



Protecting Homes & Businesses from Wildfire

Heather Miller

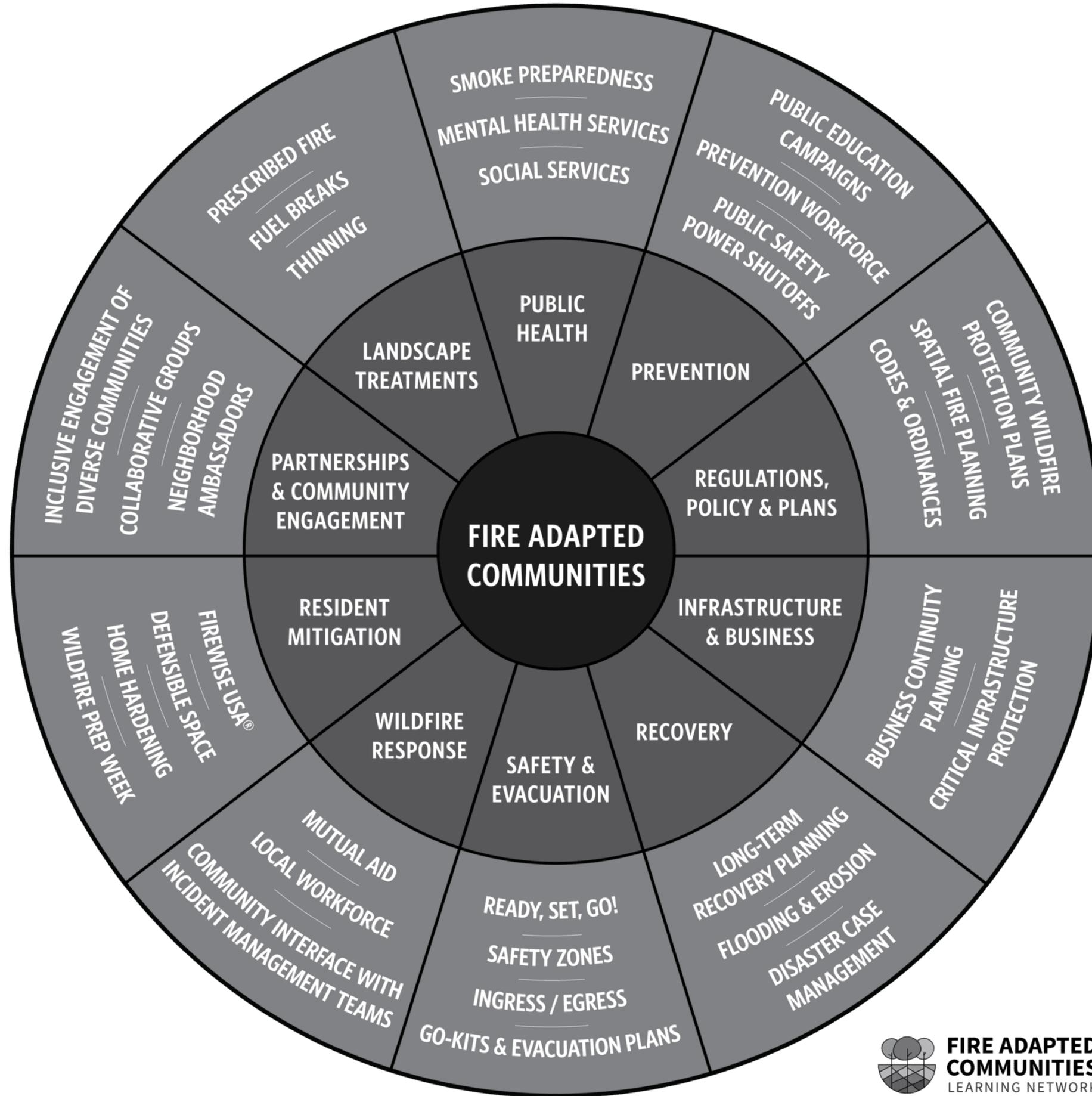
Fire Risk Reduction Specialist



Understanding Wildfires

How Wildfires Impact Communities

- The Science of Wildfires
- What Does “Home Hardening” and “Defensible Space” mean?
- Best Practices- Steps to Protect Your Home & Community from Wildfires



FIRE ADAPTED COMMUNITIES

PUBLIC HEALTH

PREVENTION

REGULATIONS, POLICY & PLANS

INFRASTRUCTURE & BUSINESS

RECOVERY

SAFETY & EVACUATION

WILDFIRE RESPONSE

RESIDENT MITIGATION

PARTNERSHIPS & COMMUNITY ENGAGEMENT

LANDSCAPE TREATMENTS

SMOKE PREPAREDNESS
MENTAL HEALTH SERVICES
SOCIAL SERVICES

PUBLIC EDUCATION
CAMPAIGNS
PREVENTION WORKFORCE
PUBLIC SAFETY
POWER SHUTOFFS

COMMUNITY WILDFIRE
PROTECTION PLANS
SPATIAL FIRE PLANNING
CODES & ORDINANCES

BUSINESS CONTINUITY
PLANNING
CRITICAL INFRASTRUCTURE
PROTECTION

LONG-TERM
RECOVERY PLANNING
FLOODING & EROSION
DISASTER CASE
MANAGEMENT

READY, SET, GO!
SAFETY ZONES
INGRESS / EGRESS
GO-KITS & EVACUATION PLANS

MUTUAL AID
LOCAL WORKFORCE
COMMUNITY INTERFACE WITH
INCIDENT MANAGEMENT TEAMS

WILDFIRE PREP WEEK
HOME HARDENING
DEFENSIBLE SPACE
FIREWISE USA®

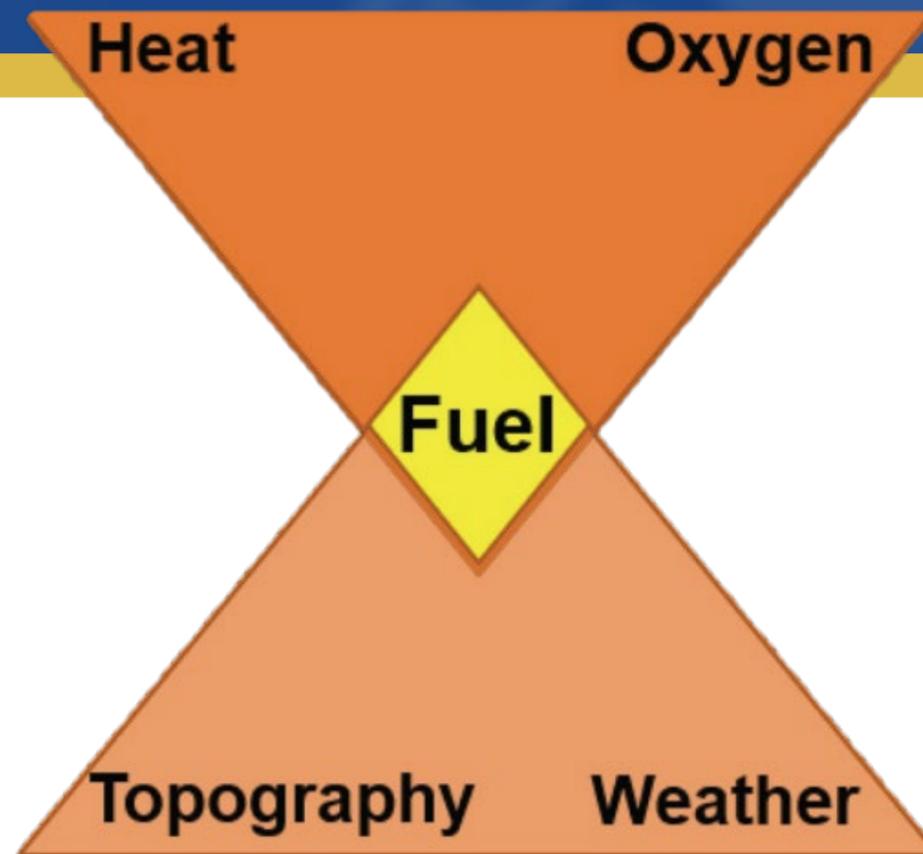
INCLUSIVE ENGAGEMENT OF
DIVERSE COMMUNITIES
COLLABORATIVE GROUPS
NEIGHBORHOOD
AMBASSADORS

PRESCRIBED FIRE
FUEL BREAKS
THINNING



Understanding Wildfires

The Science of Fire

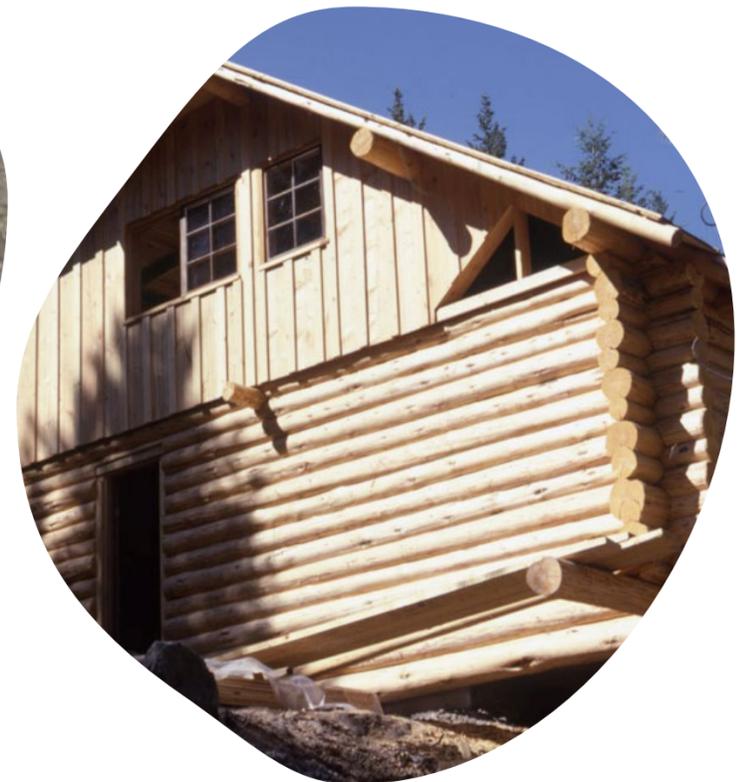




Understanding Wildfires

Fuels

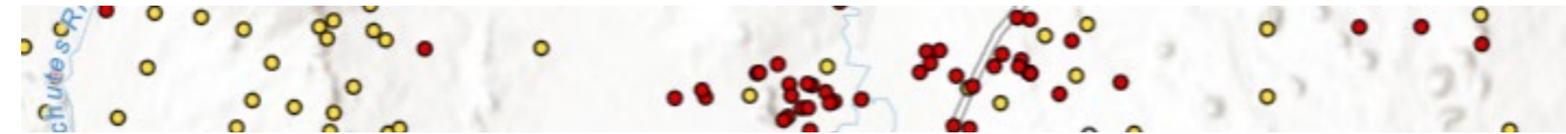
**Size, Shape,
Chemicals, &
Moisture
Affect How Easily
Fuels Ignite**



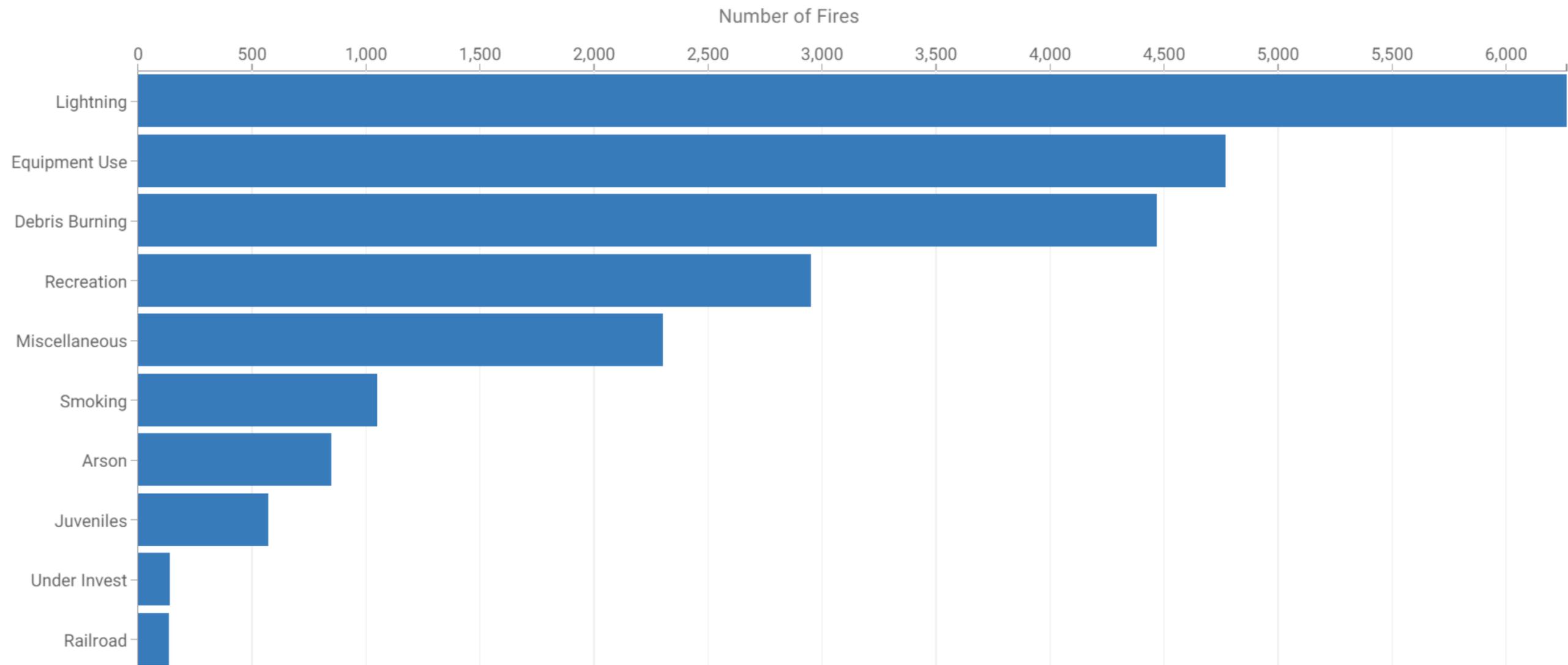


Wildfire History

Fire Starts In La Pine area



General Causes of ODF Fires 2000-2022





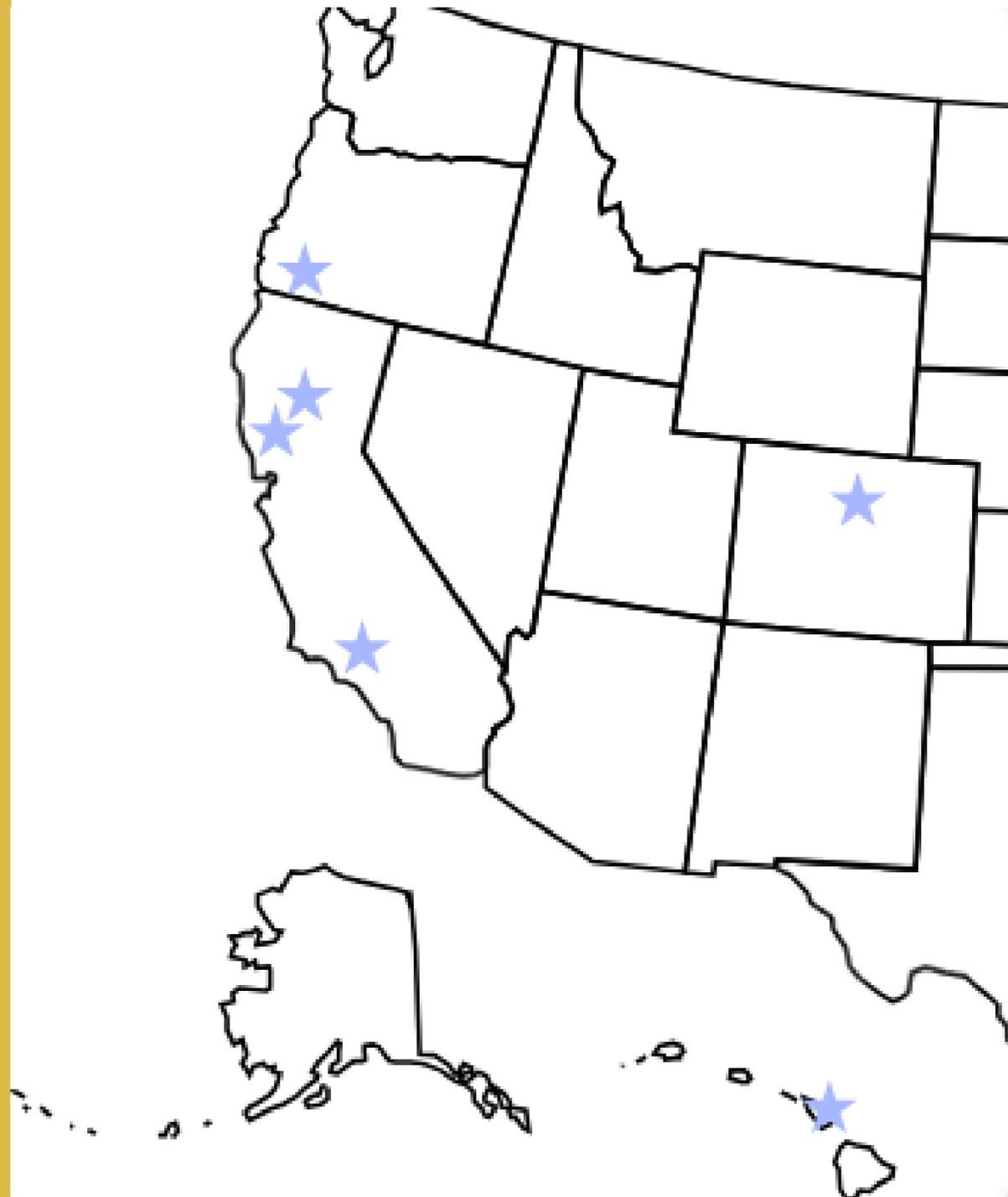
Understanding Wildfires

Defining the Problem





Wildfires in the City?



- **2017- October 8- Tubbs Fire- Santa Rosa, Ca.**
 - 5,643 Structures lost
 - 22 Lives lost
- **2018- November 8- Camp Fire- Paradise, Ca.**
 - 18,804 Structures lost
 - 85 Lives lost
- **2020- September 8- Almeda Fire- Talent, Or.**
 - 2,600 homes lost
 - 3 Lives lost
- **2021- December 30- Marshall Fire- Boulder, Co.**
 - 1,084 buildings destroyed
 - 2 Lives lost
- **2023- August 8- Lahaina Fire- Maui, Hi**
 - 2,153 structures destroyed
 - 102 Lives lost
- **2025- January 7- Palisades & Eaton Fires- Los Angeles, Ca.**
 - 16,248 structures destroyed
 - 29 Lives lost



What is “Home Hardening”?

**Roof is Class A rated-
Asphalt composition,
metal, or tile and
kept clean**

**Gutters are metal
and are clean**

**Attic & foundation
vents are covered
with 1/8” metal
screen**

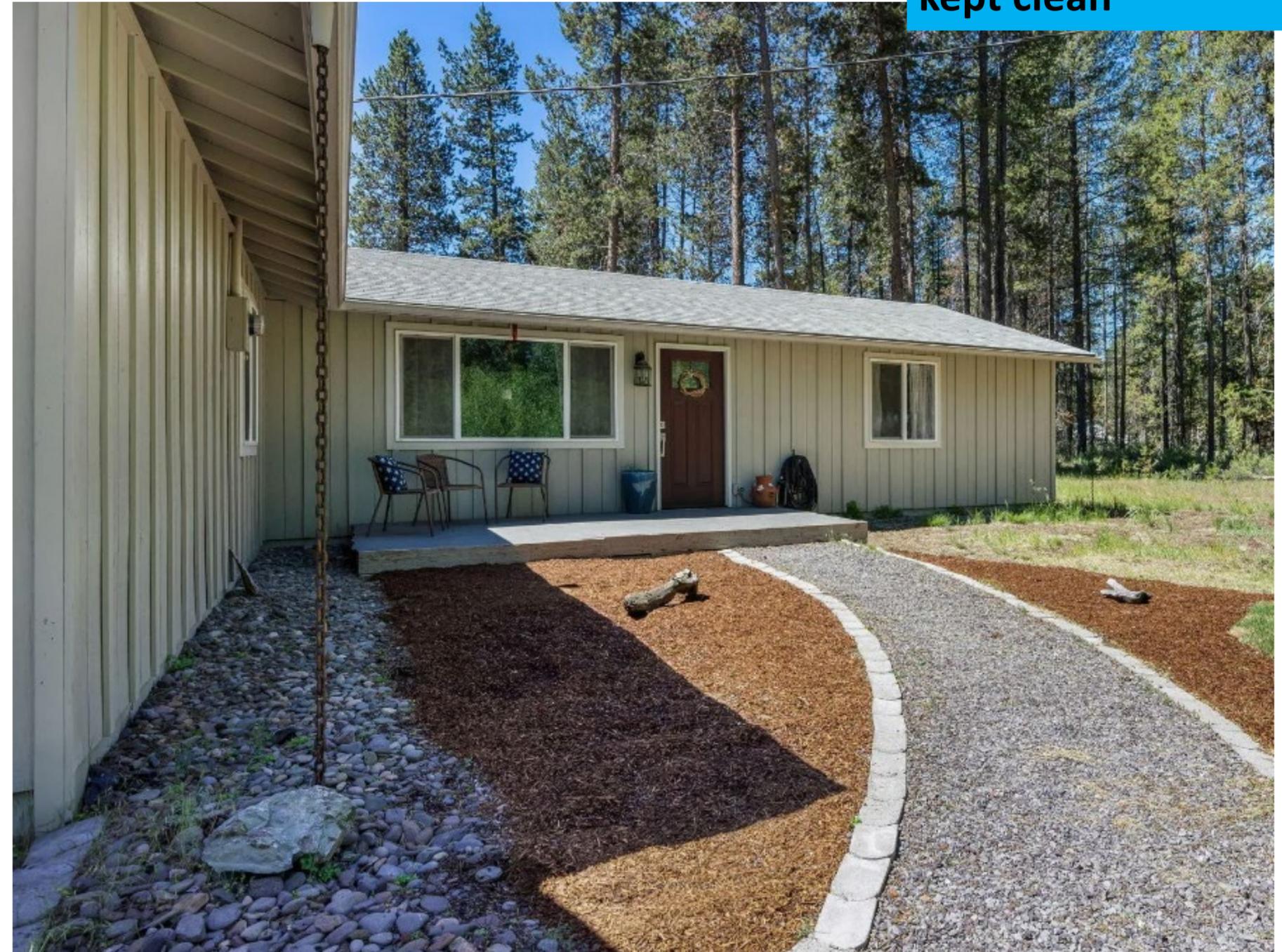
**Siding is non-
combustible if
possible- Fiber
cement, stone, or log
and in good
condition. 6”vertical
clearance if possible**

**Doors are sealed and
in good condition.
Storm doors are good**

**Windows are double-
paned or tempered**

**Decks are in good
condition and clear
of combustibles.
Decks up to 4-feet
high are covered
with 1/8-inch metal
screen or enclosed
and clean
underneath**

**Attached fences are
non-combustible for
the first 5-feet next
to the building**



- Your home is prepared for a wildfire and an ember storm.
- Addresses the most vulnerable parts of your home to increase resistance to wildfires.





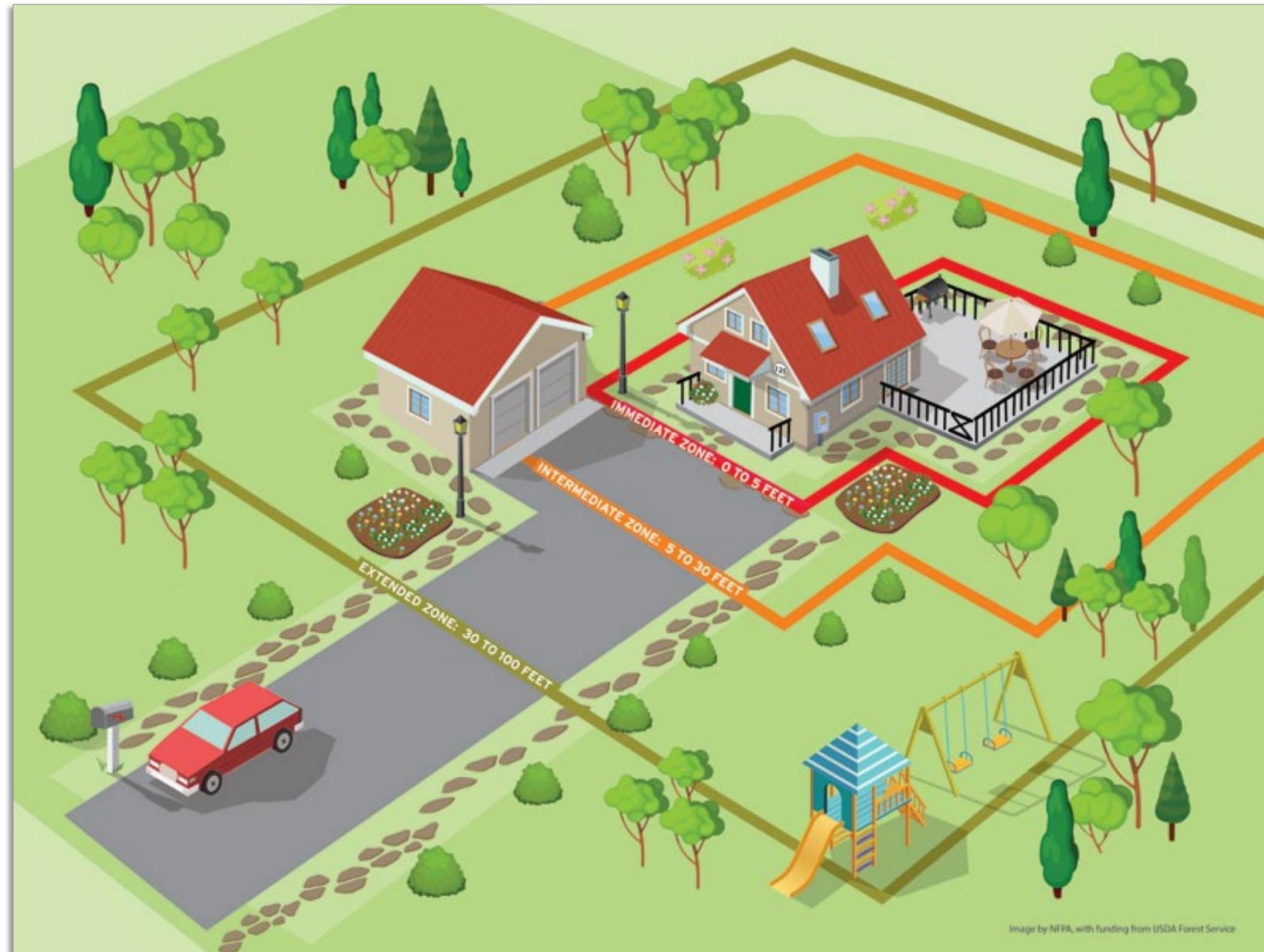
What is “Defensible Space”?



- A natural or landscaped area around a building that has been maintained and designed to reduce fire danger.
- Can give firefighters an area to work to protect the building.



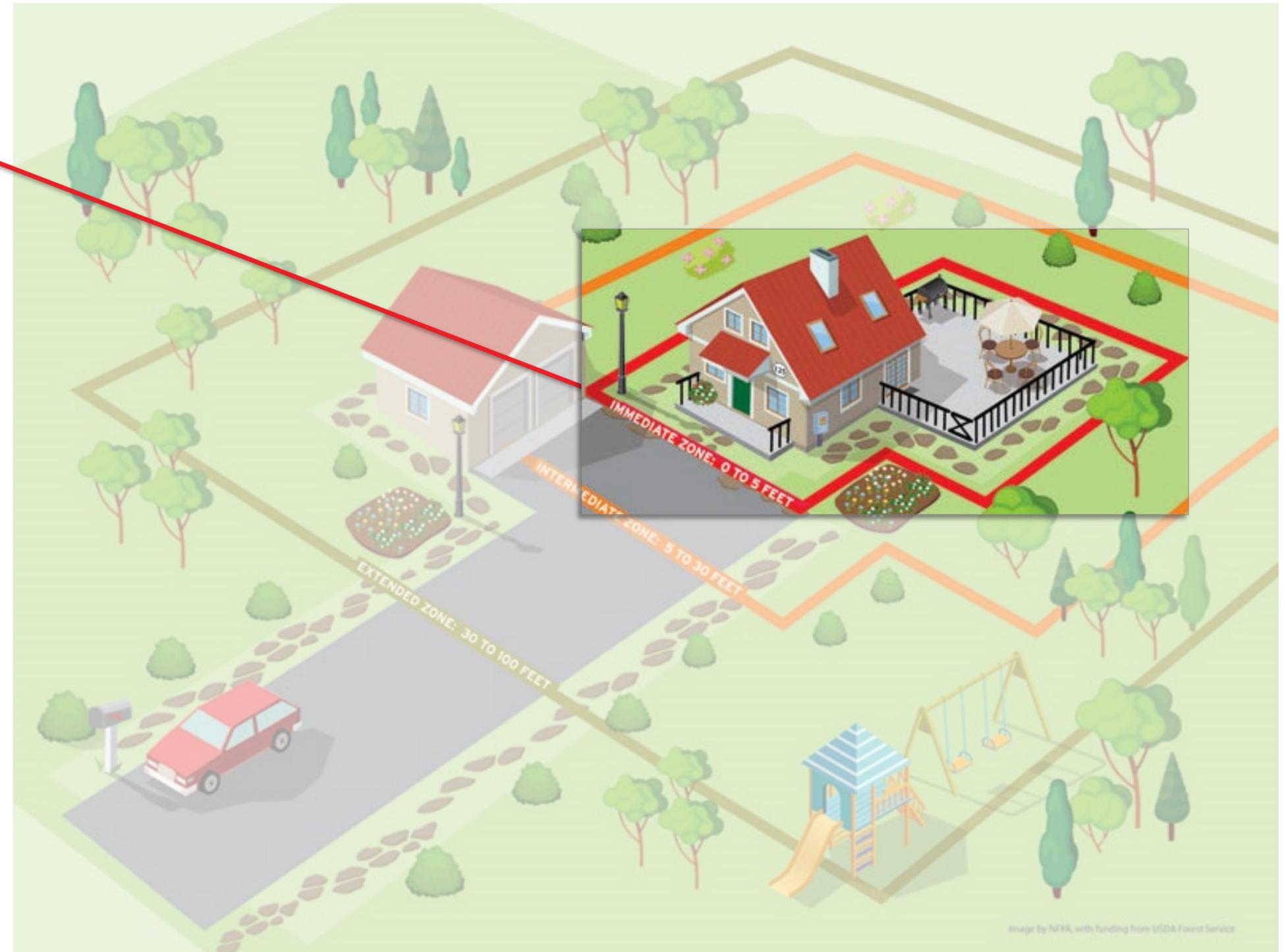
Steps to Protecting Your Home & Community



Immediate Zone

The home and first 5 ft surrounding it

- Most important zone to focus on
- Most vulnerable to embers
- Non-Combustible
- Maintenance is critical





Immediate Zone

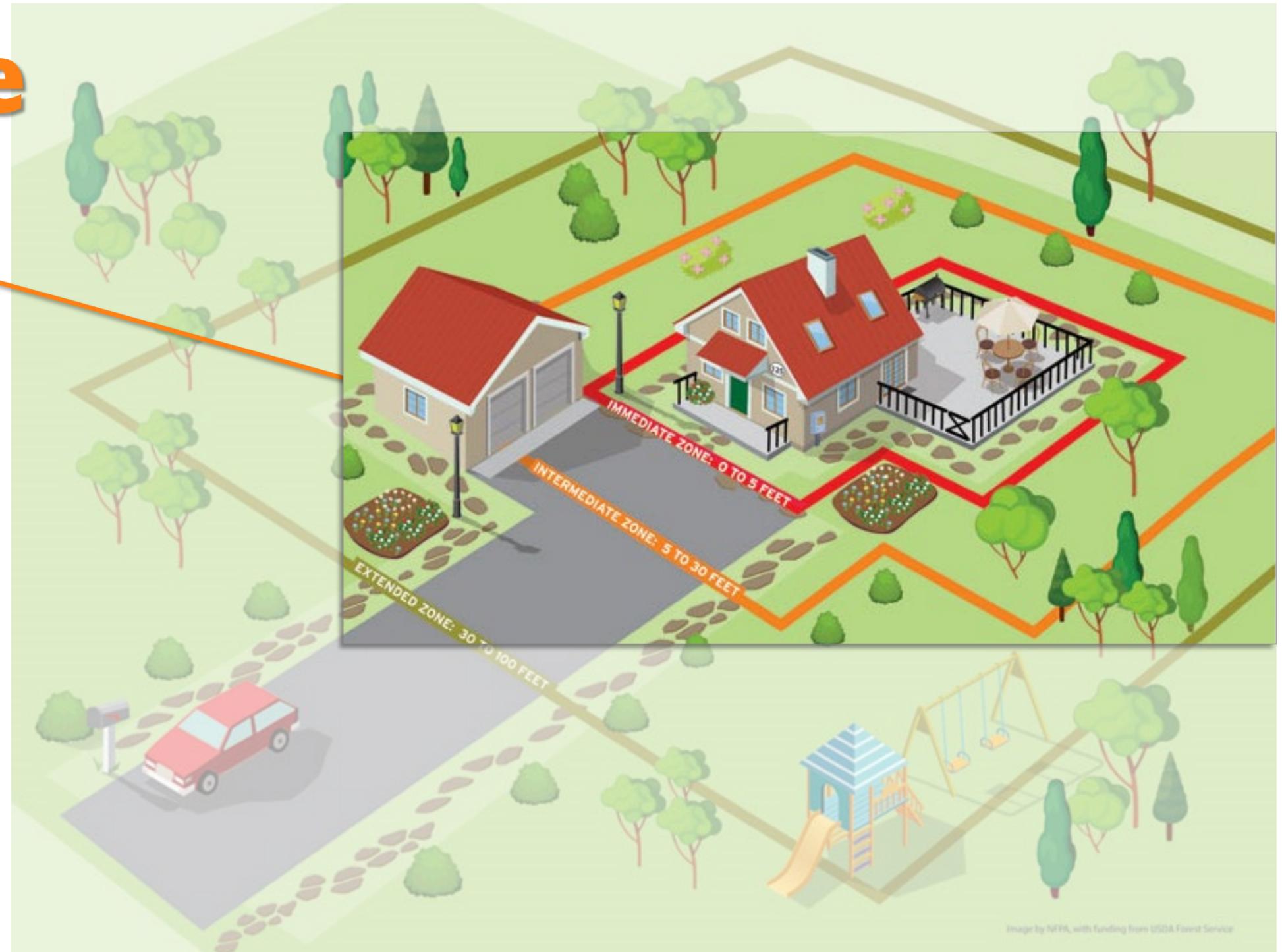
Home & First 5 Feet



Intermediate Zone

5 ft to 30 ft

- Create fuel breaks
- Keep grass mowed to less than 4"
- Remove potential fuels
- Space out vegetation
- “Lean, Clean, Green”





Intermediate Zone

5' to 30' from home



Extended Zone

30 ft to 100 ft

- Remove dead plant and tree material.
- Remove vegetation around storage sheds or other outbuildings
- Thin dense patches of trees and shrubs
- Create fuel breaks



Combustible Home:

- Wood shake siding
- Wood mulch
- Wood Deck
- Vents covered with large screen

Non-Combustible Home:

- Fiber Cement Siding
- Rock mulch
- Wood Deck with flashing
- 6" separation from ground to side
- Vents covered with 1/8" screen



Help Available Personal Assessments

An official website of the State of Oregon [How you know »](#)

OREGON DEFENSIBLE SPACE FOR HOMEOWNERS & RENTERS

Creating defensible space can help all Oregonians be prepared for wildfire.

Defensible space is the buffer you create between your business or home and the grass, trees, shrubs, or any wildland area that surrounds it. Proper defensible space can slow or stop the spread of wildfire and help protect your home or business. This checklist provides recommendations for getting started and includes actions you can take in the short term, such as over a weekend, and options to consider when upgrading your home or landscape.

Defensible space can offer protection from firebrands and embers that can travel several miles from the firefront. Studies show that well-maintained defensible space can increase structures' chances of surviving a wildfire, providing protection even if firefighters cannot reach it.

Following these recommendations can increase the likelihood your home or business will survive a wildfire, but they may not eliminate wildfire threat, so it is important to follow all evacuation orders in the event of a wildfire.

MORE INFORMATION

DEFENSIBLE SPACE PROGRAM
Oregon State Fire Marshal
oregondefensiblespace.org



INSURANCE
Division of Financial Regulation
503-947-7980
DFR.InsuranceHelp@oregon.gov

LOCAL BURN RESTRICTIONS
Contact your local fire agency

EVACUATION INFORMATION
Oregon Wildfire Response & Recovery
503-378-2911
oem_publicinfo@oem.oregon.gov

FIREWISE USA®
Scan the QR code to



About Us ▾

MAKE YOUR HOME A
FIGHTING CHANCE.
CREATE DEFENSIBLE SPACE.

SIGN UP FOR A FREE ASSESSMENT TODAY.

...deciding factor in preventing embers
community, reducing risks for everyone.

...to schedule your free assessment and
engage with resilience.

Defensible Space
Checklist

Contact Us

Defensible Space Program

503-934-0874

Email

Oregondefensiblespace.org

Or contact:

503-934-0874

OSFM.DefensibleSpace@OSFM.Oregon.Gov



Thank You



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BE READY. BE SET. GO NOW!

Know evacuation levels and follow the advice of emergency officials. Make the best decision for your safety. Don't wait to evacuate if you feel unsafe.

LEVEL 1

LEVEL 1 - BE READY to evacuate.



Prepare to evacuate:

- Be aware of danger in the area and stay informed. Sign up for local emergency alerts with your county at [ORAlert.gov](https://www.oralert.gov).
- Check for updates through local city, county and emergency service websites, social media, TV and radio.
- Have your emergency plan and go-kit ready with supplies for health, safety and identification.
- Act early if you are older or have children, disabilities or limited access to transportation.
- Consider moving pets and livestock early.
- Plan possible evacuation routes. Use [TripCheck.com](https://www.tripcheck.com) or call 511 for road closure information.
- Plan for emergency shelter. Call the American Red Cross at 1-800-733-2767 or visit [RedCross.org](https://www.redcross.org).
- If you can do so safely, check with your neighbors and share information.
- Don't wait to evacuate if you need extra time to leave or if you feel unsafe.



LEVEL 2

LEVEL 2 - BE SET to evacuate.



Be prepared to evacuate at a moment's notice:

- There is significant danger in the area. Stay informed and be alert. Continue to check for updates through local city, county and emergency service websites, social media, TV and radio.
- Time to act - follow your emergency plan and grab your go-kit of supplies.
- If you have livestock, put your animal evacuation plan into action.
- Inform loved ones of your evacuation plans.
- Conditions can change rapidly. You do not need to wait for another evacuation notice.
- Leave if you feel unsafe.



LEVEL 3

LEVEL 3 - GO NOW!



Evacuate immediately:

- There is extreme danger in the area. Leave without delay. It is unsafe to stay and threatens the safety of you, your family and emergency responders.
- Emergency responders may not be available to help if you choose to stay.
- Do not stop to gather belongings or protect your home.
- Follow your emergency plan and grab your go-kit.
- Leave as fast as safely possible. Drive carefully. Turn on your headlights. Follow traffic safety warnings and instructions from local authorities.
- Once you are safe, check with friends and family.
- Do not return until public safety officials announce the area is safe.



RESOURCES:

Local emergency alerts: [ORAlert.gov](https://www.oralert.gov)

Oregon Wildfire Resources: [Wildfire.Oregon.gov](https://www.wildfire.oregon.gov)

Current incidents in Oregon: [OEM RAPTOR Map](https://www.oregon.gov/transportation/oregon-raptor-map)

American Red Cross disaster assistance: [RedCross.org](https://www.redcross.org)

Local resources: Call 211 or 1-866-698-6155 or visit [211info.org](https://www.211info.org)



WILDFIRE EVACUATION CHECKLIST

BE READY. BE SET. GO NOW!



WHAT TO DO DURING EVACUATION

- Stay informed.** Check city, county and emergency service websites, and social media. Check local news, TV and radio for updates.
- Opt-in to receive emergency alerts** from your county at [ORAlert.gov](https://www.oralert.gov).
- Enable Wireless Emergency Alerts (WEA)** on your cell phone. Visit [Ready.gov/alerts](https://www.ready.gov/alerts) to learn more.
- Keep your cell phone charged.**
- Have an emergency plan and go-kit** ready with supplies for health, safety and identification.
- Inform loved ones of your plans.** Designate a safe meeting place and out-of-area contact person for family members.
- Gather important items** such as documents, eyeglasses, medications, medical devices, food and plenty of water.
- Act early** if you are older or have children, disabilities or limited access to transportation.
- Plan for animals.** Locate your pets and keep them with you. Consider evacuating livestock early.
- Plan possible evacuation routes.** Use [TripCheck.com](https://www.tripcheck.com) or call 511 for road closure information. If you do not drive, make other arrangements for transportation in advance.
- Plan for emergency shelter.** Call the American Red Cross at 1-800-733-2767 or visit [RedCross.org](https://www.redcross.org). Call 211 or 1-866-698-6155 or visit [211info.org](https://www.211info.org) for local resources.
- Check with your neighbors** if you have time and can do so safely. Exchange information. Ask for help if you need it and offer help if you can give it.
- Don't wait to evacuate** if you need extra time to leave or if you feel unsafe. Conditions can change rapidly. Make the best decision for your safety.
- Relocate to a safe place** outside of the affected area. Drive carefully. Turn on your headlights. Follow traffic safety warnings and instructions from local authorities.
- Remain as calm as possible.** Take slow, deep breaths. This will help you think clearly and make good decisions. If you have children or pets, they will benefit from your calm behavior during this stressful time.

WHAT TO PACK IF YOU HAVE TIME

- Critical:** Prescription medications, medical devices, eyeglasses, food and plenty of water.
- Safety:** Sanitation items, first-aid kit, flashlight with extra batteries, gloves, eye protection, and face coverings or N95 masks that protect against fine smoke particles. Wear long sleeves, long pants, sturdy shoes and a hat to keep embers out of your hair.
- Communication:** Phones, tablets, laptops, charging cords, hard drives or backup disks, maps and AM/FM radio. Consider making an emergency plan with important phone numbers before an emergency.
- Documentation:** Photo identification, driver's license, birth certificate, social security card, passport, visa, insurance policy, mortgage deed or rental agreement, medical records, banking or financial records, etc.
- Personal:** ATM debit and credit cards, cash, clothing, hygiene items, family photos and other small irreplaceable belongings.
- Animals:** Extra water, food, leashes, cages or carriers, medication, identification, bedding, and vaccination or medical records. Prepare large animals for transport and consider moving them to a safe location early.
- Visit [Ready.gov](https://www.ready.gov)** for more information about being prepared for an emergency, including a full list of emergency supplies.



WHAT TO DO INSIDE YOUR HOME IF YOU HAVE TIME

- Shut all windows and doors**, including interior doors to each room.
- Close fireplace dampers and pet doors.**
- Turn off any pilot lights.**
- Remove flammable window coverings** such as shades, curtains, shutters or blinds.
- Move flammable furniture** to the center of a room, away from windows and doors.
- Leave interior lights on** to make your home visible to firefighters in smoke or darkness.
- Turn off the air conditioning** to reduce airflow through the house.
- Leave your contact information** on your dining table.
- Take a video or pictures** of the inside and outside of your home for insurance purposes. Consider making a home inventory before an emergency.

WHAT TO DO OUTSIDE YOUR HOME IF YOU HAVE TIME

- Keep your vehicle ready.** Load your emergency supplies into the vehicle and make sure the gas tank is full. Carry your keys with you at all times. Back your vehicle into your parking space to leave quickly. Keep doors and windows shut and set the ventilation system to recycle air to keep smoke out.
- Gather flammable and combustible items** and bring them inside or in the garage. This includes patio furniture, BBQ grills, children's toys, doormats, etc.
- Turn off propane tanks.** Move propane appliances and gasoline cans away from structures if it is safe to do so. Do not shut off your natural gas. Utility companies can shut down systems when fire threatens an area. If your natural gas is shut off during a wildfire, do not turn it back on by yourself. Call your natural gas provider to restore your service.
- Leave exterior lights on** to make your home visible to firefighters in smoke or darkness.
- Help firefighters** by placing a ladder at the corner of the house; leaving gates propped open; connecting garden hoses to outside water valves; and filling water buckets and placing them around the house. Don't leave sprinklers on or water running, as that can affect critical water pressure.
- Seal your attic and ground vents.** Use plywood, duct tape, aluminum foil or commercial seals.
- Monitor your property** and the fire situation. If you feel threatened, leave right away. Do not wait for an evacuation order.

AFTER YOU EVACUATE

- Do not return** to the area until public safety officials announce the area is safe.
- Seek medical help** if you are injured.
- Inform loved ones** that you are safe.
- Continue to check for updates** through local city, county and emergency service websites, social media, local news and radio.
- Visit Wildfire.Oregon.gov for more information.
- Visit RedCross.org for disaster assistance.

Smoke and Health

Protecting our community
from smoke during wildfire
season



Overview

- Health Effects of Smoke
- What to do when it is Smoky
- Key Steps to be Ready



Health Effects of Smoke

THE RELATIVE SIZE OF PARTICLES

From the COVID-19 pandemic to the U.S. West Coast wildfires, some of the biggest threats now are also the most microscopic.

A particle needs to be 10 microns (μm) or less before it can be inhaled into your respiratory tract. But just how small are these specks?

Here's a look at the relative sizes of some familiar particles \blacktriangleright

HUMAN HAIR 50-180 μm \blacktriangleright
FOR SCALE

FINE BEACH SAND 90 μm \blacktriangleright

GRAIN OF SALT 60 μm \blacktriangleright

WHITE BLOOD CELL 25 μm \blacktriangleright

GRAIN OF POLLEN 15 μm \blacktriangleright

DUST PARTICLE (PM₁₀) <10 μm \blacktriangleright

RED BLOOD CELL 7-8 μm \blacktriangleright

RESPIRATORY DROPLETS 5-10 μm \blacktriangleright

DUST PARTICLE (PM_{2.5}) 2.5 μm \blacktriangleright

BACTERIUM 1-3 μm \blacktriangleright

WILDFIRE SMOKE 0.4-0.7 μm \blacktriangleright

CORONAVIRUS 0.1-0.5 μm \blacktriangleright

T4 BACTERIOPHAGE 0.225 μm \blacktriangleright

ZIKA VIRUS 0.045 μm \blacktriangleright



Pollen can trigger allergic reactions and hay fever—which 1 in 5 Americans experience every year.

Source: Harvard Health

The visibility limits for what the naked eye can see hovers around 10-40 μm .



Respiratory droplets have the potential to carry smaller particles within them, such as dust or coronavirus.



Wildfire smoke can persist in the air for several days, and even months.

Who is at Risk

Smoke & Health: Who is vulnerable

PEOPLE WITH EXISTING HEALTH CONDITIONS



- HEART DISEASE
- LUNG DISEASE

CHILDREN & INFANTS



PEOPLE OVER AGE 65



PREGNANT PEOPLE



AND MANY OTHERS

#SMOKE READY

- Everyone can be affected by wildfire smoke
- Some people may have worse symptoms



What to know about **smoke** during **prescribed fire season**

Prescribed burning can bring smoky air to Central Oregon. The good news is, we know when these burns are happening so we can be prepared. This is the best time to prepare for wildfire season, when the smoke can show up without warning, and stick around for longer.



WHY DO WE CARE ABOUT SMOKE?

Wildfire smoke affects everyone's health. It is important for all of us to limit our exposure to smoke! Some people may have worse symptoms, including people with health conditions or over age 65

What to Do when it is Smoky

Recommendations

For Everyone: Limit your exposure to smoke!

#1 Close windows at night during Springtime RX burns!

- Keep indoor air as clean as possible
- Be willing to change outdoor activities to avoid smoke
- Check air quality reports and monitors
- Wear an N95 mask for extreme smoke or long periods of time outside

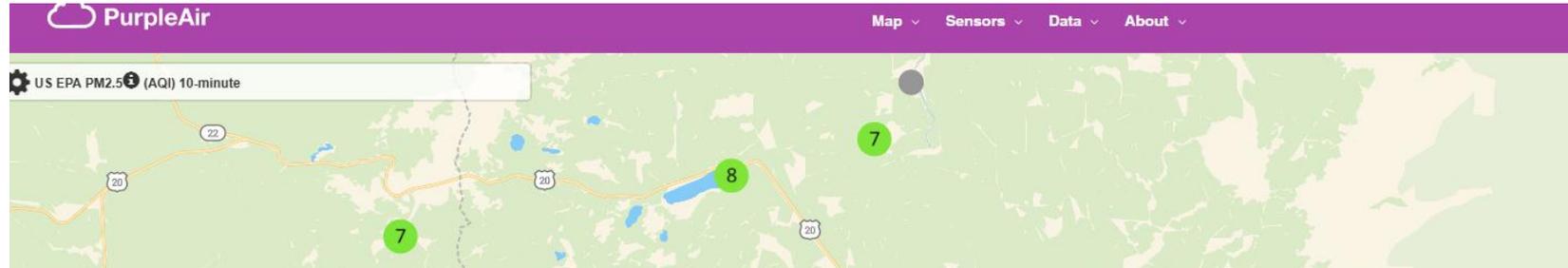


Key Steps to be Ready

AQI Basics for Ozone and Particle Pollution

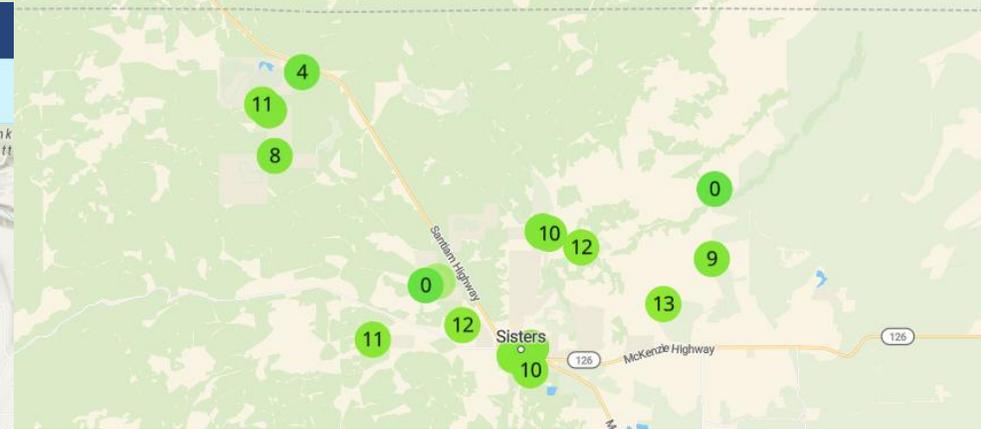
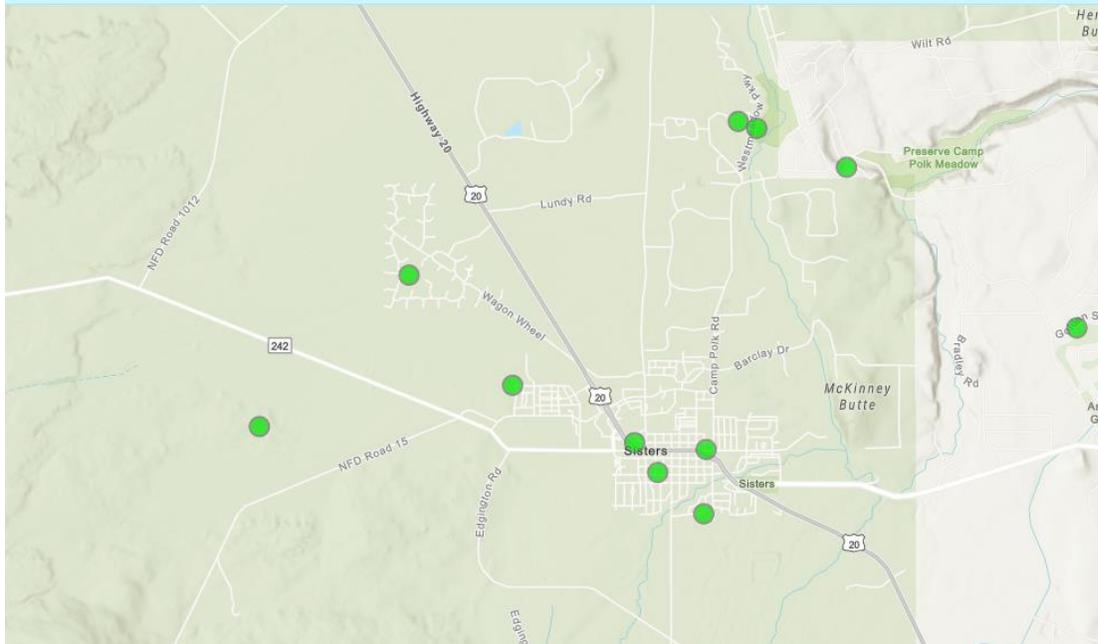
Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

Check Air Quality Near You



AirNow Fire and Smoke Map 4.0

Additional sensors, still under evaluation, shown around L.A.



Keep Indoor Air Clean

- Close windows
- Set HVAC to recirculate (in home and while driving)
- Consider using a MERV 8 or higher filter in your HVAC
- Use an air purifier or a box fan air filter

What you'll need:



Box fan



20"x20"x1" furnace filter
(MERV 13 or FPR 10)



Optional: Duct tape or bungee
cords



Thank You



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