



Creating a Fire Safe Neighborhood



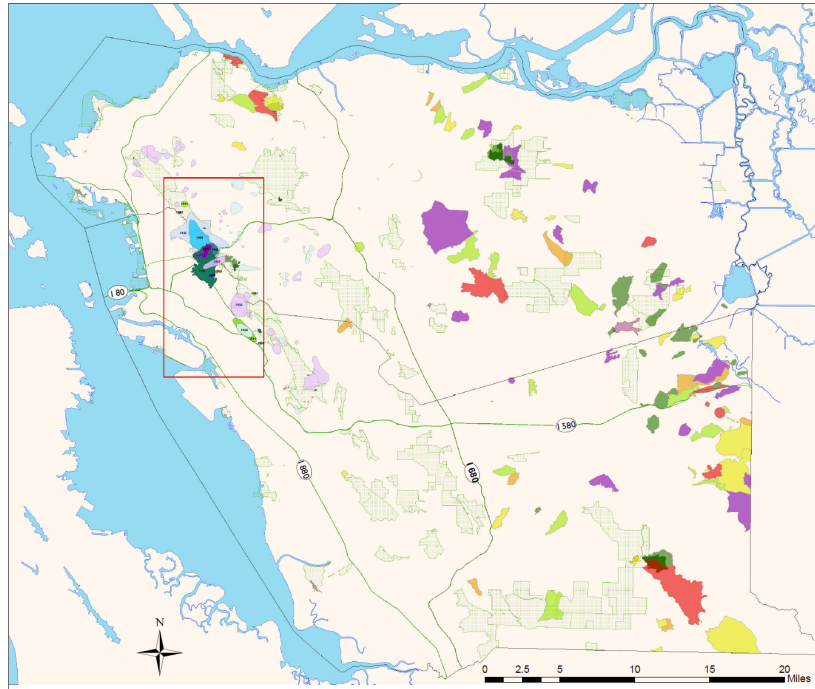
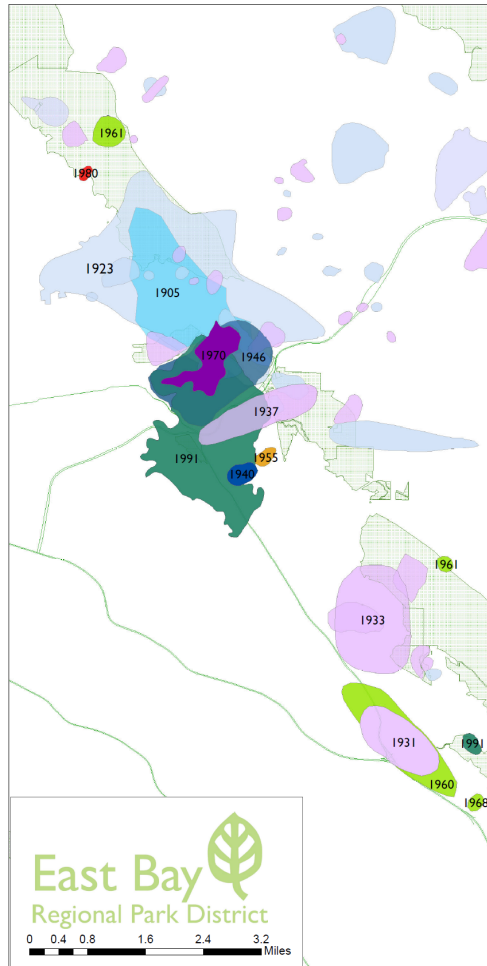
Berkeley Fire Department
November 5, 2023



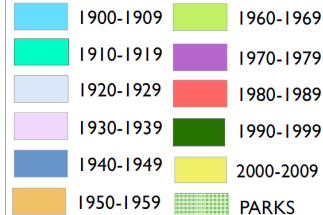
An aerial photograph of a densely populated residential neighborhood built on a hillside. The houses are packed closely together, with various architectural styles and colors. The terrain is steep, and there are many trees interspersed among the buildings. The lighting suggests it might be late afternoon or early morning, with long shadows and a slightly dim sky. The overall scene conveys a sense of high population density and limited space.

**Why is urgent action
necessary?**

Fire History in the East Bay



Legend



INFORMATION SOURCES

These fires have been mapped using the best available information, including boundaries described in newspaper articles, lookout tower records, and the CAL FIRE FRAP database. Particularly for early fires, boundaries are approximate. The fires shown here include all for which known data is available. However, many more fires occurred which were never mapped, therefore those displayed here represent a small percentage of this area's fire history.

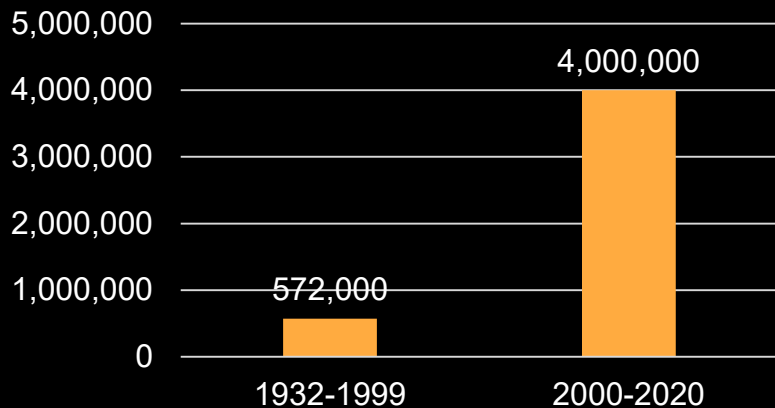
Learning from the past:

- Larger fires have occurred approx. every 20 years in the EB Hills (1905, 1923, 1937, 1946, 1970, 1991)
- Many smaller fires have occurred which were never mapped
- Fire should be an expected phenomenon, along with earthquakes (when, not if)
- To be resilient to the next fire, our efforts should take these facts into account

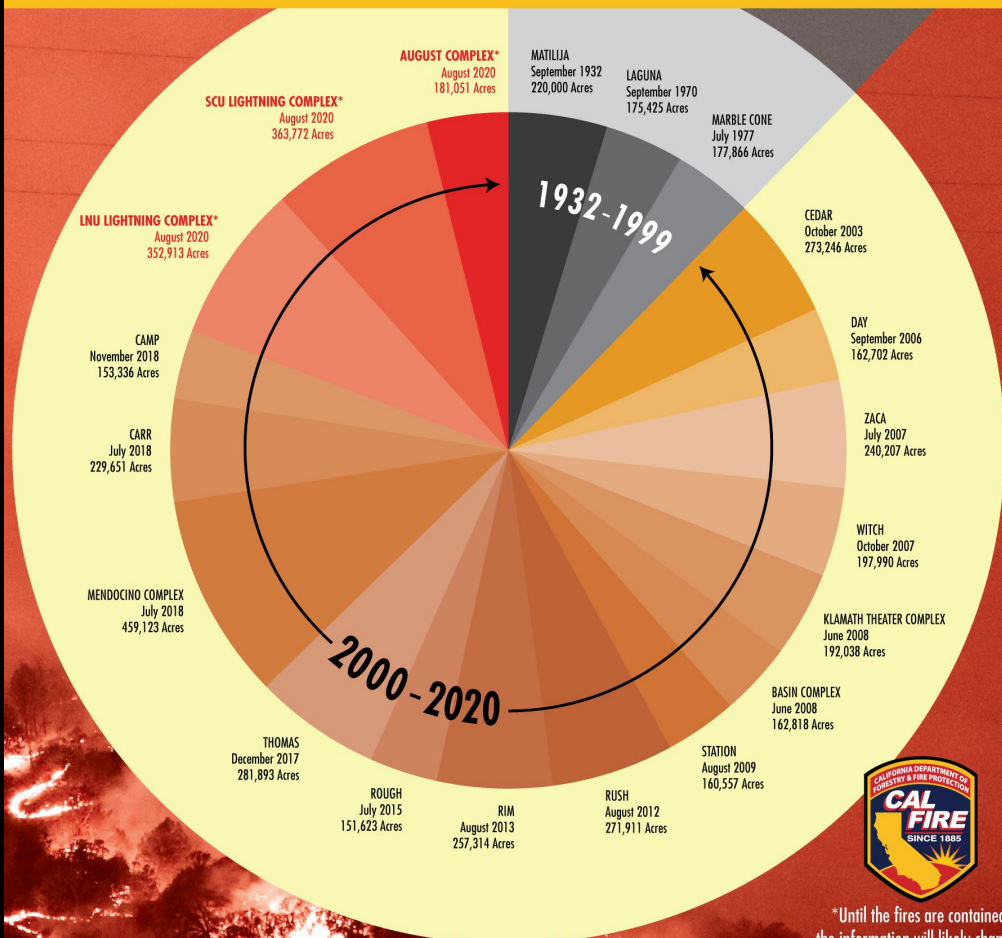


Climate Change is contributing to larger fires

Acres Burned



TOP 20 LARGEST CALIFORNIA WILDFIRES



*Until the fires are contained, the information will likely change

Fire Spread Rates

are influenced by...

- Topography
- Weather
- Fuel (Vegetation & Structures)



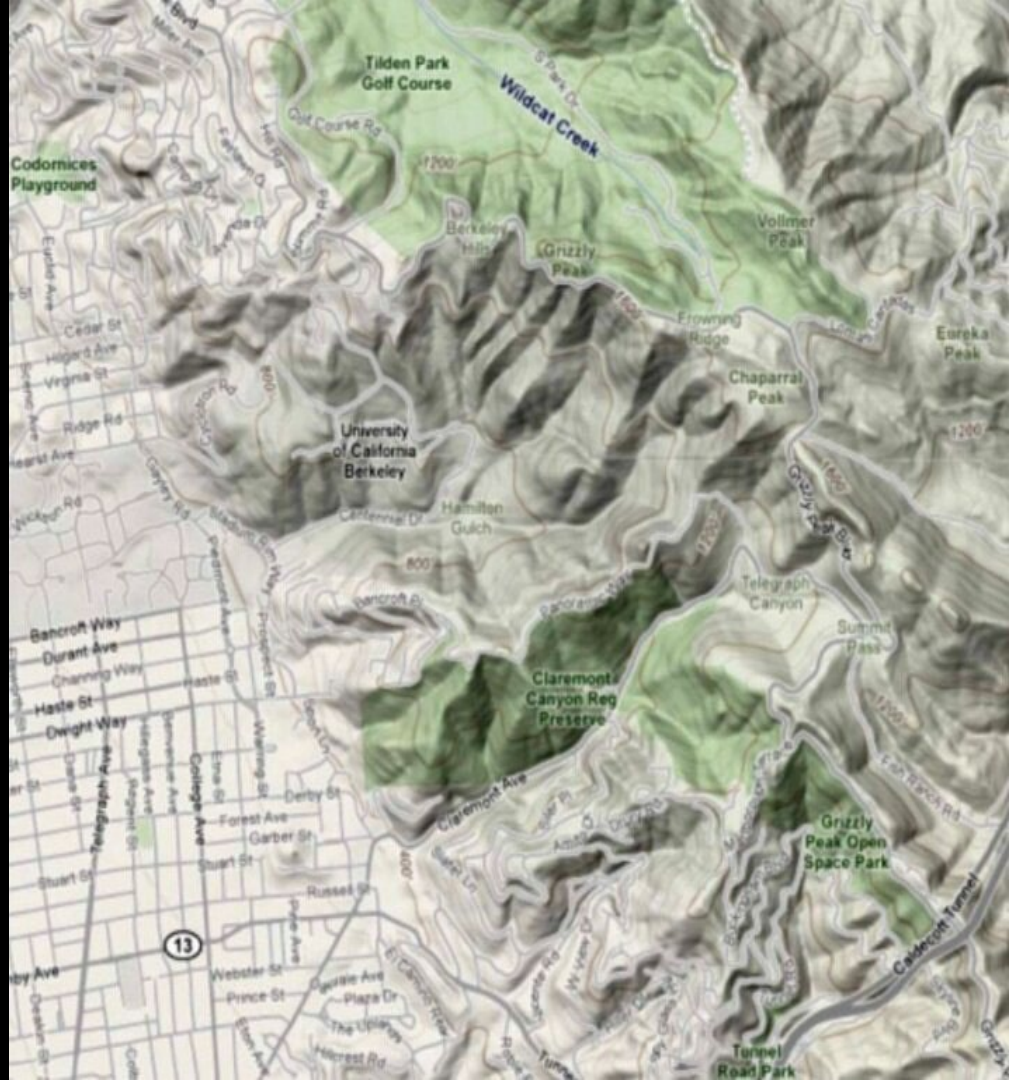
Topography

The East Bay Hills rise from Sea Level to approx. 1,700ft at some points on Grizzly Peak.

The hills have many canyons that have a particular impact on fire behavior.

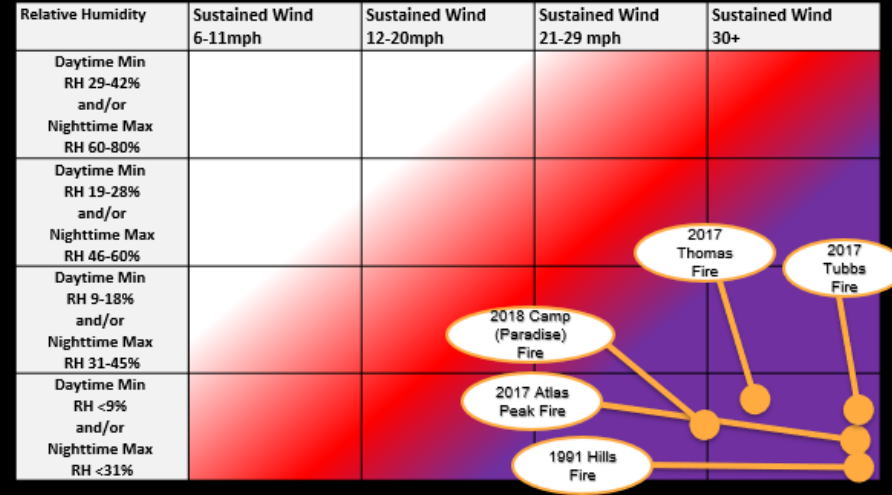
Canyons can channel diablo winds –even perpendicular to the canyon –into strong downslope/upslope winds.

This effect can result in extreme fire behavior and can be very dangerous.



Weather: Strong Seasonal Diablo Winds

- Air from 4000' is compressed as it descends to sea level.
- The compression warms and dries the air.
- As it's forced over mountains and through canyons, it accelerates.
- Historically October is most dangerous as fuels are at their driest.



Fire Weather Data

Year	Red Flag (Forecasted)	Extreme
2020	25	0
2021	16	2
2022	0	0
2023	1	0

THEN



Fuel: Grasslands to Urban Forest

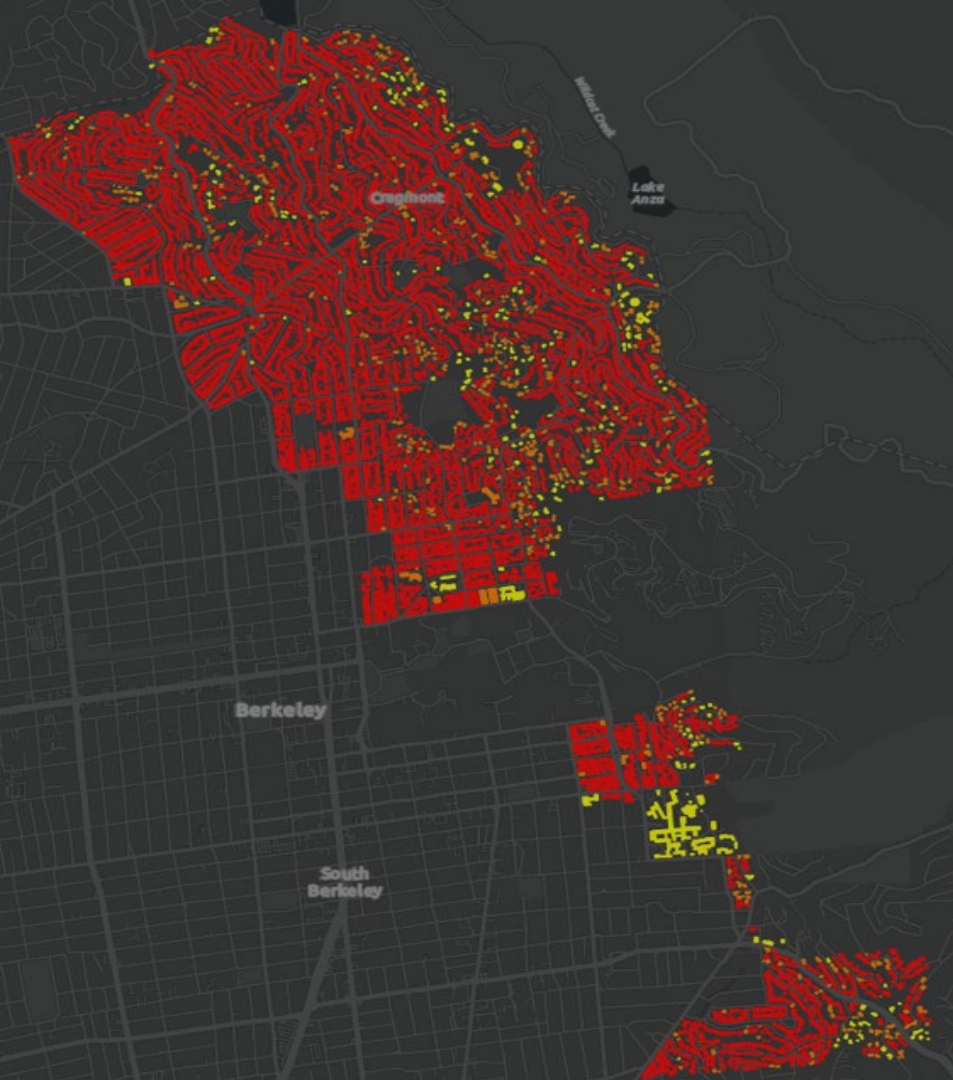
NOW



Fuel: Structures Separation Distance

High Density = **risk of community loss is very high due to structure -to-structure fire spread**

Category	SSD	Map Color
High Density	<25ft	Red
Moderate Density	25 – 50ft	Orange
Low Density	>50ft	Yellow





How to reduce the risk of ignition?

Current thoughts

on a secondary road and what to do next

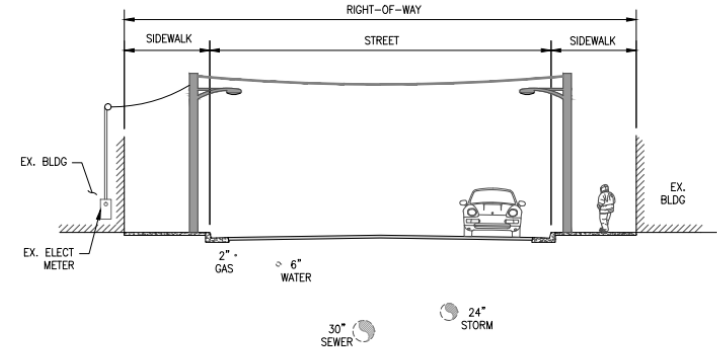
- Supportive of formal analysis of secondary access/egress
- Realistic about timeline, cost & political/social division
- If we are evacuating Zone 3 during a wildfire – have we failed?
- Consider re-focus to actions we can all take now that are known to improve outcomes
 - Defensible space
 - Home hardening
 - Preemptive relocation



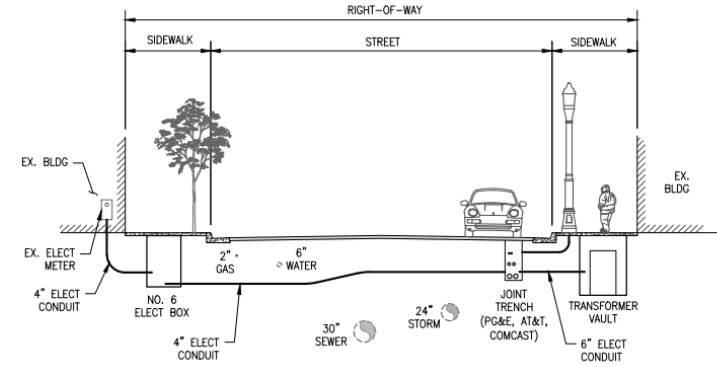
Current thoughts

on utility undergrounding

- Supportive of actions to lobby CPUC to restore funding
- Realistic about timeline & cost
- PGE Power Safety Power Shutoffs (PSPS) reduce risk
- Encourage a focus on actions we can take now including preemptive evacuation



BEFORE: STREET SECTION WITH OVERHEAD UTILITIES



AFTER: STREET SECTION WITH UNDERGROUND UTILITIES

NOTES:

1. LOCATIONS ASSUME ADEQUATE CLEARANCES
2. SHADED FACILITIES ARE EXISTING

FIGURE - 1
DIAGRAMS OF TYPICAL STREET SECTION SHOWING OVERHEAD
AND UNDERGROUND FACILITIES IN COMMERCIAL AREA

SCALE: NTS

Personal Action

can decrease the potential of an urban conflagration

1. Create & maintain Defensible Space
2. Harden homes
3. *Preemptive relocation*



Homes ignite from embers, radiant heat and direct flame

Embers come from:

- Approaching wildfire
- Burning structures
- Vegetation

Radiant Heat is produced:

- When adjacent structures ignite
- When vegetation ignites, especially Zone 0

Direct Flame causes ignition

- Primarily when fuel ignites within Zone 0



Sayre fire: A firefighter is surrounded by embers in Sylmar. (Brian Vander Brug / Los Angeles Times)

Defensible Space

acts as a buffer to wildfire and embers

It can slow or halt the progress of fire that would otherwise engulf your property and your neighborhood.

The city requires 100 feet of Defensible Space from any structure - **wildfire does not stop at property lines.**

Science: The 0'-5' area around your home and other structures **IS THE MOST** important area.

**applies to parcels in fire zones 2 and 3*



Harden your home

to increase resistance to heat, flames, and embers

- **Wire mesh behind vents** / or engineered vents
- **Gutter covers**
- **Clear combustible materials within 5' of structure** and under decks
- Double-paned windows
- Focus on sides within 25ft of other structures



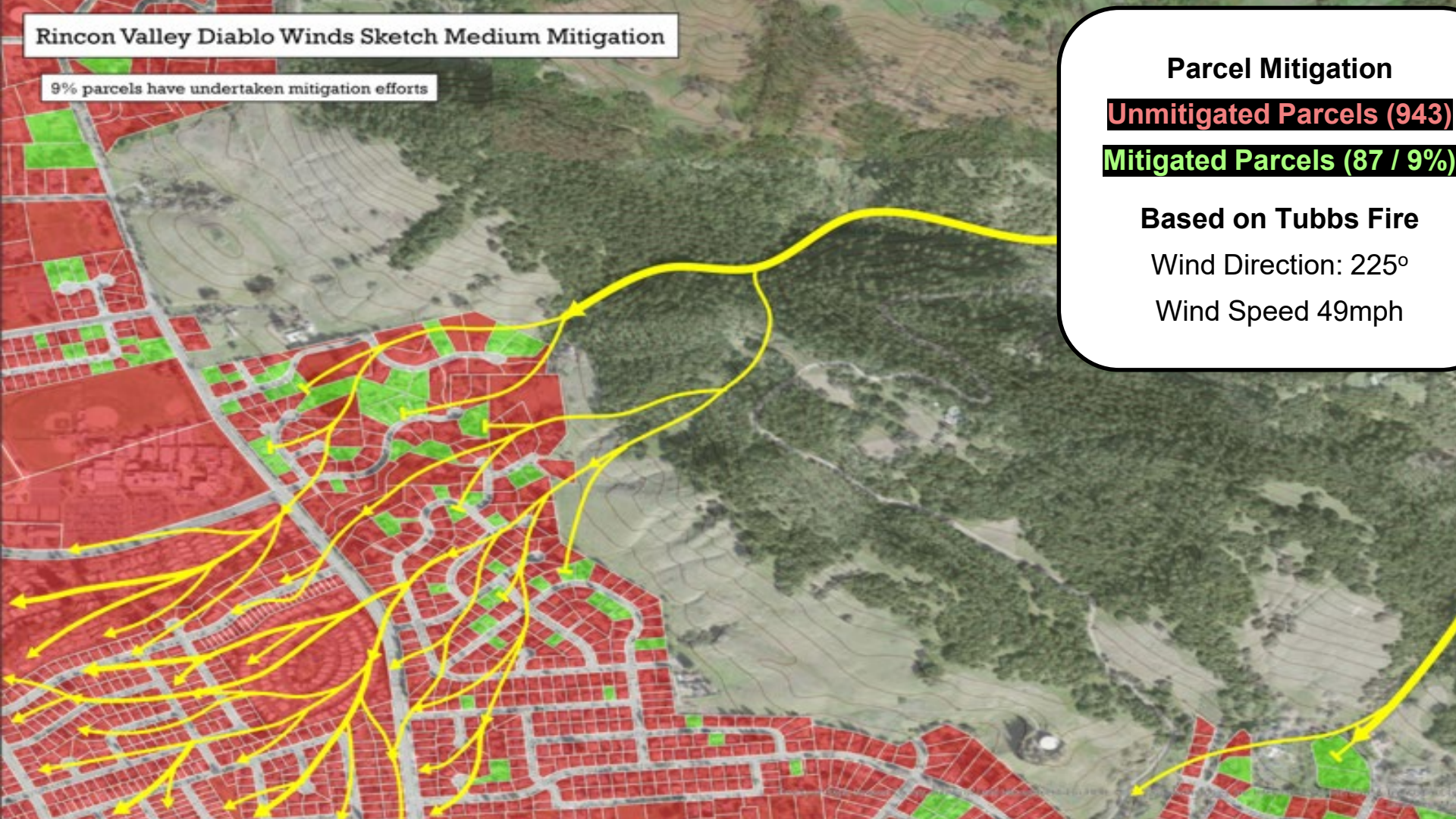


Rincon Valley Diablo Winds Sketch Medium Mitigation

9% parcels have undertaken mitigation efforts

Parcel Mitigation
Unmitigated Parcels (943)
Mitigated Parcels (87 / 9%)

Based on Tubbs Fire
Wind Direction: 225°
Wind Speed 49mph



Rincon Valley Diablo Winds Sketch High Mitigation

19% parcels have undertaken mitigation efforts

Parcel Mitigation

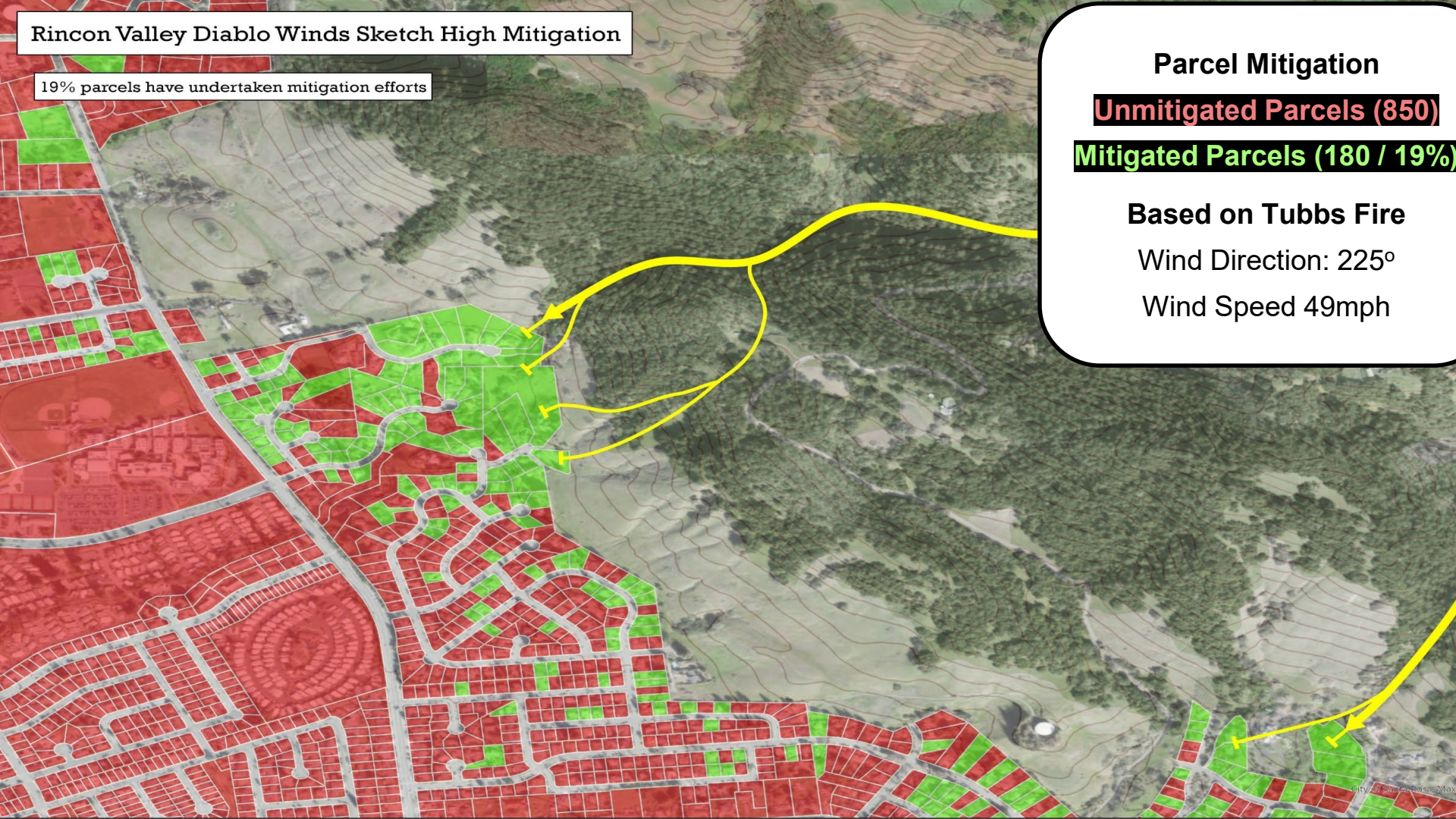
Unmitigated Parcels (850)

Mitigated Parcels (180 / 19%)

Based on Tubbs Fire

Wind Direction: 225°

Wind Speed 49mph



Insurance and Insurability

- Insurer & Re-Insurer / Passing Risk / Policy Non-Renewal / Increased premiums x3-4+
- Insurance WUI Risk Model (coming to a neighborhood near you)
- **Mitigations at community scale produce actuarially significant results**
- Must be present in at least 30% of the parcels
- Mitigations + buffers can substantially reduce risk (and improve insurability)
- **Homeowners may perform mitigations to be insurable or to reduce ignition potential if uninsured**



WILDFIRE PREPARED

— A PROGRAM OF IBHS —



HOMEOWNER GUIDE

An aerial photograph of a densely populated residential neighborhood, likely in Berkeley, California. The houses are built on a hillside, surrounded by lush green trees. The architecture is diverse, featuring various styles of homes with different rooflines and colors. The overall scene is a mix of urban development and natural greenery.

Fire Safe Berkeley Community Support Programs

Education & Outreach

- Website & Information
- Firewise coaching



HOME

FIRESAFE BERKELEY

NEWS

VOLUNTEER

FireSafe Berkeley

Join neighbors and firefighters to make this community Fire Safe!

SCROLL



Lets Make Berkeley Fire

Berkeley is at higher risk of wildfire because of its topography, abundant vegetation right next to homes, and narrow roads.

To prevent catastrophic wildfires from spreading through our community, we need to work together.

*Our goal is for firefighters and residents to work together to reduce wildfire risks.

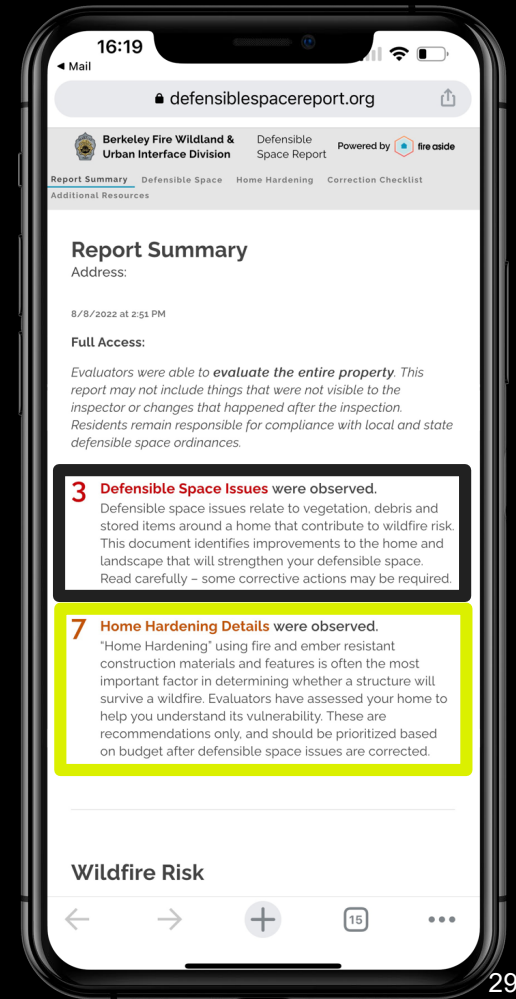


FIREWISE USA
RESIDENTS REDUCING WILDFIRE RISKS

Defensible Space Inspection (DSI)

Every inspection will generate a detailed report that explains what discoveries are violations vs recommendations.

- **What:** An easy-to-read evaluation of your property
- **Why:** Provides a roadmap to make your property more Fire Safe
- **When:** Occurs annually in Zone 2 & 3 (VHFDSZ)
- **Where:** 1:1 or side walk inspection & door hangar



Chipper Day

redesigned and expanded

- **971** Pickups
- **2,355** cubic yards removed
- Survey Response Rate 45% / **4.9** Rating out of 5
- **79%** said the program caused them to remove vegetation

“This is an excellent program! I will be able to remove a lot more brush from my property because I can do it on my time schedule rather than just the designated dates. Thank you so much for making it available!”



Evacuation and Response Time Study

- 2023 - Initial Analysis: **Local Hazard Mitigation Plan** (SB99, AB747)
 - Access Impaired Neighborhoods Study (SB99)
 - Evacuation Route Assessment (AB 747)
- 2024 - Secondary Analysis: Establish **evacuation time estimates, responder ingress estimates** for emergency scenarios and the **impact of a secondary road for Panoramic**.
 - During this phase the City will also obtain results of the **ADU analysis**, measure the benefits to **preemptive relocation** during extreme fire weather, and better understand the impact of **traffic calming on fire apparatus response times**.



Safe Passages

- A City program to improve **evacuation** and responder **ingress** through roadway treatments and vegetation management
- In the future we will **consider expanded strategic parking enforcement during fire weather**
- 2023 work included refreshing existing red curbs in Fire Zone 3



Water Delivery Capacity

Quick water anywhere

- 3,000 gallon mobile water supply
- Supplements the Above Ground Water Delivery System
- **Provides fast water in locations with inadequate water supply (Tilden Park)**
- Driver training scheduled for early 2024



Outdoor Warning System purchased, installed, tested

Completing installation and testing of the citywide system. **Used for alerting residents who are outdoors:**

- **13 of 15** Speakers Installed
- Inaugural test conducted on 9/17/23
- Survey results: System **performs as expected** with audible tone detected outdoors within ¼-½ mile



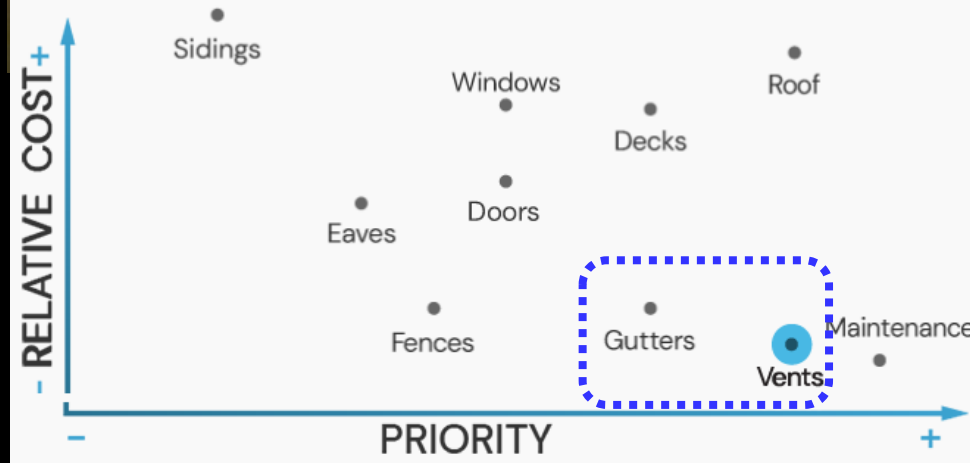
An aerial photograph of a densely populated residential neighborhood. The houses are built on a hillside, surrounded by lush green trees. The architecture varies, with some houses having multiple stories and others being smaller cottages. The overall scene is a mix of greenery and urban development.

Resident Assistance Pilot Programs

Resident Assistance Program

for Home Hardening

- Screening vents and gutters is one of the lowest cost, most effective home hardening techniques.
- Free fire rated 1/16” stainless mesh material for vents and gutters.
- Residents are responsible for installation and maintenance.
- Other commercial products are available.



RAP Key Points

- **One-time assistance** up to \$5,000 to help create defensible space, especially Zone 0
- Requires Right of Entry agreement which grants **permission to perform a full inspection**
- A **City Contractor** will perform the work **or** you can use a **trusted landscaper/gardener** and receive a reimbursement with a receipt
- **Before and after photographs** will be taken but exclude personal identifying information
- **Residents are responsible for on -going maintenance**
- **Good behavior is required.** Zero tolerance.



Regardless of participation maintaining Defensible Space is a requirement

- California Code, Public Resources Code - PRC § 4291
- City of Berkeley Municipal Code 19.48.020, Section 4902.1:
 - Residents within Fire Zone 2 & 3 must apply defensible space regulations **100 feet from structures, even when on an adjacent parcel. Fire does not respect property lines or city boundaries.**



Eligibility for cash assistance is determined using these criteria

- Senior status
- Income level
 - Based on 2023 HCD State Income Limits for Alameda County (must be at or below)

Number of Persons in Households	1	2	3	4	5	6	7	8
Annual Income	\$ 78,550	\$ 89,750	\$ 100,950	\$ 112,150	\$ 121,150	\$ 130,100	\$ 139,100	\$ 148,050

- Physical limitation and/or disability
- Extenuating circumstance



Alternate RAP Benefits

Regardless of cash eligibility, **all program participants are eligible for the following benefits:**

- A **defensible space inspection** with a City contractor present
 - So you understand the work required and how much it will cost
- **Contractor coordination**
 - RAP team will coordinate with city-selected contractor on your behalf (self pay)
- **Green waste pick -up**
 - RAP team will coordinate green waste curbside pick up on predetermined days.



Have you.....

- ❑ Reviewed your defensible space inspection report & taken action
- ❑ Used the ChipperDay program
- ❑ Implemented home hardening
- ❑ Signed up for AC Alert
- ❑ Bookmarked protect.genasys.com
- ❑ Made a household Fire Weather Plan
- ❑ Considered where you would go during Extreme Fire Weather



Resource Guide

Learn more

Berkeleyfiresafe.org – Lots of curated information, a great place to start or continue your education

BerkeleyCA.gov/WildfireEvacuation - Fire Weather Planning Toolkit

Sign Up

ACAlert.org - emergency alerts to your mobile phone and email

Bit.ly/berk-cert-news – General disaster preparedness newsletter signup

Bookmark

protect.genasys.com - Realtime Evacuation Map

Contact Us

wui@berkeleyca.gov - Defensible space, Home hardening, Firewise coaching

oes@berkeleyca.gov - Fire evacuation

fire@berkeleyca.gov - Fire Chief, General

Learn More about wildfire prep



berkeleyfiresafe.org

