

# **Rapson Subdivision** **Wildland Fire Mitigation** **Plan**

**Prepared By:**



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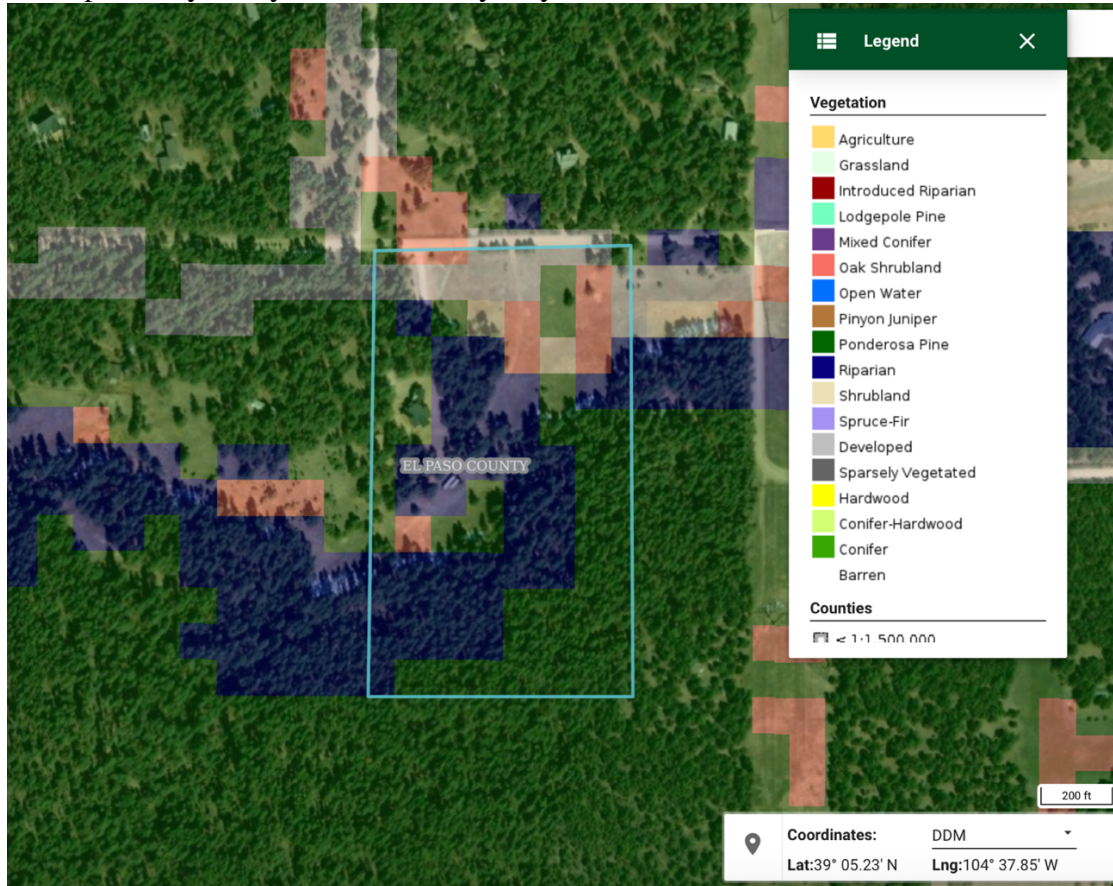
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## Overview:

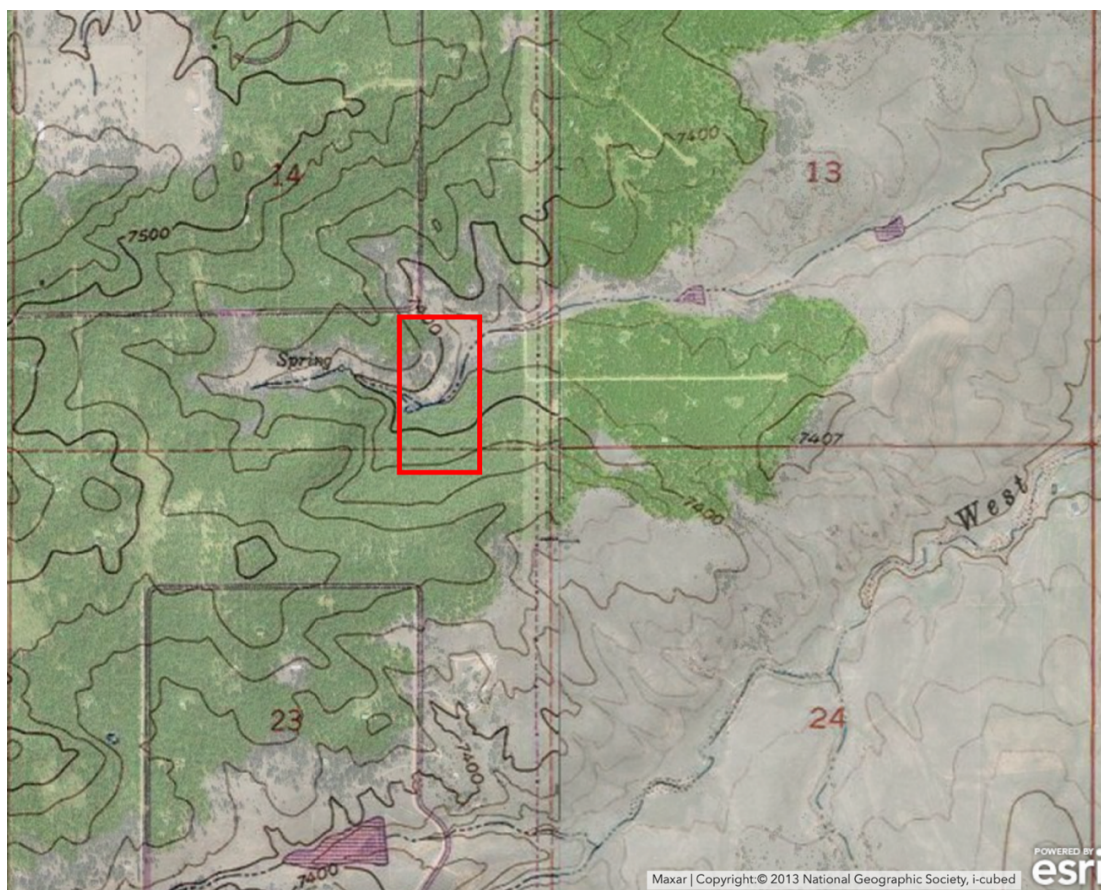
The proposed Rapson Subdivision located at 10675 Hardy Road Colorado Springs, CO 80918 (Legal Description: W2SE4SE4, EX PT TO CO FOR RD AS DES IN BK 2636-733 SEC 14-11-65) at the total size of 19.344 acres which is situated in the more extensive Black Forest ponderosa pine (Pinus Ponderosa) forest ecosystem. It has an intersecting riparian and prairie area that consists of short perennial grasses that follows the coinciding low lying area that runs through the property. The elevation of the property ranges from 7400' to 7410' above sea level. Below is the graphic depiction of the existing vegetation on the property. This properties' soil taxonomy consists of primarily sandy loam and sandy clay loam.



Source: Colorado State University Risk Reduction Planner

## Topography:

The proposed Rapson Subdivision land is located within the larger Black Forest Ponderosa Pine forest ecosystem as depicted in this map below shaded in green. The topography primarily consists of the low-lying area created by a small artesian spring upstream, surrounded by a short grass riparian area. The slope on the property does not exceed 10% in grade. The topography on the property should not have significant influence fire behavior; the wetter riparian and low-lying areas would be slower to carry ground and surface fire depending on fuel moisture conditions. The topography is generally flat; thus, aspect minimally influences the fuel and fire behavior because fuel is relatively evenly distributed within the Ponderosa Pine stands. Below is a topographic map in which the Rapson Subdivision is highlighted in the red polygon.



Source: USGS 1:24,000-scale maps

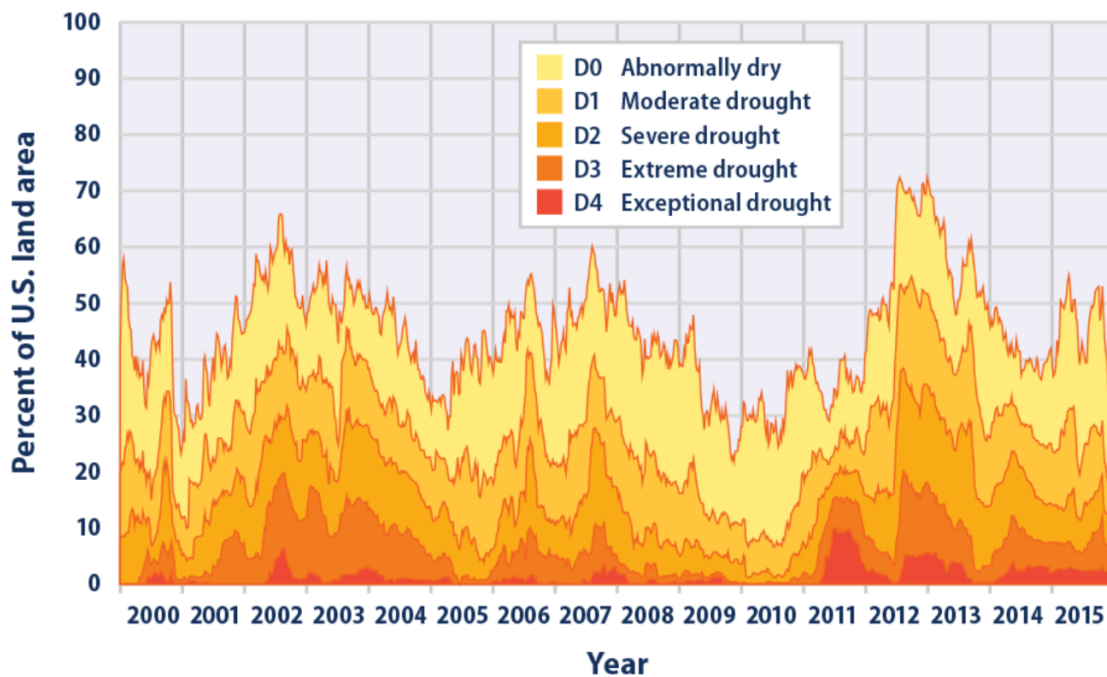
## Weather of the Region

The annual average temperature of the Colorado Springs region is 48.7 Degrees Fahrenheit. The yearly average temperature in the "traditional fire season" (Summer months) in the Colorado Springs region is 67.7 Degrees Fahrenheit. The annual average precipitation in the summer months is 7.51 Inches, and this precipitation falls typically in the form of rain during this time of the year.

The local weather impacts factors such as drought conditions, El Paso County has experienced some form of drought for the last 20 plus years, starting in the late 1990s. These droughts have become worse by the lack of perception, seasonal temperature increases, and dry weather which all increase wildland rate fire potential, rate of spread, and the probability of ignition.

The chart below shows the percentage of U.S. lands classified under drought conditions from 2000 through 2015.

**Figure 2.** U.S. Lands Under Drought Conditions, 2000–2015



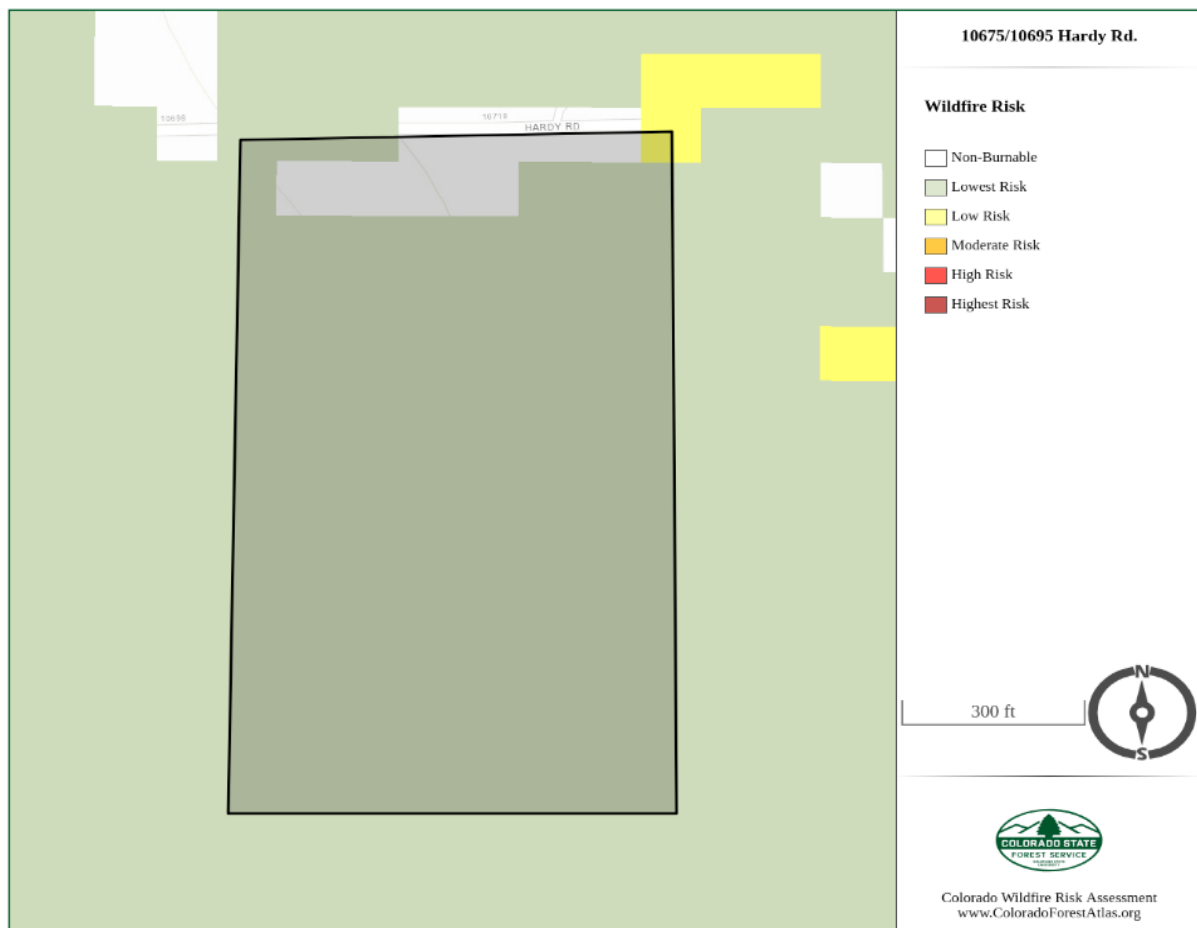
Source: EPA



# Wildfire Risk

Wildfire Risk is a composite risk rating obtained by combining the probability of a fire occurring with the individual values at risk layers. Risk is defined as "The possibility of loss or harm occurring from a wildfire." It identifies areas with the most significant potential impacts from a wildfire – i.e., those areas most at risk - considering all values and assets combined – WUI Risk, Drinking Water Risk, Forest Assets Risk, and Riparian Areas Risk.

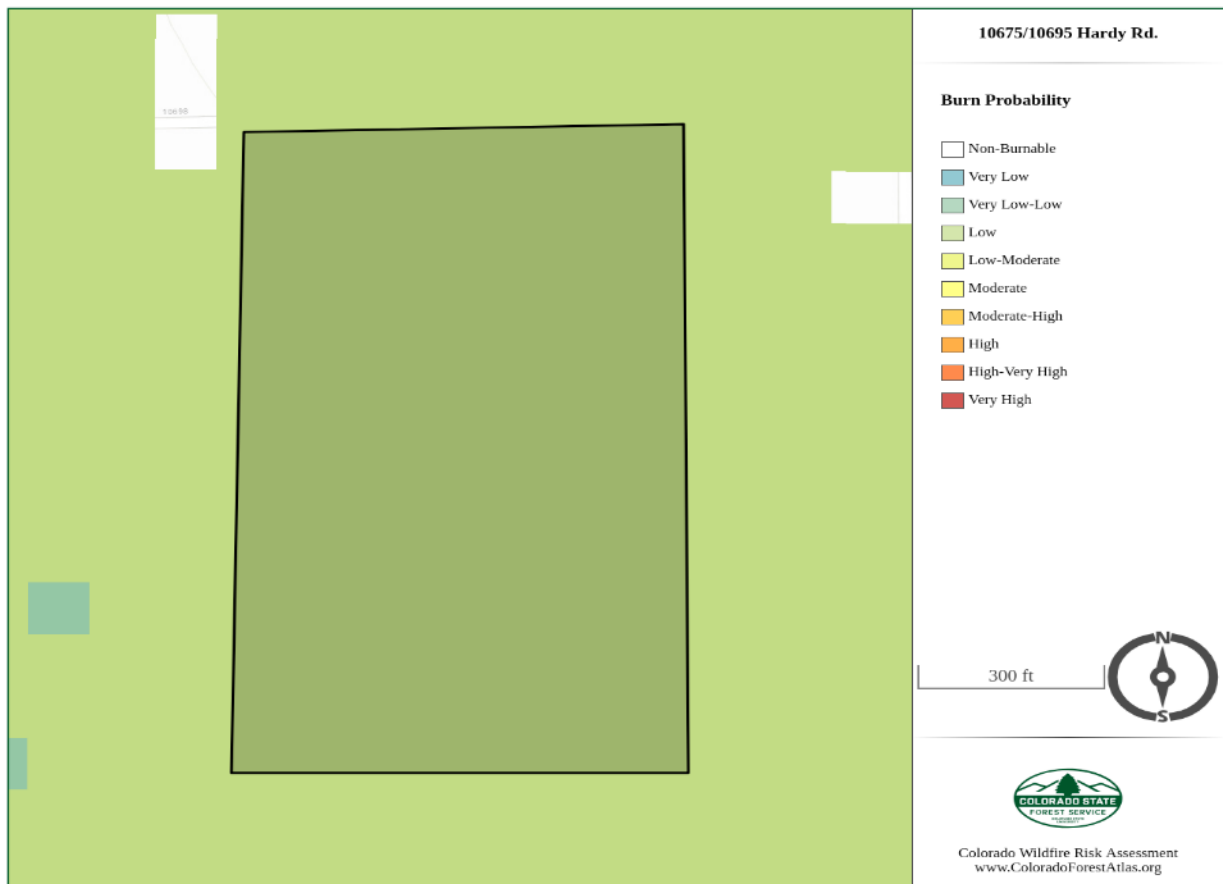
Source: Colorado State University



# Wildfire Burn Probability

Burn Probability (B.P.) is the annual probability of any location burning due to a wildfire. B.P. is calculated as the number of times a 3er cell on the landscape is burned from millions of fire simulations. The annual B.P. was estimated using a stochastic (Monte Carlo) wildfire simulation approach Technosylva's Wildfire Analyst software ([www.WildfireAnalyst.com](http://www.WildfireAnalyst.com)).

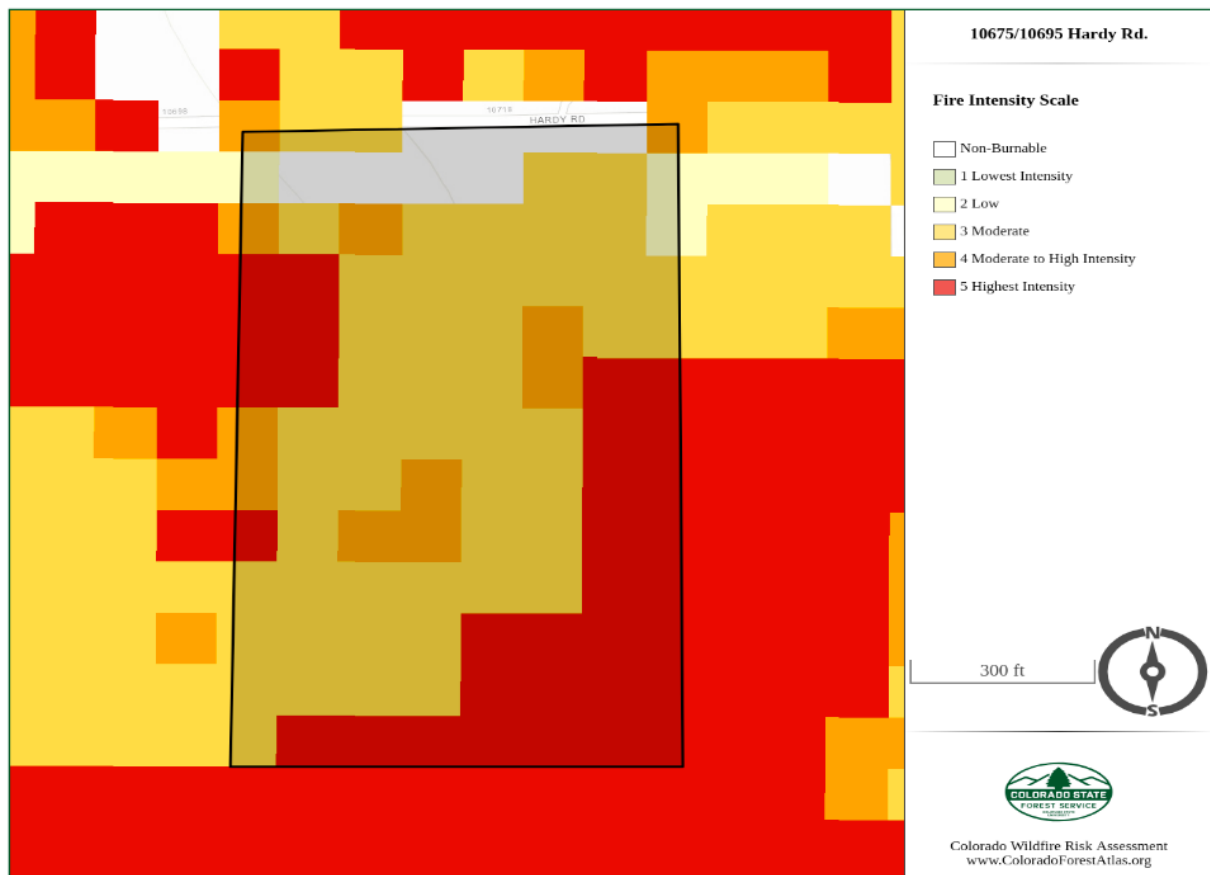
Source: Colorado State University



# Fire Intensity Scale

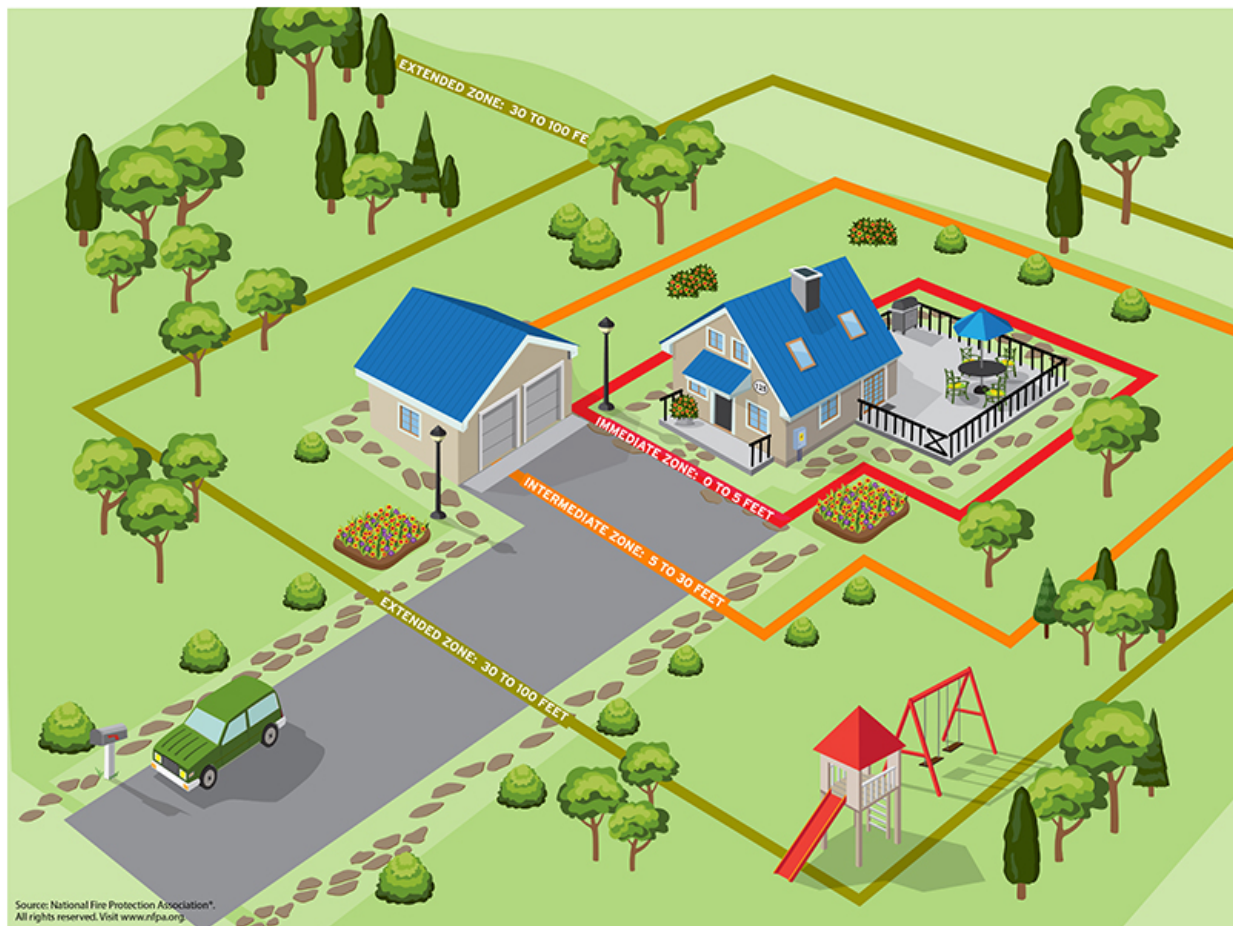
Fire Intensity Scale (FIS) specifically identifies areas where significant fuel hazards and associated dangerous fire behavior potential exist. Similar to the Richter scale for Earthquakes, FIS provides a standard scale to measure potential wildfire intensity. FIS consist of five (5) classes where the order of magnitude between classes is ten-fold. The minimum class, Class 1, represents very low wildfire intensities and the top class, Class 5, means exceptionally high wildfire intensities.

Source: Colorado State University



# Wildland Fire Risk to Structures / Defensible Space

Two factors primarily determine whether a home can survive a wildfire. First is the defensible space around the structure, and second is the structure's ignite ability. These two factors create the concept called the Home Ignition Zone (HIZ). To protect a home or a structure from wildfire, the goal is to reduce and or illuminate fuels in ignition sources within the HIZ, which will decrease the likelihood of structure ignitability. Below is a graphic created by the NFPA Firewise USA program depicting the HIZ.





# Colorado State University Defensible Space Zones

Described below are the three zones need to be addressed when creating defensible space:

**Zone 1** is the area nearest the home and other structures. This zone requires maximum hazard reduction.

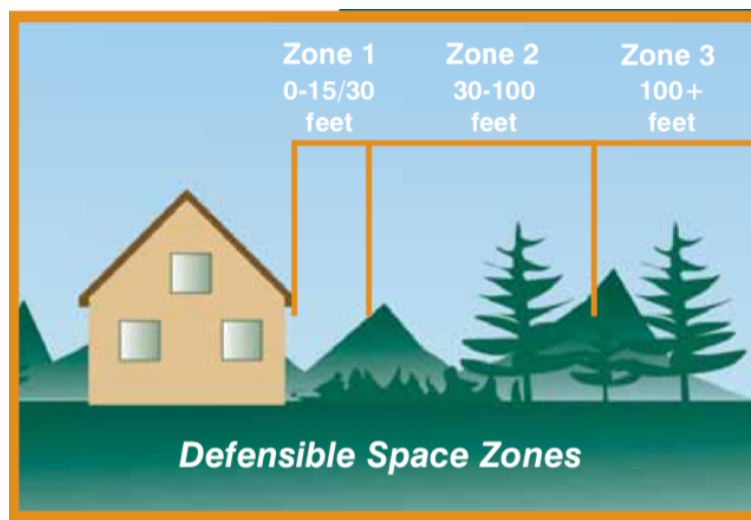
The width of Zone 1 extends a minimum distance of 15-30 feet outward from a structure, depending on property size. Most flammable vegetation is removed from this zone, with the possible exception of a few low-growing shrubs or fire-resistant plants. Avoid landscaping with common ground junipers, which are highly flammable.

**Zone 2** is a transitional area of fuel reduction between Zones 1 and 3.

Zone 2 is an area of fuel reduction designed to diminish the intensity of a fire approaching your home. The width of Zone 2 depends on the slope of the ground where the structure is built. Typically, the defensible space in Zone 2 should extend at least 100 feet from all structures. If this distance stretches beyond your property lines, try to work with the adjoining property owners to complete an appropriate, defensible space.

**Zone 3** is the area farthest from the home. It extends from the edge of Zone 2 to your property boundaries 100'+.

Zone 3 has no specified width. It should provide a gradual transition from Zone 2 to areas farther from the home with other forest management objectives. This zone offers an opportunity for you to improve the health of the forest through proper management.



Source CSU

# **Defensible Space Assessments**

## **10675 Hardy Rd. Lot 1**

Utilizing NFPA's Firewise USA criteria in combined with Colorado State University's defensible space checklist, the existing structure at 10675 Hardy Rd. was evaluated based upon the three primary zones. There is little to no fuel within the defensible space zone 1, (0-30') from the structure. It is surrounded by bare dirt and rock landscaping, the dwelling is built of fire-resistant materials, including stucco / rock and class a roofing material. Within defensible space zone 2, (30-100') from the structure, no mulch or flammable ground is covering exists; on the east side of the property, a grove of Ponderosa Pines exists within approximately (60 to 100') from the structure. In the final defensible space, zone 3, Ponderosa Pine stands are found on the West, Southwest, Northwest, Northeast, and Southeast portions of the structure, 100+ feet from the structure.



Lot 1, looking Southwest towards the dwelling

# Defensible Space Assessments

## 10695 Hardy Rd. Lot 2

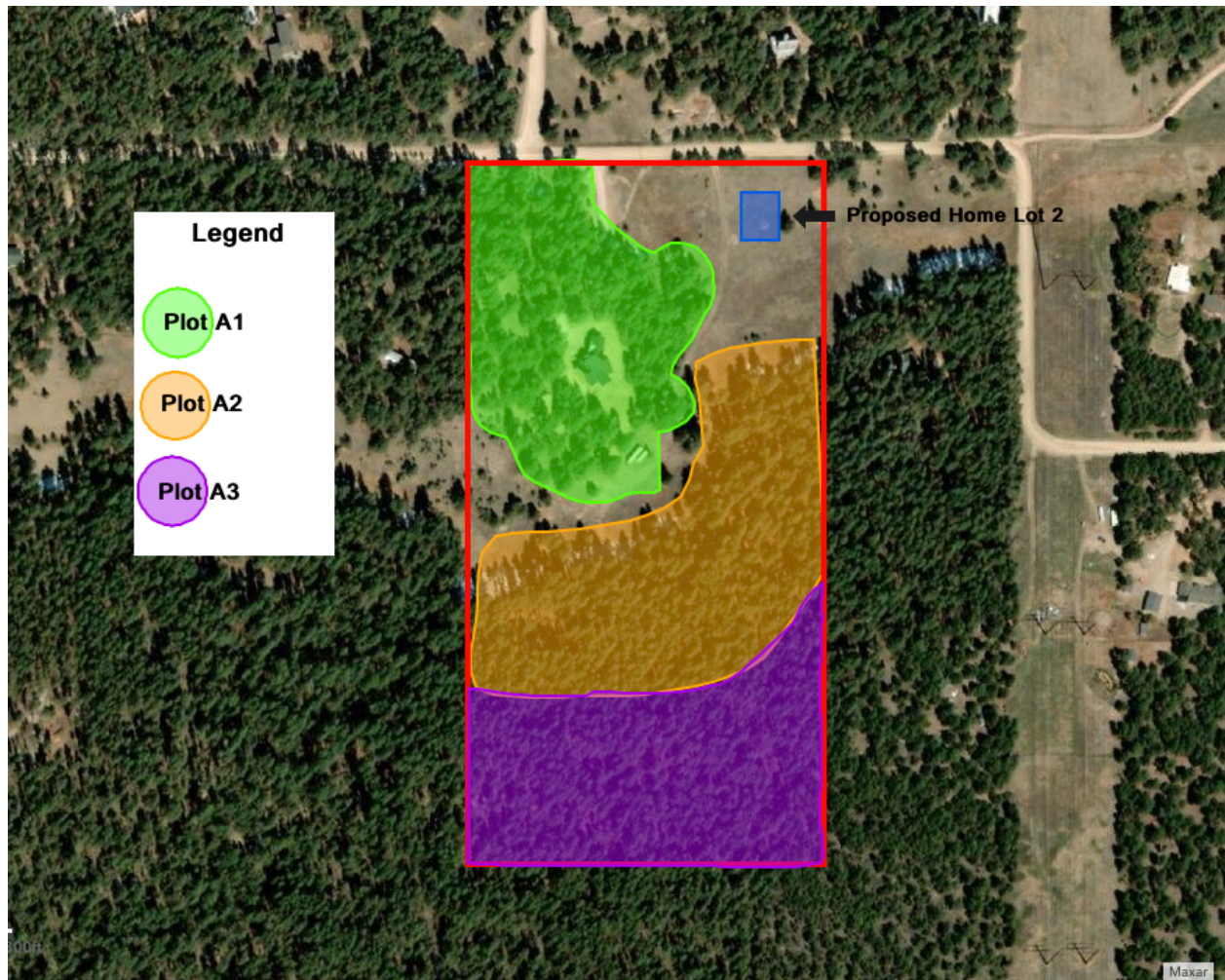
Utilizing NFPA's Firewise USA criteria in combination with Colorado State University's defensible space checklist. The proposed structure at "10695" Hardy Road (Lot 2) was evaluated based upon the three primary zones. There are only short light flashy fuels within the defensible space zone 1 (0-30') from the proposed structure. In defensible space zone 2, (30-100') from the structure, consists of primarily light flashy fuels with an occasional small Ponderosa Pine. The Lot also has multiple small ponderosa pine trees separated by 2'-10' on the East and Northern portion of the lot and in the riparian area to the Southwest. A majority of the land surrounding the proposed structure is within the low-lying area which consists of annual and perennial grasses. In the final defensible space zone 3, (100+) feet from the structure, ponderosa pine stands are to the west approximately 300' and to the south by 500' of the proposed location of the structure.



Lot 2, looking South



# Recommended Wildland Fire Mitigation Measures Map



Source: ESRI ArcMap



# **Recommended Wildland Fire Mitigation Measures**

## **Plot A<sub>1</sub>**

Plot A<sub>1</sub> is the highest priority and consists of primarily dense ponderosa pine that surrounds the single-family dwelling at 10675 located on Lot 1. Many 'dog hair' and over-topped Ponderosa Pine trees crowd the forested areas. Due to the dense canopy, there is also lack of surface fuels, especially towards the interior of the stands. This plot includes vegetation, primarily Ponderosa Pine, within zone 1, zone 2 and zone 3, the defensible space zones for the dwelling at 10675 located on Lot 1. The most aggressive treatments will be used within this plot, which includes the ingress/egress driveway. Listed below are the recommended mitigation and forest management work for this plot.

### Current Conditions:

Composition: Ponderosa Pine

Canopy Cover: 80%

### Desired Outcome:

Composition: Ponderosa Pine, releases grasses and other native surface vegetation along the forest floor through the thinning of the canopy cover.

Canopy Cover: 40%

### Prescription:

Removal of dog hair, stressed, diseased, dead, and 80% of all overtopped <6" Ponderosa Pines. size and class diversity will be a goal that is obtained while opening canopy cover to meet overall shaded fuel break and Firewise objectives. A minimum of 10' crown spacing within zone 2 and a minimum of a 30' buffer on either side along the ingress and egress driveway to limit fire spread across the driveway, which could compromise the escape route from the residence. Trees within this plot will be limbed to remove all ladder fuels 10' high or 1/3 the tree's height, whichever is less. There is a stockpile of logs and mulch located south of the dwelling that lies on the outer edge of zone 2, which will need to be moved further away from the residence. In addition, surrounding the proposed structure on Lot 2 at 10695 Hardy Rd. is approximately 8-10 Ponderosa Pine trees; all of these trees will need to be limbed to remove all ladder fuels 10' high or 1/3 the height of the tree, whichever is less; also, 10' crown spacing should be the overall goal with these trees as they lie within zone 1 and zone 2 of the proposed structure.

## **Recommended Wildland Fire Mitigation Measures Plot A2 /A3**

Plot A2/A3 includes a primarily Ponderosa pine continuous stand that begins approximately 350' from the single-family dwelling at 10675 located on Lot 1. These plots are in located within Zone 3 of both lots. These two plots best course of action would be to create a forest management plan that includes forest management objectives such as forest health, mitigation, biodiversity, and habitat preservation. Plot A2 would make an excellent area for a transitional shaded fuel break that would buffer the main residence in addition to the riparian area that runs through the property. Many 'dog hair' and over-topped Ponderosa Pine trees crowd the forest stand, especially around the perimeter. There is a lack of surface fuels, especially towards the interior of the stands.

### **Current Conditions:**

Composition: Ponderosa Pine

Canopy Cover: 80-90%

### **Desired Outcome:**

Recommend a forest management plan be created with the assistance of Colorado State Forest Service to receive the desired forest health within these plots.

Composition: Ponderosa Pine

Canopy Cover: Decreased to the desired level as determined by the forest management plan and shaded fuel break specifications

### **Prescription:**

Removal of dog hair, stressed, diseased, dead, and 80% of all overtopped <6" Ponderosa Pines. Size and class diversity will be a goal that is obtained while opening canopy cover to meet overall shaded fuel break, forest management plan, and Firewise objectives.

## Sources:

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