

PINEWOOD SPRINGS



COMMUNITY WILDFIRE PROTECTION PLAN

Updated

September 2023

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Introduction

History of the Pinewood Springs Community Wildfire Protection Plan

The initial Pinewood Springs Community Wildfire Protection Plan (CWPP) was created in 2010. While several of the original Action Plan items were accomplished, such as updating the Pinewood Springs Fire Protection District website, completing Defensibility Ratings on all structures within the Fire District and identifying and signing additional escape routes, very few additional projects have been identified or completed. The original CWPP has not been updated since its implementation.

In the summer of 2022, the Pinewood Springs Fire Protection District initiated an effort to update the CWPP. A team made up of members of the Fire Department, the Fire District Board of Directors, the Pinewood Springs Property Owners Association Board, the Pinewood Springs Water District Board of Directors, the Pinewood Springs Road Advisory Board and the Estes Park Estates Road Board was assembled to complete the update. The makeup of the team has ensured participation by a wide cross section of the Pinewood Springs community. In addition to the input from the 13 team members, the team created a public survey that was released in the fall of 2022 to gather additional input. Work continued on the document until its completion in September of 2023.

This updated CWPP uses the original CWPP as a foundation and includes numerous updates, new information, new maps and other improvements designed to increase the usefulness, practicality and ultimately the success of the plan.

Location

The community of Pinewood Springs was established in 1958 and is home to approximately 1,100 full-time residents. Pinewood Springs lies in rugged terrain surrounded by the Roosevelt National Forest and is bisected by US Highway 36. Roads within Pinewood Springs are generally steep, narrow and unpaved, and much of the community is heavily wooded. The community is contained within the Pinewood Springs Fire Protection District, which lies roughly halfway between the towns of Lyons and Estes Park and whose response area includes private and public lands on either side of US 36 between mile markers 8 and 14. The Fire Department is an integral part of the community; our firefighters, chief, officers and the District Board of Directors are all volunteers and all live in the community. While the Pinewood Springs community is small and quiet, US Highway 36 carries over 2.4 million vehicles through the community annually on their way to Estes Park and Rocky Mountain National Park. Many other people come to the Pinewood Springs area to hike, bike and camp in the surrounding National Forest, all of which increases the demand on the Fire Department, and correspondingly, increases the importance of achieving the objectives set forth in this Community Wildfire Protection Plan.

CWPP Update Team

Name	Organization	Roles / Responsibilities
<u>Ted Plank, Fire Chief</u> <u>Andrew Lucas, Assistant Fire Chief</u> <u>Andrew Hart, Captain, Wildland Readiness Coordinator</u> <u>Michael Graham, President, Board of Directors</u> <u>Ardean Johnson, Vice President Board of Directors</u>	Pinewood Springs Fire Protection District	Primary development of CWPP and decision making – community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods
<u>Gabriele Benson, Acting Board President</u> <u>Patty Peritz, Treasurer</u>	Pinewood Springs Property Owners Association	Primary development of CWPP and decision making – community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods
<u>Kim Bologna, Vice President Board of Directors</u> <u>Dan Robinson, Board Member</u>	Pinewood Springs Water District	Primary development of CWPP and decision making – community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods
<u>Joan Paskewitz, President , Road Advisory Board</u>	Pinewood Springs Road Advisory Board (Larimer County GID #2)	Primary development of CWPP and decision making – community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods
<u>Svitlana Soltysiak, President, Estes Park Estates Road Board</u>	Estes Park Estates Road Board (Larimer County PID #25)	Primary development of CWPP and decision making – community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods
<u>Max Erickson, Supervisory Forester</u> <u>Ben Pfohl, Supervisory Forester</u>	Colorado State Forest Service	Facilitation of planning process and approval of CWPP process and minimum standards. Provides input and expertise on forestry, fire and fuels and FireWise Concepts.
<u>Derek Rosenquist, Sergeant</u>	Larimer County Sheriff’s Office Emergency Services Unit	Input and expertise on Hazard Assessment, Defensible Space and FireWise Concepts
<u>Wesley Page, District Forester</u>	United States Forest Service	Input and expertise on Federal lands.
<u>Jessica Pierce</u>	Pinewood Springs Resident	Technical input and grant assistance
<u>Fritz Lampe</u>	Pinewood Springs Resident	Technical input and grant assistance

Community Risk Assessment

**Wildfire Hazard Rating for Subdivision
from Larimer County**

Ingress / Egress	Primary Road Width	Access-ibility	Secondary Road Terminus	Average Lot Size	Street Signs	Fuel Type	Defensible Space Completed	Slope	Response Time	Water Source (within subdiv.)	Water Source (off site)	Structural Materials	Utilities (gas & electric)	TOTAL SCORE
1	1	3	5	3	1	5	10	5	3	5	0	5	10	57

Pinewood Springs Wildfire Hazard Rating: HIGH

These numbers are derived from a Wildland Hazard Rating Form, found on the Larimer County Web site at [Subdivision Wildfire Hazard Review | Larimer County](#). The Hazard rating is derived from assessments of subdivision design, Subdivision Vegetation and Fire Protection capability, with scores ranging from 0-36 (Low), 37-50 (Moderate), 51-64 (High), 65-78 (Severe), and 78+ (Extreme). Larimer County rates Pinewood Springs with a score of 40, putting the community in a “Moderate” category. However, the Pinewood Springs Fire Protection District (PSFPD) has conducted the same survey and found discrepancy in some of the results. Here is a breakdown of the results of the Wildfire Hazard Rating:

Ingress/Egress:

Both Larimer County and PSFPD scored this the best possible, a 1, indicating that the community has two or more primary roads.

Primary Road Width:

Both Larimer County and PSFPD scored this the best possible, a 1, indicating that the primary roads are 20 feet wide, or more.

Accessibility:

Larimer County assessed that our roads had a grade of 5% or less. The PSFPD has determined that many roads, especially in the areas most affected by wildfire risk, are at a grade of more than 5%. So, our score on this category goes from a 1 to a 3.

Secondary Road Terminus:

Larimer County scored this as a 1, which would indicate that we have loop roads, and dead ends have turn-arounds of 45 feet or more. PSFPD would score this as a 5, which would indicate that we have dead end roads that are more than 200 feet long without adequate turnaround space. This is important to note for this community because it could cause confusion in the event of an evacuation, and because it is difficult to get fire apparatus turned around on such roads.

Average Lot Size:

Both Larimer County and the PSFPD agree that the average lot size in Pinewood Springs is 1-10 acres, giving a score of 3. Lots and inhabitation of Pinewood Springs can be found in Appendix A of this document, on page 31.

Street Signs:

Both Larimer County and PSFPD scored this the best possible, a 1, indicating that street signs are present.

Fuel Type:

Larimer County has given this category a rating of 1, which indicates that our primary surface fuel is grass. PSFPD has given this a rating of 5, which indicates brush as our primary surface fuel. A detailed map of area fuel (vegetation) types can be found in Appendix A of this document, on page 34.

Defensible Space Completed:

Larimer County rated this a 5, which would indicate that 30-70% of all property owners in the area have completed establishing and maintaining a defensible space around their home. PSFPD would score this as a 10, which would indicate that less than 30% of the homes have done so.

Slope:

Larimer County and PSFPD agree that the topography in Pinewood Springs has a slope that ranges from 11-30%, which would be a score of 5. A detailed map of area slope can be found in Appendix A of this document, on page 27.

Response Time:

Larimer County scored this as a 1, which would indicate that the response time of the PSFPD is under 15 minutes. While PSFPD personnel are always en route within that amount of time, apparatus does not always arrive on scene in that amount of time. So, PSFPD has scored this as a 5, which would indicate a response time of 16-30 minutes.

Water Source:

Both Larimer County and PSFPD have given this a score of 5, which would indicate that Pinewood Springs has a drafting or dip site for water.

Structural Materials:

Both Larimer County and PSFPD has given a score of 5, indicating that most structures in the area have wood siding with a non-wood roof.

Utilities:

Both Larimer County and PSFPD have given a score of 10, indicating that all gas and electric utilities are above ground.

Our total score is 57. A rating of 51-64 is High.

Initial community risk assessment was done using the most current GIS data available to us, and area history recorded. This document will be updated to reflect new information as it becomes available.

Fuels Hazards

The Wildland-Urban Interface (WUI)

The wildland-urban interface, or WUI, is the area where structures and other human developments meet or intermingle with wildland vegetation. The Pinewood Springs community is surrounded on all sides by National Forest lands, which form the boundaries of this local WUI. A map showing the Pinewood Springs area WUI can be found in Appendix A of this document on page 35. Wildfires in Colorado are a natural part of our ecosystems and help to restore and maintain healthy forests. However, uncontrolled wildland fire is particularly hazardous in the wildland-urban interface due to human development that is close to or within natural terrain and flammable vegetation.



Pinewood Springs contains a variety of vegetation, including predominantly meadow grasses and Ponderosa pine. Douglas fir, spruce, aspen, juniper, and mountain shrubbery are also located throughout the area.

In our area, meadow grasses make up a large part of the vegetation. These grasses grow tall and are dead and dry for much of the year.

Some mitigation work was completed west of Pinewood Springs as part of the Estes Valley Fuels Reduction Program in 2006-2007 and continuing in 2010-2012. Additional mitigation was completed on USFS lands in 2014 just east of Pinewood Springs. Substantial understory growth, and dead and down trees remain as fuel sources in the wildland-urban interface (WUI) within and surrounding the community.

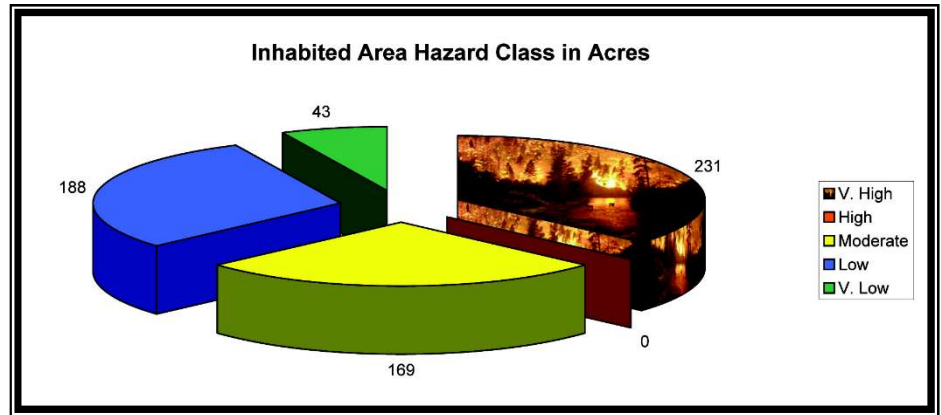
Pinewood Springs rests at the bottom of a valley, at an average elevation of 6,500 feet and is surrounded by mountains that range from 7,500 to 8,075 feet. The slopes in this area can be greater than 45%.

A detailed map of area vegetation can be found in Appendix A of this document, on page 34.

Risk of Wildfire Occurrence

The Pinewood Springs Fire Protection District responds to numerous wildland fire incidents and smoke reports per year. Since 2008, Pinewood Springs firefighters have responded on an average of 12 to 14 wildland incidents per year.

Lightning starts many wildfires in the area, and many are human-caused. US Highway 36 runs directly through the community of Pinewood Springs, increasing the probability of human-caused wildfires. Over the past decade, firefighters have routinely responded to small wildland fires caused by discarded smoking materials, camping and recreation and motor vehicle accidents.



In recent history, the closest major wildland fire to the Pinewood Springs area was the Big Elk Fire in 2002. The Big Elk fire started the afternoon of June 17 along County Road 47, in the Pinewood Springs Fire District. During the peak of the fire, it was categorized as a Type 1 Incident. The Big Elk Fire took two weeks to contain, burned approximately 4,800 acres, and claimed the lives of three firefighters.

In the fall of 2020, the Pinewood Springs area was simultaneously threatened by three major wildfires. The Cameron Peak fire approached from the northwest, the East Troublesome fire jumped the Continental Divide and approached from the west and the Calwood fire moved quickly toward Pinewood Springs from the south before high winds pushed the flames to the east and away from the area.

In 2021, the east side of Aggressive conditions Pinewood pilot was lost



Kruger Rock fire burned from the Estes Park toward Pinewood Springs. fire attack and favorable weather stopped this fire, but not before Springs was evacuated and a SEAT in the aerial firefighting effort.

Homes, Businesses and Essential Infrastructure at Risk

Pinewood Springs has approximately 400 homes (see map on page 31), most of which would be at risk in the event of a wildfire. The areas of Estes Park Estates and portions of Pinewood Drive, Pinewood Court, Chipmunk Drive and Elk Road are of special concern, due to the limited access, steep slopes and heavy fuel load.

Pinewood Springs is also home to a quarry, a bakery/gift shop and a wholesale smoked fish production business along with a church, horse properties and numerous home-based businesses. As a result of the Covid-19 pandemic in 2020-2022, there are significant numbers of residents working remotely from home.

US Highway 36 is a major thoroughfare that connects Lyons to Estes Park. The highway carries at least 2.4 million vehicles annually through Pinewood Springs to Estes Park and Rocky Mountain National Park. Estes Park depends heavily on tourism for its economy, and should the highway have to close, it would have an indefinable negative impact on the Estes Park economy.

Pinewood Springs has a 32 acre-foot community water storage reservoir, a water treatment plant, two water storage locations, four water storage tanks that total an additional storage capacity of 1.22 million gallons of water, district water distribution infrastructure and includes the Little Thompson river watershed.

The Pinewood Springs Fire Station was remodeled and expanded in 2017. The original sixty-year-old building was almost completely reconstructed and a new 4-bay apparatus garage was added.

Additional infrastructure of value in Pinewood Springs includes three-phase electrical power, primarily used by the water treatment plant, an above ground phone line coming up the canyon from Lyons, and two phone equipment cabinets containing electronics. Two private internet providers, Xbar7 and Rise Broadband, have infrastructure throughout the community. At the time of this CWPP update, a fiber optic line and associated electronics buildings and cellular towers were under construction in the US 36 corridor between Lyons and Estes Park, with infrastructure located within the Pinewood Springs Fire Protection District response area. A map of Pinewood Springs infrastructure can be found in Appendix A of this document, on page 32.

Estes Valley Fuels Reduction Project

Some of the areas surrounding Pinewood Springs are being mitigated by the USFS through the Estes Valley Fuels Reduction Program. This program is intended to mitigate the woods in Wildland Urban Interfaces around the town of Estes Park, and the inhabited areas around Estes Park. Over 8,000 acres are to be treated through this program.

Local Preparedness & Firefighting Capability

Access Concerns

Pinewood Springs is located within the Wildland Urban Interface, or WUI. Many of the roads in the community are narrow, steep, have tight turns and inadequate turnarounds and dead ends. These areas make for difficult apparatus access and egress. Evacuation routes are not adequate as there are minimal loop routes. All viable evacuation routes have not yet been defined and identified.

Helicopter Landing Zones

Pinewood Springs Fire Protection District has designated helicopter landing zones, with the primary landing zone being across the street from the fire station at approximately N40.277 degrees and W105.360 degrees. There are other meadows that can be used for landing zones in the area, and there are locations on US 36 itself that can also be used.

Staging and Safety Zones

There are a few staging areas that have been used during incidents in the past, each accommodating only a small number of apparatus in single file. There are numerous open meadows that make for reasonable safety zones.

Water Sources

In addition to the three hydrants in Pinewood Springs, water can be drafted from multiple water sources. Water can be drafted by truck or helicopter from various locations along the Little Thompson River, by truck or helicopter from Crescent Lake (a seasonal lake) or by truck or helicopter from the Pinewood Springs Reservoir.

Pinewood Springs has a unique situation with regard to water. There is no water to spare in the area, and if apparatus were to take too much water from the system or take it too quickly it could cause a collapse in the community's water infrastructure. We are a community that would benefit from more cisterns for fire use.

Fire District Organization

The Pinewood Springs Fire Protection District consists of five board members, a Fire Chief, two Assistant Chiefs, three Captains, and four Lieutenants. Including officers, there are 18 active firefighters at the time of this CWPP update. There are various staff positions held, as well, including Fire Marshal, Training and Safety Specialist, Public Information Specialist, Information Specialist, Personnel and Records Specialist, Fitness Coordinator, Medical Coordinator, Wildland Mitigation Specialist, Apparatus Maintenance Coordinator, Personal Equipment Coordinator, Wildland Readiness Coordinator, and Facilities Maintenance Coordinator.

Inventory of Fire Protection Resources

As of July 2023, the Pinewood Springs Fire Protection District (PSFPD) consists of a maximum of 25 members. Firefighter training includes wildland fire and Red Card certification; at the time of this CWPP update 10 Pinewood Springs firefighters have current Red Card certification. For apparatus, PSFPD has one Brush Truck with a 250-gallon tank, foam and portable CAFS; one Type 6/Mini-pumper with a 300-gallon tank with CAFS; one Type 2 engine with a 750-gallon tank, 1,250 GPM pump and foam; and a Type 4 tender with a 2,000-gallon tank and 1,000 GPM pump. PSFPD also has a Utility Terrain Vehicle, with a 50-gallon tank and foam capability, capable of getting supplies and water to hard-to-reach locations, and an ambulance body converted for use as a Utility and Support vehicle.

The fire department has strong relationships and mutual aid agreements with neighboring agencies, including Estes Valley Fire Protection District, Volunteer Fire Department of Big Elk Meadows, Lyons Fire Protection District, Hygiene Fire Protection District, Lefthand Fire Protection District and Allenspark Fire Protection District, all of which can be counted on to provide assistance in the event of a wildfire in the Pinewood Springs area.

Pinewood Springs Fire Station

As noted earlier in this document, The Pinewood Springs Fire Station was remodeled and expanded in 2017. The original sixty-year-old building was almost completely reconstructed and a new 4-bay apparatus garage was added. The building has a propane-fueled backup generator and can serve as a community hub in the event of a disaster. At the time of this writing, the Pinewood Springs Fire Protection District was working with Poudre Valley REA on the preliminary plans for installation of a Micro Grid system to be located at the fire station. Such a system would provide virtually uninterrupted electrical power for much of the community.

Community Evacuation

The current evacuation plan for the Pinewood Springs Fire Protection District consists of three geographic polygons utilized for Emergency Alerts and notifications. Larimer County residents with land lines are automatically alerted by the Larimer Emergency Telephone Authority (LETA) using Everbridge. Residents are regularly encouraged to register their other communication devices with LETA (or NORCOAlert.org) to ensure that they receive emergency alerts even if they do not have landline telephones. Register at [LETA - 911 Alert - Sign Up \(everbridge.net\)](https://www.everbridge.net/leta). Residents are also encouraged to download the NORCO Alert ReachWell App ([Reachwell App | NOCO Alert](https://www.reachwellapp.com/norco-alert)) which allows them to select the language in which they receive emergency alerts.

Because the Pinewood Springs Fire Protection District straddles the border between Larimer and Boulder counties, area residents may also receive emergency alert notifications from the Boulder County Dispatch Center through the Everbridge system. Residents of Pinewood Springs are encouraged to register for Boulder County Emergency Alerts at [Boulder - 911 Emergency & Opt In - Sign In \(everbridge.net\)](https://www.everbridge.net/boulder).

In the event of a wildland fire or other incident requiring evacuations, residents would be notified via the systems described above. In addition, law enforcement and firefighters will go door to door to ensure that all residents are advised to evacuate.

One of the priorities of this CWPP is to ensure that Pinewood Springs area residents are regularly educated about Emergency/Evacuation notification procedures. An Evacuation Drill hosted by Larimer County and the Pinewood Springs Fire Protection District was conducted in July of 2023. Additional evacuation information can be found in Appendix B of this document on pages 41 and 42.

Community Hazard Reduction Priorities

PINEWOOD SPRINGS COMMUNITY HAZARD REDUCTION PRIORITIES

Priority 1: RESIDENT and PROPERTY OWNER EDUCATION

The Pinewood Springs Fire Protection District and the Pinewood Springs Property Owners Association will dedicate resources toward educating Pinewood Springs area residents and property owners about wildfire in the Wildland Urban Interface (WUI). Through social media, email, mailings, community events, PSFPD Defensible Space Surveys and other means, information and educational resources will be made readily available with the goal of raising knowledge and awareness about wildfire and motivating residents and property owners to take action to protect their properties and the community.

Priority 2: RESIDENT PREPAREDNESS

The Pinewood Springs Fire Protection District and the Pinewood Springs Property Owners Association will focus resources on ensuring that area residents are engaged and prepared for wildfire and other hazards. Residents will be encouraged through ongoing social media, email, community preparedness events and other means to:

- Register to receive emergency alerts and communications
- Prepare their families, pets, livestock and homes to evacuate safely and quickly
- Prepare to shelter in place should it become necessary
- Prepare their homes and property to withstand wildfire.

Priority 3: FIRE DISTRICT PRE-PLANNING AND PREPAREDNESS

The Pinewood Springs Fire Protection District will focus additional resources on preparing for the eventual arrival of a significant wildfire in the area. Existing evacuation pre-plans will be reviewed and fine-tuned as necessary. Firefighters will receive additional training in the areas of Structure Protection, Water Supply and familiarity with new tools, such as fire-retardant applications. Communications with Mutual Aid partners will be reviewed and practiced.

The PSFPD will work toward updating Defensibility Ratings for individual properties in the District in order to assist with wildfire response planning and decision-making. A property owner's individual rating may be shared with that owner upon request.

Priority 4: TREATMENTS AND ACTIONS

A: Property Mitigation

The Pinewood Springs Fire Protection District (PSFPD) and the Pinewood Springs Property Owners Association (PSPOA) will encourage homeowners to prepare their homes and property to withstand wildfire by seeking Mitigation/ Defensible space surveys through the PSFPD and other available resources. Residents will be encouraged to follow through with suggested strategies for mitigating properties and creating defensible space around homes.

Defensible space is the area around a home or other structure that has been modified to reduce fire hazards. In this area, natural and manmade fuels are treated, cleared or reduced to slow the spread of wildfire. Establishing defensible space reduces the likelihood of a home igniting by direct contact with flame or by exposure to the radiant heat of the fire. It also helps limit local production of embers and reduces the chance a structure fire will spread to neighboring homes or surrounding vegetation. Extensive information about residential fire mitigation and the creation of defensible space can be found in a publication from the Colorado State Forest Service entitled “The Home Ignition Zone”. A copy of this publication is included in Appendix B of this document on page 44.

The PSFPD has an assigned Wildfire Mitigation Coordinator whose mission is to assist with education of residents about wildfire mitigation and help facilitate mitigation efforts within the community. This volunteer staff position is also the Fire District point of contact for the CWPP. The PSFPD and the PSPOA will continue to work to identify resources to assist residents with accomplishing mitigation goals.

B: Road Advisory Board Actions

- The Pinewood Springs Road Advisory Board will encourage and facilitate property owners to perform mitigation work on the public road right-of-way adjacent to their property, up to the edge of the road where possible.
- As resources allow, the Road Advisory Board, in collaboration with the PSFPD, will evaluate and develop projects improving the road network to better facilitate Responder access, such as creating turnaround areas where appropriate and widening bottleneck areas.
- As resources allow, the Road Advisory Board and PSFPD will enhance existing evacuation routes and identify new ones.

C: U.S. Forest Service Mitigation Projects

The PSFPD will work with the US Forest Service with establishing areas of priority for additional mitigation work to be completed in the Wildland Urban Interface in our area.

D: Community Projects and Grants

Local Boards, Agencies and residents will work together to identify and secure resources for projects that will aid the Community in withstanding the impacts of wildfire. Specific priorities for mitigation work include:

1. Treat individual properties located on the borders of the Pinewood Springs community in order to create and expand mitigated areas already in place on adjacent Roosevelt National Forest lands. The primary focus areas would include:
 - Properties along the south and west side of Apache Rd., Chipmunk Dr., Pinewood Dr. and Pinewood Ct.
 - Properties along the south side of Elk Rd.
 - Properties along the east side of Estes Park Estates Drive and the south side of Appleby Dr., Lookout Dr. and Easton Rd.

A map showing the approximate locations of these Priority Mitigation Areas can be found in Appendix A of this document on page 39. Owners of the properties in these locations will be

contacted to request their participation in mitigation efforts.

2. Treatment of areas in the community owned and managed by the Pinewood Springs Water District and the Pinewood Springs Property Owners Association to be used as "sample" mitigation measures that local residents could observe and model their own mitigation efforts after.

Action Plan, Management & Assessment Strategy

Pinewood Springs Community Action Plan 2023

1. Community Wildfire Awareness Day event to be held in May, hosted by the PSFPD.
2. The PSPOA web site Resource tab to be finalized and shared to all local agency web sites, as well as pinned to Pinewood Springs Community and PSFPD Facebook pages.
3. PSPOA Community Areas Cleanup and Mitigation Workday to be held in May following the Community Wildfire Awareness Day event. (PSPOA)
4. Pinewood Springs Firefighter Calendar with wildfire preparedness and mitigation tips to be produced and distributed to residents. (PSFPD)
5. Coordinate and fund dumpster rental for residents of the community to dispose of slash and yard waste generated in fire mitigation efforts. (PSPOA)
6. Submit an application for the 2023 Larimer County Community Mitigation grant program. (CWPP Executive Board)
7. Develop social media/email blast content for regular publication, including tips, links, memes. (PSFPD, PSPOA)
8. Identify volunteers for creation of teams for development of projects and pursuit of grants and other funding sources. (All CWPP Update Team Members)
9. Identify and prioritize areas of roads and right-of-way for improvements to egress/access. (PS Road, EPE Road, PSFPD)

Funding Needs

Several Action Plan projects, such as the Community Wildfire Awareness Day event, the Community Areas Cleanup and Mitigation Workday and dumpster rentals can be accomplished with funding available through the Pinewood Springs Fire Protection District and the Pinewood Springs Property Owners Association.

While inexpensive items in the current Action Plan can be accomplished with minimal funding, there are needs for future Action Plan projects that require significant resources. The CWPP Update committee has discussed two major ideas for hardening the area against wildfire:

- Secure funding to create a single, large mitigation area that includes all properties in the Pinewood Springs Fire Protection District and in which any or all residents could opt-in for mitigation work. This would result in a single contract instead of hundreds of residents each applying for individual grants.
- Identify grant funding or other resources to allow residents to upgrade their existing homes with fire-resistant roofing and siding materials and low U-Factor windows, all of which will greatly increase the chances of a home surviving the passage of a wildfire.

In addition, significant resources would be necessary to fund road improvements such as turnouts,

turnaround areas and additional escape routes, and to identify and construct egress trails for those residing in areas with only one access route.

Pinewood Springs CWPP Management and Assessment Plan

The CWPP Update team recognizes that perhaps the most significant obstacle to successful implementation of a Community Wildfire Protection Plan is ensuring that the plans, projects and goals identified in the plan are completed.

The Pinewood Springs community is unique in that there are several local districts with elected or County-appointed boards that manage water, roads and fire protection, as well as a property owners association. Members of those organizations make up the current CWPP Update team. In order to maintain accountability in achieving the goals of the CWPP and to ensure continuity over time, the CWPP Update team will establish an ongoing Community Wildfire Protection Plan Executive Board.

A. CWPP Executive Board Authority

The Community Wildfire Protection Executive Board does not have statutory authority of any kind. The CWPPEB exists for the purpose of encouraging facilitation of the goals of the CWPP through the Pinewood Springs Fire Protection District and other agencies as appropriate.

B. CWPP Executive Board Members

Each of the local agencies currently existing in Pinewood Springs will, on an annual basis, assign one Director to serve on the CWPP Executive Board:

Pinewood Springs Fire Protection District
Pinewood Springs Water District
Pinewood Springs Road Advisory Board (Larimer County GID #2)
Pinewood Springs Property Owners Association
Estes Park Estates Road Board (Larimer County PID #25)

The Fire Chief and the Wildfire Mitigation Coordinator will also serve on the CWPP Executive Board. In addition, two or more members of the Pinewood Springs community at large will be recruited to serve on the CWPP Executive Board. Participation on the CWPPEB is voluntary, but it is hoped that the local groups providing services to Pinewood Springs will continue to be engaged.

C. CWPP Executive Board Meetings

The CWPP Executive Board will meet quarterly to review progress on the elements of the CWPP, develop and implement strategies for accomplishing the goals of the Pinewood Springs CWPP and to update the CWPP on an ongoing basis as necessary. The CWPPEB may choose to meet more or less often as required.

Summary

This CWPP is a starting point for protecting the community from wildfire. As the community and the needs of the community change over time, this document may also be changed to reflect those needs. The CWPP serves as a form of guidance for wildland mitigation, and participation by community members is strongly encouraged. The CWPP is an entirely voluntary participation plan and does not force any action on any public or private property, nor does it force any action by any resident or property owner.

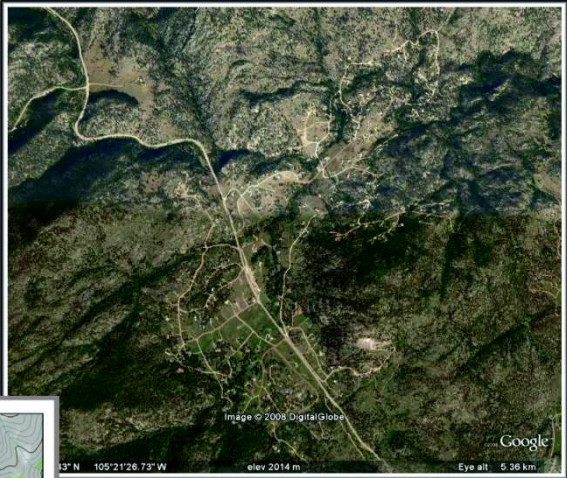
The purpose of the CWPP is to open the lines of communication between community members about wildfire mitigation and wildfire hazards, to educate and prepare residents and property owners in the area and to identify, obtain and make available grant funds and other resources that can assist with the associated activities. It is also intended to identify areas within the community and surrounding areas that can be improved and to formulate and implement plans to keep Pinewood Springs prepared and safer in the event of wildfire.

Your interest and involvement in this plan will determine the plan's effectiveness, level of involvement and continuation.

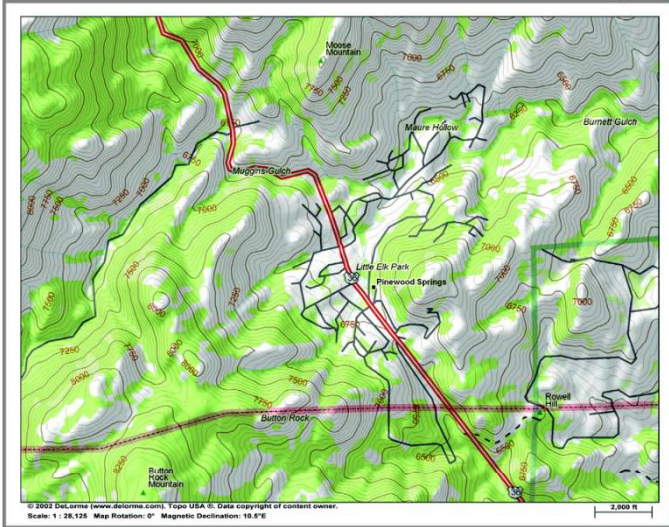
Appendix A: Pinewood Springs Maps

Pinewood Springs CWPP Area Topography

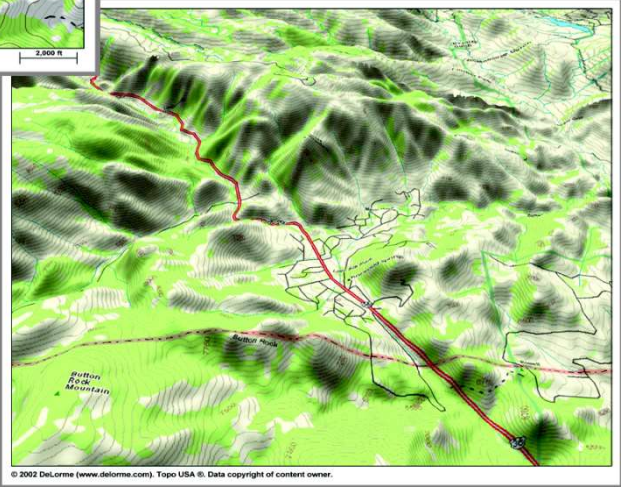
Aerial Photograph

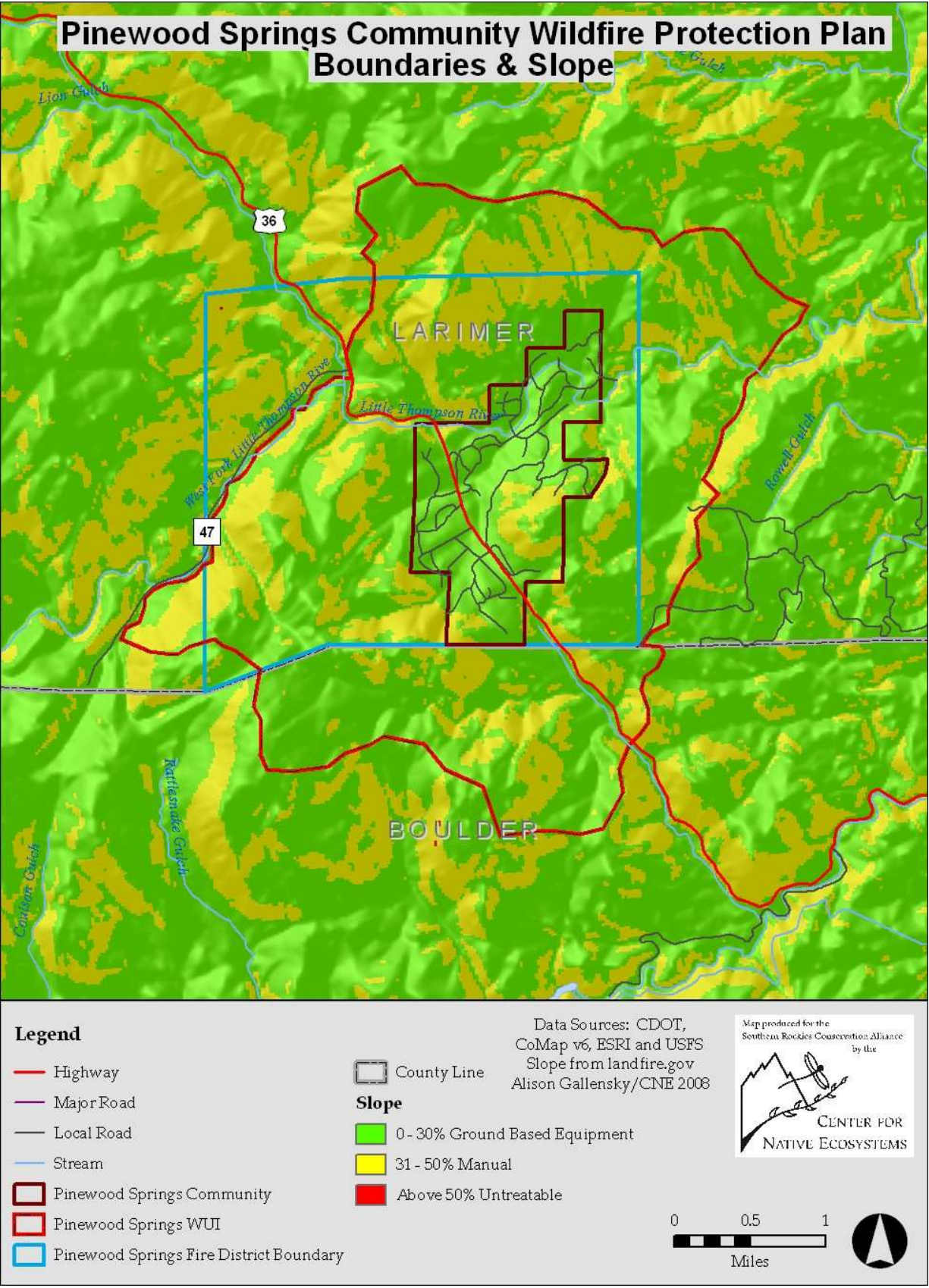


Topographic Map

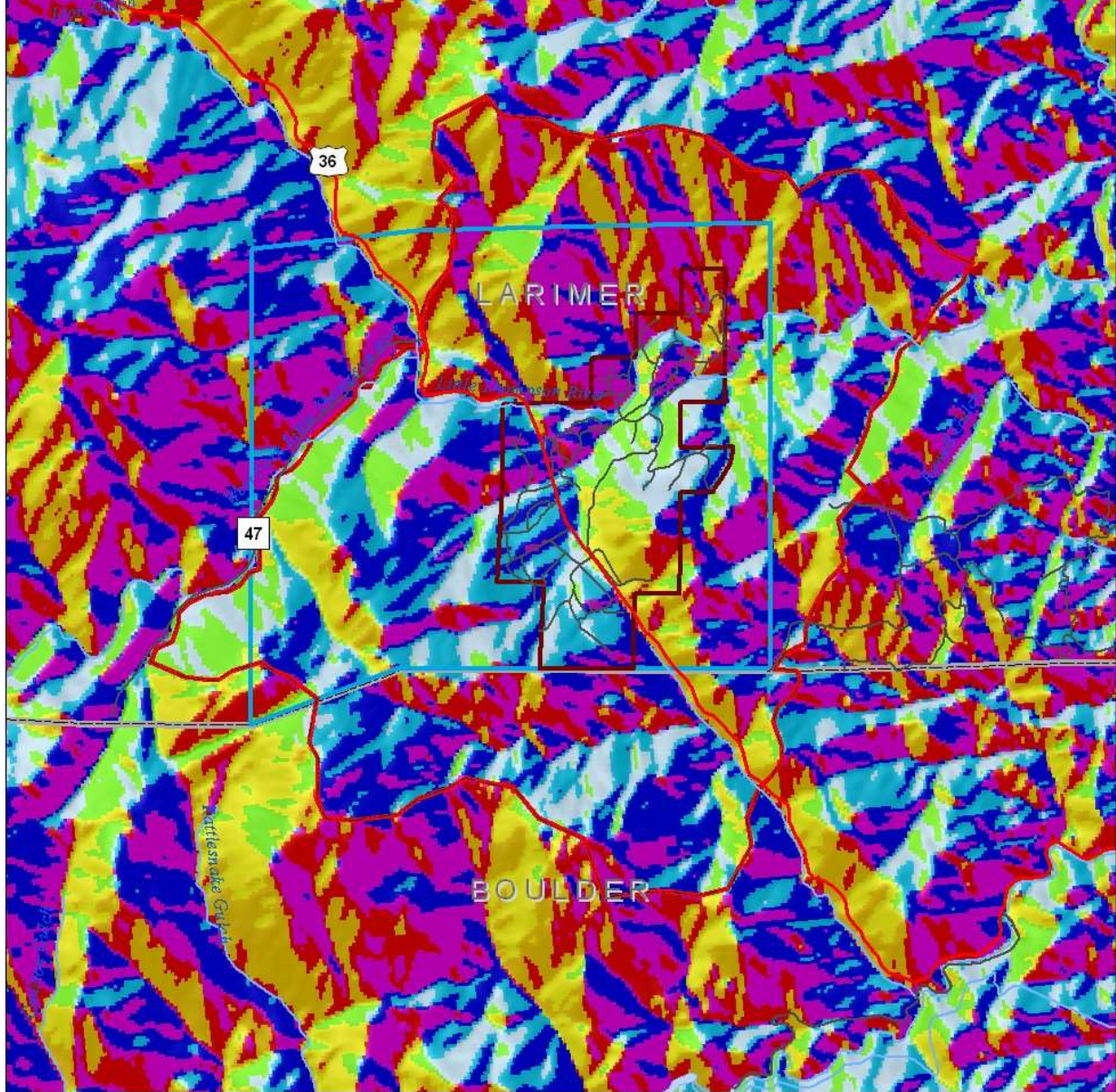


3-D Topographic Map

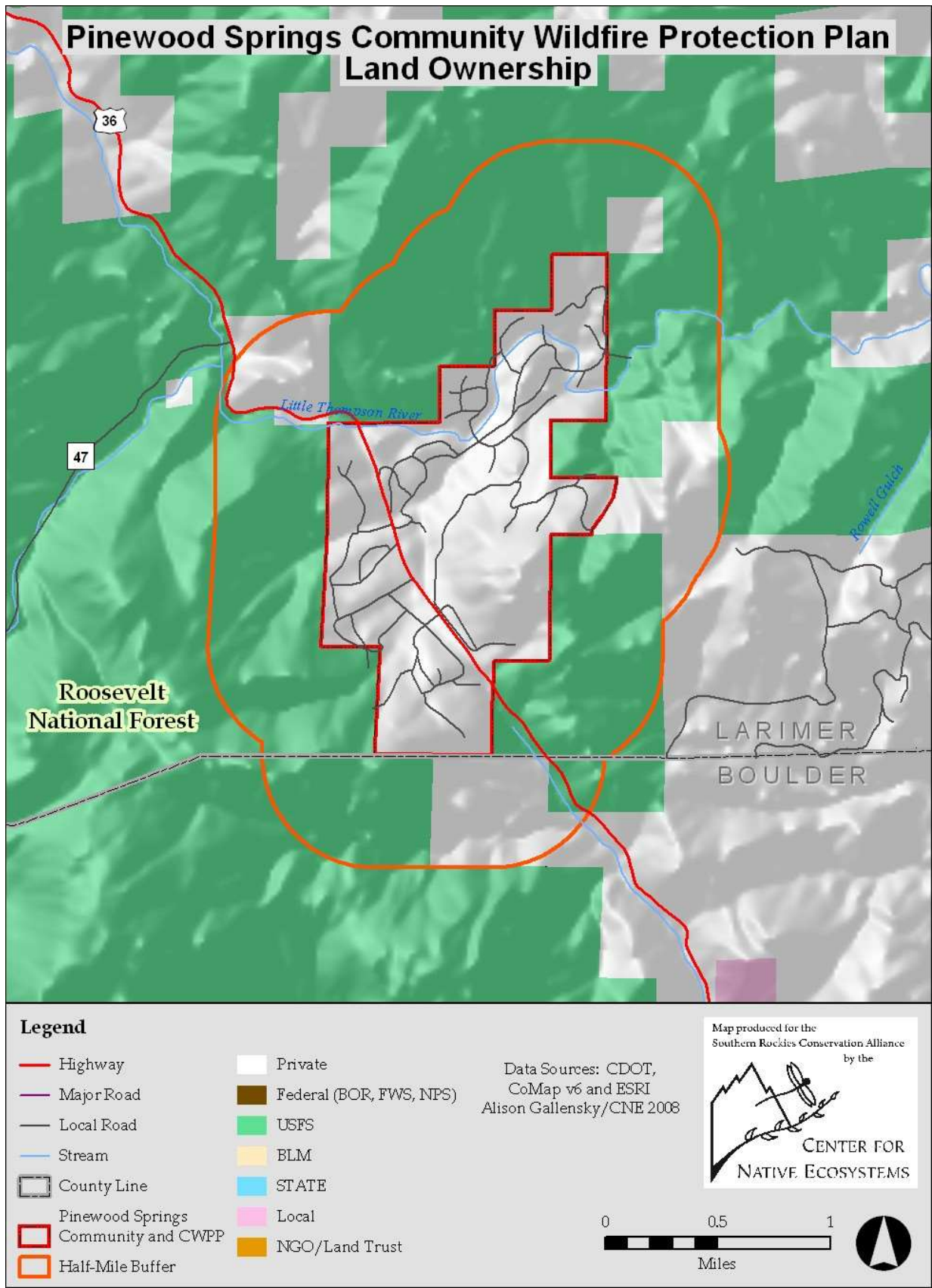




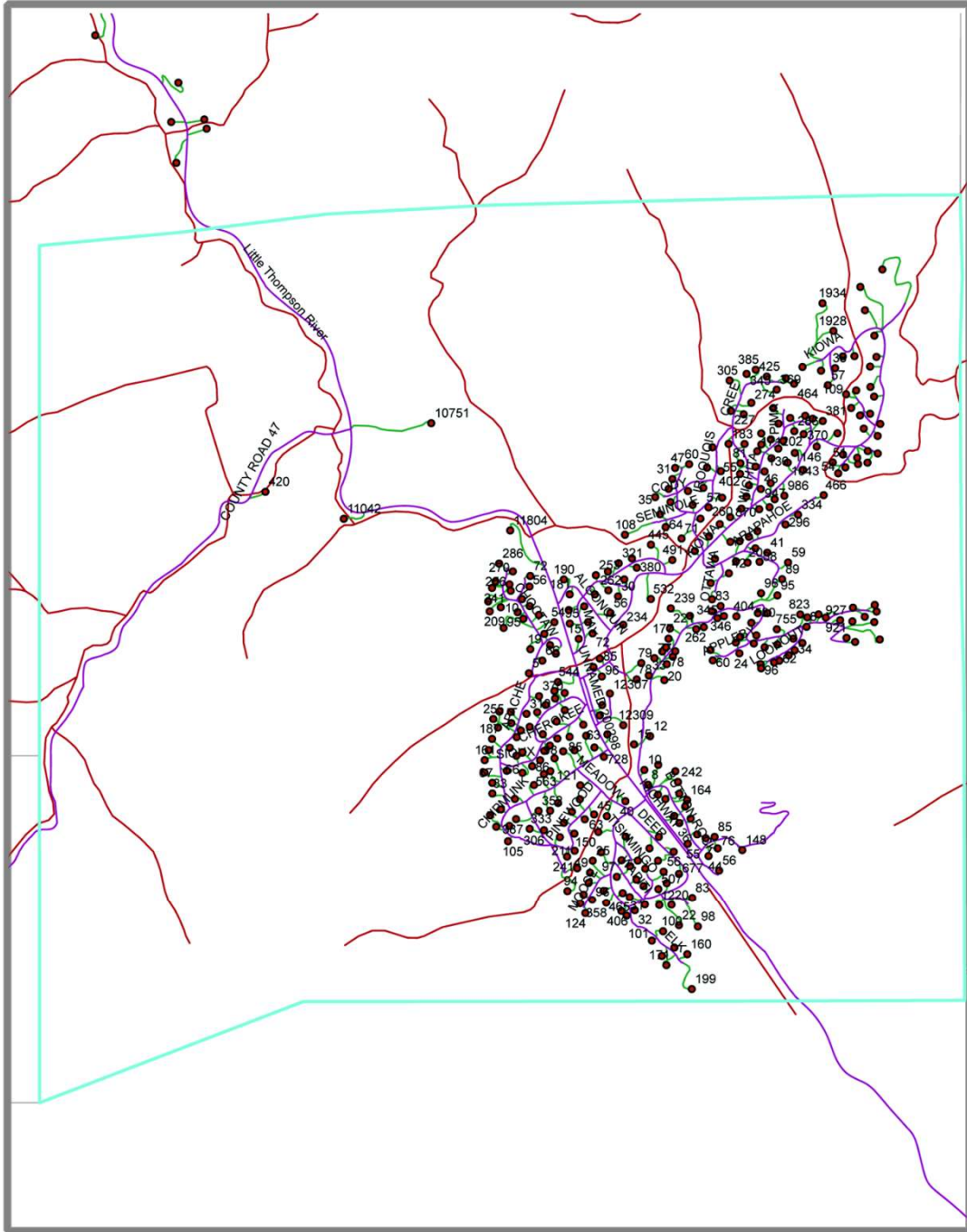
Pinewood Springs Community Wildfire Protection Plan Boundaries & Aspect - Solar Direction of Slope



Legend		Aspect		South Southwest West Northwest North Northeast East Southeast
Highway	Major Road	Flat	North	Data Sources: CDOT, CoMap v6, ESRI and USFS Aspect from landfire.gov Alison Gallensky/CNE 2008
Local Road	Stream	Pinewood Springs Community	Pinewood Springs Fire District Boundary	
Pinewood Springs WUI	County Line			Map produced for the Southern Rockies Conservation Alliance by the CENTER FOR NATIVE ECOSYSTEMS
				0 0.5 1 Miles

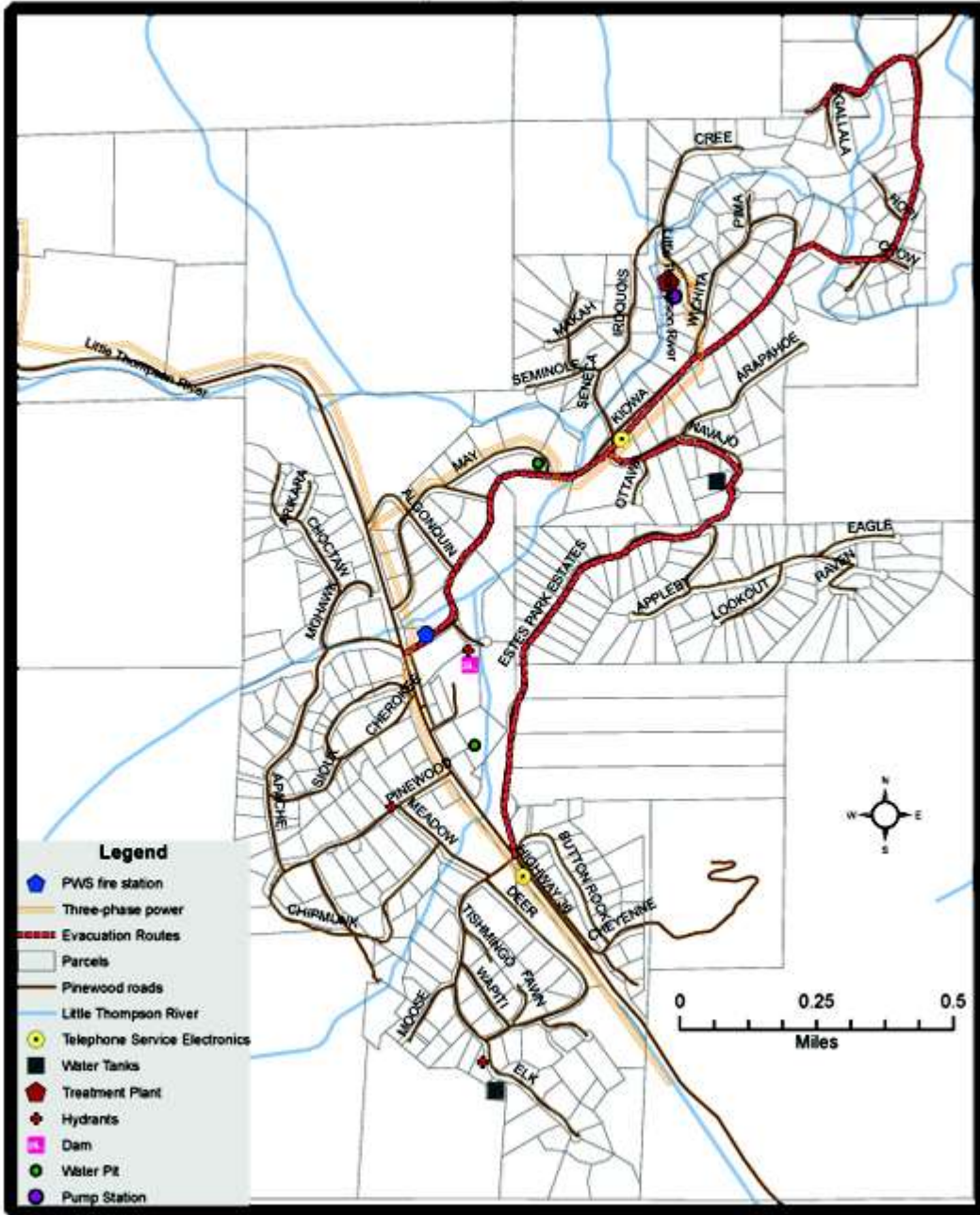


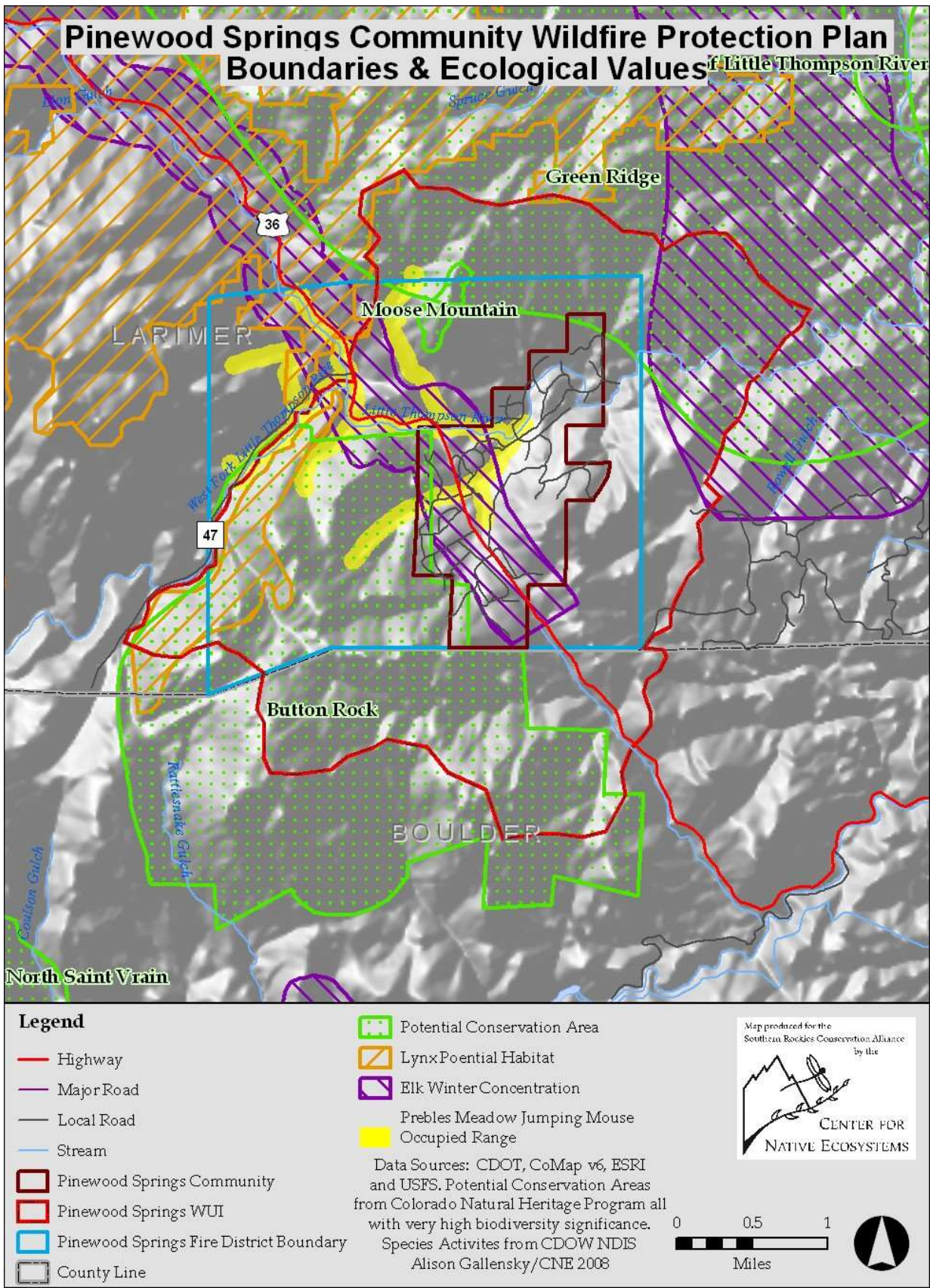
Pinewood Springs CWPP Map of Inhabitation



- Key**
- = Residence
 - = Road
 - = River / Stream
 - = Fire District Boundary

Pinewood Springs CWPP Map of Critical Infrastructure







Colorado Wildfire Risk Public Viewer

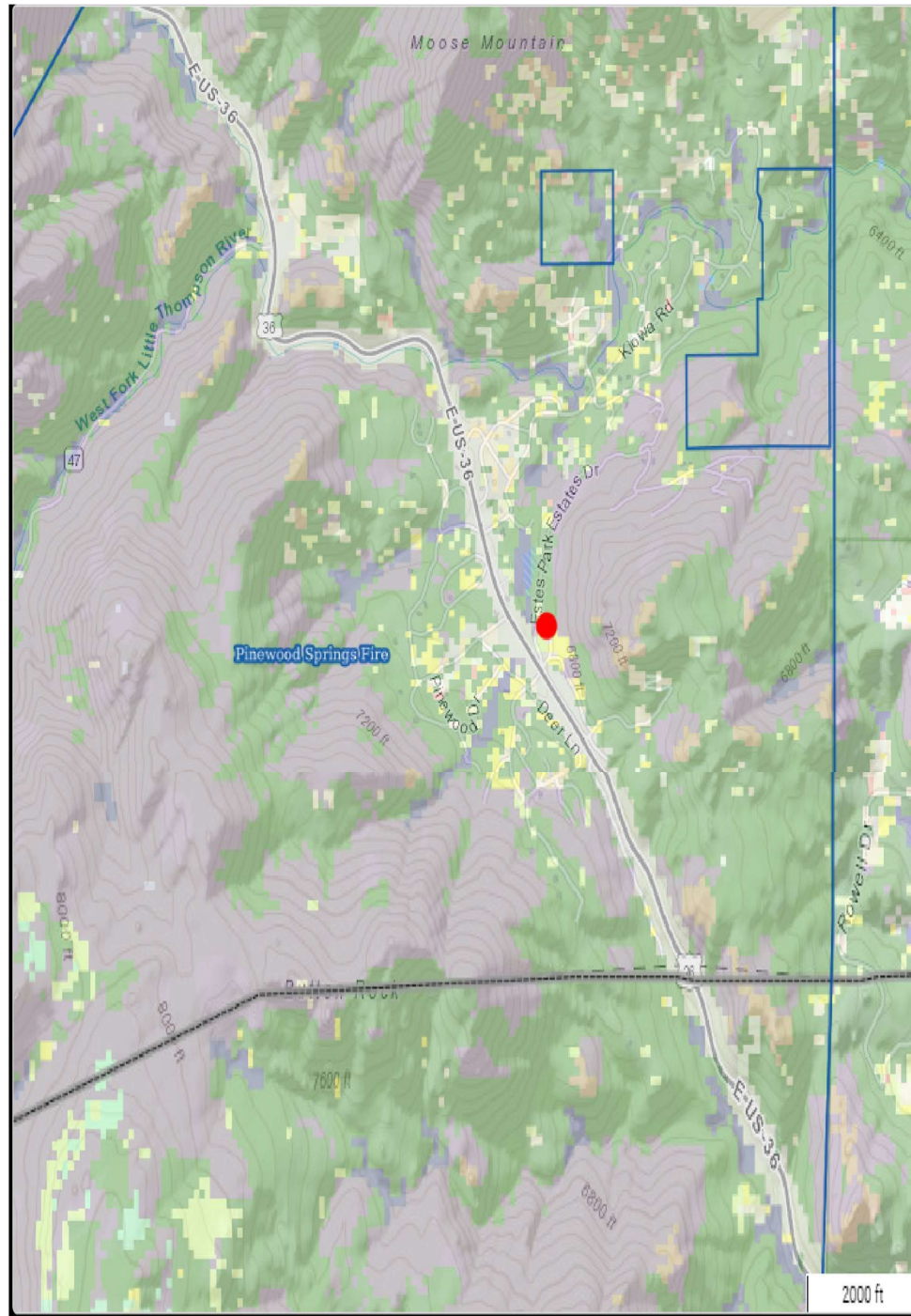
Pinewood Springs Vegetation Types

General vegetation and landcover types.

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Vegetation

- Agriculture
- Grassland
- Introduced Riparian
- Lodgepole Pine
- Mixed Conifer
- Oak Shrubland
- Open Water
- Pinyon Juniper
- Ponderosa Pine
- Riparian
- Shrubland
- Spruce-Fir
- Developed
- Sparsely Vegetated
- Hardwood
- Conifer-Hardwood
- Conifer
- Barren





Colorado Wildfire Risk Public Viewer

<https://co-pub.coloradoforestatlas.org>

Pinewood Springs Wildland Urban Interface

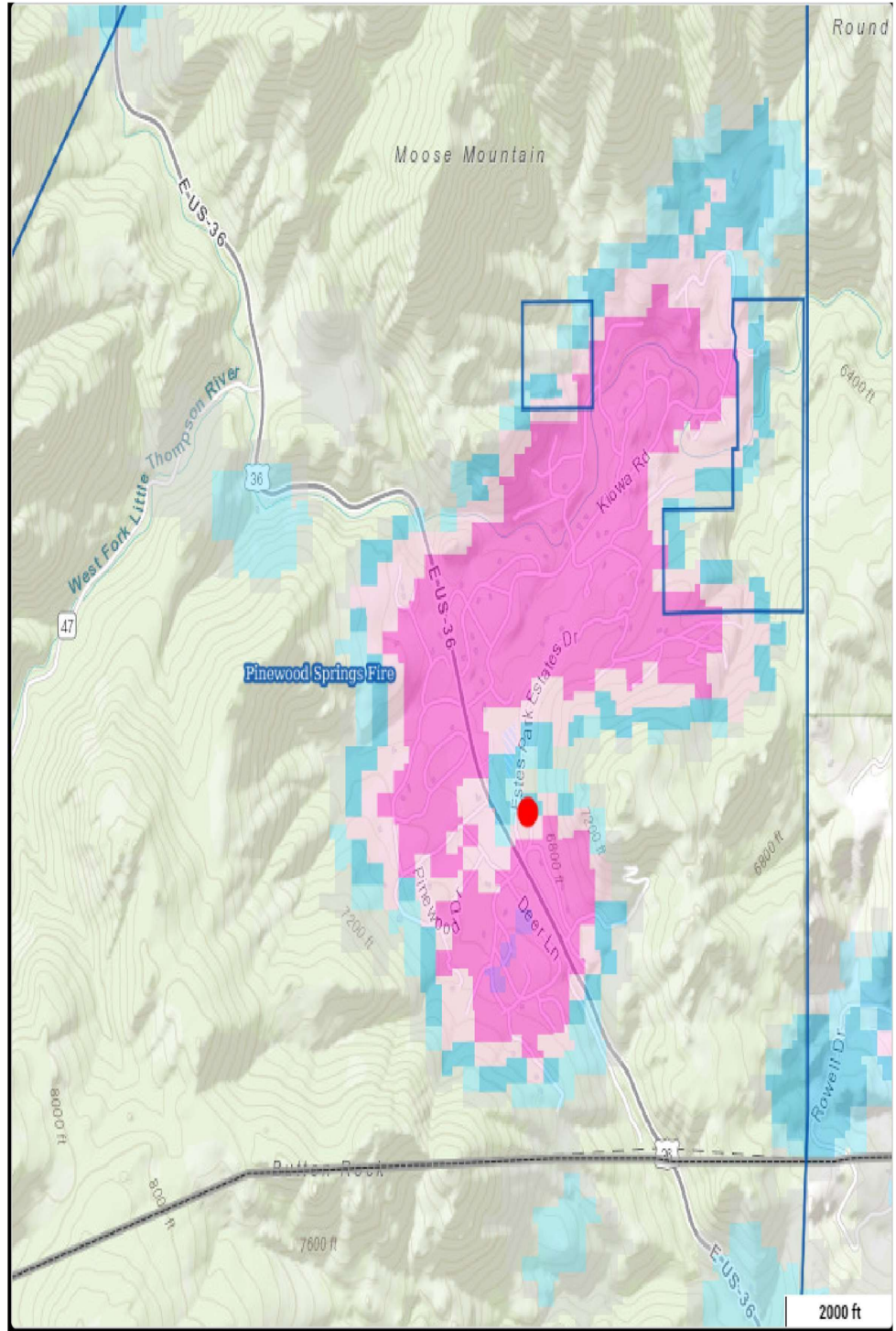
Housing density depicting where humans and their structures meet or intermix with wildland fuels.

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Legend

- Less than 1 house/40 ac
- 1 house/40 ac to 1 house/20 ac
- 1 house/20 ac to 1 house/10 ac
- 1 house/10 ac to 1 house/5 ac
- 1 house/5 ac to 1 house/2 ac
- 1 house/2 ac to 3 houses/ac
- More than 3 houses/ac





Colorado Wildfire Risk Public Viewer

<https://co-pub.coloradoforestatlas.org>

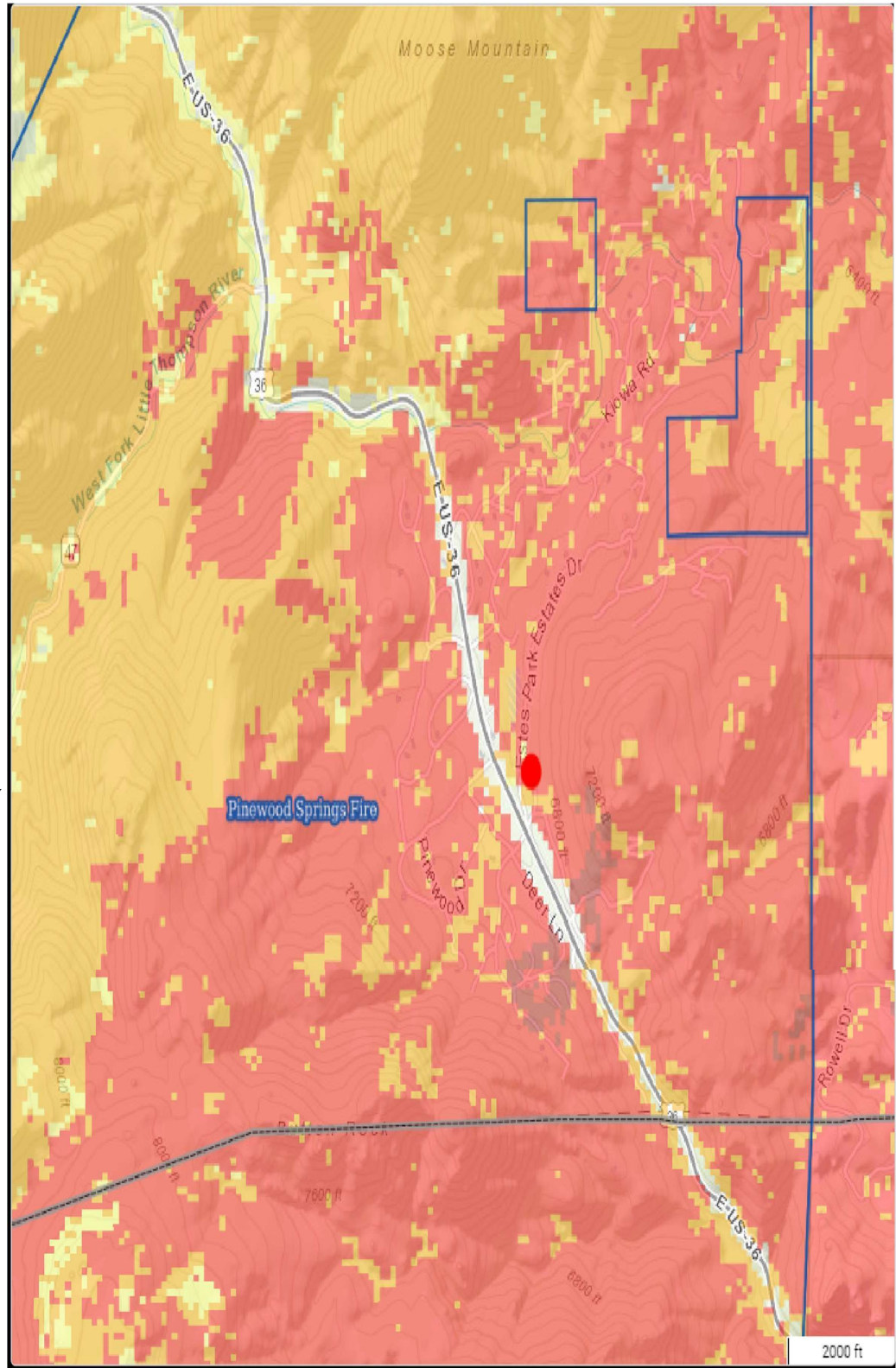
Pinewood Springs Wildfire Risk

The overall composite risk occurring from a wildfire derived by combining Burn Probability and Values at Risk Rating.

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Wildfire Risk





Colorado Wildfire Risk Public Viewer

<https://co-pub.coloradoforestatlas.org>

Pinewood Springs Fire Intensity Scale

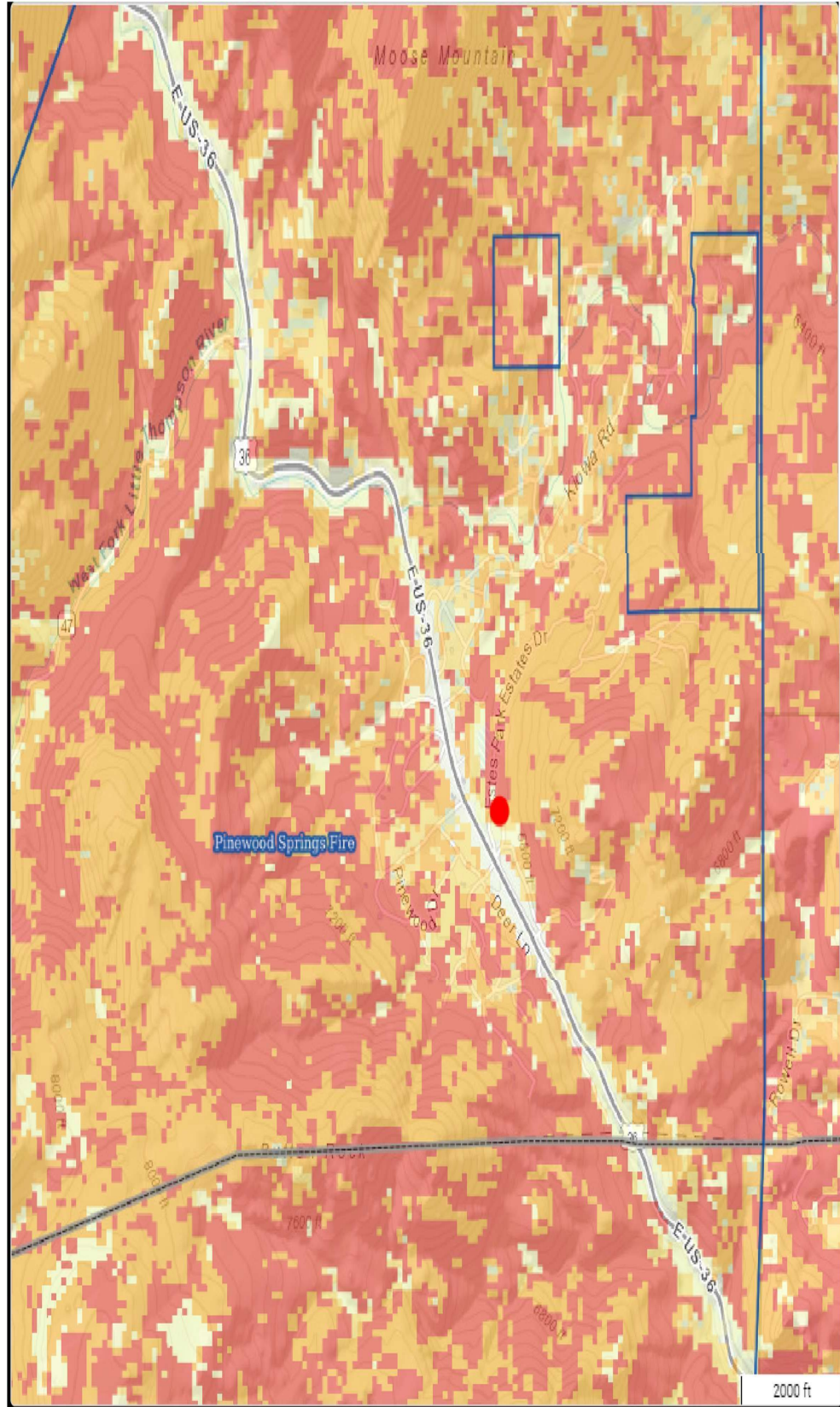
Quantifies the potential fire intensity by order of magnitude.

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Fire Intensity Scale

- 1 Lowest Intensity
- 2 Low
- 3 Moderate
- 4 Moderate to High Intensity
- 5 Highest Intensity





Colorado Wildfire Risk Public Viewer

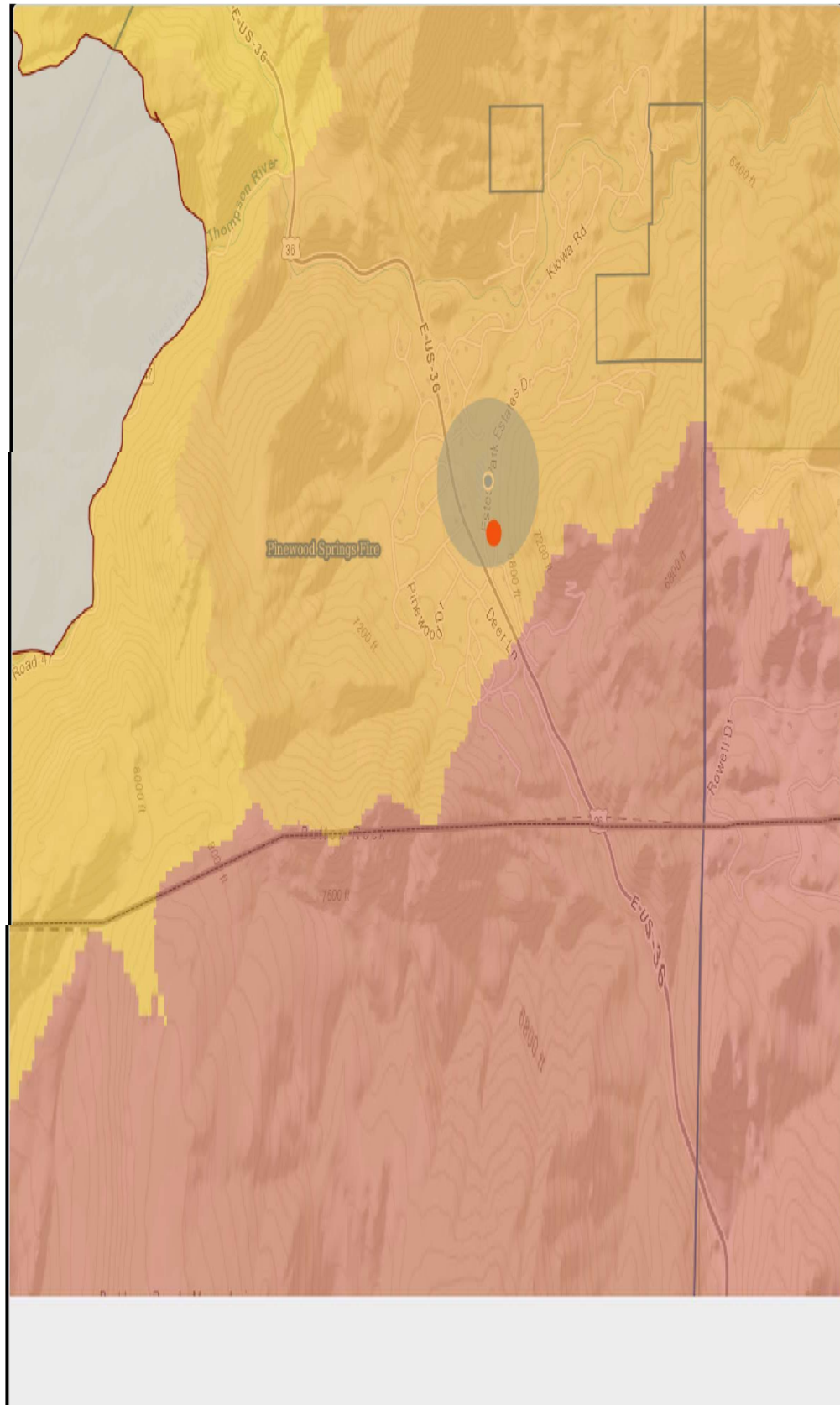
<https://co-pub.coloradoforestatlas.org>

Pinewood Springs Forest Action Plan Composite

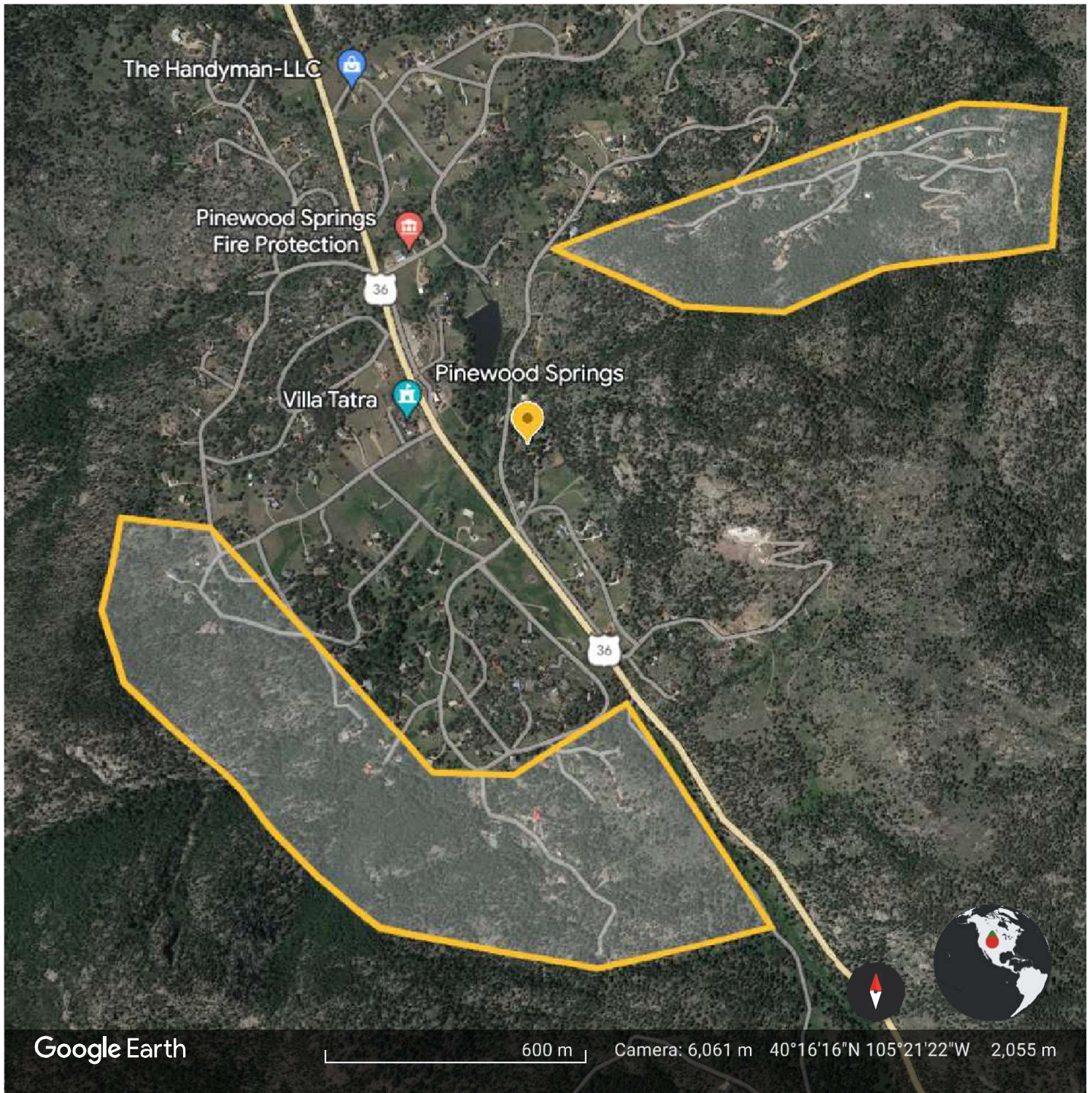
Represents priority areas where goals from the forest conditions, living with wildfire, and watershed protection themes can be achieved on the same management footprint by a project or activity.

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Forest Action Plan Composite



Pinewood Springs Community Wildfire Protection Plan Priority Mitigation Focus Areas (July 2023)



Appendix B:

Resources for

Community Members

EVACUATION CONSIDERATIONS

WHAT SHOULD GO IN MY KIT?



WHEN CREATING AN EVACUATION KIT THAT WORKS FOR *YOUR* HOUSEHOLD CONSIDER THE BASIC *EVERYDAY* NEEDS OF HOUSEHOLD MEMBERS AND YOUR PETS.

IT IS RECOMMENDED TO HAVE ONE GALLON OF WATER PER DAY PER PERSON & PETS

AT *MINIMUM* YOUR KIT SHOULD LAST YOU THREE DAYS (72 HOURS)

IF YOUR INSURANCE CAN ACCOMMODATE - TRY TO GET A *THREE MONTHS* ALLOWANCE OF YOUR PRESCRIPTION

COPY YOUR IMPORTANT DOCUMENTS ONTO THE CLOUD, A FLASH DRIVE, AND GRAB THE PHYSICAL COPIES FROM YOUR SAFE OR WHEREVER YOU KEEP IT

SCAN HERE FOR AN EVACUATION CHECKLIST



All evacuation notifications should come before **11 AM!** If you do not receive one by **11 AM** proceed to the fire station.

DO NOT FORGET FOOD, WATER, MEDICATIONS, **TRAVEL CARRIERS**, AND VETERINARY PAPERWORK FOR YOUR FURRY HOUSEHOLD MEMBERS!!!



Visit [www.https://www.larimer.gov/emergency.com](https://www.larimer.gov/emergency.com) for more preparedness information

EVACUATION: GO KIT



STARTER ITEMS:

- One Gallon of water per person
- Trail Mix, Granola Bars, Canned Food
- Boxed Food Items
- Identification Cards
- House Key
- Extra Cash / Checkbook / Debit Card

FIRST AID KIT AND MEDICAL SUPPLIES:

- Gauze / Bandages
- Ibuprofen - Tylenol - Aspirin
- Tweezer
- Antibiotic Ointment
- Eyewash / Saline
- Thermometer
- Mask (N-95)
- Prescription Medicines
- Assistive Devices (Walkers, Canes)

CHILDREN

- Books
- Toys
- Baby Formula
- Diapers / Onesies
- Bottles & Binkies

TOOLS

- Flashlight
- Batteries
- Portable Chargers - Phone, Tablet
Computer cords, and devices
- Flash drives with important
Documents (title/deeds/insurance)
- Weather Radio (Hand Crank)
- Two-way Radios
- Matches / Lighters
- Water Purification Tabs

CLOTH:

- Blankets
- Spare clothes (3 days at Minimum for
everyone in the household)
- Feminine Products

PETS

- Pet Vet Records
- Pet Food & Litter
- Pet Crate & toys
- Pet leash
- Gallon of Water

Tel: 970-619-4901 Email: camille.millard@larimer.gov
Website :<https://www.larimer.gov/emergency/prepare>

HOW TO PREPARE YOUR HOME FOR WILDFIRES

WILDFIRE RISK REDUCTION STEPS THAT CAN MAKE YOUR HOME SAFER DURING A WILDFIRE



■ VEGETATION MANAGEMENT

1. HOME IGNITION ZONES

To increase your home's chance of surviving a wildfire, choose fire-resistant building materials and limit the amount of flammable vegetation in the three home ignition zones. The zones include the **Immediate Zone** (0 to 5 feet around the house), the **Intermediate Zone** (5 to 30 feet), and the **Extended Zone** (30 to 100 feet).

2. LANDSCAPING AND MAINTENANCE

To reduce ember ignitions and fire spread, trim branches that overhang the home, porch, and deck and prune branches of large trees up to 6 to 10 feet (depending on their height) from the ground. Remove plants containing resins, oils, and waxes. Use crushed stone or gravel instead of flammable mulches in the **Immediate Zone** (0 to 5 feet around the house). Keep your landscape in good condition.

■ FIRE RESISTIVE CONSTRUCTION

3. ROOFING AND VENTS

Class A fire-rated roofing products, such as composite shingles, metal, concrete, and clay tiles, offer the best protection. Inspect shingles or roof tiles and replace or repair those that are loose or missing to prevent ember penetration. Box in eaves, but provide ventilation to prevent condensation and mildew. Roof and attic vents should be screened to prevent ember entry.

4. DECKS AND PORCHES

Never store flammable materials underneath decks or porches. Remove dead vegetation and debris from under decks and porches and between deck board joints.

5. SIDING AND WINDOWS

Embers can collect in small nooks and crannies and ignite combustible materials; radiant heat from flames can crack windows. Use fire-resistant siding such as brick, fiber-cement, plaster, or stucco, and use dual-pane tempered glass windows.

■ BE PREPARED

6. EMERGENCY RESPONDER ACCESS

Ensure your home and neighborhood have legible and clearly marked street names and numbers. Driveways should be at least 12 feet wide with a vertical clearance of 15 feet for emergency vehicle access.

- Develop, discuss, and practice an emergency action plan with everyone in your home. Include details for handling pets, large animals, and livestock.
- Know two ways out of your neighborhood and have a predesignated meeting place.
- Always evacuate if you feel it's unsafe to stay—don't wait to receive an emergency notification if you feel threatened from the fire.
- Conduct an annual insurance policy checkup to adjust for local building costs, codes, and new renovations.
- Create or update a home inventory to help settle claims faster.



**TALK TO YOUR LOCAL FORESTRY AGENCY
OR FIRE DEPARTMENT TO LEARN MORE
ABOUT THE SPECIFIC WILDFIRE RISK
WHERE YOU LIVE.**



VISIT FIREWISE.ORG FOR MORE DETAILS

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Order a Reducing Wildfire Risks in the Home Ignition Zone checklist/poster at Firewise.org



THE HOME IGNITION ZONE



A guide to preparing your home
for wildfire and creating defensible space

Formerly Quick Guide FIRE 2012-1: Protecting Your Home From Wildfire



Reducing Your Home's Wildfire Risk Begins With You

WHY?

Homeowners have the ultimate responsibility to proactively prepare their property for wildfire. By creating and maintaining the home ignition zone, residents can improve the likelihood of their home surviving a wildfire and reduce the negative impacts wildfires can have on their property.

In Colorado, if you live in the wildland-urban interface, it is not a matter of *if* a wildfire will impact your home and property, but *when*.

If your home is located in or near the natural vegetation of Colorado's grasslands, shrublands, foothills or mountains, you live in the wildland-urban interface — also known as the WUI — and are inherently at risk from a wildfire. This includes any areas where structures and other human developments meet or intermingle with wildland vegetative fuels.

Wildfires are a natural part of Colorado's varied ecosystems. Planning ahead and taking actions to reduce the risk of wildfires can increase the likelihood your home survives when wildfires occur.

As more people choose to live in

wildfire-prone areas, additional homes and lives are potentially threatened every year. Firefighters always do their best to protect residents, but **ultimately, it is your responsibility to protect your property and investments from wildfire.**

This guide focuses on actions that are effective in reducing wildfire hazards on your property. It is important to recognize that these efforts should always begin with the home or structure itself and progress outwards.

Also, remember that taking wildfire risk reduction steps is not a one-time effort — it requires ongoing maintenance. It may be necessary to perform some actions, such as removing pine needles from gutters and mowing grasses and weeds, several times a year. Other actions may just need to be

addressed annually or only once.

While you may not be able to accomplish all of these actions at once to prepare your home and property for wildfire, each completed activity will improve the safety of your home during a wildfire. However, it is important to remember there are no guarantees when it comes to wildfire. Implementing risk reduction actions does not guarantee your home will survive a wildfire, but it does improve the odds.

Knowing that wildfire impacts are inevitable, it is not only important for individuals to work on their own homes, but also for residents to work together to increase their community's resilience to wildfire. To become fire adapted, actions must not only be taken before a wildfire



As the 416 Fire burned near Durango in 2018, firefighters conducted burnouts near homes in the fire's path to eliminate fuel for the main fire and provide a secure control line. The work done by homeowners to create the defensible space buffer visible here gave firefighters the option to safely conduct the operation. Photo: Jerry McBride, Durango Herald

arrives but during and after a fire.

The National Cohesive Wildland Fire Management Strategy defines a fire-adapted community as "a human community consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire."

In order to increase the likelihood homes and infrastructure survive a wildfire, all landowners must work together to reduce fire hazards within and adjacent to communities. This includes work on individual home sites and common areas within communities. Every community member has a role in fire adaptation, from civic leaders, to developers, to first responders, to homeowners and land management agencies.

WHAT'S YOUR WUI RISK?

MORE THAN HALF
of Colorado residents live in the wildland-urban interface and are at some risk of being affected by wildfire.

Source: CSFS WUI Risk Assessment 2017

- Access WUI risk information coloradoforestatlas.org
- Reduce your wildfire risk csfs.colostate.edu
- Protect your community fireadaptednetwork.org

What Is the Home Ignition Zone?

HOME IGNITION ZONE (HIZ)

is the home and the area around the home (or structure). The HIZ takes into account both the potential of the structure to ignite and the quality of defensible space surrounding it.

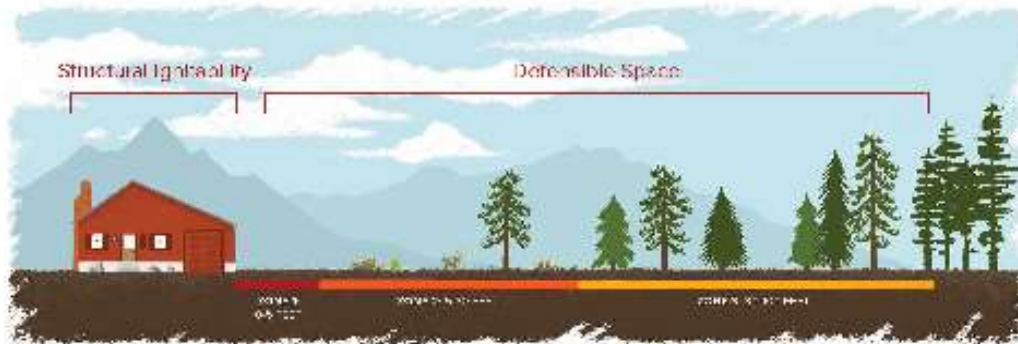


Illustration: Bonnie Palmatory, Colorado State University

The two primary determinants of a home's ability to survive a wildfire include the structure's ignitability and the quality of the surrounding defensible space. Together, these two factors create a concept called the home ignition zone, or

HIZ. It includes the structure and the space immediately surrounding it.

The space around the home is divided into three distinct spaces of management, zones 1, 2 and 3. Pages 8-9 outline specific goals and critical steps to manage your

property within each of these zones.

To reduce wildfire hazards to your home and property, the most effective proactive steps to take are to minimize the ability of the home to ignite and to reduce or eliminate nearby fuel.

METHODS OF HOME IGNITION

1. EMBER IGNITION

Embers (firebrands) are small pieces of burning material that can be transported by wind more than a mile ahead of a wildfire's flaming front. Embers can vary greatly in size, but even the smallest can start new fires (known as spot fires) on any ignitable surface they encounter, inside or outside a home. This is the most common source of home ignition during wildfires.

Flammable horizontal or nearly horizontal surfaces, such as wooden decks or shake-shingle roofs, are at greater risk for ignition from burning embers.

Many homes in the wildland-urban interface have burned because of airborne embers, so addressing structural ignitability is critical even if it appears difficult for fire to spread in the area surrounding a home.

2. SURFACE FIRE/

DIRECT FLAME CONTACT

If fuels are adjacent to a home, direct flame contact can ignite the house. Ensuring no such fuels exist within 5 feet of a home, particularly near windows or under decks, greatly minimizes this possibility.

3. RADIANT HEAT

Radiant heat is what you feel on your hands while warming them next to a campfire. This same type of heat transfer can ignite a home, whether the source of the heat is a crown fire in treetops or an adjacent home that has caught fire.



Flying embers are the most common source of home ignition during wildfires. Preparing homes for their impact is critical. Embers can ignite leaf litter in gutters and on roofs, as well as shrubs and mulch at the base of the house, as seen in this controlled ember shower experiment. Photo: Insurance Institute for Business & Home Safety

What Is Defensible Space?

DEFENSIBLE SPACE

is the area around a home (or structure) that has been modified to reduce fire hazard by creating space between potential fuel sources.

Firefighters may not be present at your home during a wildfire — they are trained to protect structures only when the situation is safe for them. You should prepare your home and property to withstand wildfire without firefighter intervention. Having an effective defensible space combined with reducing structural ignitability is the best way to improve your home's chance of survival.

Defensible space is the area around a home or other structure that has been modified to reduce fire hazard by creating a disconnected fuel load both vertically and horizontally. In this area, natural and manmade fuels are treated, removed or reduced to slow the spread of wildfire and alter fire behavior.

ATTENTION
These guidelines are adapted for ponderosa pine, Douglas-fir and mixed-conifer forest types below 9,500 feet.
SEE PAGE 14 for guidelines adapted to other forest types.

Establishing defensible space reduces the likelihood of a home igniting by direct flame contact or by radiant heat exposure. It also helps limit local production of embers and reduces the chance a structure fire will spread to neighboring homes or surrounding vegetation.

CREATING AN EFFECTIVE DEFENSIBLE SPACE involves establishing a series of management zones. Develop these zones around each building on your property, including detached garages, storage buildings, barns and other structures.



BEFORE



AFTER

A Colorado State Forest Service forest management project near Evergreen cleared dense trees in a residential area to reduce wildfire risk. The same tree with a crooked trunk in the center of these photos shows how tree thinning can be a useful tool to protect property, decrease fire intensity and boost forest health. Photo: Emma Brokt, CSFS

Recognize that fuel continuity and density play a critical role in wildfire behavior.

As you plan defensible space for your property, you can contact your nearest Colorado State Forest Service field office for guidance, or consult a forester, fire department staff or community organization appropriately trained in wildfire mitigation practices.

3

Factors Determine Wildfire Behavior

- 1. FUELS
- 2. WEATHER
- 3. TOPOGRAPHY

Of the three things wildfires need to start and spread, humans cannot change weather or topography, so we must concentrate on altering fuels in order to have any control over a disturbance as dynamic as wildfire.

Fuels can include vegetation like trees, brush and grass; but when near homes, fuels also include propane tanks, woodpiles, sheds and even homes themselves.



East Troublesome Fire. Photo: Zach Wehr, CSFS



Top left: Hardening your home can include choosing noncombustible building materials like stucco paired with a stone facade. This house near Salida shows you don't have to sacrifice curb appeal to reduce the ignitability of your house. Photo: CSFS

Top right: Preparing your home for wildfire can be accomplished as weekend projects, such as clearing vegetation from around your home's perimeter and adding noncombustible material near the foundation that won't ignite if embers land there. Photo: Wildfire Partners

Bottom: A metal roof and noncombustible exterior window coverings add layers of protection against wildfire, in addition to the well-maintained defensible space that surrounds this home. Photo: Wildfire Partners



MORE ONLINE

This guide provides only basic information about structural ignitability.

The National Fire Protection Association (NFPA) and the Insurance Institute for Business & Home Safety (IBHS) together produce Wildfire Research Fact Sheets that provide additional valuable information.

Visit the "Protect Your Home" section at the CSFS website, csfs.colostate.edu/wildfire-mitigation, for links to these and other structural ignitability resources.



Harden Your Home Against the Threat of Wildfire

STRUCTURAL IGNITABILITY

Is the likelihood the materials in and on your home will ignite during a wildfire.

The practice of reducing structural ignitability is commonly called "home hardening."

The ideal time to address home ignition risk is when the structure is in the design phase.

For existing homes, steps must be taken to reduce the structural ignitability in order to improve the likelihood of the home surviving a wildfire. The practice of reducing structural ignitability is commonly called home hardening.

BEST PRACTICES TO REDUCE STRUCTURAL IGNITABILITY

- Ensure the roof has a Class A fire rating
- Remove all leaves, needles and other debris from all 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

STRUCTURAL COMPONENTS TO CONSIDER

WINDOWS

Windows can fail either from glass breaking or frames melting before a building ignites, providing a direct path for airborne embers to reach the building's interior. Metal screens should be installed. Windows with multiple panes provide greater protection than single-paned windows.

VENTS

Vents that are not screened or are screened with a gap that exceeds 1/8 of an inch can be a direct entry point for embers to infiltrate a home and ignite it from the inside. Metal mesh screen that is 1/8-inch is small enough that most embers will be extinguished before making it inside.

SOURCE NFPA/IBHS Wildfire Research Fact Sheet — Attic and Crawl Space Vents

EXTERIOR WALLS

The exterior walls of a home or other structure are affected most by radiant heat from a fire and, if defensible space is not adequate, by direct contact with flames. Fiber cement board, brick, stucco or other fire resistant materials are recommended.

ROOF

The roof has a significant impact on a structure's ignitability because of its extensive surface area. When your roof needs significant repairs or replacement, choose only fire-resistant roofing materials. Wood and shake-shingle roofs are strongly discouraged because they are highly flammable and are prohibited in some areas of the state. Metal sheets, concrete or shingles made from asphalt, tile, clay, stone or metal are all recommended roofing materials. It is critical to keep the roof and gutters clear of flammable debris.

SOURCE NFPA/IBHS Wildfire Research Fact Sheet — Roofing Materials

ROOF EXTENSION

The extension of the roof beyond the exterior structure wall is called the eave. This architectural feature is particularly prone to ignition. As fire approaches a building, the exterior wall deflects hot air and gases up into the eave. If the exterior wall isn't ignition-resistant, the effect of the excess heat is amplified.

SOURCE NFPA/IBHS Wildfire Research Fact Sheet — Under-Eave Construction

DECKS/FENCES

Some decks and fences are readily combustible, whether made of synthetic (plastic/composite) or natural materials (wood). Many deck designs allow embers to accumulate between board gaps and at joists below deck boards. Embers can also fall through decks and may easily ignite flammable materials beneath, making it critical to remove all materials from underneath the deck. Regardless of how fuels below decks may ignite, these burning materials can readily ignite the deck and threaten the home.

Fencing material that attaches to the home must be considered a direct extension of the structure and should be made of a noncombustible material, at least where it is immediately adjacent to a home.

SOURCE NFPA/IBHS Wildfire Research Fact Sheets — Fencing | Decks

TO MANAGE YOUR HOME, LEARN THE THREE ZONES

ZONE 1

0-5 FEET FROM THE HOME

The area nearest the home. This zone requires the most vigilant work in order to reduce or eliminate ember ignition and direct flame contact with your home.

ZONE 2

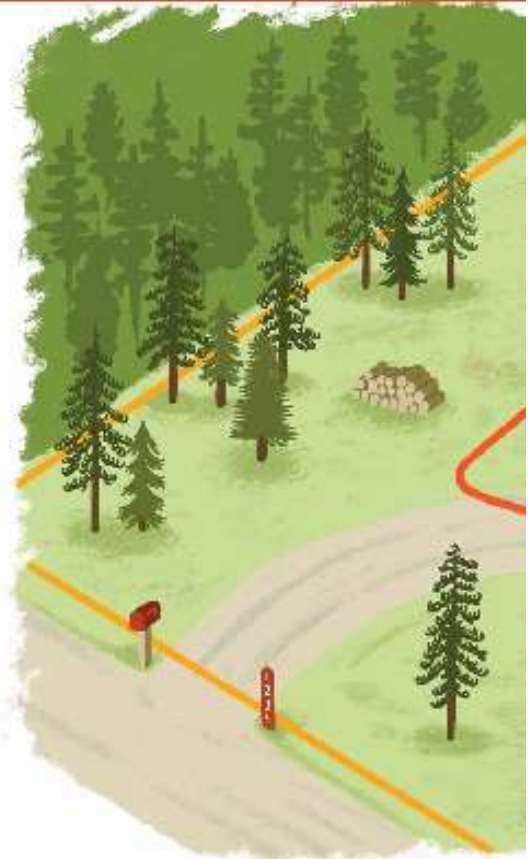
5-30 FEET FROM THE HOME

The area transitioning away from the home where fuels should be reduced. This zone is designed to minimize a fire's intensity and its ability to spread while significantly reducing the likelihood a structure ignites because of radiant heat.

ZONE 3

30-100 FEET FROM THE HOME

The area farthest from the home. It extends 100 feet from the home on relatively flat ground. Efforts in this zone are focused on ways to keep fire on the ground and to get fire that may be active in tree crowns (crown fire) to move to the ground (surface fire), where it will be less intense.



ZONE 1

GOAL: This zone is designed to prevent flames from coming in direct contact with the structure. Use nonflammable, hard surface materials in this zone, such as rock, gravel, sand, cement, bare earth or stone/concrete pavers.

CRITICAL STEPS

- Remove all flammable vegetation, including shrubs, slash, mulch and other woody debris.
- Do not store firewood or other combustible materials inside this zone.
- Prune tree branches hanging over the roof and remove all fuels within 10 feet of the chimney.
- Regularly remove all pine needles and other debris from the roof, deck and gutters.
- Rake and dispose of pine needles, dead leaves, mulch and other organic debris within 5 feet of all decks and structures. Farther than 5 feet from structures, raking material will not significantly reduce the likelihood of ignition and can negatively affect other trees.
- Do not use space under decks for storage.

ZONE 2

GOAL: This zone is designed to give an approaching fire less fuel, which will help reduce its intensity as it gets nearer to your home or any structures.

CRITICAL STEPS

- Mow grasses to 4 inches tall or less.
- Avoid large accumulations of surface fuels such as logs, branches, slash and mulch.
- Remove enough trees to create at least 10 feet* of space between crowns. Measure from the outermost branch of one tree to the nearest branch on the next tree.
- Small groups of two or three trees may be left in some areas of Zone 2. Spacing of 30 feet* should be maintained between remaining tree groups to ensure fire doesn't jump from one group to another.
- Remove ladder fuels under remaining trees. This is any vegetation that can bring fire from the ground up into taller fuels.
- Prune tree branches to a height of 6-10 feet from the ground or a third of the total height of the tree, whichever is less.
- Remove stressed, diseased, dead or dying trees and shrubs.



Illustration: Bonnie Palmatory, Colorado State University

ZONE 3

GOAL: This zone focuses on mitigation that keeps fire on the ground, but it's also a space to make choices that can improve forest health. Healthy forests include trees of multiple ages, sizes and species, where adequate growing room is maintained over time.

If the distance of 100 feet to the edge of Zone 3 stretches beyond your property lines, it's encouraged to work with adjoining property owners to complete an appropriate defensible space. If your house is on steep slopes or has certain topographic considerations, this zone may be larger.

STEPS TO CONSIDER

- ❑ Mowing grasses is not necessary in Zone 3.
- ❑ Watch for hazards associated with ladder fuels. The chance of a surface fire climbing into the trees is reduced in a forest where surface fuels are widely separated and low tree branches are removed.
- ❑ Tree crown spacing of 6-10 feet is suggested. Consider creating openings or meadows between small clumps of trees so fire must transition to the ground to keep moving.
- ❑ Any approved method of slash treatment is acceptable in this zone, including removal, piling and burning, lop and scatter, or mulching. Lop-and-scatter or mulching treatments should be minimized in favor of treatments that reduce the amount of woody material in the zone. The farther this material is from the home, the better.

This reduces the amount of vegetation available to burn and improves forest health.

- ❑ Common ground junipers should be removed whenever possible because they are highly flammable and tend to hold a layer of flammable material beneath them.
- ❑ You can keep isolated shrubs in Zone 2, as long as they are not growing under trees. Keep shrubs at least 10 feet away from the edge of tree branches.
- ❑ Periodically prune and maintain shrubs to prevent excessive growth. Remove dead stems annually.
- ❑ Spacing between clumps of shrubs should be at least 2 ½ times* their mature height. Each clump should have a diameter no more than twice the mature height of the vegetation. Example: For shrubs that grow 6 feet tall, space clumps 15 feet apart or more (measured from the edge of the crowns of vegetation clumps). Each clump of these shrubs should not exceed 12 feet in diameter.

** Horizontal spacing recommendations are minimums and can be increased to reduce potential fire behavior, particularly on slopes. Consult a forestry, fire or natural resource professional for guidance with spacing on slopes.*

Make Home Ignition Zone Maintenance a Priority

WHY?

The home ignition zone requires regular, ongoing maintenance to be effective. Your home is located in a dynamic environment — trees, grasses and shrubs continue to grow, die and drop leaves each season, and there are ongoing maintenance needs on any structures on your property.

HOME IGNITION ZONE CHECKLIST

PREPARE YOUR HOME FOR WILDFIRE WITH THESE STEPS

<p>TOP PRIORITIES</p> <ul style="list-style-type: none"> <input type="checkbox"/> CLEAR roof, deck and gutters of pine needles and other debris.* <input type="checkbox"/> MOW grass and weeds to a height of 4 inches or less.* <input type="checkbox"/> RAKE AND REMOVE all pine needles and other flammable debris from 5 feet around the foundation of your home and deck.* <input type="checkbox"/> TREAT or mow shrubs that re-sprout aggressively (such as Gambel oak) every 3-5 years or more depending on growth rates. <input type="checkbox"/> REMOVE branches that hang over the roof and chimney. <input type="checkbox"/> DISPOSE of slash from thinning trees and shrubs by chipping, hauling to a disposal site or piling in open areas for burning later. <i>Any accumulation of slash that's chipped or otherwise should be 30 feet or more from the home.*</i> <input type="checkbox"/> AVOID creating continuous areas of wood chips on the ground when chipping logs and/or slash. Break up the layer of wood chips by adding nonflammable material, or allow for wide gaps of at least 3 feet between chip accumulations. <p style="text-align: center; font-size: small;">* Address as needed, more than once a year.</p>	<p>FIREWOOD</p> <ul style="list-style-type: none"> <input type="checkbox"/> Keep firewood stacked uphill from (or at the same elevation as) any structures, and keep the woodpile at least 30 feet away from the home. <input type="checkbox"/> Do not stack firewood between remaining trees, underneath the deck or on the deck. <input type="checkbox"/> Remove flammable vegetation within 10 feet of woodpiles. <p>PROPANE TANKS</p> <ul style="list-style-type: none"> <input type="checkbox"/> Keep aboveground tanks at least 30 feet from the home, preferably on the same elevation as the house. <input type="checkbox"/> Remove flammable vegetation within 10 feet of all propane tanks and gas meters. <p>DRIVEWAYS</p> <ul style="list-style-type: none"> <input type="checkbox"/> Maintain at least 10 feet between tree crowns, thinning them a minimum of 30 feet back from each side of the driveway from the house to the main access road. <input type="checkbox"/> Remove ladder fuels beneath trees after thinning. <input type="checkbox"/> Remove any shrubs that are within 10 feet of the outer edge of tree crowns. <input type="checkbox"/> Space shrubs apart at least 2 ½ times their mature height, as measured from the edge of the shrubs. <input type="checkbox"/> Post signs at the end of the driveway with your house number that are noncombustible, reflective and easily visible to emergency responders.
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SOLUTIONS FOR MANAGING SLASH

- 1** Spread slash and wood chips over a large area to avoid heavy accumulations and large piles. Being close to the ground will help speed decomposition.
- 2** Burn slash piles, but before doing so, always contact your county sheriff's office or local fire department for current information or possible restrictions.
- 3** Lop and scatter slash by cutting it into small pieces (less than 24 inches long) and spreading it over a wide area, to a depth not exceeding 18 inches. Don't scatter material over 4 inches in diameter.



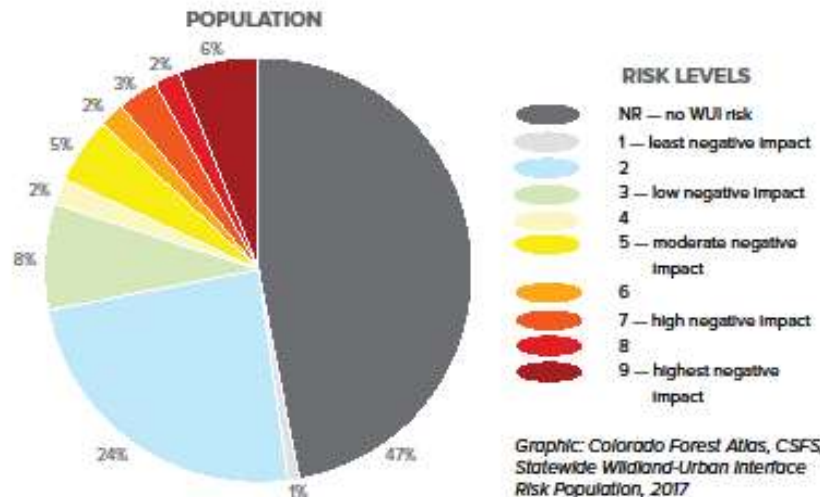
The Colorado State Forest Service works with communities to reduce wildfire risk and become recognized Firewise USA® sites, an accomplishment Piñon Ridge Estates in Chaffee County earned in 2021. CSFS forester Josh Kuehn, right, presents Craig Sommers of Piñon Ridge, with a sign for the community after residents completed the steps required for program recognition. In 2019, the Decker Fire came within a mile and a half of the neighborhood. Photo: Chaffee Chips

More Than Half of Colorado Residents Live With Some Wildfire Risk

The wildland-urban interface (WUI) includes the portions of Colorado where human development meets wildland vegetation.

The majority of Coloradans live in the WUI, in places with at least some risk of wildfire. And that number continues to increase as more residents build homes in the WUI.

As of 2017, the WUI covered about 3.2 million acres in Colorado. By 2040, the WUI area could encompass over 9 million acres in the state, according to projections from Colorado government models.



Additional Wildfire Mitigation Resources Online

- ▶ Colorado State Forest Service wildfire mitigation information and publications csfs.colostate.edu/wildfire-mitigation
- ▶ Community Wildfire Protection Planning csfs.colostate.edu/wildfire-mitigation/community-wildfire-protection-plans
- ▶ Insurance Institute for Business & Home Safety ibhs.org/risk-research/wildfire
- ▶ Colorado Wildfire Risk Viewer and Risk Reduction Planner coloradoforestatlas.org
- ▶ National Fire Protection Association: Firewise USA® nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA
- ▶ Fire Adapted Communities Learning Network fireadaptednetwork.org

Fuel Types and Arrangements

FUEL

is any material that will burn.

Whether in a wildland or urban location, when fuels are abundant and there's no space between them, a fire can quickly become uncontrollable and destructive. But when fuels are scarce and separated, a fire cannot build momentum and intensity, which makes it more manageable.

The closer together the fuels are near

your home, the bigger the threat they pose.

Fuel hazard measures look at both horizontal and vertical fuels, factoring in the type, amount and arrangement of fuels (called continuity and uniformity). Horizontal continuity is how the fuels are arranged laterally across the ground or among plant canopies. Vertical continuity refers to fuels extending from the ground into the crowns

of trees and shrubs.

Fuels with a high degree of both vertical and horizontal continuity are the most hazardous, particularly when they occur on slopes.

Mitigating wildfire hazards in the home ignition zone disrupts this fuel continuity, which helps reduce a fire's intensity and potential sources of home ignition.

SURFACE FUELS



Colorado State Forest Service

GRASSES

Grasses are perhaps the most pervasive and abundant surface fuel in Colorado. When available to burn, grasses can catch fire easily, and grass fires often spread rapidly. They also burn out quickly and do not release as much energy as fires in larger fuel types, like trees. Nonetheless, grass fuels can readily ignite structures that are directly adjacent to them.



Colorado State Forest Service

NEEDLES/LEAVES

Needles and leaf litter accumulate naturally in forests across the state. Long needles from pines like ponderosa and broadleaf litter from trees like aspen, cottonwood and maple do not compact as readily as other leaf types. Fire in these fuels can spread rapidly, particularly during windy conditions.

Shorter needle litter from spruce, fir and lodgepole pines compacts more readily and does not generally spread as fast.

Needles and leaves that ignite anywhere on or adjacent to a structure can cause damage and loss.



Colorado State Forest Service

LOGS/BRANCHES/SLASH/ WOOD CHIPS (MULCH)

Naturally occurring woody material on the ground and debris left from cutting down trees and shrubs (slash) are an important part of the fuel complex near structures.

This larger and denser material generates more heat than smaller fuels do, and it can be problematic when it is burning near structures.

Ultimately, the farther away from a structure that large amounts of these materials can be moved, the better.

MORE: A guide to mulched materials is available on the Colorado Forest Restoration Institute website, cfrf.colostate.edu.



A firefighter monitors a burnout on the 416 Fire in southwest Colorado in 2018. This effort to manage the wildfire by eliminating fuels left of the train tracks illustrates how fire can transition through different fuel types and arrangements. Photo: Kyle Miller, Wyoming Interagency Hotshot Crew

VERTICAL/LADDER FUELS



Karl Greer

LADDER FUELS

Ladder fuels are burnable materials such as smaller trees and brush that provide a means for fire to climb vertically and continue into aerial fuel sources. Ladder fuels allow a fire to leave the ground level and burn up into the branches and crowns of larger vegetation. Lower branches on large trees also can act as ladder fuels.

These fuels are potentially very hazardous but are generally easy to mitigate. Pay close attention to ladder fuels near homes, as they are extremely hazardous and especially important to address.



InciWeb

BRUSH/SHRUBS

Examples of common brush fuels in Colorado are sagebrush, bitterbrush and mountain mahogany.

As with any type of fuel, brush that is close together and adjacent to homes is hazardous.

In dry climates like Colorado, brush fuels are generally dense and contain more material in a given space than grasses. Brush also usually grows larger and burns longer and more intensely than grass when it ignites.

This makes brush fires more complex, particularly when the brush grows under trees or in large, uniform stands.

CROWN (AERIAL) FUELS



Karl Greer

CROWN FUELS

An intense fire burning in surface fuels can transition into the upper portion of the tree canopies and become a crown fire. Crown fires are dangerous because they are intense, often move rapidly, can burn large areas, and produce embers that can travel great distances and start spot fires well ahead of the main fire.

Crown fire hazard can be reduced by thinning trees to decrease crown fuels, reducing surface fuels under the remaining trees and eliminating vertical fuel continuity from the ground into the crowns.

See recommendations on pages 8-9 of this guide.

Forest Types

Recommendations in this guide refer primarily to ponderosa pine, Douglas fir and mixed-conifer ecosystems below 9,500 feet in elevation.

Those who live in or near other forest types can follow these additional recommendations.



PIÑON-JUNIPER

Fires in piñon-juniper forests tend to burn intensely in the crowns of trees under windy conditions.

When thinning these trees on a property, create a mosaic pattern that is a mixture of individuals and clumps of three to five trees. The size of each clump will depend on the size, health and location of the trees. The minimum spacing between the crowns of individual trees is 10 feet, increasing for larger trees, clumps and stands on steeper slopes.

Pruning trees for defensible space is not as critical in piñon-juniper forests as it is in pine or fir forests. Instead, it is more important to space the trees so it is difficult for a fire to move from one tree clump to the next. These trees should only be pruned to remove branches that are dead or are touching the ground. Live branches can be pruned up to 3 feet above the ground, or a third the height of the tree, whichever is less. Removing shrubs growing beneath piñon and juniper canopies is recommended.

Pruning live branches or removing and processing these trees is not recommended between April and October, when the piñon ips beetle is active in Colorado. Thinning activity that stimulates sap flow in summer months can attract these beetles to healthy trees. It is acceptable to remove dead trees and dead branches during the summer.



LODGEPOLE PINE

Older lodgepole pine stands generally do not respond well to selective thinning, but instead respond better to removing all trees over a defined area to allow healthy forest regeneration.

Selective thinning lodgepole can open the stand to severe windthrow and stem breakage. However, if your home is located within a lodgepole pine forest, you may prefer selective thinning instead of removing all the standing trees.

Thinning older stands of lodgepole pine to the extent recommended for defensible space may require several attempts spaced over a decade or more. No more than 30 percent of the trees in a mature stand should be removed in each thinning operation. Focus on removing trees that are obviously lower in height or suppressed in the forest canopy. Leaving the tallest trees will make the remaining trees less susceptible to windthrow.

Another option is leaving clumps of 30-50 trees. Clumps are less susceptible to windthrow than solitary trees. Allow a minimum of 30-50 feet between tree crowns on the clump's perimeter and any adjacent trees or clumps of trees.

To ensure a positive response to thinning throughout the life of a lodgepole pine stand, trees must be thinned early. Begin when trees are small saplings and maintain low densities within the stand as the trees mature.



GAMBEL OAK

Maintaining Gambel oak forests that remain resistant to the spread of wildfire can be a challenge because of their vigorous growing habits. Gambel oak trees grow in clumps or groves, and the stems in each clump originate from the same root system. Most reproduction occurs through sprouts from this deep, extensive root system.

Treat Gambel oak near your home every three to five years, or more often depending on growing conditions. Sprouts should be mowed at least once a year. Herbicides can be used to supplement mowing and control regrowth when treating whole clumps.

This species can be "trained" to grow more like a tree than a shrub in some locations. Remove small diameter oak within clumps and any sprouts growing parallel to the ground.



SPRUCE-FIR

Spruce and fir trees tend to grow in association with each other.

Mature spruce and fir are prone to windthrow when heavily thinned. Light thinnings or leaving groups of trees will help mitigate this problem.

Their hardiness against the wind may not be a problem if a tree has grown to maturity in the open and isn't surrounded by other trees.

Spruce and fir tend to have crowns that extend to the ground. Eliminating lower branches that act as ladder fuels is recommended.

The spruce and Ips bark beetles are native to Colorado and infest Engelmann spruce and Colorado blue spruce. They are particularly attracted to recently fallen green trees and limbs, so it is important to remove any cut branches in a timely manner so surrounding healthy trees are not infested.



Photos: Colorado State Forest Service

ASPEN

Tree spacing and ladder fuel guidelines do not apply to mature stands of aspen trees.

Generally, no thinning is recommended in aspen forests, regardless of tree size, because the thin bark is easily damaged, which can make the tree highly susceptible to fungal infections.

However, in older stands, numerous dead trees on the ground do require removal. Conifer trees often start growing in older aspen stands and can grow up through these old, downed aspens. A buildup of these trees eventually will increase the fire hazard of the stand, so young conifers should be removed from these areas.

Brush also can increase fire hazard in aspen stands and should be thinned to reduce flammability.

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- CSFS field office personnel

Cover Photography

FRONT

Top left: Cleaning debris from gutters is a critical step to prevent home ignition. Photo: Wildfire Partners. **Top right:** Firefighters from Colorado's Platte Canyon Fire Protection District defend a home during a wildfire. As the population expands into the WUI, homeowners must take responsibility to prepare their homes for wildfire. Photo: Karl Greer. **Bottom:** Of 1,000 homes threatened in the 2016 Cold Springs Fire near Nederland, only 8 burned, due in part to homeowners who readied their properties and followed home ignition zone recommendations. Photo: Wildfire Partners

BACK Mitigation work helped spare this Boulder County home near Nederland during the Cold Springs Fire of 2016. Photo: Wildfire Partners



ADAPT TO WILDFIRE

It's never too early to start protecting your home.
The Colorado State Forest Service can help.



Colorado State Forest Service
Colorado State University
5060 Campus Delivery
Fort Collins, CO 80523-5060

(970) 491-6303
csfs.colostate.edu



OUR MISSION

*To achieve stewardship of Colorado's diverse forest environments
for the benefit of present and future generations*

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Declaration of Agreement

The following signatures attest to our collaboration and agreement on the contents of this document.

Signature  Date 9/16/2023

Ted Plank, Fire Chief, Pinewood Springs Fire Protection District

 9/16/2023

Andrew Lucas, Assistant Fire Chief, Pinewood Springs Fire Protection District

 _____
Michael Graham, President, Board of Directors, Pinewood Springs Fire Protection District

 acting President RSPDA 8/24/23


Gabriele Benson, Acting President, Pinewood Springs Property Owners Association

 PRESIDENT, PINWOOD SPRINGS WATER DIST 8/24/2023

Steve Stewart, President, Pinewood Springs Water District

 President Pinewood Springs Road Advisory Board

Joar Paskewitz, President, Pinewood Springs Road Advisory Board, Larimer County GID #4

 9/16/2023

Svitlana Soltytsiak, President, Estes Park Estates Road Board, Larimer County PID #25

 9/18/2023

Max Erickson, District Forester, Colorado State Forest Service
Supervisor

 9/17/2023

Derek Rosenquist, Sergeant, Larimer County Emergency Services