



# From Conflagration to Resilience

## *Ashes to Action*

**Steve Hawks**

***Senior Director for Wildfire***

Insurance Institute for Business & Home Safety



# WHY?

Severe weather disrupts lives, displaces families, and drives financial loss. IBHS delivers top-tier science and translates it into action so we can prevent avoidable suffering, strengthen our homes and businesses, inform the insurance industry and support thriving communities.



Wildfires become **CATASTROPHES**  
when they move into a  
**COMMUNITY** and an **URBAN**  
**CONFLAGRATION** unfolds.



**Drought**



**Wind**



**People**

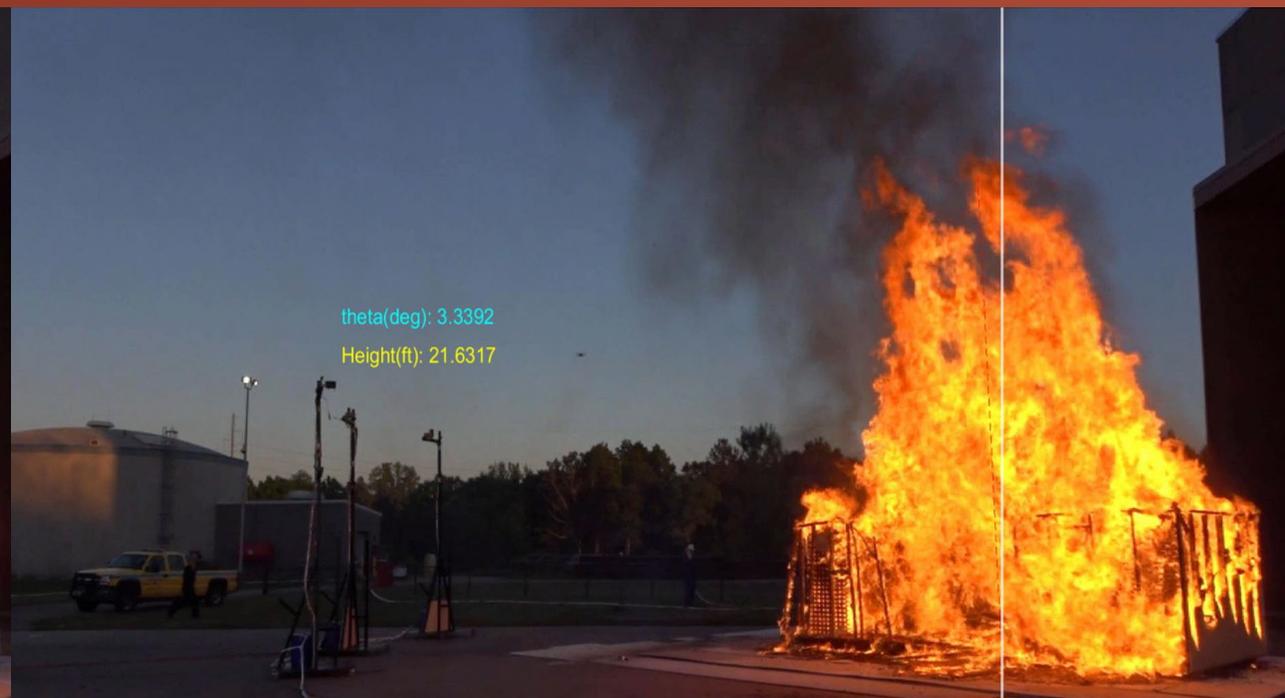
**Conflagration**

The uncontrolled spread of fire within a community leading to large structure loss.

# IMPACT OF *WIND*



WIND



NO WIND

Wildfire = Wildland fuels

Embers

Radiant Heat

Flame Contact



Wildfire = Wildland fuels

Embers

Radiant Heat

Flame Contact

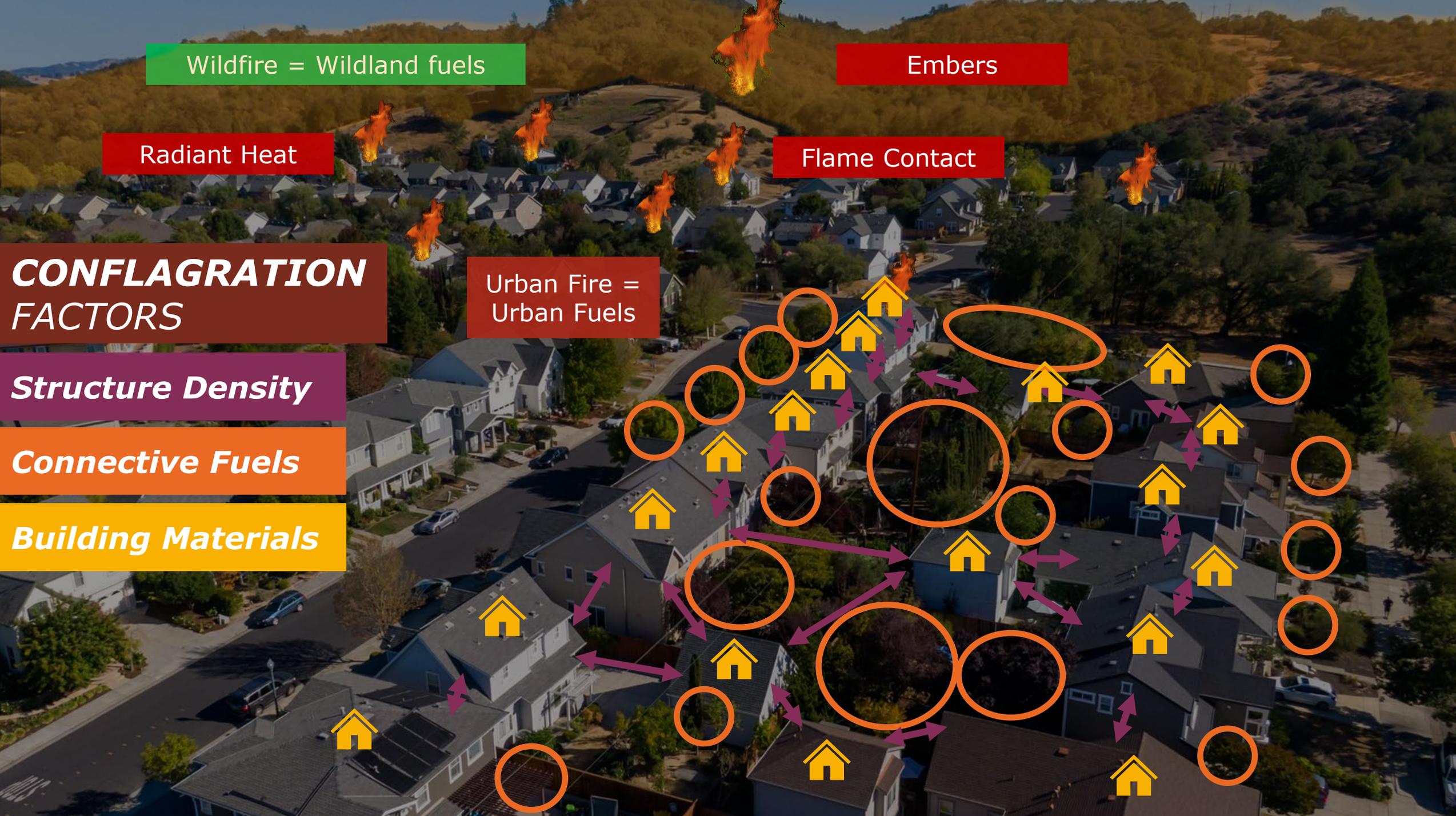
# CONFLAGRATION FACTORS

Urban Fire = Urban Fuels

Structure Density

Connective Fuels

Building Materials



ring

Embers



Flames & Heat



# Exposure



Connective Fuels



Structure-to-Structure

Dec 27 10:02 AM MST

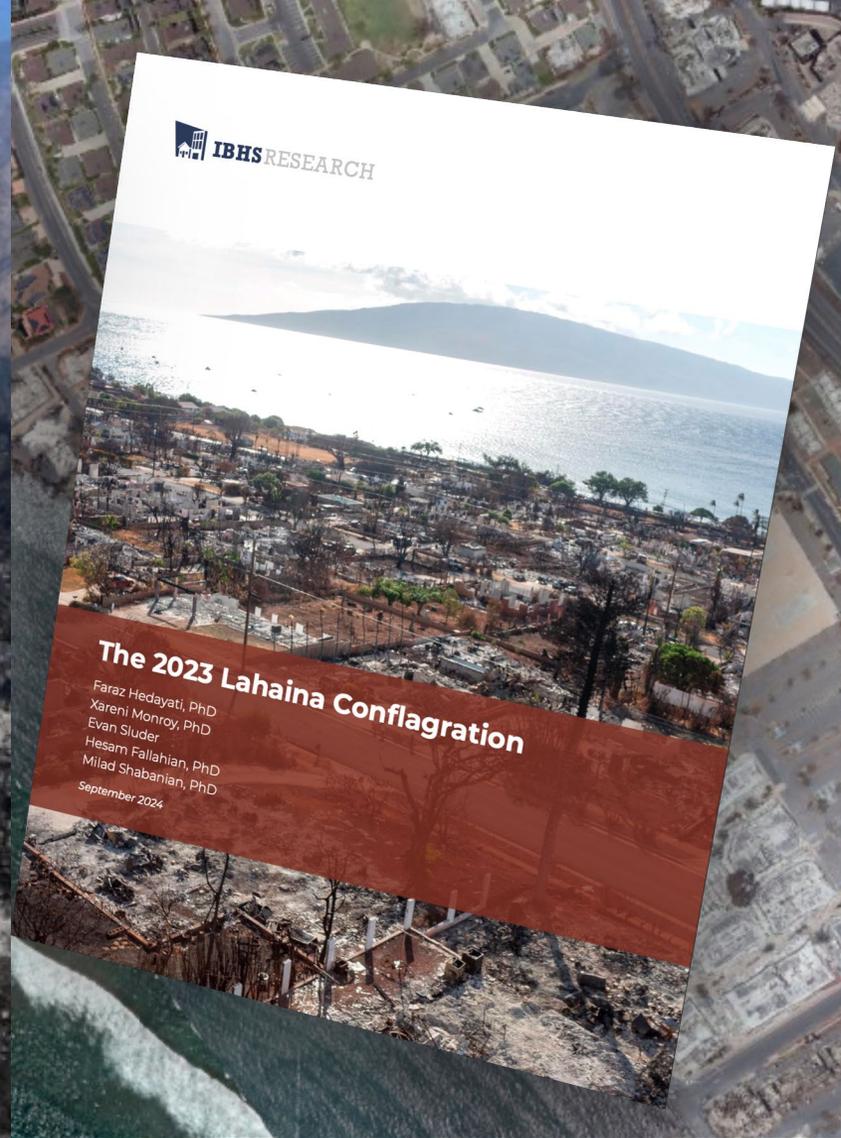
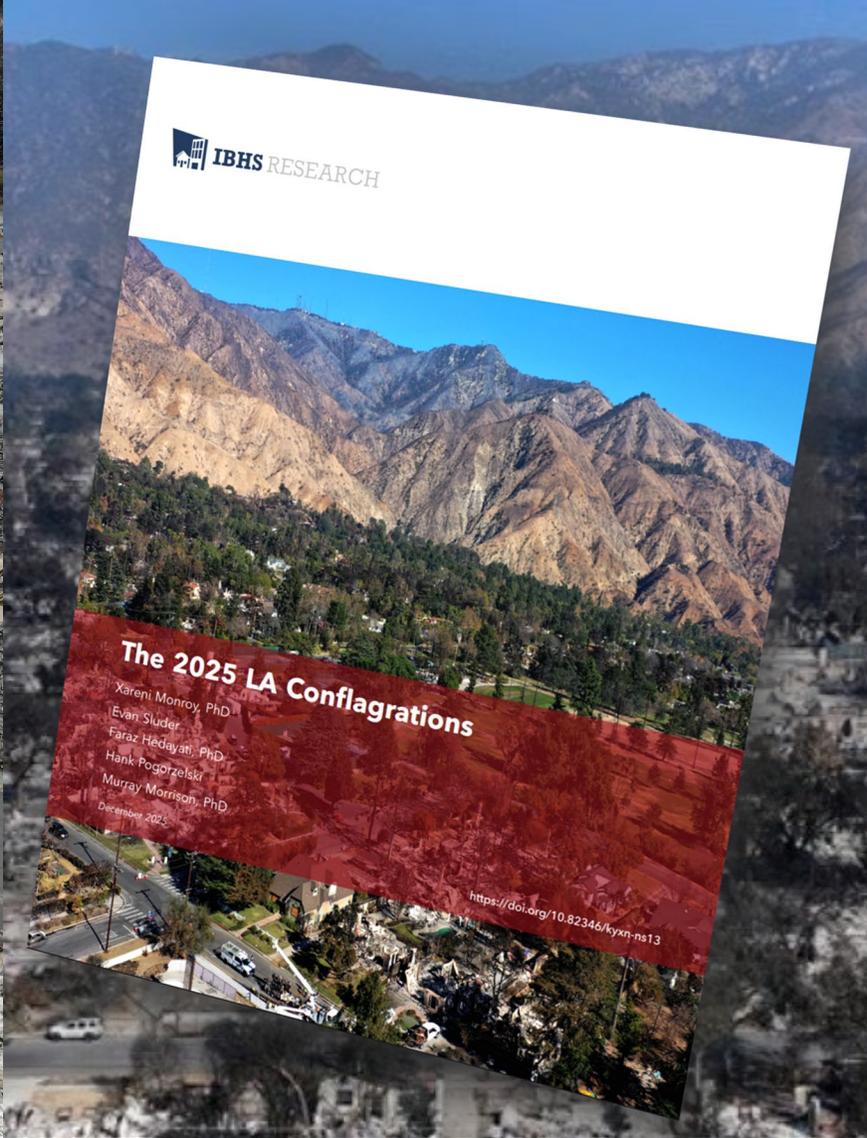
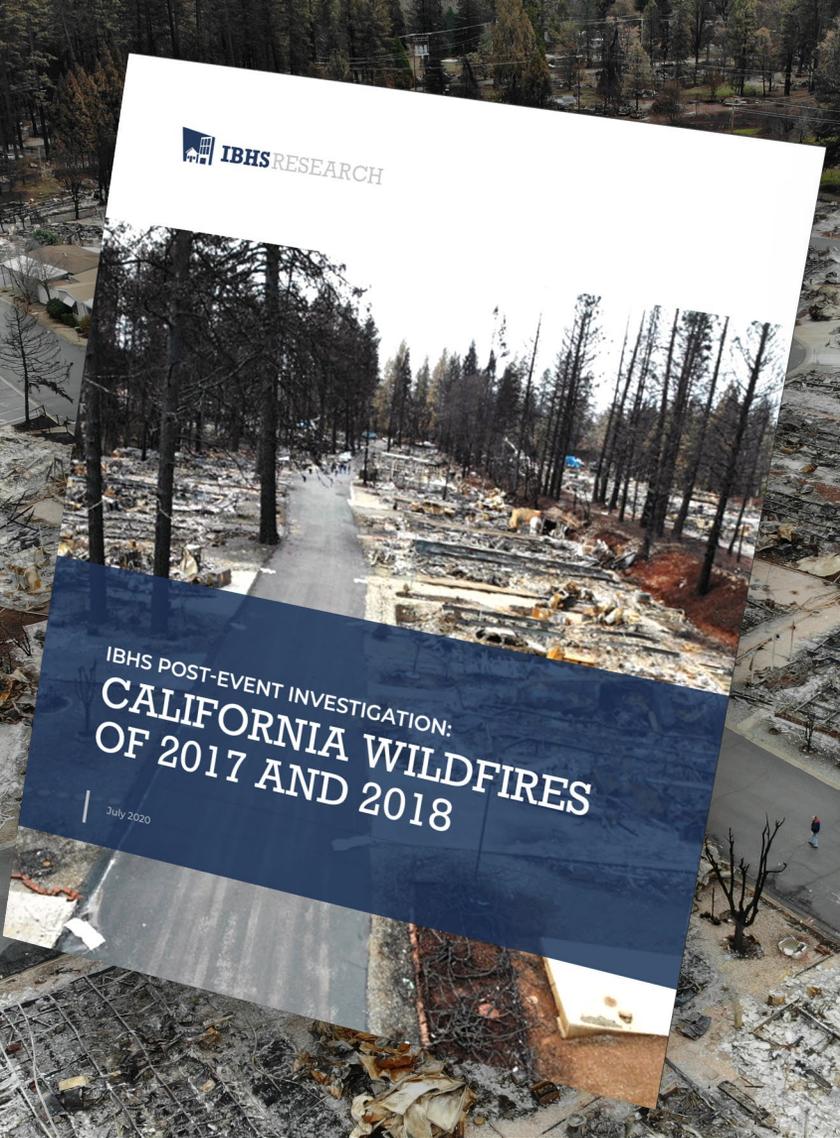
KUNA

# Preventing Ignition



08/25/2023 AM 08:01:45





**Camp Fire**  
Paradise, CA

**LA Fires**  
Los Angeles, CA

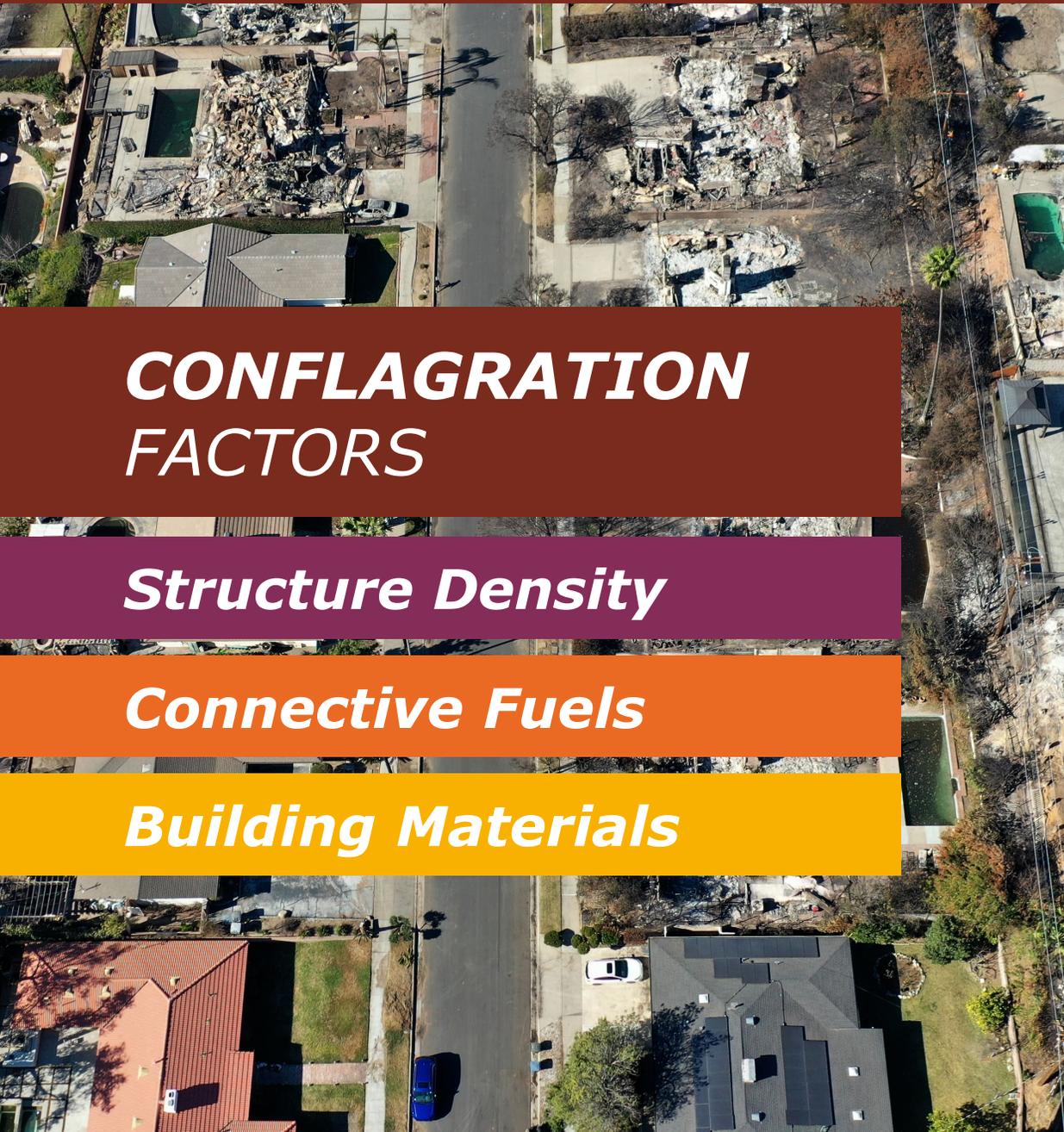
**Lahaina Fire**  
Lahaina, HI

# THANK YOU, CAL FIRE !!



# POST-FIRE FIELD INVESTIGATION

## KEY DATA COLLECTED



### CONFLAGRATION FACTORS

*Structure Density*

*Connective Fuels*

*Building Materials*

**EXPOSURE**

**STRUCTURE DENSITY**

**CONNECTIVE FUELS**

Structure spacing

Urban fuels

Fuel coverage in Z0 and Z1

**RESILIENCE**

**BUILDING MATERIALS**

Roof

Siding

Gutters

Windows

Eaves

Doors

Vents

Decks

**LA County**



**IBHS  
Research**





## The 2025 LA Conflagrations

Xareni Monroy, PhD  
Evan Sluder  
Faraz Hedayati, PhD  
Hank Pogorzelski  
Murray Morrison, PhD

December 2025

<https://doi.org/10.82346/kyxn-ns13>

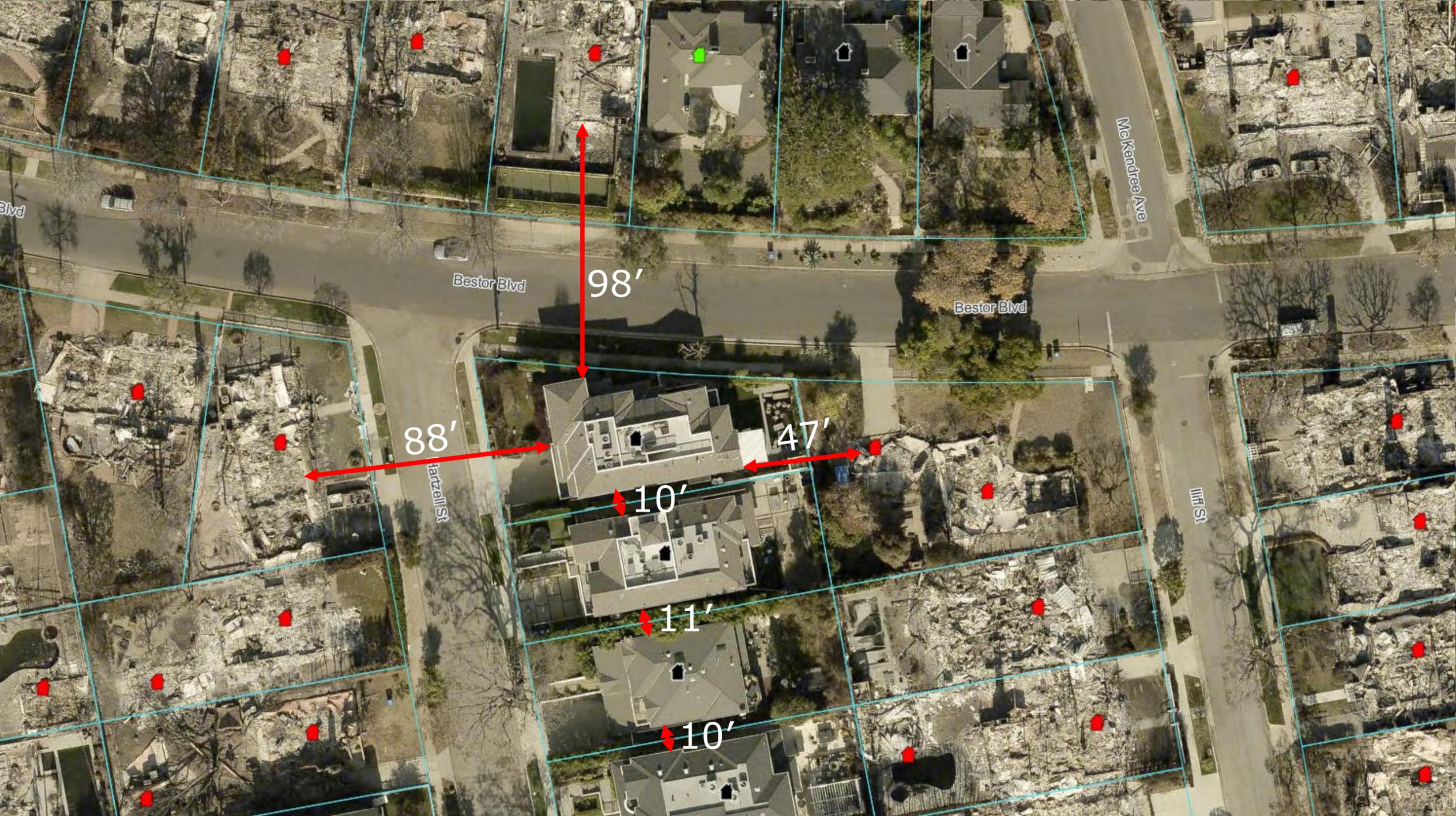


# CONFLAGRATION FACTORS

## Structure Density

Structure separation is one of the **most critical factors** in wildfire resilience.

At 10 foot spacing, even **well-hardened structures** can experience substantial damage/loss.



Bestor Blvd

McKendree Ave

Bestor Blvd

98'

88'

Hartzell St

47'

10'

11'

10'

Hartzell St

# **CONFLAGRATION FACTORS**

## ***Connective Fuels***

**More than 25%** fuel coverage in Zone 0 pushed the risk of damage or destruction to nearly **90%**.

**More than 25%** fuel coverage in Zone 0 reduces the effectiveness of Zone 1 fuel reduction.

An aerial photograph showing a residential neighborhood with houses and trees in the foreground, and a range of rugged, brown mountains in the background under a clear blue sky.

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**CONNECTIVE FUELS**

**FIELD OBSERVATIONS:  
LA COUNTY**



**Bushes  
Privacy Hedges**



**Trash Cans**



**Hot Tubs**



**Fences**



**Fence w/Veg**



**Decks**



**Pergola**



**Vehicles**



**Sheds**

# ***CONNECTIVE FUELS***

## ***LAB OBSERVATIONS***



A black trash bin is on fire, with bright orange flames and a thick plume of white smoke rising from it. The bin is situated on a concrete surface next to a tan-colored building with horizontal siding and several windows. The scene is captured from a low angle, looking up at the building and the burning bin. An orange banner is overlaid in the top right corner.

# ***CONNECTIVE FUELS***

***LAB OBSERVATIONS***

Time to ignition of plants - 7:07

Time to ignition of wall 7:17

Live Fuel Moisture content - 163%



# ***CONNECTIVE FUELS: PRIVACY HEDGES***

***FIELD OBSERVATIONS: LA COUNTY***



***VIDEO: CAL FIRE***



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# CONFLAGRATION FACTORS

## Building Materials

Homes with four hardening features — Class A roof, noncombustible siding, double-pane windows and enclosed eaves.

Had a **54%** chance of avoiding damage, compared to **36%** when only a single mitigation was in place.

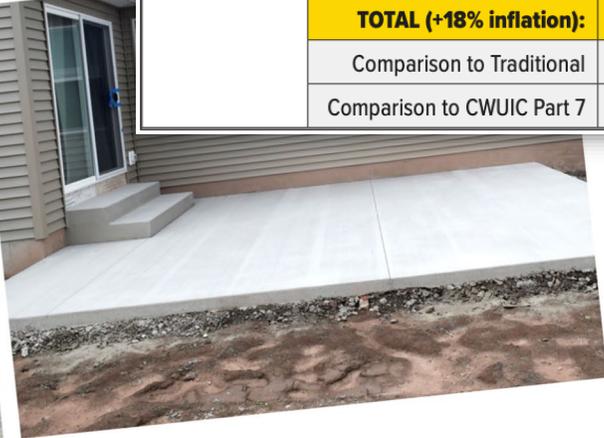
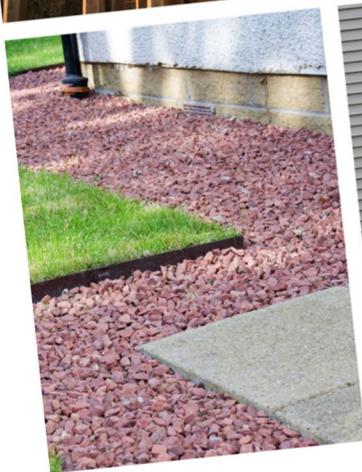
# ***BUILDING MATERIALS***

## ***FIELD OBSERVATIONS: LA COUNTY***





Assembly	Component	Traditional	CWUIC Part 7	IBHS WFPH Base	IBHS WFPH Plus
Roof	Subtotal:	\$25,321	\$26,311	\$26,311	\$26,311
Eaves	Subtotal:	\$1,900	\$4,284	\$3,681	\$5,253
Exterior Walls	Subtotal:	\$11,461	\$13,569	\$13,578	\$13,591
Windows/ Doors	Subtotal:	\$8,431	\$11,391	\$8,431	\$12,241
Deck	Subtotal:	\$1,968	\$1,968	\$1,968	\$1,968
Zone 0	Subtotal:	\$1,106	\$3,742	\$3,742	\$3,742
	<b>TOTAL (+18% inflation):</b>	<b>\$59,223</b>	<b>\$72,293</b>	<b>\$68,099</b>	<b>\$74,465</b>
	Comparison to Traditional	\$-	\$13,070	\$8,876	\$15,242
	Comparison to CWUIC Part 7	\$-	\$-	\$(4,194)	\$2,172



## Construction Costs for Wildfire-Resistant Homes

A comparison between California Wildland-Urban Interface Code (CWUIC) Part 7, IBHS Wildfire Prepared Home Base, and IBHS Wildfire Prepared Home Plus

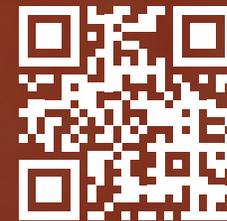
Fall 2025



Building to **WFPH Plus** adds about \$15,000 to construction costs — *around 3%* — only \$50 a month on a typical 30-year mortgage.



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*Senior Director for Wildfire*



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