



IBHS Research Wildfire Prepared

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 our **BUILT**
ENVIRONMENT and a
CONFLAGRATION unfolds.



Drought



Wind



People

Wildfire = Wildland fuels

Embers

Radiant Heat

Flame Contact



Wildfire = Wildland fuels

Embers

Radiant Heat

Flame Contact

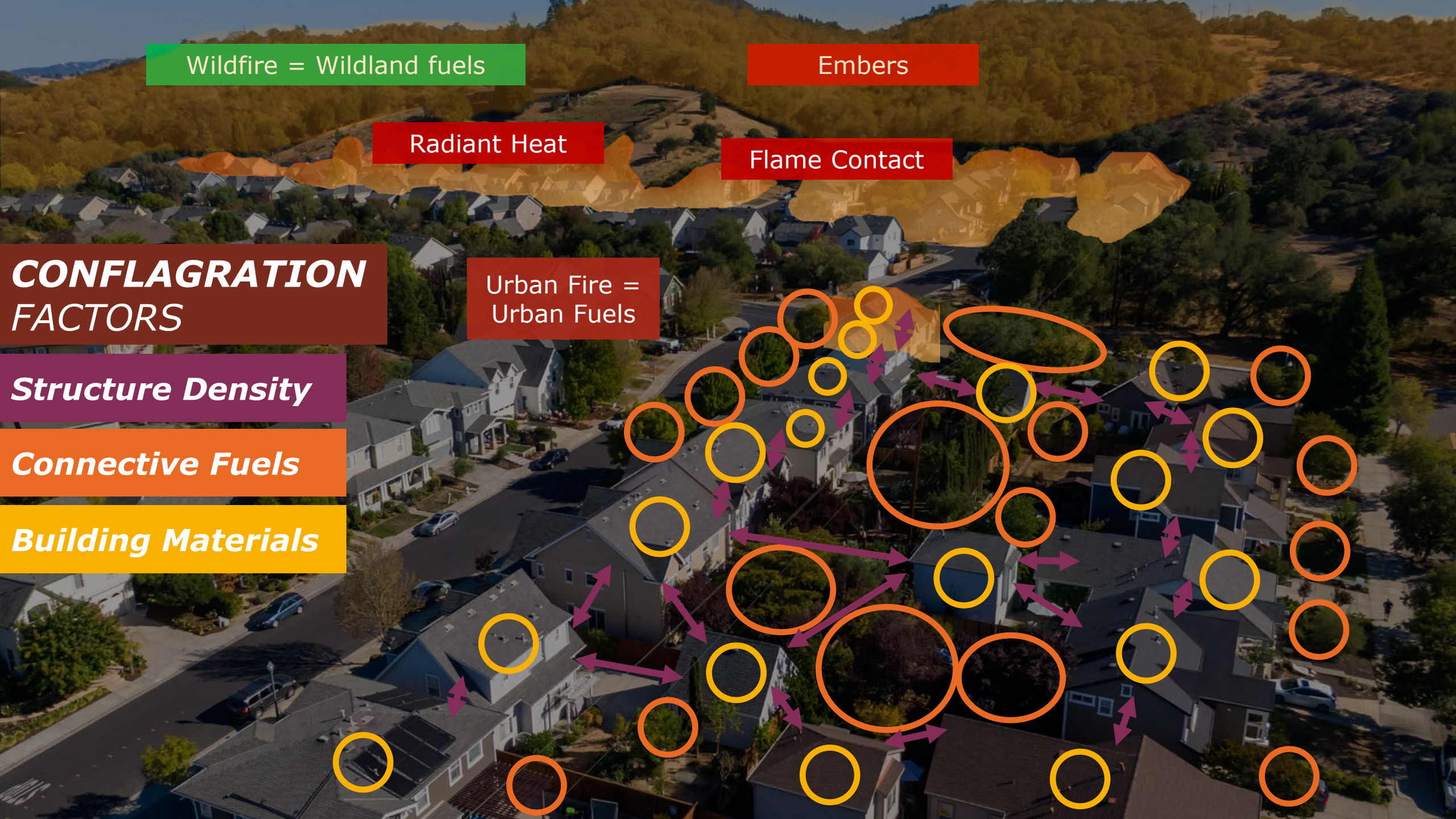
CONFLAGRATION FACTORS

Structure Density

Connective Fuels

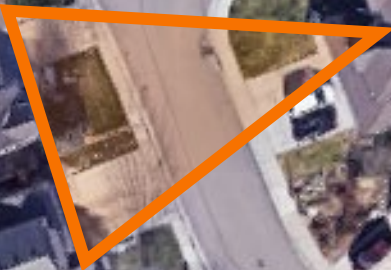
Building Materials

Urban Fire =
Urban Fuels





2011 Emerson Ln
Superior, CO 80027



Eaton Cir

Emerson Ln

CO

Google

Dec 30, 2021 6:29:22 PM MST

Video from Holly Browarsky,
Emerson Lane

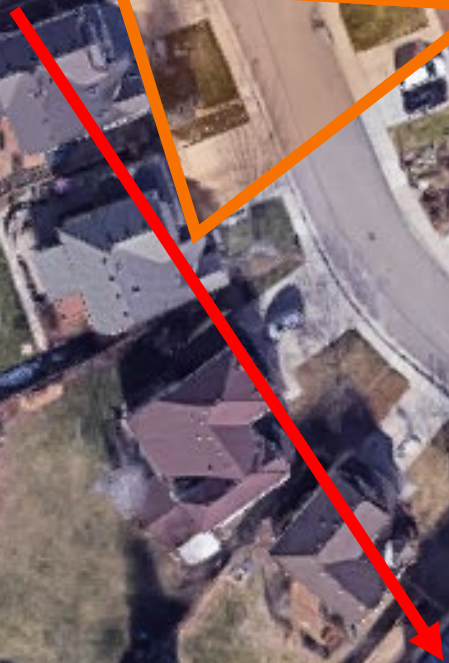
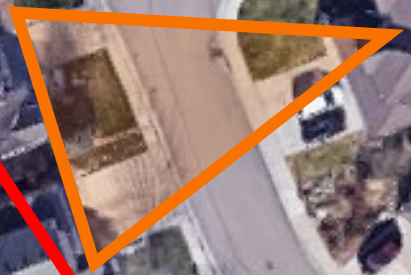
KUNA

CO

Marshall Fire (2021) 6,026 acres, 1,084 structures destroyed and 149 damaged



2011 Emerson Ln
Superior, CO 80027



CO



Google

Eaton Cir

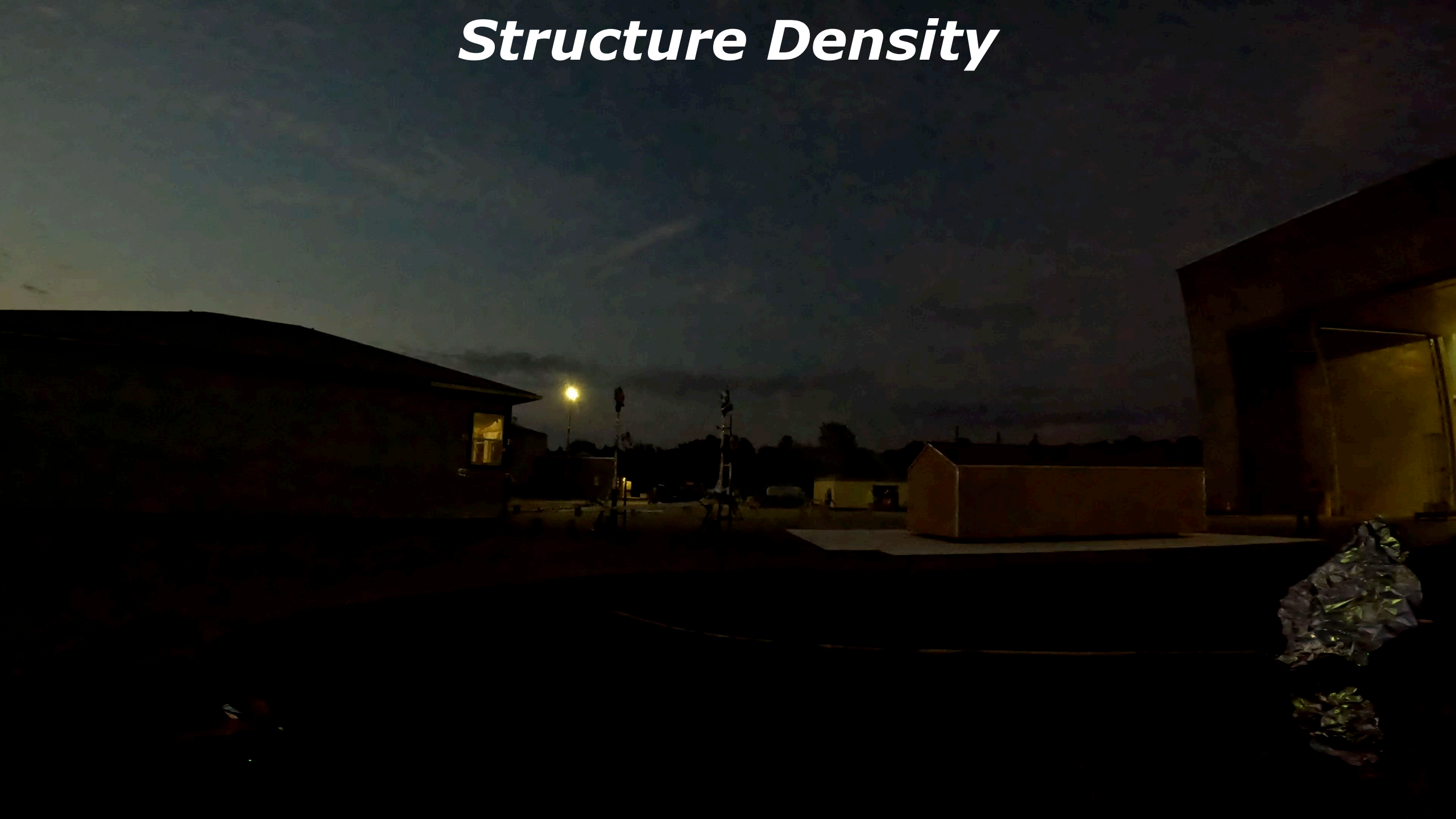
Emerson Ln

Video: FOX 4 Dallas-Fort Worth



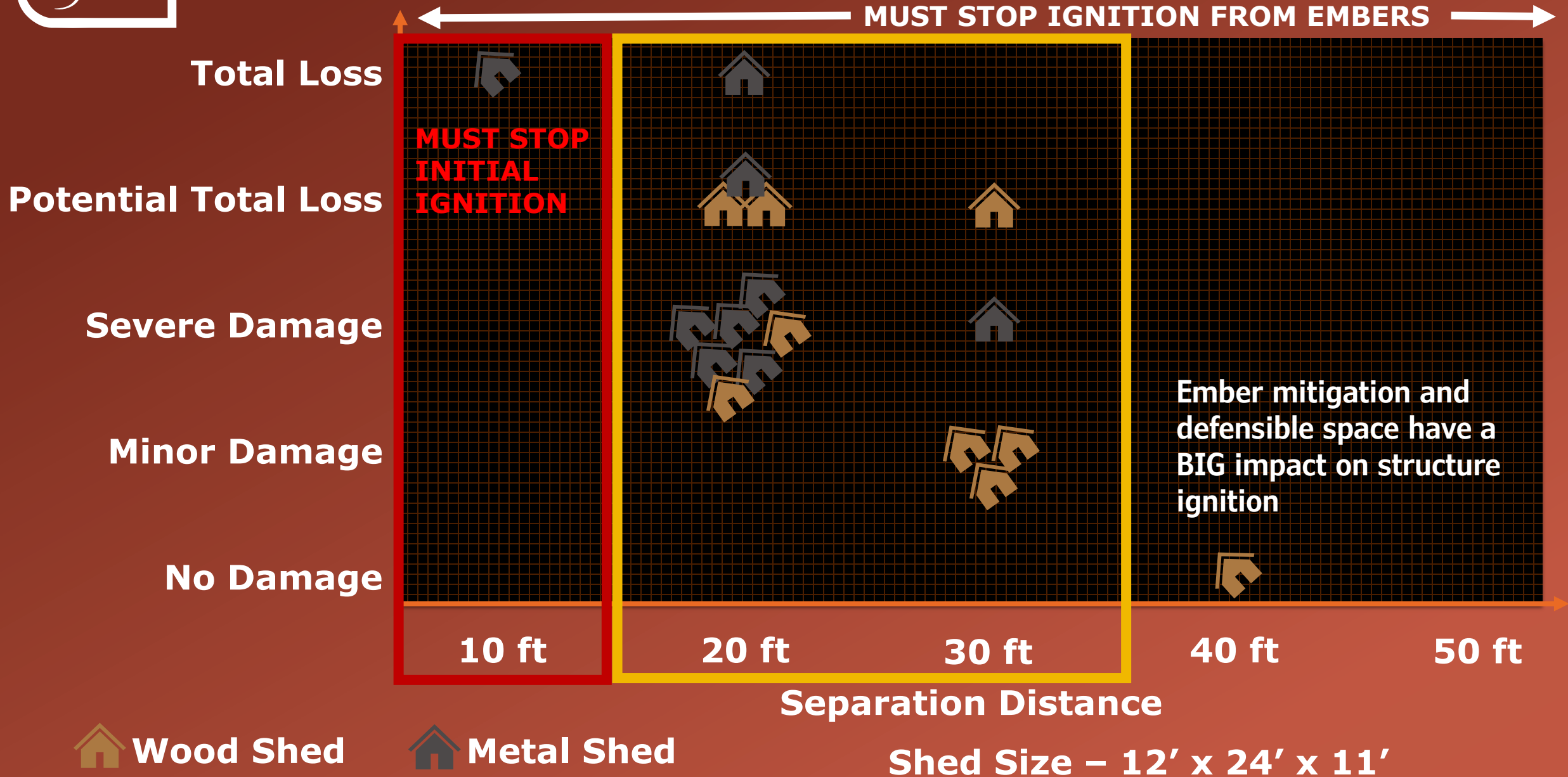
Balch Springs Fire (2022) 35 acres, 9 homes destroyed and 17 damaged

Structure Density





OUTBUILDINGS



Connective Fuel Pathways



0 – 5 FEET CONNECTIVE FUELS

FIELD OBSERVATIONS: LA COUNTY





**Hot Tub /
Retaining Wall**

***5 – 30 FEET
CONNECTIVE FUELS***

FIELD OBSERVATIONS: LA COUNTY



Decks



**Hot
Tubs**



Pergola



**Privacy
Hedges**

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 flame- and ember-resistant vents or 1/8-inch metal mesh vents.
- ✓ Ensure 6-inch vertical noncombustible clearance at base of exterior walls and decks.
- ✓ 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.



**DEVELOP A SYSTEM OF NEIGHBORHOOD
PROTECTIONS THAT MEANINGFULLY
REDUCES THE PROBABILITY OF
CONFLAGRATION**

CORE PRINCIPLES



**Decrease probability of
initial ignitions from
direct flame/radiant heat**

**Allow the neighborhood
to act as a fuel break,
not a dense fuel source**

**Protect the
neighborhood
from ember attack**

**Slow fire spread within
the neighborhood if
ignitions do occur**

Applicability

Building Types: Single family, duplexes, and townhomes up to 3 stories or less

90% or more structures separated by a minimum distance greater than 10 ft and less than 100 ft

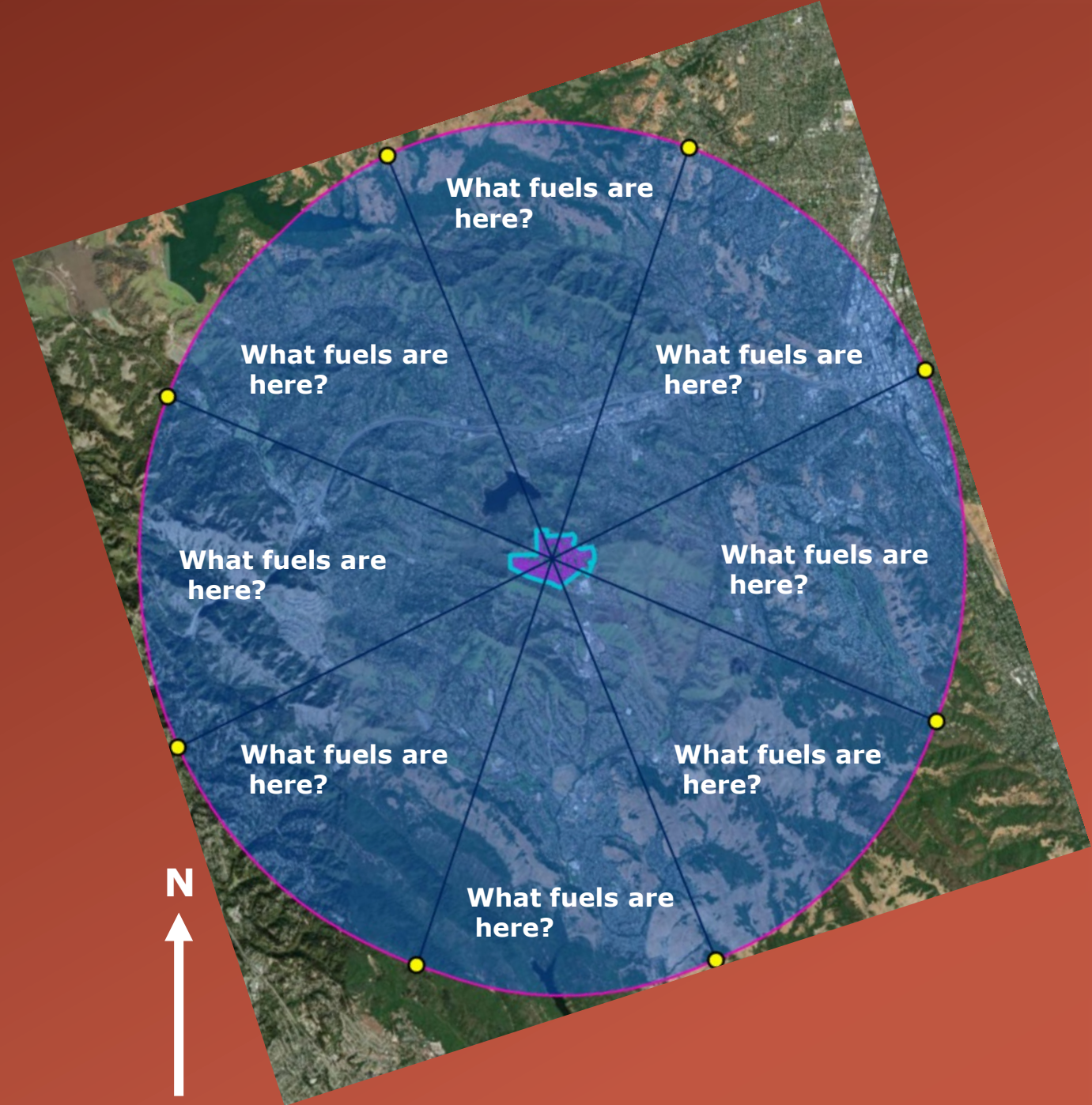
100% Class A Roof Cover Compliance

EXTERNAL FUELS

Flames & Radiant Heat:
+0.25 miles

Embers:
+4.25 miles

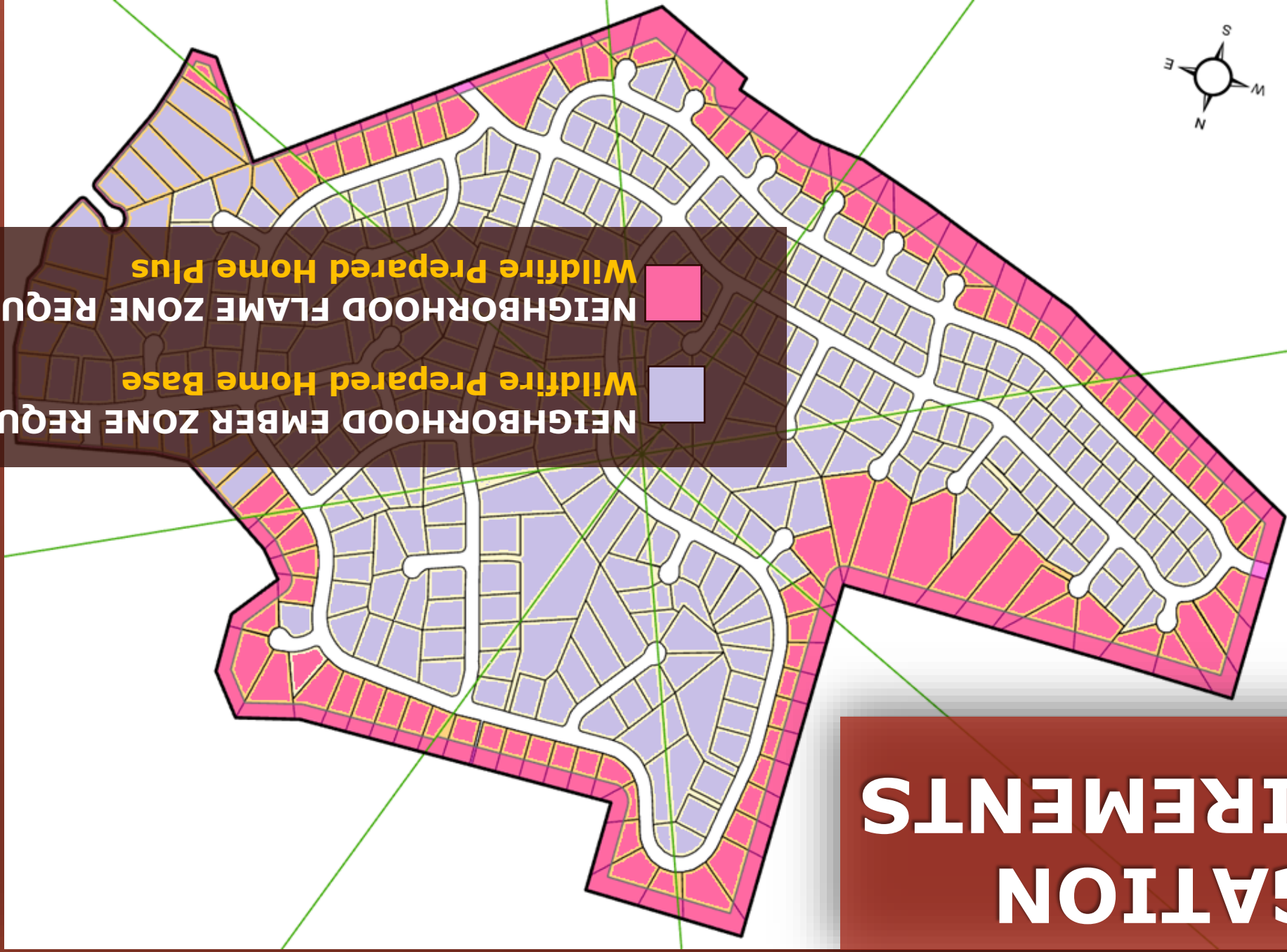
Design Wind:
70 mph, 10 m, 3-second gust wind speed open exposure



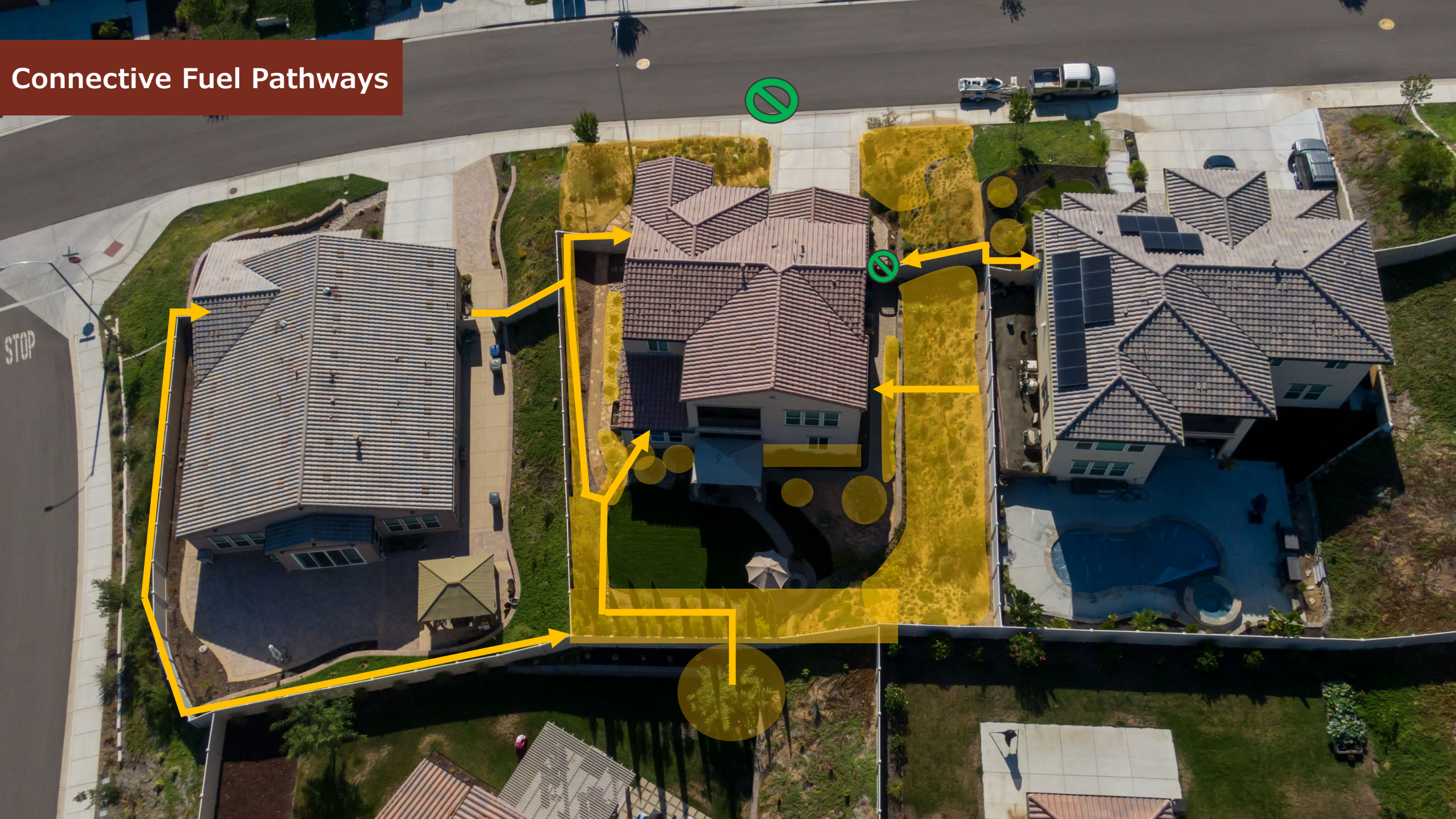
MITIGATION REQUIREMENTS

NEIGHBORHOOD EMBER ZONE REQUIREMENT:
Wildfire Prepared Home Base

NEIGHBORHOOD FLAME ZONE REQUIREMENT:
Wildfire Prepared Home Plus



Connective Fuel Pathways



An aerial photograph of a residential neighborhood. In the center is a two-story house with a light-colored stucco exterior, a brown tiled roof, and a small front porch. Several solar panels are installed on the roof. To the right is a single-story house with a dark grey roof. To the left is another single-story house with a light grey roof. The houses are surrounded by a fence and some landscaping. In the background, there is a dirt lot with some construction equipment and a road with cars.

Reduce structure ignitions.

Reduce the likelihood of conflagration.

An aerial photograph of a residential neighborhood. In the center is a large, two-story house with a grey roof and white walls, which appears to be intact. To its left and right are houses that have been completely destroyed, leaving only rubble and debris. A swimming pool is visible in the upper right quadrant, and a blue car is parked on the street in the lower left. The image is overlaid with two semi-transparent red banners containing the words 'SURVIVABILITY' and 'INSURABILITY' in white, bold, sans-serif capital letters.

SURVIVABILITY

INSURABILITY



WILDFIRE PREPARED

— A PROGRAM OF IBHS —

Steve Hawks

Senior Director for Wildfire



➤ wildfireprepared.org



🐦 [IBHS_org](https://twitter.com/IBHS_org)