

Preparing for Wildfire: The Home Ignition Zone



Fire Adapted Communities

- they understand the role of fire and are prepared for its occurrence

“A human community of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.”

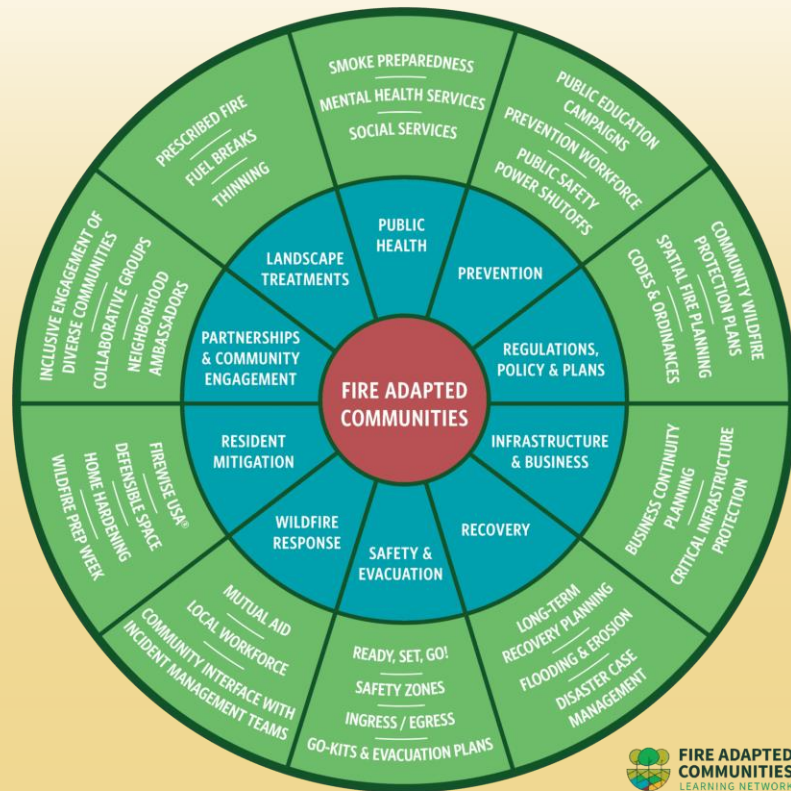
- Built Environment & Defensible Space
- Connect with Neighbors
- Build Fuel Breaks and establish evacuation routes
- Work with neighboring Land Managers to reduce wildfire risk



Fire Adapted Communities New Mexico Learning Network (FACNM)

A formal membership network for peer-learning and relationship building towards a common goal.

- Resources and best practices for wildfire preparedness
- Bi-weekly Wildfire Wednesdays Newsletter
- Webinars
- In-person learning exchanges
- Peer-to-peer connection through directory and connection calls



Visit: facnm.org

Why are we here!

- Mitigation and Home Hardening Works!
- Wildfire Response Budgets and WUI losses are increasing
- Mitigation Work Benefits Outweigh Costs



Outline

- Fire Behavior
 - Flaming Front
 - Ember Wash
- Definitions
- HIZ Concepts
 - 5ft zone
 - Structure Construction
 - Past 30ft

Fire Behavior

Flaming Front

- Flame length is based on the fuel



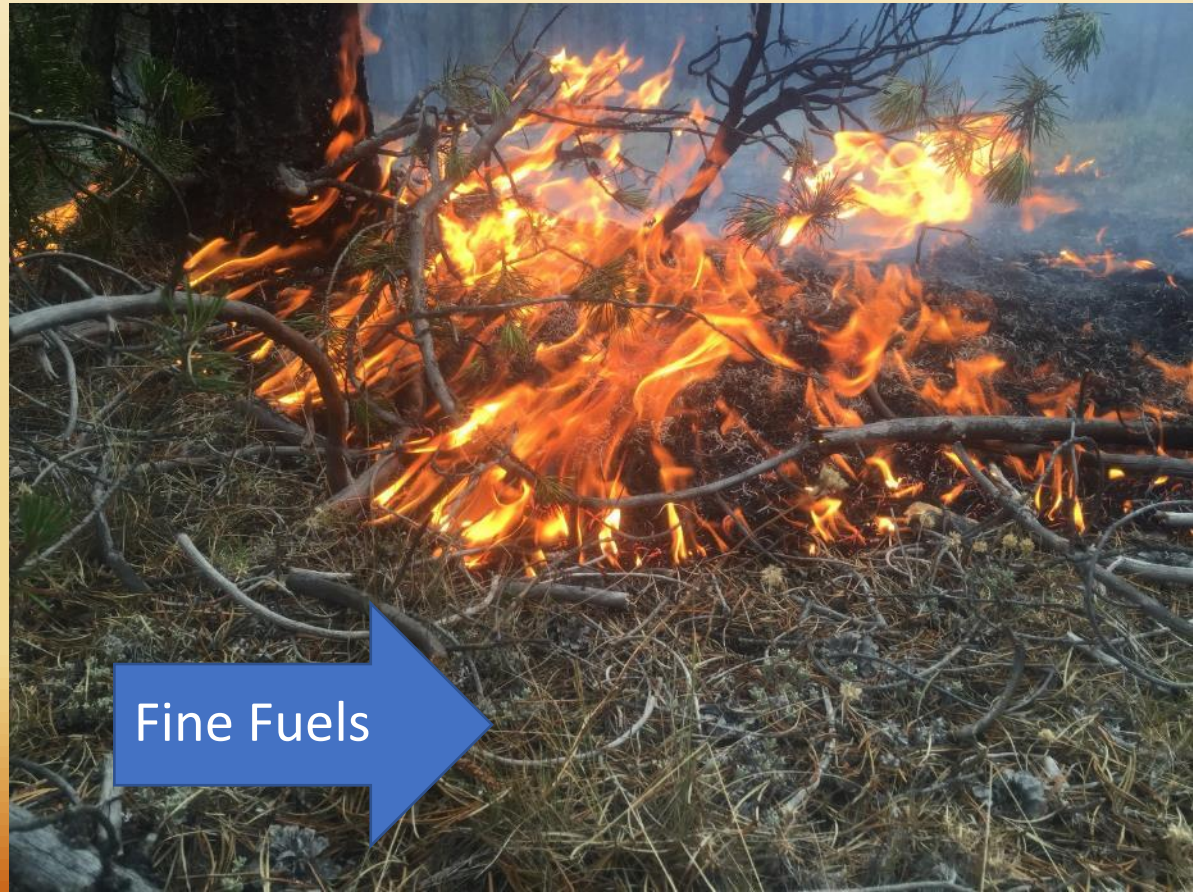
Passive Crown Fire

Active Crown Fire

Surface Fire

Receptive Fuels

- Smaller fuels ignite larger fuels
- Fine Fuels = less than $\frac{1}{4}$ inch in diameter



Fire Behavior

Ember Wash

“Snowstorm of Embers”

- Most (~60%) homes catch fire in Ember Wash
- Ignite home directly or fuel on home
- Enter home and ignite from inside
- Catch on complex shapes



Defensible Space / Survivable Space

- Defensible space implies that there will be firefighters available to defend your home.
 - Depends on Firefighter Safety & Availability
 - “Putting out the welcome mat for Firefighters, not the fire”
- Survivable space means you’ve completed preparations so your home can survive a fire with no assistance.
 - (You must be prepared to evacuate)



Breaking the Fire Triangle



What is the Home Ignition Zone?

Two factors create the concept called the Home Ignition Zone (HIZ).

1. The quality of the defensible space
2. The structure's ignitability potential

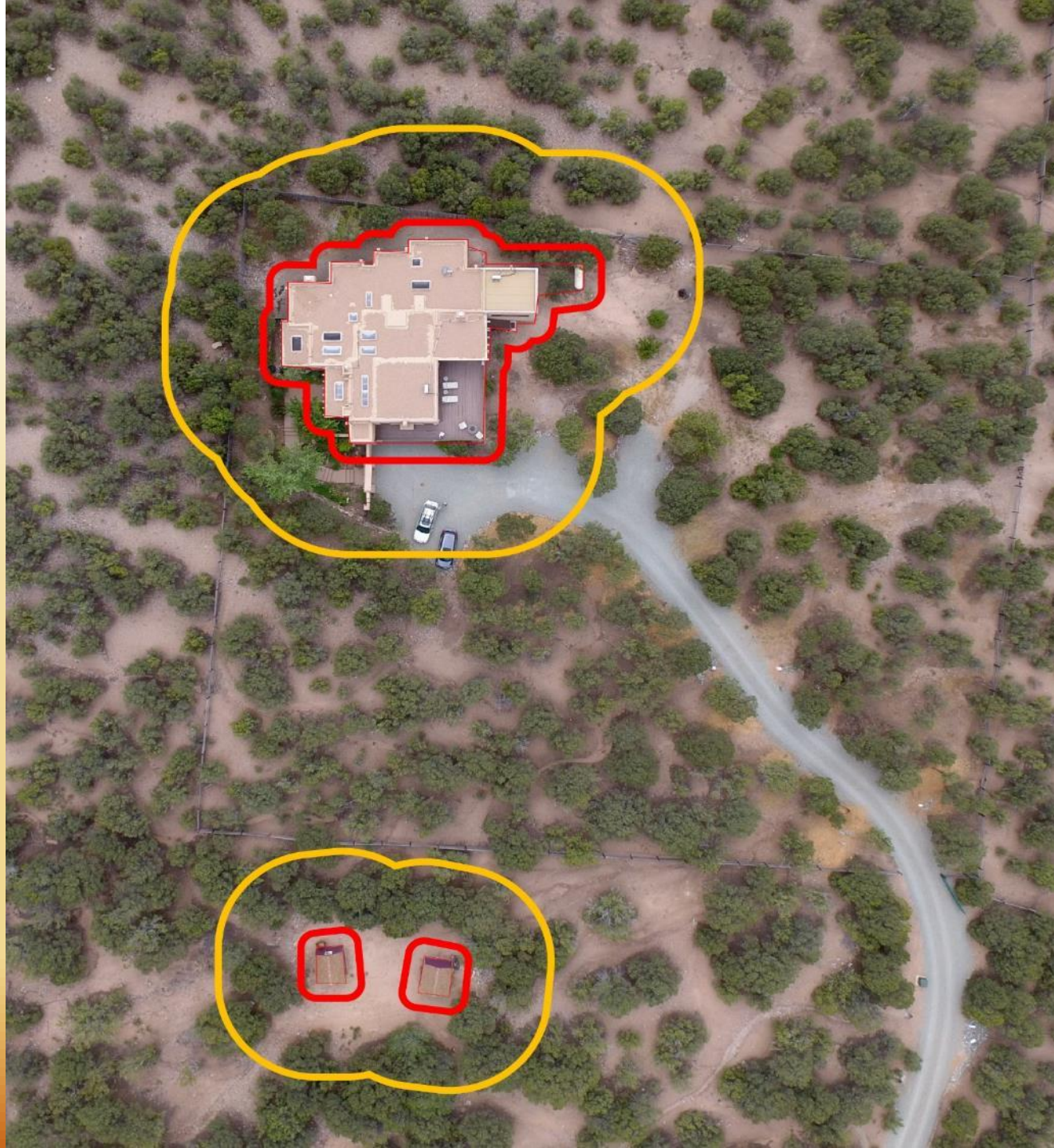
A home can survive a wildfire by removing ignition sources within the HIZ.



You can create survivable space without creating a parking lot!

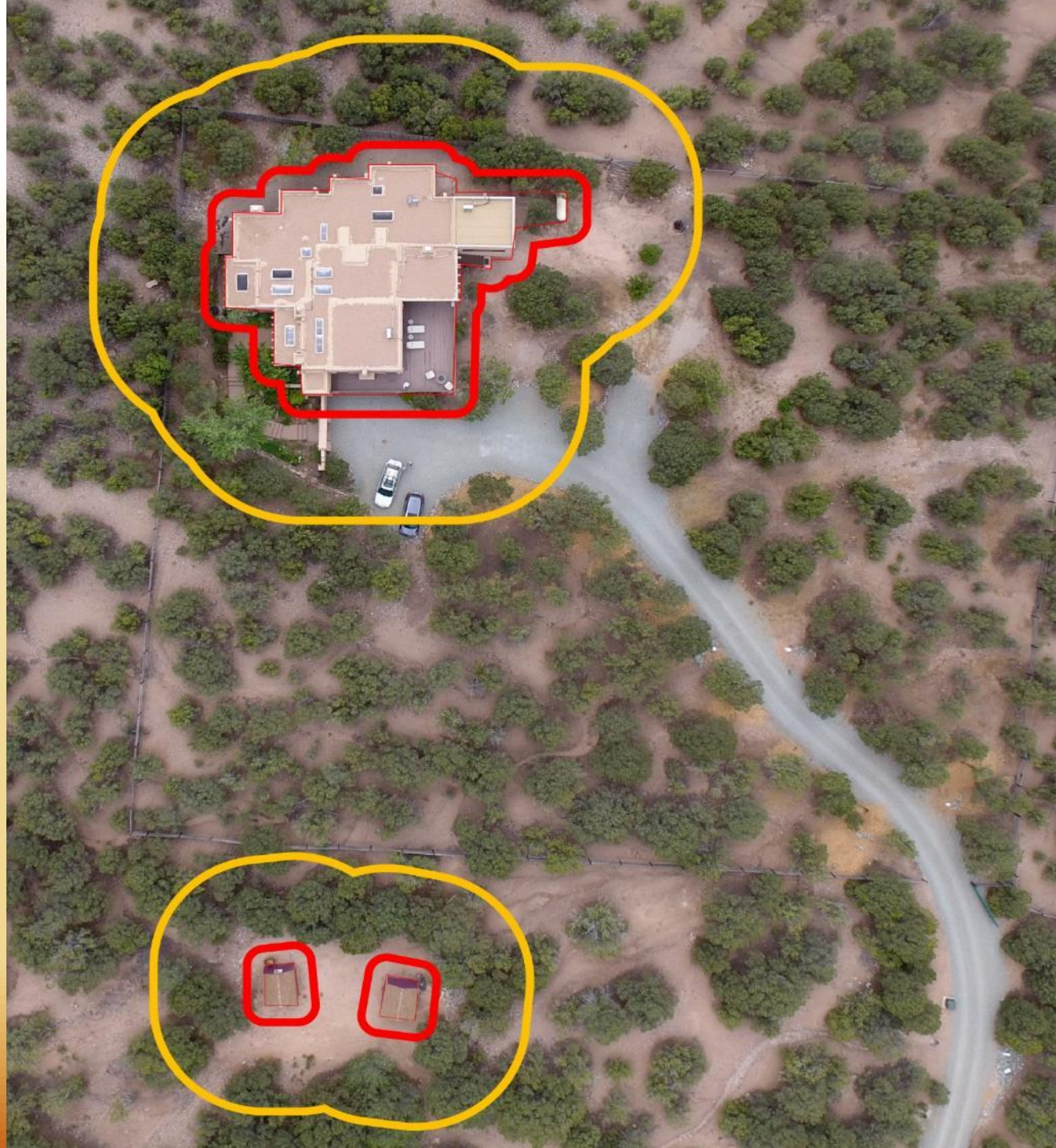
Most Important Areas

- Home Materials
- First 5 ft
- First 30ft



Within 5 ft

- Prevent flame contact with structure
- Don't provide fuels for embers to ignite



Clean up!



Look for
fine fuels



Install fire resistant materials in first 5 ft



Type of plants
and spacing are
important



Maintenance of landscaping



Don't store woodpiles or flammable things in the first 5 ft (or have a plan to move them quickly)





Structure Hazards

- Harden Home against both Flames and Firebrands (Embers)
- Construction Materials
- Continual Maintenance



Roof and Gutters

Materials and Fuel Free

Class A

Metal

Asphalt Shingle

Clay Tiles

Concrete

Copper Shingles

Solar Panels



Eaves



Vents

- 1/8th Inch Metal Screening
- Vulcan, Fireguard, Brandguard, O'hagin
- Where does the vent lead?



Walls

Combustible	Non-Combustible
Wood	Large Diameter Wood (Logs)
Vinyl	Treated Wood
Synthetic Stucco	Stucco or Cement Stucco
	Rock
	Metal (proper installation as it conducts)
	Fiber Cement (ex. Hardie Plank)
	Adobe
	Brick or Cinderblock
	Stone

Windows

- Single Pane vs. Double Pane vs. Tempered
- Vinyl vs. Aluminum Screen



Fences



Separate Fence from structure



Decks

- Combustible Vs. Non-Combustible Materials
- Solid Vs. Open Construction
- Enclose if possible



Keep decks
clear of
combustible
debris






Debris

aka your junk

- Door Mats
- Patio Furniture
- BBQ with Propane Tank
- Umbrellas or Awnings

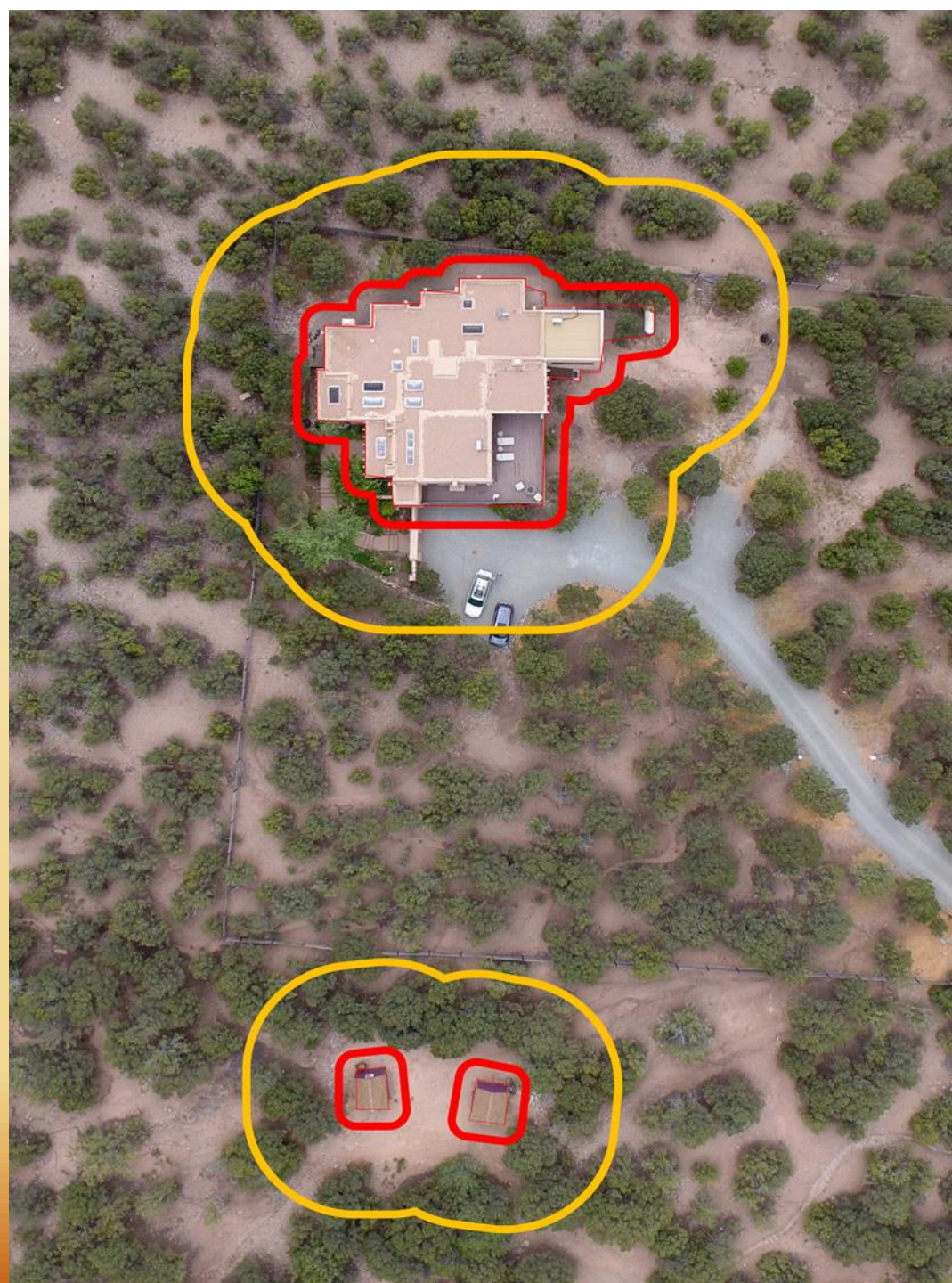


A large, white, cylindrical tank is positioned outdoors on a wooden pallet. The tank is supported by several white legs. The pallet is made of weathered, dark wood and is surrounded by a significant amount of debris, including broken wooden planks, dry leaves, and twigs. A small, bare tree stands in the foreground to the left of the tank. The background shows a wooded area with trees and a grassy slope. The word "Debris!" is overlaid in black text on the side of the tank.

Debris!

Beyond 5 ft (to 30 ft and beyond)

- Bring Fire to Ground
- Decrease Intensity
 - Flame Length
 - Temperature
- Decrease Speed of Progress
- Make it Safe for Firefighters to be at your home



- Ideally no surface fire
- NO crown fire
- Vertical separation -
Remove ladder fuels and overhanging limbs
- Horizontal separation-
vegetation separated enough so fire won't spread in crowns
- Choose fire resistant plants







- Vertical separation -
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- Horizontal separation-
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spread in crowns
- As you move further from
structure balance
ecological forestry with
fire risk.



What do we see about this house?

Trailer



Trailer

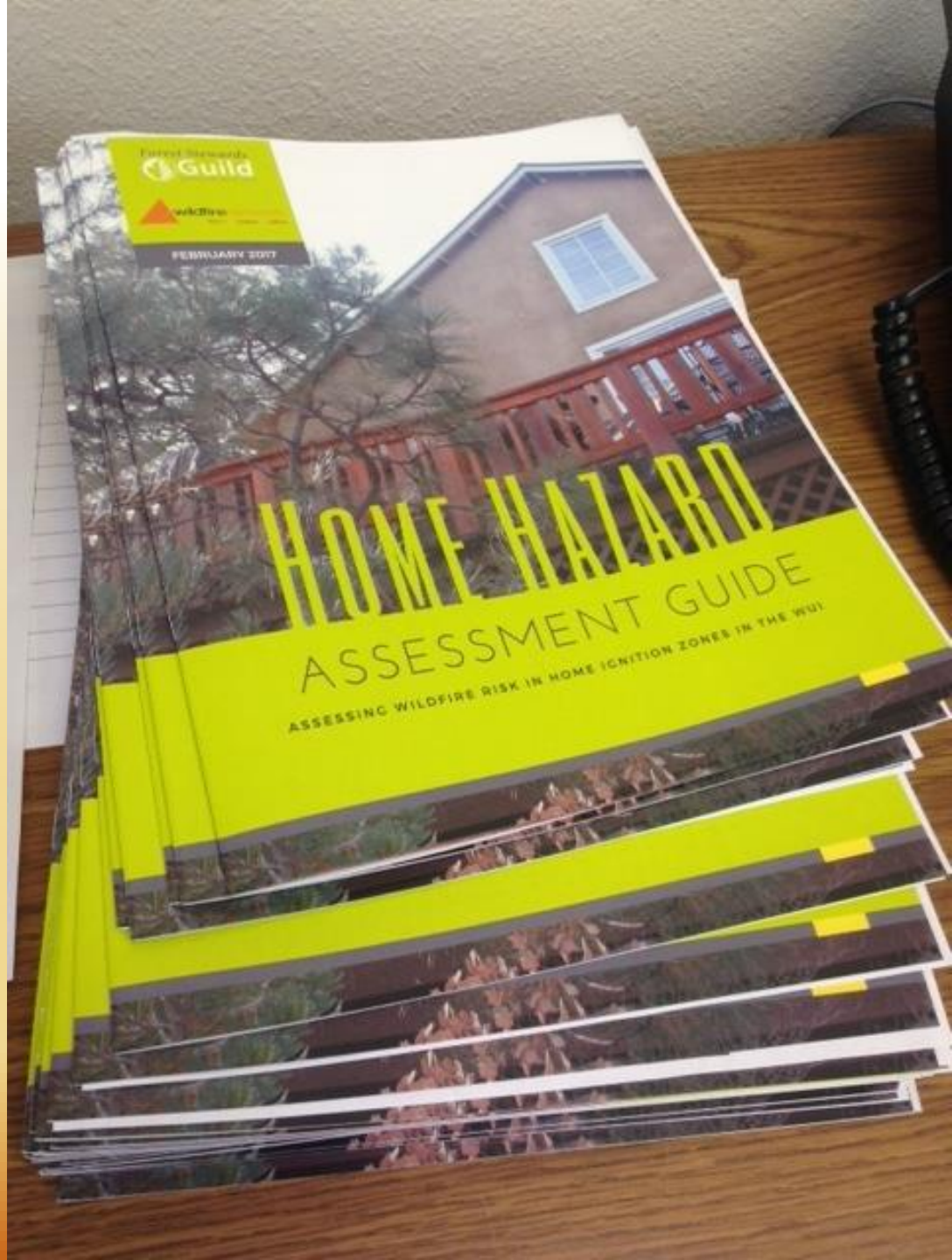


What do we see about this house?



Assessment tools
can help you
prioritize.

Visit santafefireshed.org/prepare-your-home



A Spatial Analysis of Factors Influencing Structure Loss and Survival Resulting from the 2018 Camp Fire in Paradise, California

		Variable	B	Wald	Sig.	Exp(B)	Δ Odds of destruction
Structure type	}	Mobile home	0.377	6.361	0.012	1.457	46% ↑ in odds
		Multi pane windows	-0.517	18.452	0.000	0.596	40% ↓ in odds
Construction of main building	}	Resistant siding	-0.172	2.381	0.123	0.842	16% ↓ in odds
		Unscreened vents	-0.890	7.063	0.008	0.410	59% ↓ in odds
		Water storage on property	-0.467	10.541	0.001	0.627	37% ↓ in odds
Yard, lot and associated structures	}	Wood deck, elevated	0.457	15.790	0.000	1.580	58% ↑ in odds
		Wood deck, grade	0.923	41.540	0.000	2.518	152% ↑ in odds
		Violation: cut grass	0.994	12.706	0.000	2.702	170% ↑ in odds
		Violation: rem. leaves/needles	1.466	15.323	0.000	4.330	330% ↑ in odds
		Constant	0.130	2.238	0.135	1.139	

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1. Spatial Informatics Group
2. University of Colorado Denver, Department of Urban and Regional Planning
3. University of San Francisco

	Variable	B	Wald	Sig.	Exp(B)	Δ Odds of destruction
Structure type and age	Mobile Home	2.022	134.823	.000	7.557	650% ↑ in odds
	Misc/ Utility Structure	.667	31.357	.000	1.949	95% ↑ in odds
	Built After 2005	-.675	28.295	.000	.509	50% ↓ in odds
	Built between 96 and 2005	-1.081	87.757	.000	.339	66% ↓ in odds
	Improvement value (100k)*	-.003	6.372	.012	.997	0.3% ↓ in odds/\$100k
Construction of main building	Roof Asphalt	.755	55.150	.000	2.128	110% ↑ in odds
	Enclosed Eaves	-.945	108.815	.000	.389	61% ↓ in odds
	No vents in eaves	-1.048	87.601	.000	.351	65% ↓ in odds
	Ignition resistant siding	-.587	53.698	.000	.556	45% ↓ in odds
	Multi pane window	-.408	21.267	.000	.665	33% ↓ in odds
Yard, lot and associated structures	Wood deck at grade	0.27	4.334	0.037	1.31	31% ↑ in odds
	Wood deck elevated	-0.31	10.656	0.001	0.734	27% ↓ in odds
	Veg clearance <30 ft.	.287	11.442	.001	1.332	33% ↑ in odds
	Fence	-.271	11.594	.001	.763	34% ↓ in odds
	Sloped property	.469	27.500	.000	1.598	60% ↑ in odds
	Constant	3.109	472.031	.000	22.399	

Actions to Take Today!

- Focus on the 0-5 foot zone
- Focus on flammable materials
- Raking, mowing, and cleaning gutters & roof
- Make sure vents are screened



Other Resources:

- facnm.org/prepare
 - NFPA fact sheets
 - Fire Wise Planting Guides
 - More!
- santafefreshed.org/prepare-your-home
- NFPA website
- New Mexico State Forestry
 - Ready Set Go your personal plan for wildfire

Visit our website for events, resources newsletter, and projects

www.facnm.org