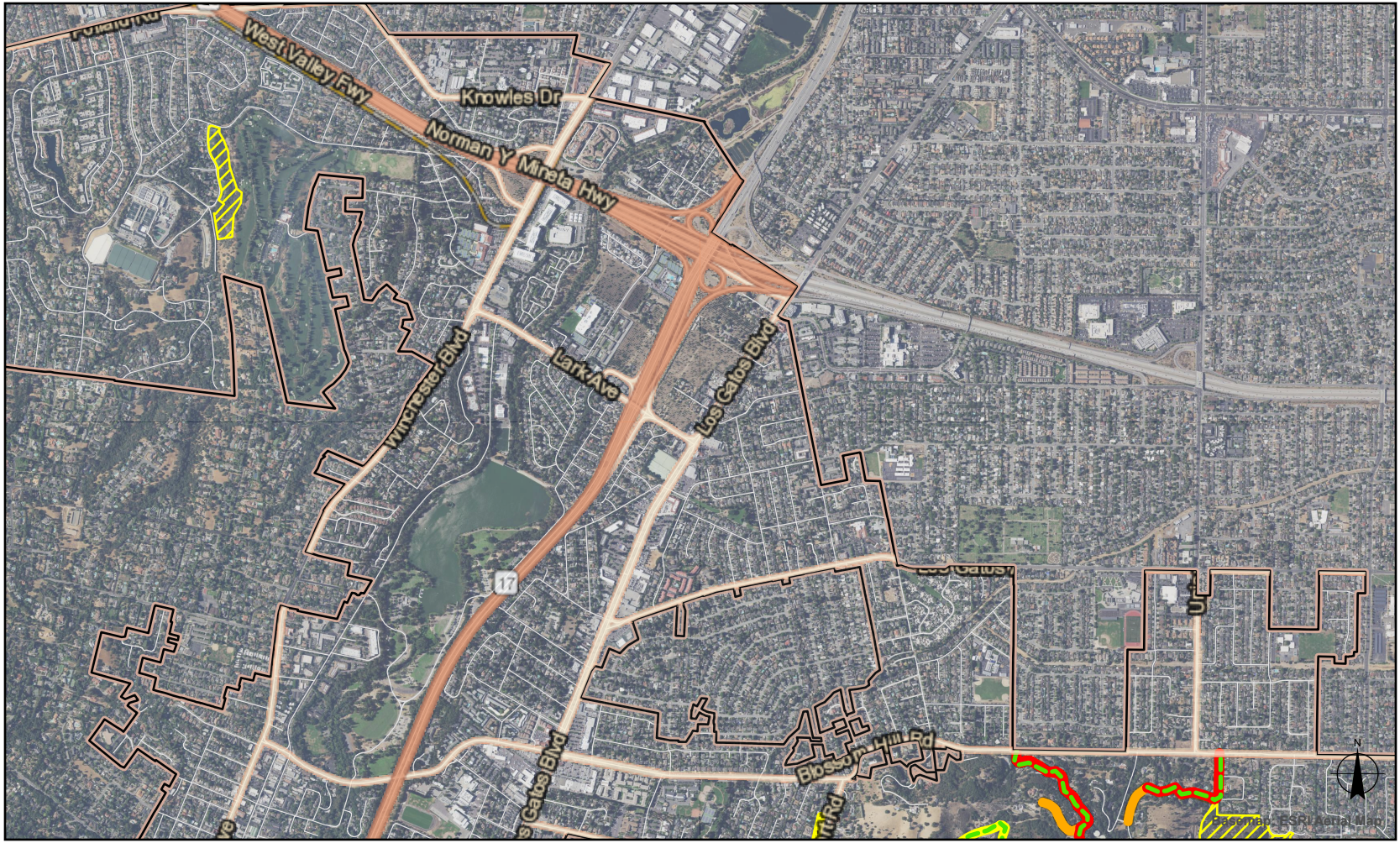


Meters
0 87.5 175

Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2589°N, 121.9831°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

Meters
0 270 540

Scale: 1:28,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2489°N, 121.9561°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020

APPENDIX C

VMP Area Open Space and Undeveloped Parkland Mapbook

LOS GATOS VEGETATION MANAGEMENT PLAN

Worcester Park Treatments

Worcester Park (11.33 Acres)

Trail (2,698.35 Feet)

Treatment Type

Fuel Reduction Area (2.33 Acres)

Mow / Graze (0.38 Acre)

Shaded Fuel Break (4.82 Acres)

Defensible Space (2.90 Acres)

Woody Debris & Dense Understory (1.25 Acres)

Invasive Species

Acacia, Ivy, & Vinca (0.57 Acre)

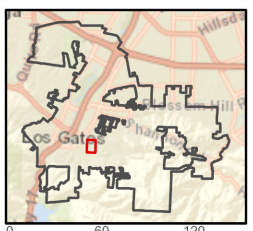
Broom (0.09 Acre)

Ivy (1.25 Acres)

Tree of Heaven (1.10 Acres)

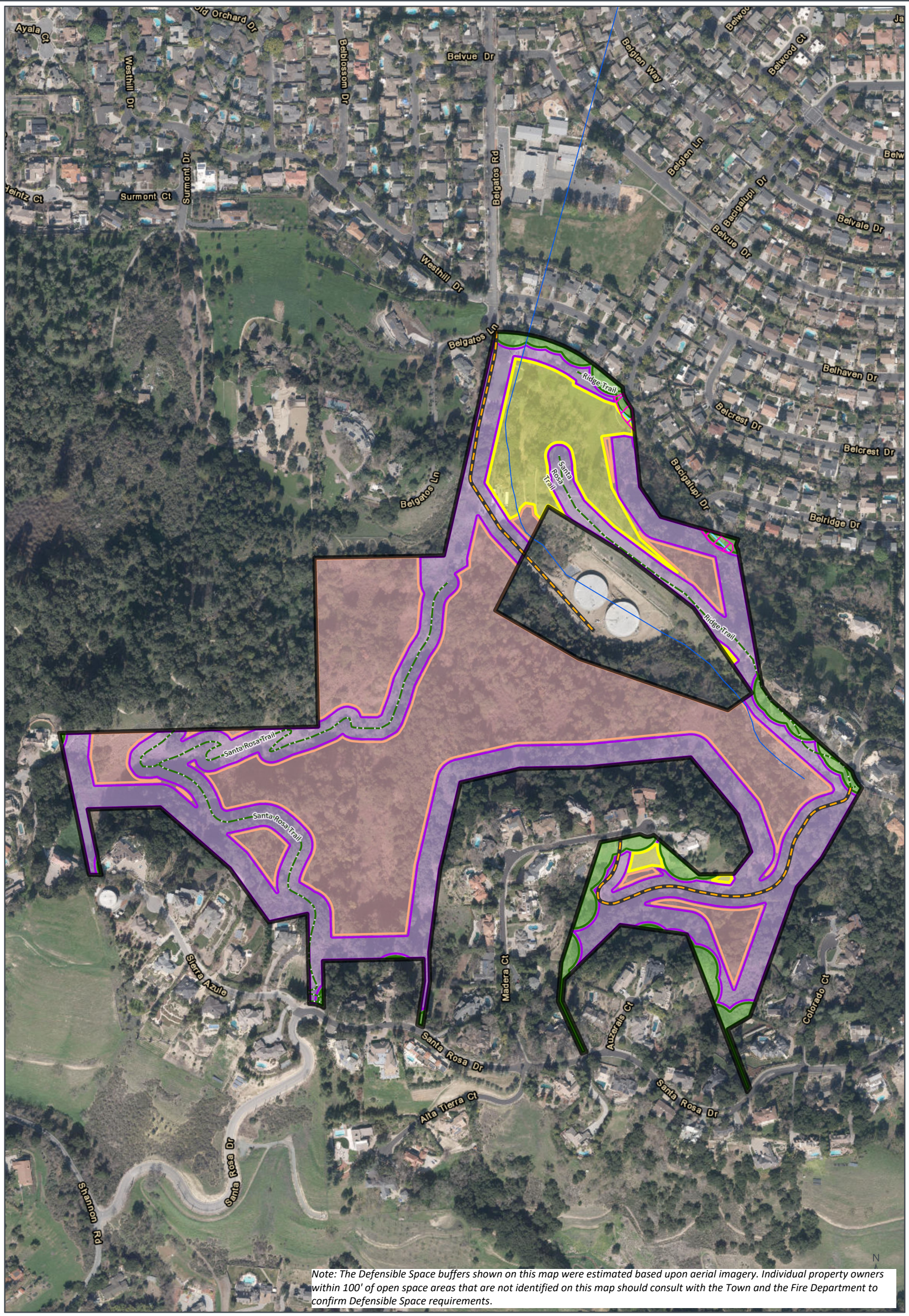
Note: The Defensible Space buffers shown on this map were estimated based upon aerial imagery. Individual property owners within 100' of open space areas that are not identified on this map should consult with the Town and the Fire Department to confirm Defensible Space requirements.

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Worcester Vegetation

SWCA ENVIRONMENTAL CONSULTANTS



Note: The Defensible Space buffers shown on this map were estimated based upon aerial imagery. Individual property owners within 100' of open space areas that are not identified on this map should consult with the Town and the Fire Department to confirm Defensible Space requirements.

LOS GATOS VEGETATION MANAGEMENT PLAN

Santa Rosa Open Space and Recreation Area Treatments

SWCA ENVIRONMENTAL CONSULTANTS

- Santa Rosa Open Space (75.89 Acres)
- Trail (6,041.67 Feet)
- Fire Road (2,961.86 Feet)

Invasive Species

- Eucalyptus (0.25 Acre)

Treatment Type

- Defensible Space (3.83 Acres)
- Fuel Reduction Area (33.55 Acres)
- Mow / Graze (6.13 Acres)
- Shaded Fuel Break (32.40 Acres)

NHD

- Stream/Creek

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Santa Rosa Vegetation



LOS GATOS VEGETATION MANAGEMENT PLAN

Heintz Open Space and Recreation Area Treatments

SWCA ENVIRONMENTAL CONSULTANTS

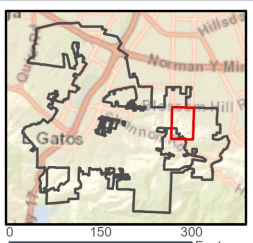
Heintz Open Space (88.12 Acres)

Trail (8,428.98 Feet)

Treatment Type

- Defensible Space (2.47 Acres)
- Fuel Reduction Area (49.10 Acres)
- Mow / Graze (10.29 Acres)
- Shaded Fuel Break (26.23 Acres)

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Heintz Vegetation

LOS GATOS VEGETATION MANAGEMENT PLAN

Santa Rosa / Heintz Open Space and Recreation Area Treatments

SWCA ENVIRONMENTAL CONSULTANTS

Santa Rosa / Heintz Open Space (164.01 Acres)

Trail (14,470.65 Feet)

Fire Road (2,961.86 Feet)

Treatment Type

Defensible Space (6.30 Acres)

Fuel Reduction Area (82.65 Acres)

Mow / Graze (16.53 Acres)

Shaded Fuel Break (58.64 Acres)

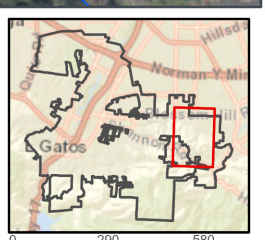
Invasive Species

Eucalyptus (0.25 Acre)

NHD

Stream/Creek

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Santa Rosa Heintz Vegetation

Note: The Defensible Space buffers shown on this map were estimated based upon aerial imagery. Individual property owners within 100' of open space areas that are not identified on this map should consult with the Town and the Fire Department to confirm Defensible Space requirements.

Note: The Defensible Space buffers shown on this map were estimated based upon aerial imagery. Individual property owners within 100' of open space areas that are not identified on this map should consult with the Town and the Fire Department to confirm Defensible Space requirements.

Oak Grove Ave
Euclid Ave
Jones Rd
216
Los Gatos Creek
Flume Trail
Jones Trl
Jones Trail
Los Gatos Creek Trl
17555

LOS GATOS VEGETATION MANAGEMENT PLAN

Novitiate Park Treatments

- Novitiate Park (9.93 Acres)
- Midpen Wildfire Resiliency Program
- Trail (1,698.16 Feet)

Invasive Species

- Avena, Star thistle, Tree of Heaven, & Non-Native Annual Grassland (5.56 Acres)
- French Broom (0.77 Acre)
- Italian Thistle (0.41 Acre)
- Ivy, Broom, & Privet (1.16 Acres)

Treatment Type

- Fuel Reduction Area (0.18 Acre)
- Mow / Graze (4.58 Acres)
- Shaded Fuel Break (1.77 Acres)
- Defensible Space (2.27 Acres)
- Woody Slash & Debris Removal (1.29 Acres)

NHD

- Stream/Creek

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Novitiate Vegetation

SWCA ENVIRONMENTAL CONSULTANTS



LOS GATOS VEGETATION MANAGEMENT PLAN

La Rinconada Park Treatments

SWCA ENVIRONMENTAL CONSULTANTS

La Rinconada Park (8.64 Acres)

Trail (1,321.83 Feet)

Treatment Type

Defensible Space (0.83 Acre)

Fuel Reduction Area (0.80 Acre)

Mow / Graze (0.29 Acre)

Shaded Fuel Break (6.84 Acres)

Invasive Species

Broom, Acacia, and Privet (0.15 Acre)

Ivy (0.33 Acre)

NHD

Stream/Creek

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: LaRinconada Vegetation

APPENDIX D

Roadway CEQA Exemption Analysis

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

Half Moon Bay Office
60 Stone Pine Road, Suite 100
Half Moon Bay, California 94019
Tel: 650.440.4160 Fax: 650.440.4165

CALIFORNIA ENVIRONMENTAL QUALITY ACT EXEMPTION ANALYSIS

PROJECT DESCRIPTION

The Town of Los Gatos (Town) Roadway Vegetation Management Project (Project) will remove hazardous vegetation and create defensible space around approximately 31.09 miles of Town-owned hillside roadways that have been identified by the Town and Town residents as roadways of high concern (Figure 1). These town-owned roadways[1] include evacuation routes and other collector, neighborhood, and hillside collector roads that are located within the wildland urban interface (WUI) and/or are have been identified by the Town and Town residents as having inadequate access for emergency response during a wildfire.

Under the project, work will focus on removing roadside vegetation to create a clear space that is 20 feet wide and 13 feet, 6 inches above roadways, as well as clearance of non-fire-resistant vegetation within 10 feet of the roads. Clearing these areas will not only improve emergency vehicle access and evacuation safety, but will also reduce the amount of heat that evacuating residents might be exposed to during a fire, improve visibility, and expand the usable width of roadways on narrow hillside streets.

The Town will work with private contractors annually to inspect and clear vegetation along the roadways. Clearing activities will include:

- Cutting back or removing vegetation and tree limbs that encroach into the roadway to create at least 20 feet of horizontal clearance.
- Removing low hanging tree limbs that extend over the roadway to create at least 13 feet, 6 inches of vertical clearance.

[1] *Although private roadways are not included in this project the Town has identified a limited number of private roadways where vegetation management is recommended. The Town will communicate with property owners on these private roadways regarding associated risks and recommendations for vegetation management to be completed by the property owners.*

- Removing all non-fire-resistant vegetation located within 10 feet of the roadways. Vegetation to be removed includes, but is not limited to, combustible vegetation such as Eucalyptus (*Eucalyptus* sp.) trees, acacia (*Acacia* sp.) trees, scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), and toyon (*Heteromeles arbutifolia*).

- Creating vertical spacing between trees and shrubs by removing vegetation that provides ladder fuels such as low branches and other understory shrubs within 10 feet of the roadways.

- Removing tree limbs and low branches on mature trees within 10 feet horizontal of the edges of the roadways to 6-10 feet vertical above the ground, and at least 13 feet, 6 inches vertical above road surfaces to allow for emergency vehicle access.

- Removing trees that are on steep slopes leaning at angles that could fall and block a roadway.

- Redwoods should be left in place unless thinning of small saplings is required.

- String-trimming groundcover, such as grasses, to achieve a height of 4 inches or less within 10 feet of the roadways.

- Coordinate the removal of vegetation entangled in overhead wires. The Town is not responsible for directly removing vegetation from overhead wires[2]. However, any required removal of vegetation entangled in overhead wires will be coordinated with PG&E. Private contractors will prune the balance of any trees partially pruned by PG&E outside of the 10-foot safety zone.
- Coordinate with property owners along private roadways where additional vegetation management is recommended. While these private roadways are not a part of this project, the Town will communicate with these property owners regarding associated risks and recommendations for vegetation management to be completed by the property owners.

The Town has identified three priority levels of roadways where vegetation management for fire safety is of utmost concern. These levels are based on Vegetation Management Action Levels (VMAL) which are defined by the amount of vegetation encroachment into and along the edges of the roadway. Existing VMAL's along roadways of high concern were identified and mapped during a reconnaissance-level survey

[2] *The Town and/or its contractors must remain a minimum of 10 feet from energized conductors and cannot remove any vegetation that is entangled in overhead wires. Therefore, removal of vegetation entangled with overhead wires will be coordinated with PG&E. The Town and/or contractors will also coordinate with PG&E where vegetation treatment creates risk of limbs falling onto wires and lane/road closures for vegetation management activities. Private contractors will prune the balance of any trees partially pruned by PG&E outside of the 10-foot safety zone.*

by SWCA Environmental Consultants biologists and arborist in June and July 2020 (Figure 2). Specifically, these levels are defined as:

- VMAL 1. High level of encroachment of roadside vegetation. Typically includes areas of dense native woodland vegetation with canopy overhanging the roadway. Vegetation often entangled in overhead wires. Pockets of dense flammable non-native invasive vegetation (e.g., acacia, broom) in the understory on hillslopes adjacent to roadways.
- VMAL 2. Moderate encroachment of roadside vegetation. Some areas of dense native woodland as in VMAL1. Additional areas of native scrub vegetation on open hillsides with non-native annual grasses. Pockets of dense flammable non-native invasive vegetation (e.g., acacia, broom) in the understory on hillslopes adjacent to roadways.
- VMAL 3. Minimal encroachment of roadside vegetation[3]. Urban streetscape within the WUI that contains irrigated ornamental/landscaped non-native vegetation. VMAL 3 roads are typically adjacent to the Town center with wide streets and sidewalks. Vegetation often entangled in overhead wires at point of connection to adjacent structures.

Based on these VMAL designations and an updated fuel model and hazard assessment, the Town has prioritized project roadways into three levels as follows (Figure 3):

- Priority Level 1: Priority 1 roadways include evacuation routes within the Town with VMAL 1 and VMAL 2 designations. Vegetation management along these roads is essential to ensuring emergency vehicles can access locations along these roads and ensuring the safety of residents as they evacuate in the event of a wildfire.
- Priority Level 2: Priority 2 roadways include roadways identified by the Town as high priority roadways that are not specifically identified as evacuation routes, but may require improvements to allow safe and efficient emergency vehicle access and resident evacuation, and have been identified as VMAL 1 and VMAL 2. These roads need work to meet Los Gatos Municipal Code and other relevant requirements and ensure the safety of Town residents in the event of a wildfire. Priority 2 roadways also include arterial and collector streets with a VMAL 1 and VMAL 2 designations.
- Priority Level 3: Priority 3 roadways have some vegetation encroachment that could increase the intensity of a fire and/or increase wildfire spread. Priority 3 roadways have been identified as any roads that are within the WUI with a VMAL 3 designation. These roads generally meet Los Gatos Municipal Code and other requirements and are not expected to need immediate or regular routine vegetation maintenance to meet requirements. These roads should be inspected

[3] *VMAL 3 roads outside the WUI were removed from the project since these roads generally meet the Los Gatos Municipal Code and other relevant requirements and are not expected to require vegetation maintenance to ensure the safety of Town residents and emergency vehicles can access locations along the roadways in the event of a wildfire.*

every few years to ensure they do not need vegetation maintenance to comply with fire requirements, such as the Los Gatos Municipal Code.

PROJECT PURPOSE

The objective of the project is to ensure Town roadways are consistent with the Government Code 51175-51189, the Town Municipal Code, and Santa Clara Fire Department access road standards, to support safer evacuation routes for residents and emergency response vehicles by creating a fuel break along evacuation routes and other roads within the Town in the event of a wildfire. [4],[5],[6]

The combination of increasing development in or near wildlands, the accumulation of wildland fuels, a drying and warming climate, longer fire seasons, and rugged terrain has resulted in significant wildfire risk to communities located in or near the WUI. The WUI area is best described as a wildland-urban intermix with homes scattered amongst wildland fuels. The Town WUI planning area includes primarily Very High Fire Hazard Severity Zone areas, as defined by CalFire and the Town of Los Gatos Fire Prevention and Protection Ordinance. [7] A Community Wildfire Protection Plan (CWPP) was prepared for the County of Santa Clara.[8] Annex 9 of the CWPP (updated in 2019) addressed specific wildlife prevention and mitigation for the Town and identified the need for removal of obstructions on road systems for evacuation (Strategic Goal FC-8) and a roadside fuel treatment program (Strategic Goal FR-7).[9] This Vegetation Management Plan (VMP) is being prepared to address those needs.

[4] Town of Los Gatos. 1996. *Town of Los Gatos Municipal Code. Chapter 9. Fire Prevention and Protection.* Available at: *https://library.municode.com/ca/los_gatos/codes/code_of_ordinances?nodeId=CO_CH9FIPRPR. Accessed July 28, 2020.*

[5] Santa Clara County Fire Department. 2009. *Standard Details & Specifications. Fire Department Apparatus Access.* Available at: *https://www.sccfd.org/images/documents/fire_prevention/standards/2.4.6_fire_department_apparatus_access.pdf. A*ccessed July 28, 2020.

[6] Town of Los Gatos. 2020. *Ordinance 2301. Ordinance of the Town of Los Gatos Amending Chapter 9 (Fire Prevention and Protection) of the Town Code Regarding Weed Abatement Regulations.* Available at: *https://www.losgatosca.gov/DocumentCenter/View/24284/Ord-2301---Amend-Chapter-9-Fire-Prevention-_-Protection-regarding-Weed-Ab*. Accessed August 21, 2020.

[7] Town of Los Gatos. 2009. *Very High Fire Hazard Areas Map.* Available at: *https://www.losgatosca.gov/DocumentCenter/View/24122/Los-Gatos-WUI-and-State-VHFHA-Map?bidId=*. Accessed July 28, 2020.

[8] Santa Clara County. 2009. *Santa Clara County Community Wildfire Protection Plan.* Available at: https://www.sccfd.org/santa-clara-county-community-wildfire-protection-plan. Accessed Jul 28, 2020.

[9] Santa Clara County. 2009. *Santa Clara County Community Wildfire Protection Plan. Annex 9.* Available at: https://www.sccfd.org/santa-clara-county-community-wildfire-protection-plan. Accessed Jul 28, 2020.

State law designates all lands within the Town as a Local Responsibility Area (LRA) for the purposes of wildland fire protection.[10] Therefore, areas within the Town are required to maintain defensible space as outlined in Government Code 51175-51189 and Los Gatos Municipal Code Chapter 9. As a result, all fire apparatus access roads are required to have an unobstructed width of no less than 20 feet, exclusive of shoulders, or as required by fire department access road standards, and an unobstructed vertical clearance of 13 feet, 6 inches. In addition, all areas within 10 feet of fire apparatus roads and driveways are required to be cleared of non-fire-resistant vegetation growth. The Santa Clara Fire Department access road standards also include the following requirements:

- The minimum clear width of fire department access roads shall be 20 feet. Modifications to the design or width of a fire access road, or additional access road(s) may be required when the fire code official determines that access to the site or a portion thereof may become compromised due to emergency operations or nearby natural or manmade hazards (flood prone areas, railway crossings, bridge failures, hazardous material-related incidents, etc.).
- The width of secondary access roads may be reduced to less than 20 feet provided turnouts are installed adjacent to the roadway every 500 feet with a minimum dimension of 10 feet wide and 40 feet long or as otherwise determined by the fire code official.
- Vertical clearance over required vehicular access roads and driveways shall be 13 feet, 6 inches.[11]

SITE DESCRIPTION

The project will take place in the Town of Los Gatos. Under the project, work will focus on roadside vegetation to achieve a clearance of 20 feet horizontally and 13 feet, 6 inches above roadways, as well as clearance of non-fire-resistant vegetation within 10 feet of the roads. The Town is located at the base of the Sierra Azules in the southwestern portion of Santa Clara County, where the Santa Clara Valley meets the lower slopes of the Santa Cruz Mountains. The Town encompasses a wide variety of terrain ranging from flat topography at the edge of the valley floor to densely wooded hillsides.

The Town includes a range of vegetation types with various fuel hazards. Chaparral vegetation is often found on the south facing slopes of the Town. Chaparral will have long flame lengths under either moderate or extreme weather conditions and burn quickly and intensely. Oak (*Quercus* sp.) woodlands,

[10] CalFire. 2008. *Very High Fire Hazard Severity Zones in LRA Map. Los Gatos.* Available at: https://osfm.fire.ca.gov/media/5932/los_gatos.pdf. Accessed July 28,2020.

[11] Santa Clara County Fire Department. 2009. *Standard Details & Specifications. Fire Department Apparatus Access.* Available at: *https://www.sccfd.org/images/documents/fire_prevention/standards/2.4.6_fire_department_apparatus_access.pdf.* Accessed July 28, 2020.

comprised of a variety of oak species, are also interspersed throughout the Town as well as mixed conifer comprised of knob cone pine (*Pinus attenuata*) and grey pine (*Pinus sabiniana*). A fire ignited in either the oak woodland or mixed conifer habitat would likely burn as a surface fire with fairly low rates of spread, although active fire behavior is possible in some patches, especially under extreme weather conditions. A limited number of conifers such as redwoods (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*) are located at lower elevations in the Town where precipitation is high, fog is common, and temperatures are moderate. Fire spread is generally limited in this fuel type; however, given the right combination of weather conditions, surface fire can be expected to burn uphill. Vegetation found along main roadways include planted street trees (e.g., elm [*Ulmus* spp.], ash [*Fraxinus* spp.], sweet gum [*Liquidambar* spp.], pine [*Pinus* spp.], palm [*Arecaceae*]), blue gum eucalyptus [*Eucalyptus globulus*], Monterey pine [*Pinus radiata*]), a wide variety of ornamental species, as well as some natives.[12]

The foothills above Los Gatos have steep, winding, and narrow roads that pose potential ingress and egress problems for emergency response and evacuations. Entrapment is also a concern due to minimal turnaround space and dead ends associated with many of the roadways. The surrounding vegetation is a mixture of dense conifer/oak woodland forests that encroach within a few feet of the roadside pavement. These forests have accumulated dead and downed wood, invasive species along the roadsides, brush and other vegetation that has been exposed to drought stress, and ongoing mortality from sudden oak death. The potential for wildfire to spread from roadside vegetation to adjacent properties or vice-versa is very high; therefore, immediate implementation of this project is necessary to protect the Town and critical power and water infrastructure. This project will also ensure that adequate evacuation routes exist within the Town for residents and tourists, and that roads are suitable for emergency response vehicle access in case of a wildfire.

VEGETATION MANAGEMENT TECHNIQUES

All removed vegetation will be cut with hand tools (e.g., chainsaws, polesaws, machetes, string trimmers), where possible, to minimize ground disturbance. A crane and bucket truck will be required to access more difficult sites. Cut vegetation will be dragged onto the nearest roadway and chipped on-site or loaded into dump trucks for chipping off-site. All supporting vehicles and heavy equipment will remain on roadways or designated staging areas. Removal and disposal of any invasive species will be completed in accordance with California Invasive Plant Council (CAL-IPC) guidelines and methodologies.

[12] Santa Clara County. 2009. *Santa Clara County Community Wildfire Protection Plan.* Available at: https://www.sccfd.org/santa-clara-county-community-wildfire-protection-plan. Accessed Jul 28, 2020.

Dead Vegetation. All downed dead trees and shrubs will be removed if they are not rotten and are not yet embedded into the ground. Downed trees that are embedded in soil and which cannot be removed without soil disturbance will be left in place.

Limb and Maintain Trees. Remove lower limbs of conifers (pine, fir, cedar, etc.) so that no leaves or needles are within 13 feet, 6 inches of the roadway, 10 feet of the ground outside the roadway, or 1/3 the height of the tree if it is less than 30 feet tall. Space trees so that the canopies do not touch, with added space between fire prone species like conifers. Trees like oaks, bay, and ornamentals with broad leaves should be limbed so that no branches are within 13 feet, 6 inches of the roadway, six feet of the ground outside the roadway, or 1/3 height of the tree if it is less than 18 feet tall. Areas with greater fire hazards, such as steeper slopes, or more severe fire danger will require greater pruning heights. In areas with steeper slopes, fires can jump and move laterally between tree crowns or the upper portion of the tree. For example, in areas categorized as VMAL 1, slopes are generally steeper and vegetation denser, requiring greater pruning heights to prevent or slow the speed at which a fire could travel between crowns. Plant spacing guidelines with specific slope ratios can be found below in Table 1.

Remove all surface fuels greater than 4 inches in height. Single specimens of trees, shrubs, or other vegetation may be retained provided they are well-spaced, well-pruned, and create a condition that avoids spread of fire to other fuel types or to a structure.

Buffer distances between vegetation will depend on the slope, vegetation size, vegetation type (brush, grass, trees), and other fuel characteristics (fuel compaction, chemical content, etc.). Areas with greater fire hazards will require greater buffers between fuels. For example, areas on steep slopes having large sized vegetation will require greater spacing between individual trees and bushes. Groups of vegetation (numerous plants growing together less than 10 feet in total foliage width) may be treated as a single plant. For example, 3 individual manzanita plants growing together with a total foliage width of 8 feet can be "grouped" and considered as one plant and spaced accordingly. See Table 1. Plant Spacing Guidelines, below.

Table 1. Plant Spacing Guidelines

Trees	Minimum horizontal space from edge of one canopy tree to the edge of the next	
	Slope	Spacing
	0% to 20%	10 feet
	20% to 40%	20 feet
	Greater than 40%	30 feet

Shrubs	Minimum horizontal space between edges of shrubs	
	0% to 20%	2 times the height of the shrub
	20% to 40%	4 times the height of the shrub
	Greater than 40%	6 times the height of the shrub
Vertical Space	Minimum vertical space between top of shrub and bottom of lower tree branches is 3 times the height of the shrub	

Adapted from Gilmer, M. 1994. *California Wildfire Landscaping.*

Equipment and Machinery

A variety of equipment may be utilized to cut and remove vegetation. Table 2 below shows a list of the possible equipment that may be used.

Table 2. Equipment List

Description	
Crane	Wood Chipper
Bucket Truck	Dump Truck
Chainsaw	String Trimmer
Polesaw	Machete

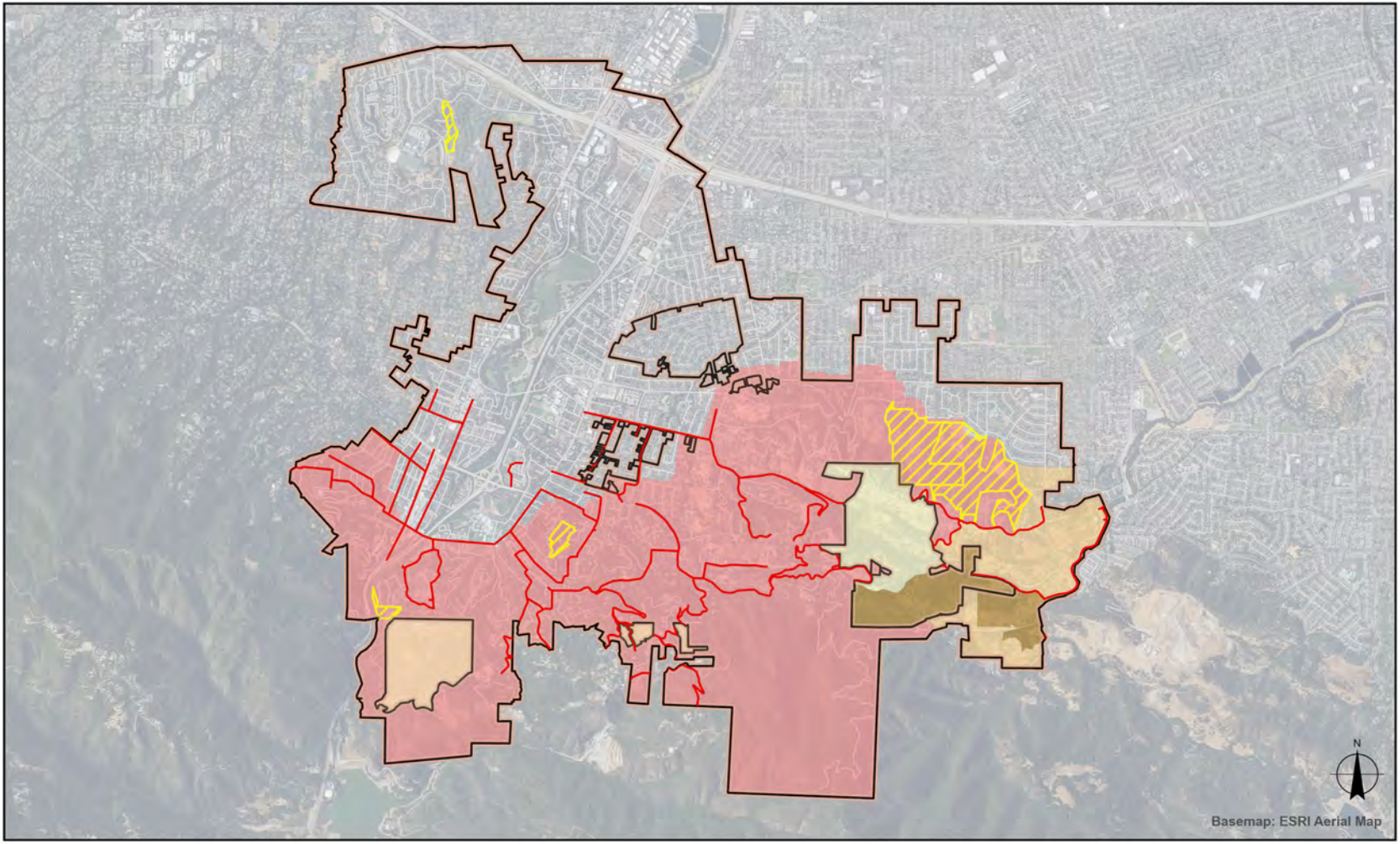
Access

Access to all work areas will be from existing surface streets. No work will be conducted within the bed or bank of California Department of Fish and Wildlife (CDFW) jurisdictional areas. No vehicles or equipment will enter creek channels.

Schedule

The Town of Los Gatos will coordinate their vegetation management activities to commence as soon as possible and occur before the peak of the 2020 fire season (fall).

Figure 1: Project Location





Town of Los Gatos Boundary
Open Space Area
Roadways of High Concern
Other Roadways

Very High Fire Hazard Area
State mandated LRA (VHFHA)
Town of Los Gatos Designated (WUIFA)
State Mandated Pre-Zone (VHFHA)
Pre-Zoned Town Designated (VHFHA)

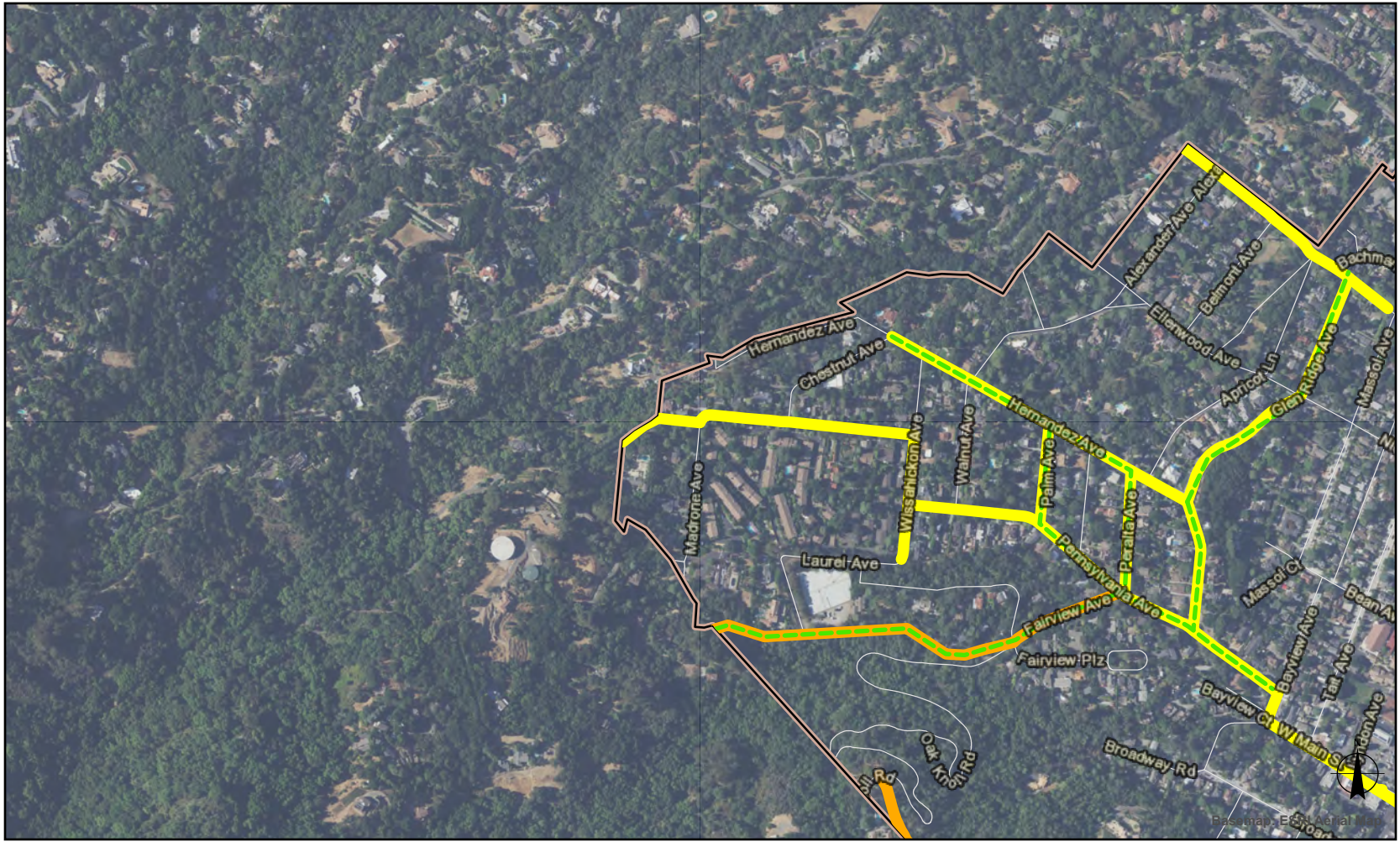
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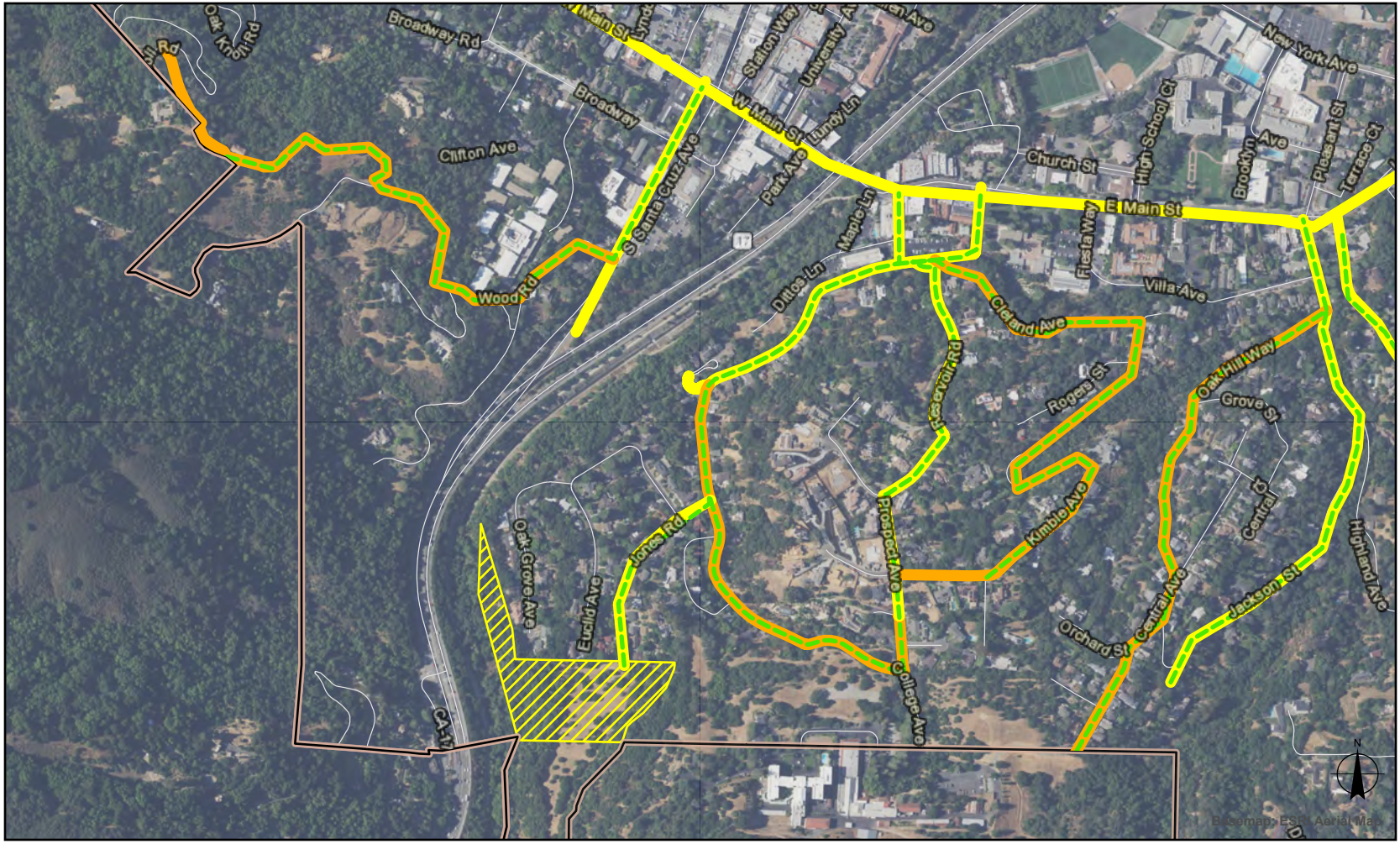
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2322°N, 121.9515°W | Santa Clara County, CA | Project Number: 60857| 8/21/2020

Figure 2: Roadway Vegetation Management Action Levels (VMAL's)


Hernandez Ave
Chestnut Ave
Alexander Ave
Belmont Ave
Ellenwood Ave
Apricot Ln
Glen Ridge Ave
Massol Ave
Madrone Ave
Wissahickon Ave
Walnut Ave
Palm Ave
Peralta Ave
Laurel Ave
Pennsylvania Ave
Fairview Ave
Fairview Plz
Massol Ct
Bayview Ave
Bayview Ct
Tait Ave
Broadway Rd
Oak Knoll Rd
W Main St
Esri Community Maps Contributors, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA | Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA,



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels

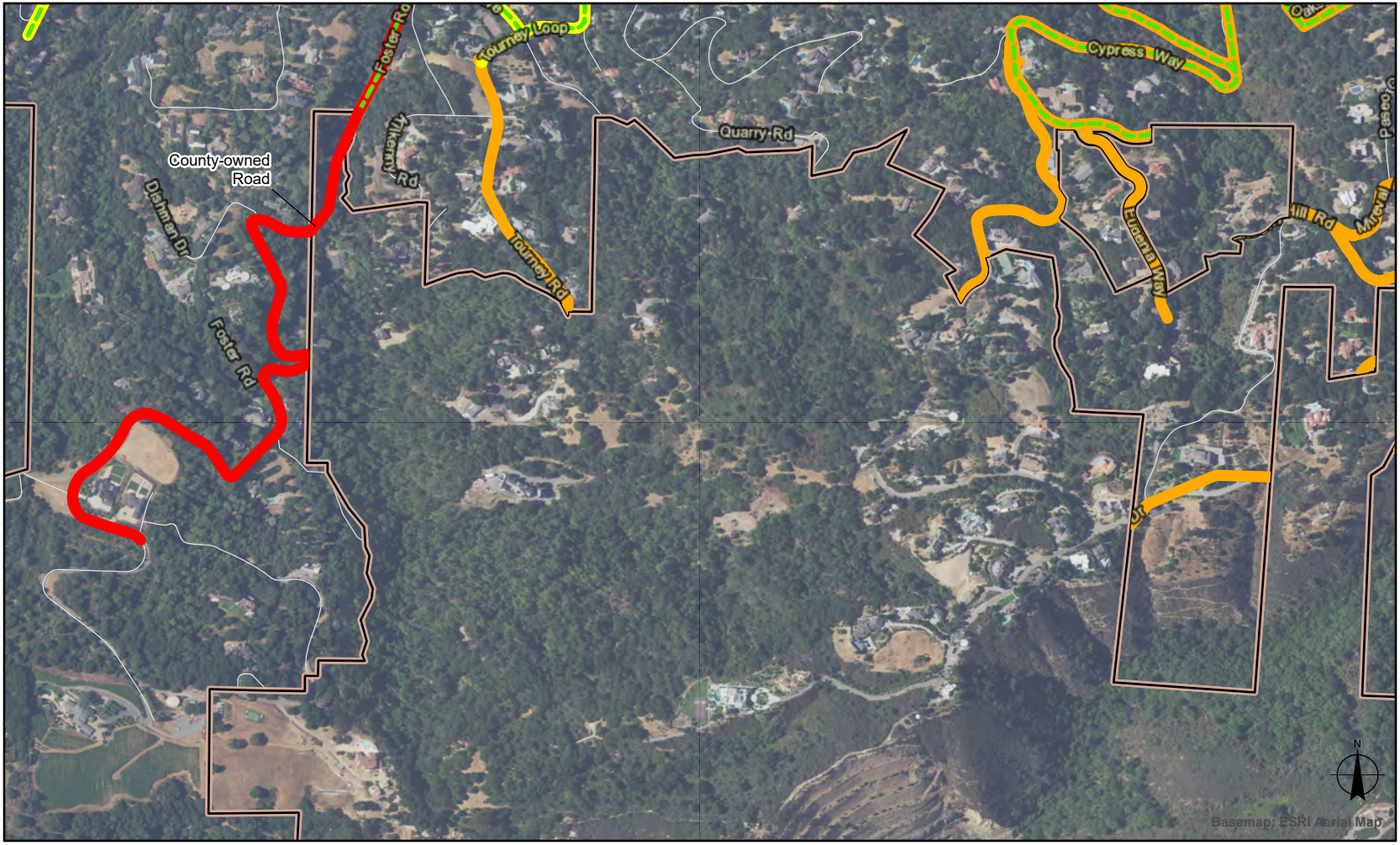
- VMAL 1 (5.30 Miles)
- VMAL 2 (13.98 Miles)
- VMAL 3 (11.81 Miles)

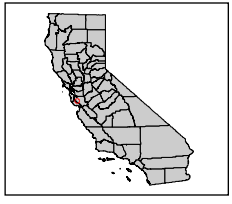
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2183°N, 121.9841°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels
VMAL 1 (5.30 Miles)
VMAL 2 (13.98 Miles)
VMAL 3 (11.81 Miles)

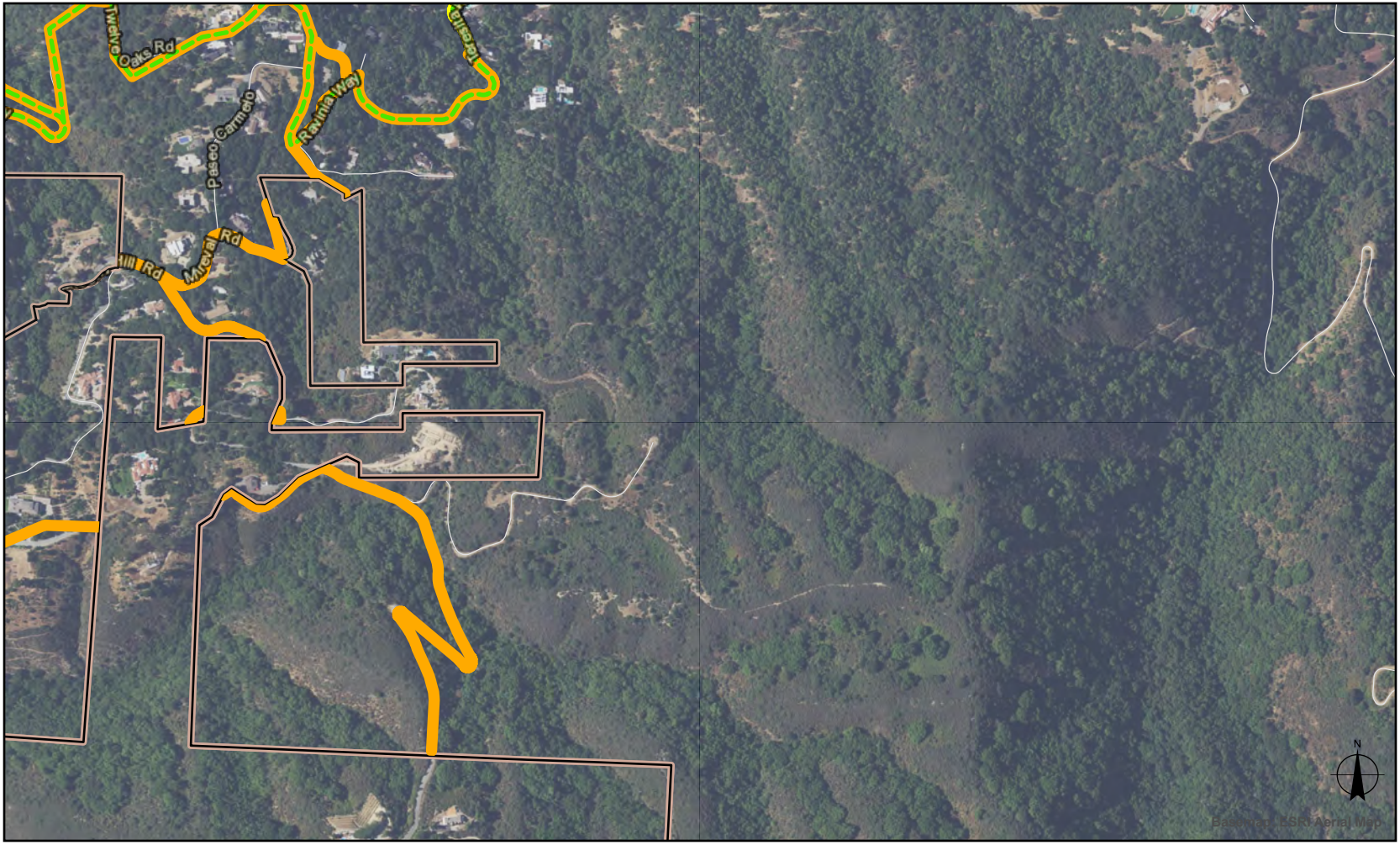


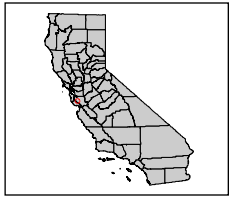
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2103°N, 121.9656°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels
VMAL 1 (5.30 Miles)
VMAL 2 (13.98 Miles)
VMAL 3 (11.81 Miles)

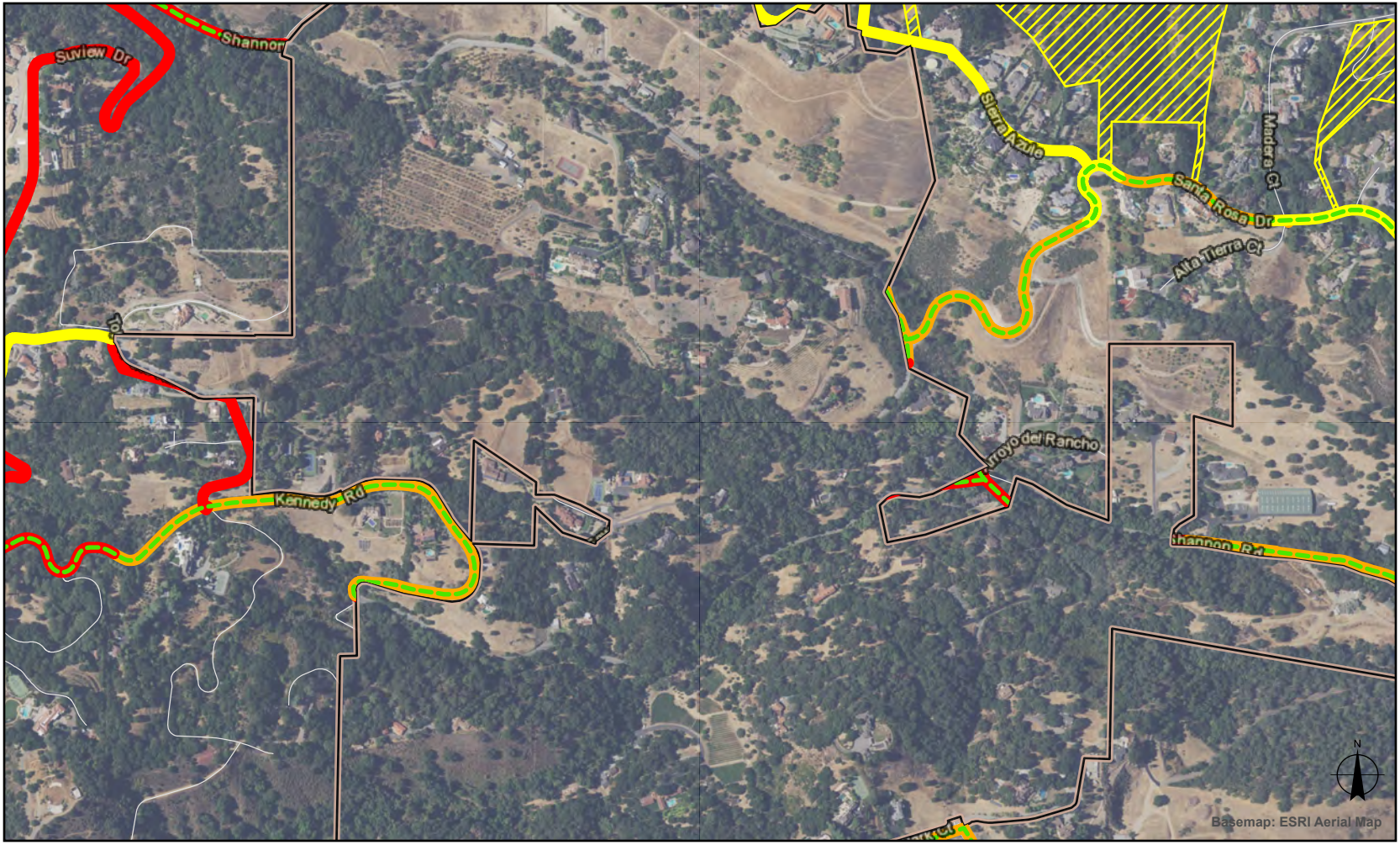


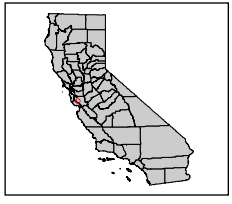
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2113°N, 121.9469°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels
VMAL 1 (5.30 Miles)
VMAL 2 (13.98 Miles)
VMAL 3 (11.81 Miles)

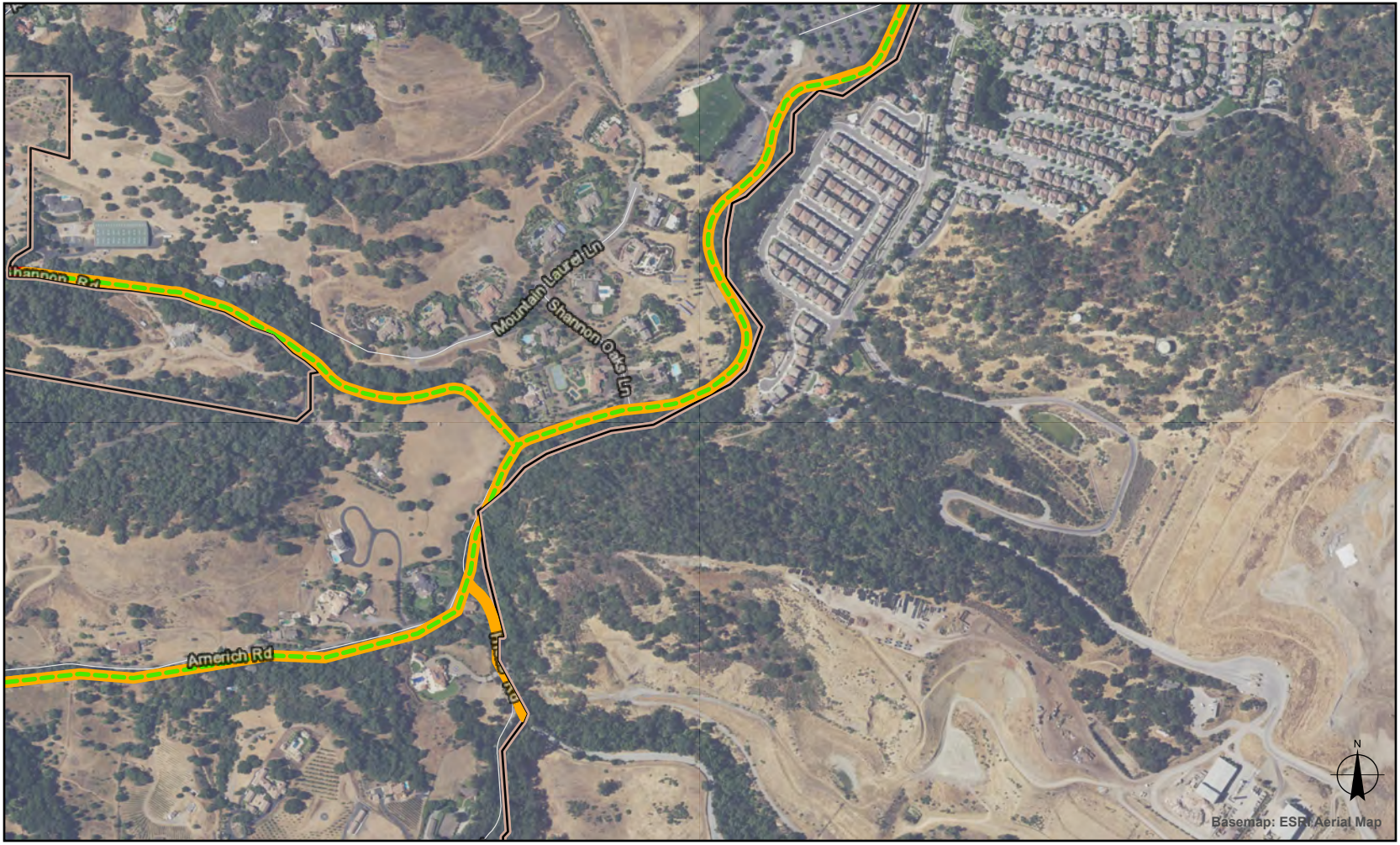


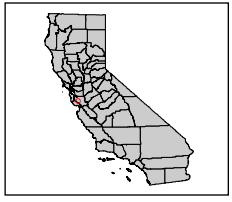
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Scale: 1:9,000

SWCA
ENVIRONMENTAL CONSULTANTS

Map Center: 37.2205°N, 121.9285°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels
VMAL 1 (5.30 Miles)
VMAL 2 (13.98 Miles)
VMAL 3 (11.81 Miles)

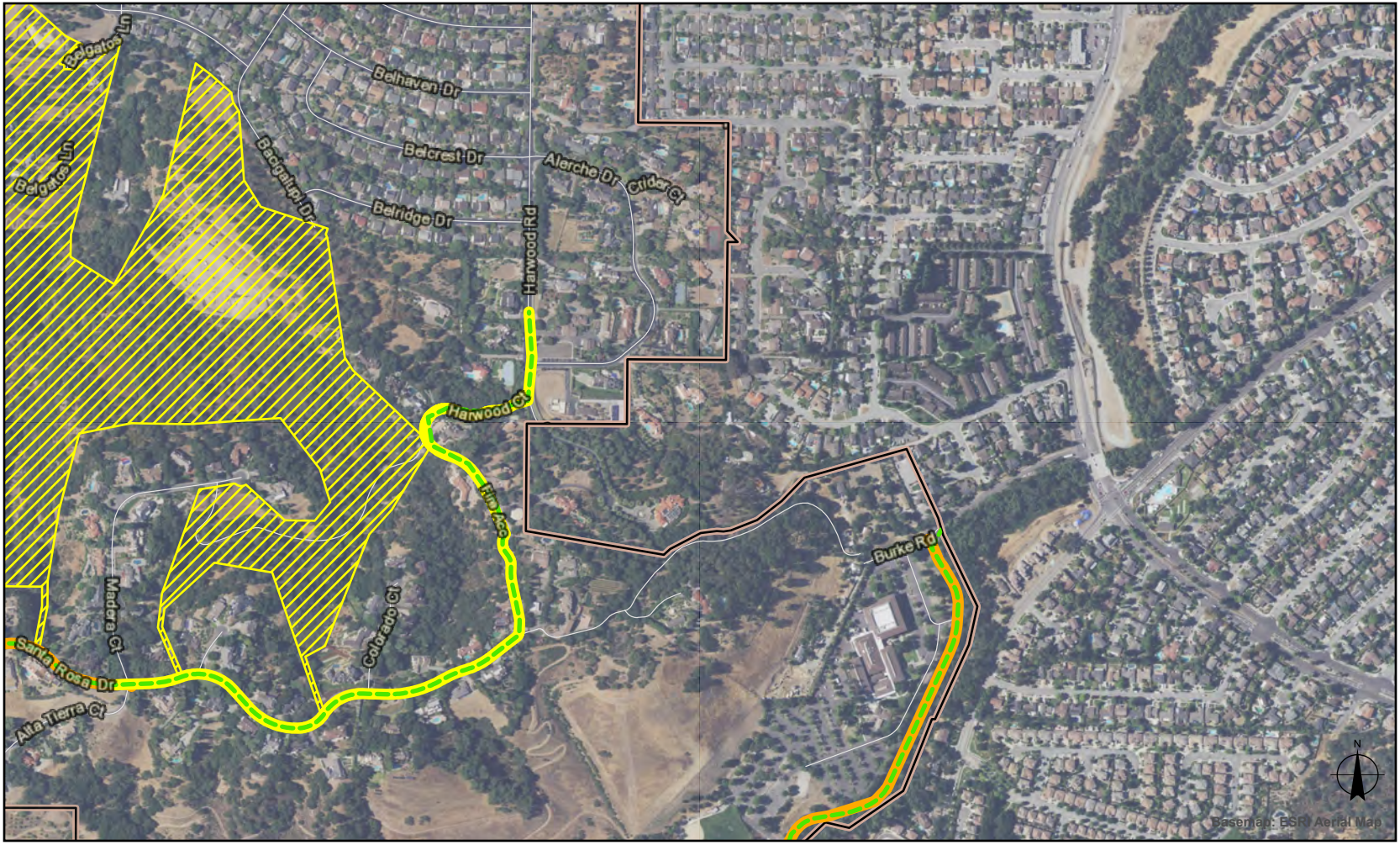


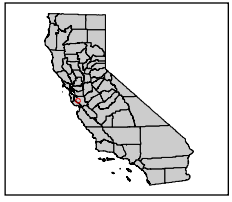
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2174°N, 121.9098°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels

VMAL 1 (5.30 Miles)
VMAL 2 (13.98 Miles)
VMAL 3 (11.81 Miles)

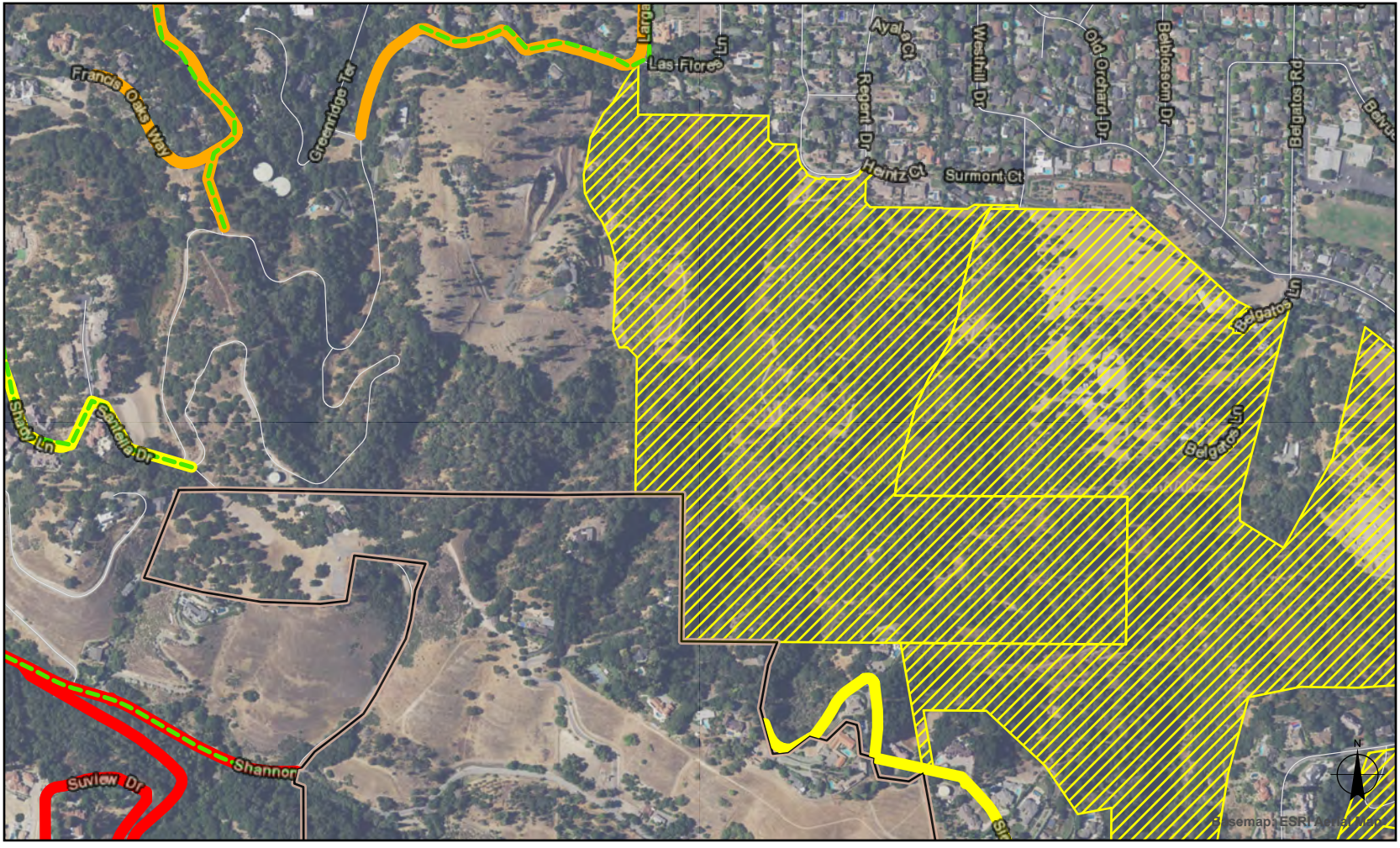


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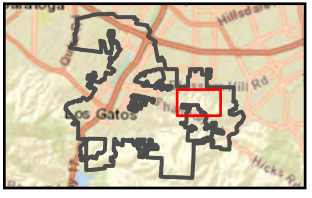




Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels

- VMAL 1 (5.30 Miles)
- VMAL 2 (13.98 Miles)
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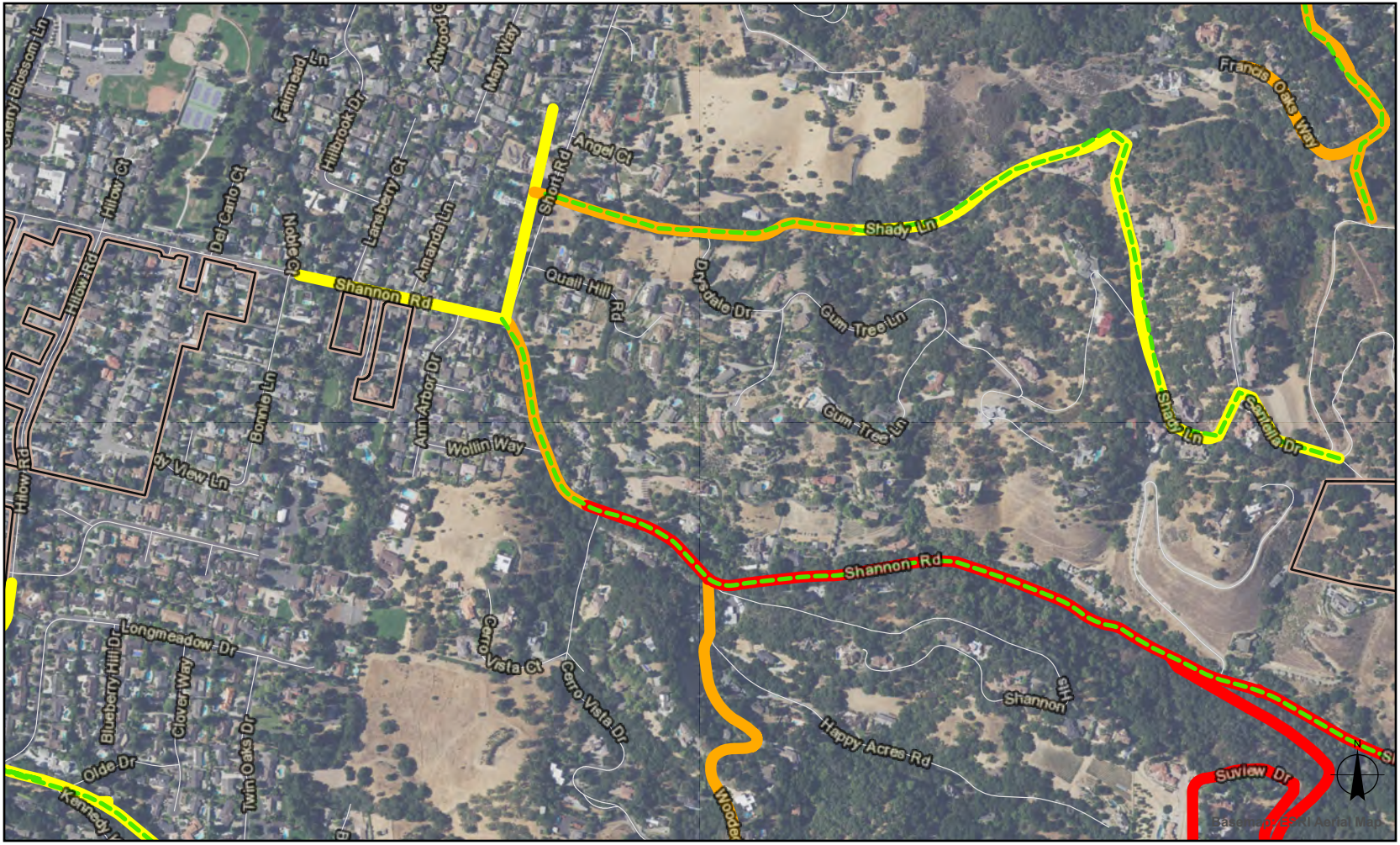


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SWCA ENVIRONMENTAL CONSULTANTS

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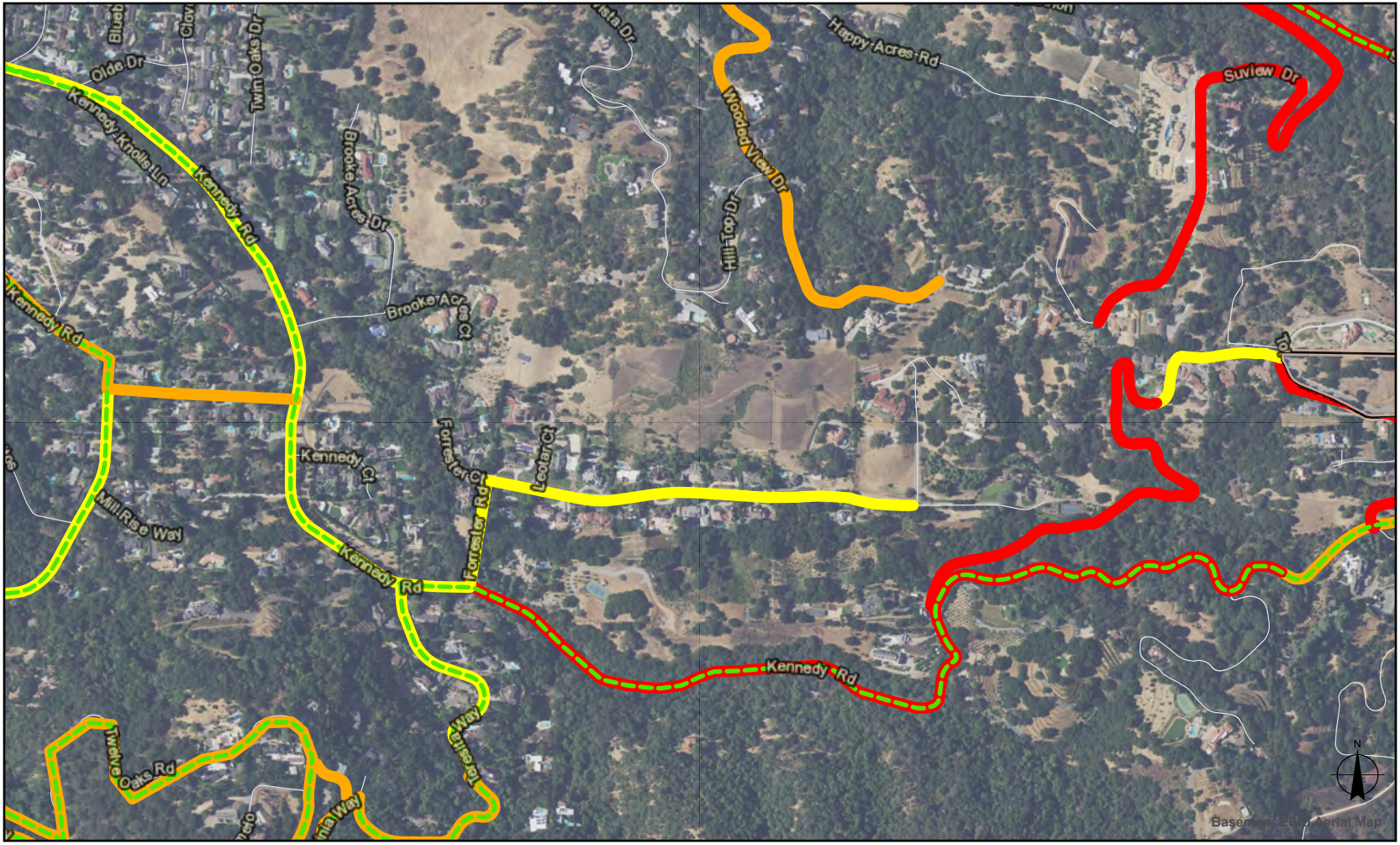
Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

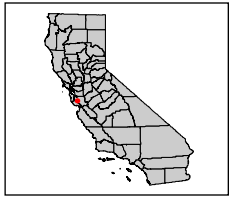
Vegetation Management Action Levels

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- VMAL 2 (13.98 Miles)
- VMAL 3 (11.81 Miles)

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2294°N, 121.9472°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels
VMAL 1 (5.30 Miles)
VMAL 2 (13.98 Miles)
VMAL 3 (11.81 Miles)

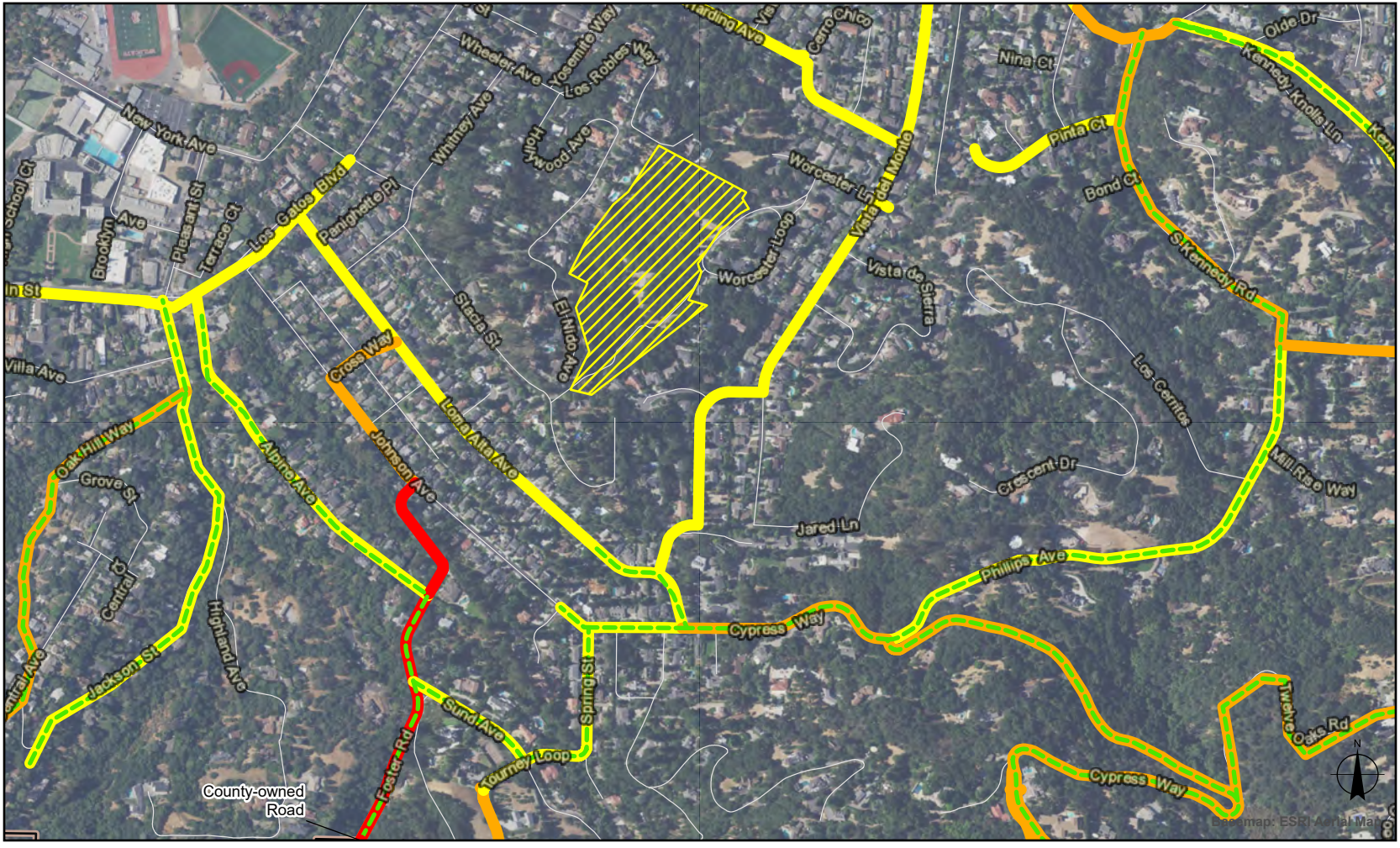


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Scale: 1:9,000

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Map Center: 37.2205°N, 121.9471°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
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Meters
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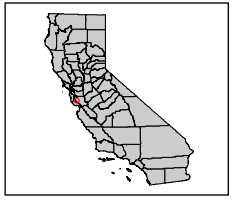
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2196°N, 121.9659°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020


Magneson Loop
Magnes
Shannon Rd
Cherry Blossom Ln
Hillow Ct
Hillow Rd
Endicott Ave
Robin Ln
Los Gatos Blvd
Nino Way
Nino Ave
Albert Dr
Albert Ct
Fisher Ave
George St
Mitchell Ave
Roberts Rd
Forrest Ave
Oak Meadow
Ohlone Ct
Riviera Dr
Avery Ln
Creekside Village Dr
Pine St
Loma Vista
Spencer Ave
Potter Ct
Caldwell Ave
Andre Ct
Templeton Ln
Ferris Ave
Alberto Way
Maggi Ct
Bella Vista Ave
Fillmore Ave
Cem Ave
Los Gatos-Saratoga Rd
Charles St
Wheeler Ave
Yosemite Way
Los Robles Way
Harding Ave
Vista del Campo
Cerro Chico
Nina Ct
Cardinal Ln
Robin Way
Blueberry Hill Dr
Longmeadow
Clover Way
Olde Dr
Kennedy
Rd
N
Esri, HERE, Garmin, FAO, NOAA, USGS, Esri Canada, Esri China (Hong Kong), Esri Korea, Esri (Thailand), Esri Japan, Esri India, Esri Europe, Esri (Middle East), Esri Australia, Esri Africa, Esri China (Hong Kong), Esri Korea, Esri (Thailand), Esri Japan, Esri India, Esri Europe, Esri (Middle East), Esri Australia, Esri Africa, Esri Canada





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels

VMAL 1 (5.30 Miles)
VMAL 2 (13.98 Miles)
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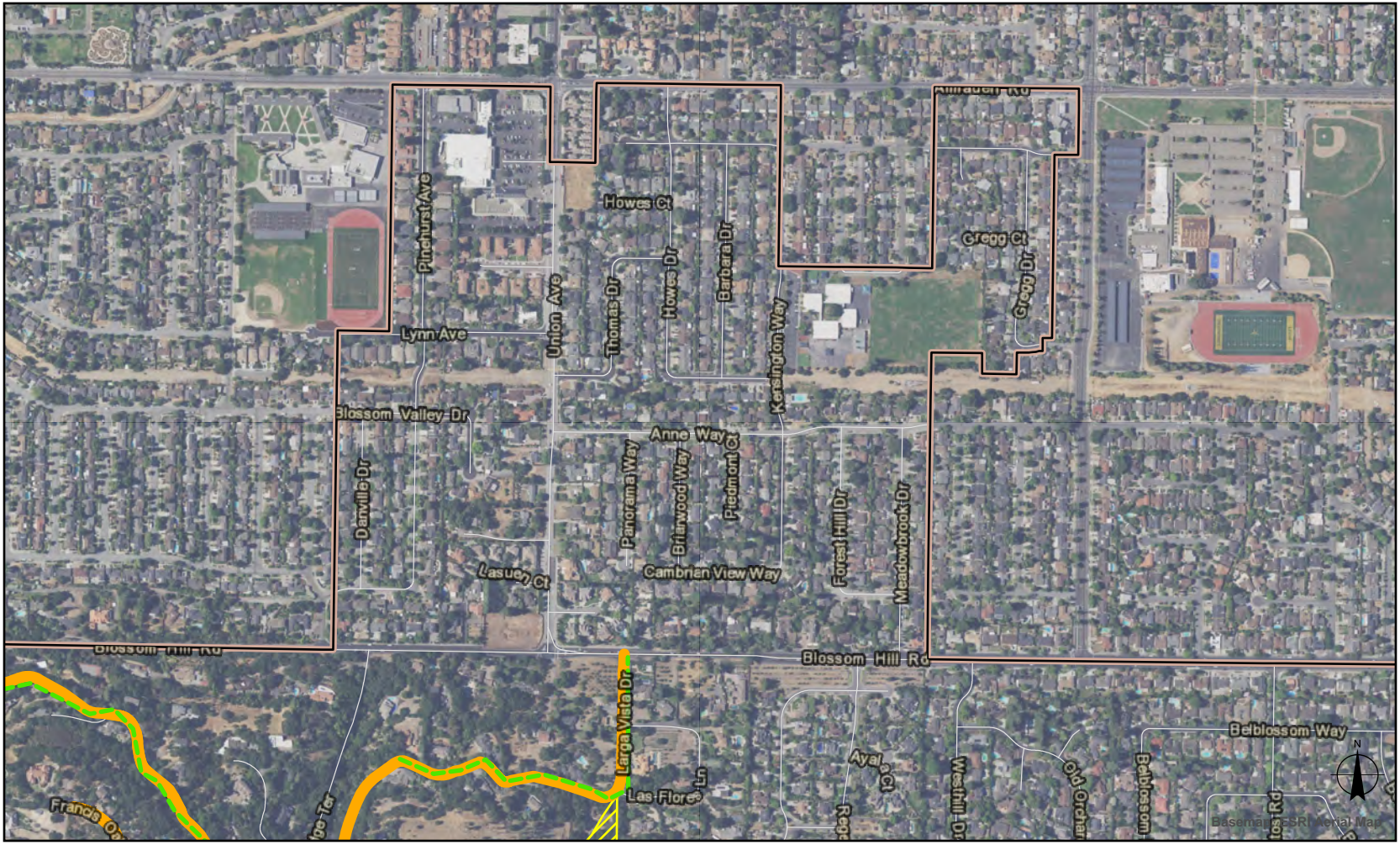


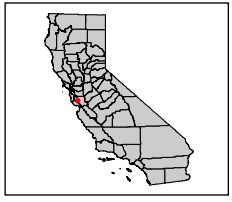
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2304°N, 121.9812°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels

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- VMAL 2 (13.98 Miles)
- VMAL 3 (11.81 Miles)



Meters
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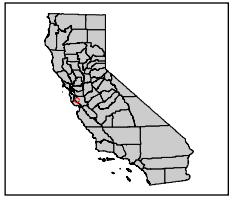
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2391°N, 121.9288°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Basemap: ESRI Aerial Map



- Town of Los Gatos Boundary
- Open Space Area
- Evacuation Routes
- Other Roadways

Vegetation Management Action Levels

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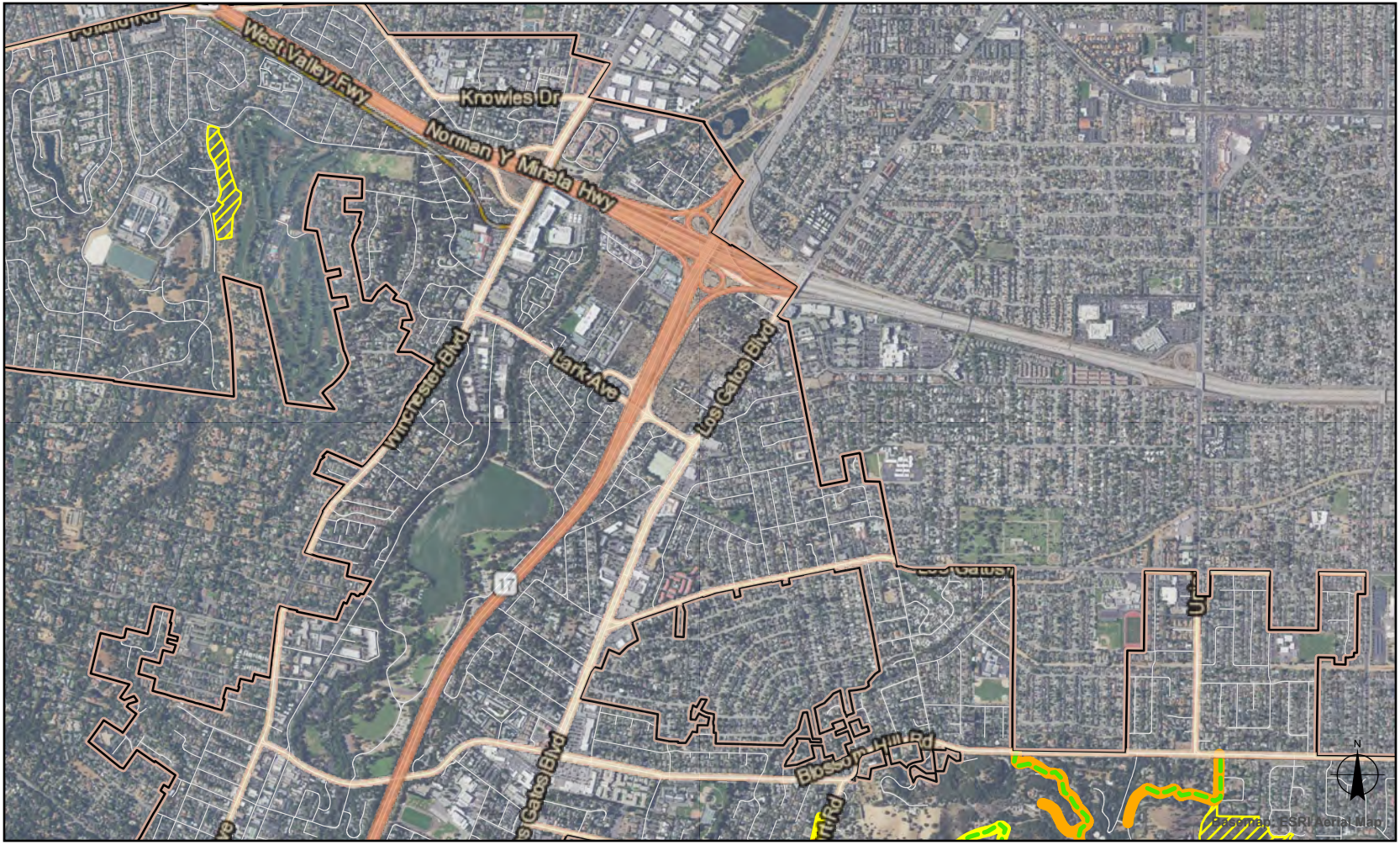


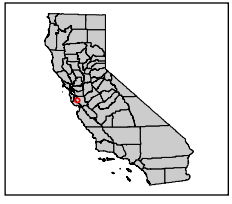
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2589°N, 121.9831°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Vegetation Management Action Levels
VMAL 1 (5.30 Miles)
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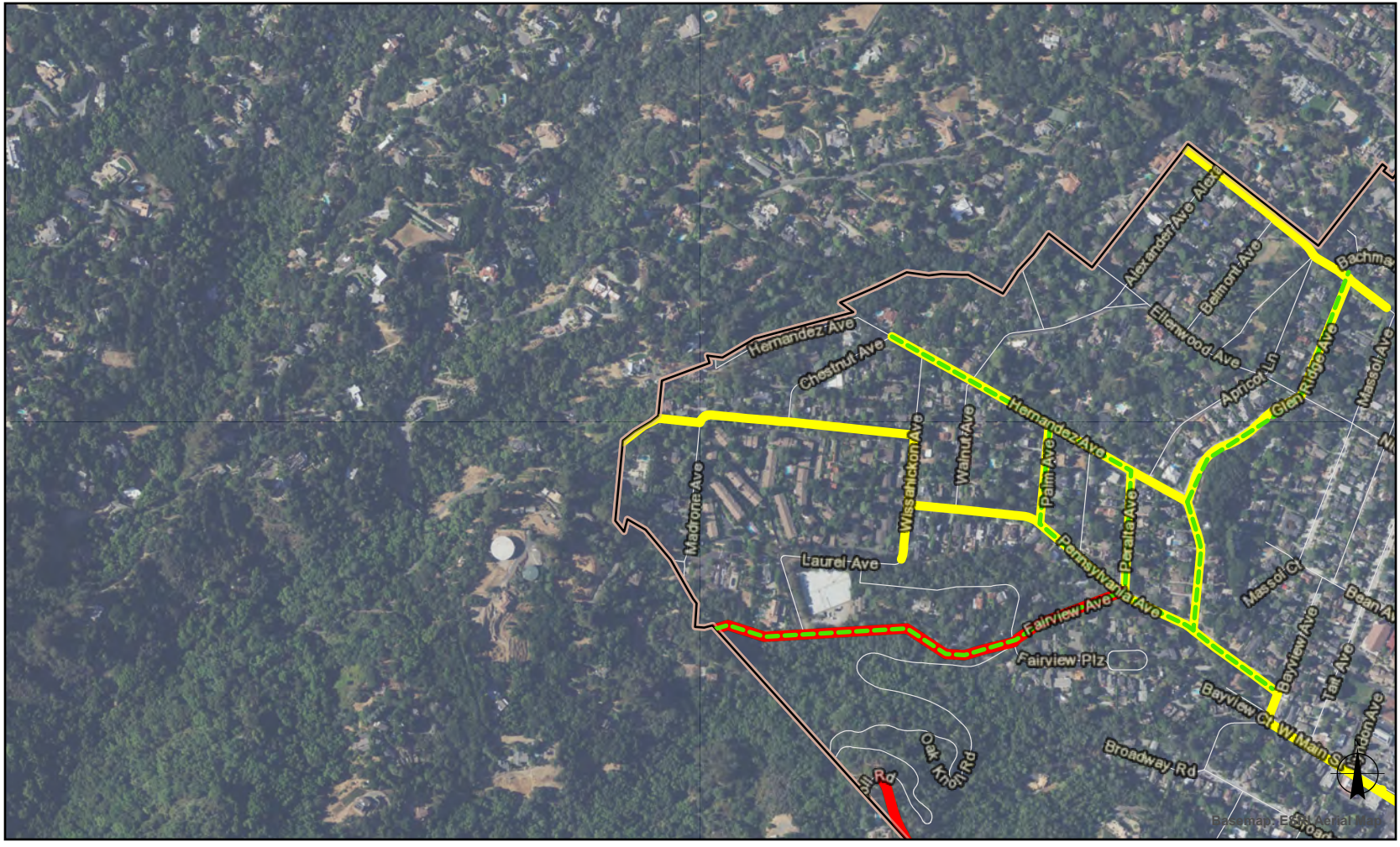
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SWCA
ENVIRONMENTAL CONSULTANTS

Map Center: 37.2489°N, 121.9561°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020

Figure 3: Roadway Priority Levels



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

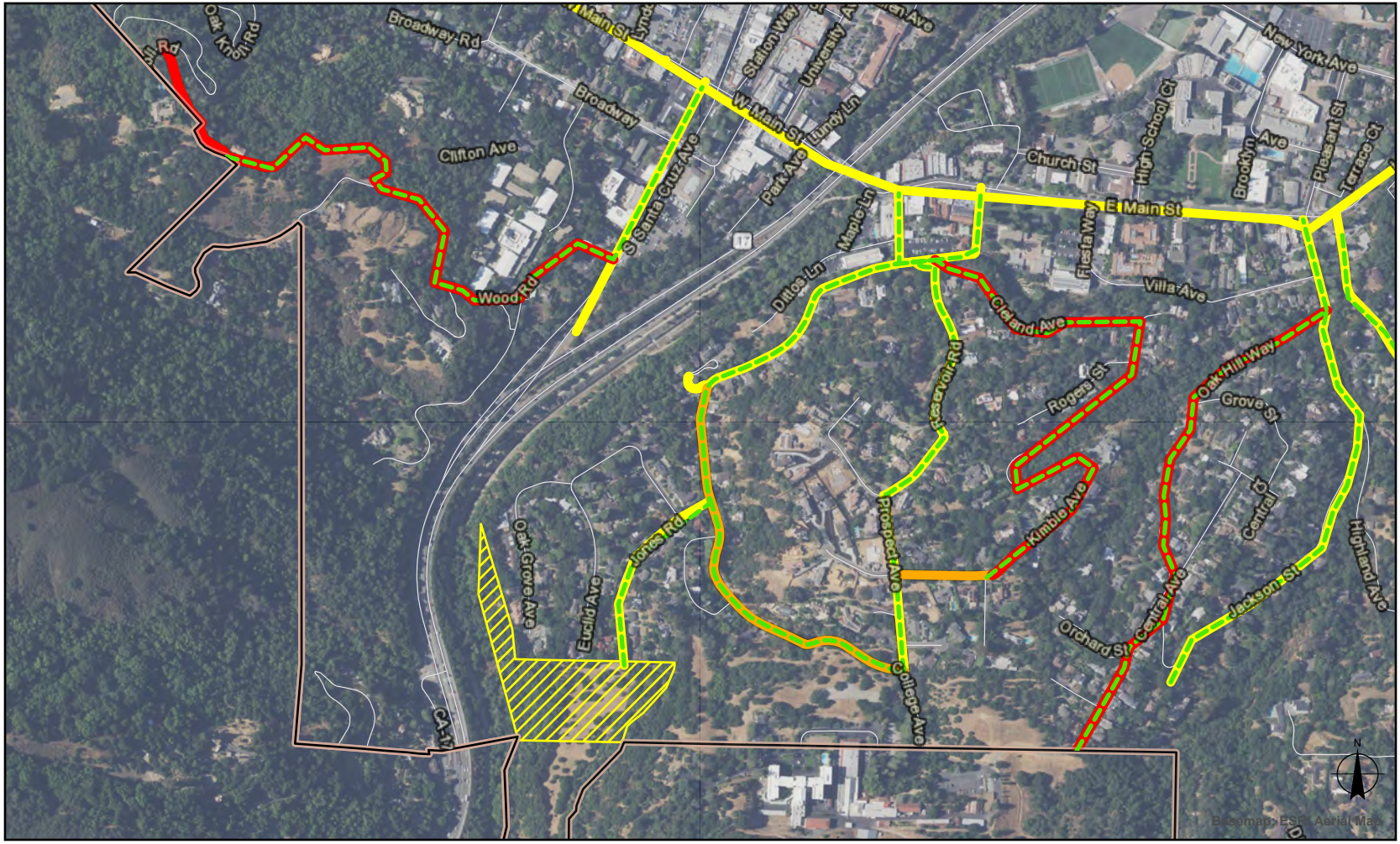
Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2274°N, 121.9958°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
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Priority Levels
Level 1 (11.26 Miles)
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Level 3 (12.45 Miles)

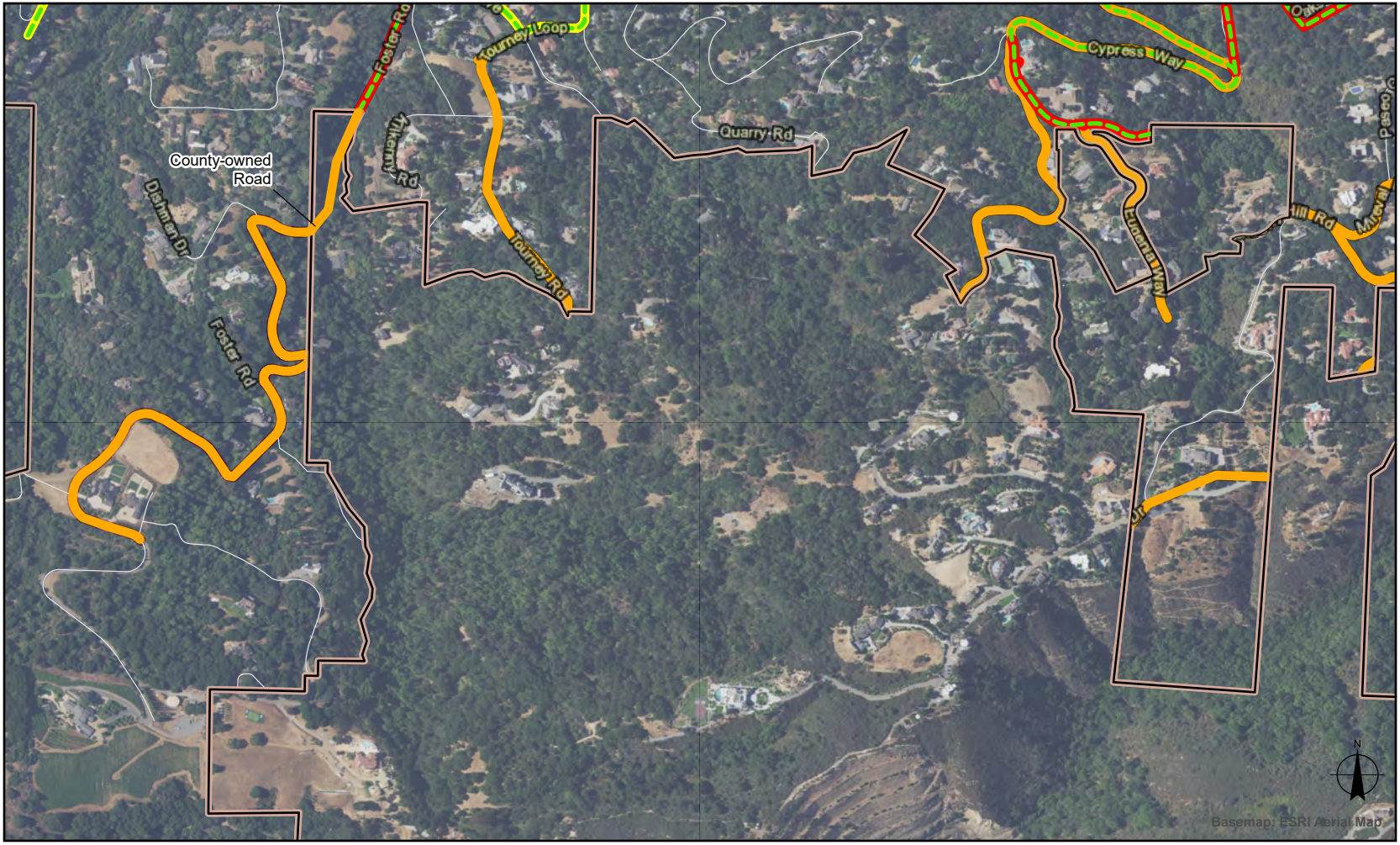


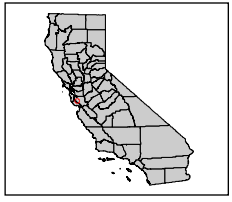
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2183°N, 121.9841°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
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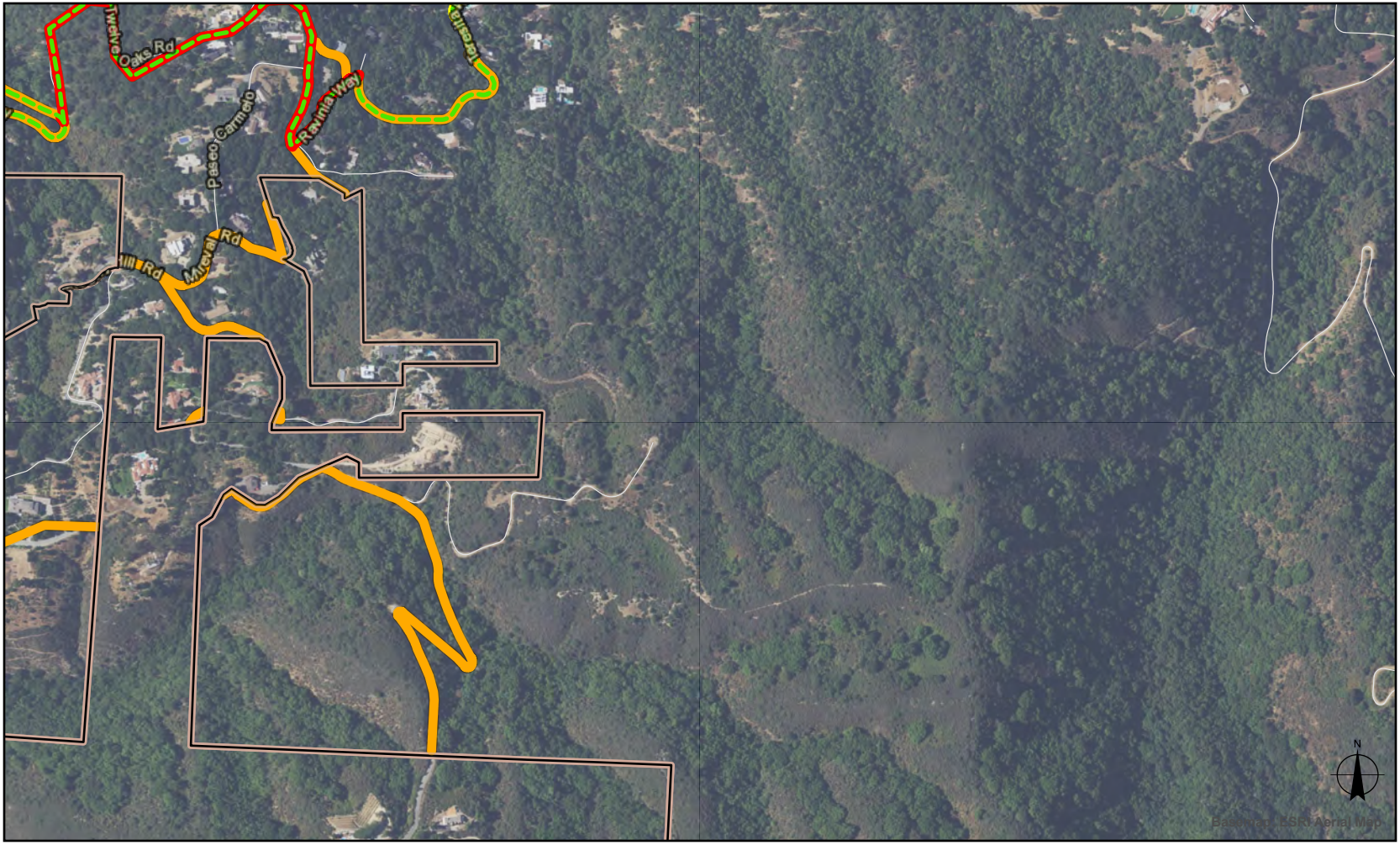


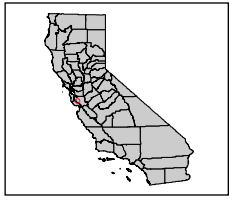
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2103°N, 121.9656°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
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Other Roadways

Priority Levels
Level 1 (11.26 Miles)
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Level 3 (12.45 Miles)

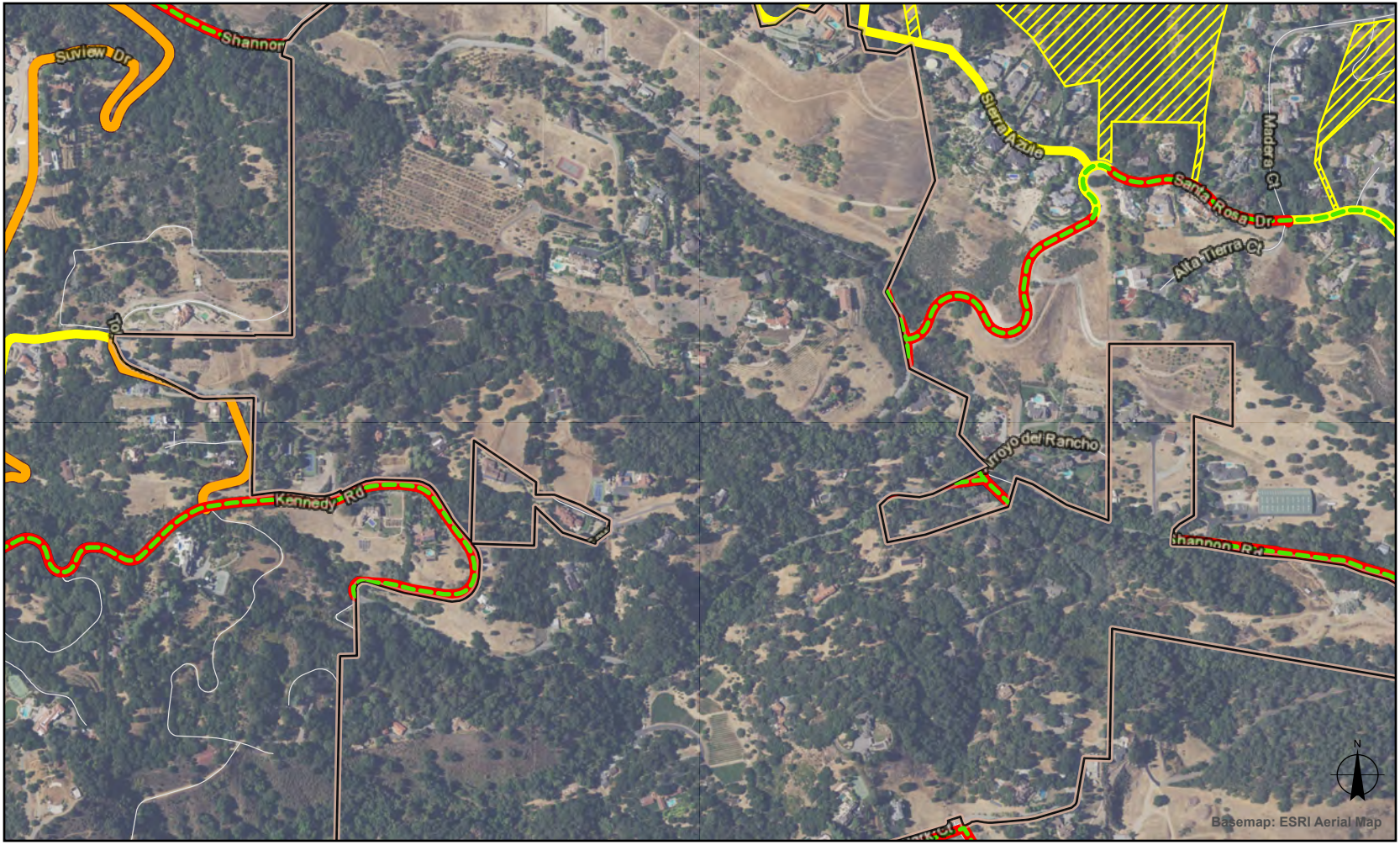


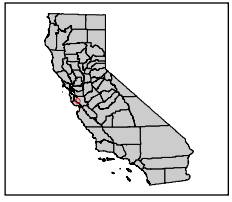
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2113°N, 121.9469°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
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Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

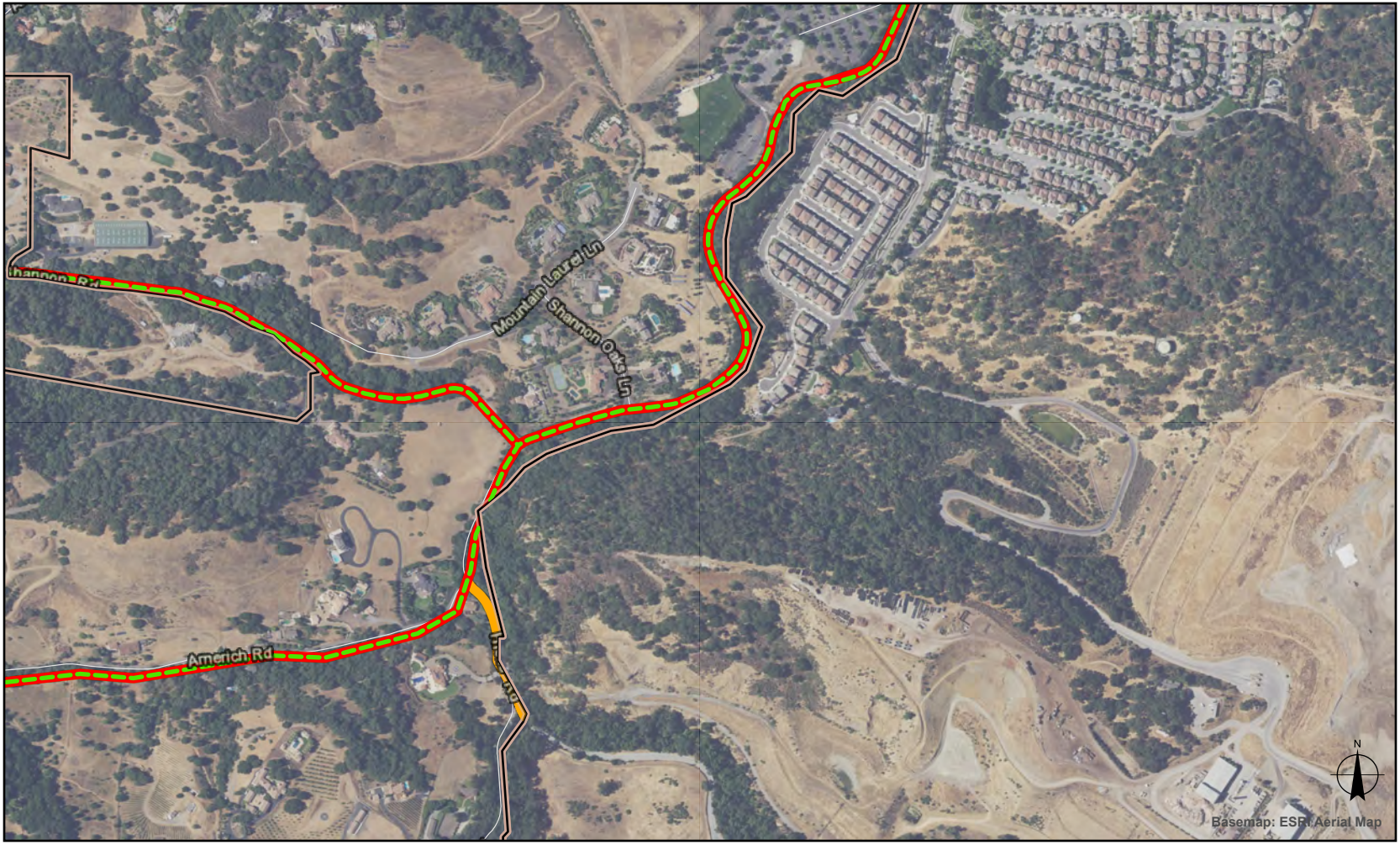


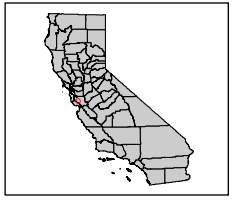
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Scale: 1:9,000

SWCA
ENVIRONMENTAL CONSULTANTS

Map Center: 37.2205°N, 121.9285°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

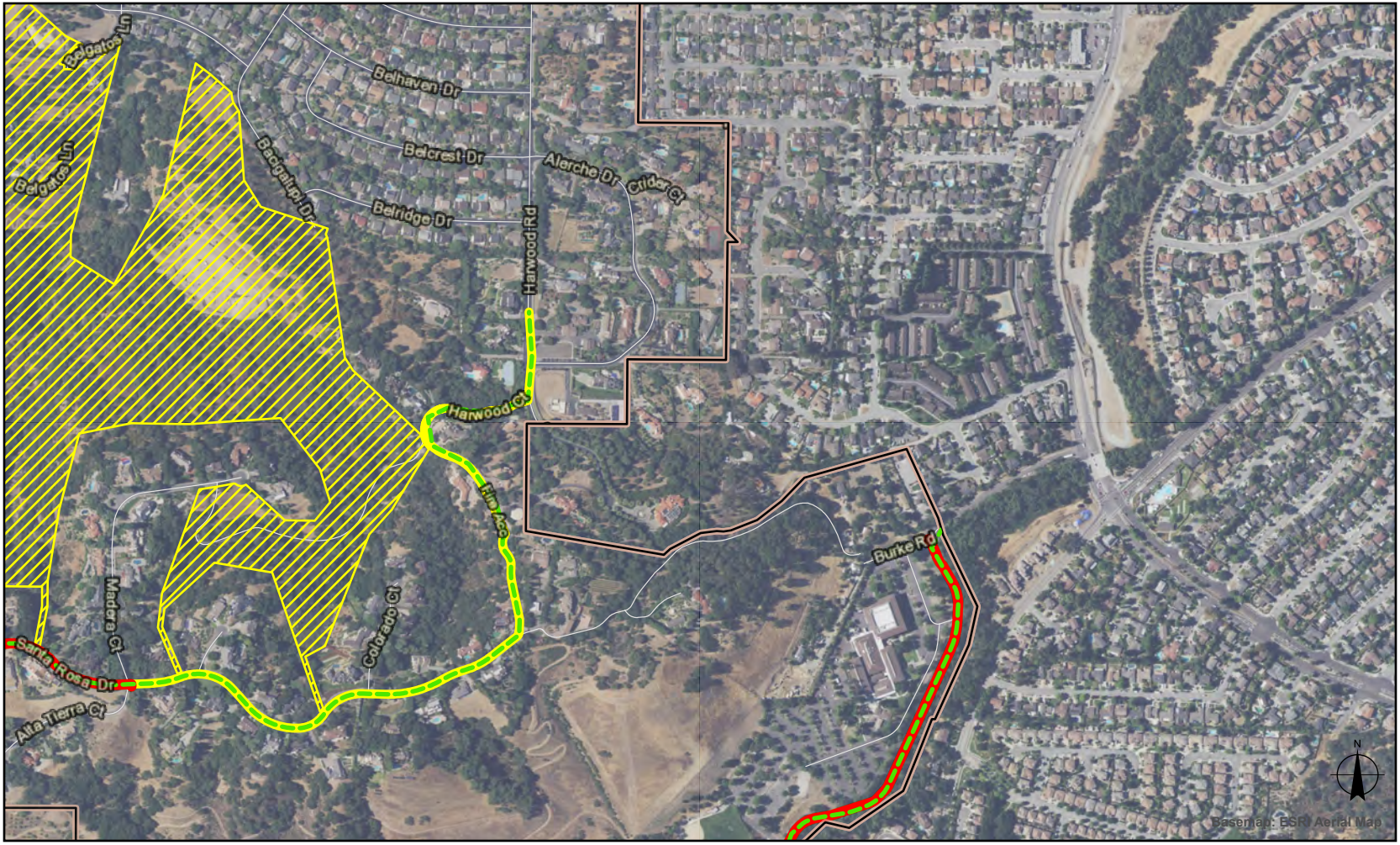


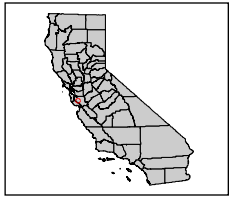
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2174°N, 121.9098°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

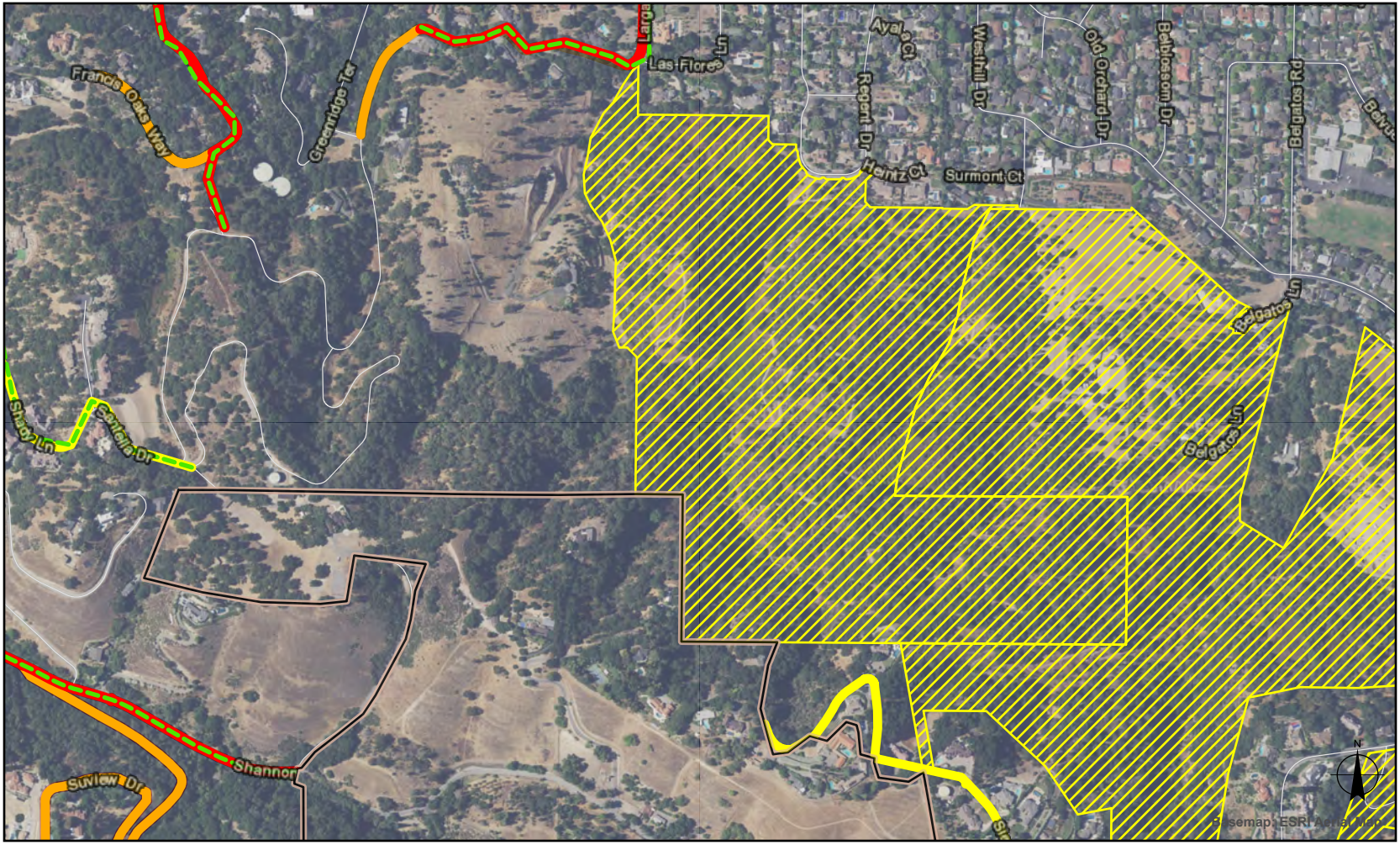


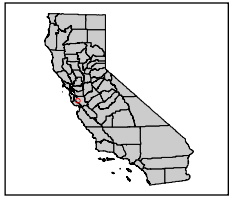
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2268°N, 121.9101°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

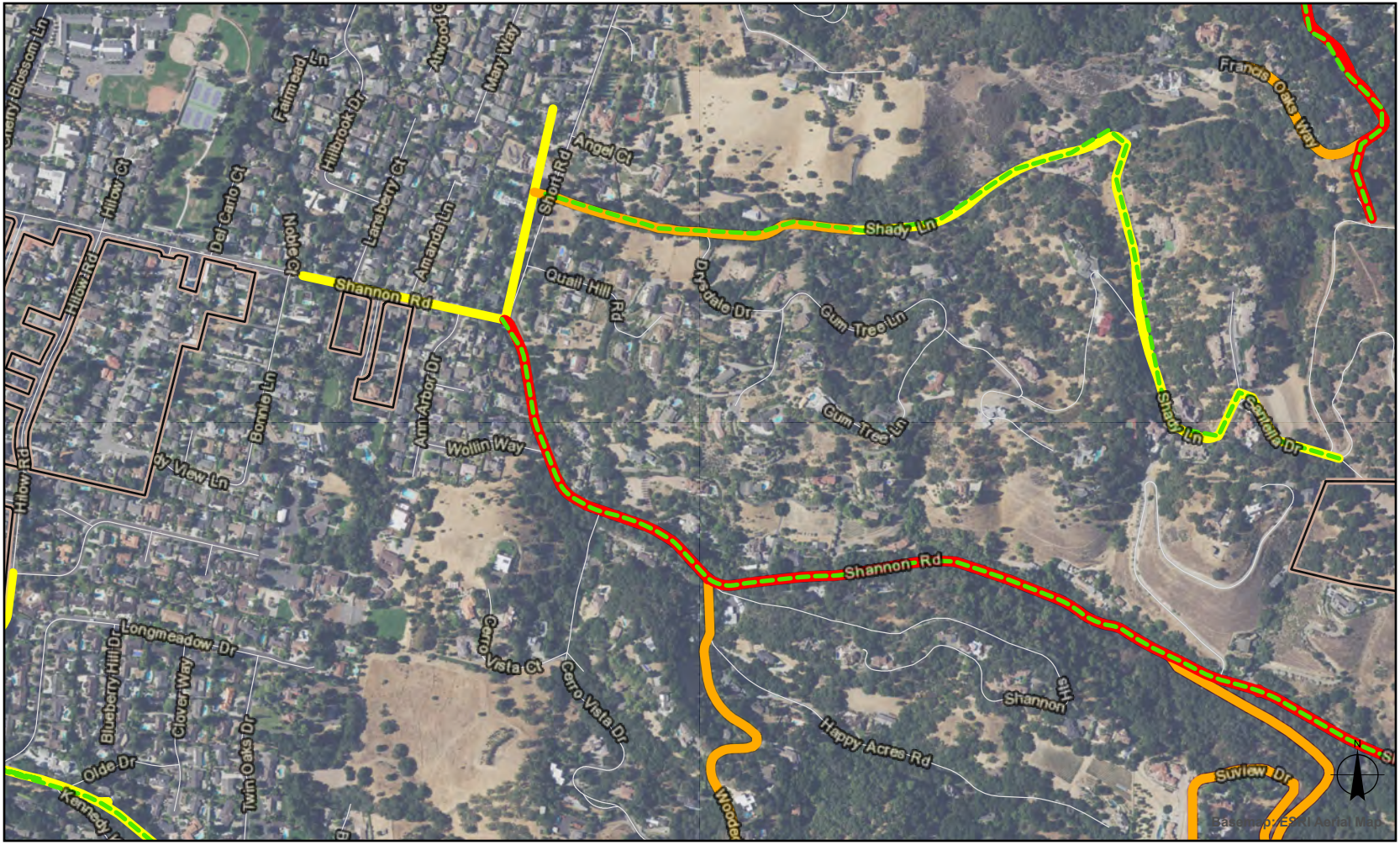


Meters
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Scale: 1:9,000

SWCA
ENVIRONMENTAL CONSULTANTS

Map Center: 37.2298°N, 121.9289°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

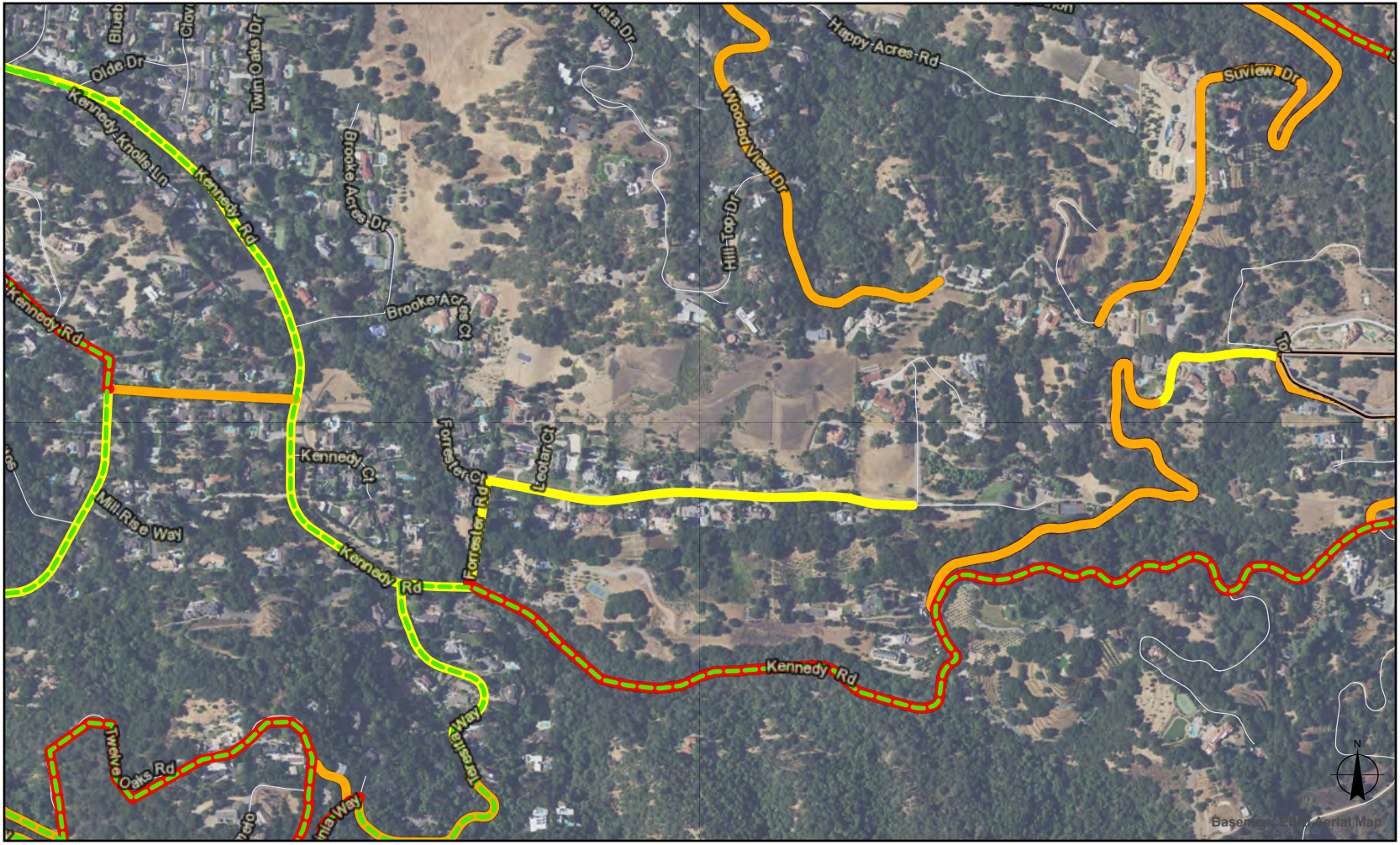
Priority Levels
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Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

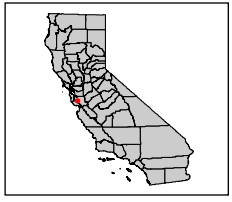
Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2294°N, 121.9472°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

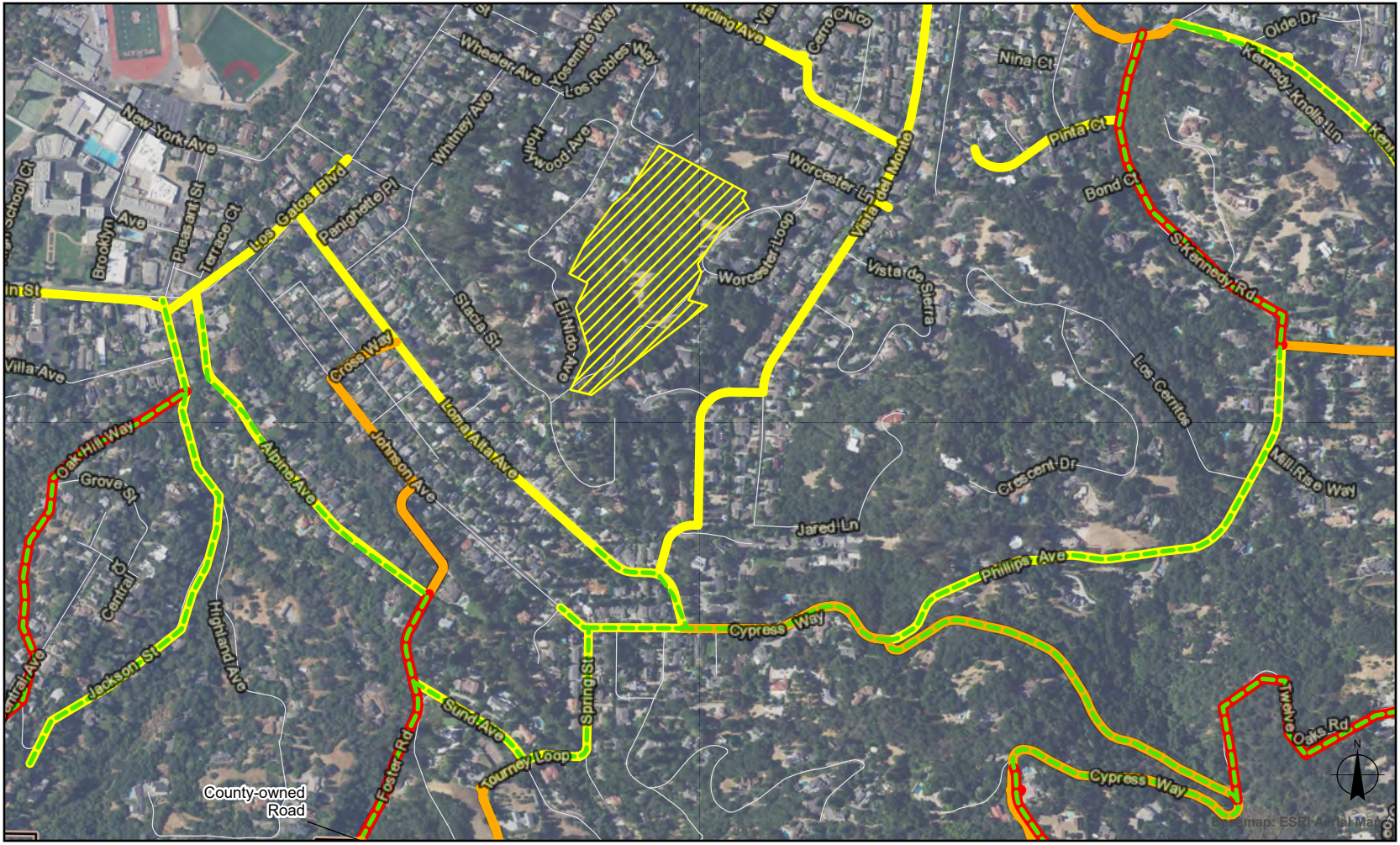


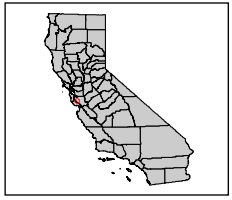
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Scale: 1:9,000

SWCA
ENVIRONMENTAL CONSULTANTS

Map Center: 37.2205°N, 121.9471°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)



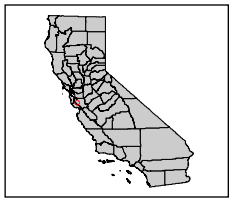
Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2196°N, 121.9659°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

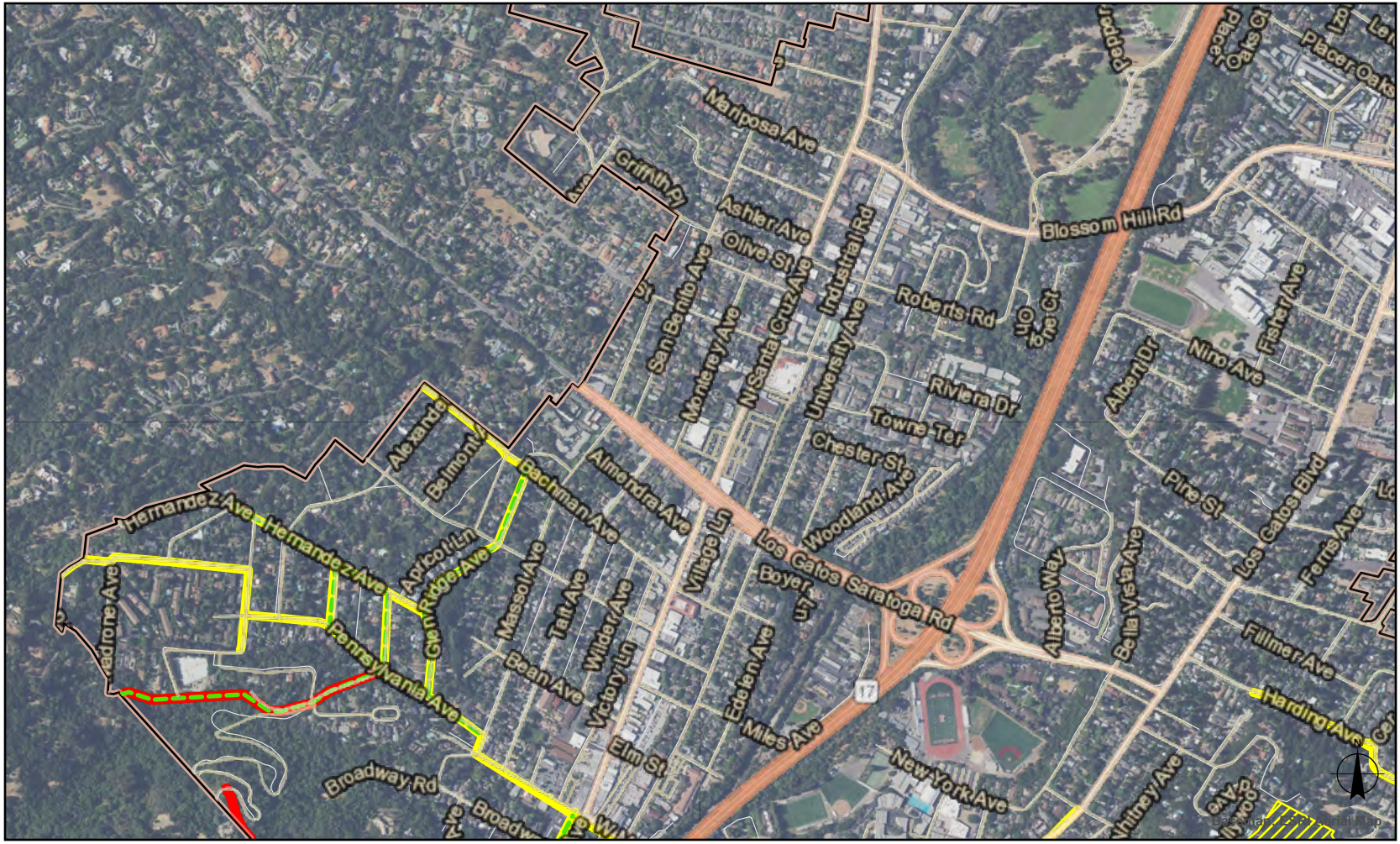


Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.229°N, 121.966°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

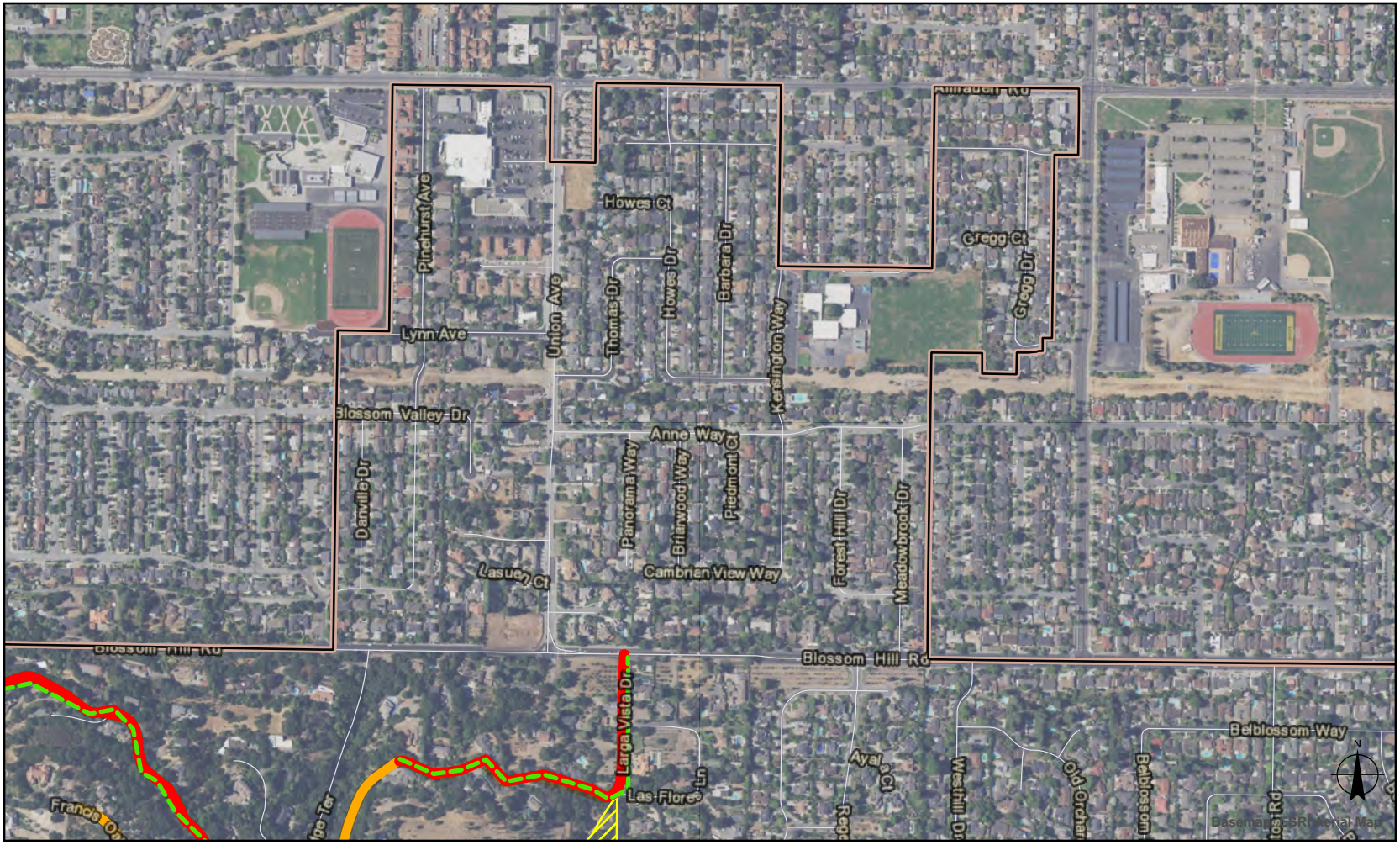
Priority Levels
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Level 2 (7.38 Miles)
Level 3 (12.45 Miles)

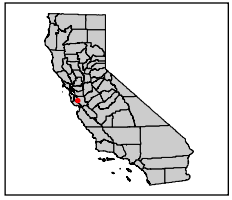
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Scale: 1:14,000

Map Center: 37.2304°N, 121.9812°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020

SWCA ENVIRONMENTAL CONSULTANTS





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)



Meters
0 87.5 175

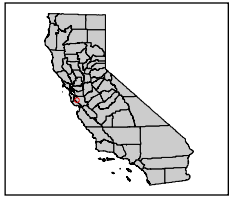
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SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2391°N, 121.9288°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020



Basemap: ESRI Aerial Map



- Town of Los Gatos Boundary
- Open Space Area
- Evacuation Routes
- Other Roadways

Priority Levels

- Level 1 (11.26 Miles)
- Level 2 (7.38 Miles)
- Level 3 (12.45 Miles)

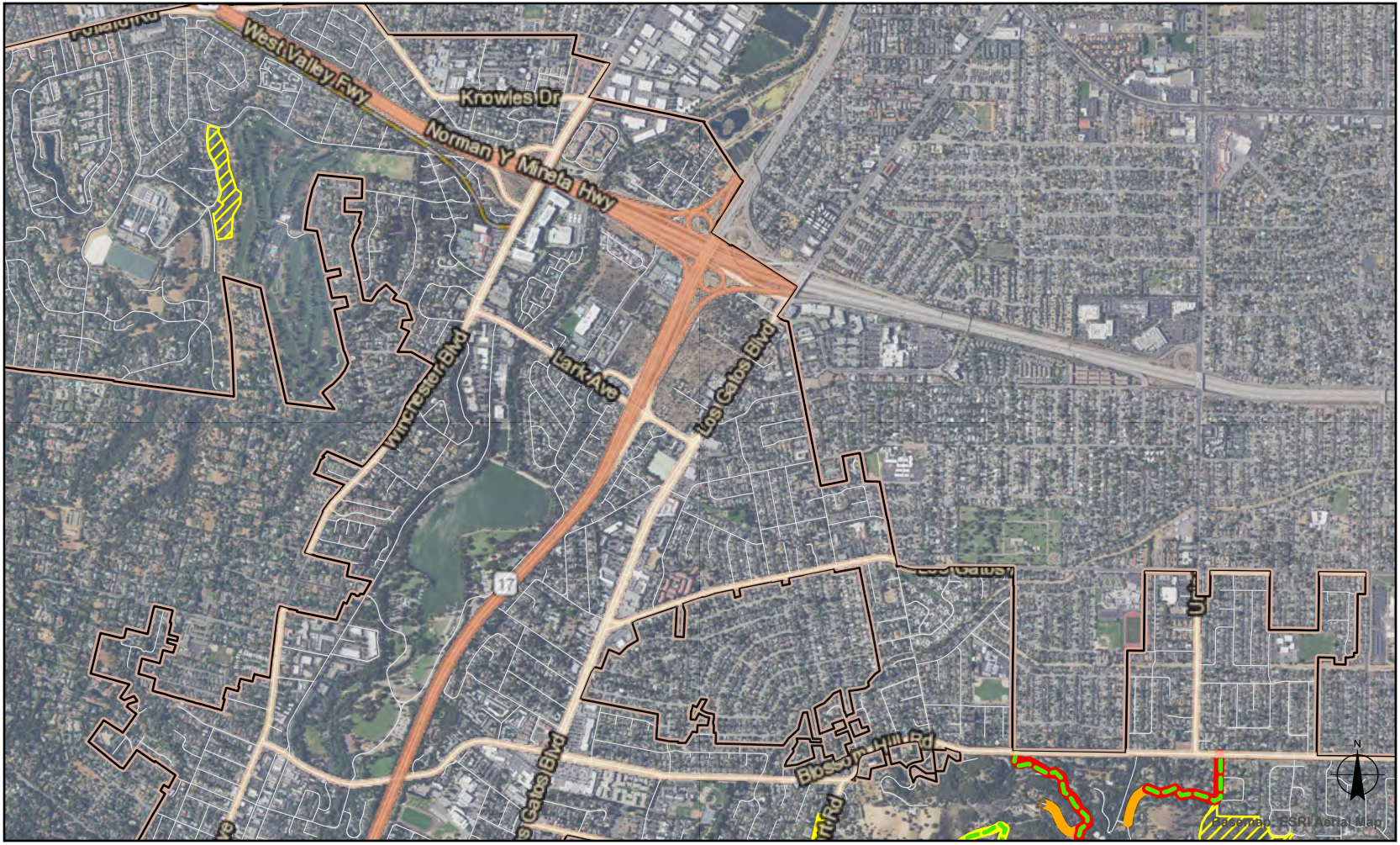


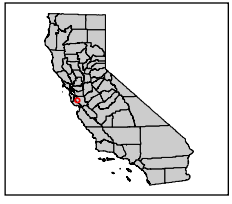
Meters
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Scale: 1:9,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2589°N, 121.9831°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020





Town of Los Gatos Boundary
Open Space Area
Evacuation Routes
Other Roadways

Priority Levels
Level 1 (11.26 Miles)
Level 2 (7.38 Miles)
Level 3 (12.45 Miles)



Meters
0 270 540

Scale: 1:28,000

SWCA ENVIRONMENTAL CONSULTANTS

Map Center: 37.2489°N, 121.9561°W | Santa Clara County, CA | Project Number: 60857| 8/26/2020

AVOIDANCE AND MINIMIZATION MEASURES

The Town's Project design avoids impacts to sensitive resources by selecting work area footprint locations in the least environmentally sensitive areas available.

The Town has incorporated the following general Avoidance and Minimization Measures (AMMs) into the proposed project to minimize impacts to residents as well as potential jurisdictional features, special-status species (including federal and state-listed species), wildlife habitat and movement corridors, and natural communities.

Table 3. Avoidance and Minimization Measures

ID #	Avoidance and Minimization Measure
1	A cultural resources records search was completed for the Town General Plan and resources were not found in areas that will be impacted by the roadways. In addition, only minimal soil disturbance is expected as part of the project. Therefore, cultural and paleontological resource impacts are not anticipated. If during any phase of the project, cultural and/or paleontological resources or human remains are discovered, work will be stopped until the find has been evaluated and the potential significance determined by a qualified professional archaeologist and an appropriate course of action has been recommended.
2	During project activities, all trash that may attract predators shall be properly contained, removed, and disposed of regularly. Following vegetation management activities, trash and debris shall be removed from work areas.
3	Project activities will be designed to avoid significant effects on special-status species that are listed as rare, threatened, or endangered under Federal law or are listed as rare, threatened, endangered, candidate, fully protected, or species of special concern under State law. A desktop review of the California Diversity Database and U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation System has been conducted and a reconnaissance survey of the roadways was completed by SWCA Environmental Consultants in July 2020. a. A qualified biologist will be retained to conduct a training to field personnel on sensitive habitat and species prior to vegetation management work. b. A qualified biologist will be engaged prior to roadway work to review the work locations. The biologist will be retained to survey the project area for special-status species if work occurs adjacent to suitable habitat. c. A qualified biologist will be retained to conduct a nesting bird survey if work occurs during the nesting bird season (generally March 1 through September 15). If a nesting bird is found, the biologist will provide measures to avoid impacting the species, such as implementing an appropriate no disturbance buffer.
4	If special-status wildlife is encountered during project activities, it will be unharmed, allowed to leave the area on its own volition, or the appropriate regulatory agency (i.e., California Department of Fish and Wildlife [CDFW] or USFWS) will be contacted to determine the appropriate action to relocate the species.
5	If work will impact riparian vegetation, the Town will consult the Regional Water Quality Control Board and CDFW, as appropriate. The following areas contain riparian resources that may need to be trimmed. These

potential resources were identified using the National Hydrologic Dataset mapping tool and were verified in the field as shown in the table below. Areas identified with riparian vegetation include:

Road Name	**Extent of Riparian Vegetation**
Almendra Avenue	No riparian vegetation observed.
Blackberry Hill Road	No riparian vegetation observed.
Foster Road	No riparian vegetation observed.
Hernandez Avenue	No riparian vegetation observed.
Hicks Road	Well-developed riparian corridor consisting of willow, walnut, and western sycamore between town boundary near Wagner Road and town boundary near Burke Ave. The majority of this vegetation is within 10' of the road.
Kennedy Road	Non-contiguous canopy of individual western sycamore trees situated on the north side of the road between Forrester Road and Coporate Limit. Likely supported by an ephemeral roadside ditch/ drainage. Some bed and bank observed near roadway.
Shannon Road	Limited willows and walnut riparian vegetation between Cerro Vista Court and midway between Suview Drive / Sky Lane. Semi-contiguous canopy in areas. Supported by an ephemeral ditch/drainage. Additional willow riparian vegetation observed at intersection with Kennedy Road. Some semi-contiguous and non-contiguous willow and walnut riparian canopy between Kennedy and Hicks Road. Supported by an ephemeral ditch/drainage.
Short Road	No riparian vegetation observed.
Talt Avenue	No riparian vegetation observed.
University Avenue	No riparian vegetation observed.
Victory Lane	No riparian vegetation observed.

6 Vegetation within a riparian area will not be removed. Only trimming will occur in these areas above and adjacent to roadways. .

7 Heavy equipment operations will not be conducted on slopes greater than 50 percent or in any slide or unstable areas.

8 No work will occur in standing water associated with a stream or creek in the project area.

9	During VMP implementation, fuel and hazardous materials will be kept at 100 feet from waterbodies to provide protection from accidental leaks or spills.
10	All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 100 feet from potentially jurisdictional drainages.
11	Prior to the onset of work, the Contractor shall ensure that there is a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills, and of the appropriate measures to take should a spill occur.
12	Soil and trimmed or chipped vegetation will not be placed where it could enter a waterbody or cover vegetation.
13	Herbicides will not be used as part of the project.
14	Project activities will be conducted to avoid introducing or spreading invasive plant species. The following are CAL-IPC Best Management Practices to prevent the spread of invasive species:[13] a. Provide prevention training to staff and contractors prior to starting work. b. Schedule activities to minimize potential for introduction and spread of invasive plants. c. Designated waste disposal areas for invasive plant materials and contain invasive plant material during transport. d. Plan travel routes to avoid areas infested with invasive plants. e. Clean tools, equipment, vehicles and animals before transporting materials and before entering and leaving worksites. f. Clean clothing, footwear and gear before leaving infested areas. g. Carry portable cleaning tools that can be used without water. h. Prepare worksites to limit the introduction and spread of invasive plants. i. Minimize soil and vegetation disturbance. j. After activities, monitor worksites for invasive plants. k. Prevent invasive plant contamination of project materials when stockpiling and during transport.
15	When possible, project activities will ensure that fuel breaks or tree removals are blended into the surrounding environment.
14	Idling of construction vehicles and equipment shall be minimized to no more than three minutes to the extent feasible. Construction foremen shall include briefing crews on vehicle use as part of pre-construction site meetings. These briefings shall include discussion of “common sense” vehicle use.
16	Prepare and implement a Traffic Control Plan to describe procedures to guide traffic (such as signage and flaggers), safeguard construction workers, provide safe passage of traffic, and minimize traffic impacts, as necessary, through the duration of the vegetation management project. Coordinate with work with local emergency services providers, as necessary, to ensure that emergency vehicle access and response is not impeded.

[13] CAL IPC. 2012. *Preventing the Spread of Invasive Plants. Best Management Practices for Land Managers (3rd ed.).* Cal-IPC Publication 2012-03. California Invasive Plant Council. Berkeley, CA. Available at: https://www.cal-ipc.org. Accessed July 28, 2020.

17	Per the Town of Los Gatos Noise Ordinance (Section 16.20.035), vegetation management activities will be limited to the hours between 8:00 am and 6:00 pm Monday through Friday and 9:00 am to 4:00 pm on Saturday.[14]
18	The Project will maintain fire-safe working conditions and best management practices. These will include: a. All work vehicles will be required to carry fire suppression equipment. Workers will be trained in the use of equipment for incipient stage fire suppression. b. No smoking is allowed in any areas of vegetation management activities along Town roadways. All vehicle parking will be restricted to paved or graveled surfaces. c. Require spark arrestors on all off-road equipment. d. Monitor weather and fire danger on a daily basis. During Red Flag Warnings, a crew member will be assigned to fire watch for each separate and distinct active work area.

[14] Town of Los Gatos. 1991. *Town of Los Gatos Municipal Code. Chapter 16. Noise*. Available at: https://library.municode.com/ca/los_gatos/codes/code_of_ordinances?nodeId=CO_CH16NO. Accessed July 28, 2020.

EXEMPT STATUS

The project qualifies for a California Environmental Quality Act (CEQA) Statutory Exemption under Article 18, *Section 15269(c) – Emergency Projects* exemption. In addition, even if the project is not statutorily exempt, the project would qualify for a Class 1 Categorical Exemption under Article 19 (Categorical Exemptions) of the State CEQA Guidelines.

Reason Why the Project is Statutorily Exempt

Article 18 (Statutory Exemptions) of the State CEQA Guidelines lists types of projects that are exempt to the requirements of CEQA. This section provides an analysis of why this project meets the conditions for a *Section 15269(c) – Emergency Projects* exemption.

15269 Emergency Projects

Section 15269(b) and (c) consist of:

(b) Emergency repairs to publicly or privately-owned service facilities necessary to maintain service essential to the public health, safety or welfare. Emergency repairs include those that require a reasonable amount of planning to address an anticipated emergency; and

(c) Specific actions necessary to prevent or mitigate an emergency. This does not include long-term projects undertaken for the purpose of preventing or mitigating a situation that has a low probability of occurrence in the short-term, but this exclusion does not apply (i) if the anticipated period of time to conduct an environmental review of such a long-term project would create a risk to public health, safety or welfare, or (ii) if activities (such as fire or catastrophic risk mitigation or modifications to improve facility integrity) are proposed for existing facilities in response to an emergency at a similar existing facility.[15]

Statutory Exemption Analysis

Section 15269(b) of the CEQA Guidelines specifies that the exemption applies to *"emergency repairs to publicly or privately-owned service facilities necessary to maintain service essential to the public health, safety or welfare"*. Section 15269(c) of the CEQA Guidelines specifies that the CEQA statutory exemption for emergency projects exempts specific actions necessary to prevent or mitigate an emergency, including

[15] *CCR Title 14, Division 6, Chapter 3, Article 18. Statutory Exemptions, Section 15269 Emergency Projects.* Available at: https://govt.westlaw.com/calregs/Document/IF7A5824AA17948DA8DD8EBA570583BCB?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)#:~:text=(a)%20Projects%20to%20maintain%2C,with%20Section%208550%20of%20the. Accessed July 28, 2020.

where *"fire or catastrophic risk mitigation or modifications to improve facility integrity are proposed for existing facilities in response to an emergency at a similar existing facility.*"

The proposed Project meets these conditions. The proposed Project would be statutorily exempt from environmental review under CEQA because it consists of vegetation management along roadways which would be used for both emergency access and evacuation in the event of a wildfire. The roadways do not currently meet the emergency response requirements of a minimum clear width of 20 feet and a minimum clear height of 13 feet 6 inches. In addition, areas within 10 feet of the roadways have not been cleared of non-fire-resistant vegetation.

This statutory exemption applies to the whole of the roadside vegetation management operation because the project is being implemented as fire or catastrophic risk mitigation to improve the integrity of the access roads, thereby improving both access for fire equipment and evacuation safety for residents. This statutory exemption is applicable if measures are *"in response to an emergency at a similar existing facility"* and if there is substantial evidence in the record to prove an emergency situation exists. Because of the increasing danger of wildfire in the WUI in California, the Town intends to begin performing roadside vegetation management activities as soon as possible and before the peak of the 2020 fire season occurs in order to reduce the vulnerability of its citizens to wildfire.

Analysis of the Fire and Resource Assessment Program (FRAP) fire history database shows recurring years with high wildfire activity (in terms of area burned) in the Bay Area. Prior to 2017, the peak year was 1964.[16] The North Bay fires of October 2017 burned more than twice the area of any previous year, following close on the heels of the large and destructive Lake County fires of 2015. As of 2018, six of the top 20 most destructive fires in California history (in terms of buildings lost) have occurred in the Bay Area.[17]

There is evidence to show that rising temperatures associated with climate change are increasing fire activity in the San Francisco Bay Area. There is also evidence that suggests fire risk is increased where development expands in the WUI.[18],[19] Warming temperatures combined with expansion of the WUI are

[16] CalFire. 2020. *Fire and Resources Assessment Program Database.* Available at: http://frap.fire.ca.gov/data/frapgisdata-sw-fireperimeters_download. Accessed July 30, 2020.

[17] State of California Office of Planning and Research, California Energy Commission, California Natural Resources Agency. 2019. *California's Fourth Climate Change Report. San Francisco Bay Area Region Report.* Available at: https://www.climateassessment.ca.gov/regions/. Accessed July 30, 2020. Pp. 27-30.

[18] *California Governor Office of Emergency Services (OES). 2018. 2018 State of California Hazard Mitigation Plan. Available at: https://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning/state-hazard-mitigation-plan. Accessed, July 30, 2020.*

[19] State of California Office of Planning and Research, California Energy Commission, California Natural Resources Agency. 2019. *California's Fourth Climate Change Report. San Francisco Bay Area Region Report.* Available at: https://www.climateassessment.ca.gov/regions/. Accessed July 30, 2020.

projected to increase fire risk in most of the Bay Area including the Town. Wildfire vegetation management is recognized as an important strategy for managing future fire risk to people and structures.

Categorical Exemption Analysis

Article 19 (Categorical Exemptions) of the State CEQA Guidelines lists classes of projects that are exempt to the requirements of CEQA. This section provides an analysis of why this project also meets the conditions for a *Class 1 – Existing Facilities* exemption along with the reasons why none of the possible exceptions to Categorical Exemptions, found in *Section 15300.2 Exceptions*, apply to this Project. The statutory language of each condition and possible exception is printed in italics below, followed immediately by the Project-related analysis for each condition and exception.

15301 Existing Facilities. Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of use.

15301(c) consists of "Existing highways and streets, sidewalks, gutters, bicycle and pedestrian trails, and similar facilities (this includes road grading for the purpose of public safety, and other alterations such as the addition of bicycle facilities, including but not limited to bicycle parking, bicycle-share facilities and bicycle lanes, transit improvements such as bus lanes, pedestrian crossings, street trees, and other similar alterations that do not create additional automobile lanes)

Under this exemption, maintenance of existing streets is authorized for the purpose of public safety.

The proposed Project meets this condition. The proposed project would be categorically exempt from environmental review under CEQA because it consists of vegetation management activities over existing streets to meet current standards of public safety and access. The project is required to achieve emergency access standards for roadways of 20 feet horizontal clearance and 13 feet 6 inches vertical clearance, as well clearance of non-fire-resistive vegetation within 10 feet of the roadways.

Although the activities will occur in some environmentally sensitive areas (where roads cross riparian areas) protection measures have been incorporated into the project to reduce the potential for impacts. Project activities will be designed to avoid significant effects on special-status species that are listed as rare, threatened, or endangered under Federal law or are listed as rare, threatened, endangered, candidate, fully protected, or species of special concern under State law. A desktop review of the California Diversity Database and U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation System has been conducted and a reconnaissance survey of the roadways was completed by SWCA Environmental Consultants in July 2020. A qualified biologist will be engaged prior to roadway

work to review the work locations. The biologist will be retained to survey the project area for special-status species if work occurs adjacent to suitable habitat. Cultural resources are not anticipated to be impacted by the project.

Conclusion

As outlined above, the proposed work would not result in a serious or major disturbance to environmental resources. Therefore, the project is eligible for categorical exemption under CEQA.

Exceptions to Categorical Exemption Analysis

15300.2 Exceptions

(a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located -- a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

This exception does not apply to the proposed project. The proposed vegetation management project is not a Class 3, 4, 5, 6 or 11 project.

(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

This exception does not apply to the proposed project. The project consists of a short-term vegetation management period that will not impact biological or cultural resources. In addition, the project would not generate any significant number of vehicle trips and would not result in any significant impacts and would therefore not contribute to any cumulative traffic, air quality, or noise impacts as they will occur within existing roadways and would meet local requirements for noise and traffic control. Therefore, impacts would be less than significant.

(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

This exception does not apply to the proposed project. There are no unusual aspects to the project that would create a reasonable possibility of significant effects to the environment. Reasonable AMMs will be undertaken during the duration of the Project. With AMMs, the project would not impact biological or cultural resources. The project would not generate significant air quality, hazardous materials, noise, or traffic impacts. Therefore, impacts would be less than significant.

(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

This exception does not apply to the proposed project. According to the California Department of Transportation, portions of California State Route 9 (SR 9) in Santa Clara County are eligible for designation as a State Scenic Highway. However, the designated portion of SR 9 refers to areas outside of the vicinity of the project area near Highways 35 and 17.[20] Because the project would trim vegetation on local roads, outside of the proposed scenic highway designation there would be no damage to scenic resources due to project implementation. No impact would occur.

(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

This exception does not apply to the proposed project. No portion of the vegetation management project seeking Categorical Exemption occurs on a hazardous site or a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code. There are three locations identified on the Geotracker database where hazardous materials cleanup efforts have been or are underway adjacent to the project area. All three sites involve releases from dry cleaners into the local groundwater, and none of the sites involve the adjacent roads.[21] The project would remain on or directly adjacent to the existing roadways and would not result in any disturbances to pavement or soil. No impact would occur.

(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

This exception does not apply to the proposed project. The project would remain on or adjacent to existing roads. Vegetation removal along existing roads would not impact any structures. Therefore, no impact to historical structures would occur.

[20] Caltrans. 2019. *List of Designated and Eligible State Scenic Highways.* Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed July 28, 2020.

[21] State Water Resources Control Board. 2020. *GeoTracker.* Available at: *https://geotracker.waterboards.ca.gov/. Accessed July 30, 2020.*

Regina Alcomendras
Santa Clara County
Clerk-Recorder
(408) 299-5688
https://www.clerkrecorder.org

Receipt: 20-183392

Product	Name	Extended
CEQA	ENVIRONMENTAL FILING	$50.00
	# Pages	36
	Document #	ENV22924
	Document Info:	TOWN OF LOS GATOS
	Filing Type	E
Total		$50.00
Tender (Check)		$50.00
Check #	142532	
Paid By	town of los gatos	

PLEASE KEEP FOR REFERENCE

9/8/20 10:58 AM efader

State of California - Department of Fish and Wildlife

2020 ENVIRONMENTAL FILING FEE CASH RECEIPT

DFW 753.5a (REV. 12/01/19) Previously DFG 753.5a

RECEIPT NUMBER: ENV22924

STATE CLEARINGHOUSE NUMBER *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY	LEADAGENCY EMAIL	DATE
TOWN OF LOS GATOS		09/08/2020

COUNTY/STATE AGENCY OF FILING	DOCUMENT NUMBER
SANTA CLARA	

PROJECT TITLE

#20-832-4508 ROADSIDE VEGETATION MANAGEMENT

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL		PHONE NUMBER
TOWN OF LOS GATOS - PARKS AND PUBLIC			(408) 399-5770
PROJECT APPLICANT ADDRESS	**CITY**	**STATE**	**ZIP CODE**
41 MILES AVE	LOS GATOS	CA	95030

PROJECT APPLICANT *(Check appropriate box)*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,343.25	$
☐ Mitigated/Negative Declaration (MND)(ND)	$2,406.75	$
☐ Certified Regulatory Program (CRP) document - payment due directly to CDFW	$1,136.50	$

☒ Exempt from fee

- ☒ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach previously issued cash receipt copy)

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$
☒ County documentary handling fee		$ $50.00
☐ Other		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☒ Check ☐ Other **TOTAL RECEIVED** $ $50.00

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
X Elaine Fader 9/11/2020	Elaine Fader, Deputy County Clerk-Recorder

ORIGINAL - PROJECT APPLICANT | COPY - CDFW/ASB | COPY - LEAD AGENCY | COPY - COUNTY CLERK | DFW 753.5a (Rev. 12012019)

Santa Clara County - Clerk-Recorder Office
State of California

County of Santa Clara

Office of the County Clerk-Recorder
Business Division

County Government Center
70 West Hedding Street, E. Wing, 1st Floor
San Jose, California 95110 (408) 299-5688

File Number: ENV22924

ENVIRONMENTAL FILING
No. of Pages: 36
Total Fees: $50.00
File Date: 09/08/2020
Expires: 10/08/2020

REGINA ALCOMENDRAS, Clerk-Recorder
By: Elaine Fader, Deputy Clerk-Recorder

CEQA DOCUMENT DECLARATION

ENVIRONMENTAL FILING FEE RECEIPT

PLEASE COMPLETE THE FOLLOWING:

1. **LEAD AGENCY:** Town of Los Gatos
2. **PROJECT TITLE:** #20-832-4508 Roadside Vegetation Management
3. **APPLICANT NAME:** Town of Los Gatos - Parks and Public Works Department **PHONE:** (408) 399-5770
4. **APPLICANT ADDRESS:** 41 Miles Ave., Los Gatos, CA 95030
5. **PROJECT APPLICANT IS A:** ☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity
6. **NOTICE TO BE POSTED FOR** 30 **DAYS.**
7. **CLASSIFICATION OF ENVIRONMENTAL DOCUMENT**

a. **PROJECTS THAT ARE SUBJECT TO DFG FEES**

☐ 1. ENVIRONMENTAL IMPACT REPORT (PUBLIC RESOURCES CODE §21152)	$	3,343.25	$ 0.00
☐ 2. NEGATIVE DECLARATION (PUBLIC RESOURCES CODE §21080(C)	$	2,406.75	$ 0.00
☐ 3. APPLICATION FEE WATER DIVERSION (STATE WATER RESOURCES CONTROL BOARD ONLY)	$	850.00	$ 0.00
☐ 4. PROJECTS SUBJECT TO CERTIFIED REGULATORY PROGRAMS	$	1,136.50	$ 0.00
☐ 5. COUNTY ADMINISTRATIVE FEE (REQUIRED FOR a-1 THROUGH a-4 ABOVE) Fish & Game Code §711.4(e)	$	50.00	$ 0.00

b. **PROJECTS THAT ARE EXEMPT FROM DFG FEES**

☒ 1. NOTICE OF EXEMPTION ($50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)	$	50.00	$ 50.00
☐ 2. A COMPLETED "CEQA FILING FEE NO EFFECT DETERMINATION FORM" FROM THE DEPARTMENT OF FISH & GAME, DOCUMENTING THE DFG'S DETERMINATION THAT THE PROJECT WILL HAVE NO EFFECT ON FISH, WILDLIFE AND HABITAT, OR AN OFFICIAL, DATED RECEIPT / PROOF OF PAYMENT SHOWING PREVIOUS PAYMENT OF THE DFG FILING FEE FOR THE *SAME PROJECT IS ATTACHED ($50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)			
DOCUMENT TYPE: ☐ ENVIRONMENTAL IMPACT REPORT ☐ NEGATIVE DECLARATION	$	50.00	$ 0.00

c. **NOTICES THAT ARE *NOT* SUBJECT TO DFG FEES *OR* COUNTY ADMINISTRATIVE FEES**

☐ NOTICE OF PREPARATION ☐ NOTICE OF INTENT NO FEE $ NO FEE

8. **OTHER:** _____ **FEE (IF APPLICABLE):** $ _____
9. **TOTAL RECEIVED** ..... $ 50.00

*NOTE: "*SAME PROJECT*" MEANS NO CHANGES. IF THE DOCUMENT SUBMITTED IS NOT THE SAME (OTHER THAN DATES), A "NO EFFECT DETERMINATION" LETTER FROM THE DEPARTMENT OF FISH AND GAME FOR THE SUBSEQUENT FILING OR THE APPROPRIATE FEES ARE REQUIRED.

THIS FORM MUST BE COMPLETED AND ATTACHED TO THE FRONT OF ALL CEQA DOCUMENTS LISTED ABOVE (*INCLUDING COPIES*) SUBMITTED FOR FILING. WE WILL NEED AN ORIGINAL (WET SIGNATURE) AND TWO (2) COPIES. IF THERE ARE ATTACHMENTS, PLEASE PROVIDE THREE (3) SETS OF ATTACHMENTS FOR SUBMISSION. *(YOUR ORIGINAL WILL BE RETURNED TO YOU AT THE TIME OF FILING.)*

CHECKS FOR ALL FEES SHOULD BE MADE PAYABLE TO: SANTA CLARA COUNTY CLERK-RECORDER

PLEASE NOTE: FEES ARE ANNUALLY ADJUSTED (Fish & Game Code §711.4(b); PLEASE CHECK WITH THIS OFFICE AND THE DEPARTMENT OF FISH AND GAME FOR THE LATEST FEE INFORMATION.

"... NO PROJECT SHALL BE OPERATIVE, VESTED, OR FINAL, NOR SHALL LOCAL GOVERNMENT PERMITS FOR THE PROJECT BE VALID, UNTIL THE FILING FEES REQUIRED PURSUANT TO THIS SECTION ARE PAID." Fish & Game Code §711.4(c)(3)

(Fees Effective 01-01-2020)

Print Form

Notice of Exemption

Appendix E

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk
County of: Santa Clara
70 W. Hedding St., 1st Fl, East Wing
San Jose, CA 35110

From: (Public Agency): Town of Los Gatos
Parks and Public Works Department
41 Miles Avenue, Los Gatos, CA 95030
(Address)

Project Title: Roadside Vegetation Management/PPW No. 20-832-4508

Project Applicant: Town of Los Gatos - Parks and Public Works Department

Project Location - Specific:
Town-wide

Project Location - City: Los Gatos Project Location - County: Santa Clara

Description of Nature, Purpose and Beneficiaries of Project:
The project will remove hazardous vegetation and create defensible space along the hillside roadways

Name of Public Agency Approving Project: Town of Los Gatos

Name of Person or Agency Carrying Out Project: Michelle Quinney/Public Works Department

Exempt Status: **(check one):**

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: 15269(c)
- ☐ Statutory Exemptions. State code number:

Reasons why project is exempt:
This is an emergency project to perform immediate repairs to maintain essential public health and safety by creating emergency access and evacuation roadways in direct response to the local wildfires

Lead Agency Contact Person: Michelle Quinney Area Code/Telephone/Extension: (408) 399-5773

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? ☐ Yes ☒ No

Signature: Date: 8/28/20 Title: CDD Director

☒ Signed by Lead Agency ☐ Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR:

Revised 2011

APPENDIX E

NEPA Open Space VMP Categorical Exclusion

U.S. Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

October 26, 2020

Mark S. Ghilarducci, Director
Governor's Authorized Representative
California Office of Emergency Services
3650 Schriever Avenue
Mather, CA 95655

Reference: Application Approval, HMGP #4407-506-075R
Town of Los Gatos, California
Vegetation Management Risk Reduction, Phase One
FIPS #: 085-44112, Supplement #61

Dear Mr. Ghilarducci:

The Federal Emergency Management Agency (FEMA) have approved and issued Hazard Mitigation Grant Program (HMGP) funds for the Town of Los Gatos (sub-recipient), HMGP #4407-506-075R, Vegetation Management Risk Reduction, Phase One.

The total eligible costs are $85,584. As shown in the enclosed Obligation Report - Supplement #61, we have obligated $64,188 for up to 75 percent Federal share; the non-Federal share match is $21,396. These funds are available in SmartLink for eligible disbursements.

This HMGP grant approval and obligation of funds are subject to the following:

1. **Scope of Work (SOW)** – The Town of Los Gatos, Santa Clara County, California proposes to conduct vegetation management work in open space areas that pose the greatest risk to life and property: La Rinconada Park (37.25720758, -121.9792007); Novitiate Park (37.21437231, -121.9851365); Worcester Park (37.22162914, -121.9659463); Heintz Open Space (37.23304184, -121.9261699); and Santa Rosa Open Space (37.22897657, -121.9202236). The project will consist of 1) establishing defensible space surrounding structures; 2) reducing the height and density of existing stands of plant species of vegetation with adequate spacing between the shrubs to reduce the fire ladder effect; 3) removing nonnative species and dead wood to further reduce the fuel loads and fuels buildup; 4) removing dead or deceased trees within the identified area of the project; 5) chipping all vegetation and wood fuel.

   During Phase One (Design), the Town will work with a consultant to prepare a plan for hazardous fuel reduction, including the detailed project scope, methods, equipment to be used, and biological analysis. No ground disturbance is allowed.

2. **Budget Revisions and Cost Overruns** - In accordance with the 2015 Hazard Mitigation Assistance Unified Guidance, Part VI D.3, when budget changes are made, all programmatic requirements continue to apply. Additional information regarding budget adjustments and

revisions can be found in 2 CFR Part 200.308. The Recipient must obtain FEMA's prior written approval for any budget revisions.

Cost overruns must be approved by FEMA Region IX before implementation and the subgrant must continue to meet programmatic eligibility requirements, including cost effectiveness and cost share. Additional information can be found in 2 CFR Part 200.

3. **Activity Completion Date** – The work schedule in the application states the project completion time frame is 5 months. We will annotate March 26, 2021 as the project completion date. Please inform the subrecipient that work completed after this date is not eligible for federal funding, and federal funds may be de-obligated for work not completed within schedule for which there is no approved time extension.

4. **Grant Period of Performance –** The Period of Performance (POP) is the period during which the Cal OES is expected to complete all subgrant activities and costs within the grant. For 4407-DR-CA, the POP ends no later than February 11, 2024. POP extensions are approved by FEMA Headquarters. Please refer to Part VI.D.4 of the *Guidance* and advise the Subrecipient; FEMA may de-obligate Federal funds for any work not completed by **March 26, 2021** where no time extension is approved.

5. **National Environmental Policy Act (NEPA)** – Phase One (Design) of this project has been determined to be Categorically Excluded from the need to prepare either an Environmental Impact Statement or Environmental Assessment in accordance with FEMA Instruction 108-1-1 and FEMA Directive 108-1-1 as authorized by DHS Instruction Manual 023- 01-001-01, Revision 1. Categorical Exclusions a4 (information gathering, data analysis and processing, information dissemination, review, interpretation, and development of documents) and a7 (commitment of resources, personnel, and funding to conduct audits, surveys, and data collection of a minimally intrusive nature) have been applied. Particular attention should be given to the project conditions before and during project implementation. Failure to comply with these conditions may jeopardize federal assistance including funding.

6. This award of funds is subject to the enclosed *Standard Hazard Mitigation Grant Program Conditions,* amended August 2018. Federal funds may be de-obligated for work that does not comply with these conditions.

If you have any questions or need further assistance please contact me, or your staff may contact Thomas Berry, Sr. Grants Management Specialist, at Thomas.Berry@fema.dhs.gov, or phone at (510) 627-7180.

Sincerely,

For David Stearrett
Acting Director
Mitigation Division
FEMA Region IX

cc: Jennifer Hogan, State Hazard Mitigation Officer
Emily Winchell Cal OES
Karen Jones, Cal OES
HM Grants Payments, Cal OES

Enclosures (4):
Obligation Report - Supplement #61
Project Management Report
Record of Environmental Considerations
Standard HMGP Conditions

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAZARD MITIGATION GRANTS PROGRAM

Obligation Report w/ Signatures

Disaster No	FEMA Project No	Amendment No	State Application ID	Action No	Supplemental No	State	Recipient
4407	75 -R	0	506	1	61	CA	Statewide

Subrecipient: Los Gatos

Project Title : Los Gatos, Vegetation Management Risk Reduction Project

Subrecipient FIPS Code: 085-44112

Total Amount Previously Allocated	Total Amount Previously Obligated	Total Amount Pending Obligation	Total Amount Available for New Obligation
$64,188.00	$64,188.00	$0.00	$0.00

Project Amount	Subrecipient Management Cost Amount	Total Obligation	IFMIS Date	IFMIS Status	FY
$64,188.00	$0.00	$64,188.00	10/23/2020	Accept	2021

Comments

Date: 10/23/2020 User Id: SSCOTT39

Comment: Approved funding for Town of Los Gatos, Vegetation Management, Phase One

Authorization

Preparer Name: STEVEN SCOTT

Preparation Date: 10/23/2020

HMO Authorization Name: THOMAS BERRY

HMO Authorization Date: 10/23/2020

Authorizing Official Signature	Authorizing Official Title	Authorization Date
Authorizing Official Signature	Authorizing Official Title	Authorization Date

Project Management Report

Disaster Number	FEMA Project Number	Amendment Number	App ID	State	Recipient
4407	**75 - R**	**0**	**506**	**CA**	**Statewide**

Subrecipient: Los Gatos
FIPS Code: 085-44112 Project Title : Los Gatos, Vegetation Management Risk Reduction Project

Mitigation Project Description

Amendment Status : Approved **Approval Status:** Approved

Project Title : Los Gatos, Vegetation Management Risk Reduction Project

Recipient : Statewide **Subrecipient :** Los Gatos

Recipient County Name : Santa Clara Subrecipient County Name : Santa Clara

Recipient County Code : 85 Subrecipient County Code : 85

Recipient Place Name : Los Gatos Subrecipient Place Name : Los Gatos

Recipient Place Code : 0 Subrecipient Place Code : 44112

Project Closeout Date : 00/00/0000

Work Schedule Status

Amend #	Description	Time Frame	Due Date	Revised Date	Completion Date
0	Kick-off	2 Months	00/00/0000	00/00/0000	00/00/0000
0	Ecological Assessment	3 Months	00/00/0000	00/00/0000	00/00/0000
0	Request for Proposals	2 Months	00/00/0000	00/00/0000	00/00/0000
0	Open Bids and Award Contract	3 Months	00/00/0000	00/00/0000	00/00/0000
0	Construction - Vegetation Removal	5 Months	00/00/0000	00/00/0000	00/00/0000
0	Project Close-out	2 Months	00/00/0000	00/00/0000	00/00/0000
0	Grant Closeout	3 Months	00/00/0000	00/00/0000	00/00/0000

Approved Amounts

Total Approved Net Eligible	Federal Share Percent	Total Approved Federal Share Amount	Non-Federal Share Percent	Total Approved Non-Fed Share Amount
$85,584.00	75.000000000	$64,188.00	25.00000000	$21,396.00

Allocations

Allocation Number	IFMIS Status	IFMIS Date	Submission Date	FY	ES/DFSC Support Req ID	ES/DFSC Amend Nr	Proj Alloc Amount Fed Share	Subrecipient Management Cost	Total Alloc Amount
20	A	10/23/2020	10/23/2020	2021	3271424	0	$64,188.00	$0.00	$8,380,446.00
						Total	$64,188.00	$0.00	$8,380,446.00

Obligations

Action Nr	IFMIS Status	IFMIS Date	Submission Date	FY	SFS Support Req ID	SFS Amend Number	Suppl Nr	Project Obligated Amt - Fed Share	Subrecipient Management Cost	Total Obligated Amount
1	A	10/23/202	10/23/2020	2021	3273862	0	61	$64,188.00	$0.00	$64,188.00
							Total	$64,188.00	$0.00	$64,188.00

FEDERAL EMERGENCY MANAGEMENT AGENCY

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP 4407-506-075 (Phase 1)

Title: Town of Los Gatos Vegetation Management (Phase 1 - Design)

NEPA DETERMINATION

Non Compliant Flag: No
EA Draft Date:
EA Final Date:
EA Public Notice Date:
EA Fonsi
Level: CATEX
EIS Notice of Intent
EIS ROD Date:

Comment The Town of Los Gatos, Santa Clara County, California proposes to conduct vegetation management work in open space areas that pose the greatest risk to life and property: La Rinconada Park (37.25720758, -121.9792007); Novitiate Park (37.21437231, -121.9851365); Worcester Park (37.22162914, -121.9659463); Heintz Open Space (37.23304184, -121.9261699); and Santa Rosa Open Space (37.22897657, -121.9202236). The project will consist of 1) establishing defensible space surrounding structures; 2) reducing the height and density of existing stands of plant species of vegetation with adequate spacing between the shrubs to reduce the fire ladder effect; 3) removing non-native species and dead wood to further reduce the fuel loads and fuels buildup; 4) removing dead or deceased trees within the identified area of the project; 5) chipping all vegetation and wood fuel. In Phase 1 the Town will work with a consultant to prepare a plan for hazardous fuel reduction, including the detailed project scope, methods, equipment to be used, and biological analysis. No ground disturbance is proposed.

Phase 1 (Design) of this project has been determined to be Categorically Excluded from the need to prepare either an Environmental Impact Statement or Environmental Assessment in accordance with FEMA Instruction 108-1-1 and FEMA Directive 108-1-1 as authorized by DHS Instruction Manual 023-01-001-01, Revision 1. Categorical Exclusions a4 (information gathering, data analysis and processing, information dissemination, review, interpretation, and development of documents) and a7 (commitment of resources, personnel, and funding to conduct audits, surveys, and data collection of a minimally intrusive nature) have been applied. Particular attention should be given to the project conditions before and during project implementation. Failure to comply with these conditions may jeopardize federal assistance including funding. - dcohen3 - 10/19/2020 23:27:13 GMT

CATEX CATEGORIES

Catex Category Code	Description	Selected
a4	(a4) Information gathering, data analysis and processing, information dissemination, review, interpretation, and development of documents. If any of these activities result in proposals for further action, those proposals must be covered by an appropriate CATEX. Examples include but are not limited to: (a) Document mailings, publication and distribution, training and information programs, historical and cultural demonstrations, and public affairs actions. (b) Studies, reports, proposals, analyses, literature reviews; computer modeling; and non-intrusive intelligence gathering activities.	Yes
a7	(a7) The commitment of resources, personnel, and funding to conduct audits, surveys, and data collection of a minimally intrusive nature. If any of these commitments result in proposals for further action, those proposals must be covered by an appropriate CATEX. Examples include, but are not limited to: (a) Activities designed to support the improvement or upgrade management of natural resources, such as surveys for threatened and endangered species, wildlife and wildlife habitat, historic properties, and archeological sites; wetland delineations; timber stand examination; minimal water, air, waste, material and soil sampling; audits, photography, and interpretation. (b) Minimally-intrusive geological, geophysical, and geo-technical activities, including mapping and engineering surveys. (c) Conducting Facility Audits, Environmental Site Assessments and Environmental Baseline Surveys, and (d) Vulnerability, risk, and structural integrity assessments of infrastructure.	Yes

EXTRAORDINARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP 4407-506-075 (Phase 1)

Title: Town of Los Gatos Vegetation Management (Phase 1 - Design)

Extraordinary Circumstance Code	Description	Selected ?
	No Extraordinary Circumstances were selected	

ENVIRONMENTAL LAW / EXECUTIVE ORDER

Environmental Law/ Executive Order	Status	Description	Comment
Clean Air Act (CAA)	Completed	Project will not result in permanent air emissions - Review concluded	
Coastal Barrier Resources Act (CBRA)	Completed	Project is not on or connected to CBRA Unit or otherwise protected area - Review concluded	
Clean Water Act (CWA)	Completed	Project would not affect any water of the U.S. - Review concluded	
Coastal Zone Management Act (CZMA)	Completed	Project is not located in a coastal zone area and does not affect a coastal zone area - Review concluded	
Executive Order 11988 - Floodplains	Completed	No effect on floodplain/flood levels and project outside floodplain - Review concluded	
Executive Order 11990 - Wetlands	Completed	No effects on wetlands and project outside wetlands - Review concluded	
Executive Order 12898 - Environmental Justice for Low Income and Minority Populations	Completed	No Low income or minority population in, near or affected by the project - Review concluded	
Endangered Species Act (ESA)	Completed	Listed species and/or designated critical habitat present in areas affected directly or indirectly by the federal action	The proposed action is to provide funding to the subrecipient for Phase 1 design development funds, without any proposed physical disturbance. These actions would result in no impacts to endangered species. ESA review will need to be completed prior to implementing any subsequent phases of the project. The proposed scope of work for design development will not destroy or adversely modify suitable habitat and will not affect any other listed or proposed species. It is therefore determined the proposed action would have No Effect on listed species and consultation with the Services under Section 7 of the Endangered Species Act is not required. - dcohen3 - 10/19/2020 23:27:38 GMT
	Completed	No effect to species or designated critical habitat (See comments for justification) - Review concluded	

FEDERAL EMERGENCY MANAGEMENT AGENCY

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP 4407-506-075 (Phase 1)

Title: Town of Los Gatos Vegetation Management (Phase 1 - Design)

Environmental Law/ Executive Order	Status	Description	Comment
Farmland Protection Policy Act (FPPA)	Completed	Project does not affect designated prime or unique farmland - Review concluded	
Fish and Wildlife Coordination Act (FWCA)	Completed	Project does not affect, control, or modify a waterway/body of water - Review concluded	
Migratory Bird Treaty Act (MBTA)	Completed	Project located within a flyway zone	
	Completed	Project does not have potential to take migratory birds - Review concluded	
Magnuson-Stevens Fishery Conservation and Management Act (MSA)	Completed	Project not located in or near Essential Fish Habitat - Review concluded	
National Historic Preservation Act (NHPA)	Completed	Not type of activity with potential to affect historic properties - Review concluded</br>	The Undertaking complies with Stipulation I.A.7.f. (assistance provided for planning, studies, design and engineering costs that involve no commitment of resources other than staffing and associated funding) of the Programmatic Agreement among the Federal Emergency Management Agency (FEMA), State Historic Preservation Office (SHPO) and California Office of Emergency Services (Cal OES), signed October 29, 2019. Thus, the Undertaking does not require SHPO review, and FEMA has no further Section 106 responsibilities in accordance with 36 CFR § 800.3(a)(1). No ground disturbance is proposed. - dcohen3 - 10/19/2020 23:23:49 GMT
Wild and Scenic Rivers Act (WSR)	Completed	Project is not along and does not affect Wild and Scenic River - Review concluded	

CONDITIONS

Special Conditions required on implementation of Projects:

Prior to any biological field survey, the subapplicant must coordinate with FEMA¿s biologists regarding compliance needs under Section 7 of the Endangered Species Act.

Source of condition: Endangered Species Act (ESA) Monitoring Required: Yes

Standard Conditions:

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP 4407-506-075 (Phase 1)

Title: Town of Los Gatos Vegetation Management (Phase 1 - Design)

Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.

This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.

If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.

Standard Mitigation Grant Program (HMGP) Conditions

FEMA Region IX, August, 2018

The following list applies to Recipients and Subrecipients accepting HMGP funds from the Federal Emergency Management Agency (FEMA) of the Department of Homeland Security (DHS):

1. **Applicable Federal, State, and Local Laws and Regulations.** The Recipient/Subrecipient must comply with all applicable Federal, State, and Local laws and regulations, regardless of whether they are on this list or other project documents. DHS financial assistance Recipients and Subrecipients are required to follow the provisions of the State HMGP Administrative Plan, applicable Hazard Mitigation Assistance Uniform Guidance, and Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards located in Title 2 of the Code of Federal Regulations (CFR) Part 200, adopted by DHS in 2 CFR 3002.

2. **Financial Management Systems.** The Recipient and Subrecipient must maintain financial management systems to account for and track funds, as referenced in 2 CFR 200.302.

3. **Match or Cost Share.** Non-federal match or cost share must comply with 2 CFR 200.306, the scope of work (SOW), and any agreements among the Subrecipient, the Recipient, and FEMA.

4. **Budget Changes.** Unanticipated adjustments are permitted within the approved total cost. However, if costs exceed the federal share, the Subrecipient must notify the Governor's Authorized Representative (GAR) of overruns before implementation. The GAR shall submit a written request for approval to FEMA Region IX. The subaward must continue to meet HMGP requirements, including cost effectiveness and cost share. Refer to 2 CFR 200.308 for additional information.

5. **Real Property and Land.** The acquisition, use, and disposition must comply with 2 CFR 200.311.

6. **Equipment.** The acquisition, use, and disposition must comply with 2 CFR 200.313.

7. **Supplies.** Upon project completion, FEMA must be compensated for unused supplies, exceeding $5,000 (fair market value), and not needed for other federal programs. Refer to 2 CFR 200.314.

8. **Procurement.** Procurement procedures must be in conformance with 2 CFR 200.318-320.

9. **Monitoring and Reporting Program Performance.** The Recipient and Subrecipient must submit quarterly progress reports, as referenced in the 2 CFR 200.328 and State HMGP Administrative Plan.

10. **Records Retention.** In accordance with 2 CFR 200.333, financial/ programmatic records related to expenditures must be maintained at least 3 years after the date of Recipient's final expenditure report.

11. **Enforcement and Termination.** If the Recipient or Subrecipient fails to comply with the award or subaward terms, whether stated in a Federal statute or regulation, the State HMGP Administrative Plan, subpplication, a notice of award, an assurance, or elsewhere, FEMA may take one or more of the actions outlined in 2 CFR 200.338, including termination or partial termination of the award or subaward outlined in 2 CFR 200.339.

12. **Allowable Costs.** Funds are to be used for allowable costs in compliance with 2 CFR 200.403, the approved SOW, and any agreements among the Subrecipient, Recipient, and FEMA.

13. **Non-Federal Audit.** The Recipient and Subrecipient are responsible for obtaining audits in accordance with the Single Audit Act of 1984, in compliance with 2 CFR 200.501.

14. **Debarred and Suspended Parties.** Recipients and Subrecipients are subject to the non-procurement debarment and suspension regulations implementing Executive Orders 12549 and 12689, and 2 CFR 180. These regulations restrict federal financial assistance awards, subawards, and contracts with parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in the federal assistance programs or activities.

15. **Equipment Rates.** Rates claimed for use of Subrecipient-owned equipment in excess of the FEMA-approved rates must be approved under State guidelines issued by the State Comptroller's Office or must be certified by the Recipient to include only those costs attributable to equipment usage less any fixed overhead and/or profit.

16. **Duplication of Funding between Public Assistance (PA) and HMGP.** Funding for PA Section 406 and HMGP Section 404 are permitted on the same facility/location, but the activities identified under each program must be distinct with separately accounted funds. At closeout, FEMA may adjust the funding to ensure the Subrecipient was reimbursed for eligible work from only one funding source.

17. **Historic Properties and Cultural Resources.** In compliance with 2 CFR 800, if a potential historic property or cultural resource is discovered during construction, the Subrecipient must cease work in the area and take all reasonable measures to avoid or minimize harm to the discovered property/resource. During construction, the Subrecipient will monitor ground disturbance activity, and if any potential archeological resources are discovered, will immediately cease work in that area, and notify the Recipient and FEMA. Construction in the area may resume with FEMA's written approval after FEMA's consultation, if applicable, with the State Historic Preservation Officer (SHPO).

18. **NEPA and Changes to the Scope of Work (SOW).** To comply with the National Environmental Policy Act (NEPA), and other Laws and Executive Orders, any change to the approved SOW shall be re-evaluated before implementation. Construction associated with a SOW change, prior to FEMA approval, may be ineligible for funding. Acceptance of federal funding requires environmental permits and clearances in compliance with all appropriate federal, state and local laws, and failure to comply may jeopardize funding.

    Within their authority, the Recipient and Subrecipient must use of all practicable means, consistent with other essential policies, to create and maintain productive harmony for people and nature, and fulfill the social, economic, and other needs of present and future generations of Americans.

APPENDIX F

Photographs



Photo 1. View of oak woodland habitat within the Santa Rosa Open Space Area.



Photo 2. View of adjacent open space and vegetation from Heintz Open Space.



Photo 3. WUI located immediately adjacent to the Heintz Open Space Area along a trail.



Photo 4. Oak savannah and grassland at Novitiate Park where mowing and grazing will be implemented.



Photo 5. A fire road within the Santa Rosa Open Space Area. Some areas contain canopy connectivity which will require trimming to accommodate access for emergency personnel.



Photo 6. Grassland and French broom located along the Worcester Park boundary adjacent to a residential property.



Photo 7. Dense French broom growing alongside a trail at Novitiate Park.



Photo 8. View from a trail in the Santa Rosa Open Space showing a hill side with dense brush cover transitioning to oak woodland in the WUI.



Photo 9. English Ivy infestations with mixed acacia and oak canopy. In the background, a residential property within the WUI sits adjacent to the Worcester Park boundary.



Photo 10. Accumulated woody slash and debris in the understory at Novitiate Park.



Photo 11. View of the turf and well managed understory at La Rinconada Park.



Photo 12. View of French broom in the understory and coast live oak canopy at La Rinconada Park.

APPENDIX G

Open Space VMP Area Treatment Activities and Timing

	January	February	March	April	May	June	July	August	September	October	November	December
Habitat Communities												
Grassland/Herbaceous	Grazing											
				Mowing / Cutting								
Chaparral/Scrub				Masticating / Cutting								
Oak Woodland				Cutting / Chipping								
Riparian Woodland				Cutting								
Invasive Species												
French Broom				Pulling		Cutting						
English Ivy				Pulling		Cutting						
	Grazing											
Italian thistle	Pulling		Chemical								Pulling	
			Grazing									
Tree of Heaven	Chemical											
	Pulling		Cutting								Pulling	
Privet									Cutting			
Eucalyptus				Chipping								
				Chemical							Cutting	
Acacia	Pulling		Chemical								Cutting / Pulling	

*Treatment timing should be the same each year.

**Nesting bird season occurs from March through August. AMMs apply.

Worcester Park

Treatments, Treatment Standards, and Sensitive Habitat Areas

Worcester Park - Moderate Risk Priority 2				
	Total Acres	**Treatment Standards**	**Treatment Activity**	**AMMs**
Defensible Space	*2.90*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Shaded Fuel Break	*4.82*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Trails (lf)	*2698.35*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Fuel Reduction Area	*2.33*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Invasive Species Removal	*3.01*	See Section 10.1.3.4 - 10.1.3.8	Manual, Mechanical,*Chemical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Mowing/Grazing	*0.38*	See Section 10.1.3.1	Mechanical, Prescribed Herbivory/Grazing	Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Woody Slash & Debris Removal	*1.25*	See Section 10.1.2	Mechanical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Invasive Species				
French Broom	*0.09*	See Section 10.1.3.6	Manual (Pulling), Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Acacia	*0.57*	See Section 10.1.3.4	Manual (Pulling), *Chemical, Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
English Ivy	*1.25*	See Section 10.1.3.7	Manual (Pulling), Mechanical (Cutting), Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Tree of Heaven	*1.10*	See Section 10.1.3.5	Manual (Pulling), *Chemical, Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Sensitive Habitat				
Oak Woodland	*8.68*	See Section 10.1.3.3	Mechanical (Cutting)	Delineate work, treatment, and protected resource area boundaries (General Measure 1). Activities will avoid areas with special-status species (Biological Resources Measure 13). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Soil and trimmed/chipped vegetation will not be placed where it covers other vegetation or near a waterbody (Aquatic Resources Measure 32).

*Restrictions apply in riparian habitat. Seasonal and quantitative restrictions may apply to sensitive habitats. Nesting bird season occurs from March through August. See AMMs.

Worcester Treatment Standards	
10.1.3.1 Grassland/Herbaceous	Grassland and certain herbaceous species are flash fuels with quick ignition, burn, and dispersal rates. Non-native annual grassland and herbaceous understories are present throughout the Open Space VMP area. Recommendations for grassland/herbaceous areas follow: · In areas where grassland transitions to woodland habitat, a fuel break should be maintained to prevent ignition of surrounding vegetation. A minimum break of 10 feet of horizontal distance should be maintained between grassland and woodland habitat. · Woody slash and debris created by dead herbaceous vegetation should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · Cut grass must be removed if it exceeds 6 inches of vertical height. If it is below 6 inches in height, grass cuttings can be left in place to protect ground soils from erosion. · Grazing is allowed in this habitat and can occur year-round in certain areas, although it is recommended and most effective in late spring through late summer. Grazing should follow the grazing plan provided by the hired grazing management company.
10.1.3.3 Oak Woodland	Oak woodland dominates the VMP Area and includes a combination of coast live oak, valley oak, California bay, buckeye, and walnut. As previously mentioned, this is a sensitive vegetation community and work in this habitat type should be minimal and conducted in accordance with AMMs and BMPs outlined in Section 11, Practices to Avoid or Minimize Impacts. Canopies in this community are intermittent to continuous. In areas with breaks in the canopy understories are generally composed of grassland and brush and scrub species. Recommendations for oak woodland areas follow: · In canopy breaks, maintain a vertical distance of 3 feet between surface fuels and low-lying tree branches (Figure 10-2). In areas where shrubs and scrub occupy the understory, a horizontal distance of at least three times the size of the scrub should be maintained, as shown in Figure 10-3. If grassland or herbaceous fuels are present in understories, a minimum distance of three times the vertical height of surface fuels should be maintained. · Duff and leaf litter should not exceed 3 feet above ground level. · If highly flammable species (Section 10.4.2) are present in oak woodland habitat, they should be removed and hauled off-site. · Only shaded fuel breaks or thinning will be used in oak woodland and will not remove more than 20 percent of oak woodland vegetation (i.e., if the oak woodland covers 100 acres, no more than 20 acres will be converted to thin or create the shaded fuel break).
10.1.3.4 Acacia, Eucalyptus & Privet	Acacia and eucalyptus are highly invasive and highly flammable species that contains flammable resins and oils. This species occurs throughout the VMP Area in small, concentrated stands mostly along roadways and adjacent to private properties. Recommendations for acacia areas follow: · Pull seedlings and small saplings by hand or with a weed wrench. Thin dense clusters and maintain 10 to 20 horizontal feet, depending on the slope, between mature trees (Figure 10-3). · Regulate and control stump sprouts, resprouts, and sapling growth using hand pulling for saplings and resprouts and chemical treatments for stumps. · A minimum vertical distance of 3 times the height of resprouts and saplings shall be cleared between the lowest lying branches and any scrub species (Figure 10-2). · Cut and treat larger sapling and mature tree species with herbicides. · Drill and inject with herbicide in applicable areas. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts. · Acacia and eucalyptus can be chipped in place so long as no plant material is left adjacent to sensitive riparian features and does not cover other plants.
10.1.3.5 Tree of Heaven	Tree of heaven is a highly invasive and flammable species that is commonly found in disturbed areas and along riparian corridors within the VMP Area. Recommendations for tree of heaven areas follow: · Pull seedlings and small saplings while soils are moist and loose. Remove taproots by digging around the base of the plant to remove all roots and prevent resprouts. · Cut the stems of mature trees at the beginning of spring and once more in June or July to reduce seed production and deplete energy reserves. · Cut and treat trunks or stems of large trees (i.e., greater than 4-inches diameter at breast height [dbh]) with chainsaws and apply herbicides.
10.1.3.6 Broom Species	Broom is common in VMP Area understories and can grow in grasslands, scrub, and woodland habitats. Recommendations for tree of heaven areas follow: · Pull shrubs by hand using a weed wrench. · Cut shrubs to just above ground level using loppers or brush cutters during the dry season in areas sensitive to ground disturbance.
10.1.3.7 English Ivy	English Ivy is a woody vine generally found in moist areas with dense canopies and good shade cover. Recommendations for tree of heaven areas follow: · Pull vines climbing trees and on the ground by hand or using rakes. · Cut stems with pruners or loppers and dig up roots using shovels to prevent resprouts. · Utilize prescribed herbivory, as appropriate, to remove ivy.

LOS GATOS VEGETATION MANAGEMENT PLAN

Worcester Park Sensitive Habitat

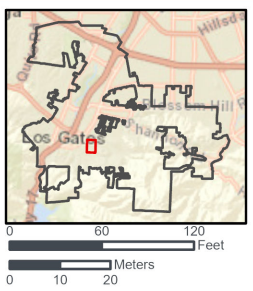
Worcester Park (11.33 Acres)

Trail (2,698.35 Feet)

Sensitive Habitat Type

Oak Woodland (8.68 Acres)

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Worcester Sensitive Habitat

SWCA
ENVIRONMENTAL CONSULTANTS

Santa Rosa Open Space
Treatments, Treatment Standards, and Sensitive Habitat Areas

Santa Rosa Open Space Preserve - High Risk Priority 1				
	Total Acres	**Treatment Standards**	**Treatment Activity**	**AMMs**
Defensible Space	*3.83*	See Section 10.1.3.3	Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Shaded Fuel Break	*32.40*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Trails (lf)	*6041.67*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Fire Road (lf)	*2961.86*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Fuel Reduction Area	*33.55*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Invasive Species Removal	*0.25*	See Section 10.1.3.4	Manual, Mechanical,*Chemical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Mowing/Grazing	*6.13*	See Section 10.1.3.1	Mechanical, Prescribed Herbivory/Grazing	Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Invasive Species				
Eucalyptus	*0.25*	See Section 10.1.3.4	*Chemical, Mechanical (Cutting & Chipping)	
Sensitive Habitat				
Riparian	*3.03*	See Section 10.1.3.9	Manual, Mechanical (Cutting)	Delineate work, treatment, and protected resource area boundaries (General Measure 1). Activities will avoid areas with special-status species (Biological Resources Measure 13). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). All AMMs in the Aquatic Resources Section apply.
Oak Woodland	*46.43*	See Section 10.1.3.3	Mechanical (Cutting)	Activities will avoid areas with special-status species (Biological Resources Measure 13). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Soil and trimmed/chipped vegetation will not be placed where it covers other vegetation or near a waterbody (Aquatic Resources Measure 32).
Chaparral/Scrub	*16.60*	See Section 10.1.3.2	Mechanical (Cutting), Prescribed Herbivory/Grazing	Activities will avoid areas with special-status species (Biological Resources Measure 13). Treatments in chaparral habitat require consultation with a qualified biologist (Biological Resources Measure 16). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Soil and trimmed/chipped vegetation will not be placed where it covers other vegetation or near a waterbody (Aquatic Resources Measure 32).

*Restrictions apply in riparian habitat. Seasonal and quantitative restrictions may apply to sensitive habitats. Nesting bird season occurs from March through August. See AMMs.

Santa Rosa Treatment Standards	
10.1.3.1 Grassland/Herbaceous	Grassland and certain herbaceous species are flash fuels with quick ignition, burn, and dispersal rates. Non-native annual grassland and herbaceous understories are present throughout the Open Space VMP area. Recommendations for grassland/herbaceous areas follow: · In areas where grassland transitions to woodland habitat, a fuel break should be maintained to prevent ignition of surrounding vegetation. A minimum break of 10 feet of horizontal distance should be maintained between grassland and woodland habitat. · Woody slash and debris created by dead herbaceous vegetation should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · Cut grass must be removed if it exceeds 6 inches of vertical height. If it is below 6 inches in height, grass cuttings can be left in place to protect ground soils from erosion. · Grazing is allowed in this habitat and can occur year-round in certain areas, although it is recommended and most effective in late spring through late summer. Grazing should follow the grazing plan provided by the hired grazing management company.
10.1.3.2 Chaparral/Scrub	Chaparral, scrub, and brush occur throughout the VMP Area and include species like California sage scrub and coyote brush. This vegetation type generally occurs in dense clusters with some tree species interspersed. Recommendations for chaparral/scrub areas follow: · Dead and dying debris should be cut and trimmed or removed. Roots can be left in place in order to maintain soil stability if necessary. · All vegetative debris should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · If trees are growing among this community, a minimum distance of 3 times the height of the scrub should be cleared between the lowest lying branches and the chaparral/scrub species (Figure 10-2). · Horizontal separation should be 2 to 3 times the height of the chaparral/scrub (Figure 10-3).
10.1.3.3 Oak Woodland	Oak woodland dominates the VMP Area and includes a combination of coast live oak, valley oak, California bay, buckeye, and walnut. As previously mentioned, this is a sensitive vegetation community and work in this habitat type should be minimal and conducted in accordance with AMMs and BMPs outlined in Section 11, Practices to Avoid or Minimize Impacts. Canopies in this community are intermittent to continuous. In areas with breaks in the canopy understories are generally composed of grassland and brush and scrub species. Recommendations for oak woodland areas follow: · In canopy breaks, maintain a vertical distance of 3 feet between surface fuels and low-lying tree branches (Figure 10-2). In areas where shrubs and scrub occupy the understory, a horizontal distance of at least three times the size of the scrub should be maintained, as shown in Figure 10-3. If grassland or herbaceous fuels are present in understories, a minimum distance of three times the vertical height of surface fuels should be maintained. · Duff and leaf litter should not exceed 3 feet above ground level. · If highly flammable species (Section 10.4.2) are present in oak woodland habitat, they should be removed and hauled off-site. · Only shaded fuel breaks or thinning will be used in oak woodland and will not remove more than 20 percent of oak woodland vegetation (i.e., if the oak woodland covers 100 acres, no more than 20 acres will be converted to thin or create the shaded fuel break).
10.1.3.4 Acacia, Eucalyptus & Privet	Acacia and eucalyptus are highly invasive and highly flammable species that contains flammable resins and oils. This species occurs throughout the VMP Area in small, concentrated stands mostly along roadways and adjacent to private properties. Recommendations for acacia areas follow: · Pull seedlings and small saplings by hand or with a weed wrench. Thin dense clusters and maintain 10 to 20 horizontal feet, depending on the slope, between mature trees (Figure 10-3). · Regulate and control stump sprouts, resprouts, and sapling growth using hand pulling for saplings and resprouts and chemical treatments for stumps. · A minimum vertical distance of 3 times the height of resprouts and saplings shall be cleared between the lowest lying branches and any scrub species (Figure 10-2). · Cut and treat larger sapling and mature tree species with herbicides. · Drill and inject with herbicide in applicable areas. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts. · Acacia and eucalyptus can be chipped in place so long as no plant material is left adjacent to sensitive riparian features and does not cover other plants.
10.1.3.9 Riparian Woodland	Riparian woodlands generally contain dense canopies with intermittent to continuous understories. Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. Riparian areas are sensitive and vegetation management activities should be minimal to protect and avoid impacts to sensitive resources per the AMMs and BMPs in Section 11, Practices to Avoid or Minimize Impacts. Recommendations for riparian areas follow: · Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. · Target climbing and ladder fuels, such as poison oak and giant reed (Arundo donax). Three feet of separation should be maintained between surface fuels and low-lying canopy branches. · Remove highly flammable species (Section 10.4.2). · Monitor canopy continuation and connectivity. In areas with gaps in the canopy, understory growth, including ladder fuels, is more prevalent. These gaps, if present, should maintain 3 times the vertical distance of the height of surface fuels which should be trimmed or removed to ensure no highly flammable pockets of dense vegetation forms (Figure 10-2).



LOS GATOS VEGETATION MANAGEMENT PLAN

Santa Rosa Open Space and Recreation Area Sensitive Habitat

SWCA ENVIRONMENTAL CONSULTANTS

- Santa Rosa Open Space (75.89 Acres)
- Trail (6,041.67 Feet)
- Fire Road (2,961.86 Feet)
- Grazing Exclusion Area

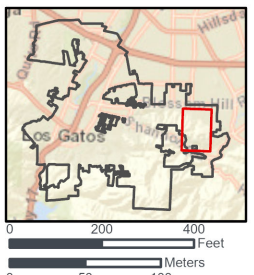
Sensitive Habitat Type

- Oak Woodland (46.43 Acres)
- Chaparral/Scrub (16.60 Acres)
- Riparian (3.03 Acres)

NHD

- Stream/Creek

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



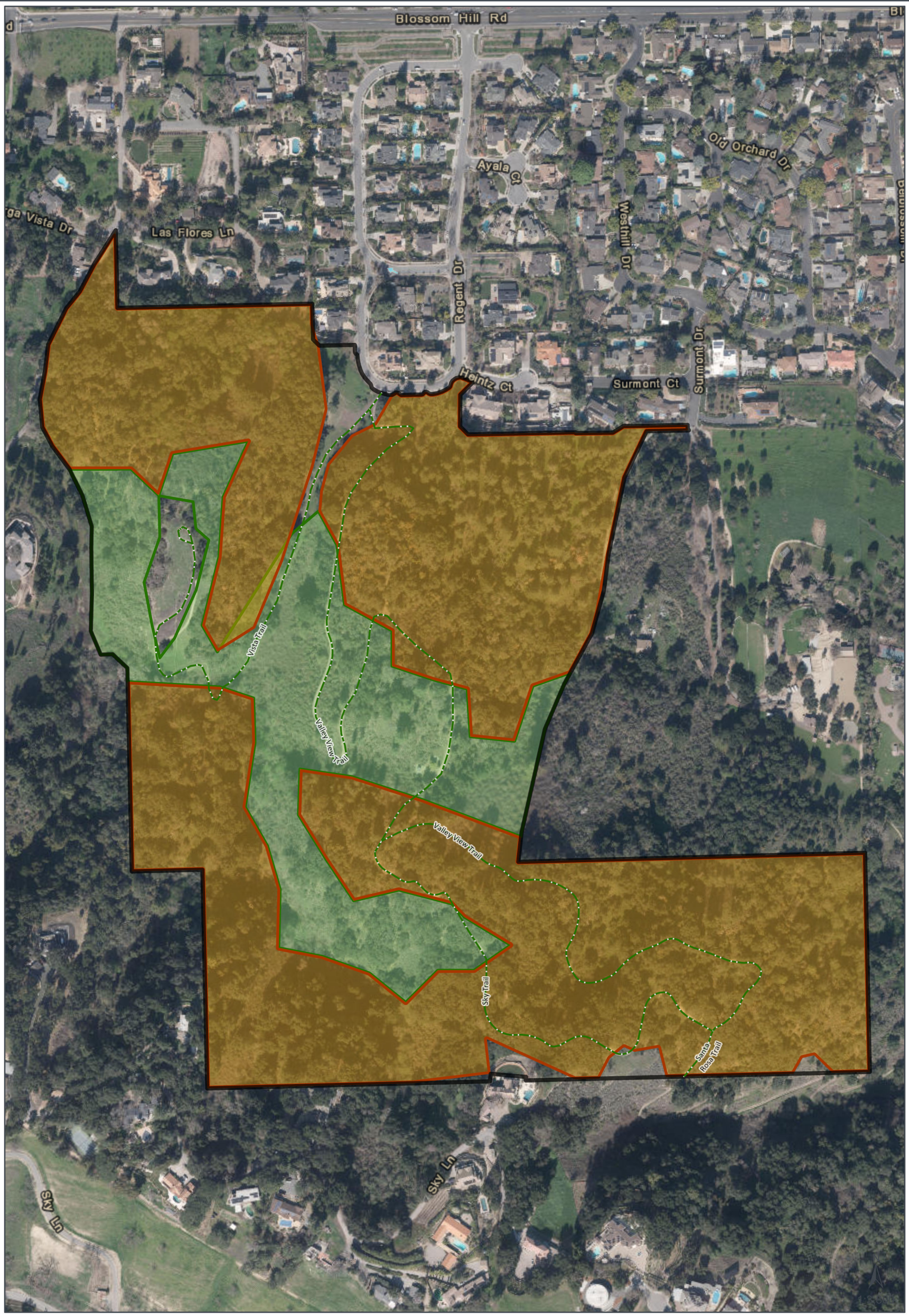
File: Santa Rosa Sensitive Habitat

Heintz Open Space
Treatments, Treatment Standards, and Sensitive Habitat Areas

Heintz Open Space Preserve - High Risk Priority 1				
	Total Acres	**Treatment Standards**	**Treatment Activity**	**AMMs**
Defensible Space	*2.04*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Shaded Fuel Break	*26.67*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Trails (lf)	*8428.98*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Fuel Reduction Area	*49.10*	See Section 10.1.3.3	Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Mowing/Grazing	*10.29*	See Section 10.1.3.1	Mechanical, Prescribed Herbivory/Grazing	Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Sensitive Habitat				
Oak Woodland	*64.72*	See Section 10.1.3.3	Mechanical (Cutting)	Delineate work area/treatment area boundary (General Measure 1). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Soil and trimmed/chipped vegetation will not be placed where it covers other vegetation or near a waterbody (Aquatic Resources Measure 32).
Chaparral/Scrub	*20.30*	See Section 10.1.3.2	Mechanical (Cutting), Prescribed Herbivory/Grazing	Activities will avoid areas with special-status species (Biological Resources Measure 13). Treatments in chaparral habitat require consultation with a qualified biologist (Biological Resources Measure 16). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Soil and trimmed/chipped vegetation will not be placed where it covers other vegetation or near a waterbody (Aquatic Resources Measure 32).

*Restrictions apply in riparian habitat. Seasonal and quantitative restrictions may apply to sensitive habitats. Nesting bird season occurs from March through August. See AMMs.

Heintz Treatment Standards	
10.1.3.1 Grassland/Herbaceous	Grassland and certain herbaceous species are flash fuels with quick ignition, burn, and dispersal rates. Non-native annual grassland and herbaceous understories are present throughout the Open Space VMP area. Recommendations for grassland/herbaceous areas follow: · In areas where grassland transitions to woodland habitat, a fuel break should be maintained to prevent ignition of surrounding vegetation. A minimum break of 10 feet of horizontal distance should be maintained between grassland and woodland habitat. · Woody slash and debris created by dead herbaceous vegetation should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · Cut grass must be removed if it exceeds 6 inches of vertical height. If it is below 6 inches in height, grass cuttings can be left in place to protect ground soils from erosion. · Grazing is allowed in this habitat and can occur year-round in certain areas, although it is recommended and most effective in late spring through late summer. Grazing should follow the grazing plan provided by the hired grazing management company.
10.1.3.2 Chaparral/Scrub	Chaparral, scrub, and brush occur throughout the VMP Area and include species like California sage scrub and coyote brush. This vegetation type generally occurs in dense clusters with some tree species interspersed. Recommendations for chaparral/scrub areas follow: · Dead and dying debris should be cut and trimmed or removed. Roots can be left in place in order to maintain soil stability if necessary. · All vegetative debris should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · If trees are growing among this community, a minimum distance of 3 times the height of the scrub should be cleared between the lowest lying branches and the chaparral/scrub species (Figure 10-2). · Horizontal separation should be 2 to 3 times the height of the chaparral/scrub (Figure 10-3).
10.1.3.3 Oak Woodland	Oak woodland dominates the VMP Area and includes a combination of coast live oak, valley oak, California bay, buckeye, and walnut. As previously mentioned, this is a sensitive vegetation community and work in this habitat type should be minimal and conducted in accordance with AMMs and BMPs outlined in Section 11, Practices to Avoid or Minimize Impacts. Canopies in this community are intermittent to continuous. In areas with breaks in the canopy understories are generally composed of grassland and brush and scrub species. Recommendations for oak woodland areas follow: · In canopy breaks, maintain a vertical distance of 3 feet between surface fuels and low-lying tree branches (Figure 10-2). In areas where shrubs and scrub occupy the understory, a horizontal distance of at least three times the size of the scrub should be maintained, as shown in Figure 10-3. If grassland or herbaceous fuels are present in understories, a minimum distance of three times the vertical height of surface fuels should be maintained. · Duff and leaf litter should not exceed 3 feet above ground level. · If highly flammable species (Section 10.4.2) are present in oak woodland habitat, they should be removed and hauled off-site. · Only shaded fuel breaks or thinning will be used in oak woodland and will not remove more than 20 percent of oak woodland vegetation (i.e., if the oak woodland covers 100 acres, no more than 20 acres will be converted to thin or create the shaded fuel break).



LOS GATOS VEGETATION MANAGEMENT PLAN

Heintz Open Space and Recreation Area Sensitive Habitat

SWCA ENVIRONMENTAL CONSULTANTS

Heintz Open Space (88.12 Acres)

Trail (8,428.98 Feet)

Sensitive Habitat Type

Oak Woodland (64.72 Acres)

Chaparral/ Scrub (20.30 Acres)

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Heintz Sensitive Habitat

Novitiate Park

Treatments, Treatment Standards, and Sensitive Habitat Areas

Novitiate Park - Moderate Risk Priority 2				
	Total Acres	**Treatment Standards**	**Treatment Activity**	**AMMs**
Defensible Space	*2.27*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Shaded Fuel Break	*1.77*	See Section 10.1.3.3	Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Trails (lf)	*1698.16*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Fuel Reduction Area	*0.18*	See Section 10.1.3.3	Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Invasive Species Removal	*7.90*	See Section 10.1.3.4 - 10.1.3.8	Manual, Mechanical,*Chemical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Mowing/Grazing	*4.58*	See Section 10.1.3.1	Mechanical, Prescribed Herbivory/Grazing	Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Woody Slash & Debris Removal	*1.29*	See Section 10.1.2	Mechanical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Invasive Species				
French Broom	*0.77*	See Section 10.1.3.6	Manual (Pulling), Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
English Ivy	*1.16*	See Section 10.1.3.7	Manual (Pulling), Mechanical (Cutting), Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Privet	*1.16*	See Section 10.1.3.4	Manual (Pulling), *Chemical, Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Italian thistle	*0.41*	See Section 10.1.3.8	Manual (Pulling), *Chemical, Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Tree of Heaven (and non-native grassland)	*5.56*	See Section 10.1.3.5 & See Section 10.1.3.1	Manual (Pulling), *Chemical, Mechanical (Cutting) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Sensitive Habitat				
Riparian	*0.62*	See Section 10.1.3.9	Manual, Mechanical (Cutting)	Delineate work, treatment, and protected resource area boundaries (General Measure 1). Activities will avoid areas with special-status species (Biological Resources Measure 13). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). All AMMs in the Aquatic Resources Section apply.
Oak Woodland	*6.09*	See Section 10.1.3.3	Mechanical (Cutting)	Activities will avoid areas with special-status species (Biological Resources Measure 13). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Soil and trimmed/chipped vegetation will not be placed where it covers other vegetation or near a waterbody (Aquatic Resources Measure 32).

*Restrictions apply in riparian habitat. Seasonal and quantitative restrictions may apply to sensitive habitats. Nesting bird season occurs from March through August. See AMMs.

Novitiate Treatment Standards	
10.1.3.1 Grassland/Herbaceous	Grassland and certain herbaceous species are flash fuels with quick ignition, burn, and dispersal rates. Non-native annual grassland and herbaceous understories are present throughout the Open Space VMP area. Recommendations for grassland/herbaceous areas follow: · In areas where grassland transitions to woodland habitat, a fuel break should be maintained to prevent ignition of surrounding vegetation. A minimum break of 10 feet of horizontal distance should be maintained between grassland and woodland habitat. · Woody slash and debris created by dead herbaceous vegetation should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · Cut grass must be removed if it exceeds 6 inches of vertical height. If it is below 6 inches in height, grass cuttings can be left in place to protect ground soils from erosion. · Grazing is allowed in this habitat and can occur year-round in certain areas, although it is recommended and most effective in late spring through late summer. Grazing should follow the grazing plan provided by the hired grazing management company.
10.1.3.2 Chaparral/Scrub	Chaparral, scrub, and brush occur throughout the VMP Area and include species like California sage scrub and coyote brush. This vegetation type generally occurs in dense clusters with some tree species interspersed. Recommendations for chaparral/scrub areas follow: · Dead and dying debris should be cut and trimmed or removed. Roots can be left in place in order to maintain soil stability if necessary. · All vegetative debris should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · If trees are growing among this community, a minimum distance of 3 times the height of the scrub should be cleared between the lowest lying branches and the chaparral/scrub species (Figure 10-2). · Horizontal separation should be 2 to 3 times the height of the chaparral/scrub (Figure 10-3).
10.1.3.3 Oak Woodland	Oak woodland dominates the VMP Area and includes a combination of coast live oak, valley oak, California bay, buckeye, and walnut. As previously mentioned, this is a sensitive vegetation community and work in this habitat type should be minimal and conducted in accordance with AMMs and BMPs outlined in Section 11, Practices to Avoid or Minimize Impacts. Canopies in this community are intermittent to continuous. In areas with breaks in the canopy understories are generally composed of grassland and brush and scrub species. Recommendations for oak woodland areas follow: · In canopy breaks, maintain a vertical distance of 3 feet between surface fuels and low-lying tree branches (Figure 10-2). In areas where shrubs and scrub occupy the understory, a horizontal distance of at least three times the size of the scrub should be maintained, as shown in Figure 10-3. If grassland or herbaceous fuels are present in understories, a minimum distance of three times the vertical height of surface fuels should be maintained. · Duff and leaf litter should not exceed 3 feet above ground level. · If highly flammable species (Section 10.4.2) are present in oak woodland habitat, they should be removed and hauled off-site. · Only shaded fuel breaks or thinning will be used in oak woodland and will not remove more than 20 percent of oak woodland vegetation (i.e., if the oak woodland covers 100 acres, no more than 20 acres will be converted to thin or create the shaded fuel break).
10.1.3.4 Acacia, Eucalyptus & Privet	Acacia and eucalyptus are highly invasive and highly flammable species that contains flammable resins and oils. This species occurs throughout the VMP Area in small, concentrated stands mostly along roadways and adjacent to private properties. Recommendations for acacia areas follow: · Pull seedlings and small saplings by hand or with a weed wrench. Thin dense clusters and maintain 10 to 20 horizontal feet, depending on the slope, between mature trees (Figure 10-3). · Regulate and control stump sprouts, resprouts, and sapling growth using hand pulling for saplings and resprouts and chemical treatments for stumps. · A minimum vertical distance of 3 times the height of resprouts and saplings shall be cleared between the lowest lying branches and any scrub species (Figure 10-2). · Cut and treat larger sapling and mature tree species with herbicides. · Drill and inject with herbicide in applicable areas. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts. · Acacia and eucalyptus can be chipped in place so long as no plant material is left adjacent to sensitive riparian features and does not cover other plants.
10.1.3.6 Broom Species	Broom is common in VMP Area understories and can grow in grasslands, scrub, and woodland habitats. Recommendations for tree of heaven areas follow: · Pull shrubs by hand using a weed wrench. · Cut shrubs to just above ground level using loppers or brush cutters during the dry season in areas sensitive to ground disturbance.
10.1.3.7 English Ivy	English Ivy is a woody vine generally found in moist areas with dense canopies and good shade cover. Recommendations for tree of heaven areas follow: · Pull vines climbing trees and on the ground by hand or using rakes. · Cut stems with pruners or loppers and dig up roots using shovels to prevent resprouts. · Utilize prescribed herbivory, as appropriate, to remove ivy.
10.1.3.8 Italian Thistle	Italian thistle is an invasive species commonly found in disturbed areas, grasslands, and in riparian areas. This species occurs in concentrated patches throughout the VMP Area. Recommendations for Italian thistle areas follow: · Smaller infestations can be removed by hand by pulling, digging, and cutting. Digging may be restricted in areas that contain sensitive habitat including riparian, chaparral, and oak woodland especially in areas upslope of aquatic resources and in areas with steep slopes due to the high level of soil disturbance. · Pull plants by hand once the plant has bolted but prior to flower production. · Cut plants by hand or brush cutters before the thistle flowers and again in early summer to reduce energy reserves. This treatment is best used in the dry season when soils are hard and hand pulling is more difficult. · Graze infestations in the early spring when individual plants are approximately 4 to 6 inches high. Grazing should continue for about 2 to 3 weeks, or in coordination with the contracted grazing manager. · Treat plants with herbicides in mid-spring before they spread seed. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts.
10.1.3.9 Riparian Woodland	Riparian woodlands generally contain dense canopies with intermittent to continuous understories. Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. Riparian areas are sensitive and vegetation management activities should be minimal to protect and avoid impacts to sensitive resources per the AMMs and BMPs in Section 11, Practices to Avoid or Minimize Impacts. Recommendations for riparian areas follow: · Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. · Target climbing and ladder fuels, such as poison oak and giant reed (Arundo donax). Three feet of separation should be maintained between surface fuels and low-lying canopy branches. · Remove highly flammable species (Section 10.4.2). · Monitor canopy continuation and connectivity. In areas with gaps in the canopy, understory growth, including ladder fuels, is more prevalent. These gaps, if present, should maintain 3 times the vertical distance of the height of surface fuels which should be trimmed or removed to ensure no highly flammable pockets of dense vegetation forms (Figure 10-2).



LOS GATOS VEGETATION MANAGEMENT PLAN

Novitiate Park Sensitive Habitat

SWCA ENVIRONMENTAL CONSULTANTS

Novitiate Park (9.93 Acres)

Trail (1,698.16 Feet)

Grazing Exclusion Area

Sensitive Habitat Type

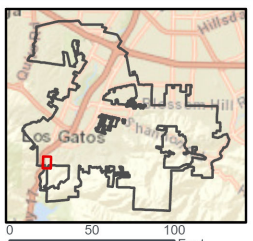
Oak Woodland (6.09 Acres)

Riparian (0.62 Acre)

NHD

Stream/Creek

Santa Clara County, Ca
NAD 1983 UTM Zone 10N



File: Novitiate Sensitive Habitat

La Rinconada Park

Treatments, Treatment Standards, and Sensitive Habitat Areas

La Rinconada Park - Low Risk Priority 3				
	Total Acres	**Treatment Standards**	**Treatment Activity**	**AMMs**
Defensible Space	*0.83*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Shaded Fuel Break	*6.84*	See Section 10.1.3.3	Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). All Aquatic Resources Measures apply.
Trails (lf)	*1321.83*	See Section 10.1.3.3 & See Section 10.1.3.1	Mechanical (Cutting & Chipping) & Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Fuel Reduction Area	*0.80*	See Section 10.1.3.3	Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). All Aquatic Resources Measures apply.
Invasive Species Removal	*0.48*	See Section 10.1.3.4 - 10.1.3.8	Manual, Mechanical,*Chemical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Mowing/Grazing	*0.29*	See Section 10.1.3.1	Mechanical, Prescribed Herbivory/Grazing	Livestock will be excluded from riparian areas using exclusion fencing (Aquatic Resources Measure 33).
Invasive Species				
English Ivy	*0.33*	See Section 10.1.3.7	Manual (Pulling), Mechanical (Cutting), Prescribed Herbivory/Grazing	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
French Broom	*0.15*	See Section 10.1.3.6	Manual (Pulling), Mechanical (Cutting)	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Acacia	-	See Section 10.1.3.4	Manual (Pulling), Mechanical (Cutting)*Chemical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Privet	-	See Section 10.1.3.4	Manual (Pulling), Mechanical (Cutting), *Chemical	Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19).
Sensitive Habitat				
Riparian	*3.28*	See Section 10.1.3.9	Manual, Mechanical (Cutting)	Delineate work, treatment, and protected resource area boundaries (General Measure 1). Activities will avoid areas with special-status species (Biological Resources Measure 13). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). All AMMs in the Aquatic Resources Section apply.
Oak Woodland	*3.24*	See Section 10.1.3.3	Mechanical (Cutting)	Activities will avoid areas with special-status species (Biological Resources Measure 13). Limit the risk of pathogens spread through BMPs (Biological Resources Measure 19). Soil and trimmed/chipped vegetation will not be placed where it covers other vegetation or near a waterbody (Aquatic Resources Measure 32).

*Restrictions apply in riparian habitat. Seasonal and quantitative restrictions may apply to sensitive habitats. Nesting bird season occurs from March through August. See AMMs.

La Rinconada Treatment Standards	
10.1.3.1 Grassland/Herbaceous	Grassland and certain herbaceous species are flash fuels with quick ignition, burn, and dispersal rates. Non-native annual grassland and herbaceous understories are present throughout the Open Space VMP area. Recommendations for grassland/herbaceous areas follow: · In areas where grassland transitions to woodland habitat, a fuel break should be maintained to prevent ignition of surrounding vegetation. A minimum break of 10 feet of horizontal distance should be maintained between grassland and woodland habitat. · Woody slash and debris created by dead herbaceous vegetation should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · Cut grass must be removed if it exceeds 6 inches of vertical height. If it is below 6 inches in height, grass cuttings can be left in place to protect ground soils from erosion. · Grazing is allowed in this habitat and can occur year-round in certain areas, although it is recommended and most effective in late spring through late summer. Grazing should follow the grazing plan provided by the hired grazing management company.
10.1.3.3 Oak Woodland	Oak woodland dominates the VMP Area and includes a combination of coast live oak, valley oak, California bay, buckeye, and walnut. As previously mentioned, this is a sensitive vegetation community and work in this habitat type should be minimal and conducted in accordance with AMMs and BMPs outlined in Section 11, Practices to Avoid or Minimize Impacts. Canopies in this community are intermittent to continuous. In areas with breaks in the canopy understories are generally composed of grassland and brush and scrub species. Recommendations for oak woodland areas follow: · In canopy breaks, maintain a vertical distance of 3 feet between surface fuels and low-lying tree branches (Figure 10-2). In areas where shrubs and scrub occupy the understory, a horizontal distance of at least three times the size of the scrub should be maintained, as shown in Figure 10-3. If grassland or herbaceous fuels are present in understories, a minimum distance of three times the vertical height of surface fuels should be maintained. · Duff and leaf litter should not exceed 3 feet above ground level. · If highly flammable species (Section 10.4.2) are present in oak woodland habitat, they should be removed and hauled off-site. · Only shaded fuel breaks or thinning will be used in oak woodland and will not remove more than 20 percent of oak woodland vegetation (i.e., if the oak woodland covers 100 acres, no more than 20 acres will be converted to thin or create the shaded fuel break).
10.1.3.4 Acacia, Eucalyptus & Privet	Acacia and eucalyptus are highly invasive and highly flammable species that contains flammable resins and oils. This species occurs throughout the VMP Area in small, concentrated stands mostly along roadways and adjacent to private properties. Recommendations for acacia areas follow: · Pull seedlings and small saplings by hand or with a weed wrench. Thin dense clusters and maintain 10 to 20 horizontal feet, depending on the slope, between mature trees (Figure 10-3). · Regulate and control stump sprouts, resprouts, and sapling growth using hand pulling for saplings and resprouts and chemical treatments for stumps. · A minimum vertical distance of 3 times the height of resprouts and saplings shall be cleared between the lowest lying branches and any scrub species (Figure 10-2). · Cut and treat larger sapling and mature tree species with herbicides. · Drill and inject with herbicide in applicable areas. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts. · Acacia and eucalyptus can be chipped in place so long as no plant material is left adjacent to sensitive riparian features and does not cover other plants.
10.1.3.6 Broom Species	Broom is common in VMP Area understories and can grow in grasslands, scrub, and woodland habitats. Recommendations for tree of heaven areas follow: · Pull shrubs by hand using a weed wrench. · Cut shrubs to just above ground level using loppers or brush cutters during the dry season in areas sensitive to ground disturbance.
10.1.3.7 English Ivy	English Ivy is a woody vine generally found in moist areas with dense canopies and good shade cover. Recommendations for tree of heaven areas follow: · Pull vines climbing trees and on the ground by hand or using rakes. · Cut stems with pruners or loppers and dig up roots using shovels to prevent resprouts. · Utilize prescribed herbivory, as appropriate, to remove ivy.
10.1.3.9 Riparian Woodland	Riparian woodlands generally contain dense canopies with intermittent to continuous understories. Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. Riparian areas are sensitive and vegetation management activities should be minimal to protect and avoid impacts to sensitive resources per the AMMs and BMPs in Section 11, Practices to Avoid or Minimize Impacts. Recommendations for riparian areas follow: · Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. · Target climbing and ladder fuels, such as poison oak and giant reed (Arundo donax). Three feet of separation should be maintained between surface fuels and low-lying canopy branches. · Remove highly flammable species (Section 10.4.2). · Monitor canopy continuation and connectivity. In areas with gaps in the canopy, understory growth, including ladder fuels, is more prevalent. These gaps, if present, should maintain 3 times the vertical distance of the height of surface fuels which should be trimmed or removed to ensure no highly flammable pockets of dense vegetation forms (Figure 10-2).



LOS GATOS VEGETATION MANAGEMENT PLAN

La Rinconada Park Sensitive Habitat

La Rinconada Park (8.64 Acres)

Grazing Exclusion Zone

Sensitive Habitat Type

Oak Woodland (3.24 Acres)

Riparian (3.28 Acres)

NHD

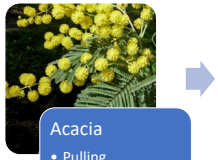
Stream/Creek

Santa Clara County, Ca
NAD 1983 UTM Zone 10N

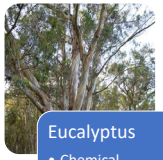


SWCA ENVIRONMENTAL CONSULTANTS

File: LaRinconada Vegetation Sensitive Habitat



Acacia
- Pulling
- Chemical
- Cutting



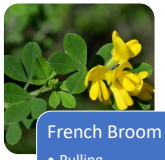
Eucalyptus
- Chemical
- Cutting
- Chipping



Grassland
- Mowing / Cutting
- Grazing



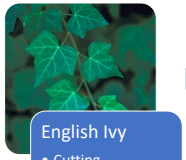
Italian Thistle
- Pulling
- Grazing
- Chemical



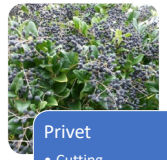
French Broom
- Pulling
- Cutting



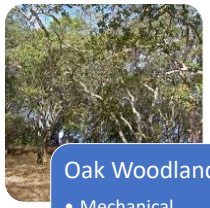
Tree of Heaven
- Pulling
- Chemical
- Cutting



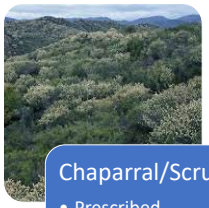
English Ivy
- Cutting
- Pulling
- Grazing



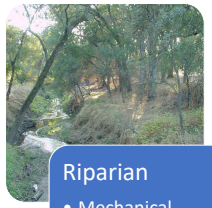
Privet
- Cutting



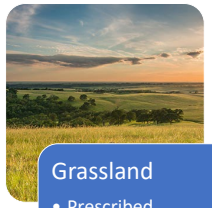
Oak Woodland
- Mechanical (Cutting / Chipping)



Chaparral/Scrub
- Prescribed Herbivory/Grazing
- Mechanical (Masticating / Cutting)



Riparian
- Mechanical (Cutting)



Grassland
- Prescribed Herbivory/Grazing
- Mechanical (Mowing / Cutting)

VMP Treatment Standards	
10.1.3.1 Grassland/Herbaceous	Grassland and certain herbaceous species are flash fuels with quick ignition, burn, and dispersal rates. Non-native annual grassland and herbaceous understories are present throughout the Open Space VMP area. Recommendations for grassland/herbaceous areas follow: · In areas where grassland transitions to woodland habitat, a fuel break should be maintained to prevent ignition of surrounding vegetation. A minimum break of 10 feet of horizontal distance should be maintained between grassland and woodland habitat. · Woody slash and debris created by dead herbaceous vegetation should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · Cut grass must be removed if it exceeds 6 inches of vertical height. If it is below 6 inches in height, grass cuttings can be left in place to protect ground soils from erosion. · Grazing is allowed in this habitat and can occur year-round in certain areas, although it is recommended and most effective in late spring through late summer. Grazing should follow the grazing plan provided by the hired grazing management company.
10.1.3.2 Chaparral/Scrub	Chaparral, scrub, and brush occur throughout the VMP Area and include species like California sage scrub and coyote brush. This vegetation type generally occurs in dense clusters with some tree species interspersed. Recommendations for chaparral/scrub areas follow: · Dead and dying debris should be cut and trimmed or removed. Roots can be left in place in order to maintain soil stability if necessary. · All vegetative debris should be hauled off-site or chipped in place. Vegetative materials chipped in place must not exceed 6 inches in height and should be evenly distributed to prevent a buildup of debris. · If trees are growing among this community, a minimum distance of 3 times the height of the scrub should be cleared between the lowest lying branches and the chaparral/scrub species (Figure 10-2). · Horizontal separation should be 2 to 3 times the height of the chaparral/scrub (Figure 10-3).
10.1.3.3 Oak Woodland	Oak woodland dominates the VMP Area and includes a combination of coast live oak, valley oak, California bay, buckeye, and walnut. As previously mentioned, this is a sensitive vegetation community and work in this habitat type should be minimal and conducted in accordance with AMMs and BMPs outlined in Section 11, Practices to Avoid or Minimize Impacts. Canopies in this community are intermittent to continuous. In areas with breaks in the canopy understories are generally composed of grassland and brush and scrub species. Recommendations for oak woodland areas follow: · In canopy breaks, maintain a vertical distance of 3 feet between surface fuels and low-lying tree branches (Figure 10-2). In areas where shrubs and scrub occupy the understory, a horizontal distance of at least three times the size of the scrub should be maintained, as shown in Figure 10-3. If grassland or herbaceous fuels are present in understories, a minimum distance of three times the vertical height of surface fuels should be maintained. · Duff and leaf litter should not exceed 3 feet above ground level. · If highly flammable species (Section 10.4.2) are present in oak woodland habitat, they should be removed and hauled off-site. · Only shaded fuel breaks or thinning will be used in oak woodland and will not remove more than 20 percent of oak woodland vegetation (i.e., if the oak woodland covers 100 acres, no more than 20 acres will be converted to thin or create the shaded fuel break).
10.1.3.4 Acacia, Eucalyptus & Privet	Acacia and eucalyptus are highly invasive and highly flammable species that contains flammable resins and oils. This species occurs throughout the VMP Area in small, concentrated stands mostly along roadways and adjacent to private properties. Recommendations for acacia areas follow: · Pull seedlings and small saplings by hand or with a weed wrench. Thin dense clusters and maintain 10 to 20 horizontal feet, depending on the slope, between mature trees (Figure 10-3). · Regulate and control stump sprouts, resprouts, and sapling growth using hand pulling for saplings and resprouts and chemical treatments for stumps. · A minimum vertical distance of 3 times the height of resprouts and saplings shall be cleared between the lowest lying branches and any scrub species (Figure 10-2). · Cut and treat larger sapling and mature tree species with herbicides. · Drill and inject with herbicide in applicable areas. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts. · Acacia and eucalyptus can be chipped in place so long as no plant material is left adjacent to sensitive riparian features and does not cover other plants.
10.1.3.5 Tree of Heaven	Tree of heaven is a highly invasive and flammable species that is commonly found in disturbed areas and along riparian corridors within the VMP Area. Recommendations for tree of heaven areas follow: · Pull seedlings and small saplings while soils are moist and loose. Remove taproots by digging around the base of the plant to remove all roots and prevent resprouts. · Cut the stems of mature trees at the beginning of spring and once more in June or July to reduce seed production and deplete energy reserves. · Cut and treat trunks or stems of large trees (i.e., greater than 4-inches diameter at breast height [dbh]) with chainsaws and apply herbicides.
10.1.3.6 Broom Species	Broom is common in VMP Area understories and can grow in grasslands, scrub, and woodland habitats. Recommendations for tree of heaven areas follow: · Pull shrubs by hand using a weed wrench. · Cut shrubs to just above ground level using loppers or brush cutters during the dry season in areas sensitive to ground disturbance.
10.1.3.7 English Ivy	English Ivy is a woody vine generally found in moist areas with dense canopies and good shade cover. Recommendations for tree of heaven areas follow: · Pull vines climbing trees and on the ground by hand or using rakes. · Cut stems with pruners or loppers and dig up roots using shovels to prevent resprouts. · Utilize prescribed herbivory, as appropriate, to remove ivy.
10.1.3.8 Italian Thistle	Italian thistle is an invasive species commonly found in disturbed areas, grasslands, and in riparian areas. This species occurs in concentrated patches throughout the VMP Area. Recommendations for Italian thistle areas follow: · Smaller infestations can be removed by hand by pulling, digging, and cutting. Digging may be restricted in areas that contain sensitive habitat including riparian, chaparral, and oak woodland especially in areas upslope of aquatic resources and in areas with steep slopes due to the high level of soil disturbance. · Pull plants by hand once the plant has bolted but prior to flower production. · Cut plants by hand or brush cutters before the thistle flowers and again in early summer to reduce energy reserves. This treatment is best used in the dry season when soils are hard and hand pulling is more difficult. · Graze infestations in the early spring when individual plants are approximately 4 to 6 inches high. Grazing should continue for about 2 to 3 weeks, or in coordination with the contracted grazing manager. · Treat plants with herbicides in mid-spring before they spread seed. Restrictions apply to sensitive habitat areas, see Section 11, Practices to Avoid or Minimize Impacts.
10.1.3.9 Riparian Woodland	Riparian woodlands generally contain dense canopies with intermittent to continuous understories. Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. Riparian areas are sensitive and vegetation management activities should be minimal to protect and avoid impacts to sensitive resources per the AMMs and BMPs in Section 11, Practices to Avoid or Minimize Impacts. Recommendations for riparian areas follow: · Downed branches, woody slash, and debris should be removed adjacent to stream and creek channels to reduce surface fuel. · Target climbing and ladder fuels, such as poison oak and giant reed (Arundo donax). Three feet of separation should be maintained between surface fuels and low-lying canopy branches. · Remove highly flammable species (Section 10.4.2). · Monitor canopy continuation and connectivity. In areas with gaps in the canopy, understory growth, including ladder fuels, is more prevalent. These gaps, if present, should maintain 3 times the vertical distance of the height of surface fuels which should be trimmed or removed to ensure no highly flammable pockets of dense vegetation forms (Figure 10-2).