

Indian Springs

Community Wildfire Protection Plan



Prepared by Forest Stewardship Concepts, Ltd. at the request of Indian Springs Landowners Association and Fremont County, Colorado.

Signatory Page

The following people have reviewed and approved the Indian Springs Community Wildfire Protection Plan. It is now ready for implementation.

President, Board of Directors,
Indian Springs Landowners Association

Date

Lieutenant, Deer Mtn. Fire Protection District

Date

Jim Beicker, Sheriff, Fremont County

Date

Chair, Fremont County BOCC

Date

Steve Morrissey, Director, Fremont County
Office of Emergency Management

Date

Keith E. Berger, Field Manager, USDI BLM Royal Gorge
Field Office

Date

John Grieve, State District Forester,
Cañon City, Colorado State Forest Service

Date

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PREFACE:

A Community Wildfire Protection Plan (CWPP) is a local wildfire protection plan that can take a variety of forms based on the needs of the community. The CWPP may address issues such as wildfire response, hazard mitigation, community preparedness, training, equipment or structure protection – or all of the above.

The process of developing a CWPP can help a community clarify and refine its priorities for protection of life, property and critical infrastructure in the wildland-urban interface. It also can lead community members through valuable discussions regarding management options and implications for the surrounding watershed.

This CWPP incorporates the “Fire Adapted Communities Concept” by including projects that support resilient landscapes and addressing the community response to wildfires.

CWPPs also improve a community’s ability to compete for grants to fund hazard mitigation projects, prevention, and preparedness education for residents in the community.

The wildland urban interface (WUI) is another term found throughout this document. It can be simply described as the geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

For the purposes of community wildfire protection planning a more specific definition is used. The Healthy Forest Restoration Act defines wildland-urban interface as:

- a.) an area extending ½ mile from the boundary of an at risk community.
- b.) an area within 1.5 miles of the boundary of an at-risk community, including any land that:
 1. Has a sustained, steep slope that creates the potential for wildfire behavior endangering the at risk community.
 2. Has a geographic feature that aids in creating an effective fire break, such as a road or ridge top.
- c.) An area that is adjacent to an evacuation route for an at risk community that requires hazardous fuels reduction to provide safer evacuation from the at risk community.

I. COMMUNITY IDENTIFICATION & DESCRIPTION

The Indian Springs (IS) area is in Fremont County, north of Cotopaxi Colorado. It covers approximately 13,451 acres, with 2,363 acres being classified as Wildland Urban Interface by Colorado Wildfire Risk Assessment Program. Elevation ranges from 8,000 feet near the southern boundary to 9,000 feet in the northeast corner of the analysis area. County Road 12 provides primary access. See **Figure 1: Indian Springs Vicinity Map** for an understanding of the CWPP location. See **Table 1: Indian Springs Land Ownership** to get an idea of land ownership distribution.

IS area contains 159 total lots within its boundary. Of the 159 parcels 75 or (47%) are considered improved and 84 or (53%) unimproved. Eighteen (18) miles of roads serve the area. Most roads are reasonably good dirt and gravel that provide year round access.

Indian Springs Landowners Association is active within the CWPP boundary. Defensible space activities are evident on a few of the properties.

Large wildfires are not unusual in the area. The Dinosaur fire burned 2,400 acres in 1988 on the north eastern side of Cañon City. The Royal Gorge fire of 2013 burned 3,218 acres and destroyed forty eight structures in similar fuel types and terrain as found in Indian Springs. The Parkdale fire of 2010 burned 629 acres and destroyed five structures. These fires increased Indian Springs resident's awareness of the hazards of living in a wildland setting.

Initial attack for all wildland and structure fires on Indian Springs is provided by the Deer Mountain Fire Protection District (DMFPD), Fremont County Wildland Fire Team, Bureau of Land Management and US Forest Service.

A public meeting was held on XXXXXX, 2016 to review the draft Community Wildfire Protection Plan (CWPP) and incorporate changes suggested by the property owners, fire district representatives, Colorado State Forest Service (CSFS) personnel and Fremont County Sheriff's Department. Xx residents participated in the meeting and their comments have been included in this plan.

Table 1: Indian Springs Land Ownership

Name	Acres
Private	5,266
State Land Board	612
Bureau of Land Management	7,573
Total	13,451

II. Fire Adapted Communities

Communities in wildfire prone areas are learning what it takes to be fully prepared for wild land fire. A fire adapted community incorporates people, buildings, businesses, infrastructure, cultural resources, and natural areas into the effort to prepare for the effects of wild land fire. Community leaders and residents accept responsibility for living in an area with wildfire hazards. They have the knowledge and skills and have adopted tools and behaviors to prepare in advance for their community's resilience in a wildfire prone environment.

A Fire Adapted Community..... *(Source: Guide to Fire adapted Communities)*

- ✓ Acknowledges and understands its wildfire risk
- ✓ Recognizes that it is in or near a fire prone ecosystem
- ✓ Has leaders and citizens with knowledge, skills, willingness and realistic expectations to properly prepare for and deal with wildland fire
- ✓ Communicates clearly with citizens about wildfire risks and specific methods for preparedness
- ✓ Has adequate local fire suppression training, equipment, and capacity to meet realistic community protection needs
- ✓ Creates and uses a Community Wildfire Protection Plan (CWPP)
- ✓ Reduces levels of flammable vegetation on lands near and inside the community
- ✓ Has local building, planning, zoning and fire prevention policies and codes that require ignition resistant buildings, building materials, and landscapes

- ✓ Has buildings and landscapes that are designed, constructed, retrofitted, and maintained in a manner that is resistant to ignition
- ✓ Creates safety features such as buffers between fuels and neighborhoods, designated evacuation routes, and internal neighborhood safety zones
- ✓ Makes sure fire adapted community features, activities, and behaviors are maintained over time
- ✓ Has leaders and residents who coordinate, plan and collaborate to leverage their resources to reduce wildfire risk while increasing community resiliency



Figure 1: Indian Springs Vicinity Map



III. COMMUNITY ASSESSMENT

The overall risk to the community from wildland fire is High. This section will discuss the factors considered and contributing to the overall rating. The assessment is based on two levels of information. **The Colorado Wildfire Risk Assessment Summary** report found in **Appendix L**: provides a wealth of broad scale information about the IS CWPP area. Site specific findings were developed based on field reconnaissance, Core Team knowledge and stakeholders insights.

Colorado Wildfire Risk Assessment (WRA) Summary Report

The Colorado WRA provides a consistent, comparable set of scientific results to be used as a foundation for wildfire mitigation and prevention planning in Colorado. Please refer to **Appendix L** for in depth discussions on individual risk rating factors. The Colorado WRA website has further detailed information for you at www.ColoradoWildfireRisk.com

Colorado WRA places heavy emphasis on structure and population density. That distorts the risk figure substantially when an individual landowner is trying to understand how a wildfire in their vicinity is likely to impact them. The CWPP Core Team has elevated the RISK of wildfire to High/Very High after considering the Colorado WRA report. Fremont County Community Wildfire Protection Plan of 2008 ranked Indian Springs as one of the highest priority fire hazard areas in the county when all factors were considered.

Wildland Urban Interface Risk Index:

The Wildland-Urban Interface (WUI) Risk Index layer is a rating of the potential impact of a wildfire on people and their homes. The key input, WUI, reflects housing density (houses per acre) consistent with Federal Register National standards. The location of people living in the wildland-urban interface and rural areas is essential for defining potential wildfire impacts to people and homes.

	WUI Risk Class	Acres	Percent
	-1 (Least Negative Impact)	11,088	82.4 %
	-2	36	0.3 %
	-3	2,184	16.2 %
	-4	9	0.1 %
	-5	134	1.0 %
	Total	13,451	100.0 %

Wildfire Risk:

Wildfire Risk represents the possibility of loss or harm occurring from a wildfire. It is the primary output of the Colorado Wildfire Risk Assessment (Colorado WRA). Risk is derived by combining the Wildfire Threat and the Fire Effects assessment outputs. It identifies areas with the greatest potential impacts from a wildfire – i.e. those areas most at risk - considering all values and assets combined together.

Wildfire Risk combines the likelihood of a fire occurring (threat), with those areas of most concern that are adversely impacted by fire (fire effects), to derive a single overall measure of wildfire risk.

Since all areas in Colorado have risk calculated consistently, it allows for comparison and ordination of areas across the entire state.

Fire Effects are a key component of Wildfire Risk. Fire Effects are comprised of several inputs focusing on values and assets at risk. The purpose of Fire Effects is to identify those areas that have important values or assets that would be adversely impacted by a wildfire. Fire Effects inputs include Wildland Urban Interface, Forest Assets, Riparian Assets and Drinking Water Importance Areas (watersheds). Refer to the Values Impacted Rating for more information about Fire Effects.

Wildfire Risk Class		Acres	Percent
	Non-Burnable	0	0.0 %
	Lowest Risk	6,073	45.1 %
	Low Risk	6,194	46.0 %
	Moderate Risk	1,185	8.8 %
Total		13,451	100.0 %

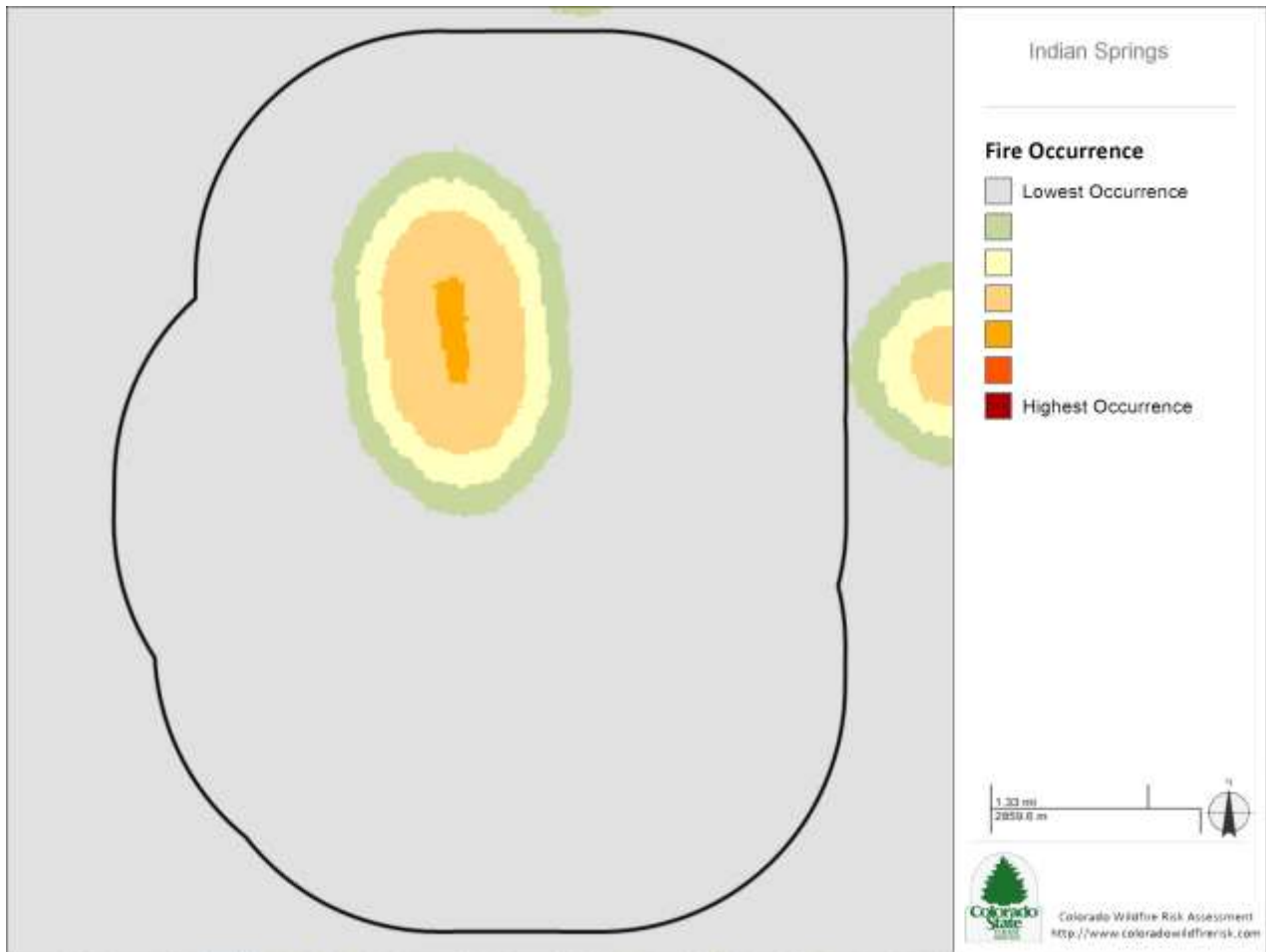
Wildfire Threat

Wildfire Threat is the likelihood of an acre burning. Threat is derived by combining a number of landscape characteristics including surface fuels and canopy fuels, resultant fire behavior, historical fire occurrence, percentile weather derived from historical weather observations, and terrain conditions. These inputs are combined using analysis techniques based on established fire science.

Wildfire Threat Class		Acres	Percent
	Non-Burnable	1	0.0 %
	Lowest Threat	9,984	74.2 %
	Low Threat	533	4.0 %
	Moderate Threat	2,253	16.7 %
	High Threat	680	5.1 %
	Highest Threat	0	0.0 %
Total		13,451	13,451

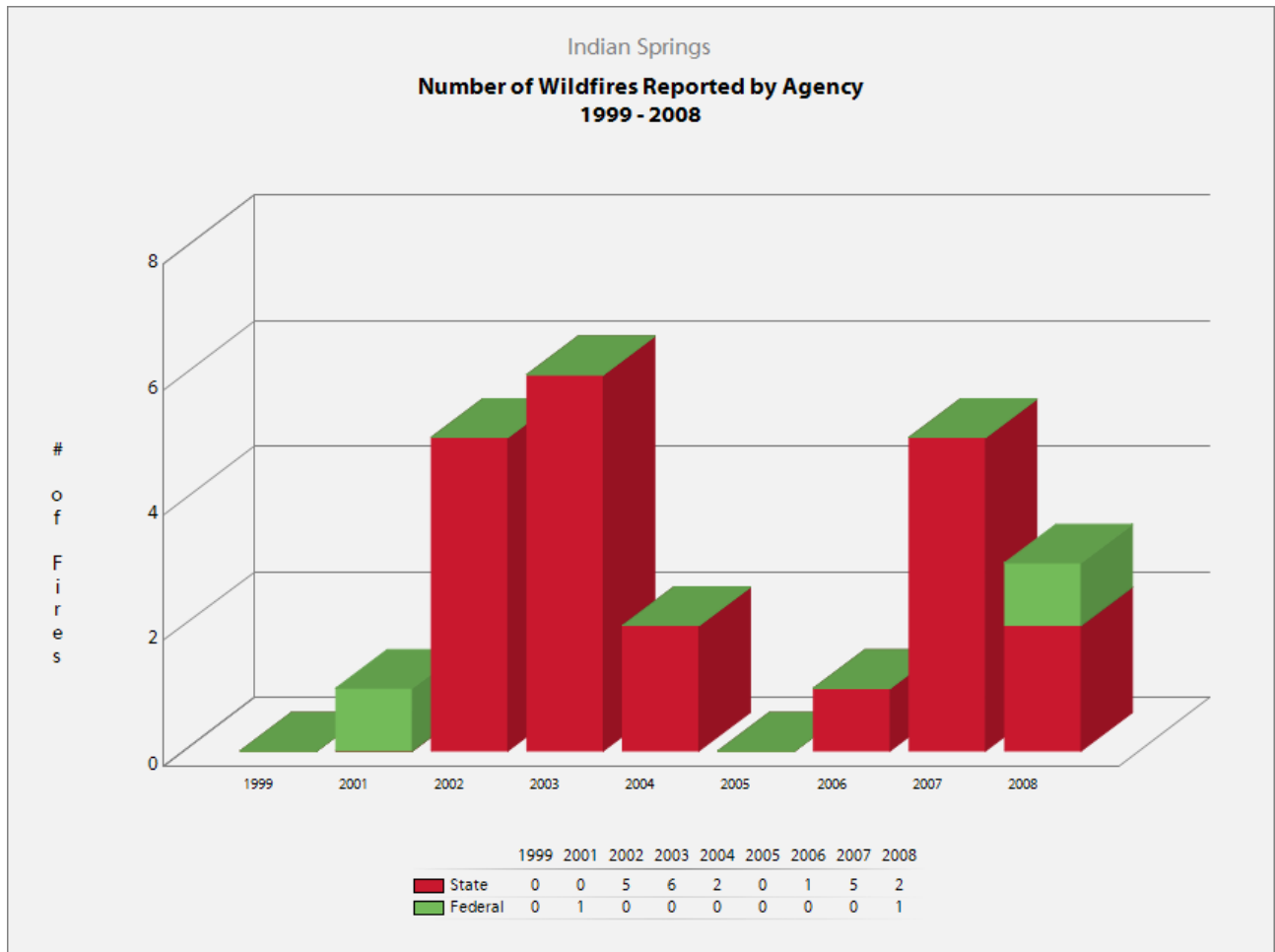
Fire Occurrence

Fire Occurrence is an ignition density that represents the likelihood of a wildfire starting based on historical ignition patterns. Occurrence is derived by modeling historic wildfire ignition locations to create an average ignition rate map. The ignition rate is measured in the number of fires per year per 1000 acres.

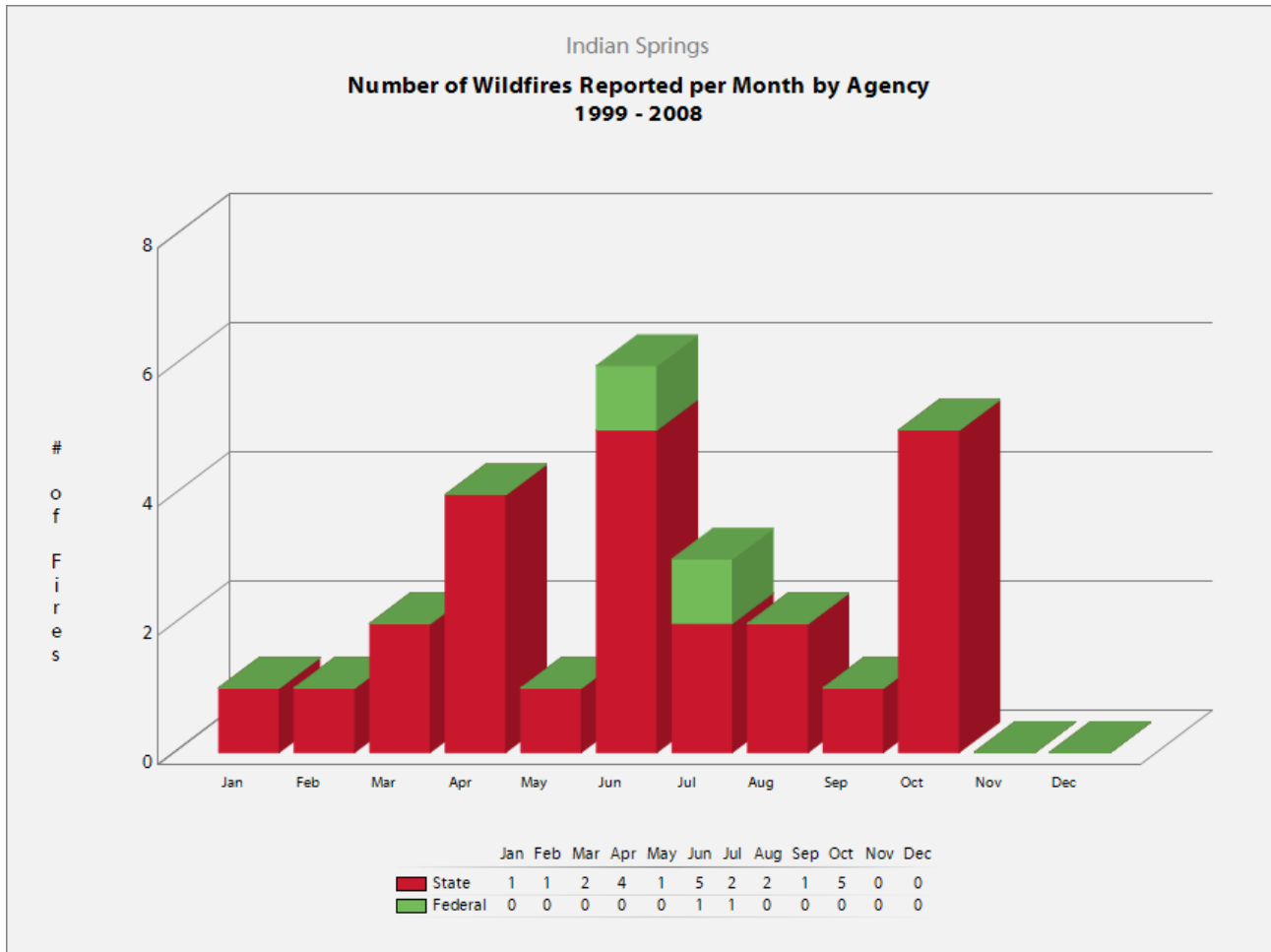


Fire history statistics provide insight as to the number of fires, acres burned and cause of fires in Colorado. These statistics are useful for prevention and mitigation planning. They can be used to quantify the level of fire business, determine the time of year most fires typically occur and develop a fire prevention campaign aimed at reducing a specific fire cause.

NOTE: Fire history numbers for private land in the CO WRAP are broken down by zip code and therefore cover a much broader area than Indian Springs.



The chart below demonstrates that the fire season in the Indian Springs area is much longer than it may appear.



Fire Behavior

Fire behavior is the manner in which a fire reacts to the following environmental influences:

1. Fuels
2. Weather
3. Topography



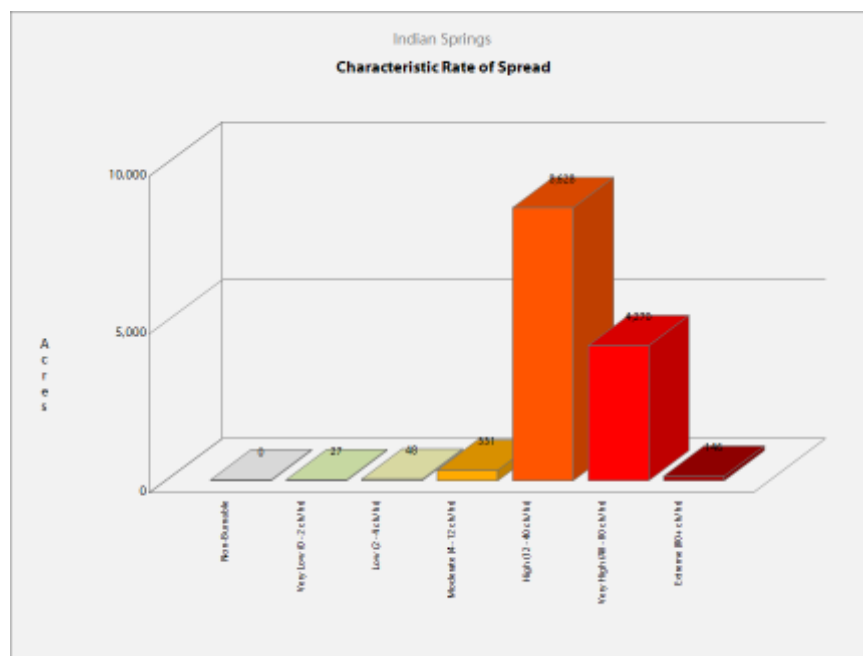
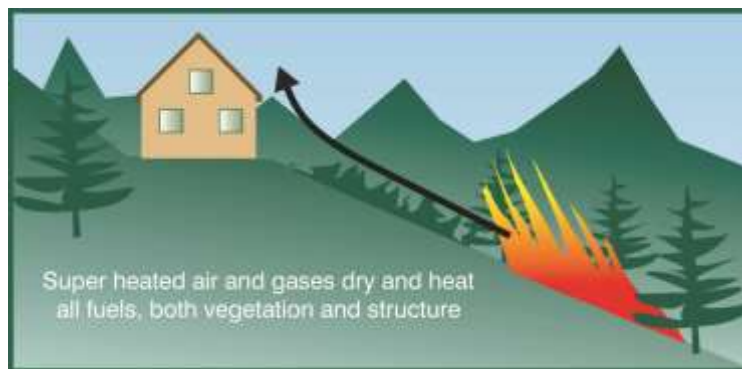
Fire behavior characteristics are attributes of wildland fire that pertain to its spread, intensity, and growth. Fire behavior characteristics utilized in the Colorado WRA include fire type, rate of spread, flame length and fireline intensity (fire intensity scale). These metrics are used to determine the potential fire behavior under different weather scenarios. Areas that exhibit moderate to high fire behavior potential can be identified for mitigation treatments, especially if these areas are in close proximity to homes, business, or other assets.

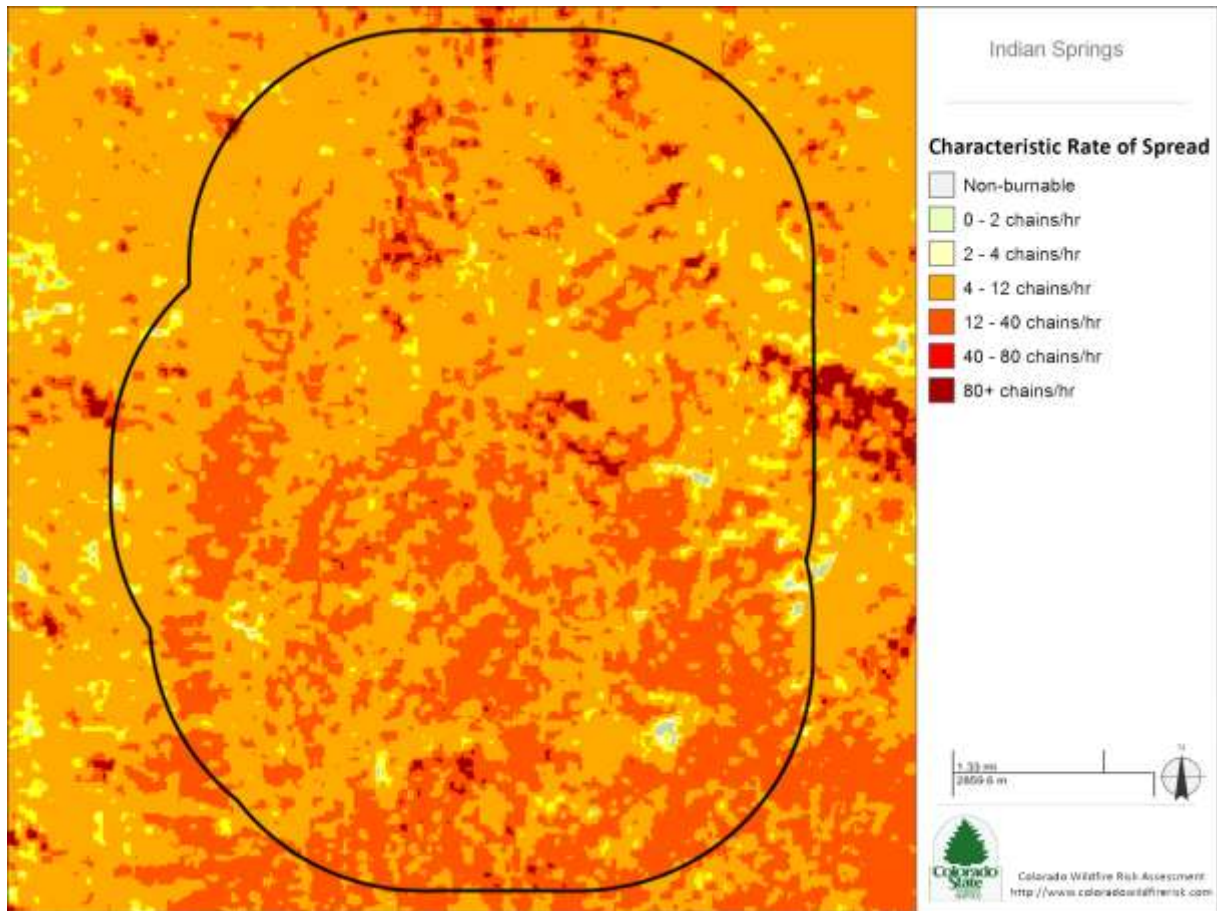


Characteristic Rate of Spread

Characteristic Rate of Spread is the typical or representative rate of spread of a potential fire based on a weighted average of four percentile weather categories. Rate of spread is the speed with which a fire moves in a horizontal direction across the landscape, usually expressed in chains per hour (ch/hr) or feet per minute (ft/min). For purposes of the Colorado WRA, this measurement represents the maximum rate of spread of the fire front. Rate of Spread is used in the calculation of Wildfire Threat in the Colorado WRA.

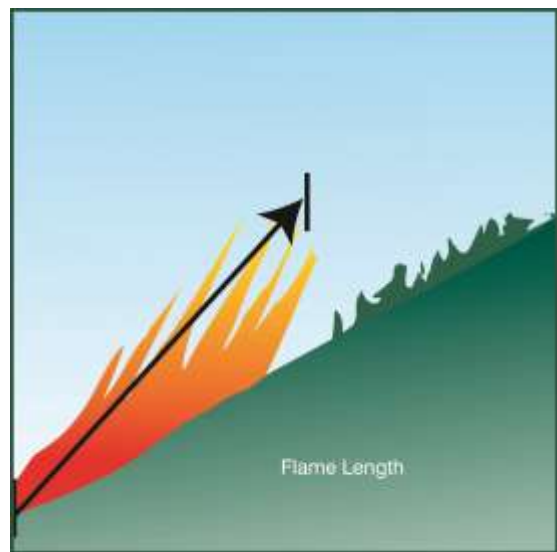
Rate of spread is a fire behavior output, which is influenced by three environmental factors - fuels, weather, and topography. Weather is by far the most dynamic variable as it changes frequently.



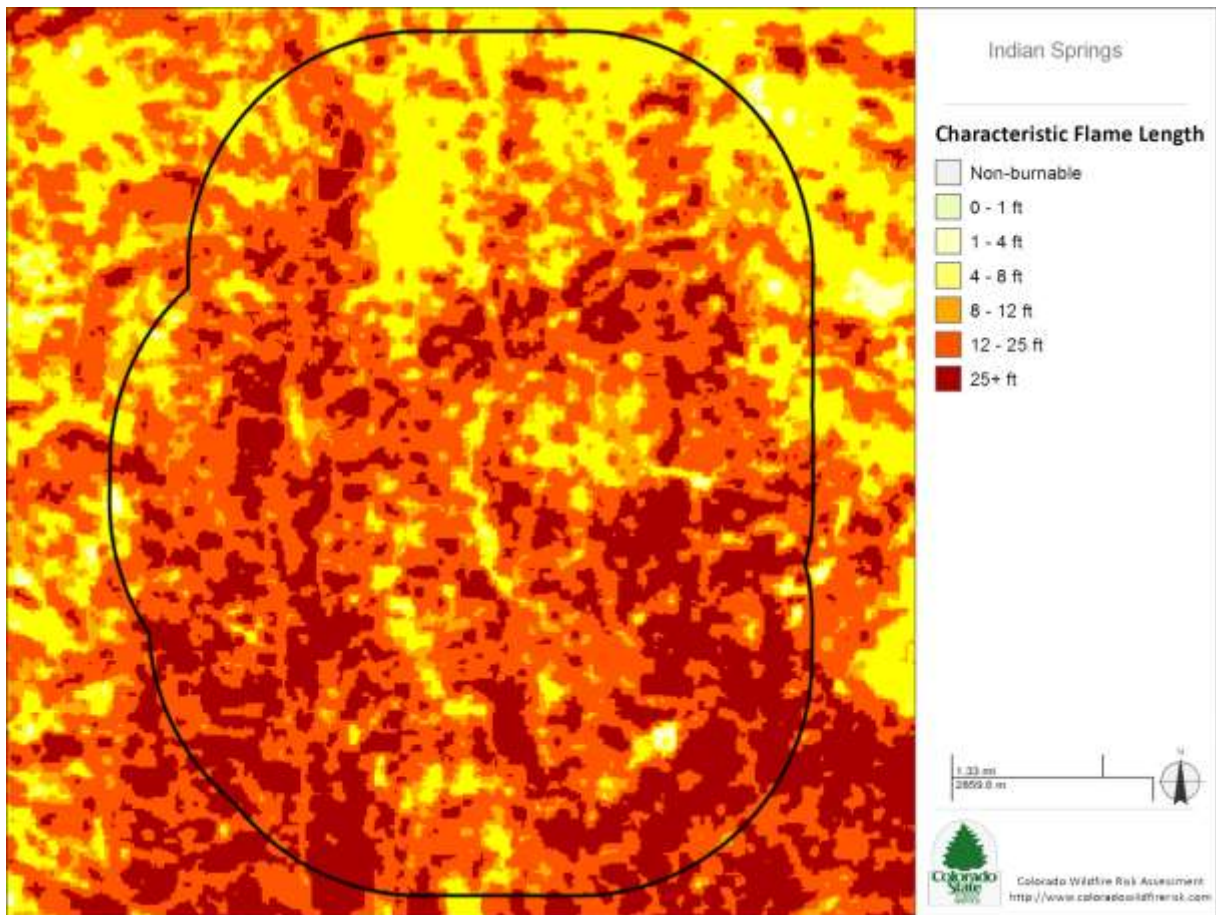


Characteristic Flame Length

Characteristic Flame Length is the typical or representative flame length of a potential fire based on a weighted average of four percentile weather categories. Flame Length is defined as the distance between the flame tip and the midpoint of the flame depth at the base of the flame, which is generally the ground surface. It is an indicator of fire intensity and is often used to estimate how much heat the fire is generating. Flame length is typically measured in feet (ft). Flame length is the measure of fire intensity used to generate the Fire Effects outputs for the Colorado WRA.



Flame Length		Acres	Percent
	Non-Burnable	0	0.0 %
	Very Low (0 - 1 ft)	0	0.0 %
	Low (1 - 4 ft)	40	0.3 %
	Moderate (4 - 8 ft)	2,009	14.9 %
	High (8 - 12 ft)	1,619	12.0 %
	Very High (12 - 25 ft)	6,100	45.3 %
	Extreme (25+ ft)	3,684	27.4 %
Total		13,451	100.0 %



Suppression Difficulty Rating

Suppression Difficulty Rating reflects the difficulty or relative cost to suppress a fire given the terrain and vegetation conditions that may impact machine operability. This layer is an overall index that combines the slope steepness and the fuel type characterization to identify areas where it would be difficult or costly to suppress a fire due to the underlying terrain and vegetation conditions that would impact machine operability (in particular Type II dozer).

SDR Class	Acres	Percent
-1 (Least Difficult)	0	0.0 %
-2	0	0.0 %
-3	5,864	43.6 %
-4	5,635	41.9 %
-5	1,155	8.6 %
-6	638	4.7 %
-7	139	1.0 %
-8	20	0.1 %
-9 (Most Difficult)	0	0.0 %
Total	13,451	100.0 %

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 maximum class, Class 5, represents very high wildfire intensities.

1. Class 1, Lowest Intensity:
Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
2. Class2, Low:
Small flames, usually less than two feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
3. Class 3, Moderate:
Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but bull dozers and plows are generally effective. Increasing potential for harm or damage to life and property.
4. Class 4, High:
Large Flames, up to 30 feet in length; short-range spotting common; medium range spotting

possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.

5. Class 5, Highest Intensity:

Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

	FIS Class	Acres	Percent
	Non-Burnable	0	0.0 %
	1 (Lowest Intensity)	110	0.8 %
	2 (Low)	1,901	14.1 %
	3 (Moderate)	1,693	12.6 %
	4 (High)	7,355	54.7 %
	5 (Highest Intensity)	2,392	17.8 %
Total		13,451	100.0 %

Fire Type

There are two primary fire types – surface fire and canopy fire. Canopy fire can be further subdivided into passive canopy fire and active canopy fire. A short description of each of these is provided below.

Surface Fire

A fire that spreads through surface fuel without consuming any overlying canopy fuel. Surface fuels include grass, timber litter, shrub/brush, slash and other dead or live vegetation within about 6 feet of the ground.



Passive Canopy Fire

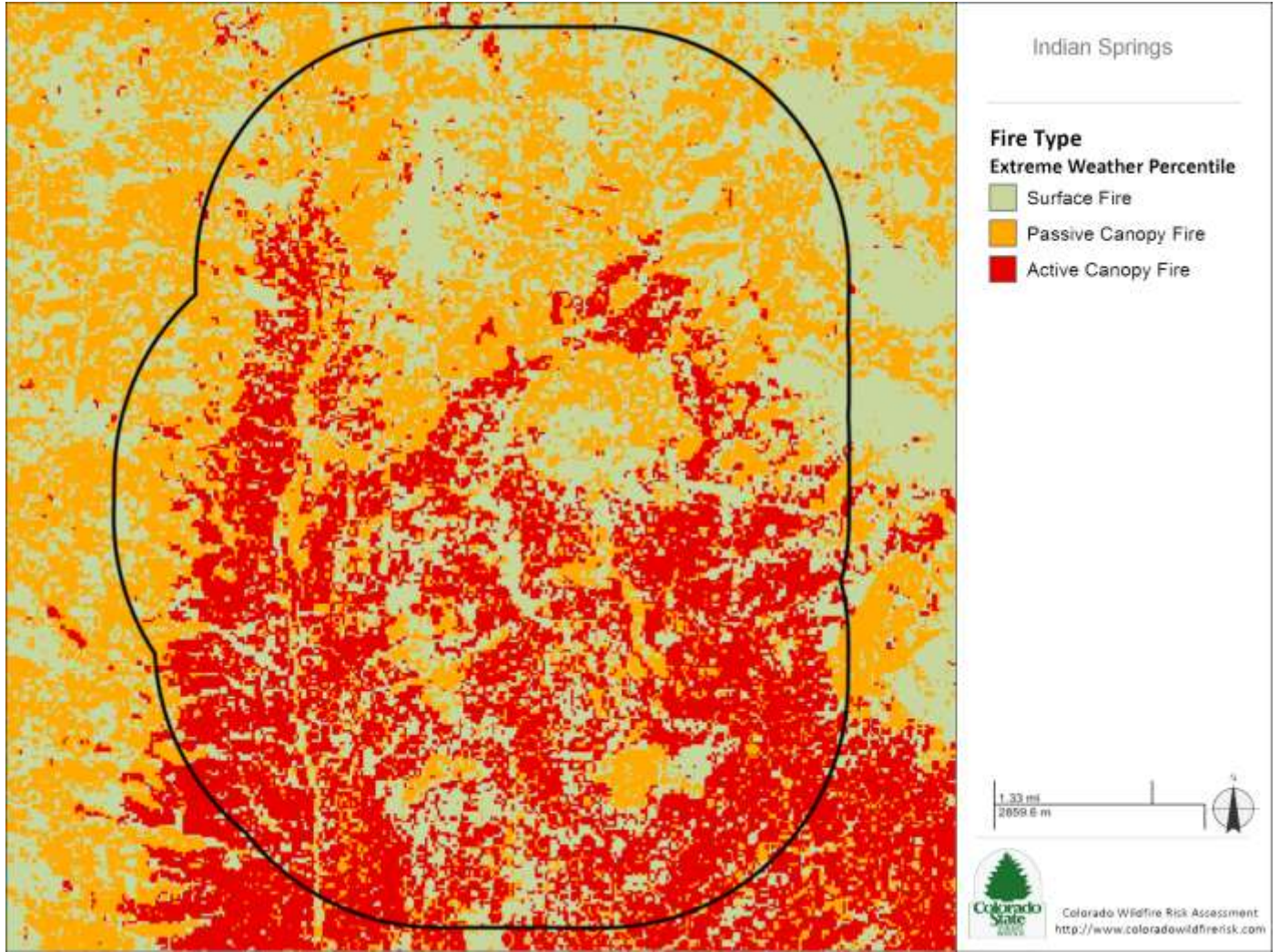
A type of crown fire in which the crowns of individual trees or small groups of trees burn, but solid flaming in the canopy cannot be maintained except for short periods (Scott & Reinhardt, 2001).



Active Canopy Fire

A crown fire in which the entire fuel complex (canopy) is involved in flame, but the crowning phase remains dependent on heat released from surface fuel for continued spread (Scott & Reinhardt, 2001).





Surface fuels

Surface fuels or fire behavior fuel models as they are technically referred to, contain the parameters required by the Rothermel (1972) surface fire spread model to compute surface fire behavior characteristics, including rate of spread, flame length, fireline intensity and other fire behavior metrics. As the name might suggest, surface fuels account only for surface fire potential. Canopy fire potential is computed through a separate but linked process. The Colorado WRA accounts for both surface and canopy fire potential in the fire behavior outputs. However, only surface fuels are shown in this report.

Surface fuels typically are categorized into one of four primary fuel types based on the primary carrier of the surface fire: 1) grass, 2) shrub/brush, 3) timber litter, and 4) slash. Two standard fire behavior fuel model sets have been published. The Fire Behavior Prediction System 1982 Fuel Model Set (Anderson, 1982) contains 13 fuel models, and the Fire Behavior Prediction System 2005 Fuel Model Set (Scott & Burgan, 2005) contains 40 fuel models. The Colorado WRA uses fuel models from the 2005 Fuel Model Set.

Surface Fuels	Description	FBPS Fuel Model Set	Acres	Percent
GR 2	Low Load, Dry Climate Grass (Dynamic)	2005	1,102	8.1 %
GS 2	Moderate Load, Dry Climate Grass-Shrub (Dynamic)	2005	2,296	17.1 %
SH 1	Moderate Load, Humid Climate Grass-Shrub (Dynamic)	2005	853	6.3 %
SH 5	High Load, Humid Climate Grass-Shrub	2005	887	6.6 %
SH 7	Very High Load, Dry Climate Shrub	2005	2,256	16.8 %
TU 1	Light Load, Dry Climate Timber-Grass-Shrub	2005	113	0.8 %
TU 2	Moderate Load, Humid Climate Timber-Shrub	2005	1	0.0 %
TL 2	Low Load, Broadleaf Litter	2005	94	0.7 %
TL 3	Moderate Load, Conifer Litter	2005	4,796	35.7 %
TL 5	High Load, Conifer Litter	2005	1,087	8.1 %
TL 6	Moderate Load, Broadleaf Litter	2005	5	0.0 %
TL 8	Long-needle Litter	2005	1,031	7.7 %
NB 3	Agricultural	2005	32	0.2 %
Total			13,451	100.0 %

Here are a few representative photos of fuel models found in Indian Springs area.



Fuel Model TL 8



Fuel Model GS 2



Fuel Model TU 1



Fuel Model TL 3

Fuel Hazards

Many homes have varying degrees of wildfire hazard mitigation completed around them. Much more is needed. Some landowners have reduced ladder fuels adjacent to their structures by pruning the lower limbs off of trees. This reduces the likelihood of a surface fire becoming a crown fire. Pruned limbs must be disposed of and not left on the ground.

All forest stands adjacent to structures with crown closures greater than forty percent are problematic. Continuous surface and crown fuel arrangement, both horizontal and vertical, render this area susceptible to torching, crown fire, and ignition by wind born embers, even under moderate weather conditions. The CO WRAP Fire Intensity Scale (page 23) for Indian Springs shows ninety nine percent (99%) of the area as high or above fire intensity.

Local topography further aggravates fire behavior and control. Slopes range from ten to fifty percent with most hillsides ranging from twenty to over forty (20->40%) percent. Small, non-descript drainages are abundant. They form chimneys where wildfires can make rapid runs uphill.

Table 4: Indian Springs Fire Behavior Prediction

Fuel Model*	Rate of Spread (miles/hr.)	Flame length (feet)	1 hour fire size (acres)	1 hour Fire perimeter (miles)	Separation Distance ¹ (feet)
GR 2	1.25	8	337	3	33
GS 2	.5	7	51	1.2	28
SH 7	.7	16	96	1.6	66
TL 3	.04	2	0.4	.1	6
TL 5	.11	3	3	.28	13

Note: Highlighted zones are well beyond hand crew and engine suppression threshold.

¹Separation distance is the distance needed for humans to not sustain injury from a wildfire.

Spot fires will likely ignite up to a half mile from the flaming front. Crown fires are likely to spread at 0.83 miles per hour.

Slope also drives fire behavior. Fires burn more rapidly uphill because the flames tend to preheat fuels above them. While fire does burn downhill slower it can be pushed downhill by high winds or long range spotting.

Chart 2: Fire Behavior Increase as Slope Gets Steeper (0-45% slope)

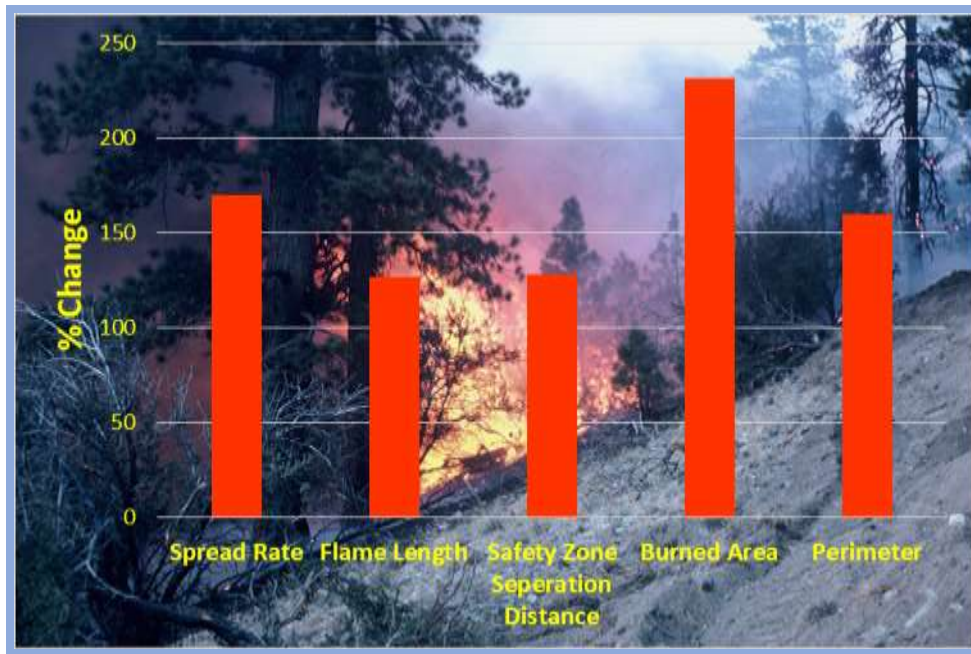


Table 5: Indian Springs CWPP Area Slope Distribution

% Slope	Acres	% Area
0-22%	4,761	35
22-32%	2,984	22
32-44%	2,882	21
> 44%	2,824	21
Total	13,451	99

Risk of Ignition and Wildfire Occurrence

The vegetative mosaic found in Indian Springs is living testimony to fires role in ecosystem dynamics in the area. In fact the charred stump in the cover photo is on site testimony to fire past presence at IS. Most contemporary fires are lightning caused but human caused fires are expected to increase as more homes are built in Indian Springs.

Fremont County has experienced a number of large wildfires recently. The 3,218 acre Royal Gorge fire of 2013 has added energy to the CWPP process. It burned forty eight (48) structures.

Other fires in the region provide a serious warning for all people living in places prone to wildland fires. They include Black Forest, Waldo, Wetmore, Mason, Iron Mountain, Parkdale and the list goes on.

Low fuel moistures and low relative humidity are common in the area, as are periods of high winds. When dry, windy conditions coincide with a heat source the stage is set for large, troublesome wildfires.

Fires originating in or near the community are of most immediate concern, but fires starting well beyond the boundaries of the planning area can have profound effects. Rapid rates of spread and long distance spotting (starting a new fire by windblown embers) are the norms for fires in the vicinity. **Table 4: Indian Springs Fire Behavior Prediction** provides insight into potential fire behavior on a bad day at Indian Springs.

III Community Values at Risk & Hazard Assessment

Fremont County Community Wildfire Protection Plan of 2008 ranked Indian Springs as one of the highest priority fire hazard areas in the county when all factors were considered. The general subdivision layout and design found at Indian Springs does not incorporate contemporary standards for development that are sensitive to wildfire implications. Normally today a subdivision would be required to have two viable means of ingress and egress. Road grades would not be over 10% and lot layout would be sensitive to slope and not force a structure to be cantilevered over a heavily wooded slope or a driveway to be so steep it provides marginal access to a building site. There is very little that can be done to change pre-existing conditions in terms of layout and design. Individuals then, are left to assure that the home ignition zone is in good condition.

Values:

Seventy five (75) structures were triaged based on their anticipated ability to survive a wildfire in their vicinity without any human intervention to prevent them from burning. Nineteen of the seventy five triaged structures (25%) are expected to survive a wildland fire in the neighborhood. 55 structures (75%) will likely be destroyed when a wildfire occurs in the neighborhood. See the **Fire Control Features Maps** in **Appendix B** for structure triage results.

Indian Springs landowners place a high premium on their natural surroundings and the visual quality of the landscape. Vast expanses of heavily burned, charred forest are objectionable whether structures burn or not. If the view is seriously impacted much of the intrinsic value of the home will also be lost.

Access:

Eighteen (18) miles of paved or gravel and dirt roads provide good access throughout Indian Springs. Addresses are normally displayed at driveway intersections with access roads. Most home addresses are visible. Several locked gates will impede first responders until they breach the barrier. Without an accurate map or detailed instructions it can be very difficult for first responders to find a specific address even though most intersections are signed.

Road grades often exceed 10 percent (10%) on main arterials in the community. Driveways can be as much steeper. Dead end roads do not have "No Outlet" signs at the junction with the main road. Turnarounds and cul-de-sacs at the end of the roads are inadequate for large structure fire equipment.

Evacuation route is currently limited to the main road. There are a few locations with light grass fuel loading that can be used as temporary sanctuaries if evacuation routes are cut off. See **Appendix B: Fire Control Features Maps** for locations of safety zones.

Risk:

Three kinds of risk are associated with wildland fire. The first concern is the risk to people trying to evacuate under less than optimal conditions. Second is the risk to firefighters attempting to protect property. Third is the risk wildfire poses to property. The concept of survivable space addresses both the second and third facets of risk under one umbrella.

Triage:

Structure triage was conducted on each parcel with buildings on it. Triage is a concise decision making process that is used if/when a wildfire threatens multiple structures simultaneously. See **Appendix D: Structure Triage** for a brief description of the triage process. The following observations are gleaned from the site visits.

- ✓ Twenty of the structures are expected to survive. That leaves thirty five (55) or 73% of the structures within Indian Springs as likely to be destroyed or heavily damaged during a wildfire.
- ✓ Poor conditions in the structure ignition zone were the most prevalent problem found during triage. See the discussion of the home ignition zone starting on page 37.
 - 95% of the unlikely to survive did not have enough low fire intensity space around them.
 - 86% were adjacent to heavy fuels.
 - 54% were on slopes over 21%.
 - 29% had firewood and other combustible human plunder in close proximity to the structure.
 - 4% of the structures were very close to or overhang the slope.

It is important to understand the role of triage in this community wildfire protection plan. It is a quick, inexpensive way to determine overall community wildfire risk and helps to identify areas to focus improvement efforts. Its utility during an actual wildfire depends upon the nature of the wildfire. When only one structure is threatened, firefighting resources are usually assigned to protect that single structure, unless doing so creates a severe safety hazard.

During a large wildfire scenario when more structures are threatened than there are firefighting resources to protect them, this triage work will help the Incident Commander assign scarce resources to the places where they have the best chance for success.

Maps developed for this Community Wildfire Protection Plan identify structure location and survivability. The CWPP is an ever evolving document and will be revised on a regular basis to reflect new information about structure survivability and other important fire control features in Indian Springs.

Table 6: Structure Triage

Subdivision	# Structures Triage	% Survivable	% Non-Survivable
Indian Springs	75	25	75

Note: Structure survivability is dynamic. As wildfire mitigation work is completed these numbers and the Fire Control Features Maps will be revised to reflect current structure status. Revisions will be agreed to by the Deer Mountain Fire Protection District and the Fremont County Office of Emergency Management. Fremont County will be responsible for maintaining the Geographic Information System that is used to develop said maps.

Evacuation:

This area can expect to be threatened by wildfires originating in both wildland areas around it and from wildfires originating within the area. Fires originating in light flashy grass and shrub fuels inside the planning area will dramatically complicate evacuations. There are light fuel zones within the threatened area that can serve as safe spots in an emergency situation but they are not the ideal solution.

Timing the initiation of an evacuation must consider the amount of time it will take to notify citizens and get them out of the area. It must also consider how rapidly the wildfire is likely to spread over an extended period of time. Fire spread rates are heavily dependent upon wind speed and slope. Evacuations are ordered and executed by the Fremont County Sheriff’s Department, in consultation with wildfire personnel on scene. In most rapidly evolving situations it is wise to err on the side of the angels providing everyone plenty of time to leave the area safely.

Notification of an impending evacuation has been problematic on several wildfires lately. Reverse 911 systems have had a difficult time keeping up with the wide array of communications options available to people today. People often convert from the traditional “land lines” to cellular phones without updating their contact information with emergency call centers. Indian Springs does not have cell phone coverage.

Fremont County has an “Alert Fremont” emergency notification system that will notify individuals with cell phones and Voice Over Internet Protocol (VOIP) phone numbers of emergencies in their area. It is important to have current contact information registered in that system. All landlines are automatically part of the “Reverse Notification System” and need do nothing. Cell phones must be entered in to the system by owners. The information on how to do this is on the main page of the Fremont County website – <http://www.fremontco.com> or directly at <http://www.fremontco.com/miscellaneous/fremont911.shtml>

See **Appendix N: Alert Fremont** for more information and a link to register your cell phone/s.

See section III of **Alert Fremont** for a few additional thoughts to facilitate timely evacuation in a wildfire setting.

Local Preparedness and Protection Capability

All the triaged structures are within Deer Mountain Fire Protection District coverage. Deer Mountain Fire Protection District has three fire stations with a total of 25 volunteers. Station 3 is located within Indian Springs community. Three volunteer firefighters work out of this station. Initial attack is likely to take 15-20 minutes from Station 3. Backup for fires that elude control by the Station 3 cadre is at best 30 minutes away from Station 2 and personnel from Station 1 are 60 minutes out.

BLM & USFS have initial attack resources stationed in Cañon City that can respond in lengthier timeframes if they are not already assigned to an active wildfire elsewhere.

If/When DMFPD requests reinforcements or mutual aid from nearby departments it will take at least 1.5 hours for that assistance to arrive on scene. Reinforcement availability is dependent upon wildfire workload at the time of the request.

The BLM has a Single Engine Air Tanker (SEAT) based at the Fremont County Airport during periods of high fire danger. A SEAT is not always stationed there or may be obligated to another wildfire.

Enhanced Fire protection:

Some insurance companies will not insure homes in Indian Springs due to the initial attack times and lack of fire hydrants. In other cases fire insurance is very expensive. Correcting the present situation will be very expensive and is probably unrealistic given the likely pool of volunteers within the community.

Water Supply:

Water supply is a problem within most of the Indian Springs area. There are a few cisterns at individual residences. They are not well marked, capacities differ and methods to hook fire apparatus to them vary. Table 7 describes water source location and size.

Table 7: Water Resources

Location	Gallons	Drained in Winter
Fire Station 3 (On Trucks)	500	No
Fire Station 3 (outside tanks)	5,500	Yes
Red Feather & Bison (Lot 11)	1,000	Yes
Primary Spring (End of Big Bow Dr.)	3,000	No
End of Broken Arrow Dr. (Lot 7)	250	Yes
North Red Feather Dr. (lot 120)	250	Yes
Half Mound Dr. (Lot 57)	250	Yes
Bird Point Drive (Lot 53)	250	Yes
End of Cedar Bluff Dr. Lot 98)	250	Yes

Table 8: IS CWPP Available Wildland Fire Suppression Resources

TYPE RESOURCE	TYPE	# ON HAND	# DESIRED
Deer Mountain Fire Protection District Station 1:			
Personnel		20	
Wildland firefighters (Carded)		9	
Brush trucks 150-250 gallons	6	2	
Tender 3,000 gal 250		1	
Tender 1,000 gal 150		2	+1
Portable holding tanks	1500-2000 gal	2	
Power saw kit (on Type 6 Engines)		3	
Personnel & Equipment Transport		1	
Deer Mountain Fire Protection District Station 2:			
Personnel		2	
Wildland firefighters (Carded)		2	
Tender 1,000 gal 150	6	1	+1
Power saw kit (on Type 6 Engines)		1	
Deer Mountain Fire Protection District Station 3:			
Personnel		3	
Wildland firefighters (Carded)		1	
Brush trucks 150-250 gallons		1	
Tender 1,000 gal 150	6		+1
Power saw kit (on Type 6 Engines)		1	
Fremont County Wildland Fire Team			
Wildland firefighters (Carded)		12	
Engine - 250 gallons	6	1	
Engine - 300 gallons	6	1	
Engine - 500 gallons	6	1	
Tender - 1500 gallon 6x6		1	
Water trailer- 450 gallon		1	
Portable holding tanks		2	
Colorado State Dept. Of Public Safety			
Wildland Firefighters (Carded)		2	
Engine	6	1	
Power saw kit		2	
Wildland fire tool cache (20 person)	Mop up kits	1	
Bendix/King hand held radios		4	
Drip Torches		4	
BLM/USFS Pike/San Isabel NF (1)			
Wildland Firefighters (Carded)		26	
Engine	6	2	
Engine	4	1	
Power saw kit			
Portable pump kits	Mark 3	2	
Portable holding tanks	1500-2000 gal	3	
Wildland fire tool cache	100 person		
Single Engine Air Tanker/s (during very high fire danger)			

(1) Structure protection is the responsibility of fire protection districts and state. Federal partners provide assistance upon request and are most likely to do more wildland type suppression work, hence there isn't a need for heavy structure protection apparatus or resources.

IV. COMMUNITY MITIGATION PLAN

HOW BUILDINGS ARE IGNITED BY WILDFIRE

Although wildfire can threaten a building in three different ways (burning embers, direct flame contact, and radiant heat), ember exposure is the most significant cause of ignition. For example, windblown embers (firebrands) can directly ignite easily ignited materials such as a wood shake roof, lawn chairs, wood piles, mulch, pine needles, or debris that has accumulated in gutters, roof valleys, or around dormers. Other combustible building components, such as siding or a deck, would be vulnerable to the flames or radiant heat from these more easily ignited materials. Gable ends and open eave vents are also vulnerable to the entry of embers, which can then ignite combustible items in attic spaces. Because embers can travel a long distance when carried up by convection currents, a wildfire is still a threat even if it is miles away (IBHS 2011).

Research confirms that certain key characteristics determine which buildings burn and which buildings survive. Keeping property free of debris and maintaining fire resistant landscaping reduces the likelihood of building ignition.

Everyday preparedness actions are important, such as creating a fuels free (mulch free) zone within five feet of the building's foundation, moving firewood piles and propane tanks away from buildings, keeping roofs clean, keeping combustible landscape plants away from buildings, and disposing of landscape trimmings (IBHS 2011). These preparatory actions must be regularly performed *before* a wildfire occurs to improve the survivability of people and property.

Home Ignition Zone



A home with its immediate surroundings (about 100-150 feet from the structure) is the home ignition zone.

Recent research into the cause for loss of homes during wildfires indicates that home ignitability, rather than wildland fuels, is the principal cause of home losses during wildland/urban interface fires. Key items are flammable roofing materials (e.g. cedar shingles) and the presence of burnable vegetation (e.g. ornamental trees, shrubs, wood piles, and pine needle accumulation) immediately adjacent to homes (Cohen, 1999).

The home ignition zone includes a home and its immediate surroundings within 100 to 150 feet of the structure. Fuel conditions within this zone, to a large degree, will determine whether a home will survive a wildfire. High intensity fire behavior beyond the home ignition zone does not transfer enough energy directly from its flames to ignite a wooden structure. The fuels surrounding a home within the home ignition zone principally determine the potential for directly igniting the home. Firebrands lofted from extreme wildfires must directly ignite on a structure to be an effective ignition source. If firebrand ignitions occur in the fuels surrounding a home, then those fuels determine the home's ignition potential. Thus, regardless from how far firebrands travel a home's

exterior materials and design and fuels in the home ignition zone determine its ignition potential from firebrands.

The primary and ultimate responsibility for home wildfire protection lies with private homeowners, not public land management agencies (or taxpayers). It is critical that special attention be given to reducing fuels in the home ignition zone around structures to improve their chances of surviving a wildfire. This includes insuring that there are no combustible materials like concentrations of pine needles, dry grass, hay or straw, firewood, deck furniture, household trash, flammable materials such as gasoline, diesel or paint thinners, paper boxes, and fabrics near the structure or in the home ignition zone for firebrands to land on. In the past few years research has found that a significant number of homes destroyed in wildfires burned as the result of the presence of combustible materials within the home ignition zone. Some homes ignited as much as 8 hours after the fire front passed. Reducing places for embers to penetrate the home such as open windows and vents also improves structure survivability.

Survivable Space:

Survivable space is an area around structures where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire towards the structure and lower the intensity of the fire as it passes the developed area. It also reduces chances of structure fire moving from the building to surrounding vegetation. Survivable space can provide room for firefighters to do their jobs. A house is likely to withstand a wildfire if vegetation is managed to reduce a fire's intensity. Structure design and construction also influence its survivability when a wildfire passes through the neighborhood. Removing flammable materials such as firewood, lumber and gasoline from the decks and base of structures will pay big dividends when an ember storm hits the home.

The concept of “defensible” space assumes that there will be sufficient wildfire personnel and equipment to actively protect each threatened structure. This assumption is accurate when only one or two structures are imperiled. When numerous structures are threatened simultaneously there aren’t enough firefighting resources available in Fremont County to protect them all. Mutual aid assistance from other fire departments in the region need time to mobilize and take effective action during large incidents.

Survivable space around a structure is the key to assuring that a home is still standing after a major wildfire. ***A structure is survivable IF it can withstand being overrun by a high intensity wildfire without any on site intervention by wildfire personnel.*** This requires close attention to structure design, construction, and its relationship to combustible natural and manmade plunder.

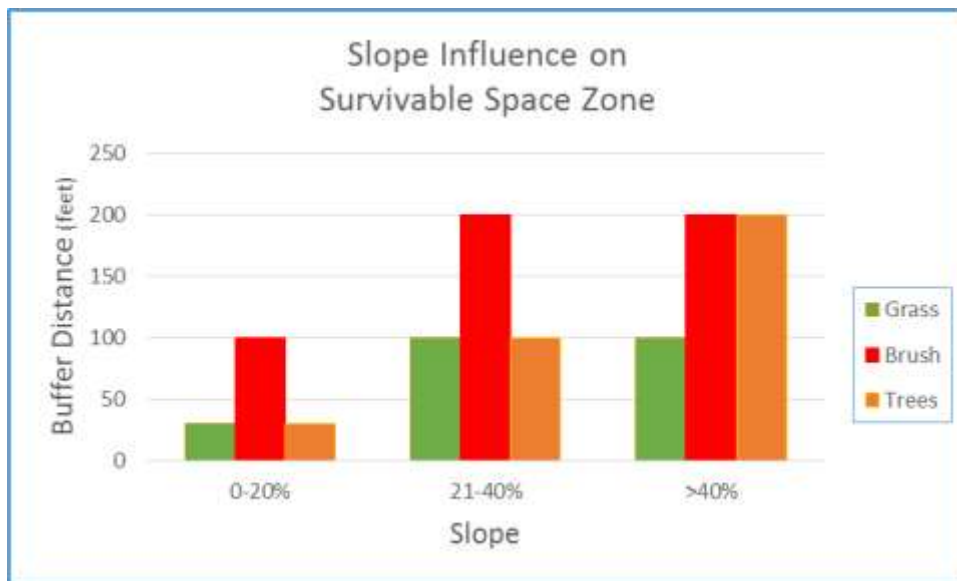
Effective survivable space is the landowners’ most reliable means of providing wildfire protection for their structures. This is especially true in Indian Springs. Terrain, and landownership patterns in IS make landscape level fuel modification difficult. ***The key to individual structure survival is Survivable Space and good “Fire Wise” practices immediately adjacent to structures.***

During periods of high to extreme fire danger a wildfire will rapidly exceed the suppression capability of the local fire suppression forces. **Table 4: Indian Springs Fire Behavior Prediction** displays the difficult position firefighters will face on a dry, windy day. Hand crews are effective when flame lengths are less than four feet. On a bad day 100 percent (100%) of Indian Springs is expected to exceed four foot flame lengths. The size of a fire within the first hour is also expected to grow beyond local initial attack capability during periods of high thru extreme fire danger.

Homeowners should not expect much protection intervention if/when a large fire burns through the area. The harsh realities of evacuations, triage and coordinating attack with mutual aid forces will consume local fire forces for several hours. ***Fire Wise rated survivable space is the key to structures surviving on their own. Do it now and maintain it.***

In some cases, sizeable effort has been spent developing defensible space around quality homes perched on the edge of a steep slope with heavy vegetation below the structure. Unfortunately the trajectory of the flames will intersect the structure, exposing it to direct contact with flames. The County should encourage people to set new homes back from the edge of steep, brushy slopes using the guidelines provided in “**Protecting Your Home from Wildfire - Creating Wildfire Defensible Space Zones**”, Quick Guide Series Fire 2012-1 available on the CSFS website and included in this CWPP as **Appendix M**.

Chart 3: Slope Impact on Survivable Space



This chart indicates how far thinning needs to be done above and below a structure based on the slope it is on or adjacent to. It is also a good source to determine how far back from a slope to set a new structure.

State Tax Incentives for Wildfire Hazard Mitigation:

On April 4, 2013 the Governor signed House Bill 13-1012 that extend the deduction until January 1, 2025 to encourage more residents of the Wildland Urban Interface to mitigate wildfire hazards around their homes. House Bill 13-1012 extended tax incentives that allow landowners to deduct the actual costs of their wildfire mitigation, up to \$2,500 from their taxable income. The program allows each landowner to get credit for fifty percent of the cost of wildfire mitigation up to a total of \$2,500 per year. To get the full credit the total mitigation costs must be \$5,000 or greater. The work must be done in accord with an existing Community Wildfire Protection Plan to qualify.

This is a good incentive for individual landowners to improve survivable space around their structures.

Education and Information:

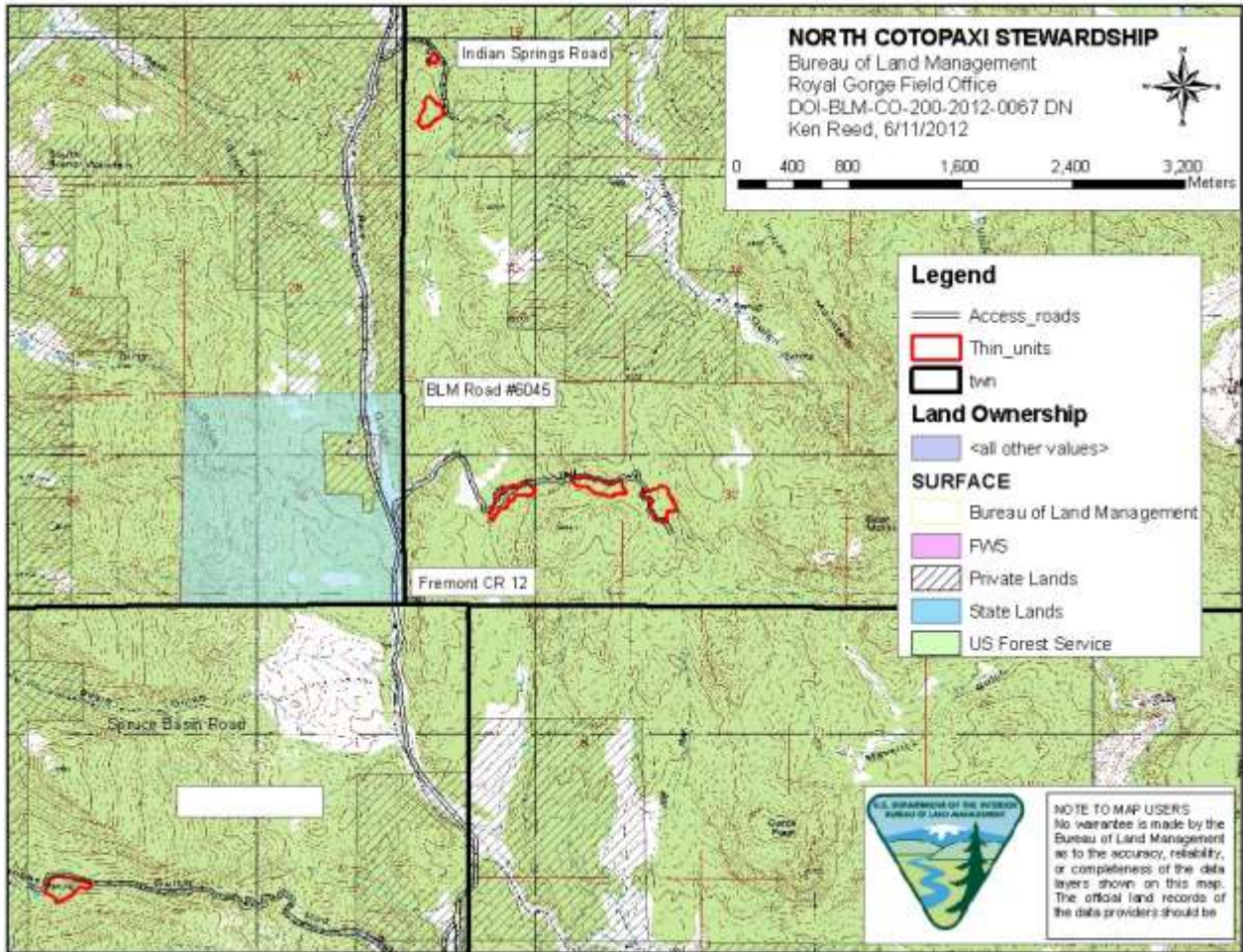
Dollar for dollar, one of the best ways to improve community wildfire resilience is wildfire awareness activities such as brochures, public service announcements, workshops, fire danger signs and informal discussions in the neighborhood. Fremont County has a FireWise trailer that they take to various gatherings in the County. It contains materials and displays that highlight the benefits of FireWise concepts. The trailer is available for property and home owners associations to use for member information exchanges. The Royal Gorge fire provides a reminder and “teachable moment” to focus Indian Springs landowners on the realities of the environment in which they live. Like all teachable moments it is not likely to last very long.

Fuel Hazard Reduction:

Individual owners have done varying degrees of wildfire mitigation work around their structures and along their driveways. Much more work is needed to mitigate wildfire hazards within Indian Springs.

DMFPD will provide wildfire hazard risk assessments at no charge for residents within the district. Colorado State Forest Service personnel will also provide risk assessments for structures for a fifty dollar fee.

The Bureau of Land Management, Royal Gorge Field Office is doing some forest management projects in the vicinity that will reduce wildfire intensity and crown fire potential. The map below shows the areas to be thinned on the North Cotopaxi Stewardship project. Two of the treatment units are adjacent to the main road into Indian Springs. This forest thinning and fuel reduction will enhance the utility of the road as a fire control line if/when a large fire threatens the community.



Treatment Costs:

Treatment costs for survivable space and shaded fuelbreak work are highly variable depending on the amount of thinning and slash disposal to be done and the relative care involved in doing the work. Hand crews working next to structures and chipping the slash will cost from \$1,000 to \$2,000 per acre. Mechanical thinning with a hydro-ax type machine will normally cost from \$400 to \$700 per acre depending on tree density, slope and rockiness.

Slash Disposal:

Dealing with the waste material generated by wildfire hazard mitigation is a persistent problem throughout the Wildland Urban Interface. Indian Springs Landowners Association plans to purchase a chipper and have a designated list of volunteers to supervise use of the machine. This approach will be the safest most trouble free means of disposing of slash. It will also assure that the machine is in good operating condition and extend the life of the chipper.

ISLA first priority as a community will be to treat fuels along Bird Point Drive past Burnt Timber Circle and up Read Feather Road to the Junction of Broken Arrow Drive. This will begin to improve evacuee safety during egress from the area. With sixty (60) foot road rights of ways in the development, they will be able to work within thirty (30) feet of the centerline without individual landowner authorization. Ideally the fuel reduction zone would be at least seventy five (75) feet on each side of the road. It is hoped that once property owners see the extent of thinning needed they will be willing to approve additional hazard mitigation beyond the platted ROWs.

Individual homeowner's first priority should be to create survivable space around their structures. The availability of a chipper to treat the slash from this activity will substantially reduce costs and effort to deal with the waste.

Colorado State Forest Service in Cañon City has an informal business card collection of local contractors that do wildfire hazard reduction work. They can be reached at (719) 275-6865 for current listing.

Wildfire Suppression Infrastructure:

Fire Station 3:

Fire Station 3 is a small metal shed with minimal space for equipment and supplies. It also does not have a reliable, year round water supply. The building needs to be replaced with a more suitable structure and a fire well needs to be drilled. It is unknown whether a well capable of supporting wildfire operations is even feasible at Station 3.

Water Supply:

A few homes have cisterns but they are difficult to find, capacities vary and removing water from them with wildfire apparatus may be problematic. They need to be inventoried and marked on the ground and included on the fire control features map.

Turnarounds:

Accommodations for turning vehicles around near the end of the road are critical for fire suppression purposes. Space is inadequate to turn around fire equipment at the end of most dead end roads. Cul de Sacs are generally poorly constructed. On the other hand, driveway turnaround space can even be tight for a full sized pickup truck. In some cases there is little room to construct turnarounds at the end of driveways so parking fire apparatus on access roads and running hose lays to structures is the only option. See **Appendix H: Road & Driveway Specifications** for design specifics.

Pistol turns offer an alternative to full blown 45 foot radius cul de sacs that should be considered to provide viable turn around space at the end of roads and driveways.

There are many cul de sacs in the area. None have “No Outlet” signs warning evacuees and first responders not to use them in an emergency. Two “No Outlet” signs are all that are needed to notify fire personnel and the public that they are entering dead end road systems.

Fire Control Features/Triage Maps:

The maps developed for this Community Wildfire Protection Plan provide invaluable information for wildland firefighting. Reinforcements and mutual aid folks often struggle with road layout and fire suppression opportunities without good maps. Communications can be enhanced by providing high quality maps that show important features. See **Appendix B: Fire Control Features Maps** for locations of homes with/without survivable space, water locations, staging areas, safety zones, aviation hazards etc.

Fremont County Office of Emergency Management will provide a set of maps and orthophotos to dispatchers, first responders, the Sheriff’s department and Colorado State Forest Service. They will also have a few reserved to distribute during the inevitable emergency. They update triage information on these maps on a regular basis.

Evacuation Planning:

One factor to consider and address directly in the Evacuation Plan is the amount of time it will take to fully implement the evacuation in comparison to the expected fire behavior described in **Table 4: Indian Springs Fire Behavior Prediction**. Fire spread rates of half mile per hour and spotting distances of close to a quarter mile mean that evacuations should probably be implemented when any fire is within 3 miles of a structure during high or greater fire danger periods.

An evacuation simulation exercise would be an eye-opener for residents and should be scheduled for summer 2017. This test run will give everyone involved a better sense of the task at hand.

There is also a need to develop an inventory of residents with special transportation needs and limits to mobility. Providing oxygen or other medical accommodations for evacuees during the evacuation is critical.

It is also time for all residents in the CWPP analysis area to check their phone status in the **Alert Fremont** 911 Emergency Notification system. See **Appendix N** for details.

Evacuation Options:

One marginal evacuation route is provided by a steep, narrow driveway on the northeastern corner of Indian Springs off Broken Arrow drive. The landowner that controls this route has agreed to provide egress in an emergency. This route is not suitable for general evacuation purposes. Nor is it a viable escape route for wildfire personnel to move out of harm’s way to a safety zone. One stalled vehicle will close the road, conceivable trapping all occupants of vehicles behind/below it in a very dangerous mid-slope location with no place to turnaround or seek refuge if the slope caught fire.

During a rapidly evolving wildfire or if the fire has burned across evacuation routes, there are two potential Safety Zones in IS. Safety Zones should be considered a stop gap solution as they are not well suited for situations where the evacuation order is expected to last for more than a few hours. Lots 52 & 107 have areas that contain light grass/shrub vegetation and could serve as Safety Zones in an emergency. It is important to document any agreement with a landowner to use their property as an emergency safety zone in event of a wildfire.

Strategic Recommendations:

The Indian Springs CWPP Core Team is composed of paid agency employees and LOA or resident volunteers who are all dedicated but over committed and there is no full time focus in pre-planning, hazard detection, follow up, communications, coordination, and/or implementation of improvements. The community does not have a mechanism for administering multiple demands, setting priorities, and insuring representation that benefits the community as a whole.

In order to strengthen the ability for IS to implement the Community Wildfire Protection Plan Deer Mountain Fire Protection District will seek funds to employ a coordinator or project manager to ensure implementation of the Plan and other CWPPs in development, including the required overall leadership, management, and activity coordination. In addition, the position would be responsible for such items as overseeing development of survivable space in the community and generation of grant proposals for the implementation of the Community Wildfire Protection Plan with the Colorado State Forest Service and other entities.

Other communities and fire districts have filled this position in a variety of ways. In one very successful instance a fire district board member was employed part time to complete grant applications and oversee implementation of the various CWPP action items. The community successfully competed for over two million dollars of grant money to replace a derelict bridge and construct a shaded fuelbreak. In other instances fire districts have formed cooperatives that employ one person to write grant applications and promote FireWise activities for multiple departments. In another case a retired HOA member took on the tasks described above and was compensated by the HOA. He was very successful and their wildfire hazard mitigation work has been recognized both statewide and nationally.

Less enthusiastic communities have not arranged for such help and their programs have languished. It is unreasonable to expect extended volunteer efforts to sustain the complex grant application process, supervise project implementation and also serve as volunteer firefighters.

V. IMPLEMENTATION & MONITORING

Implementation:

Table 9: Implementation Items Priority & Cost lists all the mitigation actions/projects identified in this CWPP. There are also an estimated fifty six (56) structures that need to have their survivable space improved.

Table 9: Implementation Items Priority & Cost

Mitigation Action	Priority	Estimated Cost (\$s)
Conduct FireWise and Survivable Space Workshops and provide onsite advice	1	1,200 annually
Survivable Space Around All Structures (\$5,000/lot)	2	2,000/ lot
Install “No Outlet” signs at entrance to IS & seven other locations within the area	3	4,000
Encourage residents to stay current in the E911 system (Public Service Announcements)	4	200
Print & distribute Fire Control Features Maps (20 sets) @\$48/set	5	960
Inventory and mark residential cisterns	6	2,000
Negotiate and document agreement to use Safety Zones	7	1,000
Purchase a 12” Vermeer chipper for the Indian Springs community	8	39,000
Develop a chipping program to deal with wildfire hazard mitigation slash.	9	4,000 annually
Reduce crown fire potential along 2.8 miles of major evacuation routes	10	14,000
Replace existing structure at fire station 3	11	100,000
Drill fire well at station 3	12	300,000
Purchase additional fire apparatus for Station 3 and train additional firefighters	13	80,000
Install pistol type turn arounds at each cul de sac less than 45’ radius	14	70,000
Evacuation Simulation	15	3,000
Total		619,360

Monitoring:

Plans do not implement themselves. Monitoring progress is a crucial part of seeing any plan through to completion. Given the values at risk in Indian Springs, it will be important to take a pulse on accomplishments on an annual basis. We expect more homes to become survivable and maps will have to be revised to reflect the work that has been accomplished. The OEM will revisit the CWPP and associated accomplishments each fall and will get new maps printed as accomplishments warrant.

- ❖ Through the Deer Mountain FPD; seek funds for the purpose of hiring and possibly cost- sharing a coordinator (implementation manager) who, among other things, would do the following:
 - ✓ Provide the leadership needed to implement this plan.
 - ✓ Establish a prevention attitude in the community for wildfire.

- ✓ Strengthen public understanding, acceptance and participation in IS CWPP operations and improvement projects.
- ✓ Insure follow up to commitments by the community or within the community and on behalf of the IS CWPP goals.
- ✓ Facilitate the organization of an ongoing cooperative management team consisting of members from the Core Team, LOA and Fremont County officials. This group will act as an advisory board to represent the community as a whole. This entity would do the following:
 - Set priorities, develop and administer fundraising activities, interact with and coordinate with County, coordinate with State and Federal agencies on behalf of the community as a whole, and insure follow up on all operations and or activities.

Table 10: Action Plan for Completing the Indian Springs CWPP, identifies the responsibilities and tasks necessary to accomplish the job at hand. The priorities and responsibilities have been negotiated and agreed to by the Core Team and the various named individuals.

Table 10: Action Plan for Completing the Indian Springs CWPP

Mitigation Action	Target Date	Assigned to	Completed ✓
Conduct FireWise and Survivable Space Workshops and provide onsite advice	Summer 2016	Chief DMFPD	
Survivable Space Around All Structures (\$5,000/lot)	ASAP	Homeowners	
Install “No Outlet” signs at entrance to IS & seven other locations within the area	August 2016	Homeowners Association	
Encourage residents to stay current in the E911 system (Public Service Announcements)	Summer 2016	Steve Morrissey Fremont Co OEM	
Print & distribute Fire Control Features Maps (20 sets) @\$48/set	Summer 2016	Steve Morrissey Fremont Co OEM	
Inventory and mark residential cisterns	June 2016	Homeowners Association	
Negotiate and document agreement to use Safety Zones	September 2016	Homeowners Association	
Purchase a 12” Vermeer chipper for the Indian Springs community	August 2016	Homeowners Association	
Develop a chipping program to deal with wildfire hazard mitigation slash.	September 2016	Homeowners Association	
Reduce crown fire potential along 2.8 miles of major evacuation routes	June 2017	Homeowners Association	
Replace existing structure at fire station 3	November 2017	Chief DMFPD	
Drill fire well at station 3	April 2018	Chief DMFPD	
Purchase additional fire apparatus for Station 3 and train additional firefighters	May 2018	Chief DMFPD	
Install pistol type turn arounds at each cul de sac less than 45’ radius	May 2019	Homeowners Association	
Evacuation Simulation	Summer 2017	Steve Morrissey Fremont Co OEM	