

WILDLAND URBAN INTERFACE ISSUES

*WHY IS THIS PROBLEM GETTING WORSE?

*WHAT CAN BE DONE ABOUT IT?

Presentation For
Bel Air-Beverly Crest Neighborhood Council
Emergency Preparedness Committee

October 20, 2021

Presented By:
David Shew, *Wildfire DefenseWorks*
CAL FIRE Staff Chief, Retired

INTRODUCTION: DAVID SHEW

- Recently Retired from *CAL FIRE* after 31 Years of Service
 - Office of the State Fire Marshal
 - Staff Chief – Division of Planning and Risk Analysis
 - California Strategic Fire Plan
 - 11 Years – Incident Management Team 3, Lead PIO
 - Napa County Fire Marshal
 - Extensive Field Experience – Operations and Administrative Chief
- Wildland Fire Consulting: ***Wildfire DefenseWorks***

THE NATIONAL (GLOBAL) WILDFIRE PROBLEM:

IT'S SIGNIFICANCE TO THE FIRE SERVICE, AND TO THE NATION



WHAT WE ARE GOING TO DISCUSS:

- California's Fire Problem – an Overview
- Various Prevention Activities, Efforts, Projects, Programs, etc. that are being employed
- Impacts of these efforts and some success stories
- **BUT**..... Reality Check with Statistics
- So Where is the Silver Bullet to solve all this???
- Why is the “Missing Link” is so Elusive
- Big Picture Conversation – Prevention, Science, Research
- Beverly Hills Wildfire Assessment Report

ASSUMPTIONS:

- California is a natural fire environment
- Due to Land Management decisions and Human Intervention, Fire has largely been removed from the environment
 - Historical Perspective
- These decisions have resulted in an unnatural environmental state
- Recognition today that things must change
- BUT..... No collective consensus on what or how to do that

CALIFORNIA'S FIRE PROBLEM

An Overview

LAND MANAGEMENT DECISIONS



1909



1938



1958



1979

1909 10-30 Trees per acre vs. 1990 300 Trees per acre
Forest in Montana



Perhaps the most
successful ad
campaign **EVER!**

CALIFORNIA STRATEGIC FIRE PLAN



“A vision for a natural environment that is more fire resilient; buildings and infrastructure that are more fire resistant; and a society that is more aware of and responsive to the benefits and threats of fire; all achieved through local, state, federal, tribal, and private partnerships.”



- This is the guiding vision to address wildland fire in California
- We have to learn how to live with fire
- Need to be more resilient, and resistant to wildfire
- Newly updated in 2018 (Board of Forestry and Fire Protection)



The eight goals of the Fire Plan can be consolidated into 3 main initiatives.

DROUGHT AND CLIMATE CHANGE:

- Fire ignitions continue to increase above normal 5 year averages
- More large devastating fires – recent Valley and Butte Fires, Tubbs and Atlas Fires, Woolsey Fire, Thomas Fire, Carr Fire, Mendocino Complex, Camp Fire, Dixie Fire, Caldor Fire, etc.
- 200 – 300 initial attack fires each week, on average
- Longer fire seasons across the West– on average, now 75 days longer than 40 years ago
- Recognition that “status quo” won’t solve the problem
- Current efforts focused on prevention – attempt to be more proactive
- Increase efforts and knowledge based on scientific research

EXAMPLES OF STANDING
DEAD TREES:

KILLED FROM BARK BEETLE



- **Tree Mortality Photo Comparison:**



JULY 12, 2015



OCTOBER 11, 2015



OCTOBER 19, 2016

STATISTICALLY SPEAKING:

Current Year Statistics

The below statistics are tracked on a weekly basis and provide a snapshot of the number of fires and acres burned. These are preliminary numbers taken from our Computer Aided Dispatch (CAD) system and the national Incident Management Situation Report, and will likely change as dispatched wildfires may end up being other types of fires, false alarms or as more accurate information is provided. These numbers are subject to change until the final fire season reports are completed and tabulated.

Year to Date Wildfire Statistics (CAL FIRE and Federal)

Updated as of October 15, 2021

Interval	Fires	Acres
2021 Combined YTD (CALFIRE & US Forest Service)	8,106	2,495,174
2020 Combined YTD (CALFIRE & US Forest Service)	8,931	4,115,155
5-Year Average (same interval)	7,581	1,290,091

(These statistics are a combination of wildfires responded to by CAL FIRE in both the State Responsibility Area and the Local Responsibility Area under contract with the department, as well as federal fire agencies reported in the National Situation Report. Final numbers will be provided in the annual Wildfire Activity Statistics Report (Redbook) once it's published.)

<https://www.fire.ca.gov/stats-events/>

**CALIFORNIA HAS ALWAYS
HAD LARGE FIRES.....**



Top 20 Largest California Wildfires

	<i>FIRE NAME (CAUSE)</i>	<i>DATE</i>	<i>COUNTY</i>	<i>ACRES</i>	<i>STRUCTURES</i>	<i>DEATHS</i>
1	AUGUST COMPLEX (<i>Lightning</i>)	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	1,032,648	935	1
2	DIXIE (<i>Under Investigation</i>)*	July 2021	Butte, Plumas, Lassen, Shasta & Tehama	963,309	1,329	1
3	MENDOCINO COMPLEX (<i>Human Related</i>)	July 2018	Colusa, Lake, Mendocino & Glenn	459,123	280	1
4	SCU LIGHTNING COMPLEX (<i>Lightning</i>)	August 2020	Stanislaus, Santa Clara, Alameda, Contra Costa, & San Joaquin	396,624	222	0
5	CREEK (<i>Undetermined</i>)	September 2020	Fresno & Madera	379,895	853	0
6	LNU LIGHTNING COMPLEX (<i>Lightning/Arson</i>)	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
7	NORTH COMPLEX (<i>Lightning</i>)	August 2020	Butte, Plumas & Yuba	318,935	2,352	15
8	THOMAS (<i>Powerlines</i>)	December 2017	Ventura & Santa Barbara	281,893	1,063	2
9	CEDAR (<i>Human Related</i>)	October 2003	San Diego	273,246	2,820	15
10	RUSH (<i>Lightning</i>)	August 2012	Lassen	271,911 CA / 43,666 NV	0	0
11	RIM (<i>Human Related</i>)	August 2013	Tuolumne	257,314	112	0
12	ZACA (<i>Human Related</i>)	July 2007	Santa Barbara	240,207	1	0
13	CARR (<i>Human Related</i>)	July 2018	Shasta County & Trinity	229,651	1,614	8
14	MONUMENT (<i>Lightning</i>)*	July 2021	Trinity	223,001	50	0
15	CALDOR (<i>Under Investigation</i>)*	August 2021	Alpine, Amador, & El Dorado	221,775	1,003	1
16	MATILJA (<i>Undetermined</i>)	September 1932	Ventura	220,000	0	0
17	RIVER COMPLEX (<i>Lightning</i>)*	July 2021	Siskiyou & Trinity	198,685	122	0
18	WITCH (<i>Powerlines</i>)	October 2007	San Diego	197,990	1,650	2
19	KLAMATH THEATER COMPLEX (<i>Lightning</i>)	June 2008	Siskiyou	192,038	0	2
20	MARBLE CONE (<i>Lightning</i>)	July 1977	Monterey	177,866	0	0

There is no doubt that there were fires with significant acreage burned in years prior to 1932, but those records are less reliable, and this list is meant to give an overview of the large fires in more recent times.

This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

*Numbers not final.



Top 20 Most Destructive California Wildfires

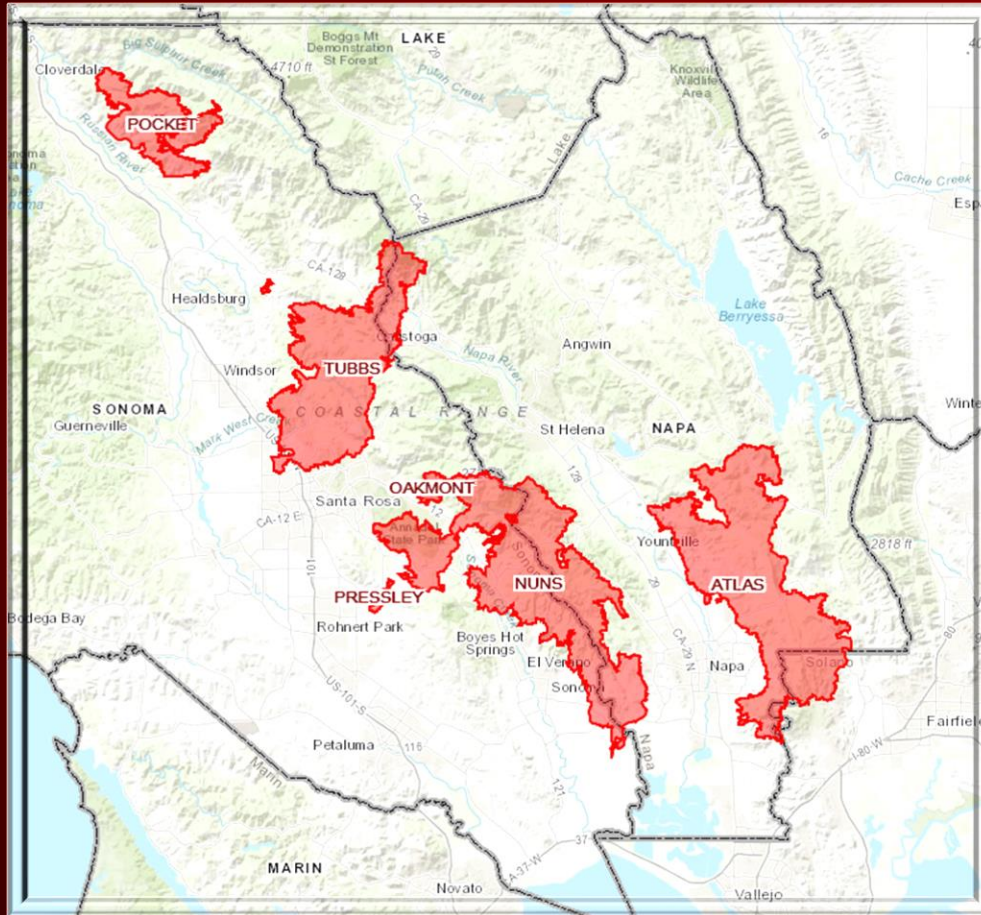
FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 CAMP (Powerlines)	November 2018	Butte	153,336	18,804	85
2 TUBBS (Electrical)	October 2017	Napa & Sonoma	36,807	5,636	22
3 TUNNEL - Oakland Hills (Rekindle)	October 1991	Alameda	1,600	2,900	25
4 CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
5 NORTH COMPLEX (Lightning)	August, 2020	Butte, Plumas, & Yuba	318,935	2,352	15
6 VALLEY (Electrical)	September 2015	Lake, Napa & Sonoma	76,067	1,955	4
7 WITCH (Powerlines)	October 2007	San Diego	197,990	1,650	2
8 WOOLSEY (Electrical)	November 2018	Ventura	96,949	1,643	3
9 CARR (Human Related)	July 2018	Shasta County, Trinity	229,651	1,614	8
10 GLASS (Undetermined)	September 2020	Napa & Sonoma	67,484	1,520	0
11 LNU LIGHTNING COMPLEX (Lightning/Arson)	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
12 CZU LIGHTNING COMPLEX (Lightning)	August 2020	Santa Cruz, San Mateo	86,509	1,490	1
13 NUNS (Powerline)	October 2017	Sonoma	54,382	1,355	3
14 DIXIE (Under Investigation)*	July 2021	Butte, Plumas, Lassen, & Tehama	963,309	1,329	1
15 THOMAS (Powerline)	December 2017	Ventura & Santa Barbara	281,893	1,063	2
16 CALDOR (Under Investigation)	September 2021	Alpine, Amador, & El Dorado	221,775	1,003	1
17 OLD (Human Related)	October 2003	San Bernardino	91,281	1,003	6
18 JONES (Undetermined)	October 1999	Shasta	26,200	954	1
19 AUGUST COMPLEX (Lightning)	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	1,032,648	935	1
20 BUTTE (Powerlines)	September 2015	Amador & Calaveras	70,868	921	2

"Structures" include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.

This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

*Numbers not final





• October 8, 2017

Central & Southern LNU Complex

All fires shown ignited within a 6 hour window, beginning at 2143 Hours

Winds speeds recorded at 40 – 80 mph

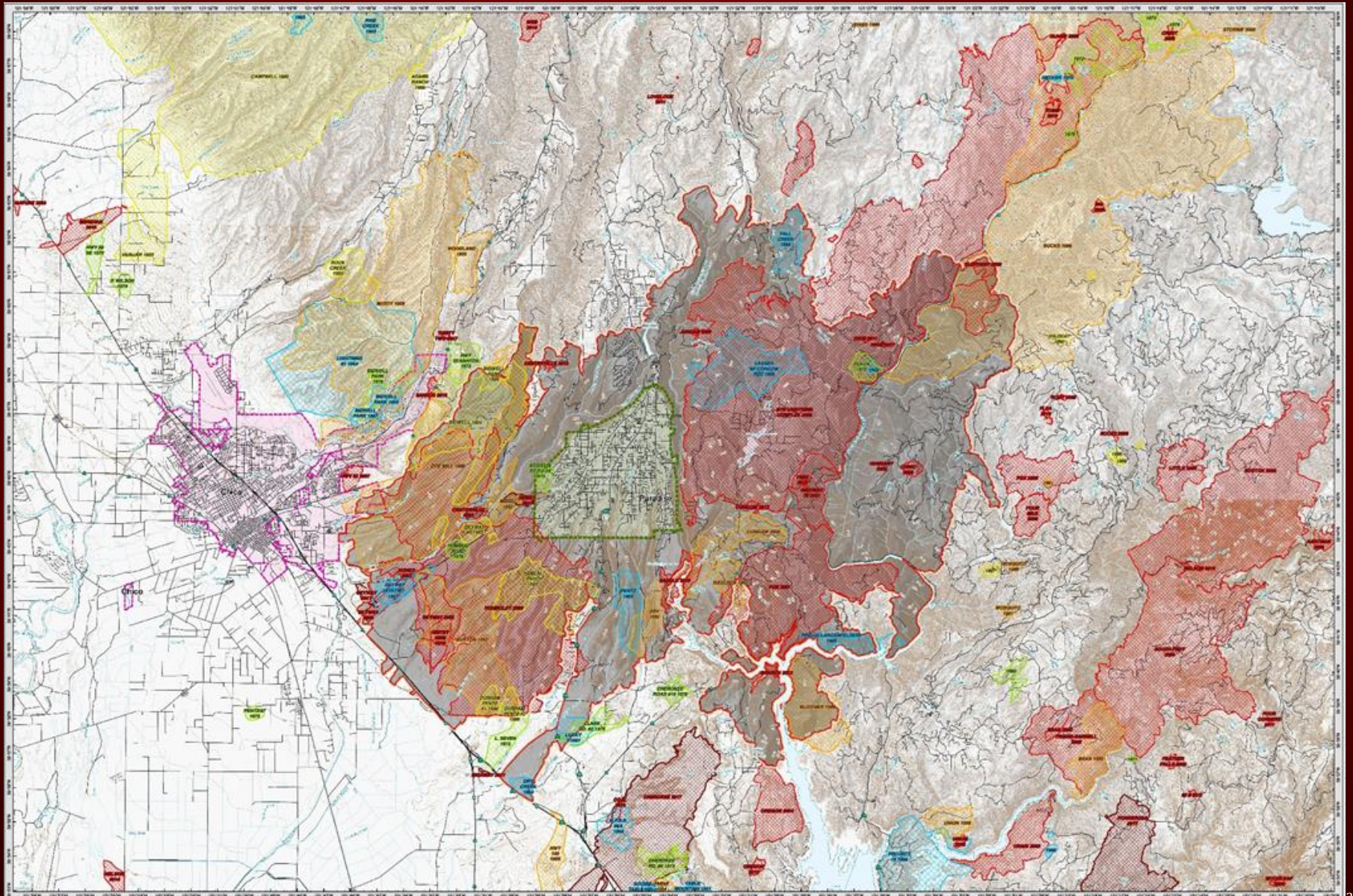
Total Acreage: > 160,000

Structures Affected: > 9,000

Fatalities: 30

First 48 Hours of the Incidents:
 3662 Phone Calls
 Average of 153 Calls Per Hour
 Average of 2.5 Calls Per Minute

FIRE HISTORY MAP – CAMP FIRE



EXTREMELY RAPID GROWTH DUE TO SPOTTING OF WIND DRIVEN EMBERS:





VALLEY FIRE STATISTICS:

- Final Size: 76,067 Acres, Approximately 118 Square Miles
- Start Date: September 12, 2015, 1:24 PM
- End Date: 100% Contained on October 7, 2015
- Total Number of Personnel Assigned: 4,300
- 4 Fatalities, 4 Firefighters Burned

Total Structural Summary	Total Affected	Damaged	Destroyed
Single Residences	1322	41	1281
Multiple Residences	27	0	27
Mixed Commercial/Residential	0	0	0
Nonresidential Commercial Property	73	7	66
Other Minor Structures	626	45	581
Totals	2048	93	1955

2017 STATEWIDE STATISTICS:



DINS Dashboard Trial



Selection Extents

Adjust to change data displayed in map and figures.

Damage Type

- Minor Damage (10-25%)
- Superficial Damage (1-9%)
- Moderate Damage (26-50%)
- Major Damage (51-75%)
- Destroyed (>75%)
- No Damage

Incident Name

Incident Name

Incident Type

- Fire
- Flood

Total Inspections

12,772

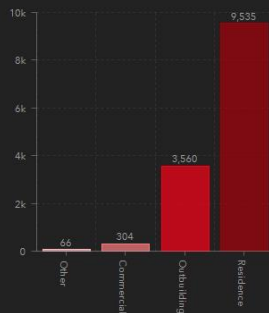
Total 2017 DINS Inspections from all incidents and damage types (unless selected otherwise).

Destroyed Structures

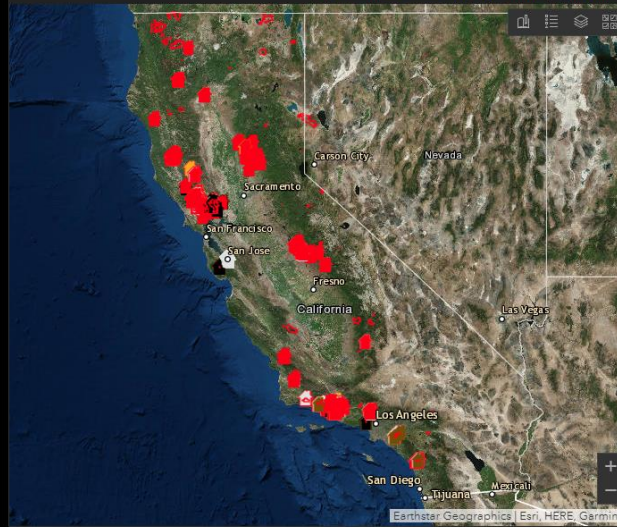
10,827

Structures with 50% or greater damage.

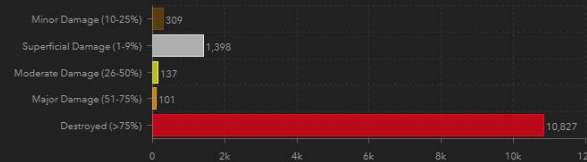
Structure Type



Expand map to view on full page from top right corner



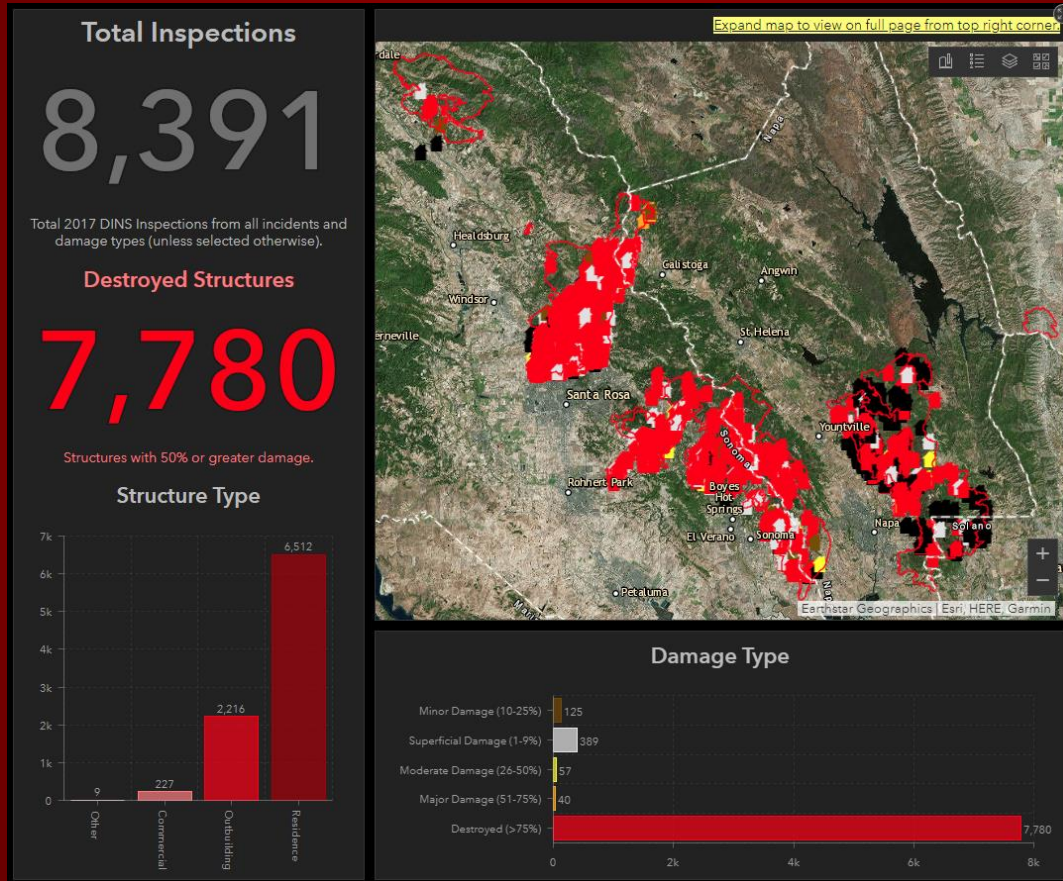
Damage Type



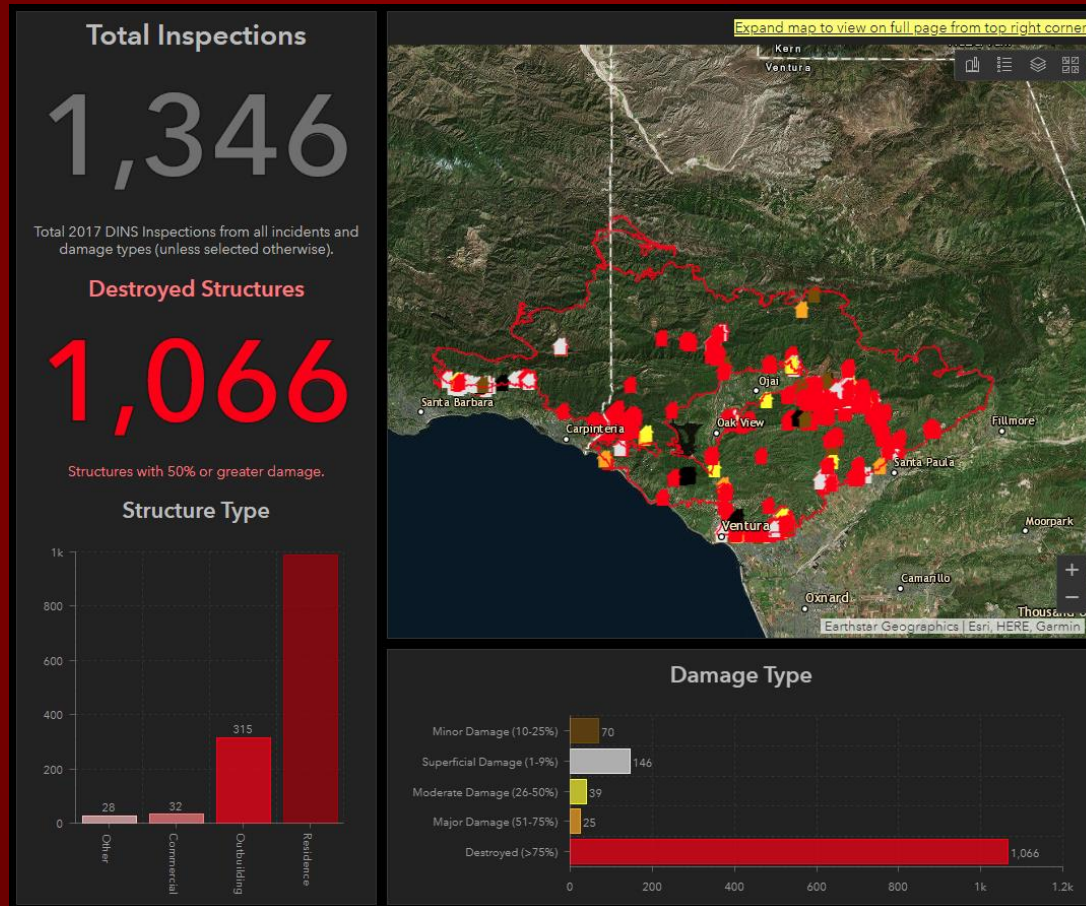
Structures by Incident



OCTOBER 8, 2017 – NORTH BAY, OR WINE COUNTRY FIRE SEIGE:



DECEMBER 4, 2017 – THOMAS FIRE, VENTURA AND SANTA BARBARA COUNTY



JANUARY 9, 2018 – MUDSLIDES IN MONTECITO, SUMMERLAND, AND CARPENTERIA



**SO HOW DO WE
COMBAT ALL THIS?**

WHERE IS THE

SILVER BULLET

TO REVERSE THIS TREND?

LET'S LOOK AT PREVENTION TODAY:

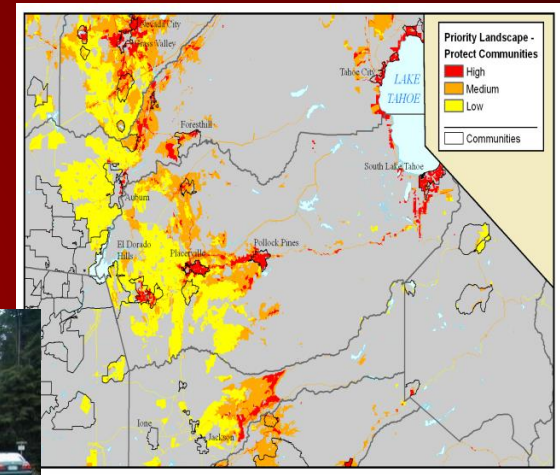
In no specific order.....

- 1. **Planning and Risk Analysis:**
 - 2018 Strategic Fire Plan
 - Land Use Planning
 - CAIRS (California All Incident Reporting System) – Redbook
 - Wildland Pre-Fire Engineering
 - Defensible Space Inspections
 - Damage Inspections (DINS)



- 2. WUI Codes
- 3. Firewise (FireSmart)
- 4. FRAP (Fire & Resource Assessment Program)
 - Fire Hazard Severity Zone Mapping
 - Forest and Rangeland Risk Assessment
 - CalMAPPER
 - California Forest Stewardship Program
- 5. VTPEIR – Vegetation Treatment Program Environmental Impact Report
- 6. Forest Carbon Plan

7. Law Enforcement
8. Public Education
9. Pre-Fire Engineering
10. Fire Suppression Cost Recovery
11. Vegetation Management Program
12. California Conservation Corps
13. Communities at Risk
14. Fire Adapted Communities
15. Cohesive Strategy
16. Fire Safe Councils
17. MOU for Prescribed Fire
18. Others?



EXAMPLES OF PREVENTION:

1. Roadside Fuel Breaks – keep fires from burning into communities
2. Homes constructed utilizing WUI Codes

Importance of other factors such as location on property, PRC 4291 compliance, etc.



OTHERS?



PUBLIC EDUCATION CAN WORK!



FROM THIS:



TO THIS:



SO, THAT'S A PRETTY GOOD LIST, RIGHT?

Lots of great work being done by lots of people, and some great success stories to show for it,

**But What Does Any Of This
Have To Do With You?**

BECAUSE WE CLEARLY HAVEN'T FIGURED IT ALL OUT YET!!!

- Buying more fire engines and hiring more firefighters won't solve the problem
- We need to understand the science better
- Solutions will come from a better understanding of fire behavior and impacts on structures

THERE ARE SOME THINGS WE DO KNOW:

Perhaps the single most predominant factor for homes destroyed in wildfires:



ARE EMBERS!

Statistically speaking, approximately 70% to 90% of homes damaged or destroyed by wildfires are the result of embers

And if embers ignite a structure, it generally has only a 5% to 10% chance of surviving the fire



Science Based
Research is
being done, but
much more is
needed

Question: Are we emphasizing this issue enough?

ALL HANDS ON DECK!

1. Architectural and Engineering Professions
2. Land Use Planning
3. Construction Industry
4. Environmental Issues – SMOKE IMPACTS!
5. Elected Officials
6. Neighborhood, City, and Regional Groups
7. Worldwide Problem
8. ***We must overcome the resistance to change!!!***

WILDFIRE ASSESSMENT REPORT

A Wildfire Assessment Report for Beverly Hills July 27, 2021



Prepared by:
David Shew and J. Lopez



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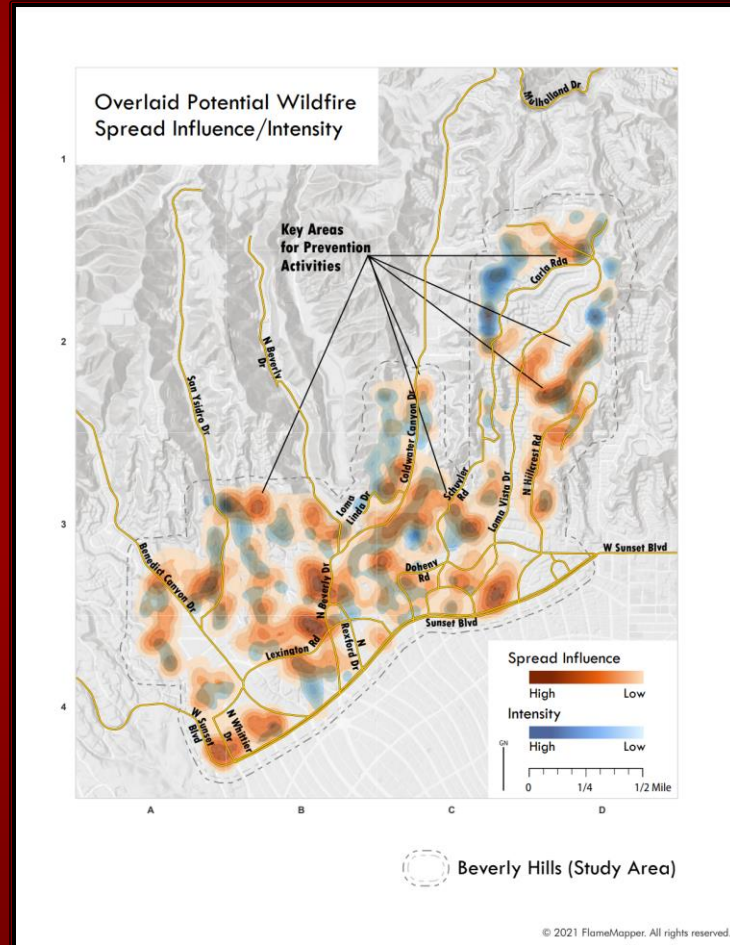
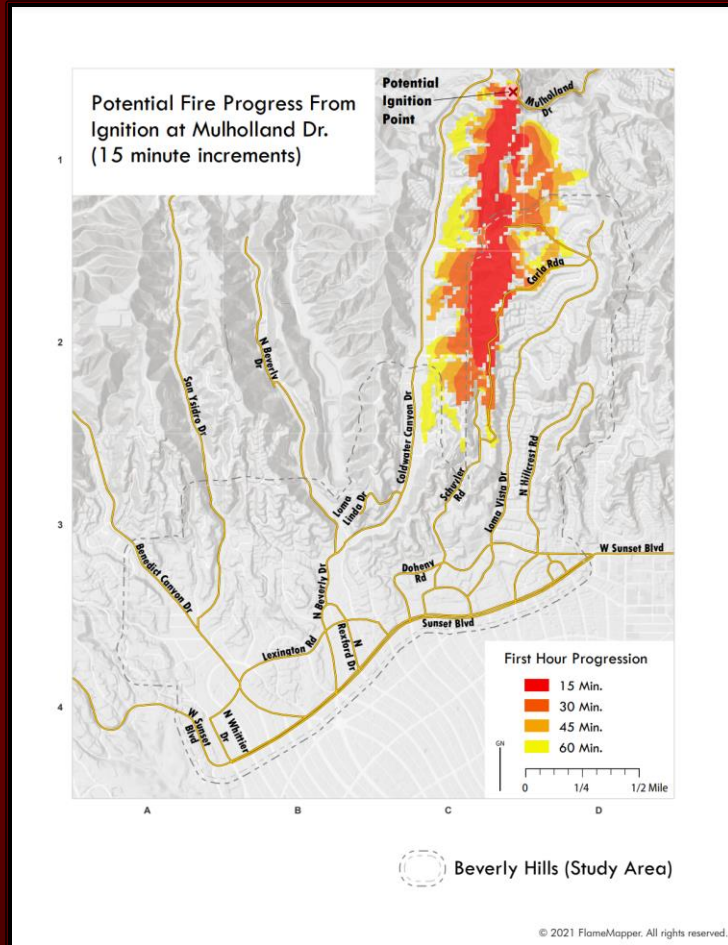
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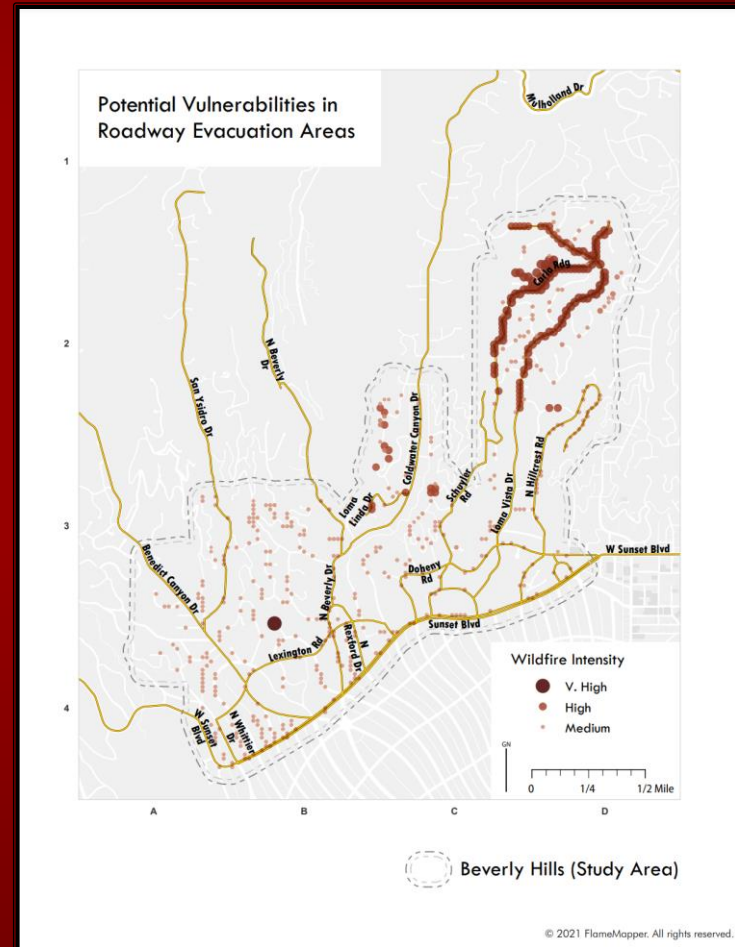
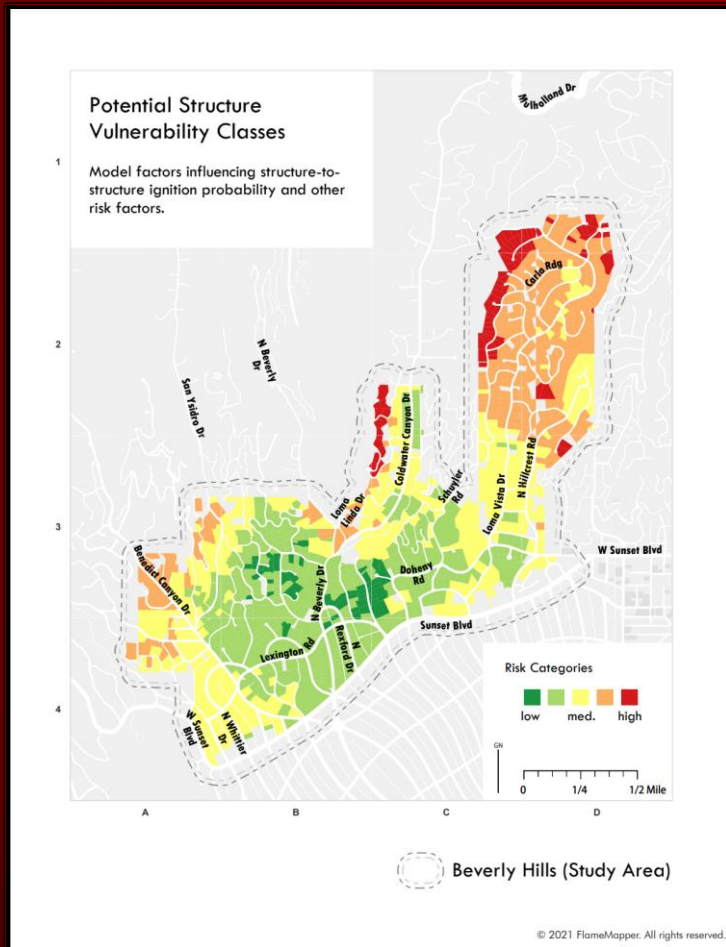
Wildfire Defense Works

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WILDFIRE PREDICTION MAPPING:



WILDFIRE PREDICTION MAPPING:



QUESTIONS?

THANK YOU!

Staff Chief David Shew, Retired

CAL FIRE / Office of the State Fire Marshal

WILDFIRE DEFENSEWORKS

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