



Woodrock Community Wildfire Protection Plan

January 2024

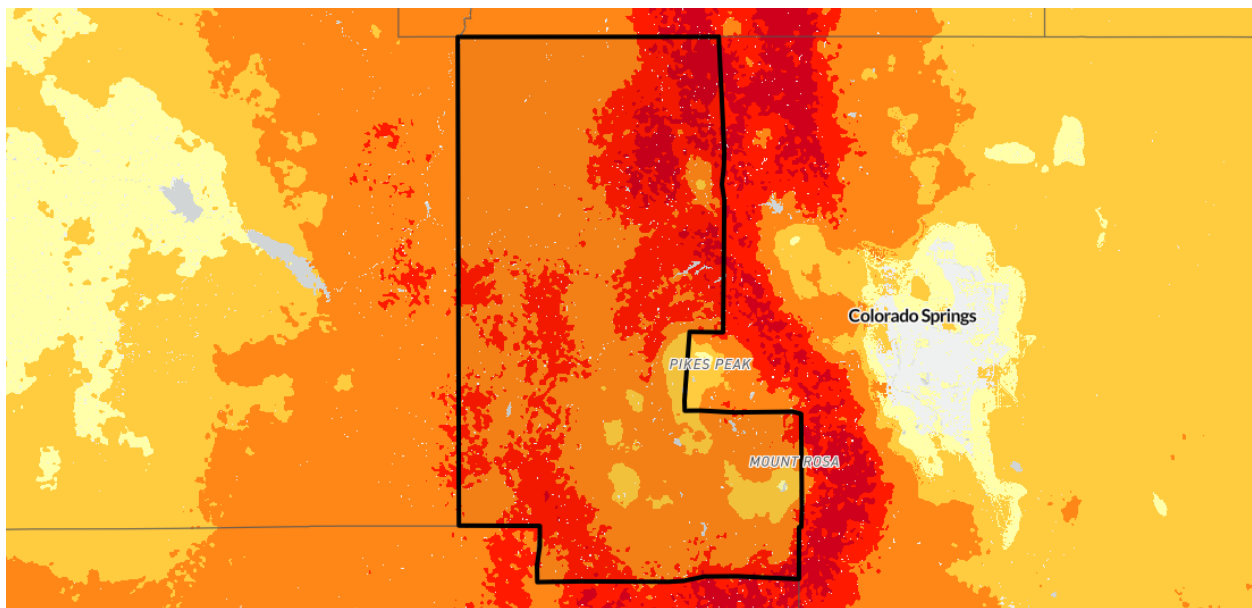
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Overview

The purpose of the Woodrock Community Wildfire Protection Plan (CWPP) is to assess the risk of wildfire to the community, provide information and encouragement to create defensible spaces for home sites, structures, and lots, encourage community-wide fuel mitigation to reduce wildfire risk, and to supplement the community's efforts in FireWise certification each year.

The threat of wildfire is a constant in Colorado and wildfires burn thousands of acres each year. Wildfires become especially dangerous when wildland vegetation begins to intermix with homes. This area is known as the Wildland Urban Interface. According to the United States Forest Service (USFS) Wildfire Risk Tool, Teller County has, on average, greater risk and likelihood of wildfire than 97 percent of all counties in the United States.



Source: USFS Risk Mapping Tool

According to wildfire planners, planning for wildfires should take place long before a community is threatened. Once a wildfire ignites, the only option available to firefighters is to attempt to suppress the fire before it reaches our community. Therefore, a Community Wildfire Protection Plan (CWPP) serves as a unique, flexible, and living document to empower our community to share the responsibility with other organizations in determining the best strategies for protection against wildfire.

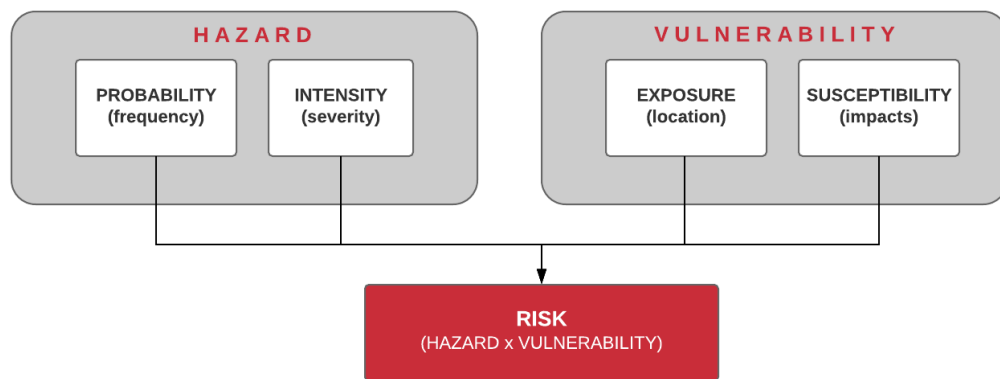
Introduction

The Woodrock Community Wildfire Protection Plan (CWPP) has been developed in response to the Healthy Forests Restoration Act of 2003 (HFRA). This legislation established unprecedented incentives for communities to develop comprehensive wildfire protection plans in a collaborative inclusive process. Furthermore, this legislation directs the Departments of Interior and Agriculture to address local community priorities in fuels reduction treatments on both federal and non-federal lands.

The HFRA emphasizes the need for federal agencies to collaborate with communities in developing hazardous fuels reduction projects, and places priority on treatment areas identified by communities through development of a CWPP. Priority areas include the wildland-urban interface (WUI), municipal watershed and other local values at risk, areas impacted by windthrow or insect or disease epidemics, and critical wildlife habitat that might be negatively impacted by a catastrophic wildfire. In compliance with Title 1 of the HFRA, the CWPP requires agreement among local government, local fire departments and the state agency responsible for forest management (the Colorado State Forest Service). The CWPP must be developed in consultation with interested parties and the applicable federal agency managing lands surrounding at-risk communities.

Further, CWPPs are developed to mitigate losses from wildfires. Wildfires can occur at any time throughout the year and can pose a serious threat to residents. By developing this CWPP, Woodrock is outlining a strategic plan to mitigate, prepare, respond, and recover.

The basis for a quantitative framework for assessing wildland fire risk to highly valued resources and assets (HVRAs) has been well established. Wildland fire risk is a function of two main factors—1) Wildland fire hazard and 2) HVRA vulnerability.



PROBABILITY = the likelihood of a fire burning at a specified place during a specified time

INTENSITY = the characteristics of a fire that causes effects should a fire occur

EXPOSURE = the location of resources & assets with respect to the wildfire hazard

SUSCEPTIBILITY = the relationship between fire behavior and outcomes (expected impacts from different intensity fires)

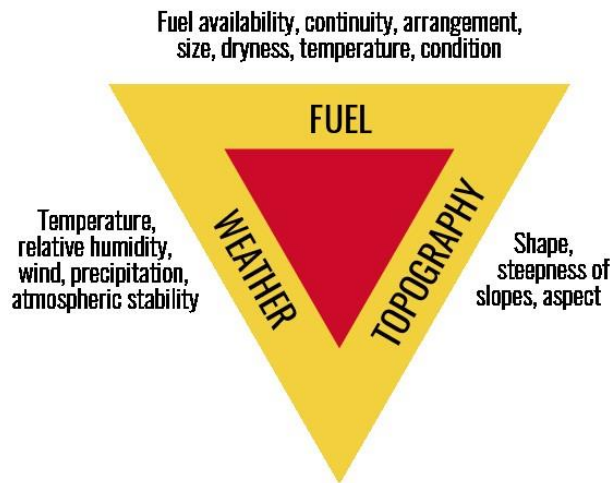


Adapted from Scott, Thomson, Calkin, 2013.

Wildland fire hazard is a physical situation with potential for causing damage to vulnerable resources or assets. Quantitatively, Wildland fire hazard is measured by two main factors—1) burn probability (or likelihood or burning), and 2) fire intensity (measured as flame length, fire line intensity, or other similar measure).

HVRA vulnerability is also composed of two factors—1) exposure and 2) susceptibility. Exposure is the placement (or coincidental location) of an HVRA in a hazardous environment—for example, building a home within a flammable landscape. Some HVRAs, such as critical wildlife habitat or endangered plants, are not movable; they are not "placed" in hazardous locations. Still, their exposure to wildland fire is the Wildland fire hazard where the habitat exists. Finally, the susceptibility of an HVRA to wildland fire is how easily it is damaged by fires of different types and intensities. Some assets are *fire-hardened* and can withstand very intense fires without damage, whereas others are easily damaged by even low-intensity fire. For the purpose of this plan, the focus will be the impact of efforts on individual property owners to mitigate their property to reduce risk and prevent the spread of wildfire.

The fire risk triangle is a graphic representation of the elements of any fire: fuel, weather and topography.



Again, while not all factors can be mediated, understanding their role in fire development and modifying risk factors whenever possible is the single best option in preventing fires in the Woodrock community.

Statement of Intent

The intent of the CWPP is to reduce the risk of wildfire and promote ecosystem health. The plan also is intended to reduce home losses and provide for the safety of residents and firefighters during wildfires.

Goals

The goals and objectives of the Woodrock CWPP include the following:

1. Provide for the safety of residents and emergency personnel.
 - a. Objective 1: Establish and maintain access and egress routes.
 - b. Objective 2: Use “evacuated” signs to assist first responders.
 - c. Objective 3: Provide education on turning off propane valves if safe to do so.
2. Mitigate wildfire risk through property management.
 - a. Objective 1: Identify local building requirements through the community’s Architectural Review Board (ARB) with the underlying goal to provide for more fire-resistant structures.
 - b. Objective 2: Participate in the national FireWise certification program each year in order to reduce insurance costs, provide education, and identify risks in the form of a risk assessment.
 - c. Objective 3: Encourage participation in annual shredding of low-lying/dead trees and vegetation.
3. Limit the number of homes destroyed by wildfires.
 - a. Objective 1: Conduct routine training at least annually to property owners.
 - b. Objective 2: Assist residents with clearing vegetation in the immediate property zone.
 - c. Objective 3: Coordinate with Teller County Fire Department to identify and reduce risk and conduct risk assessments every 5 years.

Key Stakeholders and Working Group Partners

Federal Representative:

US Forest Service

State Representatives:

Colorado Parks and Wildlife

Mueller State Park

County Representatives:

Teller County Fire Department

Coalition for the Upper South Platte

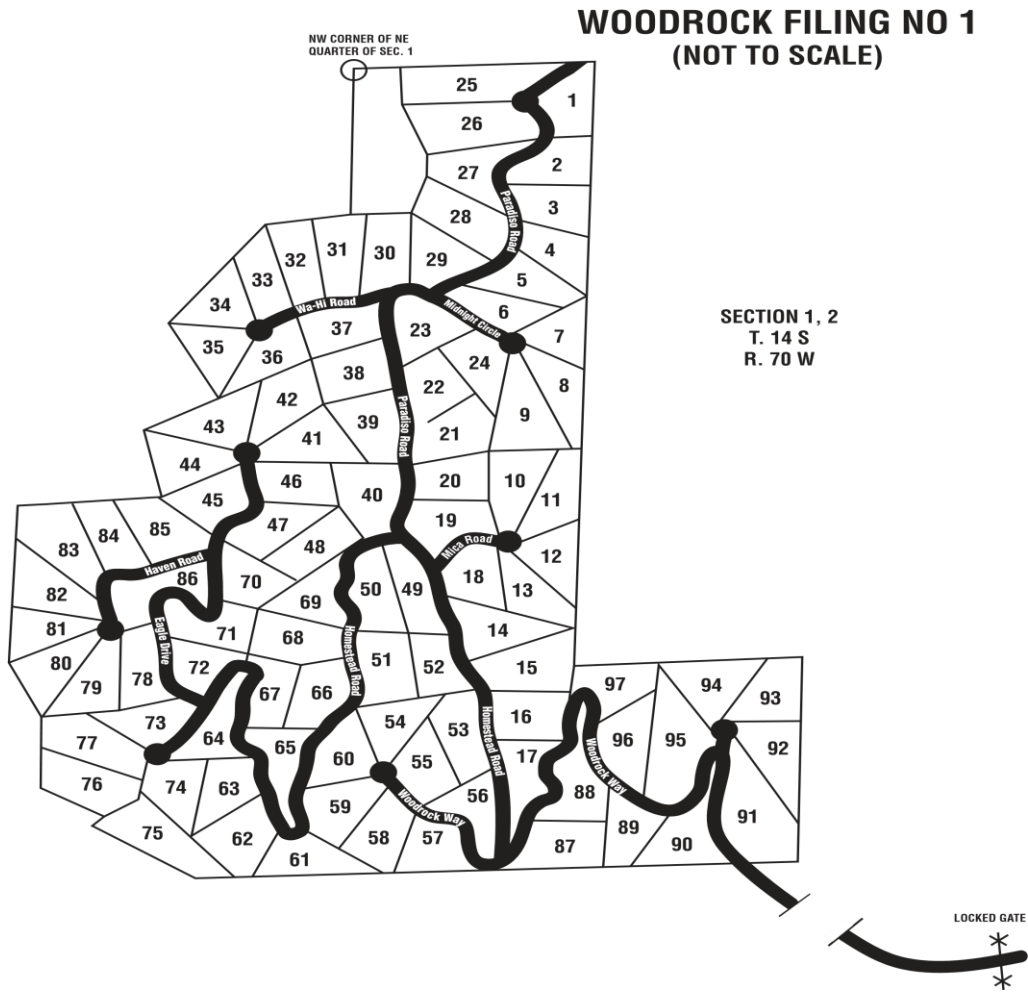
Teller County Government and Office of Emergency Management

Community Background

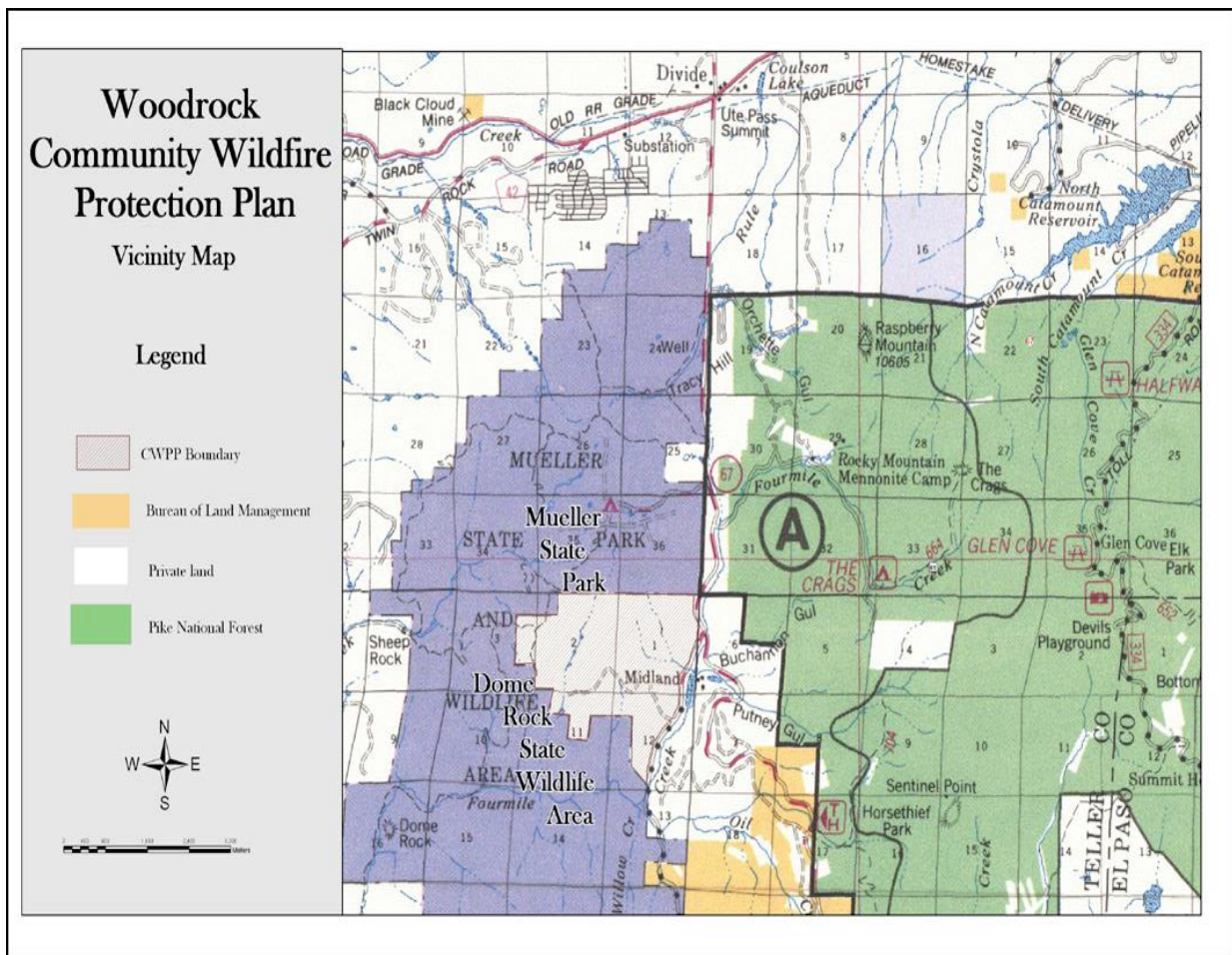
Location

Woodrock is a gated subdivision that consists of approximately 282 total acres directly south of Muller State Park, which is managed by Colorado Parks and Wildlife. Woodrock is bordered by the west and south by Dome Rock State Wildlife Area and to the east by CR 61 (also known as Four Mile Road).

Woodrock is comprised of privately owned lots (97 total lots) ranging in size from 2-5 acres with some property owners possessing one or more lots. There are currently 50 homes in the community with some homes occupied year-round and others seasonally. There are at least 50 people in the community at any one time, though the population can easily double depending on season and community events.



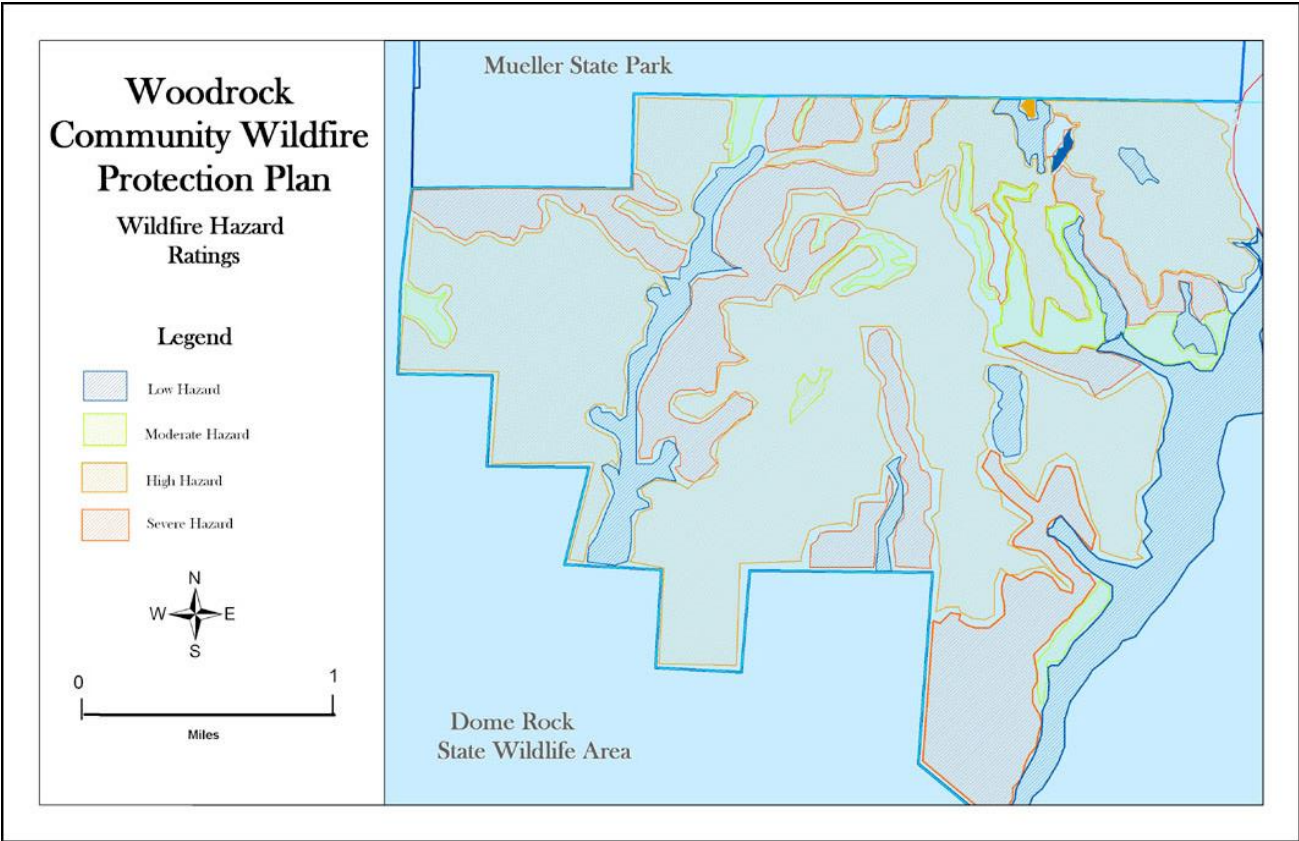
The map below is a larger representation of the overall area in Woodrock (inside the polygon and labeled with the letter "A"), with outside boundaries including Mueller State Park and Dome Rock State Wildlife Areas as well as neighboring areas. Note colors/designations for references to public land, Bureau of Land Management (BLM) land and National Forest areas.



General Landscape and Vegetation Types

Woodrock is in forest woodlands. Dense spruce and pine growth cover substantial portions of the subdivision, with occasional Douglas fir and Ponderosa pine interspersed with aspen growth. West facing slopes contain even denser stands of trees and slopes are very steep. Crown cover densities within these strands were rated type III, "High Risk", in the Teller County Wildfire Protection Plan (TCWPP). Dead and downed trees, including those on undeveloped lots and neighboring areas, contribute to ground fuels.

The wildfire hazard ratings for Woodrock have been evaluated by Colorado State Forest Services and appear in the polygon below (rotated from previous page). The wildfire hazard ratings were developed by combining the density and type of trees with the degree of slope. Ratings are general over large areas; some small areas of a different fire hazard may be included within one of the categories (such as undeveloped lots that abut developed ones). Blue areas, or low hazard, denote areas next to water sources or lands on flatter areas with maximum access and egress that are regularly mitigated. The medium hazard areas in yellow that are on mild to moderate slopes or on cleared lots without water supply. The high and severe hazard areas are either on steep slopes or on unmitigated lots with dense trees or significant downed trees and/or ground cover.



The Colorado State Forest Service has conducted thorough analysis and research on different factors that contribute to the risk of wildfire. Specific forest assets were identified and categorized to prioritize forest assets that would be most adversely affected by fire. These categories include – 1) forest asset layer characteristics, 2) forest asset fire response classes for trees, and 3) canopy cover classes. Using these categories, a visual representation of risk was created.

1. Forest Asset Layer Characteristics

Height Class	Canopy Cover Class	Fire Response Class
0 to 10 meters	Open or Sparse	Sensitive
10.1 to 25 meters	Closed	Resilient
25.1+ meters		Adaptive

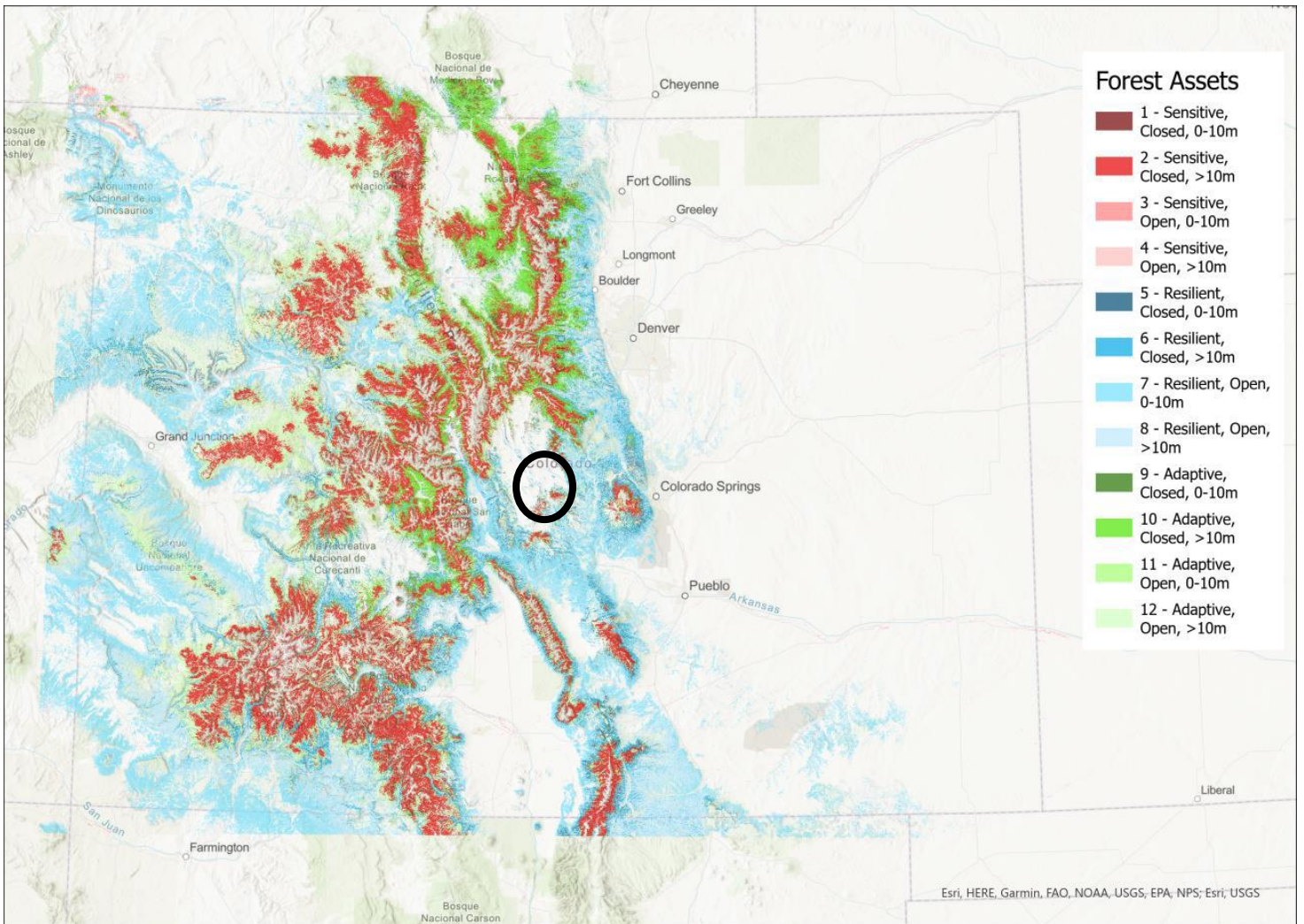
2. Forest Asset Response Classes for Different Trees

Value Impacted	General Description
Sensitive (Code = 1)	Fire sensitive. Intolerant trees sensitive to damage from fire with low intensities.
Resilient (Code = 2)	Fire resisters. Tolerant tree species whose adult stages can survive low severity fires.
Adaptive (Code = 3)	Fire endurers. Tree species adapted with the ability to regenerate following fire by sprouting or serotinous cones.

3. Canopy cover classes

Value Impacted	General Description
Sparse	Canopy cover may be less than 25percent in cases when the cover of each of the other life forms present (i.e. shrub, dwarf-shrub, herb, nonvascular) is less than 25percent and tree cover exceeds the cover of the other life forms. Hence, the cover is 10-25percent.
Open	Open stands of trees with crowns not usually touching (generally forming 25-60percent cover).
Closed	Trees with their crowns overlapping (generally forming 60-100percent cover).

The following figure presents the forest assets dataset for Colorado.

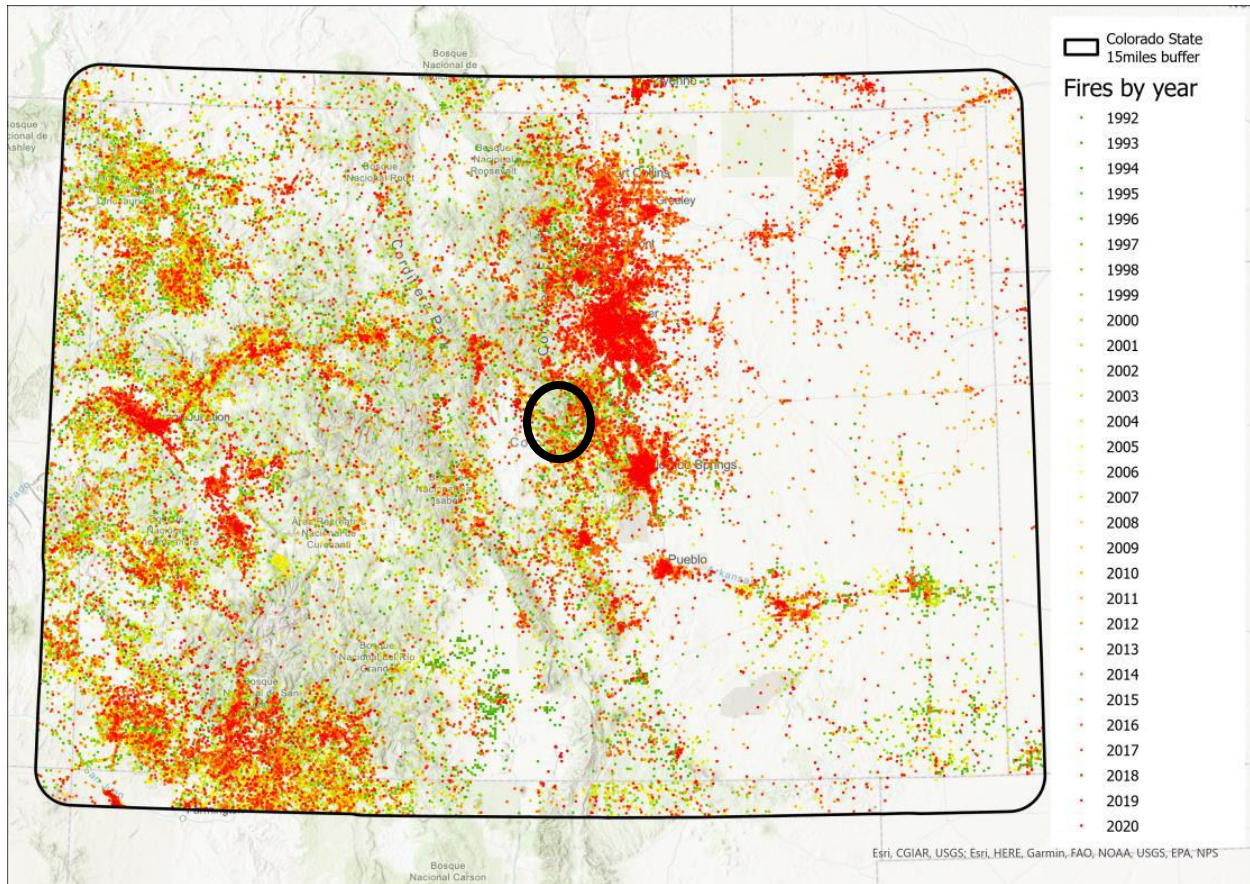


Approximate area of Teller County, including Woodrock, is circled in the map above with primary assets consisting of sensitive (intolerant trees sensitive to damage from fire with low intensities) and closed systems (trees with their crowns overlapping (generally forming 60-100percent cover). These combined factors represent the highest level of risk possible.

Colorado Historical Fire Occurrence

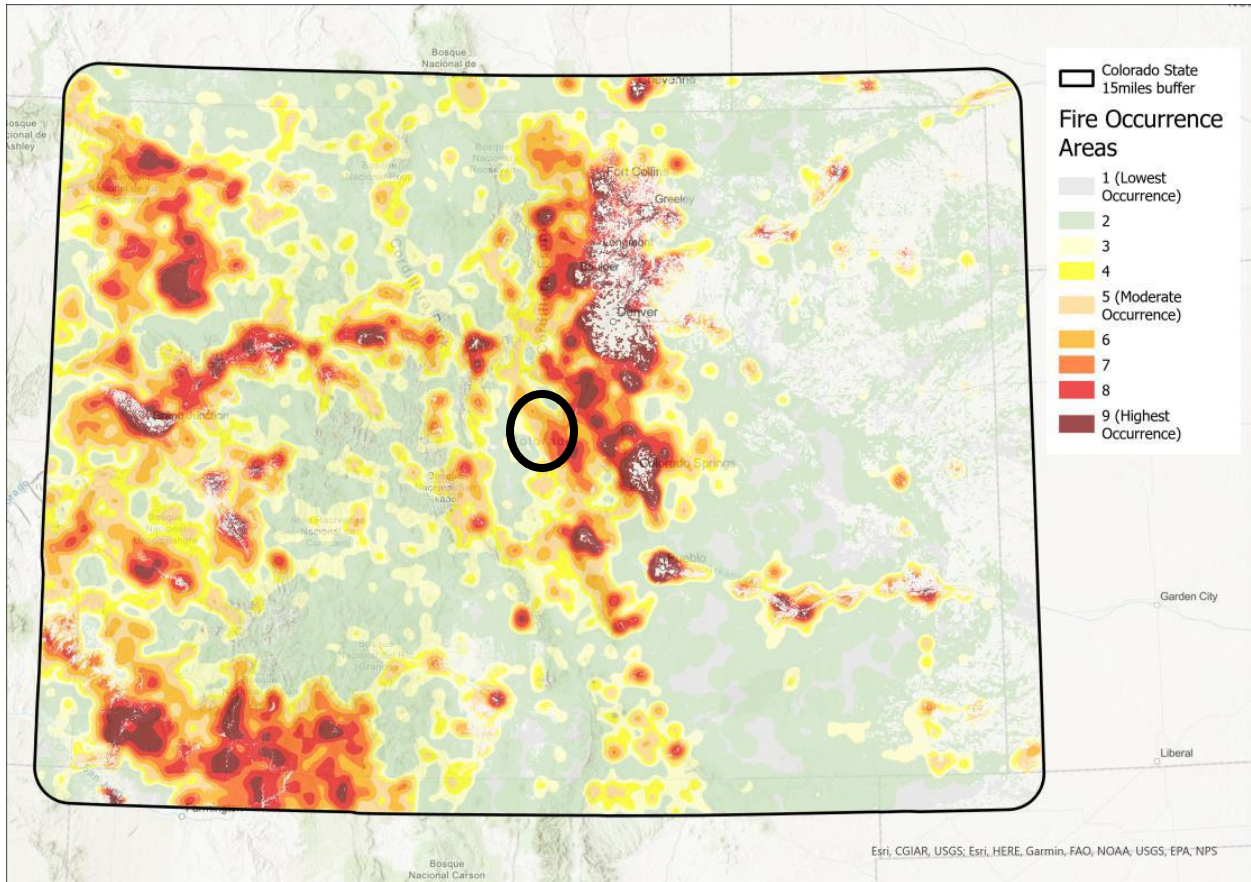
Historical fire occurrence is used as a variable to analyze past fires and outputs while representing the likelihood of a wildfire starting based on historical ignition patterns. In the figure below, Colorado State Forest Service used datasets compiled by the United States Forest Service (USFS) Fire Sciences Laboratory to show fire ignition data. It was noted that fire ignition data can be underreported in many rural areas of Colorado. These tables appear below as – 1) historical ignitions for 1992-2020, and 2) fire occurrence density for 1992-2020.

1. Historical ignitions, 1992-2020



Approximate area of Teller County, including Woodrock, is circled in the map above.

2. Fire occurrence density, 1992-2020



Approximate area of Teller County, including Woodrock, is circled in the map above and includes the High Park Fire from 2023.

The importance of an effective CWPP cannot be underscored. In the year 2020 alone, the three largest wildfires ever recorded in Colorado occurred; the Cameron Peak Fire, the East Troublesome Fire and the Pine Gulch Fire.

The Cameron Peak Fire



The Cameron Peak Fire measured in at 208,913 acres (about 326 square miles) in Larimer County was the largest wildfire recorded in Colorado history. It was first reported just before 2 p.m. on August 13, 2020 and exploded over Labor Day weekend when it burned more than 78,000 acres. The fire survived a September snowstorm and grew over the mountains southeast toward the foothills west of Fort Collins and Loveland, as well as near Estes Park and into Rocky Mountain National Park. Colorado Highway 14 between Fort Collins and Walden was closed for two months. The fire was not declared 100 percent contained until 112 days later on December 2, 2020, and ultimately damaged 469 structures. Of these, 243 were considered a total loss, causing more than \$6 million in market value.

The East Troublesome Fire



The East Troublesome Fire in Grand County was the second-largest recorded fire in state history at 193,812 acres (about 303 square miles), and it killed two people. Three days after the fire was first reported on October 14, 2020, high winds and low humidity allowed the fire to spread to over 10,000 acres. The fire first forced the mandatory evacuation of approximately 90 homes just three days later after threatening State Highway 125. Between October 20th and October 23rd, the East Troublesome Fire spread dramatically, with 24-hour increases of around 18,000 to 87,000 acres during the four-day run, according to fire officials. The peak fire spread of 87,093 acres occurred between late afternoon on October 21st and the early afternoon of October 22nd when the fire exploded from 18,550 acres to 187,964 acres. Fire officials said the wildfire spread eastward into the Rocky Mountain National Park on October 22nd, crossing the Continental Divide and reaching the western edge of Estes Park on October 23rd. It was during this period that a population of over 35,000 in Grand Lake and Estes Park were placed under a mandatory evacuation with more than 7,000 structures threatened. After a winter storm from October 24th thru October 26th, fire activity remained minimal until it was declared 100 percent contained on November 30, 2020, 49 days later.

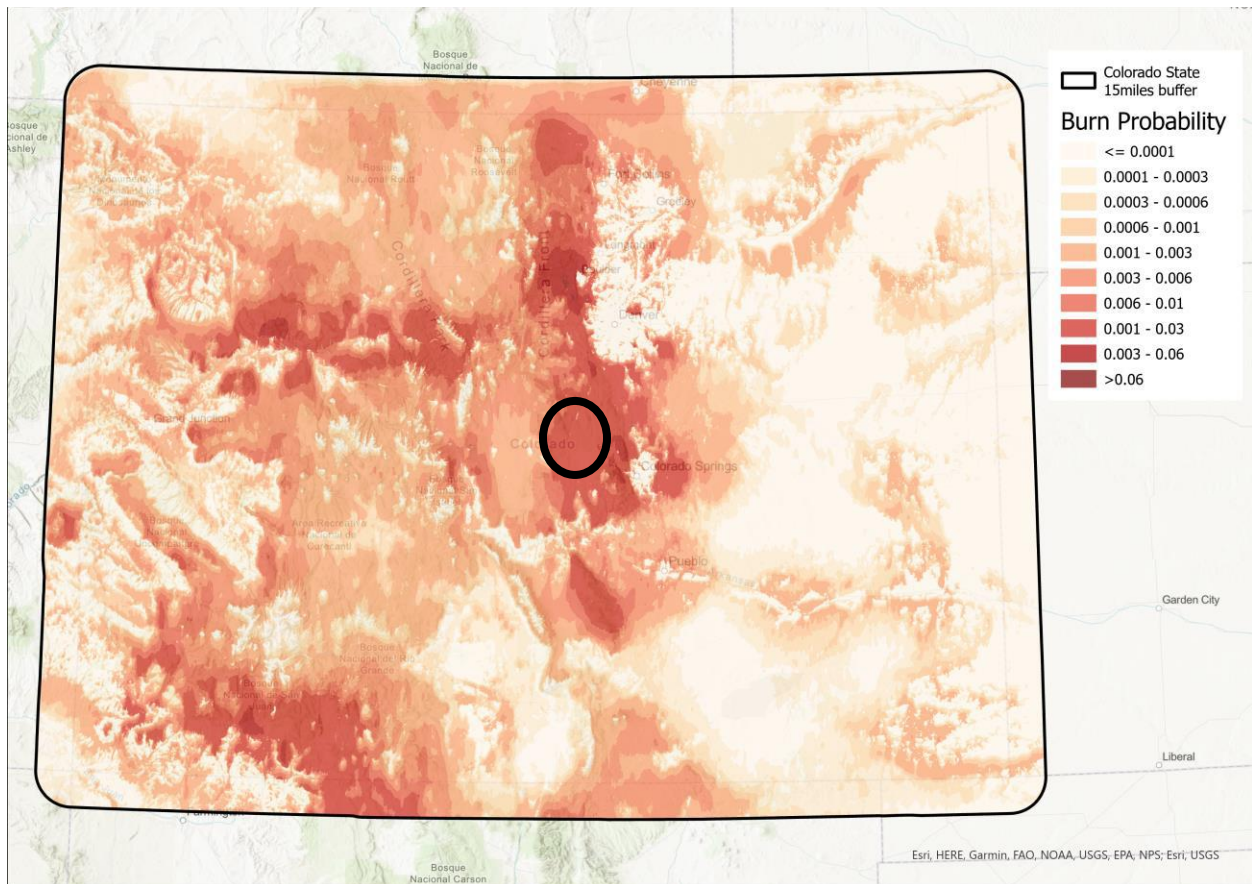
The Pine Gulch Fire



At 139,007 acres (about 217 square miles), the Pine Gulch Fire in Mesa and Garfield counties briefly held the title of largest-recorded fire in state history until it was surpassed by the Cameron Peak and East Troublesome fires. First reported on July 31, 2020, the fire was sparked by a lightning strike about 18 miles north of Grand Junction. The fire burned in remote, rough terrain in pinyon, juniper, oak and sage brush, according to the Bureau of Land Management. The fire was reported 10 percent contained 54 days later.

Each of these fires resulted in significant loss of resources and property. In the case of the East Troublesome Fire, two lives were lost. It is important to note that these fires were caused by natural and man-made origins and spread rapidly.

Further, the following table illustrates the burn probability for Colorado, with Teller County circled:



When combined with the Teller County map and probability at the beginning of this plan, it is evident that Woodrock is at a very high risk of wildfire. The single best controllable factor in preventing wildfire in Woodrock rests upon owners. For this purpose, FireWise USA® has provided a collaborative framework to help communities get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level. Woodrock has participated in FireWise USA® for years to provide education and awareness and to maintain good standing and certification as a FireWise USA® community.

Importantly, FireWise USA® helps communities, like Woodrock, analyze risk through five key areas – 1) fire hazard identification, 2) structural vulnerability, 3) protection capabilities, 4) general fire risk, and 5) values at risk. Each of the areas specific to Woodrock will be explored in the following plan.

All residents are encouraged to download and bookmark resources for current Colorado wildfires and emergency notifications:

a. Colorado Wildfire Status Dashboard (shows fires by county) www.coemergency.com

b. Everbridge App (available for iOS and Android) www.everbridge.com



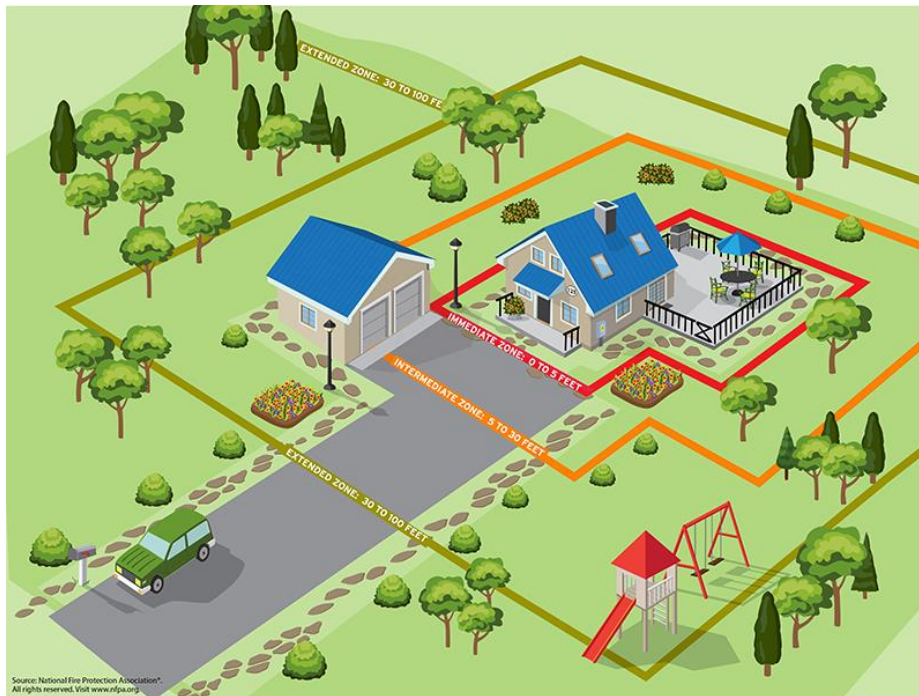
Firewise USA® and Woodrock

Woodrock conducts Firewise USA® certification efforts annually, with a risk assessment coordinated jointly with Divide Fire Department every five years. The following sections reflect both guidance and findings from the most risk assessment conducted in August 2023.

Structural Vulnerability

Research around home destruction vs. home survival in wildfires point to embers and small flames as the main way that the majority of homes ignite in wildfires. Embers are burning pieces of airborne wood and/or vegetation that can be carried more than a mile through the wind can cause spot fires and ignite homes, debris and other objects.

There are methods for homeowners to prepare their homes to withstand ember attacks and minimize the likelihood of flames or surface fire touching the home or any attachments. Experiments, models and post-fire studies have shown homes ignite due to the condition of the home and everything around it, up to 200' from the foundation. This is called the Home Ignition Zone (HIZ). HIZ include three separate areas of concerns – 1) Immediate Zone (0-5 feet from the furthest attached exterior point of a home), 2) Intermediate Zone (5-30 feet from the furthest exterior point of the home), and 3) Extended Zone (30-200 feet from the home). Checklists and fact sheets can be found in the appendix of this CWPP.



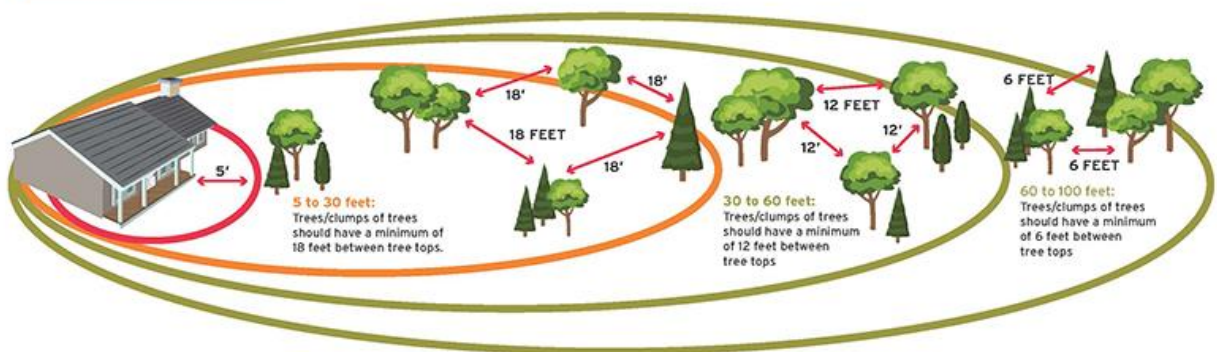
Home and property owners in Woodrock should start by focusing on the house itself, then moving into the landscaping section of the Immediate Zone. Specific ways to reduce vulnerability in the Immediate Zone are:

- Clean roofs and gutters of dead leaves, debris and pine needles that could catch embers
- Replace or repair missing or loose roofing to prevent ember penetration
- Install 1/8 inch metal mesh screening to exterior attic vents and keep vents clean
- Repair or replace damaged/loose window screens and/or broken windows. Screen or box-in areas below patios and decks with wire mesh to prevent debris and combustible materials from accumulating
- Move flammable materials away from wall exteriors, including mulch, flammable plants, leaves/needles, and firewood piles
- Remove stored items from underneath decks or porches

The Intermediate Zone, extending from 5-30 feet from the furthest exterior point of the home, is the second priority in fire prevention. Landscaping, creating breaks and hardscaping all influence and decrease fire behavior. Home and property owners in Woodrock can reduce impacts in this zone by:

- Clearing vegetation from under propane tanks
- Creating fuel breaks with driveways, walkways or paths, and decks
- Keeping native grasses trimmed to a height of 4 inches or less
- Removing vegetation under trees (known as ladder fuels) so a surface fire doesn't extend to the crown of the tree. Pruning trees up to 6 to 10 feet from the crown (or 1/3 the height of shorter trees) is a key preventive measure.
- Spacing trees to a minimum of 18 feet between crowns with distance increasing with the percentage of slope.
- Placing trees to ensure the mature canopy is no closer than 10 feet to the edge of the structure
- Placing small clusters of trees and shrubs to break up the continuity of the vegetation across the landscape

TREE SPACING



The Extended Zone (30-200 feet from the furthest exterior point of the home) encompasses landscaping. The goal is not to eliminate fire, but to interrupt the fire's path and keep flames smaller on the ground. Measures here include:

- Dispose of heavy accumulations of ground litter and debris
- Remove dead plants and trees

- Remove small conifers or saplings growing between mature trees
- Remove vegetation adjacent to storage sheds or outbuildings
- Improve canopy distance between tree tops
 - 12 feet between canopy tops for trees 30-60 feet from the home
 - 6 feet between canopy tops for trees 60-100 feet from the home

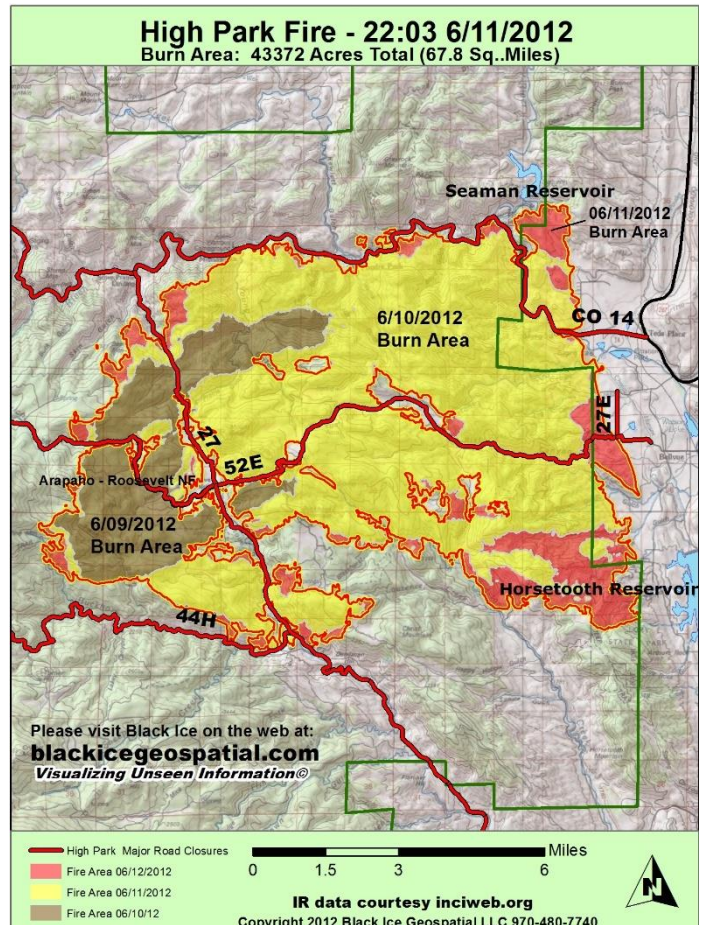
Significant Findings from 2023 Risk Assessment

Divide FD noted common vegetation types of heavy timber, shrubs and grasses. Topography included several steep slopes and they noted chimneys with a southern aspect. Wind exposure was identified as regularly exposed to winds, especially in the spring months. There is a history of wildfire for the area (High Park Fire in May 2022 which involved over 1,572 acres).

Because of ongoing chipping programs, greater than 75 percent of homes in Woodrock have treated vegetation and created a combustible-free area in the immediate zone. In the intermediate and extended zones, 50-74 percent of homes have treated vegetation. Divide FD indicated there are multiple fuels management plans in place both within the area and in the USFS-managed lands.

Potential Mitigation Strategies

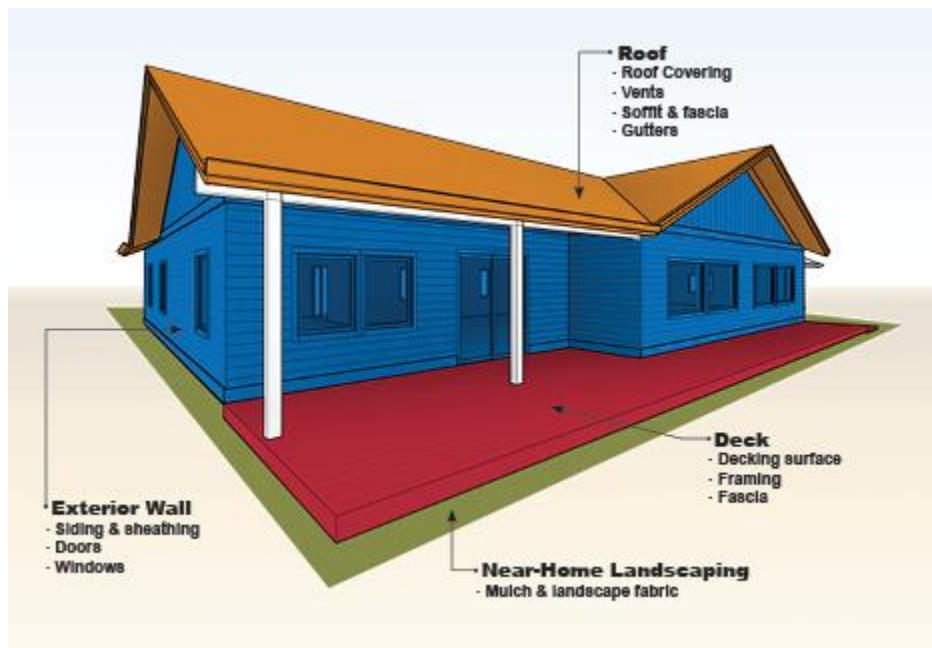
The best strategy is property mitigation to remove combustible materials in the immediate zone as the first priority, followed by the intermediate and extended zones. Routinely removing vegetation and participating in the community’s free chipping program is key to continuous mitigation and risk reduction. Little can be done about natural elements and conditions; however, understanding risk and continuously working to reduce the probability of fire is instrumental in preventing loss of property and environment.



Structural Ignitability (Roofs, Siding, Decks, Landscaping)

The likelihood the materials in and on home will ignite during a wildfire is known as structural ignitability. The ideal time to address home ignition risk is when the structure is in the design phase, and the Woodrock Architectural Committee has taken steps to reduce risk with new construction and renovations. However, homeowners can still take steps to reduce the ignitability of an existing home:

- Ensure the roof has a Class A fire rating
- Remove all leaves, needles and other debris from decks, roofs and gutters
- Screen attic, roof, eaves and foundation vents with 1/8-inch metal mesh
- Screen or wall-in stilt foundations and decks with 1/8-inch metal mesh
- Use tempered glass for windows; two or more panes are recommended
- Create 6 inches of vertical clearance between the ground and home siding
- Replace combustible fencing or gates, at least within 5 feet of the home



Significant Findings from 2023 Risk Assessment

50-75 percent of homes were found to have metal, tile or Class A asphalt or fiberglass shingles. The same percentage of homes were found to have non-combustible soffit vents with mesh or screening. Roughly half of the homes in Woodrock had skirting underneath decks; the remainder had no skirting noted.

About 50-75 percent of homes had wooden attachments with a high combustion likelihood. Regarding materials, greater than 75 percent of homes had multi-paned windows. Divide FD noted that homeowners are maintaining their roofs and gutters, with greater than 75 percent of homes having metal gutter systems.

Access to Structures by Firefighting Equipment (Driveway Width, Overhanging Vegetation)

In wildland–urban interface (WUI) areas, firefighters balance wildfire suppression and structure protection. These tasks are often performed under resource limitations, especially when many structures are at risk. To address this problem, wildland firefighters employ a process called “structure triage” to prioritize structure protection based on perceived defensibility. The presence of a safety zone is the most important factor in determining structure defensibility. In addition, factors including road proximity, vegetation composition, and topography have high importance in firefighter response.



Woodrock employs various mitigation strategies to help with firefighter and first responder access, including chipping programs coordinated with Divide FD, information sessions at annual meetings, and provision of resources to residents and property owners of area mitigation experts.

Protection Capabilities

Road System Accessibility (One-Lane Roads, Turnarounds)

The community has only one way in and one way out with the exception of an emergency fire exit through Mueller State Park, which is co-used by the Park and Woodrock in case of emergency. Most secondary roads in Woodrock do not have turnaround capability save for individual driveways, with most roads having a dead-end.

HOME IGNITION ZONE CHECKLIST

SIMPLE STEPS FROM ROOF TO FOUNDATION TO MAKE A HOME SAFER FROM EMBERS AND RADIANT HEAT

- Clean roofs and gutters of dead leaves, debris and pine needles that could catch embers
- Replace or repair any loose or missing shingles or roof tiles to prevent ember penetration
- Reduce embers that could pass through vents in the eaves by installing 1/8 inch metal mesh screening
- Clean debris from exterior attic vents and install 1/8 inch metal mesh screening to reduce embers
- Repair or replace damaged or loose window screens and any broken windows
- Screen or box-in areas below patios and decks with wire mesh to prevent debris and combustible materials from accumulating
- Move any flammable material away from wall exteriors - mulch, flammable plants, leaves and needles, firewood piles - anything that can burn
- Remove anything stored underneath decks or porches

VISIT [FIREWISE.ORG](https://www.firewise.org) FOR MORE DETAILS

Image by NFPA, with funding from USDA Forest Service

Availability of Fire Hydrants/Water Storage

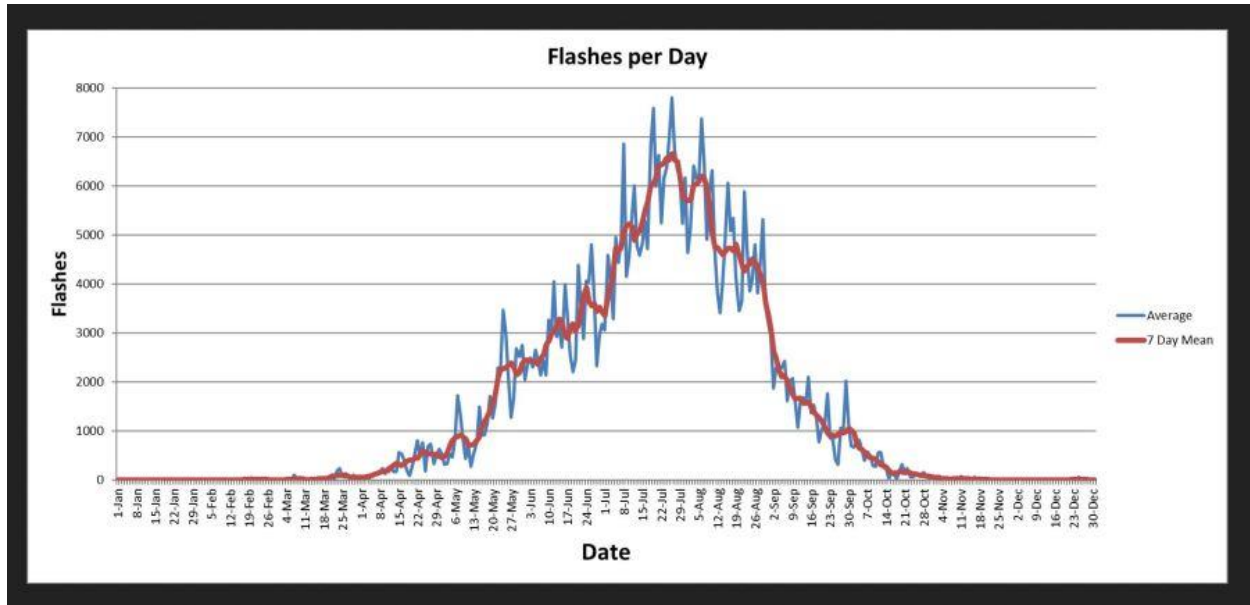
There is no comprehensive community water supply available for firefighting in Woodrock. All homes have private wells for water supply. If power lines were downed as a result of fire, residential wells would become inoperative. A 3,000-gallon community cistern has been installed (Lot 17 at the intersection of Woodrock Way and Homestead Road) and has a dry hydrant, gravity fed connection for firefighting availability; however, without routine maintenance this cistern may well be ineffective. Additional water could be drawn from private ponds located to the east and southwest of the community but an agreement would have to be reached between those property owners and county, state, and federal agencies and most properties in Woodrock are not in close proximity to these ponds.

Fire Risk

General Risk Level (High, Moderate, Low)

Given all factors, including natural risks, manmade hazards, mitigation strategies and fire history, Woodrock has a moderate to high risk of wildfire.

Potential for Lightning-Caused Fires



As noted in this CWPP, lightning-caused fire potential is extremely high, especially in the monsoon months. Normally, the wildfire threat in Colorado increases significantly after the middle of June and usually peaks in early July (see graph above), and remains high through August and early September. Colorado averages about 2500 wildfires each year, with about one quarter of all forest fires in Colorado ignited by lightning. Many of these lightning caused wildfires occur in the absence of rain and are the result of what is referred to as "dry" thunderstorms.

Lightning is often accompanied by strong winds from thunderstorms. These winds can quickly turn smoldering organic material into a raging fire. Thunderstorm winds tend to be erratic in direction and speed, posing one of the greatest dangers for firefighters. Lightning that strikes the ground is usually divided into two categories – 1) negative strikes, and 2) positive strikes, depending on the ionic source region of the thunderstorm. Negative strikes are far more common than positive strikes; the positive strikes, however, are more intense and have a longer contact duration to the ground than the negative strikes, and are more likely to ignite a fire.

Lightning detection technology provides land managers with the ability to identify the general location and charge category of each lightning strike. National Weather Service forecasters help land managers and firefighters by producing fire weather forecasts on a daily basis. Fire weather "spot" forecasts are also provided for those who work on prescribed burns or specific wildfires. Forecasters also issue red

flag warnings for use by land managers when the combination of dry vegetation and critical weather conditions will result in a high potential for the development and spread of wildfires. Land managers, in turn, typically inform the general public of the fire danger in national parks, national forests, and other public lands.

Potential for Human-Caused Fires

According to the US Forest Service, nearly 85 percent of wildland fires in the United States are caused by humans. Human-caused fires result from campfires left unattended, the burning of debris, equipment use and malfunctions, negligently discarded cigarettes, and intentional acts of arson. In Colorado, people caused the majority of the nearly 69,000 wildfires that raged across the State over the past three decades.

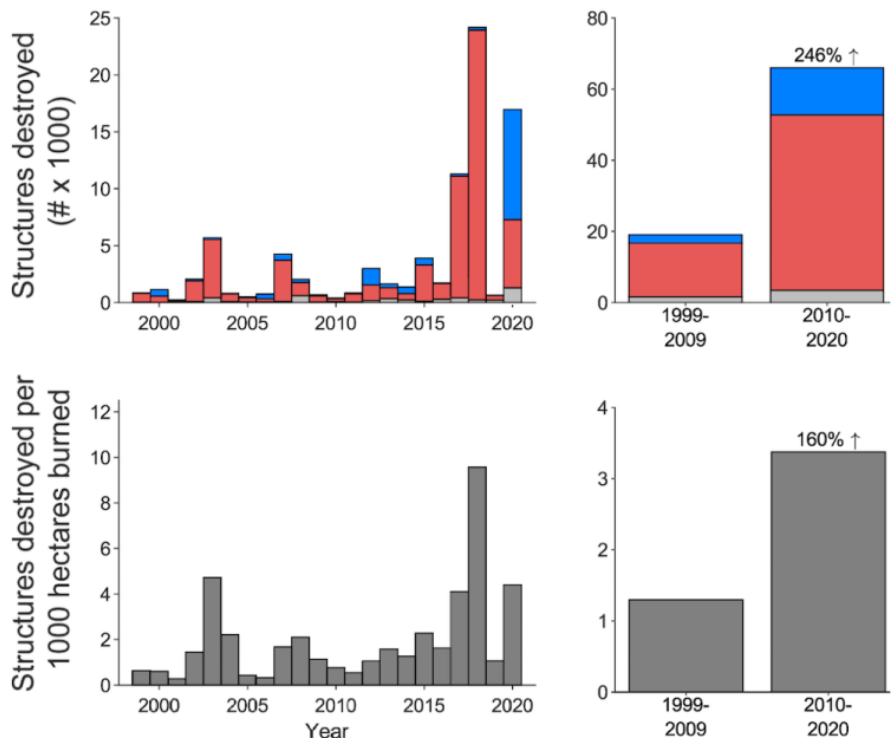
From 1992 to 2020, about 60 percent of Colorado wildfires were caused by human activity, while lightning accounted for the rest, a U.S. Forest Service analysis found. The top three human activities causing the flames in the state are recreation and ceremony (12.4%), sparks from equipment, like cars, chainsaws and ATVs (5.7%), and smoking (5.4%).

In April 2023, the 403 fire started after a homeowner improperly disposed of ashes from a fireplace. The fire burned more than 1,500 acres in Park and Teller counties and resulted in mandatory evacuations.

Woodrock residents should be aware of these risks and understand ways to mitigate human-caused fires. Having a fire extinguisher handy at public gatherings, reminding contractors and guests of the dangers of fires from discarded cigarettes, and regularly maintaining equipment are three strategies that are easily implemented.

Trends in structure losses due to wildfires

About 76% of wildfires that destroyed property from 1999 to 2020 were started by human sources (red) and 18% by lightning (blue). Light gray bars are undetermined ignitions. Total structure loss rose 246% from the first to the second decade. Wildfires are also destroying more structures for every 1,000 hectares (about 4 square miles) burned, up 160%.



Fact Sheets

1. Attic and Crawl Space Vents
2. Decking
3. Immediate Zone Mediation
4. Wildfire Evacuation Checklist
5. Red Flag Warnings
6. Teller County Burn Bans, Stage I, II and III



Attic and Crawl Space Vents

Windblown embers can enter attics and crawl spaces through vents.

INSTALLING THE RECOMMENDED MESH SCREENING AND ELIMINATING STORAGE IS CRITICAL TO REDUCING BUILDING IGNITIONS DURING A WILDFIRE.

VENTS IN ATTICS AND CRAWL SPACES

Attic and crawl space vents, and other openings on the vertical wall of a home, serve important functions, including providing ventilation to remove unwanted moisture from these typically unoccupied spaces and oxygen for gas appliances such as hot water heaters and furnaces. Wind-blown embers are the principal cause of building ignition and can readily enter these spaces, which are often hot and dry. Providing air for ventilation, while also keeping out embers can present a dilemma. Dry materials are more easily ignited by embers, so limiting the entry of embers into attic spaces is critical. Adding to the problem are the combustible materials we tend to store in these spaces (e.g., cardboard boxes, old clothes and other combustible materials) because embers accumulate against them and they can be easily ignited.

HOW VENTS FUNCTION

Ventilated attic spaces have openings in two locations. Inlet air comes from vents located in the under-eave area at the edge of your roof. Exiting air leaves through vents located on the roof or at the gable ends of your home. If your home is built over a crawl space, you will typically have vents on each face of your home to provide cross-ventilation. Experiments conducted at the IBHS Research Center demonstrated that regardless of whether a vent had an inlet or outlet function, when wind blows against its face, it is an inlet vent. Therefore, any vented opening on your home should be able to resist the entry of embers. Unvented attic and crawlspace designs are available for some areas of the country. These designs are more easily implemented with new construction. Check with local building code officials to see if this is an option where you live.

USE MESH SCREENING TO REDUCE EMBER ENTRY INTO VENTS

Building codes require vent openings to be covered by corrosion resistant metal screens, which are typically 1/4-inch to keep out rodents. However, research shows that embers can pass through 1/4-inch mesh and ignite combustible materials, particularly smaller materials such as saw dust. Embers also can enter smaller screening, such as 1/16-inch, but cannot easily ignite even the finer fuels; however, this size screening is more easily plugged with wind-blown debris and is easily painted over if you are not careful when re-painting your house. Installing 1/8-inch mesh screening is suggested in wildfire prone areas, as it effectively minimizes the entry of embers. It's important to note that 1/8-inch screening only minimizes the size and number of embers and does not eliminate them entirely; making it very important to reduce what's stored in the attic and crawl space.

BEST CHOICES FOR VENTS TO RESIST EMBER ENTRY:

1 For (under-eave) inlet vents, opt for a soffit eave design. IBHS research demonstrates that gable end vents and other vent openings are vulnerable to wind-blown embers when the face of the vent is perpendicular to the wind flow, while embers are less likely to pass through vents with a face that is parallel to the wind flow. Therefore, soffit eave construction is preferred to open eave.

2 For outlet vents, opt for a ridge that is rated to resist wind driven rain. These vents have an external baffle at the vent inlet. Vents that have been approved for use by the California Office of the State Fire Marshal.

3 Turbine vents also help keep embers out, but you should attach a piece of 1/8-inch mesh to the bottom of the roof sheathing at the opening for the vent.



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WILDFIRE RESEARCH FACT SHEET



Reduce the Vulnerability of Your Deck to Wildfire

MANY HOMES LOCATED IN WILDFIRE-PRONE AREAS HAVE ATTACHED DECKS, WHICH CAN POTENTIALLY SPREAD FIRE TO THE HOUSE WHEN IGNITED DURING A WILDFIRE.

A burning deck can ignite siding or break the glass in doors or windows, allowing fire to gain entry into the house. Consequently, making decks less vulnerable to wildfire also makes your house less vulnerable. Reducing the deck's vulnerability requires an approach that focuses on the materials and design features used to build the deck, and creating a noncombustible zone around and under the deck.

EMBER EXPOSURE AND IGNITION

Walking surfaces of decks are either solid surface or constructed using deck boards (with between board gaps). Solid surface decks are commonly light weight concrete or tile. Combustible deck board types include: solid wood and wood-plastic composites (these products are more widely used than noncombustible deck boards). Noncombustible deck board types include: metal and fiber cement.

Recent testing at the IBHS Research Center showed embers mostly lodge between deck board gaps and where deck boards rest on joists. Embers can accumulate and potentially ignite decking and combustible joists. Embers can also fall through board gaps and land on materials stored beneath the deck. It's critical to remove all combustible materials from the under-deck area to minimize the opportunity for ignitions; where resulting flames would impinge on the decking (some wood-plastic decking products are vulnerable to flaming exposures).

IBHS tests also showed that even without vegetative debris in between deck gaps, medium density softwood decking products, such as redwood or western redcedar are vulnerable to ember ignitions. Most wood-plastic composites, along with higher density tropical hardwood, and fire-retardant treated decking products are less vulnerable to embers. The vulnerability to embers in these locations is a reminder to remove debris that accumulates in these areas.

BUILDING CODE REQUIREMENTS

The International Wildland Urban Interface Building Code (IWUIC) and the California Building Code are the most commonly referenced construction codes for wildfire-prone areas; both include requirements that focus on the walking surfaces of decks. Noncombustible products are allowed by both codes.

The California Code provides provisions for accepting combustible decking products. These types of products are more commonly used by homeowners living in wildfire-prone areas across the country. Their requirement governs the amount of heat released when

combustible decking is ignited by a gas burner. This mimics burning debris that could be located under the deck, or burning vegetation impinging on the underside of the deck, but does not mimic ember exposure. Combustible decking products that comply with the California Code can be found at: http://osfm.fire.ca.gov/licensinglistings/licenselisting_bml_searchcotest.

The IWUIC prohibits common combustible deck boards with the exception of fire-retardant treated decking (rated for outdoor exposure) and other materials

- Photo Captions:**
- A** Embers that pass through deck board gaps will land on the ground, or on combustible materials stored under the deck, as shown during this IBHS test.
 - B** The near home noncombustible zone that surrounds the foundation should include a noncombustible area underneath the deck.
 - C** Vegetative debris in between deck board gaps will make this location even more vulnerable to ember accumulation.

RECOMMENDATIONS FOR YOUR DECK:

- 1** Combustible materials should not be stored beneath decks. This will effectively create a noncombustible zone under the entire footprint of the deck.
- 2** Routinely remove debris that accumulates in between deck board gaps and debris that can accumulate at the intersection between the deck and house.
- 3** If the deck is a non-fire-retardant treated softwood deck, consider removing and replacing deck boards within a few feet of the house. Be careful to match the deck board thickness.
- 4** When building new decks, select deck boards that comply with the California Building Code requirements. If using wood joists, cover the top and part of the sides with a foil-faced bitumen tape product.

that meet the requirements of an Ignition Resistant Material. However, as of this date, no other materials meet these requirements. The IWUIC allows an enclosed deck option that uses a horizontal construction attached to the bottom of the deck joists. This option should only be used with a solid surface deck. Using this option with deck boards (and the associated gaps), will cause moisture-related degradation problems (corrosion of fasteners and wood rot). Water from rain or melting snow will easily get into the enclosed space and will have a much harder time getting out.



FIREWISE USA™
 ENCOURAGING RESPONSIBLE WILDFIRE RISK

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IMMEDIATE (NONCOMBUSTIBLE) ZONE

Why is it important to create and maintain 5 feet of noncombustible space around the exterior of a building?

Wildfire risks are on the rise, but there are ways home and business owners can take control of their vulnerabilities. Changes made to a structure and its surroundings within 100 feet can make a big impact. Research from the Insurance Institute for Business and Home Safety (IBHS) shows that the first 0 to 5 feet around the structure, known as the immediate zone or noncombustible zone, has the greatest impact on your risk. IBHS and the National Fire Protection Association® (NFPA®) recommend keeping this zone well-maintained and clear of combustible materials.

IBHS Research

The main objective of the 0-to-5-foot zone is to reduce the potential that embers landing near a building will ignite fuels and expose the area around a home to a direct flame (Figure 1). Removing anything that can ignite from embers is critically important. To verify how effective a 5-foot noncombustible zone is around a building, more than 180 tests were conducted in 2018 at the IBHS Research Center to evaluate fire behavior and heating of buildings (Figures 2a & 2b).

Key Observations

- For combustible landscaping, such as wood mulch, the thickness of the mulch bed, wind speed, and location of the flame and building all impact the potential of mulch to ignite and how quickly fire can spread to the building.
- Burning mulch generates embers that can ignite nearby mulch, increasing the chances of direct flame contact spreading to the building.
- When flames are 5 feet away, a building's surface temperature is below temperatures that could cause ignition. However, corners of a building (45-degree angles) experience a higher temperature when exposed to flames, even when a 5-foot space is present. Testing showed that corners can be more vulnerable due to fire spread through fuel (such as mulch) on the ground, because at the same wind speed, wind blowing directly at a wall (90-degree angle) will result in taller flames and more radiant heat, while wind on a corner (45-degree angle) will result in longer flames that are closer to the ground.

Recommendations

- Keep the corner areas of a building clear of combustible materials due to the higher probability of having direct flame touching the surrounding ground.
- Keep gutters free of debris and use metal gutters.
- Install hard surfaces, such as a concrete walkway, or use noncombustible mulch products, such as rock.
- Keep the lawn well irrigated and use low-growing herbaceous (non-woody) plants. Shrubs and trees are not recommended in the 5-foot zone.
- Remove dead vegetation and implement a maintenance strategy to keep the 5-foot zone clear of dead plant materials.
- Mitigating home ignition zones shouldn't stop at 5 feet from the building. It should be combined with the footprint of an attached deck and area that extends away from the building up to 100 feet or to the property line.



Figure 1 – Creating and maintaining home ignition zones (defensible space) around your property are proven ways to reduce risks of property damage during a wildfire, as tests at the IBHS Research Center have shown.



Figure 2a Experiments conducted at the IBHS Research Center to study the effectiveness of creating a noncombustible space around buildings.



Figure 2b Embers impacting a building; left side with combustible (wood) and the right with noncombustible (rock) mulch.

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Learn More

- ▶ For online training and other resources, see nfpa.org/firewise.
- ▶ Access the latest research from IBHS at ibhs.org.



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Wildfire Evacuation Checklist

Make leaving safely second nature



Plan, prepare and practice these simple tips that can help make leaving your home quicker, easier and safer in the event of a wildfire and reduce your risk of injury.

Pre-fire: Plan, prepare and practice before a wildfire occurs.

A wildfire may make it necessary for you and your neighbors to evacuate. Plan, prepare and practice wildfire evacuation together and with your local emergency services. This can help save lives!



Pre-fire: plan

- ✔ Sign up to receive local emergency alerts and warnings on all home phones, cellphones and other devices.
- ✔ Know what your community's emergency notification and evacuation plans are.
- ✔ Plan an evacuation route away from your home and other alternate routes in case the first route is closed or threatened by wildfire.
- ✔ Make sure your designated contact knows your plan and to communicate with you to know you are safe.
- ✔ Know the evacuation plans for locations where household members regularly are such as workplaces, schools and commuter routes.
- ✔ Plan to evacuate family, friends or neighbors who have disabilities.
- ✔ Maintain roads and bridges on your property and in your community if you are responsible for them. Improve roads to have 2 ways out and make them wide enough for emergency vehicles. Make sure everyone can open gated roads. Post load limits on bridges. Build culverts with materials that won't melt.



Pre-fire: prepare

- ✔ Prepack emergency supply kits.
- ✔ Back vehicles into your garage or park them in an open space facing the direction of escape.
- ✔ Keep the gas tank in vehicles at least half full.



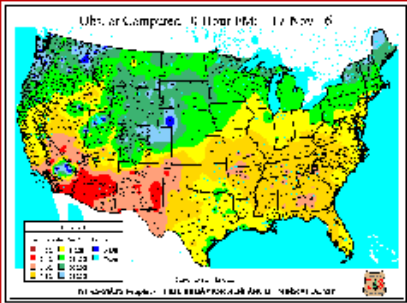
Pre-fire: practice

- ✔ Practice often with everyone in your home, using at least 2 ways out of your neighborhood.
- ✔ Participate in community wildfire drills. If something could keep you from leaving successfully, such as a locked gate, address it immediately.
- ✔ Practice evacuating animals and pets, including how to operate trailers and other vehicles needed to transport them. Know what resources are needed for their care in case of evacuation.

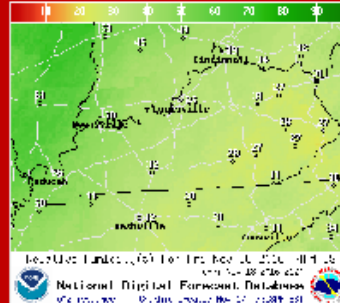


What Is a Red Flag Warning?

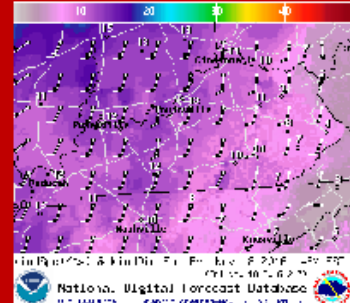
Red Flag Warnings alert fire managers on federal lands to conditions that are highly unfavorable for prescribed burns and that may lead to especially dangerous wildfire growth. To issue a Red Flag Warning, we need the following:



Ten-hour fuels of 8% or less. This parameter describes how much water is held by small vegetation such as grass, leaves, and mulch that take only about ten hours to respond to changes in dry/wet conditions.



Relative humidity (RH) less than 25% for several hours. RH depicts how much water is in the air, relative to the temperature of the air.



Winds 20 feet off the ground of at least 15 mph for several hours.

Red Flag Warnings are usually only issued during the spring and fall fire weather seasons, February 15 – April 30 and October 1 - December 15. When warnings are issued, officials know to curtail planned burns and to be on the lookout for wildfires.

A Red Flag Warning means warm temperatures, very low humidities, and stronger winds are expected to combine to produce an increased risk of fire danger.

-If you are allowed to burn in your area, all burn barrels must be covered with a weighted metal cover, with holes no larger than 3/4 of an inch.

-Do not throw cigarettes or matches out of a moving vehicle. They may ignite dry grass on the side of the road and become a wildfire.

-Extinguish all outdoor fires properly. Drown fires with plenty of water and stir to make sure everything is cold to the touch. Dunk charcoal in water until cold. Do not throw live charcoal on the ground and leave it.

-Never leave a fire unattended. Sparks or embers can blow into leaves or grass, ignite a fire, and quickly spread.



Teller County Fire Ban Guide



The Teller County Sheriff serves as the County Fire Warden and is tasked with monitoring fire danger levels and enforcing Fire Bans adopted by the County Commissioners to prevent wildfires that endanger life & property. Fire Bans are posted on the County website, www.co.teller.co.us and www.co.teller.co.us/OEM. Also check with [United States Forest Service \(USFS\)](http://www.usfs.gov), [Bureau of Land Management \(BLM\)](http://www.blm.gov), [City of Woodland Park](http://www.cityofwoodlandpark.com), and [City of Cripple Creek](http://www.cityofcripplecreek.com) for their current burn status and/or restrictions.

Activity	Orange Flag	Red Flag	Stage I Ban	Stage II Ban	Stage III Ban
Burn Permits/ Slash Burning	NOT ALLOWED				
Outdoor Fires (Developed campgrounds, picnic areas, and private lands)	ALLOWED WITH CAUTION		*ALLOWED <i>*In a permanent fire ring, with water supply or approved fire extinguisher readily available, and 25' away from combustibles.</i>	*NOT ALLOWED <i>*Restriction includes Gas Fire Pits.</i>	
Outdoor Cooking	ALLOWED WITH CAUTION		*ALLOWED <i>*In all BBQ grills or smokers and 10' away from combustibles.</i>	*ALLOWED <i>*Only BBQ grills fueled by propane, natural gas, or liquid fuel and 10' away from combustibles.</i>	NOT ALLOWED
Outdoor Smoking	ALLOWED WITH CAUTION		*NOT ALLOWED <i>*No smoking outside except in an enclosed building, vehicle, in an area cleared of all flammable materials.</i>		
Outdoor Welding and Torching	ALLOWED WITH CAUTION		*ALLOWED <i>*An approved fire extinguisher readily available.</i>	*NOT ALLOWED <i>*Unless approved by the county or the city.</i>	
Fireworks	*NOT ALLOWED <i>*Except commercial fireworks approved by the county or the city.</i>				
Model Rockets	NOT ALLOWED				
Explosives	*NOT ALLOWED <i>*Except for permitted mining/construction operations.</i>				
Chainsaws	ALLOWED WITH CAUTION		*ALLOWED <i>*An approved fire extinguisher readily available. For Stage III, spark arrester and a shovel also needs to be readily available .</i>		
Recreational Shooting	*ALLOWED WITH CAUTION		*ALLOWED	*NOT ALLOWED <i>*Explosive targets, tracer, and incendiary rounds are illegal and never allowed.</i>	

*-denotes exception or rule For more information visit www.tellercountysheriff.com or www.co.teller.co.us/OEM

Declaration of Agreement

The following signatures are those of the Woodrock Board of Directors and attest to our agreement and collaboration on the contents of this document.

Jon Cornick, President

Date Signed

Lori Schleich, Vice President

Date Signed

Mary Callaway, Secretary

Date Signed

James McPherson, Treasurer

Date Signed

Clint Whiting, Roads Chairperson

Date Signed

Mike Miller, Roads Chairperson

Date Signed

Sylvie King, Mitigation & Community Wildfire Protection Chairperson


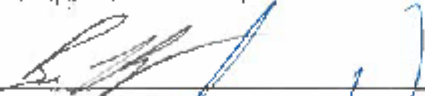
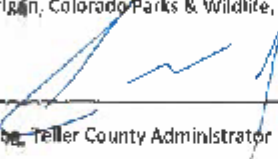
Date Signed

Steve King, Mitigation & Community Wildfire Protection Chairperson

Date Signed

Community Partners and Stakeholders

The following signatures are community partners and stakeholders who indicate their approval and support of the Woodrock Community Wildfire Protection Plan (CWPP).

 _____	<u>May 23rd, 2024</u>
JT McLeod, Chief, Divide Fire Department	Date Signed
 _____	<u>June 27, 2024</u>
Brian Kerrigan, Colorado Parks & Wildlife, Mueller State Park	Date Signed
 _____	<u>08 08 2024</u>
Ross Herzog, Teller County Administrator	Date Signed