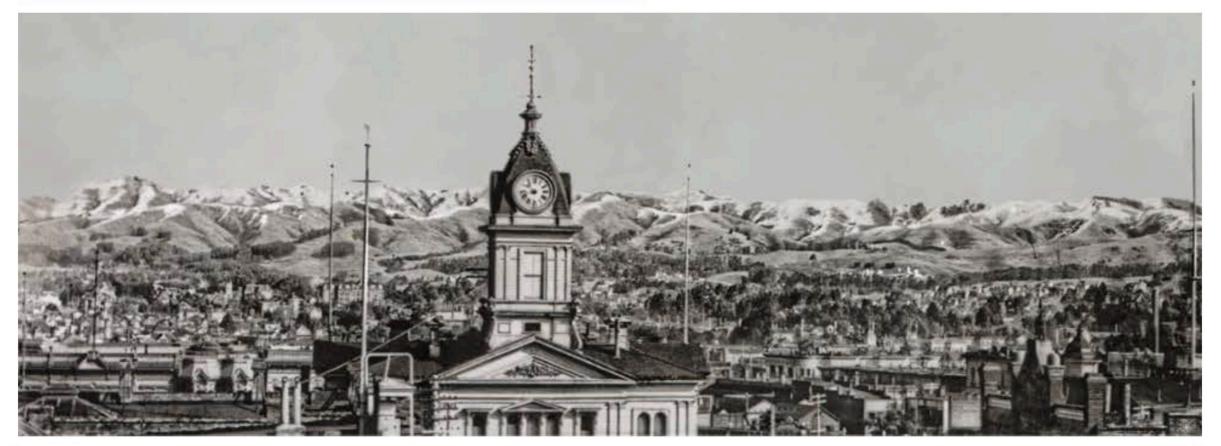
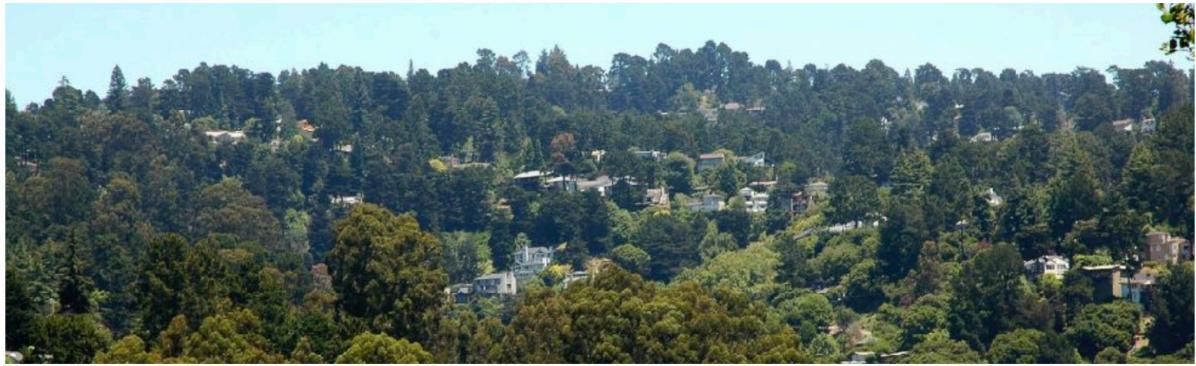


THE 1903 OAKLAND HILLS SKYLINE





THE FRANK HAVENS OAKLAND HILLS SKYLINE

THEN THERE WAS THE 1923 BERKELEY FIRE

'The fire department will not be able to stop it': Berkeley fire chief's sobering message about risk of 1923-like inferno

Julie Johnson Sep. 16, 2023

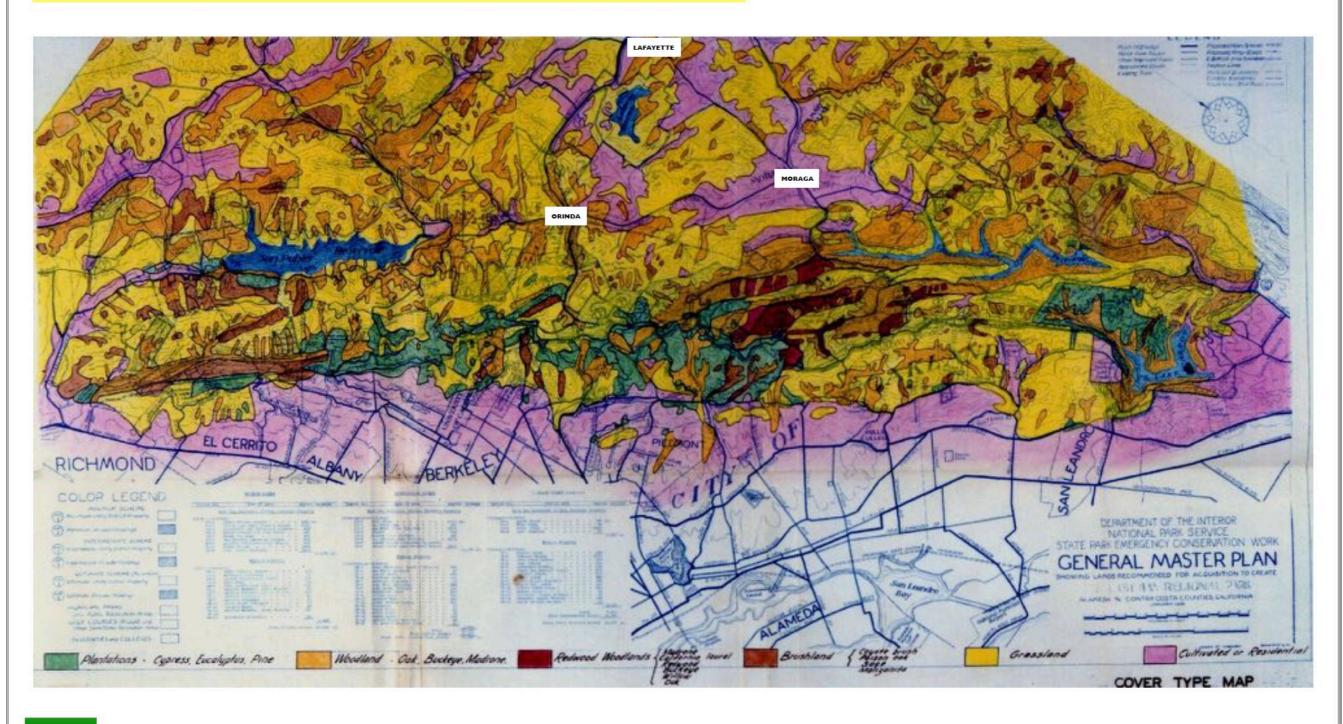


An aerial view of the damage after a 1923 fire destroyed more than 600 homes in North Berkeley. Courtesy Berkeley Public Library

On Sept. 17, 1923, a <u>wildfire</u> driven by strong winds <u>raced into north Berkeley</u> <u>neighborhoods</u> from the hills behind the university. As the outmatched young fire department called for help, thousands of UC students sprang into action, and San Francisco firefighters drove engines onto barges and rushed across the bay.

3 MILLION EUCALYPTUS TREES AS MAPPED IN 1936

1936 EAST BAY HILLS VEGETATION MAP



PLANTATIONS- BLUE GUM EUCALYPTUS, MONTEREY PINE, AND MONTEREY CYPRESS

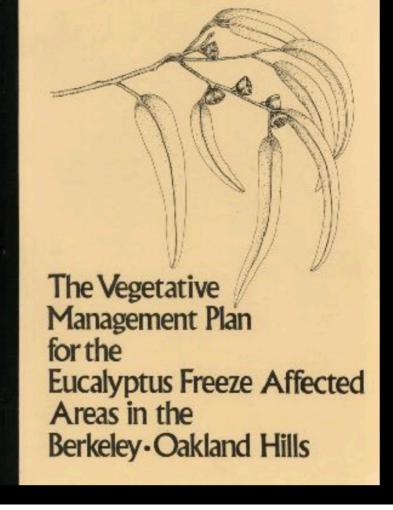
THEN THERE WAS THE 1972 FREEZE



A NINE DAY NOVEMBER FREEZE KILLED OR DAMAGED THOUSANDS OF EUCALYPTUS TREES WITH 800 ACRES CLEARED IN 3 YEARS BY EBRPD, EBMUD, UC, AND OAKLAND.

THE FIRST EAST BAY HILL FUELBREAK WAS CREATED ALONG THE HIGH RIDGE BETWEEN TILDEN AND LAKE CHABOT.





25 DIE, 3,000 HOMES ARE LOST, AND COSTS EXCEED \$1.5 BILLION

Fire statistics 25 Deaths 150 Injuries 2,843 Houses destroyed 433 Apartments destroyed 3,276 **Dwellings** destroyed 1,520 Acres burned 5.25 miles Fire perimeter \$1.537 billion **Dollar loss**

Come channes made

THE FIRE BLEW THROUGH 790

HOMES IN LESS THE ONE HOUR

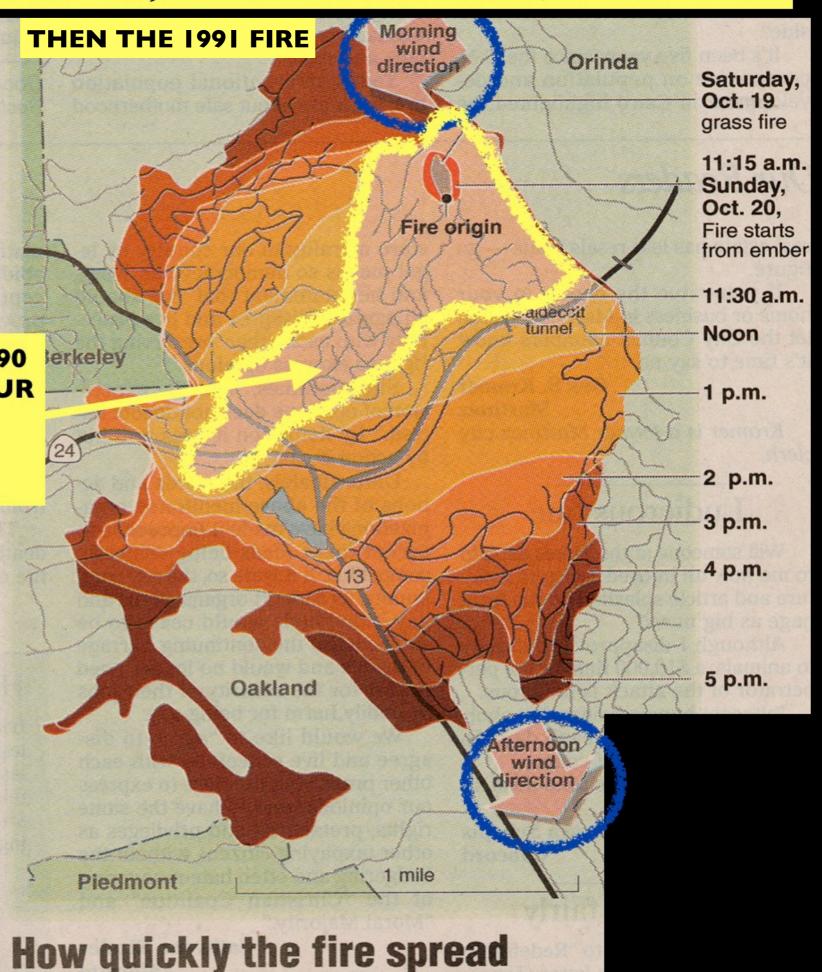
ONE HOUSE IN EVERY II SECONDS

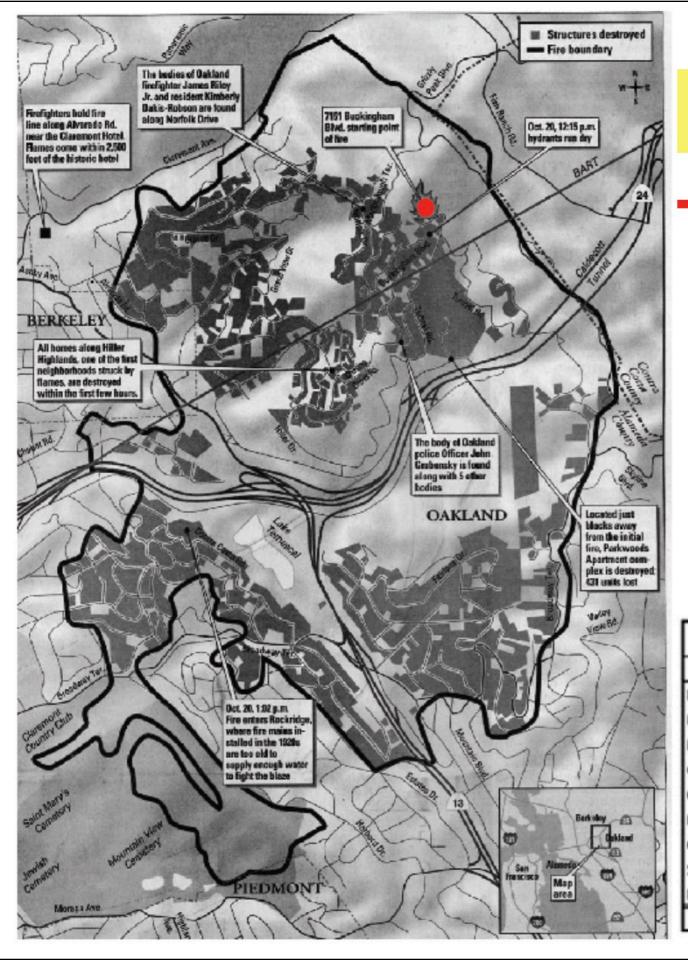
fire departments practice coordinated firefighting in field conditions, training urban firefighting techniques.

Properties are inspected and fire codes enforced for clearing combustibles near houses and maintaining fire roads.

Controlled burns have eliminated more than 1,200 acres of fuel.

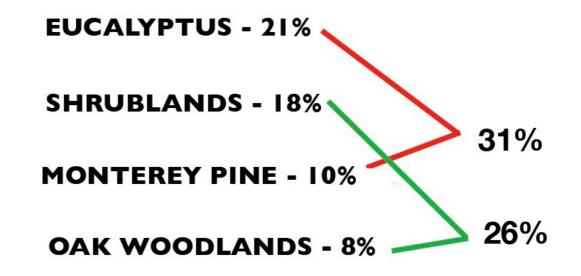
Communication systems have improved. In 1991, the Oakland Fire Department used a 2-band radio, limiting all emergency communication to 2 channels, which were overloaded during the blaze.





WHAT BURNED DURING THE 1991 FIRE?

RESIDENTIAL - 40% OF FIRE ACREAGE



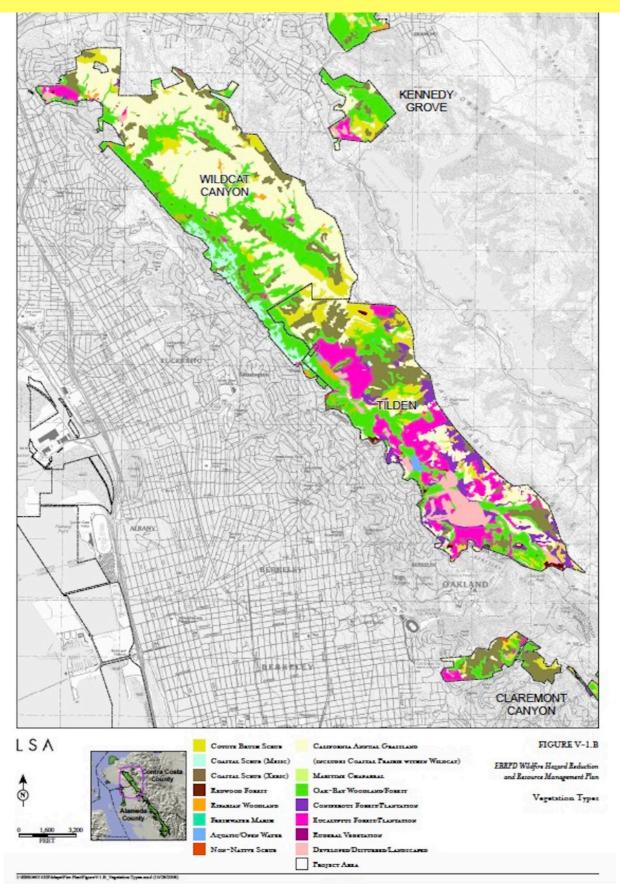
ROADSIDE VEGETATION - 3%

1991 FIRE ENCLOSED 615.2 hectares or 1,520 acres					
Catergory	Area (ha)	%			
Eucalyptus	132.1	326.4	21%		
Monterey pine	56.3	139.1	9%		
Norther Ca. coastal scrub	109.7	271.1	18%		
Grassland	2.9	7.2	0.5%		
Coastal scrub and grassland mosaic	28.5	70.4	5%		
Monterey pine and coastal scrub mosaic	2.3	5.7	0.4%		
Coast live oak and coastal scrub mosaic	19.2	47.4	3%		
Structures (and residential landscape and trees)	246.2	608.4	40%		
Highways and road side vegetation	18	44.5	3%		
Totals	615.2	1,520	100%		

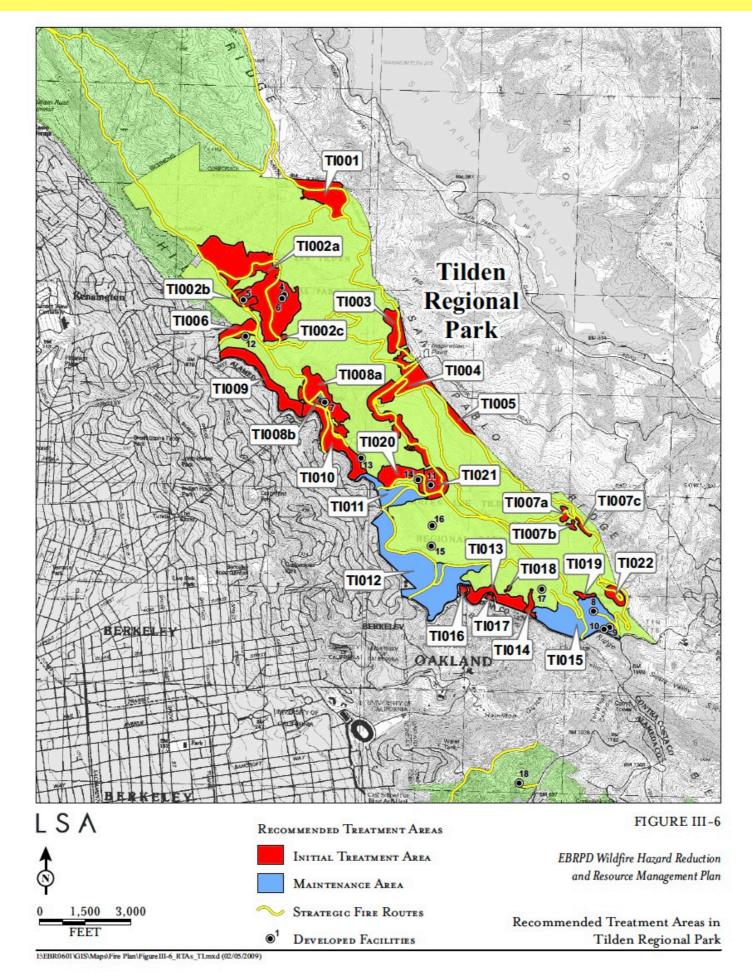
THE 1995 HILLS EMERGENCY FORUM PLAN WAS NOT USED TO DEVELOP A PROGRAMATIC EIR. IN 2005, AGENCIES DECIDED TO DEVELOP THEIR INDIVIDUAL PLANS AND CEQA PROCESS.



THE PARK DISTRICT THEN COMPLETED ITS OWN 2010 PLAN/EIR-TILDEN & WILDCAT VEGETATION AND PROJECT AREAS

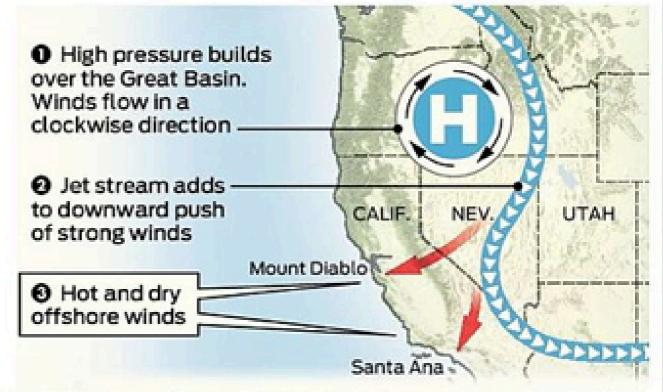


EBRPD TILDEN 2010 PLAN/EIR FUEL TREATMENT POLYGONS

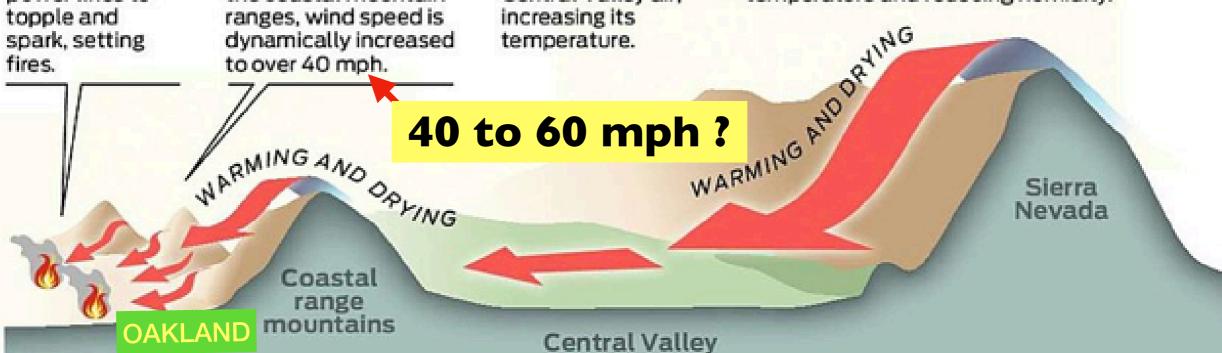


DIABLO WINDS CAN RUIN ANY FIRE MITIGATION PLAN

The Diablo winds that were forecast for Northern California usually come in the fall, but their behavior is hard to predict because mountains, valleys and even cloud formations can alter their speed and directon.



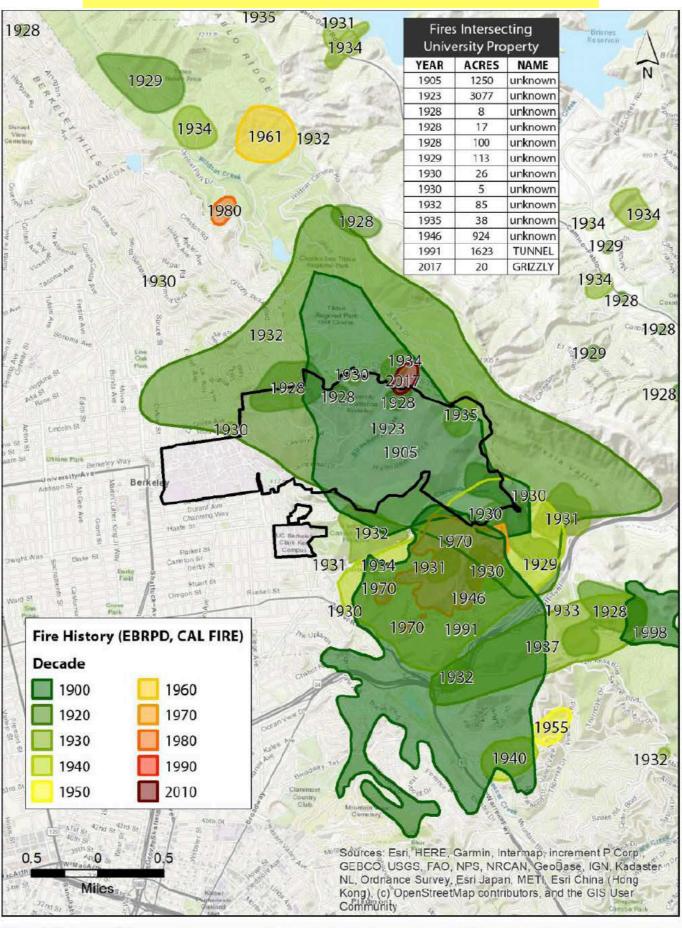
- The excessive wind can cause power lines to topple and spark, setting fires.
 - Squeezing through canyons and gaps of the coastal mountain ranges, wind speed is
- Winds come into contact with warm Central Valley air, increasing its temperature.
- 4 High-pressure wind cascades over the Sierra mountains. The air is compressed, increasing temperature and reducing humidity.



Sources: National Weather Service; NOAA

John Blanchard / The Chronicle

BERKELEY HILLS FIRE HISTORY



Fire History Map

UC Berkeley Hill Campus Wildland Fuel Management Plan

Figure 6. Fire history of the East Bay Hills

OAKLAND HILLS FIRE HISTORY

CITY OF OAKLAND, CALIFORNIA / SECOND REVISED DRAFT VEGETATION MANAGEMENT PLAN

2.4 Fire History and Ignitions

Fire history is an important component in understanding fire frequency, fire type, significant ignition sources, and vulnerable areas. The topography, vegetation, and climatic conditions associated with the Plan Area combine to create a unique situation capable of supporting large-scale, high-intensity, and sometimes damaging wildfires, such as the 1991 Tunnel Fire. The history of wildfires in the Plan Area is presented in Table 5.

Table 5. History of Wildfires in the Oakland Hills

Year	Month	Wind	Acres	Structures Lost	Location	
1923	September	Diablo	130	584	North of UC Berkeley Campus	
1931	November	Diablo	1,800	5	Leona Canyon	
1933	November	Diablo	1,000	5	Joaquin Miller	
1937	September	Westerly	700	4	Broadway Terrace	
1940	September	Westerly	30	0	Broadway Terrace	
1946	September	Diablo	1,000	0	Buckingham/Norfolk	
1955	November	Westerly	10	0	Montclair	
1960	October	Diablo	1,200	2	Leona Canyon	
1961	November	South- Westerly	400	0	Briones Regional Park, Tilden Regional Park, Roberts Regional Recreation Area, Chabot Regional Park	
1968	October	Westerly	204	0	North of Naval Hospital	
1970	September	Diablo	204	37	Buckingham/Norfolk	
1980	December	Diablo	2	5	Wildcat Canyon Road, Berkeley	
1990	October	Westerly	200	0	Leona Canyon	
1991	October	Diablo	1,700	3,000	Buckingham/Norfolk	
2017	July	West/North	9	0	Grizzly Peak and South Park	
2017	September	North	22	0	Leona Quarry	
2017	October	Diablo	7	0	Elysian Fields and Gold Links Road	
2017	December	Diablo	2.5	2	Snake Road and Colton Boulevard	
2020	May	Unknown	2	0	Fontaine Street/Golf Links Road	
2020	June	Unknown	2.5	0	I-580 near Howard Elementary School	
2020	August	Unknown	<u><1</u>	0	I-580/West Keller Avenue	
2022	June	Calm	2.5	0	Sheffield Village/Covington Street	
2022	September	Unknown	<u><1</u>	0	I-580/Edwards	
2022	September	Unknown	<1	4	35th/MacArthur Boulevard	

Source: City of Oakland 2017b, Hunt, Pers. Comm. 2023.

As presented in Table 5, nearly all significant wildfires have burned in the months of September, October, or November. This timeframe coincides with the end of the dry summer season, where vegetation has lower fuel moistures and Diablo winds return to the Plan Area. While not all the fires shown in Table 5 were associated with Diablo (easterly or northeasterly) winds, the largest and most damaging fires have occurred during such winds.



The Santiago Canyon fire in 1889 burned approximately 300,000 acres across Orange County, San Diego County, and Riverside County. Before 2018, this was the largest fire on record in terms of acreage.



AUGUST COMPLEX

1,032,648 ACRES MENDOCINO COUNTY+ AUG 2020



DIXIE FIRE 963,309 ACRES

BUTTE COUNTY+ JUL 2021



LARGEST RECORDED

MENDOCINO COMPLEX

459,123 ACRES JUL 2018



SCU LIGHTNING COMPLEX

396,625 ACRES COLUSA COUNTY+ STANISLAUS COUNTY+ AUG 2020

MOST DESTRUCTIVE



CEDAR FIRE

2,820 STRUCTURES SAN DIEGO COUNTY OCT 2003



TUNNEL-**OAKLAND HILLS**

2,900 STRUCTURES ALAMEDA COUNTY OCT 1991



TUBBS FIRE

5,636 STRUCTURES SONOMA COUNTY OCT 2017



#1 CAMP FIRE

18,804 STRUCTURES BUTTE COUNTY 810S VON

1,520 ACRE OAKLAND HILLS **WILDFIRE IS 3RD MOST DESTRUCTIVE AND DEADLY FIRE IN CALIFORNIA HISTORY**



CAMP FIRE

85 DEATHS BUTTE COUNTY 8102 VON



GRIFFITH PARK

29 DEATHS L.A. COUNTY OCT 1933





TUNNEL-

OAKLAND HILLS 25 DEATHS ALAMEDA COUNTY OCT 1991



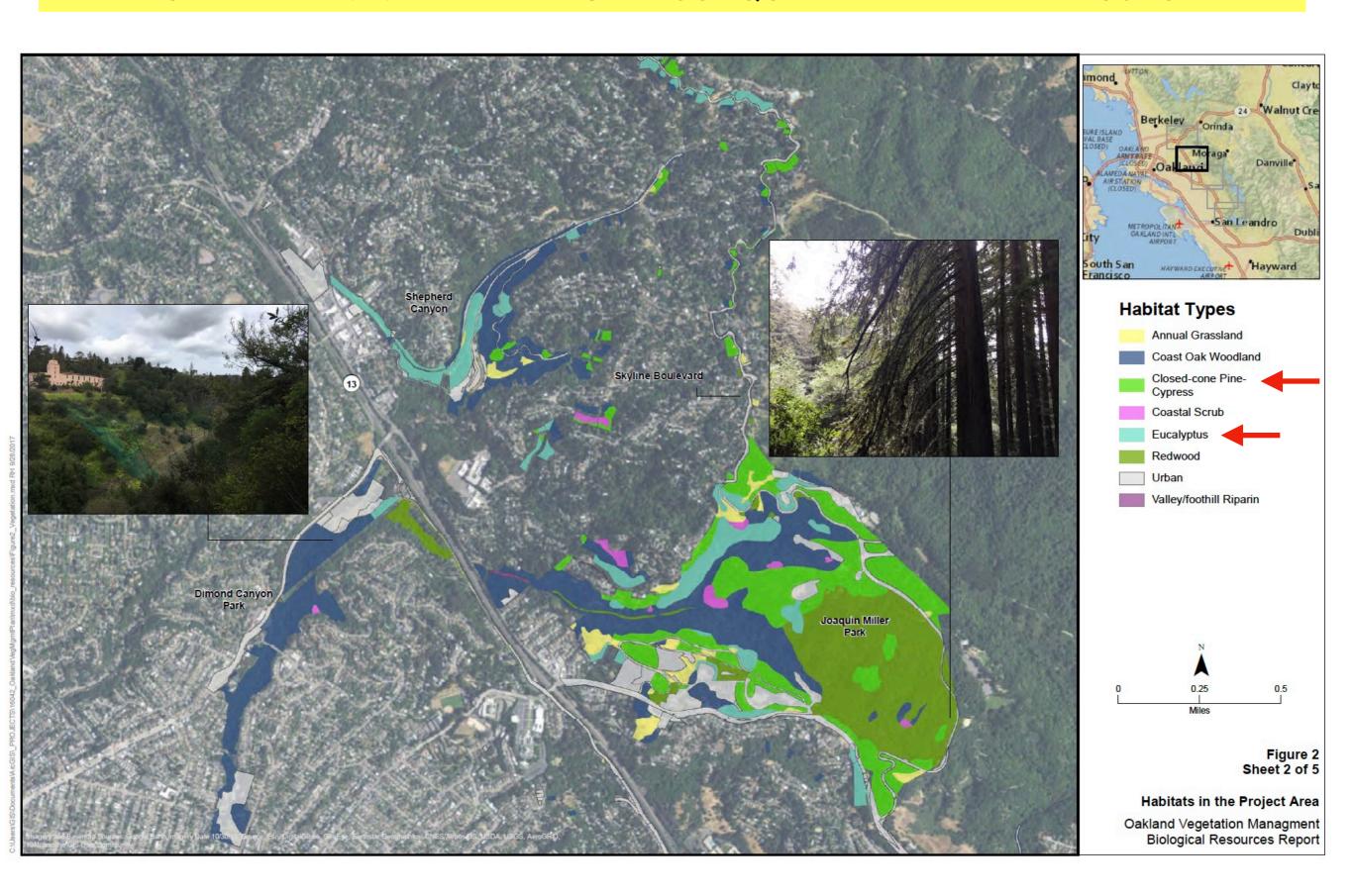
TUBBS

22 DEATHS SONOMA COUNTY OCT 2017

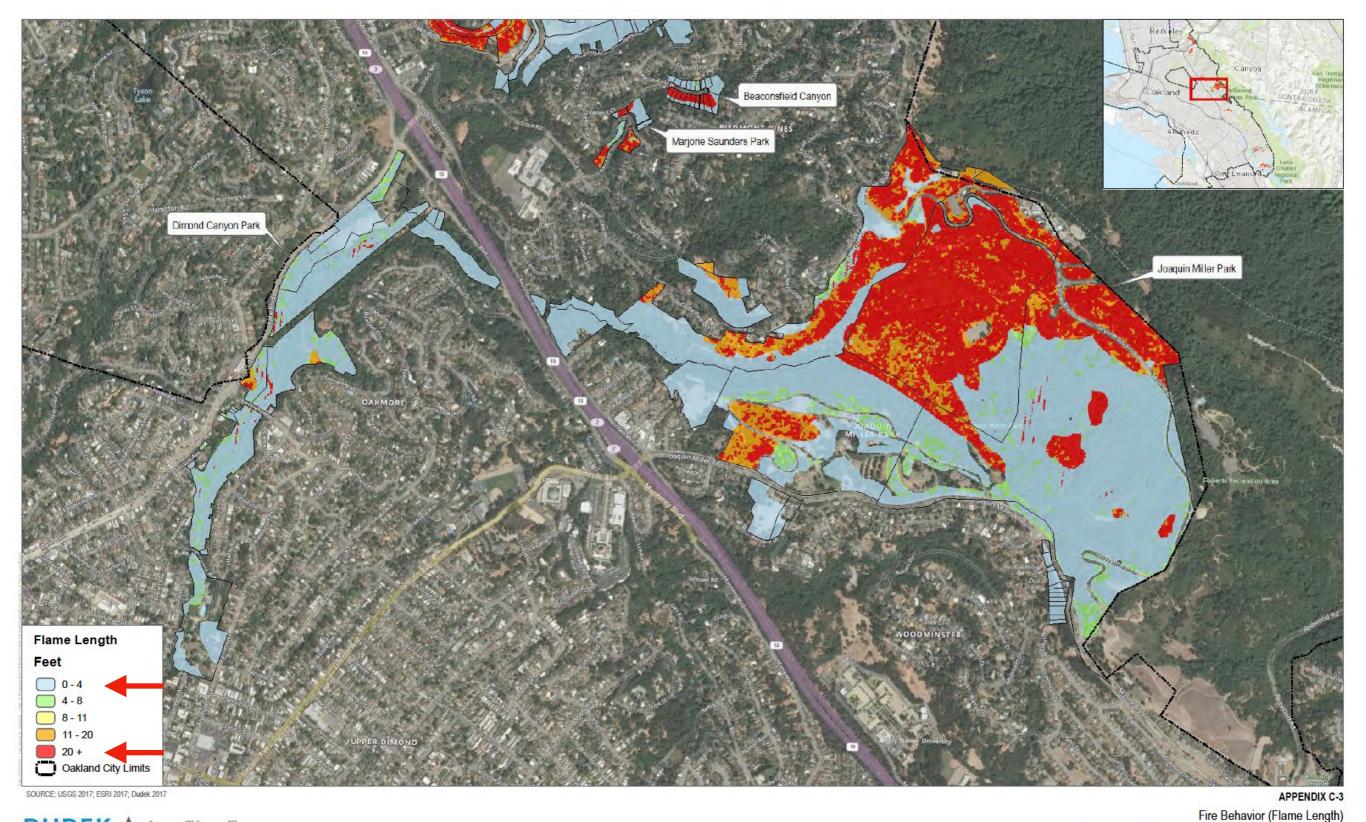


THREE CURRENT AGENCY VEGETATION AND FIRE MITIGATION PROJECTS

1- THE OAKLAND 2023 DRAFT VMP/EIR. JOAQUIN MILLER PARK PROJECT AREA



JOAQUIN MILLER PARK FLAME LENGHS FROM THE OAKLAND 2023 DRAFT VMP/EIR

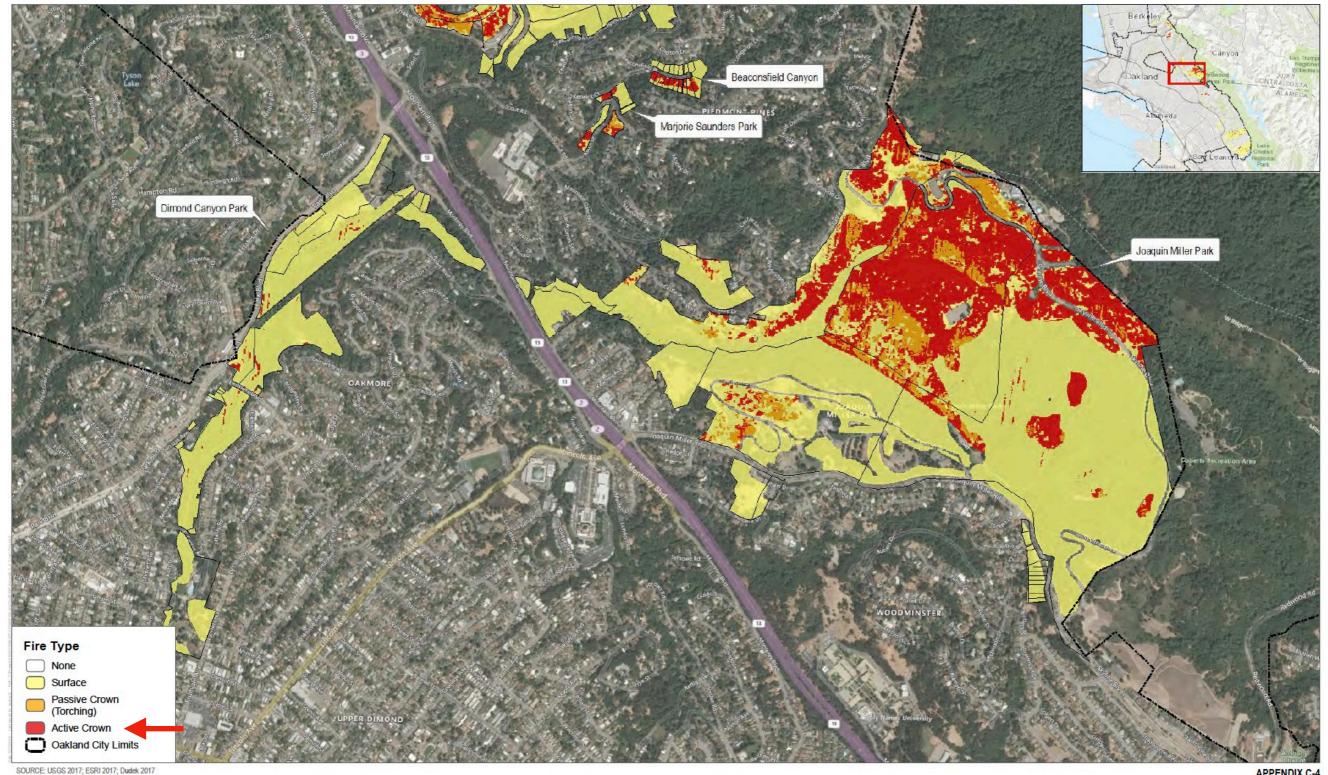


DUDEK 6 9 487.5 975 Feet

Fire Behavior (Flame Length)

Appendix C (Fire Behavior Analysis) - Second Revised Draft Vegetation Management Plan - City of Oakland, California

JOAQUIN MILLER PARK FIRE TYPE FROM THE OAKLAND 2023 DRAFT VMP/EIR

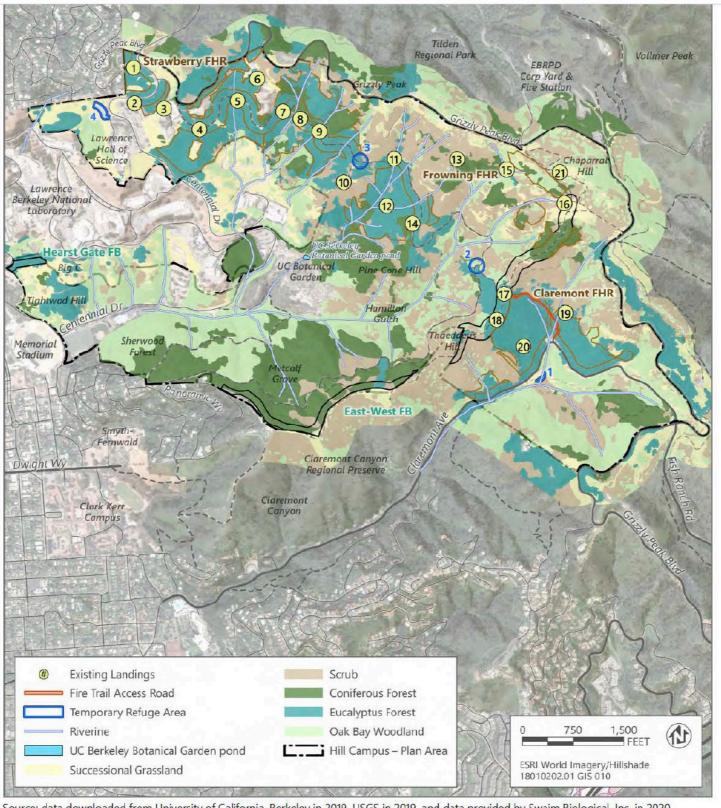


DUDEK 6 0 487.5 975 Feet

Fire Behavior (Crown Fire Activity)

THREE CURRENT AGENCY VEGETATION AND FIRE MITIGATION PROJECTS

2- THE UC BERKELEY HILLS CAMPUS TREATMENT PROJECTS IN THE 2023 VMP/EIR



Source: data downloaded from University of California, Berkeley in 2019, USGS in 2019, and data provided by Swaim Biological, Inc. in 2020

Vegetation Communities in the Plan Area and Identified Treatment Projects Figure 3.5-1

PREDICTED FLAME LENGTHS IN THE UC BERKELEY HILLS FINAL 2023 VMP/EIR

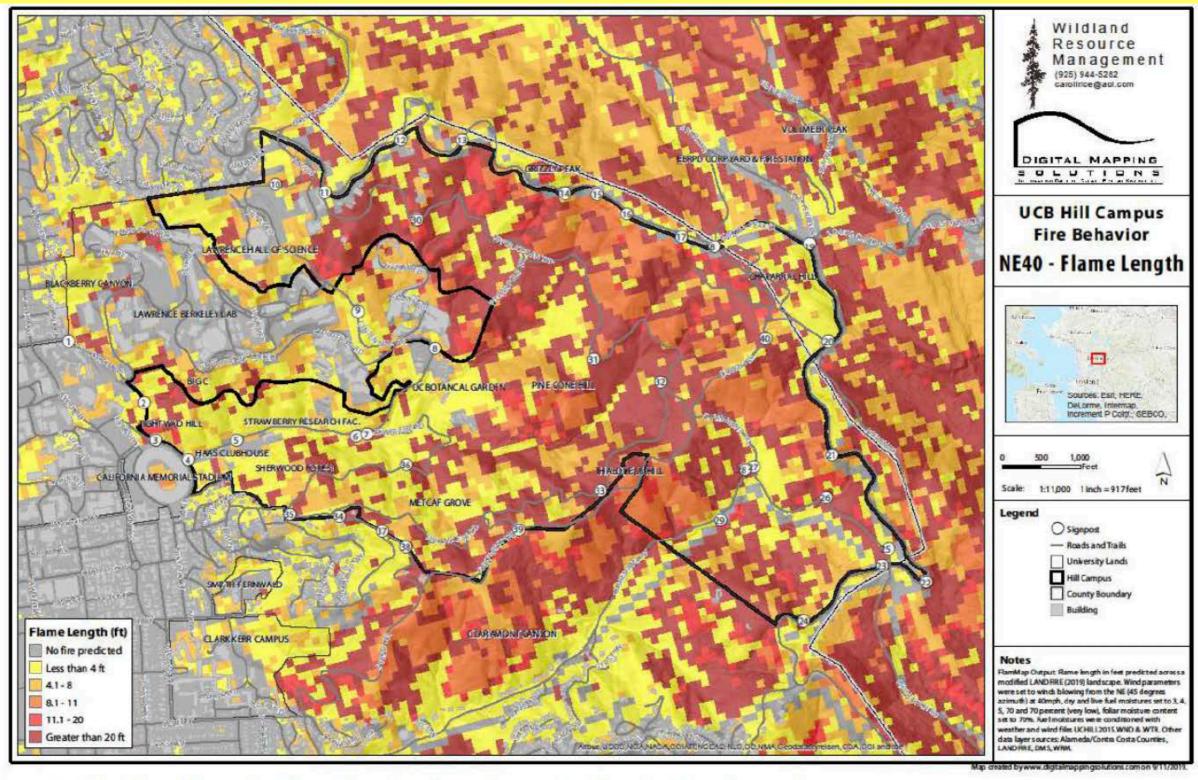


Figure 19. Predicted flame lengths with a 40 mile per hour wind blowing from the northeast

THREE CURRENT AGENCY VEGETATION AND FIRE MITIGATION PROJECTS

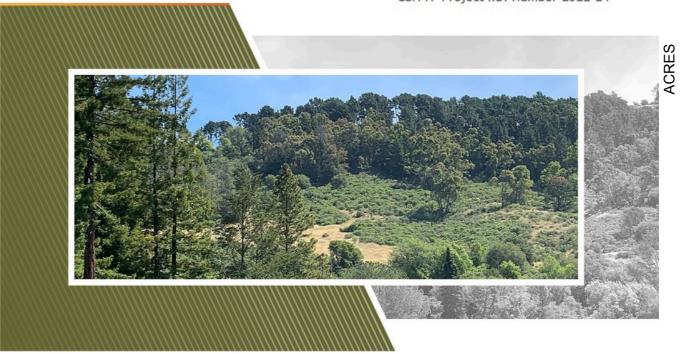
3- EBRPD PROJECT TO TREAT DEAD OR HAZARDOUS EUCALYPTUS



PROJECT-SPECIFIC ANALYSIS AND ADDENDUM TO THE CalVTP PROGRAM EIR

East Bay Hills Vegetation Treatment Project

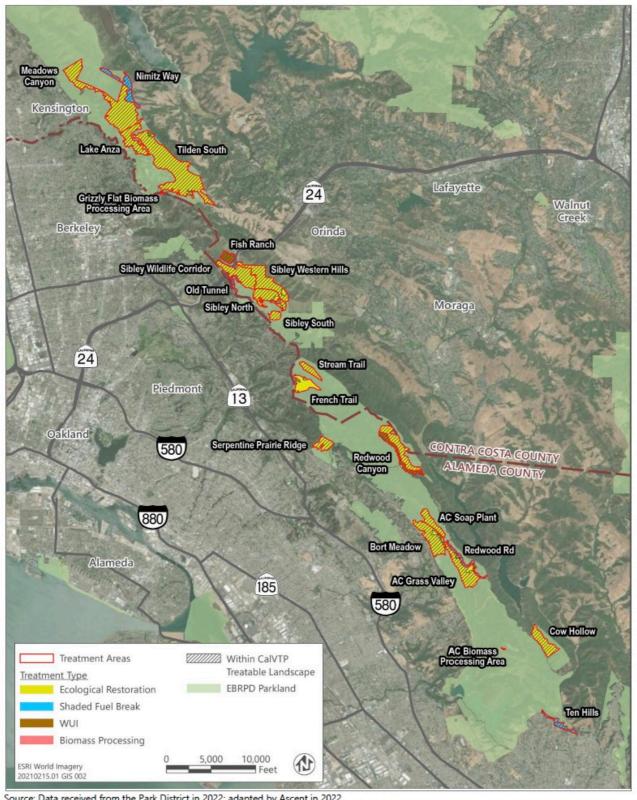
CalVTP Project I.D. Number 2022-24



Total Acres by Treatment Type	
WUI Fuel Reduction	89
Shaded Fuel Breaks	158
Ecological Restoration	2,031
	2,280



EBRPD PROJECT AREAS FOR ECOLOGICAL RESTORATION AND FUEL BREAKS



Source: Data received from the Park District in 2022; adapted by Ascent in 2022.

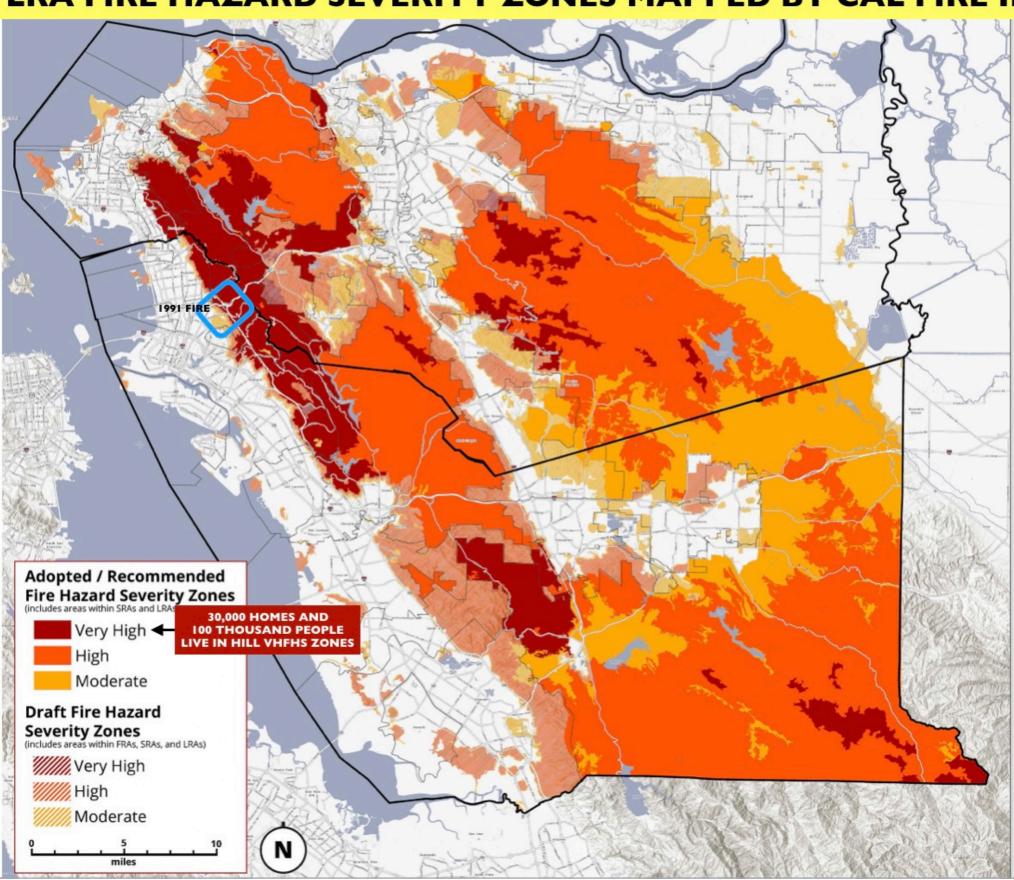
Figure 2-1 Project Area

CONTRA COSTA AND ALAMEDA COUNTIES

Composite Fire Hazard Severity Zones*

- *The fire hazard severity zones shown here are a COMPOSITE of three CAL FIRE datasets:
- 1) ADOPTED (Nov 2007) State Responsibility Areas (SRAs) with Very High, High, and Moderate fire hazard severity designations.
- 2) RECOMMENDED (Sep 2008, Jan 2009) Local Responsibility Areas (LRAs) with Very High fire hazard severity designation.
- 3) DRAFT (Sep 2007) fire hazard severity zones in Federal (FRA), State (SRA), or Local (LRA) Responsibility Areas.

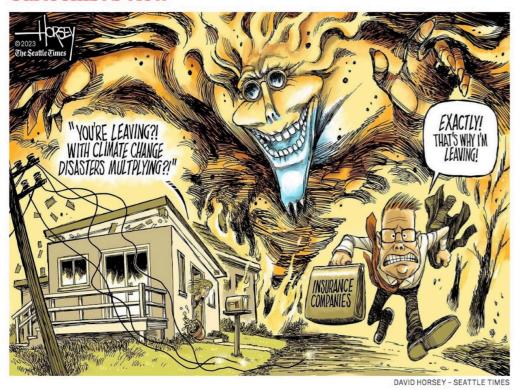
SRA & LRA FIRE HAZARD SEVERITY ZONES MAPPED BY CAL FIRE IN 2007

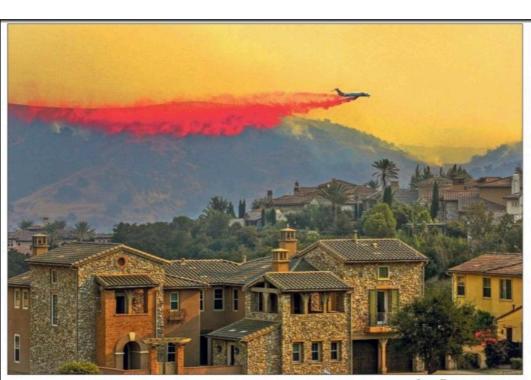


CAL FIRE'S 2022 STATE RESPONSIBILITY AREA (SRA) FIRE HAZARD SEVERITY ZONES an Pablo Bay Wildlife Area Antioch Martinez Oakley Concora ael Stockton Richmond Brentwood San Joaquin Walnut C Berke Oakland Mar San Francisco San Ramon **LRA ZONE MAP** Tracy TO COME LATER THIS FALL San L **EAST BAY SRA** Dal City Livermore Amador Haywa Valley J3 South San Valley Francisco acifica Millbrae Fremon San Mateo Redwood City Palo Alto Miritas Very High High Santa Clara Moderate San Jose

LOCAL RESPONSIBILITY AREA (LRA) FIRE HAZARD SEVERITY ZONES WILL BE RELEASED LATER THIS YEAR OR IN 2024

Cartoonist's view





AN AIR TANKER fighting the Blue Ridge fire drops fire retardant in Chino Hills in October 2020. In recent years, home insurers have been withdrawing from the most fire-prone parts of the state.

Deal coaxes insurers back to state's high-risk zones

OAKLANDSIDE

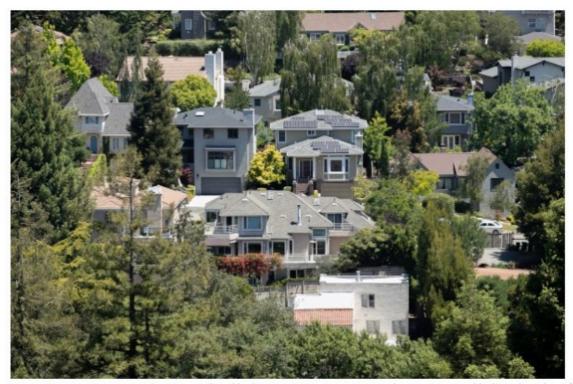
DONATE
Open Search

The Qaklandside. Journalism for Oakland.

With insurers fleeing fire-prone California, what can be done in Oakland?

Councilmember Janani Ramachandran held a town hall this week to talk wildfire prevention and home insurance woes.

by Natalie Orenste in August 31, 2023



Insurance companies are declining to renew or write new policies in the fire-prone Oakland hills and other parts of the state. Credit: Amir Aziz.

WHITE PAPER

ABAG 2018

Bay Area Wildland Urban Interface Review of Risks, Plans, and Strategies

Strategy Types to Reduce Vulnerability

2

5

Reduce Exposure through Land Use Planning – Where homes, businesses, and infrastructure are located can be a powerful way to reduce wildfire risk. Different locations within a city can present drastically different wildfire risk. Locating important assets in areas of low fire risk is a straightforward method to reduce risk. When using land use as a fire management tool it is critical that other considerations like flood risk, transit access, and economic feasibility are considered as well.

Reduce Exposure through Vegetation Management – Vegetation is a key variable in determining the fire risk for a specific area. In the Wildland Urban Interface, vegetation (grass, shrubs, trees) is the primary fuel source that powers fires. Most strategies to address vegetation occur in three sub-areas:

Defensible Space – The amount of vegetation and its proximity to a home has a large influence on the likelihood the structure will be damaged by a wildland fire. Depending on the local conditions, many strategies recommend anywhere between 30 and 100 feet of vegetation clearance around structures, with the distance largely dependent on the slope of the property as well as the vegetation height.

Fuel Breaks – Areas can be greatly protected when there is a break in vegetation. Across the region fire crews use paved roads, dirt roads, and fire break specific lines to provide a barrier where a fire may have a reduced chance of spreading. Any fuel break by itself will not stop a wildfire, but they provide an increased probability of success for fire suppression activities.

Open Space Management – The makeup of vegetation in the wildland and open space areas can drastically change the likelihood and intensity of fires. Types of vegetation and densities of vegetation can change fire characteristics. If fires are less intense in wildland areas, they're less likely to spread in an uncontrollable manner.

Reducing Fragility by Hardening Assets – Certain construction methods and materials are less likely to ignite when they are exposed to fire, or when embers from a nearby fire are present. By making structures or infrastructure less likely to catch fire, there is a greater likelihood assets will survive nearby fires. This is also sometimes referred to as structure ignitability.

THE CONSERVANCY BELIEVES OAKS ARE THE BEST HILL LANDSCAPE CHOICE

COAST LIVE OAKS	BLUE GUM EUCALYPTUS
A CALIFORNIAN NATIVE THAT IS FIRE-SAFE	AN AUSTRALIAN NATIVE THAT IS <u>NOT</u> FIRE-SAFE
60' TALL & OPEN MOSAIC OF FUEL	150' TALL & DENSE MOSAIC OF FUEL
LITTLE MAINTENANCE REQUIRED	HIGH MAINTENANCE REQUIRED
COMPATABLE WITH RESIDENTIAL AREAS	NOT APPROPRIATE IN RESIDENTIAL AREAS
MODERATE RISK TREES IN DIABLO WINDS	VERY HIGH RISK TREES IN DIABLO WINDS
CONSIDERED FIRE SAFE BY THE PUBLIC	GROWING PUBLIC CONCERNS ABOUT FIRE HAZARDS
EMBER TRANSPORT WELL UNDER 1/4 MILE	EMBER TRANSPORT WELL OVER 1 MILE
NOT DAMAGED BY FREESE OR DROUGHT	DAMAGED DURING 1972 FREEZE AND 2020 DROUGHT
SELF SUSTAINING OVER TIME	150 YEAR HAZARD TREE RENOVATION CYCLE
SMALL EQUIPMENT- (STAFF- ARBORISTS)	LARGE EQUIPMENT- (FORESTERS-LOGGING)
\$ 20,000 PER ACRE TERM OWNERSHIP COSTS	\$200,000 PER ACRE TERM OWNERSHIP COSTS
CAN BE SAFE IN A MANAGED WUI LANDSCAPE	VERY FLAMMABLE IN A WUI LANDSCAPE
OAK WOODLANDS ARE CEQA EASY	EUCALYPTUS FORESTS CAN BE CEQA DIFFICULT
NO CEQA OAK WOODLAND LAWSUITS	FOUR "SAVE EUCALYPTUS" LAWSUITS- \$300,000 COST
RELIABLE IN SHELTERED FUELBREAKS	RISKY IN SHELTERED FUELBREAKS
LOW LIABILITY RISK- WOODLAND TREES	HIGH LIABILITY RISK- TALL EUCALYPTUS FOREST TREES
SUDDEN OAK DEATH (SOD) A THREAT	AUSTRALIAN PATHOGENS & INSECTS A THREAT
SOME WANT LIVE OAKS RETAINED	SOME WANT EUCALYPTUS TREES RETAINED

THE CONSERVANCY BELIEVES A THINNED EUCALYPTUS FOREST WITH NO UNDERSTORY IS NOT THE SUSTAINABLE LANDSCAPE NEEDED FOR OUR CHANGING CLIMATE AND INCREASING WILDFIRE RISKS.

INSTEAD, THE OVERTOPPING EUCALYPTUS SHOULD BE REMOVED TO ALLOW FOR THE RESTORATION OF OAKS AND A MOSAIC OF OTHER APPROPRIATE NATIVES.

ESTIMATED NUMBERS OF EUCALYPTUS, PINE, AND CYPRESS TREES

CURRENT BLUE GUM EUCALYPTUS, MONTEREY PINE, & MONTEREY CYPRESS- ACREAGE AND ESTIMATED NUMBER OF TREES (<10") Tree estimates do not include trees between 4 & 10 inches. Double tree estimates and estimated trees/acre to include smaller trees

AGENCY	EUCALYPTUS	MONTEREY PINE	MONTEREY CYPRESS	TOTAL ACRES	TREE ESIMATES	EST. AVE. TREES/ACRE
EAST BAY REGIONAL PARK DISTRICT	2,785	135	0	2,920	438,000	150
EAST BAY MUNICIPAL WATER DISTRICT	287	560	0	847	127,050	150
UC BERKELEY (Hills Campus)	136	32	0	168	25,200	150
CITY OF OAKLAND (Residential areas)	913	33	354	1,300	57,200	44
CITY OF OAKLAND (CITY PARKS VMP)	177	90	90	357	26,775	75
CITY OF BERKELEY (Residential areas)	916			21	916	44
CITY OF BERKELEY (CITY PARKS)	87			8	87	11
TOTAL ACRES & ESTIMATED TREES	5,301	850	444	5,621	675,228	120

FUTURE BLUE GUM EUCALYPTUS, MONTEREY PINE, & MONTEREY CYPRESS TREES TO THE YEARS OF 2043-63. ASSUMING RETENTION OF LARGE TREES WITH 30' AVERAGE SPACING, AND NO AGENCY COMMITMENTS FOR REMOVAL OF SENESCENT TREES OR CONVERSION TO NATIVES.

	WONTENET THE	MONTEREY CYPRESS	TOTAL ACRES	NEW TREE ESIMATES	NEW EST. AVE. TREES/ACRE
2,785	135	0	2,920	105,120	36
287	560	0	847	127,050	150
136	32	0	34	1,224	36
913	33	354	1,300	57,200	44
177	90	90	357	12,852	36
916			21	-	0
87			8	-	0
5,301	850	444	5,487	303,446	55
	287 136 913 177 916 87	287 560 136 32 913 33 177 90 916 87	287 560 0 136 32 0 913 33 354 177 90 90 916 87	287 560 0 847 136 32 0 34 913 33 354 1,300 177 90 90 357 916 21 87 8	2,785 135 0 2,920 105,120 287 560 0 847 127,050 136 32 0 34 1,224 913 33 354 1,300 57,200 177 90 90 357 12,852 916 21 - 87 8 -

INCREASING LOGGING AND TREE REMOVAL COSTS

EBRPD LOGGING COST TRENDS

1973 to 1999- LOGGING COSTS WERE \$2,000/ACRE. LOGS WERE TRUCKED AND SOLD FOR PAPER OR FOR CO-GENERATION.

2010 to 2022- LOGGING COSTS WERE \$8,000/ACRE. LOGS WERE CHIPPED, TRUCKED, AND USUALLY SOLD FOR PAPER.

2023 to 2024- LOGGING COSTS ARE \$21,000/ACRE FOR 445 ACRES AT CHABOT REGIONAL PARK. BIO MASS IS BURNED "ON SITE" IN A CARBONATOR TO REDUCE BIO MASS TONS, ELIMINATE TRUCKING COSTS, AND TO SAVE CARBON.

Eucalyptus tree removal price by tree size

Eucalypts vary in size. Some can be small bushes (less than 10 feet in height) while others can be towering trees (up to 100 feet in height).

Eucalyptus Tree Size	Low Price	High Price
Small (10-15 feet)	\$350	\$950
Medium (20 - 35 feet)	\$1,150	\$2,900
Large (45+ feet)	\$2,500	\$7,300

AGENCY	NEW TREE ESIMATES	TREES * \$2,000
EAST BAY REGIONAL PARK DISTRICT	105,120	\$ 210,240,000
EAST BAY MUNICIPAL WATER DISTRICT	127,050	\$ 254,100,000
UC BERKELEY (Hills Campus)	1,224	\$ 2,448,000
CITY OF OAKLAND (Residential areas)	57,200	\$ 114,400,000
CITY OF OAKLAND (CITY PARKS VMP)	12,852	\$ 25,704,000
CITY OF BERKELEY (Residential areas)	-	\$ -
CITY OF BERKELEY (CITY PARKS)		\$ 11-11-11-11-11-11-11-11-11-11-11-11-11-
LARGE TREES	303,446	\$ 606,892,000
		A

POTENTIAL REGIONAL COST

WE BELIEVE THE EAST BAY IS NOT READY FOR ANOTHER MAJOR FIRE, AND ARE EXPLORING OPTIONS TO PROVIDE NEW LEADERSHIP FOR BOTH AGENCIES AND RESIDENTS



NINE MEMBERS

STAFF PROVIDES ROTATING LEADERSHIP
MEETINGS ARE CLOSED WITHOUT MINUTES
NO ELECTED'S OR PUBLIC ALLOWED AT MEETINGS
MEAGER DUES PROVIDE OPERATIONAL FUNDS
A VOLUNTARY INTERAGENCY ASSOCIATION
A PT CONSULTANT (soon to retire) ASSISTS MEMBERS
SELF FORMED BY LETTER OF INTENT IN 1992

TIME FOR A CHANGE?

TO SOMETHING MORE LIKE

SEVENTEEN MEMBERS
GOVERNING BOARD OF DIRECTORS
MEETINGS ARE OPEN AND RECORDED
TRANSPARENT WILDFIRE PREVENTION
EXCELLENT FUNDING
A REGIONAL AGENCY WITH STAFF
FORMED AND FUNDED BY PUBLIC VOTE- 2020



INSTEAD

A 2023 HILL FOCUSED CITY AND COUNTY MEMO OF UNDERSTANDING (MOU) IS NEARING COMPLETION TO ADDRESS REGIONAL POLICIES FOR WILDFIRE PREVENTION