



California Department of Forestry
and Fire Protection (CAL FIRE) California Climate
Investments



**Department of Forestry and Fire Protection
(CAL FIRE) Southern Region's Community Wildfire
Prevention and Mitigation Program Direct Award Grant
(CSR Direct Grant) 2021-2022
Project Scope of Work**

Project Name: SBCFPD Lake Arrowhead/Crestline Area Fuel Mitigation Project

Project Tracking Number: CSR Direct Grant 2022

Project Description Summary: Please provide a paragraph summarizing proposed project including the location, habitable structures, acres treated, etc. (Please type in blank space below. Please note there is no space limitations).

San Bernardino County Fire Protection District (SBCFPD) will provide hazardous fuel reduction, community wildfire protection, and safety task force planning for eight project sites in San Bernardino County. The project aims to reduce fire hazards and increase fire resilience in some of the most threatened communities in the county. SBCFPD, in collaboration with Mt. Baldy Fire Safe Council, and Mountain Rim Fire Safe Council identified the following communities in need of fire reduction services: Lake Arrowhead and surrounding areas, Crestline, Running Springs, Waterman Canyon, Wrightwood and surrounding areas, Angelus Oaks, Oak Glen, and Mt. Baldy Village (Mt. Baldy Road). The target stakeholder for this project includes residents, community members, trail supporters, and seasonal visitors. The Project's program design encompasses listed collaborative network recommendations, including fuel loading reduction following timber blowdown, curbside drop-off chipping efforts, wildfire fuel modification, manual treatment methods (i.e., use of loppers, chainsaws, and other hand-operated power tools) for thinning and limbing vegetation and removing ladder fuels and hazard trees. Collectively, the Projects will address the problem of increased fire frequency and intensity by implementing hazardous fuel reduction in referenced communities.

A. Scope of Work

This item is broken into project specific criteria depending on the type of project being proposed: Wildfire Prevention Planning, Wildfire Prevention Education or Hazardous Fuels Reduction. Please answer one section of questions that pertain to the primary activity type for your project.

Section 1: Hazardous Fuels Reduction

1. Describe the geographic scope of the project, including an estimate of the number of habitable structures and the names of the general communities that will benefit.

Section 1: Hazardous Fuels Reduction

The San Bernardino Mountains are an easterly extension of the larger San Gabriel Mountains. The San Jacinto Mountains to the south form a natural boundary between Los Angeles and other cities of the Inland Empire and the Mojave Desert that covers most of southern California. The San Bernardino range stretches for 55 miles just northeast of the namesake city, rising to a height of 11,499 feet at San Geronio Mountain, in the middle of a 94,700-acre wilderness area, part of Sand to Snow National Monument. The San Bernardino National Forest is historically one of the most wildfire-prone forests in the country. The area's arid climate, highly flammable vegetation, steep slopes, and seasonal Santa Ana winds can enhance fires sparked by lightning, careless behavior, accidents, or deliberate actions of humans. Not all areas and resources impacted by these fires will recover naturally, so forest managers and partners have launched several restoration efforts intended to produce ecosystems able to adapt and thrive over time. Projects within the areas burned by past fires focus on forest or upland vegetation, ecosystem restoration, sensitive wildlife species management, infrastructure improvements, and other beneficial projects. Within the mountain range are several communities that have been identified as fuel reduction focus areas due to recent timber blowdowns. Hazardous fuels reduction will include routes of ingress and egress to reduce fuels to secure safe passage for public safety and for potential evacuation routes.

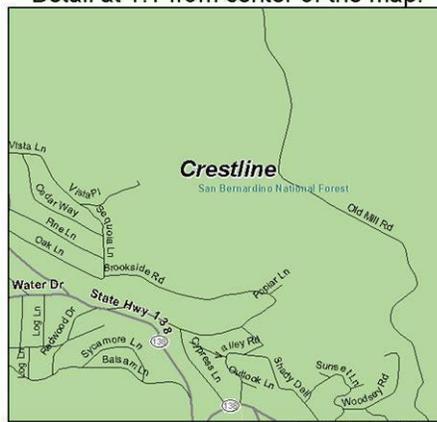
1. **Lake Arrowhead:** An unincorporated community and census-designated place in the San Bernardino Mountains of San Bernardino County, surrounded by San Bernardino National Forest. This community is amongst the eponymous Lake Arrowhead Reservoir. This community is a tourist community, surrounded by residential streets with branched shorelines filled with hundreds of private piers. Tourism is the primary economic generator for the area, contributing several million dollars per year to the county and providing hundreds of full-time and part-time jobs for residents. Beginning in late 2011, a catastrophic drought began affecting Lake Arrowhead and the rest of California. By November 2016, the lake level had dropped 11.975 feet (3.650 m). This drop exposed much of the lake floor and beached most of the docks. As of February 2019, the lake has rebounded to just 2 feet (0.61 m) below the historical average. According to a fire analysis in 2019, Lake Arrowhead is ranked as being "high risk" for fires



Elevation 5,174 Ft.

2 **Crestline:** An unincorporated census-designated place in the San Bernardino Mountains of San Bernardino County, California, United States. The Crestline Census Designated Place is located within Lake Arrowhead Census County Division of San Bernardino County. Crestline houses Lake Gregory Regional Park in the pine forest. Tourism is a primary economic generator for the area, contributing hundreds of thousands of dollars per year and providing full-time and part-time jobs for residents. This area of the San Bernardino mountains, from Crestline to Big Bear, hosts over five million visitors per year, primarily part-time vacation homeowners, friends and guests, and travelers from the Southern California area. There is limited industry in the Crestline area. The major industries are the home building industry and service providers for residents and tourism.

Detail at 1:1 from center of the map.



Elevation 4,316 FT.

3 **Running Springs:** Running Springs is a census-designated place in San Bernardino County, California, United States. Running Springs is situated 17 miles west of the city of Big Bear Lake. It is an inholding in the San Bernardino National Forest. Located at the junction of State Route 18 and State Route 330, it is a significant gateway to the mountain communities of Lake Arrowhead, Arrowbear, Green Valley Lake, and Big Bear. It is the closest community to

Snow Valley Mountain Resort. It lies some 16 miles (26 km) northeast of Highland, California, up State Route 330, at 6,080 feet (1,850 m). While there is no primary industry in Running Springs, service industries are geared to the tourism market, as the San Bernardino National Forest is a year-round tourist destination.

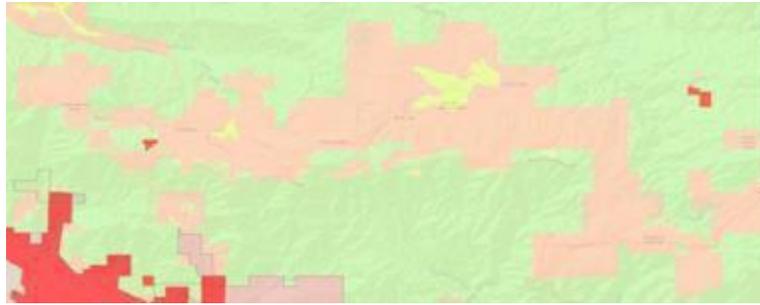


Elevation 6,109 FT.

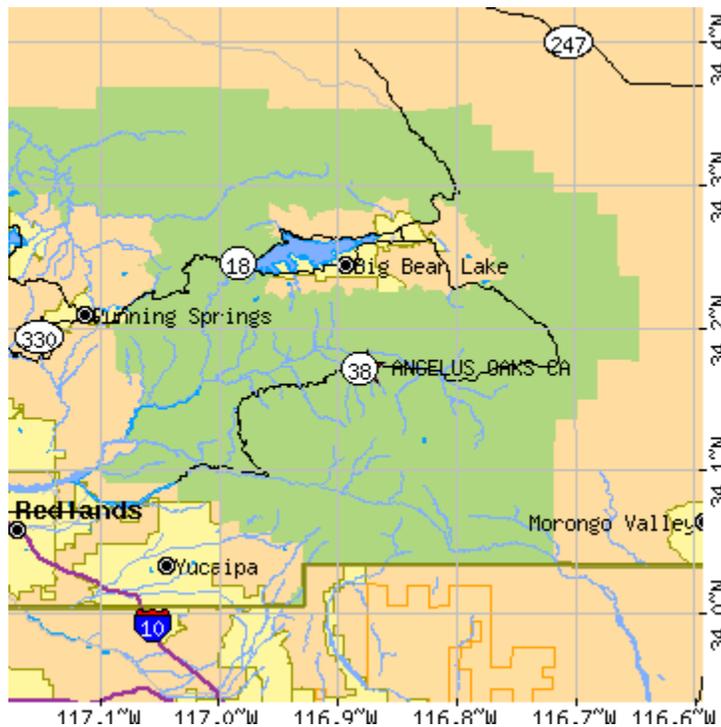
4. **Waterman Canyon:** Waterman Canyon is a deep narrow canyon in San Bernardino County near Arrowhead Springs Station and close to Arrowhead Springs Hot Lake as one of the major thoroughfares in the San Bernardino Valley. According to the 2016 Traffic Volumes on California State Highways published by CalTrans, the average daily traffic for Waterman Canyon Road is approximately 16,000 vehicles per day.



This photo encompasses Lake Arrowhead, Crestline, Running Springs, and the Waterman Canyon area.



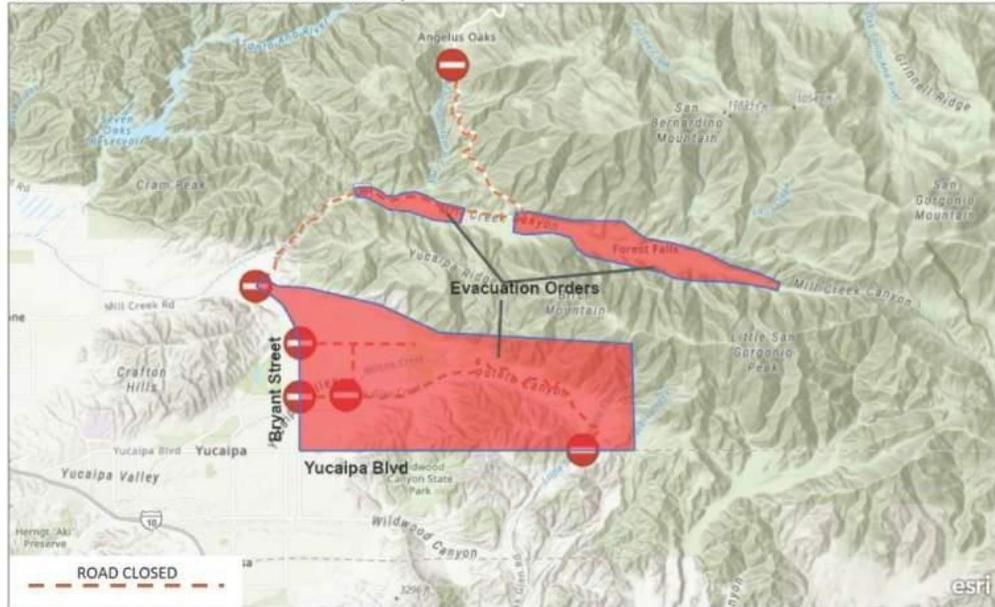
5. **Angelus Oaks:** Angelus Oaks is an unincorporated community in San Bernardino County, California, United States, and has a population of 535 as of the 2010 U.S. Census, up from an estimated population of 312 in 2000. It is surrounded by the San Bernardino National Forest and located northeast of Redlands on California State Route 38. During the El Dorado Fire of 2020, the community of Angelus Oaks was evacuated and areas within the community were burned as a result of the fire.



6. **Oak Glen:** Oak Glen is a census-designated place situated between the San Bernardino Mountains and the Little San Bernardino Mountains in San Bernardino County, California, United States. Oak Glen is located 15 miles east of San Bernardino, at an elevation of 4,734 feet. The population was 638 at the 2010 census. Over a 23-day period, the El Dorado Fire of 2020 burned 22,680 acres in the Oak Glen, Yucaipa Ridge area, and within the San Gorgonio Wilderness Area of the San Bernardino National Forest. The fire forced the evacuations of Oak Glen, north Yucaipa, Mountain Home Village, Forest Falls, and Angelus Oaks communities. The fire required 60 miles of fireline and

ranged from a minimum elevation of 3,030' to a maximum of 10,640'. There were 4 residences damaged, 5 residences destroyed, along with 15 other structures destroyed. Large amounts of fire fuel remain that will be eliminated during this project.

2020 El Dorado Fire Evacuation Order Map



Esri, NASA, NGA, USGS | Loma Linda University, County of Riverside, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

7. **Wrightwood** is a census-designated place in San Bernardino County, California. It sits at an elevation of 5,935 feet (1,809 m). The population from the 2020 census is 4,720. This shows steady growth since the 2010 census which showed the population was 4,525. This is up from the 2000 census which showed a population of 3,837. Wrightwood is located 77 miles northeast of Los Angeles. In August 2016, part of Wrightwood's population was evacuated as part of the Blue Cut Fire mandatory evacuation orders which temporarily displaced over 82,000 people in San Bernardino County. In September 2020, the Bobcat Fire caused evacuation warnings for the Wrightwood area as it raged across the San Gabriel Mountains. This area remains “high risk” for fires and is a community hazard reduction priority in the Wrightwood Community Wildfire Protection Plan.



MOUNTAIN AREA EMERGENCY ROUTES



8. Mt. Baldy Road: Lying within the San Gabriel Mountains National Monument and Angeles National Forest, Mt. Baldy is the high point of the range, within the County, and the entire Los Angeles metropolitan area. When the area became a national forest in 1908, the forest service began offering 99-year leases of plots of land in Icehouse Canyon for vacation cabins. In collaboration with Mt. Baldy Fire Safe Council, SBCFPD will provide fuel reduction treatments along Mt. Baldy Road in San Antonio Canyon. The Mt. Baldy community houses four heavily trafficked trails. The project will improve the fire safety of evacuation routes for residents and visitors, and should provide defensible space around the Mt. Baldy School and nearby habitable structures. The Mt. Baldy community houses two extreme and two very high hazardous communities as identified by the NoHarm Risk50 assessment detailed below.



Elevation 10,069 Ft.

Mount Baldy Community Risk 50 Hazard Ratings		
Community Name	Score	Adjective Rating
Barrett-Stoddard	50	Extreme
Bear Canyon/Goat Hill	48	Extreme
Ski Resort Road	45	Very High
The Village	41.5	Very High
Icehouse Canyon	27.5	High

Rating Categories: Low < 16; Moderate 16-25; High 26-35; Very High 36-45; Extreme > 45.

Forest and communities face unprecedented threats to public safety and quality of life. Before and since the disastrous 2003 Old Fire, the threat of fire danger and evacuation concerns were, and continue to be, paramount. As provided in more detail below, grant funding will allow SBCFPD to treat additional private forest land within the San Bernardino National Forest to reduce catastrophic wildfire, improve forest health, improve water quality services, rehabilitate burned lands, and improve wildlife habitat.

Project Area Statistics	Local Area of Responsibility	Federal Area of Responsibility	State Area of Responsibility
	LRA	FRA	SRA
Project Influence Zone (PIZ)		8,000	
Treatment Influence Zone (TIZ)		1,600	

2. Describe the goals, objectives, and expected outcomes of the project.

The proposed project aims to address the problem of increased fire frequency and intensity by implementing hazardous fuel reduction in unincorporated census-designated communities.

Objectives include the following treatments: identifying, flagging, cutting, and hand spraying of the invasive plants. This will require manual labor to remove brush with various tools, including the Pulaski, hand ax, Grubbing hoe, chainsaw, handsaw, and other equipment to modify vegetation arrangement. Identified practices are among the most common methods property owners use to meet Fire Code requirements. Additionally, treatment methods include the use of loppers, chainsaws, and other hand-operated power tools for thinning and limbing vegetation and removing ladder fuels and hazard trees. Trees greater than 8 inches diameter at breast height (dbh) would be retained. No ground disturbance would occur. Riparian areas, including areas along the San Antonio Creek, would be excluded from treatment. Material would be chipped and removed and/or scattered onsite; no pile burning will occur. The application of growth inhibitors, defoliators, or killers reduces highly flammable herbaceous or poisonous plants such as annual grasses or poison oak.

Expected Outcomes: Reduction of wildfire frequency and intensity overall, which reduces the risks for firefighters and prevents the spread of fires to more residential areas and the loss of life and property. In addition to fire hazard reduction, vegetation management has other benefits, including increased water yields, improved habitat for wildlife, reduced invasive exotic plant species, and open access for recreational purposes.

3. Provide a clear rationale for how the proposed project will reduce the risks associated with wildfire to habitable structures.

Vegetation has a strong influence on wildland fire behavior by fuel type, fuel moisture, the arrangement and continuity of fuels, slope, aspect, and weather. Vegetation can be modified and managed, but the threat of significant catastrophe exists. Within the proposed project, vegetation management, related to wildland fire, refers to the total or partial removal of high fire hazard grasses, shrubs, or trees. The risk of wildfire can be reduced by thinning invasive plants utilizing cutting back and spraying. Fewer plants will be in these spaces to provide fuel for these fires, resulting in the prevention of losing precious infrastructure and lives to fires. For example, in 2007, the Grass Valley Fire damaged or destroyed 199 homes. This fire proved that high intensity fire is not a factor in home loss, rather, the fire spread through surface fuels within the residential area led to this devastating loss comparable to many other catastrophic fires nationwide. Thousands of homes have been lost in wildland fires over the years within the County which is why this mitigating project is significant.

4. Identify any additional assets at risk to wildfire that will benefit from the proposed project. These may include, but are not limited to, domestic and municipal water supplies, power lines, communication facilities and community centers.

Droughts are expected to become more frequent and intense in San Bernardino County and, more broadly, throughout Southern California by mid-century as a direct impact of climate change. Specifically, San Bernardino County is likely to experience more intense heat over this century. Outlined projects will minimize the impact of drought by enabling water sources to be constrained, thus, minimizing the impact on households and natural resources. Water shortages can particularly stress low-income families who may end up spending a more significant percentage of their earnings on basic water service during shortages. Drought can also result in costly damages to the agricultural industry and harm water-reliant biological resources, such as marshes, conifer forests, pinyon-juniper woodlands, and grasslands. Failure to intercept the projected frequency and severity of flooding may expand current FEMA 100- and 500-year floodplains.

Current FEMA floodplains include areas near Barstow, Victorville, Twentynine Palms, Rancho Cucamonga, Ontario, and the City of San Bernardino. Mediating frequency and security of flooding positively impact community recovery, specifically, vulnerable communities housing persons experiencing homelessness, individuals with disabilities, senior citizens living alone, and senior care centers. Flooding may also damage energy transmission and transportation infrastructure (such as bridges), affecting not only the assets themselves but also more rural populations who may rely on this San Bernardino County infrastructure for mobility. Climate changes such as increasing air temperature and wildfire frequency can exacerbate air quality issues. Due to its geography downwind of the Los Angeles metropolitan area and constricted by high mountain ranges, the Valley region in San Bernardino County already experiences some of the worst air quality problems in the country (American Lung Association, 2019). The scope of work included in this grant will provide asset and infrastructure protection for critical elements projected for San Bernardino County.

5. How will the project/activity utilize the left-over woody biomass? Will the project/activity use a biomass facility to reduce greater greenhouse gas emissions?

Left-over woody biomass will be chipped and removed and/or scattered onsite; no pile burning will occur. The use of bioenergy is expanding rapidly globally due to rising oil prices and climate change policies. Previous research on bioenergy production from perennial woody biomass has shown promise both in terms of net greenhouse gas (GHG) reductions and other environmental and socio-economic benefits. Wood chips produced from locally sourced woody biomass showed the lowest greenhouse gas emissions over the full life cycle.¹

B. Degree of Risk

Discuss the location of the project in relation to areas of moderate, high, or very high fire hazard severity zone as identified by the latest Fire and Resource Assessment Program maps. Fire hazard severity zone maps by county can be accessed at:

http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps.php

1

https://www.enr.gov.nt.ca/sites/enr/files/resources/substituon_of_fossil_fuels_with_wood_biomass_report.pdf

Global warming has occurred rapidly throughout the past half-century. In California, less precipitation occurs as snow. This means less water is stored in the snow-pack, and dry summers could result in even less water availability. Summertime peak temperatures will increase, and fire "seasons" may become even longer. All treatment areas proposed in this application are considered high fire zones.

Wildfire habitat continues to be decimated on an enormous scale in the Mountains. The world of fire suppression is changing. Fire seasons are longer, and fire behavior is more extreme. The primary reasons for these changes are:

- Climate change.
- Wood (abundance of fuels).
- The wildland-urban interface (structures and communities adjacent and within the forest boundary).

1. Describe the geographic proximity of the project to structures at risk to damage from wildfire. (Please type in blank space below. Please note there is no space limitations).

San Bernardino Mountains, located east of the San Gabriel Mountains, downwind of the Los Angeles metropolitan area, is constricted by high mountain ranges. The Valley region in San Bernardino County already experiences some of the worst air quality problems in the country (American Lung Association, 2019). Climate changes such as increasing air temperature and wildfire frequency may compound these issues and drive a range of air quality, human health, and ecological risks in San Bernardino County. Santa Ana winds blow in an offshore direction in parts of Southern California. They are caused by the formation of large high-pressure systems over eastern California, Nevada, and Utah, producing strong (>18 mph) and dry winds. Santa Ana winds can also act as catalysts for wildfires.

When a large-scale fire affects the mountain regions proposed for mitigation in the proposed project, major infrastructure is put at risk. Infrastructure includes major highways, homes, buildings, water and sewer lines, as well as natural habitats for endangered species. Major Freeways include: I10, I15, I210, I40. Major Highways include 58, 62, 66, 395. All of these Freeways and Highways mentioned are also considered major thoroughfares for commerce in and out of Southern California. Major Airports include: San Bernardino International Airport and Ontario International Airport. Major rail and railways include: BSNF Railway Company through the Cajon Pass as it travels to the ports of Los Angeles and Long Beach and along the I10 Freeway. SBCFPD provides all-hazard emergency services to 60 cities and communities in the County of San Bernardino. Major hospitals include: Arrowhead Regional Medical Center, St. Bernardine's, Patton, Mountains Community, High Desert Regional Medical Center, San Antonio, Victor Valley, and Desert Valley. SBCFPD protects the California Aqueduct and many local water transmission lines as well as many wastewater treatment facilities. Other utilities include major gas and electrical transmission lines to/from Los Angeles. In addition to the

numerous elementary and secondary educational facilities, SBCFPD provides service to California State University, San Bernardino, which has a student and full-time staff population of over 20,000.

C. Community Support

- 1. Does the project include any matching funds from other funding sources or any in-kind contributions that are expected to extend the impact of the proposed project?**

The proposed request does not include any matching funds. SBCFPD will utilize existing vehicles and hand tools to accomplish the project scope of work and provide in-kind contributions as available. The total project cost is estimated at \$505,163 using the current SBCFPD Board Approved Fees Schedule. The requested amount of funding is \$500,000. The difference of \$5,163 will be met by in-kind contribution by our department if needed to complete the project.

- 2. Describe plans for external communications during the life of the project to keep the effected community informed about the goals, objectives, and progress of the project. Activities such as planned press releases, project signage, community meetings, and field tours are encouraged.**

SBCFPD will develop a Communications and Public Engagement plan to raise awareness about the project and CAL FIRE funded fire prevention efforts among residents of the adjoining communities. The Public Engagement Strategy will be a living document that includes engagement goals and identifies target audiences, key messages, material needs and dissemination, and media engagement. SBCFPD will develop electronic and print materials for dissemination to local residents, stakeholders, and community groups. Materials developed may incorporate the use of professional photography. Community meetings will be facilitated by SBCFPD for local community groups in the project areas.

- 3. Describe any plans to maintain the project after the grant period has ended.**

Planned maintenance includes preparing existing trees for release, hand thinning excess accumulated fuels, and creating piles or chipping cut material. The project will address the delay in standard maintenance of the area. The project will also continue to maintain its directive in the future as it remains a focus of annual treatments.

- 4. Does the proposed project work with other organizations or agencies to address fire hazard reduction at the landscape level?
(Please type in blank space below. Please note there is no space limitations).**

The proposed project will coordinate with the Mt. Baldy Fire Safe Council, U.S. Forest Service, and Mountain Rim Fire Safe Council for assistance with the scope of work for projects. SBCFPD will ensure financial compliance is met at or below the projected cost.

D. Project Implementation

- 1. Discuss the anticipated timeline for the project. Make sure to take seasonal restrictions into account.**

Projected Timeline

Date	Task	Responsible Party
September 2022	Project Begins. All kick off meetings are scheduled during the month that notice of award is made.	SBCFPD
September 2022 - December 2023	Assign Staff to project and conduct engagement meetings with participating agencies.	SBCFPD
November 2022	Create Work Plan for Project.	SBCFPD
November 2022- December 2022	Create Education & Outreach Materials.	SBCFPD
December 2022	Finalize milestone and quarterly objectives with team.	SBCFPD

January 2023	Outreach to local community members and involved organizations about project.	SBCFPD
February 2023	Secure partnerships with relevant stakeholders.	SBCFPD
March 2023	Semi-annual report: Submit jobs reporting data to CAL FIRE.	SBCFPD
January 2023 - March-2023	Complete 10% total acres of project.	SBCFPD
April 2023- June 2023	Complete additional 30% total acres of project.	SBCFPD
June 2023	Semi-annual report: Submit jobs reporting data to CAL FIRE.	SBCFPD
July 2023- September 2023	Complete additional 8% total acres of project.	SBCFPD
October 2023- December 2023	Complete additional 10% total acres of project.	SBCFPD
December 2023	Semi-annual report: Submit jobs reporting data to CAL FIRE.	SBCFPD

January 2024 - March-2024	Complete additional 10% total acres of project.	SBCFPD
April 2024- June 2024	Complete additional 30% total acres of project.	SBCFPD
June 2024	Semi-annual report: Submit jobs reporting data to CAL FIRE.	SBCFPD
October 2024- December 2024	Complete additional 10% total acres of project.	SBCFPD
December 2024	Semi-annual report: Submit jobs reporting data to CAL FIRE.	SBCFPD
March 2025	Finish up any incomplete work on all job sites and complete final invoicing to CalFIRE.	SBCFPD
April 2025	Complete final project closeout report.	SBCFPD

2. Verify the expected time frames to complete the project will fall under the required completion dates depending on the source of the funds awarded.

The proposed project will be completed no later than March 30, 2025 and final closeout will be submitted by April 30, 2025.

3. Using bullets, list the milestones that will be used to measure the progress of the project.

Upon notice of award package, SBCFPD will coordinate with collaborative networks on high priority areas and assign a schedule that will include acreage milestones by quarter. The following key points will take place first:

- Notification and acceptance of award package by May 2022.
- Strategic planning and implementation coordination meeting.

The project will be measured by adherence to the project timeline and completion of milestones as outlined above. Project reporting will aid in keeping the project on task. Additionally, frequent team meetings to ensure staff are accomplishing deliverables will be conducted.

4. Using bullets, list the measurable outcomes (i.e., project deliverables) that will be used to measure the project's success.

Measurable outcomes for detailed projects are:

Lake Arrowhead- 295 acres	
Hand thinning	295 acres
Chipping	20 acres (within total area)
Invasive Removal	20 acres (within total area)
Crestline- 57 acres	
Hand thinning	42 acres
Chipping	5 (within total area)
Invasive Removal	5 (within total area)
Invasive spraying	5 (within total area)
Running Springs- 29 acres	
Hand thinning	19 acres
Chipping	19 (within total area)
Invasive Removal	5 (within total area)
Invasive spraying	5 (within total area)
Waterman Canyon- 38 acres	

Hand thinning	38 acres
Chipping	5 (within total area)
Piling	10 (within total area)
Mt. Baldy Road- 24 acres	
Hand thinning	24 acres
Chipping	7 (within total area)
Piling	12 (within total area)
Wrightwood - 725 acres	
Hand thinning	500 acres
Chipping	203 (within total area)
Piling	190 (within total area)
Angelus Oaks- 238 acres	
Hand thinning	165 acres
Chipping	66 (within total area)
Piling	62 (within total area)
Oak Glen- 133 acres	
Hand thinning	92 acres
Chipping	37 (within total area)

Piling	35 (within total area)
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5. If applicable, how will the requirements of the California Environmental Quality Act (CEQA) be met?

SBCFPD will review all projects funded by the grant under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), if applicable, to ensure compliance with all applicable CEQA and NEPA requirements.

6. Are there any existing forest or land management plans; Conservation Easements; Covenant, Conditions & Restrictions (CC&R's); matters related to zoning; use restrictions, or other factors that can or will limit the wildfire prevention proposed activity?

(Please type in blank space below. Please note there is no space limitations).

There are no existing forest or land management plans; Conservation Easements; Covenant, Conditions & Restrictions (CC&R's); matters related to zoning; use restrictions or other factors that can or will limit the wildfire prevention proposed activity.

E. Administration

1. Describe any previous experience the project proponent has with similar projects. Include a list of recent past projects the proponent has successfully completed if applicable. Project proponents having no previous experience with similar projects should discuss any past experiences that may help show a capacity to successfully complete the project being proposed. This may include partnering with a more experienced organization that can provide project support.

SBCFPD has years of experience completing projects of similar size and scope. The work outlined in this proposal aligns with SBCFPD's principles and work. In addition to the social and economic benefits our agency provides to underserved communities, SBCFPD provides essential environmental services and opportunities for disadvantaged communities to surge in tourism and capitalist ventures financially. Completed projects are detailed below:

Project Name	Scope of Work	Total Project Cost	Project Funder	Project Completion Date
Bark Beetle Hazard Mitigation Project	The removal of hazardous natural fuels as well as eliminating vegetative fire hazards from public and private property	\$ 13.5 Million	USFS 2008 San Bernardino Mountains Tree Mortality and Fuels Management Grant	7/14/2013

2. Identify who will be responsible for tracking project expenses and maintaining project records in a manner that allows for a full audit trail of any awarded grant funds.

(Please type in blank space below. Please note there is no space limitations).

SBCFPD has in-house grant management and invoicing processes that will track project hours, expenses, milestones and ensure the work is completed on schedule. Project records will be maintained at SBCFPD's administrative office.

F. Budget

A detailed project budget should be provided in an Excel spreadsheet attached to this grant application. The space provided here is to allow for a narrative description to further explain the proposed budget. (Please type in blank space below. Please note there is no space limitations).

1. Explain how the grant funds, if awarded, will be spent to support the goals and objectives of the project. If equipment grant funds are requested, explain how the equipment will be utilized and maintained beyond the life of the grant.

Cost estimate for Fuel Reduction work in Lake Arrowhead and surrounding areas, Crestline, Running Springs, Waterman Canyon, Wrightwood and surrounding areas, Angelus Oaks, Oak Glen, and Mt. Baldy Village (Mt. Baldy Road).

The total cost for the project proposed are as follows:

Fuel Reduction: \$460,281

11.79% Indirect Cost: \$44,882

Total Project Cost: \$505,163

Total Request: \$500,000

Salary and Benefits for fuel mitigation work \$6,678.80 per chipping day.

Equipment for fuel reduction work: \$1,396.30 per day

Total Cost for fuel reduction work is \$ 460,281 for a total of 57 days.

Personnel	# of Personnel	Hourly Rate	# of Hrs	Daily Rate
Captain	1	\$ 154.30	10	\$ 1,543.00
Crew Foreman	1	\$ 132.10	10	\$ 1,321.00
FSA III (Reg)	4	\$ 52.65	10	\$ 2,106.00
FSA I (Extra Help)	12	\$ 14.24	10	\$ 1,708.80
Total Personnel Cost			40	\$ 6,678.80
Equipment	Qty of Equip	Hourly Rate	# of hours	
Crew Buggy	1	\$ 75.67	10	\$ 756.70
Chipper (includes Truck)	1	\$ 63.96	10	\$ 639.60
Total Equipment Cost				\$ 1,396.30
Project Cost				\$ 8,075.10

**Rates taken from current Board Approved Fee Schedule*

All equipment utilized for the proposed scope of work will be charged at a daily rate. There will be no new equipment purchased with requested funds. The crew buggy will be used to transport crews. The chipper is used to reduce mitigated fuel size for easier transport. Rates listed are current as of the time of application. It is anticipated that rates will change with each fiscal year. SBCFPD will submit modifications to the project accordingly when rate changes occur.

2. Are the costs for each proposed activity reasonable for the geographic area where they are to be performed? Identify any costs that are higher than usual and explain any special circumstances within the project that makes these increased costs necessary to achieve the goals and objectives of the project.

Costs proposed are reasonable and within geographic averages. There are no proposed costs that are higher than usual.

3. Is the total project cost appropriate for the size, scope, and anticipated benefit

of the project?

SBCFPD utilized its current hourly fees to develop the proposed budget. The budget has been reviewed by organizations that specialize in forest services and it has been agreed that costs are appropriate for the scope of work being presented.

4. Using bullets please list each object category amount that you are requesting and the detail of how that would support meeting the grant objectives.

- Salary & Benefits: \$380,692
 - Category consists of project management staff to oversee the project and grant throughout the project period.
- Equipment: \$79,589
 - Category includes crew buggy and chipper rental for a total of days within the project period.
 - Crew Buggy cost is \$75.67 an hour with an estimate of 10 hours needed per daily rental
 - Chipper (includes truck) cost is \$63.96 per hour for a total estimate of 10 hours needed per daily rental
- Indirect Costs: \$44,882
 - Category includes grant administration, finance, and general indirect costs as associated with the project.

G. California Climate Investments

The space provided here is to allow for a narrative description to further explain how the project/activity will reduce Greenhouse Gas emissions. (Please type in blank space below. Please note there is no space limitations).

1. How will the project/activity reduce Greenhouse Gas emissions?

As fires burn, carbon stored in trees and other vegetation combusts, releasing carbon dioxide and other potent greenhouse gases such as methane and nitrous oxide into the atmosphere. This means that as fires increase, so do emissions. By implementing strategies to reduce the frequency and intensity of wildfires, the project will significantly reduce these greenhouse gas emissions. The proposed fuel reduction activities would generate little fugitive dust, particulate, and mobile source emissions. No burning or ground disturbance is proposed. Vehicle trips to and from the treatment area and equipment use associated with vegetation thinning and removing ladder fuels and hazard trees (i.e., chainsaws, chipper) would generate mobile source emissions. Equipment use would also result in little fugitive dust and particulate matter emissions. Vehicle trips and equipment use would be temporary and intermittent. Emissions from equipment use would be minimized because all equipment use would be conducted according to requirements of the South Coast Air Quality Management

District, such that violation of air quality standards is not anticipated.

Sensitive receptors, including students and other individuals attending Mt. Baldy Elementary School and recreationists, such as hikers, would not be exposed to substantial pollutant concentrations given the temporary and intermittent nature of project activities. The project would not conflict with or obstruct any applicable air quality plan implementation.

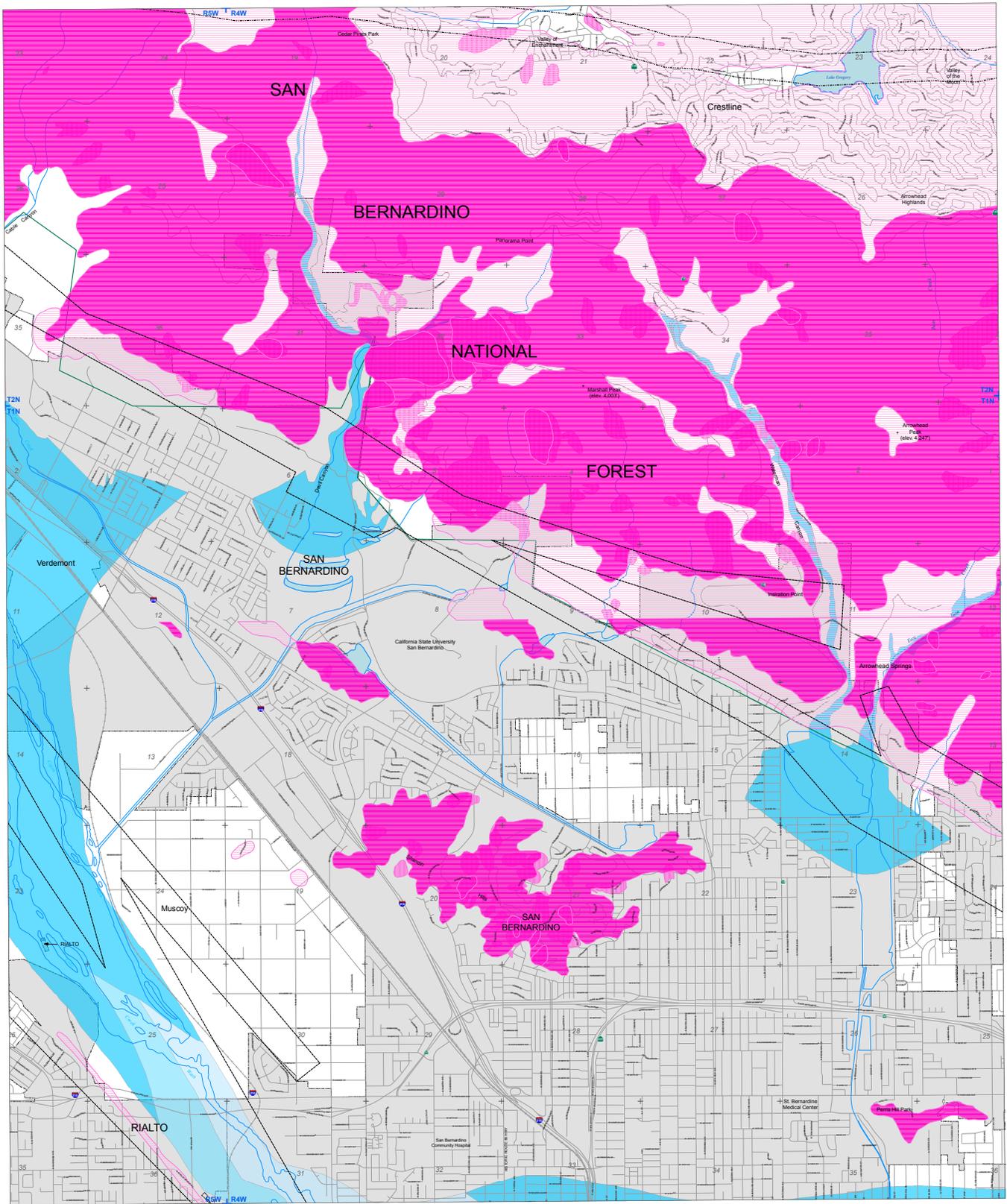
Tracking #: TBD

Project Budget

Project Name: San Bernardino County Fire Fuel Mitigation Project

Budget Category	Item Description	Cost Basis			Cost Share (%)			Funding Source (\$)			Total (\$)
		Quantity	Units	Cost/Unit	Grant	Grantee	Partner	Grant	Grantee	Partner(s)	
A. Salaries and Wages											
	Captain	57	Days	\$ 1,543	100%	0%	0%	\$ 87,951	\$ -	\$ -	\$ 87,951
	Crew Foreman	57	Days	\$ 1,321	100%	0%	0%	\$ 75,297	\$ -	\$ -	\$ 75,297
	FSA III (Reg)	57	Days	\$ 2,106	100%	0%	0%	\$ 120,042	\$ -	\$ -	\$ 120,042
	FSA I (Extra Help)	57	Days	\$ 1,709	100%	0%	0%	\$ 97,402	\$ -	\$ -	\$ 97,402
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
	Sub-Total Salaries and Wages:							\$ 380,692	\$ -	\$ -	\$ 380,692
B. Employee Benefits											
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Hours	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
	Sub-Total Employee Benefits:							\$ -	\$ -	\$ -	\$ -
C. Contractual											
		0	Contract		0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Contract		0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Acres	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Miles	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
	Sub-Total Contractual:							\$ -	\$ -	\$ -	\$ -
D. Travel & Per Diem:											
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Days	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
	Sub-Total Travel & Per Diem:							\$ -	\$ -	\$ -	\$ -
E. Supplies											
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
	Sub-Total Supplies:							\$ -	\$ -	\$ -	\$ -
F. Equipment											
	Crew Buggy	57	Days	\$ 757	100%	0%	0%	\$ 43,132	\$ -	\$ -	\$ 43,132
	Chipper	57	Days	\$ 640	100%	0%	0%	\$ 36,457	\$ -	\$ -	\$ 36,457
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
	Sub-Total Equipment:							\$ 79,589	\$ -	\$ -	\$ 79,589
G. Other Costs											
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
		0	Each	\$ -	0%	0%	0%	\$ -	\$ -	\$ -	\$ -
	Sub-Total Other Costs							\$ -	\$ -	\$ -	\$ -
Total Direct Costs								\$ 460,281	\$ -	\$ -	\$ 460,281
Indirect Costs (Exclude Equipment)								#####	\$ 44,882		\$ 44,882
Total Project Costs								\$ 505,163	\$ -	\$ -	\$ 505,163
Less Program Income								\$ -			\$ -
Total Grant Proposed Costs								\$ 505,163	\$ -	\$ -	\$ 505,163

See FH14 C



See FH30 C

San Bernardino County Land Use Plan
GENERAL PLAN
Geologic Hazard Overlays

SCALE 1:14,400



Generalized Landslide Susceptibility

- Low to moderate
- Moderate to high
- Steep, Scoring Landslide
- Rockfall/Debris-Flow Hazard Area (Forest Falls Only)

Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale by USGS, Mission, CA, and digitized by USGS, 1994 and by U.S. Tax, State Division of Mines and Geology, 1994.
Positional accuracy of map data is at least plus or minus 100 feet.

Zone of Suspected Liquefaction Susceptibility

- Zone of Susceptibility

The Zone of Suspected Liquefaction Susceptibility layer compiled by the San Bernardino County Geologic Data.
Positional accuracy of map data is at least plus or minus 100 feet.

Generalized Liquefaction Susceptibility

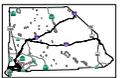
- Low
- Medium
- High

Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale by USGS, Mission, CA, and digitized by USGS, 1994 and by U.S. Tax, State Division of Mines and Geology, 1994.
Positional accuracy of map data is at least plus or minus 100 feet.

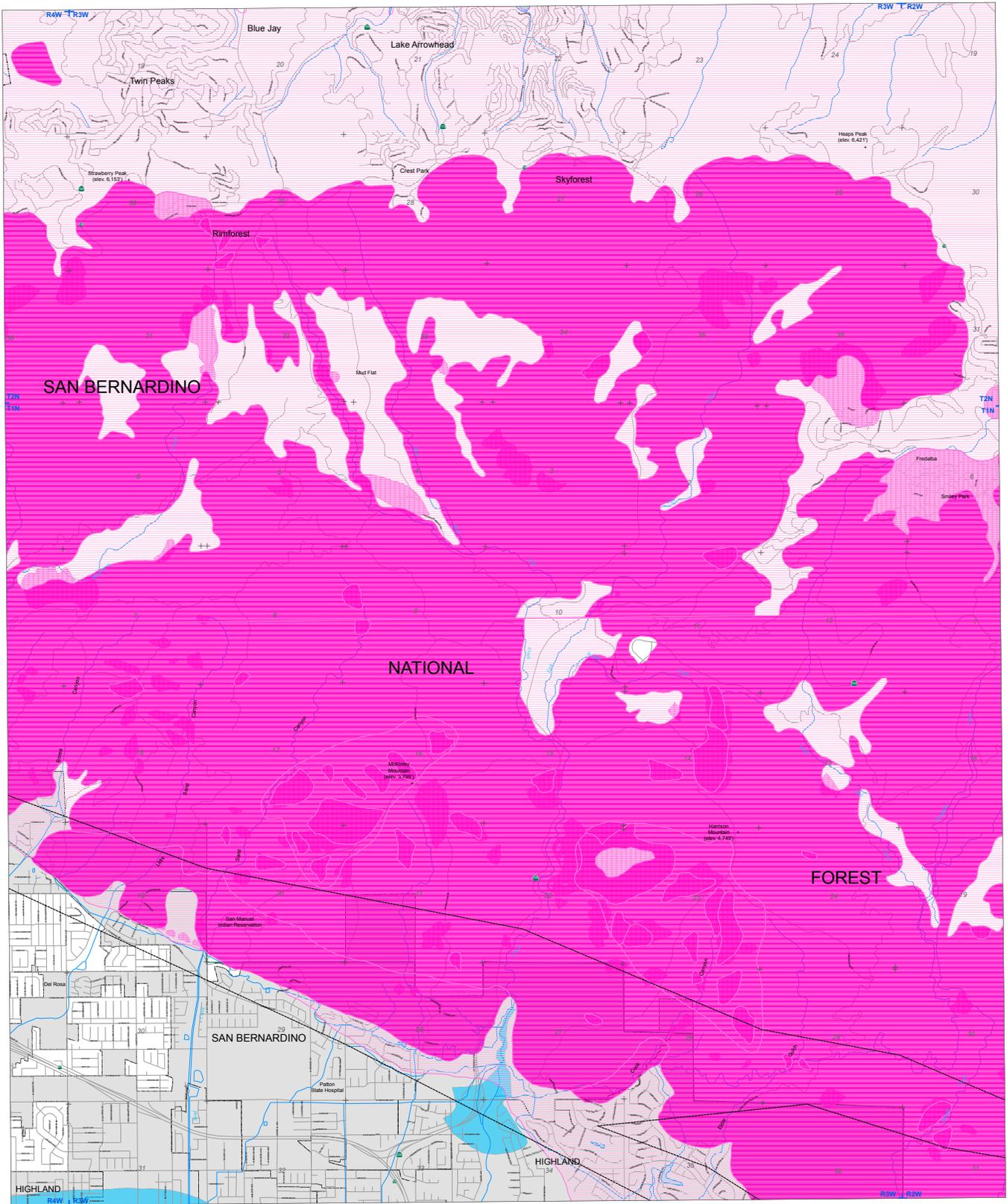
Earthquake Fault Zones

- Earthquake Fault Zone Boundary
- County Designated Fault Zones

Map data compiled on 1:100,000 and 1:50,000 scale topographic maps by the State of California, Division of Mines and Geology, 1961.
Positional accuracy of map data is at least plus or minus 100 feet.
Effective January 1, 1994, the name "State Shaded Zones" has been changed to "Designated Fault Zones" and Code 17.2, Title 2, of the Public Resources Code has been renamed the "Designated Earthquake Fault Zoning Act".



See FH15 C



See FH22 C

See FH24 D

See FH31 C

San Bernardino County Land Use Plan
GENERAL PLAN
Geologic Hazard Overlays

SCALE 1:14,400



Generalized Landslide Susceptibility

- Low to moderate
- Moderate to high
- Steeply Scalloping Landslide
- Rockfall/Debris-Flow Hazard Area (Forest Falls Only)

Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale by 2.5x. UTM, Zone 11N, datum NAD 83, 90% and by S. Tan, State Division of Mines and Geology, 1988.
Positional accuracy of map data is at best plus or minus 100 feet.

Zone of Suspected Liquefaction Susceptibility

- Zone of Susceptibility

The Zone of Suspected Liquefaction Susceptibility layer compiled by the San Bernardino County Geologic Data.
Positional accuracy of map data is at best plus or minus 100 feet.

Generalized Liquefaction Susceptibility

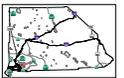
- Low
- Medium
- High

Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale by 2.5x. UTM, Zone 11N, datum NAD 83, 90% and by S. Tan, State Division of Mines and Geology, 1988.
Positional accuracy of map data is at best plus or minus 100 feet.

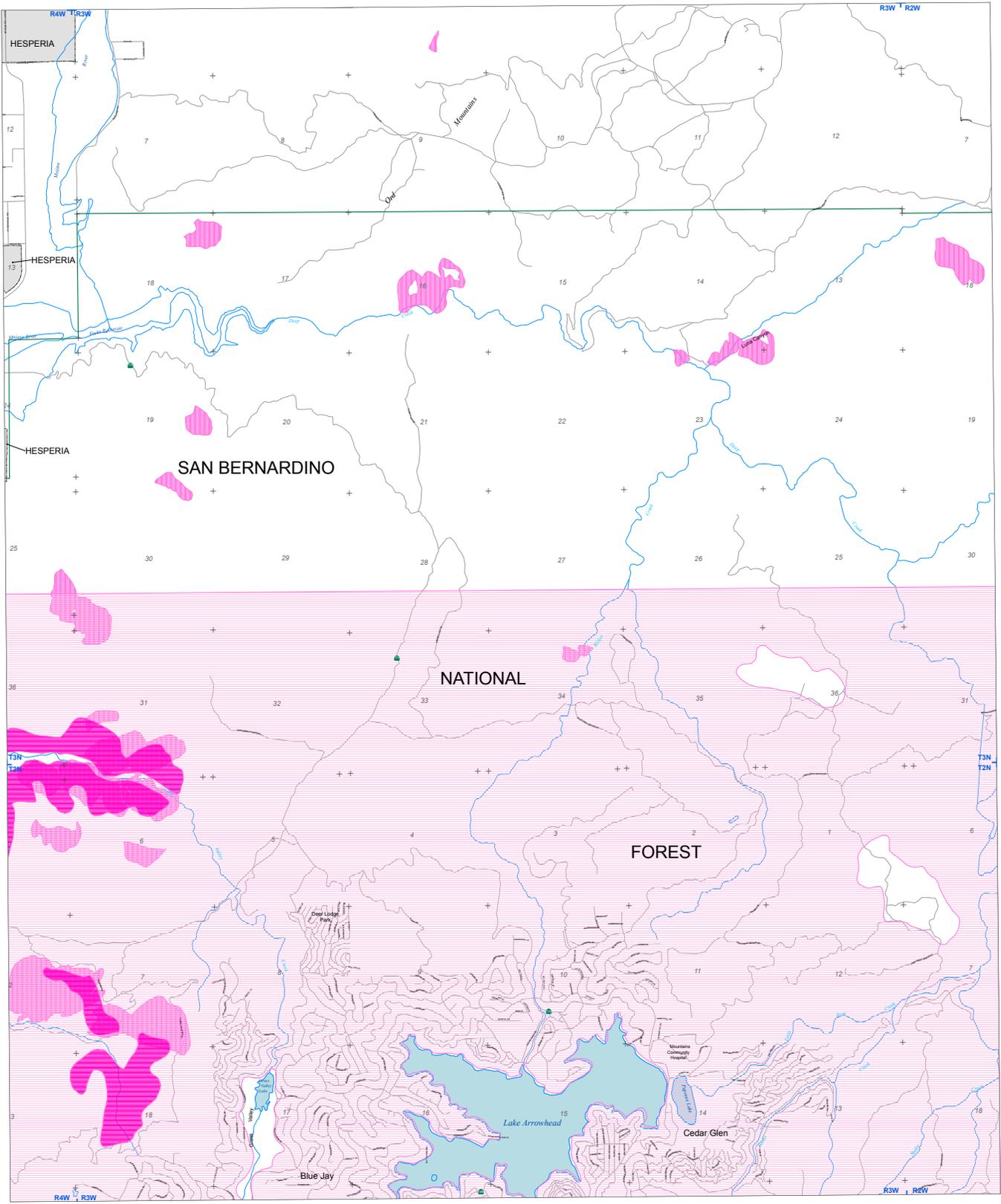
Earthquake Fault Zones

- Earthquake Fault Zone Boundary
- County Designated Fault Zones

Map data compiled on 1:100,000 and 1:50,000 scale topographic maps by the State of California, Division of Mines and Geology, 1981.
Positional accuracy of map data is at best plus or minus 100 feet.
NOTICE: Effective January 1, 2004, the name "State Shaded System" has been changed to "San Bernardino Fault Zones" and Code 12.1, Title 2, Chapter 12.1, San Bernardino County Code has been renamed the "Report From Earthquake Fault Zoning Act".



See FH07 C



See FH23 C

San Bernardino County Land Use Plan
GENERAL PLAN
Geologic Hazard Overlays

SCALE 1:14,400



Generalized Landslide Susceptibility

- Low to moderate
- Moderate to high
- Steep, Scoring Landslide
- Rockfall/Debris-Flow Hazard Area (Forest Falls Only)

Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale USGS maps by USGS, Map Scale 1:62,500, and by U.S. Top. State Division of Mines and Geology, 1981.
Positional accuracy of map data is at best plus or minus 100 feet.

Zone of Suspected Liquefaction Susceptibility

- Zone of Susceptibility

The Zone of Suspected Liquefaction Susceptibility layer compiled by the San Bernardino County Geologic Data.
Positional accuracy of map data is at best plus or minus 100 feet.

Generalized Liquefaction Susceptibility

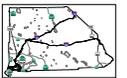
- Low
- Medium
- High

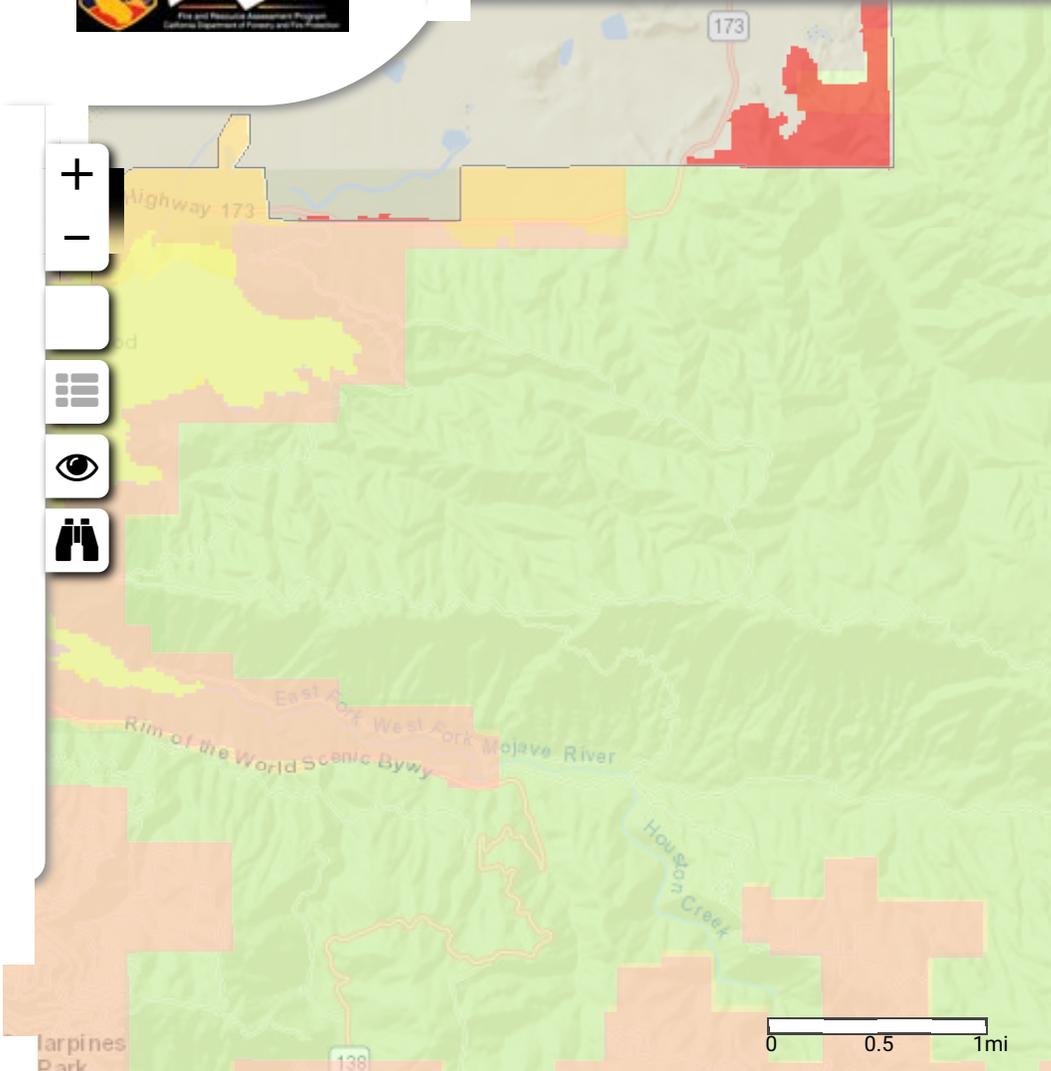
Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale USGS maps by U.S. Top. State Division of Mines and Geology, 1981.
Positional accuracy of map data is at best plus or minus 100 feet.

Earthquake Fault Zones

- Earthquake Fault Zone Boundary
- County Designated Fault Zones

Map data compiled on 1:125,000 and 1:50,000 scale topographic maps by the State of California, Division of Mines and Geology, 1981.
Positional accuracy of map data is at best plus or minus 100 feet.





LEGEND ✕

City Boundaries

- Incorporated Area

County Boundaries

-

FHSZ in LRA

- VHFHSZ

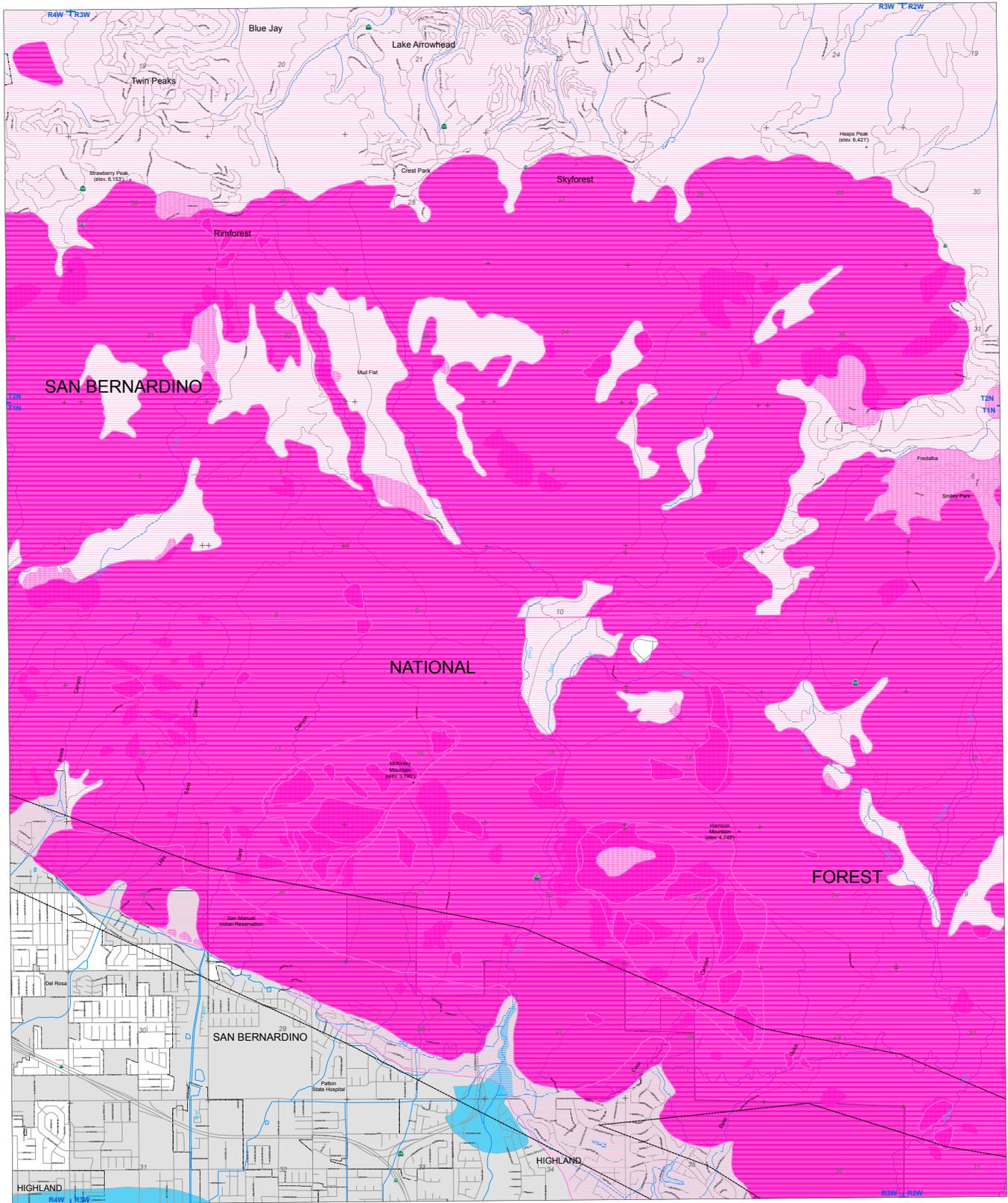
FHSZ in SRA

- Very High
- High
- Moderate

SRA

- Local Responsibility Area (LRA)
- State Responsibility Area (SRA)
- Federal Responsibility Area (FRA)

See FH15 C



See FH22 C

See FH24 D

See FH31 C

San Bernardino County Land Use Plan
GENERAL PLAN
Geologic Hazard Overlays

SCALE 1:14,400



Generalized Landslide Susceptibility

- Low to moderate
- Moderate to high
- Steeply Sloping Landslide
- Rockfall/Debris-Flow Hazard Area (Forest Falls Only)

Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale maps by USGS, 1984, and digitized by S. Tan, State Division of Mines and Geology, 2008. Positional accuracy of map data is at least plus or minus 100 feet.

Zone of Suspected Liquefaction Susceptibility

- Zone of Susceptibility

The Zone of Suspected Liquefaction Susceptibility layer compiled by the San Bernardino County Geologic Data. Positional accuracy of map data is at least plus or minus 100 feet.

Generalized Liquefaction Susceptibility

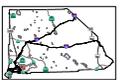
- Low
- Medium
- High

Map data originally compiled on 1:62,500 scale topographic maps, photoreduced from 1:25,000 scale maps by USGS, 1984, and digitized by S. Tan, State Division of Mines and Geology, 2008. Positional accuracy of map data is at least plus or minus 100 feet.

Earthquake Fault Zones

- Earthquake Fault Zone Boundary
- County Designated Fault Zones

Map data compiled on 1:125,000 and 1:62,500 scale topographic maps by the State of California, Division of Mines and Geology, 1981. Positional accuracy of map data is at least plus or minus 100 feet.



Mt. Baldy NoHARM

2021 Mountain Rim custom risk description

21-FP-BDU-0130

Ski Resort Road

Thunder Mountain

Icehouse Canyon

Bear Canyon/Goat Hill

Mt Baldy

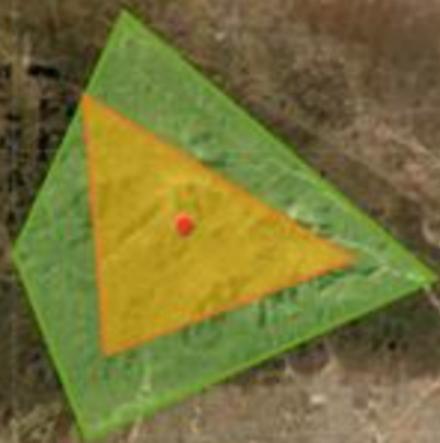
Ontario Peak

Barrett-Stoddard

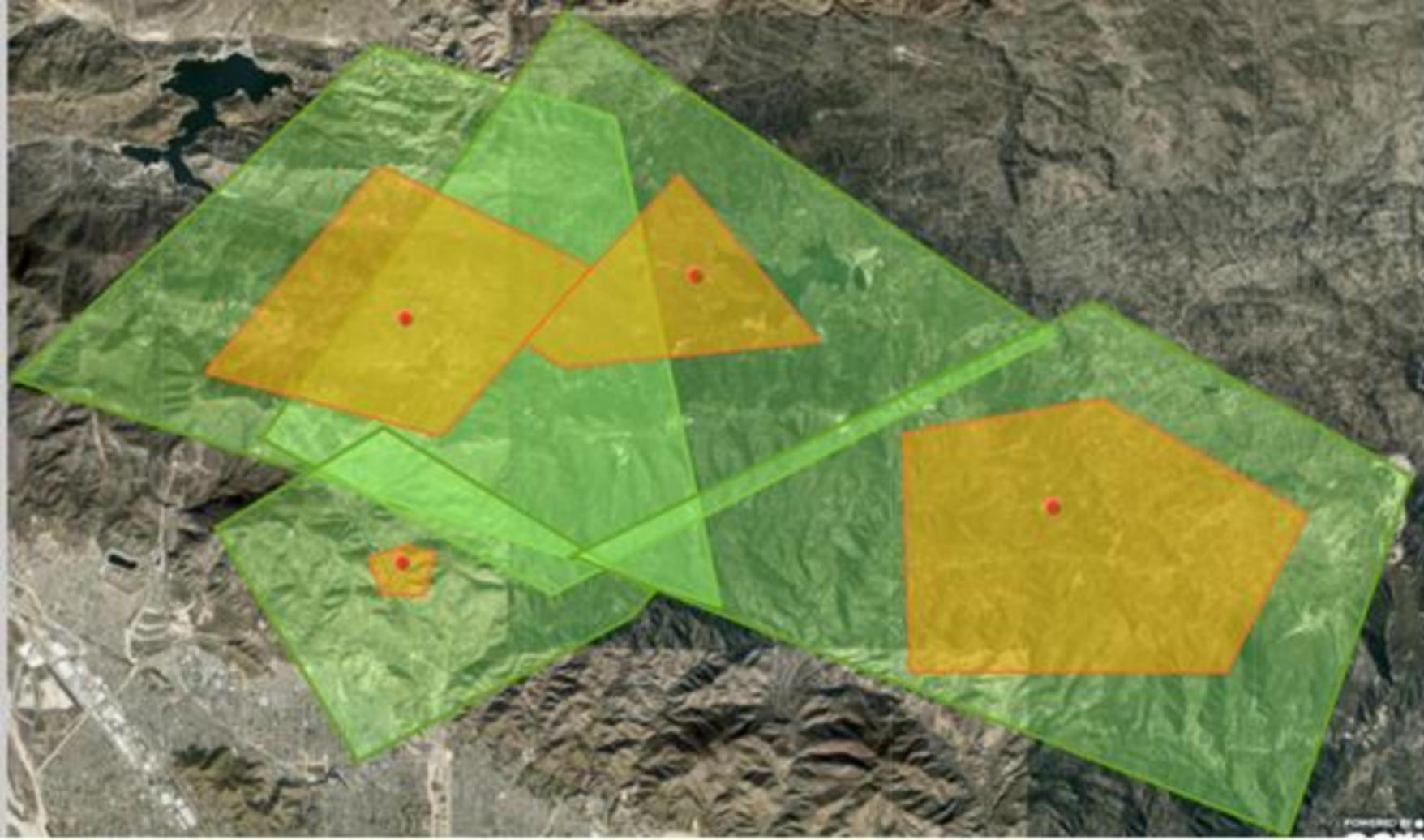
Legend

-  Communities
-  High Risk
-  Low Risk
-  Moderate Risk
-  Very High Risk
-  Peak









NONDISCRIMINATION COMPLIANCE STATEMENT

STD. 19 (Rev. 10/2019)

COMPANY NAME

San Bernardino County Fire Protection District

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), medical condition (cancer), age (over 40), marital status, denial of family care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

Dan Munsey

DATE EXECUTED

EXECUTED IN THE COUNTY OF

PROSPECTIVE CONTRACTOR'S SIGNATURE

PROSPECTIVE CONTRACTOR'S TITLE

Fire Chief/ Fire Warden

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

San Bernardino County Fire Protection District

DRUG-FREE WORKPLACE CERTIFICATION

STD. 21 (Rev. 10/2019)

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor or grant recipient to the certification described below. I am fully aware that this certification, executed on the date below, is made under penalty of perjury under the laws of the State of California.

CONTRACTOR/BIDDER FIRM NAME San Bernardino County Fire Protection District	FEDERAL ID NUMBER 95-6002748
BY (Authorized Signature) 	DATE EXECUTED
PRINTED NAME AND TITLE OF PERSON SIGNING Dan Munsey TITLE Fire Chief/ Fire Warden	TELEPHONE NUMBER (Include Area Code) (909) 387-5779
CONTRACTOR/BIDDER FIRM'S MAILING ADDRESS 157 W. 5th Street, 2nd Floor, San Bernardino, CA 92415-0451	

The contractor or grant recipient named above hereby certifies compliance with Government Code Section 8355 in matters relating to providing a drug-free workplace. The above named contractor or grant recipient will:

1. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).
2. Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b), to inform employees about all of the following:
 - (a) The dangers of drug abuse in the workplace,
 - (b) The person's or organization's policy of maintaining a drug-free workplace,
 - (c) Any available counseling, rehabilitation and employee assistance programs, and
 - (d) Penalties that may be imposed upon employees for drug abuse violations.
3. Provide as required by Government Code Section 8355(c), that every employee who works on the proposed contract or grant:
 - (a) Will receive a copy of the company's drug-free workplace policy statement, and
 - (b) Will agree to abide by the terms of the company's statement as a condition of employment on the contract or grant.
4. At the election of the contractor or grantee, from and after the "Date Executed" and until _____^(DATE) (NOT TO EXCEED 36 MONTHS), the state will regard this certificate as valid for all contracts or grants entered into between the contractor or grantee and this state agency without requiring the contractor or grantee to provide a new and individual certificate for each contract or grant. If the contractor or grantee elects to fill in the blank date, then the terms and conditions of this certificate shall have the same force, meaning, effect and enforceability as if a certificate were separately, specifically, and individually provided for each contract or grant between the contractor or grantee and this state agency.