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You are at risk!



Rugged mountains, rolling foothills, majestic forests and green valleys, dry summers and mild winters — Colorado is home to millions of people and a vacation destination for thousands more. However, these same qualities which create scenic views, a desirable quality of life and a peaceful living environment, can also produce severe wildfire hazards.

Many people don't realize that they face serious wildfire danger. But if you live in the foothills, grasslands, or mountains of Colorado, **you are at risk!**

Making the problem even worse is the exploding population in once-rural areas surrounding municipalities. The result is that more homes

and lives are potentially threatened by wildfire every year.

When strong winds and hot, dry days lead to wildfires, you cannot expect fire engines to park in front of your home to protect your family and possessions. As much as they may want to, there just aren't enough firefighters or equipment to defend every home.

In a matter of minutes, a wildfire can jump from a burning hillside, race through your subdivision and destroy your home and your neighborhood. To protect your home, your family and your possessions, follow the steps outlined in this notebook – and make your property **"FireWise."**

To be **FireWise** you must carry out certain fire protection measures before a fire even starts. By following the following simple fire safety steps, your home will have a chance to survive while firefighters work to bring the wildfire under control. Remember, a fire department's effectiveness in battling a wildfire starts with **YOU!**



Access

When a wildfire threatens, the first few minutes are the most critical for saving your home. Firefighting personnel must be able to immediately locate and safely travel to your home in order to effectively protect it.

Street signs and house addresses must be clearly posted, and roads must be able to accommodate busy traffic. At the same time that fire engines and other emergency equipment are trying to drive into your area, you must be able to escape in your car with your family and valuable personal possessions.

Street Signs and Addresses

Proper identification of your home is essential. During a major wildfire, firefighters from throughout the state (or even the nation) will arrive to assist local firefighters. They will rely on clear street signs and addresses to find your home.



- ❑ Street names and addresses should be printed in letters and numbers at least four inches tall on a contrasting color background. They should be visible from all directions of travel for at least 150 feet.
- ❑ Signs should be made of fire resistant materials (e.g. metal).
- ❑ Each street and road in your area should be labeled and each should have a different name or number.

- ❑ Your home should have its own house number which should be in numerical order along your street or road.
- ❑ If your house is set back from the street or road, your address should be posted at the entrance of your driveway.
- ❑ In situations where more than one home is accessed off a single driveway, all addresses should be posted at the street and at each appropriate intersection along that driveway.

Access to Your House

Even if your street and house are clearly identified for firefighters, precious time can be lost if firefighters have difficulty getting to your house. Narrow roads, dead-end streets, steep driveways and weak bridges can delay firefighters, or prevent them from arriving at all; firefighting equipment is much larger and heavier than your family car or truck.



- ❑ Single lane roads or driveways should have turnouts at regular intervals with enough space to allow emergency vehicles and cars to pass.

- ❑ Road and street systems must be designed to provide safe emergency evacuation and fire department access. A minimum of two primary access roads should be designed into every subdivision and development.
- ❑ All private and public streets should be constructed to provide two traffic lanes, each a minimum of ten feet wide. This is just



enough space for a fire engine and car to pass each other.

- ❑ Curves and intersections should be wide enough to allow large fire equipment to easily pass and turn.



- ❑ Roads, driveways and bridges should be built to carry at least 40,000 lbs., the average weight of a fire engine. (By comparison, the average family station wagon weighs about 4,000 lbs.)

- ❑ Streets and driveways must not be too steep or have sharp curves – this can prevent emergency equipment from gaining access to your home.



- ❑ Dead-end streets and long driveways should have turnaround areas designed as either a “T” or a circle large enough to allow fire equipment to turn around.

Each of these steps will give firefighters a chance to find and protect your home. A few minutes delay can make a difference in saving your home. If you have any question about emergency access to your home, including construction widths, grades or strengths, contact your local fire department.



Water supply

Establish Your Emergency Water Supply

Water supply is vital for a fire department to protect a threatened house or extinguish a burning one. Even a **FireWise** house may not be able to survive a wildfire without an emergency water supply. Many jurisdictions require new developments to form or join a community or municipal water system. In these cases, the designed water systems have large storage facilities that generally meet the needs of firefighters.



Your Personal Emergency Water Supply

- A minimum water storage supply of 2,500 gallons is recommended for use in emergencies. If you live in a home isolated from others, you may not have access to an adequate



Construction of a dry hydrant system.

community water system. Cooperation with your neighbors can result in the development of a common emergency water storage facility to provide protection, not only for your home but for others. Finally, as a last resort, you may need to develop your own well.

Access To Your Emergency Water Supply

- Once you have established an emergency water supply, you must make sure firefighters can get to it. If your water comes from a well, it is recommended that you have a gasoline-powered generator so firefighters can operate your pump during a power failure.



- For any emergency water supply, the outlet valve must be easily seen and visibly signed from the nearest road. You can obtain specific outlet, valve design and thread requirements by contacting your local fire department.





Defensible space

Your first defense against wildfire is to create and maintain a defensible space around your home. This does **not** mean your landscape must be barren. A defensible space is an area, either man-made or natural, where the vegetation is modified to slow the rate and intensity of an advancing wildfire. It also creates an area where fire suppression operations can occur and helps protect the forest from a structure fire.



A disaster waiting to happen.



This home is more easily defensible.

Defensible Space

Wildfire hazards can be effectively reduced by following these defensible space guidelines developed by the Colorado State Forest Service. (Also see Cooperative Extension Fact Sheet 6.302.)

- The dimensions of a defensible space are subjective and depend on site characteristics, but typically a defensible space, on flat ground, extends a minimum of 75 feet around a home. This distance should be extended if the structure is located on a slope.



- Thin out continuous tree and brush cover around structures. The initial 15 feet around a structure should consist of an area in which all flammable vegetation is removed.
- Beyond the initial 15 feet, trees should be thinned to 10-12 foot crown spacing. Occasionally, clumps of 2 or 3 trees are acceptable for a more natural appearance if additional space surrounds them.
- Mow dry grass and weeds to a height of 6 inches or less for a distance of 30 feet from all structures.



- Prune tree branches within the defensible space up to a height of 10 feet above the ground.
- Dispose of all slash and debris left from thinning by either chipping, hauling away or piling and burning (check with your local fire department for burning restrictions).

- Remove shrubs and small trees, or other potential “ladder” fuels from beneath large trees. Left in place, these fuels can carry a ground fire into the tree crowns.



- Trim branches which extend over roof eaves.
- Remove branches within 15 feet of chimneys.



- Maintain the defensible space annually by removing debris, shrubs and other vegetation which has accumulated during the year.



- Clean pine needles, leaves and other debris from roofs and gutters. This will eliminate an ignition source for firebrands, especially during hot, dry weather.



- Stack firewood and wood piles at least 30 feet from any structure. Clear away flammable vegetation within 10 feet of these wood piles. (Many homes have survived as a fire passed, only to burn later from a wood pile that ignited after the firefighters left.)



This home might not survive a wildfire.

- Place liquefied petroleum gas (LPG) tanks and fuel storage containers at least 30 feet from structures. Clear flammable vegetation from within 10 feet of all such tanks.



Remember, after you have established your **FireWise** environment, you must maintain it regularly. If you have any questions about creating or maintaining defensible space around your home contact your local fire department or Colorado State Forest Service district office.



Trees & shrubs

Firewise Landscaping

Many naturally occurring plants in our area are highly flammable during the summer and can fuel a wildfire, causing it to spread rapidly. Removing flammable native vegetation and replacing it with low-growing, fire-resistive plants is one of the easiest and most effective ways to create a defensible space.

Select landscape vegetation based on fire resistance and ease of maintenance, as well as visual enhancement of your property. In general, fire-resistive plants:

- ❑ grow close to the ground;
- ❑ have a low sap or resin content;
- ❑ grow without accumulating dead branches, needles, leaves or other debris;
- ❑ are easily maintained and pruned;
- ❑ are drought-tolerant in some cases.

If fire-resistive plants are not available, vary the height of your landscape plants and give them adequate spacing.

The taller the plants, the more widely they should be spaced. Contact your fire department, local nursery



or Colorado State Forest Service office to find out which fire resistive plants are adapted to the climate in your area. (Additional information is available on Cooperative Extension Fact Sheet 6.305.)

Other Firewise Precautions

After you have created defensible space around your home, additional **FireWise** precautions may be necessary.

- ❑ Work with neighbors to clear common areas between houses and prune areas of heavy vegetation that may pose a threat to everyone.



- ❑ Avoid planting trees under or near electrical lines (they may eventually grow into or touch the lines in high winds, thus causing a fire).
- ❑ If part of your property extends outside of the newly created defensible space and is heavily forested, thin trees to decrease fire hazard and improve forest health.
- ❑ Remove dead, weak or diseased trees and trees that are obviously leaning – leaving a healthy mixture of older and younger trees.



Construction design & materials

Make Your House *Firewise*

Your house may be vulnerable to a wildfire because of its design, construction and/or location. When preparing to build, buy or remodel, know what to look for in a **FireWise** home. A few modifications to your construction plans can reduce the chance of your house catching fire, or resist further damage if it does catch fire. Don't let your house become more fuel for a wildfire.

If you are building a new house, evaluate your building site.

- ❑ Choose a site away from heavily vegetated areas.



Probably not a wise location for a home.

- ❑ Build on the most level portion of the property.
- ❑ Avoid ridge tops, canyons and areas between high points on a ridge. These are extremely hazardous locations for houses and fire-fighters because they become natural chimneys, increasing the intensity of the fire.



This location would become a natural chimney during a wildfire.

- ❑ Set your structure a minimum of 30 feet back from the ridges or cliffs; increase the distance if the home will be higher than one story.

Building Materials

Use fire-resistive or non-combustible construction materials, combined with design techniques to prevent or slow the penetration of fire beyond your home's exterior. Whenever possible, use brick, rock or stucco – they resist fire much better than wood. If you decide on a wood exterior, it is **especially** important that you follow the **FireWise** practices in this notebook.

Your Roof

Your roof has the largest surface area of your structure and is the most vulnerable part of your house. It can easily catch fire from a wildfire's wind-blown sparks.

Use class A or B roofing materials, such as asphalt shingles, slate or clay tile, or metal.

Siding/walls

- ❑ Use fire-resistive or non-combustible construction materials whenever possible. Use a minimum of a Class III flame-spread rated siding material – stone, brick and stucco are best. Walls should be constructed of fire-resistive materials from the ground to the roof overhang.



- ❑ Roof eaves extending beyond exterior walls are also susceptible to flame exposure. Limit them in length and box or enclose them with fire-resistive materials.

Foundation

A building's foundation comes in contact with a spreading wildfire before other areas of the structure.

Enclose foundations with concrete block, cement walls, or other fire-resistive building materials.

Windows

Windows are often overlooked as fire hazards, but can be serious risks. The heat from a wildfire may be enough to ignite the furnishings inside your house through the windows.

- ❑ Minimize the size and number of windows on the downhill side of the house or the side that would most likely be exposed to a wildfire.
- ❑ Consider both size and materials for windows and sliding glass doors. Multi-paned glass provides insulation from trapped air and gives more protection from radiant heat than single-paned glass. It also reduce breakage potential from wind-blown debris.

Other Areas

- ❑ Cover exterior attic, soffit and underfloor vents with metal wire mesh (no larger than 1/8 of an inch) to prevent sparks from entering your home through vents.

- ❑ Install eave and soffit vents closer to the roof line than the walls.
- ❑ Design decks so that they are not located at the top of a hill directly in the line of a fire moving up slope.

- ❑ Enclose the undersides of balconies and decks on slopes with fire-resistive materials. If not enclosed, these areas can trap flames and burning embers that can ignite your home.



- ❑ Use weed-barrier fabric under deck and balcony areas to keep them free of vegetation.



- ❑ Cover chimneys and stovepipes with a non-flammable screen (mesh no larger than 1/2 inch).





Interior safety

Residential sprinkler systems

A fire occurs in 1 out of 10 American homes every year. In wildland areas, the fire from the home may spread into the wildland. Residential Fire Sprinkler Systems are a great asset to homeowners in the Urban Wildland Interface.

Homes in wildland areas usually have a longer fire department response time. In a home with residential sprinklers installed, the fire will be controlled and often extinguished before fire crews arrive. A sprinkler system will reduce the heat and smoke that is generated during a fire, thus allowing a safer environment in which to escape.

A sprinkler system can be designed for any type of water supply. Many homes that are built in wildland areas do not have a domestic water supply available. Water supply for homes usually come from a well. A water tank can be installed to supply the sprinkler system.

Smoke Detectors

Lives can be saved when smoke detectors are properly installed and maintained. Most areas require smoke detector installation for new structures.

Choice of Detectors

- There are several types of smoke detectors available. Some run on batteries, some run on household current and others get their main power source from the household current with a battery back up in the event of a power failure.

- There are several ways smoke detectors detect smoke. Some use an “ionization” sensor which detects slow smoldering fires, some use a “photoelectric” sensor which detects flame and others use a combination of the two.

How Many?

- Minimum protection requires a smoke detector outside each sleeping area and on every level of the home. Be sure everyone sleeping in your home can hear your smoke detector alarms with bedroom doors closed.



- Smoke detectors are not recommended for kitchens, bathrooms, or garages where cooking fumes, steam, or exhaust could set off false alarms, or for attic and unheated spaces, where humidity and temperature changes might affect a detector’s operation.

Where to Install

Because smoke rises, mount detectors high on a wall or on the ceiling. Wall mounted units should be mounted 4 to 12 inches from the ceiling. Ceiling mounted units should be mounted at least 4 inches from the nearest wall.

Maintenance

- Test your smoke detectors weekly and replace the batteries twice a year (when you set your clock forward and back, change your batteries). Many battery powered smoke detectors “chirp” or give some type of audible signal when their battery power is low.
- Clean your smoke detectors at least once a year. Dust and cobwebs can reduce a detector’s sensitivity to smoke. The life expectancy for any type of smoke detector is about 10 years. If you have smoke detectors that are older than 10 years, they need to be replaced.

Portable Fire Extinguishers

Portable fire extinguishers are your best defense against a small fire. Fire extinguishers for home use are not intended to fight large or spreading fires.

Choosing a Fire extinguisher

All fire extinguishers are labeled using standard symbols for the class of fires they can put out. A red slash through any of the symbols tells you the extinguisher cannot be used on that class of fire.

Class A:

- Ordinary combustibles such as wood, cloth, paper, rubber and many plastics.



Class B:

- Flammable liquids such as gasoline, oil, grease, tar, oil based lacquer, and flammable gas.



Class C:

- Energized electrical equipment including wiring, fuse boxes, circuit breakers, machinery, and appliances.



Extinguisher Size

Portable extinguishers are also rated for the size of fire they can handle. Normally, an extin-

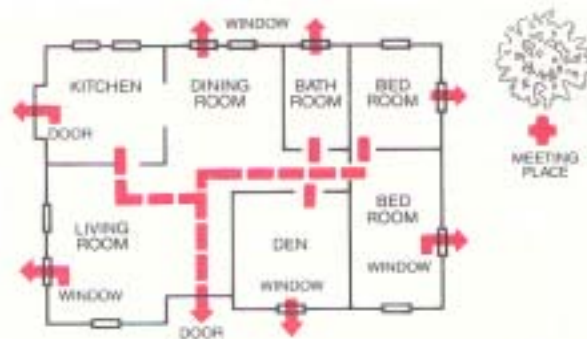
guisher that has a minimum rating of 2A-10B:C is recommended for each floor level. The larger the number, the larger the fire that the extinguisher can put out. Higher-rated models are often heavier. Make sure you can hold and operate the extinguisher before you buy.

Installation/Maintenance

- Extinguishers should be installed in plain view, above the reach of small children, near an escape route and away from stoves and heating appliances.
- Extinguishers require routine care. Read your operator’s manual and ask your dealer how your extinguisher should be inspected and serviced.
- Rechargeable models must be serviced after every use. (Service companies are listed in the Yellow Pages under “Fire Extinguishers.”) Disposable fire extinguishers can only be used once and must be replaced after use.

Plan Your Escape!

Smoke alarms can cut your risk of dying in a home fire nearly in half, but you have to know what to do when they go off.



Make a plan

- Draw a floor plan of your home, marking two ways out (including windows) of every room, and decide on the best escape routes.
- Pick an outside meeting place (preferably in front of your home), and tell everyone to meet there after they’ve escaped, so you can count heads and tell firefighters if anybody’s trapped inside.

Practice Your Plan

- ❑ Every household should have a fire escape plan, but practice is essential; there's no time to lose in a fire emergency.
- ❑ Practice your escape plan at least twice a year. Make your exit drills realistic. Pretend that some exits are blocked by smoke or fire and practice using alternative escape routes.

Test Doors before Opening Them

Kneel or crouch and touch the door with the back of your hand. If the door is warm, use another escape route. If it's completely cool, put your shoulder against the door and open it slowly. Be prepared to slam it shut if there's smoke or flame on the other side.

Crawl Low under Smoke

Heat rises carrying smoke with it, so air will be cooler and cleaner near the floor during a fire. If you run into smoke, try another escape route. If you must exit through the smoke, crawl on your hands and knees and keep your head close to the floor.



Stop Drop and Roll

If your clothes catch on fire “**Stop Drop and Roll,**” making sure you cover your face.



Get Out and Stay Out

React immediately! Do not try to rescue possessions or pets and never go back inside a burning building. Call the fire department from a neighbor's phone, a portable phone, or call box after you've escaped. When reporting the fire make sure you give your address, name, closest cross street, and directions if you live in a difficult area to find.

Fire Prevention Checklist

Throughout The House

General Safety

- ❑ Keep doors, hallways, and stairs clear of obstructions.
- ❑ Post emergency numbers near the telephone.
- ❑ Do not smoke in bed.
- ❑ Do not put ashtrays on chairs or sofa arms.
- ❑ Do not leave unattended cigarettes burning in ashtrays.



Electrical Safety

- ❑ Get rid of frayed or cracked electrical cords.
- ❑ Do not place electrical cords under rugs, over nails or in high traffic areas.
- ❑ Do not overload electrical outlets or extension cords.
- ❑ Do not place electrical cords near sinks, bathtubs, or ranges.
- ❑ Make sure all fuses in the fuse box are the correct size.
- ❑ Make sure all outlets have cover plates and no exposed wiring.



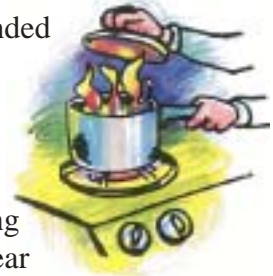
Safety from Alternate Heat Sources

- ❑ Plug heaters directly into the wall socket and unplug when not in use. Do not use extension cords with portable heaters.
- ❑ Do not place heaters where they can be knocked over.
- ❑ Keep flammable materials (such as furniture, clothes, curtains or towels) at least 3 feet from space heaters or stoves.
- ❑ Do not store flammable liquids near ignition sources (heaters, furnaces, hot water heaters or stoves).
- ❑ Clean chimneys yearly.
- ❑ Do not leave heaters unattended or sleep while they are on.
- ❑ Do not use heaters to dry clothes.



Kitchen Safety

- ❑ Do not leave food unattended on the stove. If you must leave the kitchen, take a utensil along with you as a reminder.
- ❑ Do not cook while wearing sleeves that can dangle near burners.
- ❑ Do not let grease build up on your stove or oven.
- ❑ Do not let crumbs build up in your toaster.
- ❑ Do not let curtains hang near your range.
- ❑ Check the kitchen before you go to bed.
- ❑ Turn the oven off.





What to do when...

What To Do When You Are Threatened By Wildfire

If you have followed the advance preparation steps previously outlined, you have created a **FireWise** home that has a better chance of surviving a wildfire. But when a wildfire is immediately threatening your area, there are additional steps you can take.

- ❑ If you see a fire approaching your home, report it immediately by dialing 9-1-1. Stay on the phone to answer additional questions the emergency dispatcher may ask.
- ❑ Dress properly to prevent burns and lifelong scars. Wear long pants, cotton or wool long-sleeve shirts or jackets. Gloves and a damp cloth provide added protection. Do not wear short sleeve shirts or clothing made of synthetic fabrics.

Emergency Wildfire Survival Checklist

If there is time before the fire arrives, take the following actions:

Prepare to Evacuate

- ❑ Park your car in the garage, facing out with windows closed and keys in the ignition.
- ❑ Close the garage door but leave it unlocked. Disconnect the automatic garage door opener in case of power failure.
- ❑ Place valuable documents, family mementos and pets inside the car in the garage ready for quick departure.

Outside Your Home

- ❑ Move combustible yard furniture away from the house or store it in the garage (if it catches fire while outside, the added heat could ignite your house).
- ❑ Cover windows, attic openings, eave vents and sub-floor vents with fire-resistant material such as 1/2-inch or thicker plywood. This will eliminate the possibility of sparks blowing into hidden areas within the house.
- ❑ Close window shutters if they are fire-resistant.
- ❑ Attach garden hoses to spigots and place them so they can reach any area of your house.
- ❑ Fill trash cans and buckets with water and place them where firefighters can find them.
- ❑ If you have an emergency generator or a portable gasoline-powered pump that will supply water from a swimming pool, pond, well or tank, clearly mark its location and make sure it is ready to operate.

- ❑ Place a ladder against the house on the side opposite the approaching fire to help firefighters in rapidly getting onto your roof.

Inside Your Home

- ❑ Close all windows and doors to prevent sparks from blowing inside.
- ❑ Close all doors inside the house to slow down fire spread from room to room.

- ❑ Turn on a light in each room of your house, on the porch and in the yard. This will make the house more visible in heavy smoke or darkness.
- ❑ Shut off liquefied petroleum gas (LPG) or natural gas valves.
- ❑ Move furniture away from windows and sliding glass doors to keep it from igniting from the heat of fire radiating through windows.
- ❑ Remove your curtains and drapes. If you have metal blinds or special fire resistant window coverings, close them to block heat radiation.

Evacuating

- ❑ If you do evacuate, use your pre-planned route, away from the approaching fire front.
- ❑ Keep a flashlight and portable radio with you at all times.
- ❑ If you are trapped by fire while evacuating in your car, park in an area clear of vegetation, close all vehicle windows and vents, cover yourself with a blanket or jacket and lie on the floor.
- ❑ If you are trapped by fire while evacuating on foot, select an area clear of vegetation along a road, or lie in the road ditch. Cover any exposed skin with a jacket or blanket. Avoid canyons that can concentrate and channel fire.

If You Stay in Your Home When a Fire Approaches

- ❑ Stay inside your house, away from outside walls.
- ❑ Close all doors, but leave them unlocked.
- ❑ Keep your entire family together and remain calm. Remember: if it gets hot in the house, it is many times hotter and more dangerous outside.

After the Fire Passes

- ❑ After a fire passes, check inside the attic for hidden burning embers.
- ❑ Check the roof immediately, extinguishing all sparks and embers. If you must climb onto the roof, use caution, especially if it is wet.
- ❑ Check inside the attic for hidden burning embers.
- ❑ Check your yard for burning woodpiles, trees, fence posts or other materials.
- ❑ Keep the doors and windows closed.
- ❑ Continue rechecking your home and yard for burning embers for at least 12 hours.