



Los Angeles Fires Case Study Discussion

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Severe Wildfire Conditions



1. Ignition Source

2. Extreme fire behavior
High intensity, fast growth

3. Residential fires
Ignitable structures, proximity,
many ignitions

4. Fire protection resources
Number of ignitions +
environment overwhelms resources

5. Fire protection effectiveness
Reduced or nonexistent

6. Suburban
Conflagration
Catastrophe

An aerial photograph showing a residential neighborhood that has been severely damaged. The ground is covered in a thick layer of rubble, including twisted metal, broken concrete, and charred remains. Several buildings are either completely destroyed or reduced to skeletal remains. The surrounding area shows some greenery and intact structures, providing a stark contrast to the devastation in the center.

CONFLAGRATION:

**Uncontrollable
Structure-to-Structure
Fire Spread**

Built environment conflagrations follow:



Humans



Drought



Wind



PARCEL



COMMUNITY

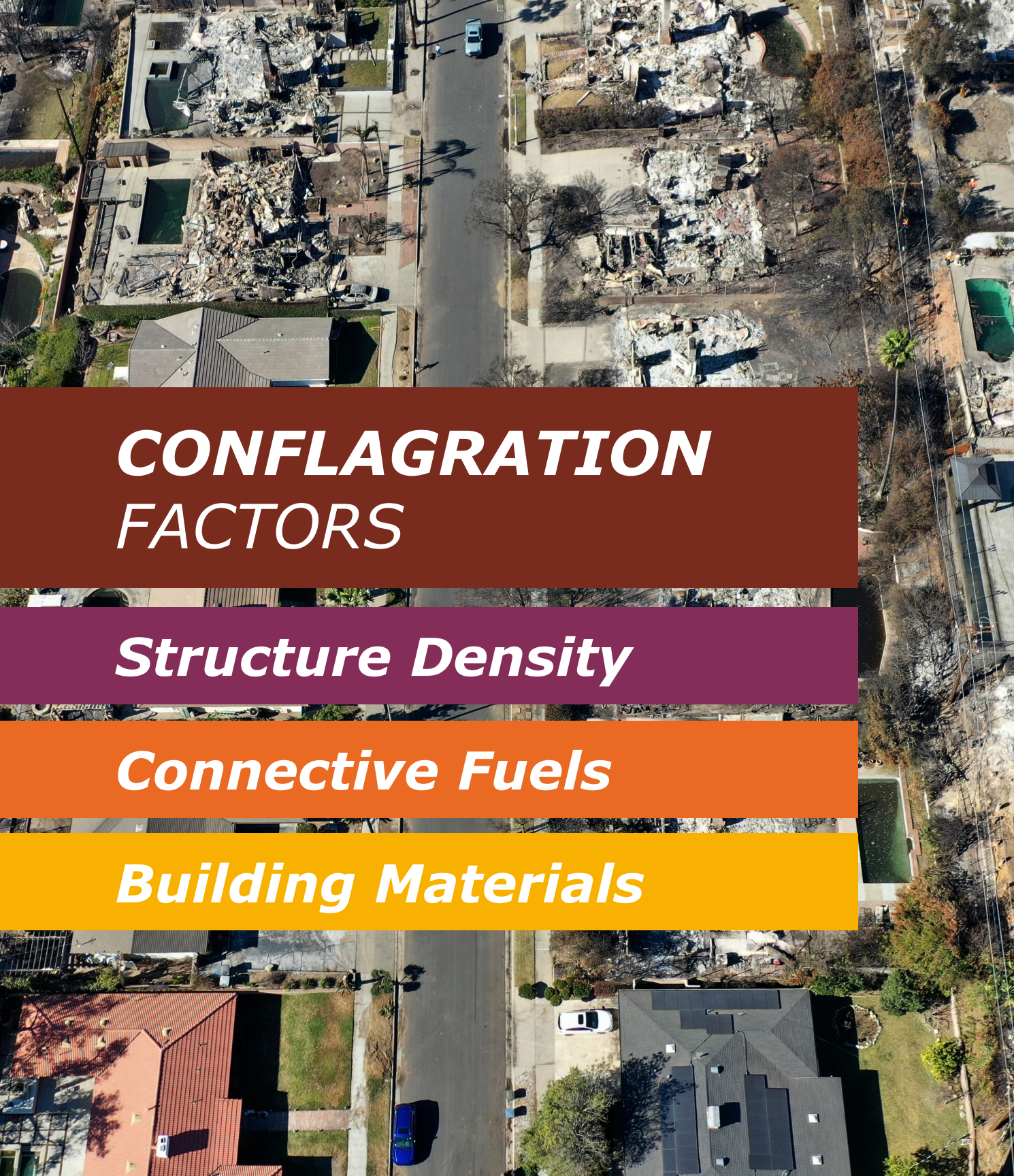
CONFLAGRATION in LA

- Flash Drought
- Gusts over 60 mph
- Relative Humidity under 10%

By January 7, 2025, more than **5.8 million people** were living in areas classified as severe drought in LA County.

January 7, 2025





CONFLAGRATION FACTORS

Structure Density

Connective Fuels

Building Materials

KEY DATA COLLECTED

FUEL FACTORS	Vegetation fuel cover	
	Vertical combustible coverage	
	Urban fuels	
BUILDING COMPONENTS	Roof	Siding
	Gutters	Vents
	Windows	Fences

BUILDING MATERIALS

FIELD OBSERVATIONS: LA COUNTY



WINDOWS



STUCCO



6-INCH VERTICAL CLEARANCE

BUILDING MATERIALS

LAB OBSERVATIONS

*Double-pane windows consistently provide better fire barrier performance (Shields et al., 2005)
Tempered windows provide higher heat resistance (Babrauskas, 2003)*

TRASH CANS



CONNECTIVE FUELS

FIELD OBSERVATIONS: LA COUNTY



FENCES

HOT TUBS



CONNECTIVE FUELS

LAB OBSERVATIONS

**Fences provide a pathway
for fire to reach the home**
(Butler et al, 2022; Insurance Institute for
Business & Home Safety, 2020)

Cold Flow Measurement

No-wind Shed Burns

Modeling Shed Burns

With Wind Shed Burns

Modeling ADUs

ADUs Burns



STRUCTURE DENSITY

Wind-Driven Building-to-Building Fire Spread



NIST





PARCEL + COMMUNITY

WILDFIRE PREPARED

— A PROGRAM OF IBHS —



ADDITIONAL MITIGATIONS AGAINST FLAMES

- ✓ Cover gutters.
- ✓ Enclose eaves.
- ✓ Install noncombustible siding.
- ✓ Upgrade windows & doors.
- ✓ Upgrade to a noncombustible deck.
- ✓ Move accessory structures at least 30 feet away.
- ✓ Remove back-to-back fencing.

MITIGATIONS AGAINST EMBERS

ROOF

- ✓ Ensure the roof covering is Class A fire-rated & maintained clear of debris.
- ✓ Choose noncombustible gutters & downspouts.

BUILDING FEATURES

- ✓ Install ember-resistant vents or 1/8-inch metal mesh over vents.
- ✓ Ensure 6-inch vertical noncombustible clearance at base of exterior walls.
- ✓ Clear & maintain the underdeck area; enclose low-elevation decks.

0-5 FOOT NONCOMBUSTIBLE ZONE

- ✓ Establish a **0-5 foot noncombustible zone** around the home and decks; remove overhanging branches; replace combustible fences within 5 feet.

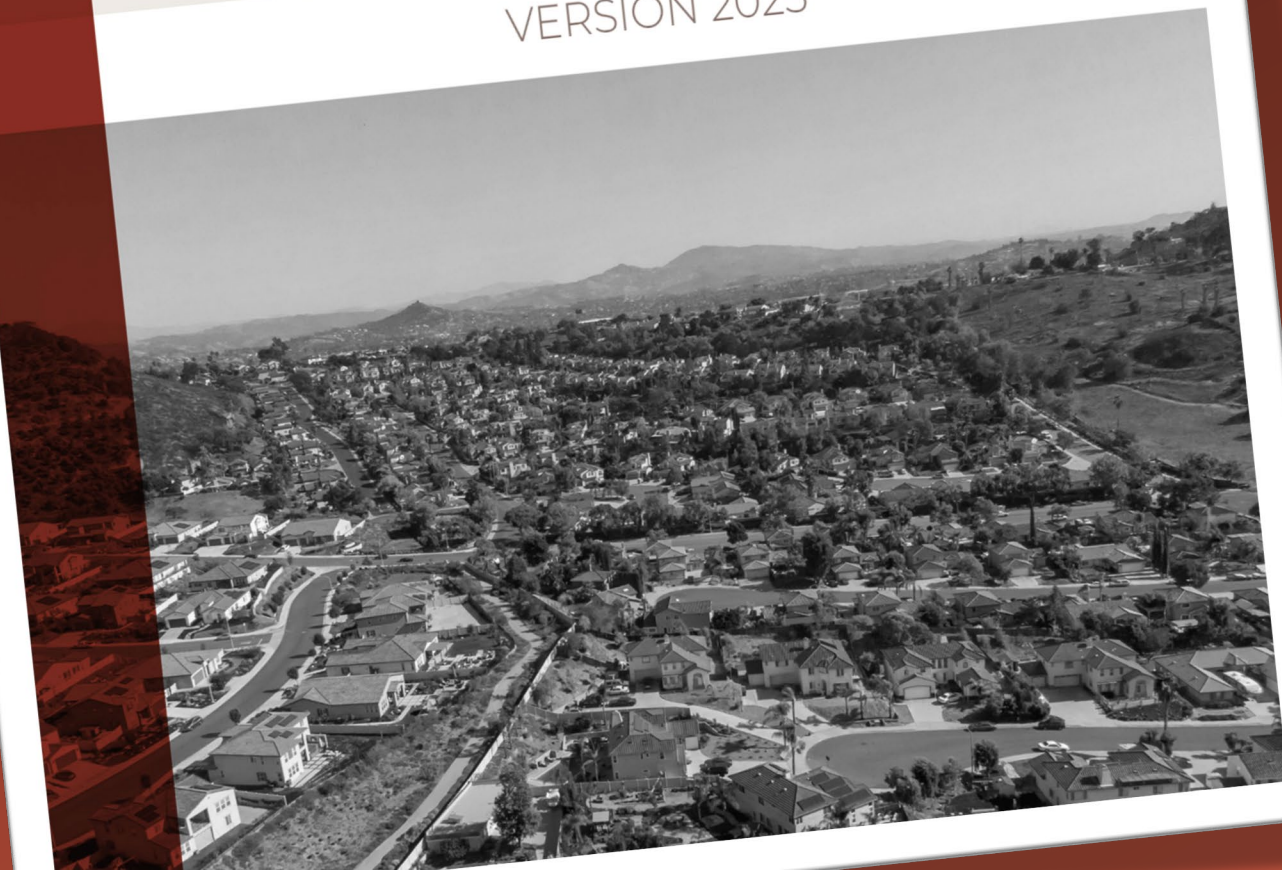
5-30 FOOT DEFENSIBLE SPACE ZONE

- ✓ Maintain yard with spaced vegetation, structures, & other connective fuels; clear debris; remove firewood.
- ✓ Move structures at least 10 feet away & maintain a 0-5 foot noncombustible zone around them.


**WILDFIRE
PREPARED**[®]
— NEIGHBORHOOD —

TECHNICAL
STANDARD

VERSION 2025



MITIGATION APPROACH

Ember Attack

NEIGHBORHOOD EMBER ZONE

Wildfire Prepared Home Base

Embers + Direct Flame/Radiant Heat

NEIGHBORHOOD FLAME ZONE

Wildfire Prepared Home Plus

WELCOME TO OUR

Wildfire-Resilient Neighborhood

kb
HOME

Built on Relationships



We're taking our commitment to building homes that make life better to the next level.

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Dixon Trail is the nation's first community to meet the Insurance Institute for Business & Home Safety's (IBHS) new neighborhood-level wildfire resilience standard: Wildfire Prepared Neighborhood. The community will serve as a model for research-backed methods to reduce wildfire risk and underscores KB Home's dedication to building innovative homes and communities that offer greater peace of mind.



Escondido

In California, enhancing wildfire resilience costs **less than \$3,000** for new construction over Chapter 7A.

*Headwaters Economics/IBHS, 2022



Reduce structure ignitions.

Reduce the likelihood of conflagration.



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