Cuerno Verde Owners Association

Community Wildfire Protection Plan (CWPP)

Prepared By

Fire Mitigation Committee
of the
Cuerno Verde Owners Association

In Cooperation With

Colorado State Forest Service

Wet Mountain Fire Protection District

Custer County Office of Emergency Management

Custer County Sheriff

CUERNO VERDE "THE PINES"

COMMUNITY WILDFIRE PROTECTION PLAN

Table of Contents

ACCEPTANCE

The Cuerno Verde Owners Association's (CVOA) Community Wildfire Protection Plan (CWPP) was developed in accordance with the guidelines set forth in the Healthy Forests Restoration Act of 2003.

The Cuerno Verde CWPP is a document to guide the Association in efforts toward understanding risk associated with residing within the Wildland Urban Interface (WUI). The actions proposed in the plan are appropriate to satisfy NFPA standards and objectives of the Colorado State Forest Service. Project success will benefit the natural resources, reduce risk from wildland fire and compliment the missions of the Wet Mountain Fire Protection District and Custer County Office of Emergency Management.

The CWPP has been reviewed and approved by the Cuerno Verde Owners Association CWPP Core Team.

Vincent Dougan 4-17-19

Vincent Dougan, President **Date**
Cuerno Verde Owners Association

Cindy Howard 4-17-19

Cindy Howard, Director **Date**
Custer County Office of Emergency Management

Shannon Byerly 4/17/19

Shannon Byerly, Sheriff **Date**
Custer County Sheriff

John Grieve 4-17-2019

John Grieve, District Forester **Date**
Colorado State Forest Service

Kit Shy 4-17-2019

Kit Shy, Fire Chief **Date**
Wet Mountain Fire Protection District

Cuerno Verde Owners Association CWPP Updates/Amendments		
Change	**Date**	**Comments**
Original		**Approved at Core Team meeting**

NOTE: Amendments to the plan must be approved by Colorado State Forest Service, Wet Mountain Fire Protection District and Custer County Office of Emergency Management.

SECTION 1: INTRODUCTION

Development of the Community Wildfire Protection Plan (CWPP)

- Cuerno Verde Owners Association Board of Directors established a Fire Mitigation Committee (FMC) to develop a CWPP;
- FMC and CVOA Board of Directors conducted owner meetings to discuss the CWPP development process and gain owner participation and support;
- Board and Committee members attended meetings with Colorado State Forest Service and Custer County Office of Emergency Management to discuss CVOA CWPP development;
- Board and Committee members met with Wet Mountain Fire Protection District Officers to conduct an overall assessment of the Cuerno Verde subdivision and proposed fire mitigation strategies;
- Board and Committee members incorporated the Colorado State Forest Service developed template for creation of a Community Wildfire Protection Plan.

Purpose of the Plan

- Provide an overall assessment of wildfire risks in Cuerno Verde subdivision;
- Increase awareness of wildfire factors on individual properties and common property within the subdivision;
- Provide information for mitigation strategies specific to an owner's property and structures including the necessity of ongoing mitigation maintenance;
- Assist first responders in identifying within the subdivision: water sources, "safe" zones, staging areas, equipment turnarounds and other items of interest to emergency personnel;
- Develop a project plan. Projects will include forest mitigation, installation of water sources and other relevant projects.

Wildland Urban Interface

Cuerno Verde "The Pines" subdivision is located in the Wet Mountain Valley on the western shoulder of the Wet Mountains overlooking the northern Sangre de Christo range to the west. The towns of Westcliffe and Silver Cliff are north of the subdivision. "The Pines" is a covenant controlled residential community of 527 lots each approximately six (6) acres in size. The Cuerno Verde Owners Association (CVOA) owns and maintains a clubhouse and horse barn for use of Association members.

Owners of "The Pines" properties understand the wildfire risk associated with residing in the wildland urban interface (WUI). "The Pines" homes, location, elevation, exposure, topography and fuels lend to the possibility of a profound loss of life and property from a

wildfire event. To prepare for wildfire, reduce risk to life and property, the Association's Board of Directors (BOD), Fire Mitigation Committee (FMC) and concerned homeowners sought assistance in developing a Community Wildifre Protection Plan (CWPP) from the Colorado State Forest Service, Custer County Office of Emergency Management (CCOEM), Wet Mountain Fire Protection District (WMFPD) and Custer County Sherriff's Office.
The Custer County Wildfire Protection Plan (CCWPP) is a master plan. The goal of the CCWPP is to open discussion, set goals, determine strategies toward implementation of forest improvements within the County. The plan may be reviewed at: http://www.custercountygov.com/index.php?pg=wildfire_protection_plan

The CVOA plan is specific to the Cuerno Verde subdivision. Development of the plan conforms to standards established for a CWPP by the Colorado State Forest Service document Community Wildfire Protection Plan (CWPP) Template. To quote from the guide: "The process of developing a CWPP can help a community clarify and refine its priorities for the protection of life, property, and critical infrastructure in the wildland – urban interface (WUI). A focus is to lead owners through discussions regarding forest management options and implications for the surrounding watershed."

The County and Cuerno Verde plans share some fuel models: foothills and montane zones composed of grasslands, brush and dense forests. Topography of Custer County is a mountain valley draining south to north with the valley floor at an average elevation of 7800 ft. abruptly rising to numerous 14,000 + peaks within the Sangre de Christo range and multiple 10,000+ peaks within the Wet Mountains. Weather in Custer County is consistent with a cool semi-arid climate.

The CWPP is an important document for Association members to study in order to understand the wildfire threat and reduce private and common Association property fire risk. After approval by the relevant agencies, the plan becomes a fluid document requiring periodic updating to stay abreast of the Association's fire risk.

Current Situation

Wildfire is nature's mechanism for maintaining a healthy forest. Prehistory forests also exhibited overgrowth in which vegetation competed for sunlight, nutrients and water. This overgrowth created a stressed forest inviting insect infestation. Natural fire cycles cleansed the forest by removing excess undergrowth, diseased trees and other stressed vegetation. This natural cycle is not likely to be experienced in a person's lifetime. The current forest exists in a snapshot of time where decades of fire suppression have dramatically increased the accumulation of fuel loads. Current drought conditions combined with dispersed home sites, limited road access, limited fire fighting resources, scarce water availability and challenging terrain reflect the current forest environment. Responding to these abnormal forest conditions is a complex problem.

Leadership

The Cuerno Verde Owners Association is an organization active in administrating the recorded Declaration (Covenants), Bylaws, Colorado Common Interest Ownership Act (CCIOA) mandated Responsible Governance Policies and rules through the elected Board of Directors and Board appointed committees. The committees are the Fire Mitigation Committee (FMC), Architectural Control Committee (ACC), Nominating and Outreach Committee (NOC) and Social Committee (SC). The committees are staffed by Association members donating time and energy for multiple purposes. Intertwined in the work of the committees is communication and education of the property owners on the environment of the subdivision with emphasis on the Wildland Urban Interface (WUI).

The Board of Directors members are President Vince Dougan, Secretary Mark Tesmer, Treasurer Bob Wheeler and Member-at-Large Matt Clark. The Fire Mitigation Committee members are chair Don Munden, co-chair Jim Griffin, Vince Dougan and Sharon Connolly. Board Member Matt Clark, retired all risk emergency manager, provides oversight and expertise to the committee. The FMC and Matt Clark have invested many volunteer hours in the development of the CVOA CWPP. The Association plans to offer membership safety training through CERT classes and Ready, Set, Go! initiatives.

Appendix A: Board of Directors – Duties

Fire Protection

Fire protection for Custer County is provided through the Wet Mountain Fire Protection District (WMFPD). The District has 28 volunteer members and two salaried administrators governed by an elected unpaid board. The District possesses 15 firefighting apparatus across 6 fire stations responsible for protection of Custer County (585 sq. mi.) and a segment of Fremont County (25 sq. mi.). The main station located in Westcliffe has personnel housing and multiple bays for apparatus. The satellite stations house apparatus only. Firefighting water for the incorporated towns of Westcliffe and Silver Cliff is supplied through a hydrant system. Rural areas of the District have no engineered water systems and rely on wild water lakes and agricultural ponds. Cuerno Verde has no water source. Current goals of the CVOA are to be proactive in encouraging forest fuels mitigation, provide water sources (cisterns), install evacuation routes, install dead end signs and indicate safety zones and other items of interest to emergency personnel.

Appendix B: WMFPD Preparedness to Respond

Fire History and Response

The Wet Mountain Valley/Sangre de Christo Wilderness receives a large number of visitors annually. This increases the possibility of wildfire ignition due to carelessness. Due to the size of the Wet Mountain Fire Protection District jurisdiction, the possibility for responsibility overload of District personnel is reality as responses to medical, traffic accident and wildfire are required. The volunteer District personnel are ready, but firefighting resources will be challenged to respond to a rural wildfire event involving structures due to time and distance. Custer County Government has no fire apparatus to reinforce the District resources. In the event of a wildfire, delegation of authority will be immediately transferred to the state and federal forest service agencies. By default, the Cuerno Verde subdivision will become an unwanted partner of the emergency agencies.

The goal of the CVOA is to become self-reliant and a wanted partner of the emergency agencies. Association members are motivated to achieve a managed forest and become a Firewise community. CVOA Board of Directors has committed to assume ownership of the current situation and to improve the health, sustainability and fire resistance of subdivision forests. The ultimate goal is to protect life, structures, wildlife, watersheds, vistas and other values at risk and sustain efforts for generations of owners.

Custer, Pueblo, Fremont and Huerfano counties have a history of wildfires. In 2018, the arson initiated Spring Creek Fire, historically Colorado's third largest fire, destroyed 140 structures and burned over 100,000 acres. The town of Gardner, 35 miles south of Westcliffe, was placed on pre-evacuation and Colorado State Highway 69 was closed at the Custer/Huerfano county line.

Following is a list of significant fire events within or adjoining Custer County since 1993. The 2002 fire originating within Cuerno Verde destroyed 2 structures in Antelope Valley subdivision and burned 442 acres within the Antelope Creek drainage.

- 1993 – Lake Fire – 250 acres forest service property – lightning caused
- 2002 – Cuerno Verde Fire – 442 acres – 2 structures – human caused
- 2002 – Iron Mountain Fire – >4400 acres – 100 structures – human caused
- 2005 – Mason Gulch Fire – >11,300 acres – 6 structures – lightning caused
- 2011 – Sand Gulch Fire – 555 acres – forest and private – lightning caused
- 2016 – Junkins Fire – >15,000 acres – 6 structures – human caused
- 2016 – Beulah Hills Fire – 5000 acres – 14 structures – human caused
- 2017 – Hayden Pass Fire – 20,000 acres – 2 structures – lightning caused
- 2018 – Spring Creek Fire – >100,000 acres – 140 structures – human caused

Common environmental factors were higher than normal temperatures, lower than normal relative humidity and higher than normal wind speeds. Unfortunately, these conditions are not uncommon in Custer County.

Values At Risk

Annually, from May to September, Cuerno Verde occupied structures increase from 86 to 183. As a result, during fire season, the resident population of Cuerno Verde and adjoining subdivisions increases dramatically and equals the population of the towns of Westcliffe and Silver Cliff. In the event of wildfire, risk to life is significantly greater within Cuerno Verde and surrounding subdivisions due to response time and absence of a local water source.
The appraised value of structures within Cuerno Verde subdivision from Custer County Assessor records is $51,336,414. Replacement cost of all structures within the subdivision in the event of a catastrophic wildfire would be $125,000,000+. Sections of three watersheds are found within the subdivision. Damage to these watersheds would be significant to wildlife, Wet Mountain Valley ranching and the Arkansas River watershed.

Total appraised value of structures within adjoining subdivisions, SilverWest Airport and adjoining private properties: $79,200,993.

- SilverWest Estates $3,194,400
- Centennial Ranch $21,041,250
- Timber Ridge $3,905,500
- Antelope Valley $17,953,718
- Eastcliffe $22,722,675
- SilverWest Airport $2,250,000
- Private Property $8,133,450

Replacement cost of structures within the listed properties would surpass $180,000,000.

Appraised value of structures within Cuerno Verde, adjoining subdivisions and private and public properties totals $130,537,307. As a comparison, appraised value of Westcliffe and Silver Cliff properties total $109,282,820.

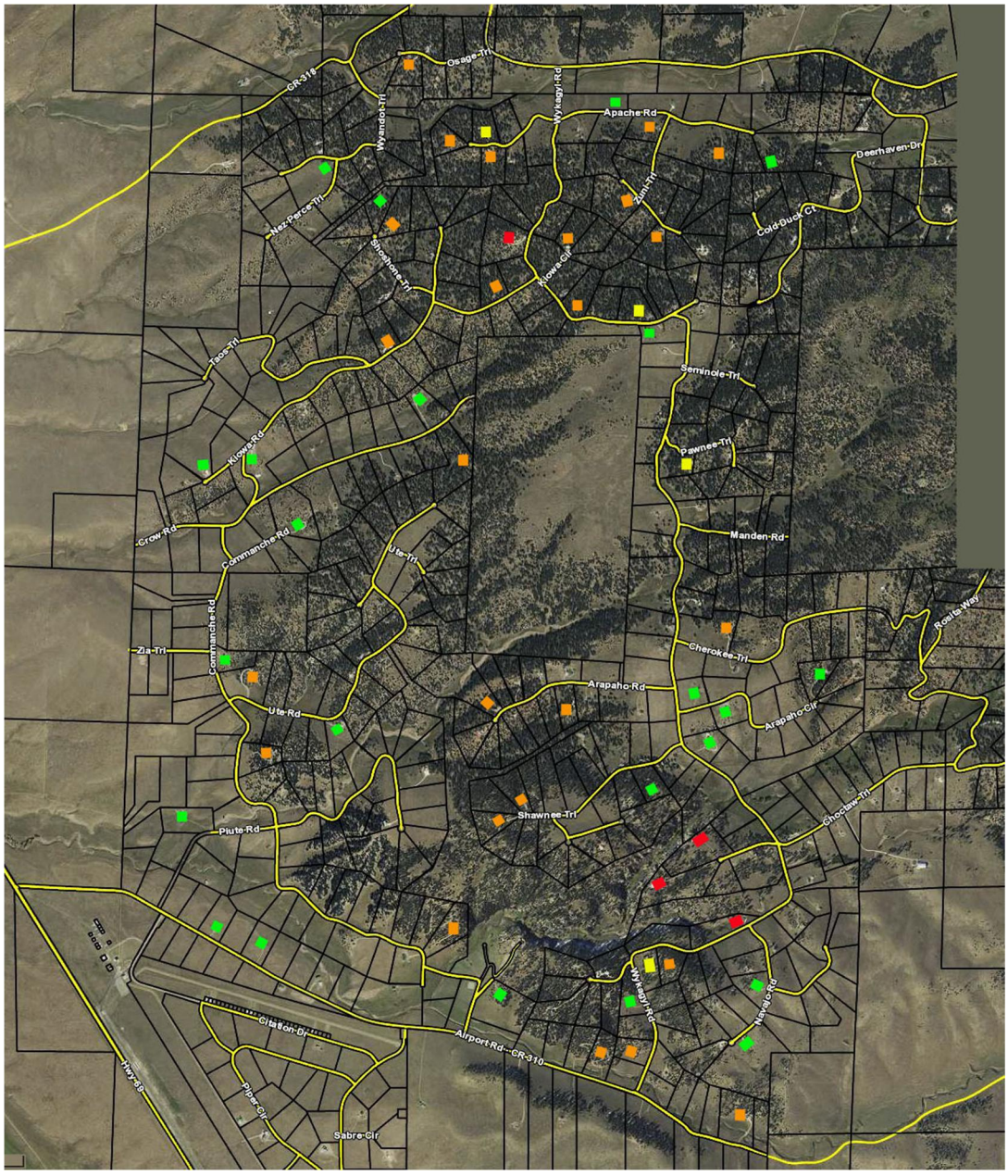
There is difficulty in assigning monetary value to wildlife, watersheds, vistas and other values at risk. It is indisputable that these assets are critical to the value of properties and quality of life of Cuerno Verde owners.

Appendix C: Values at Risk

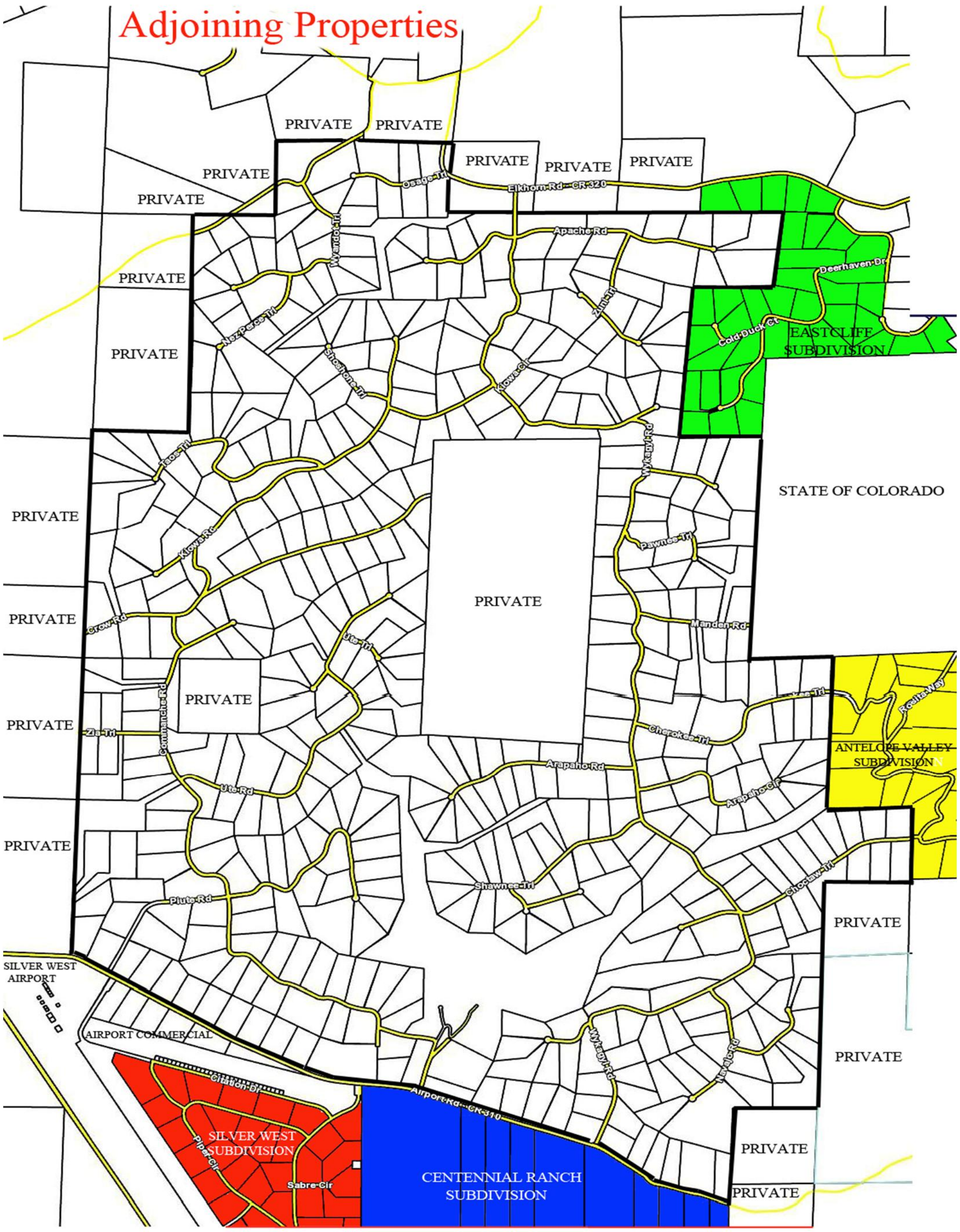
Plan Partnership

The plan evolved from the BOD, FMC and homeowners evaluating subdivision wildfire risk, discussing the risk with the State Forest Service, CCOEM, Sherriff's Office and WMFPD. The Association created the plan to guide owners in reducing the risk of serious injury or loss of life and damage to private and common property. A fire risk assessment map was developed to satisfy CWPP requirements but more importantly as an educational tool for owner awareness and baseline for property owners' fire risk.

Fire Risk Assessment Map



Cuerno Verde Owners Association has collaborated with adjoining subdivisions in management of a water augmentation decree and in establishment of a satellite fire station at SilverWest Airport. The Association is committed to coordination with neighboring residents for projects of mutual interest.



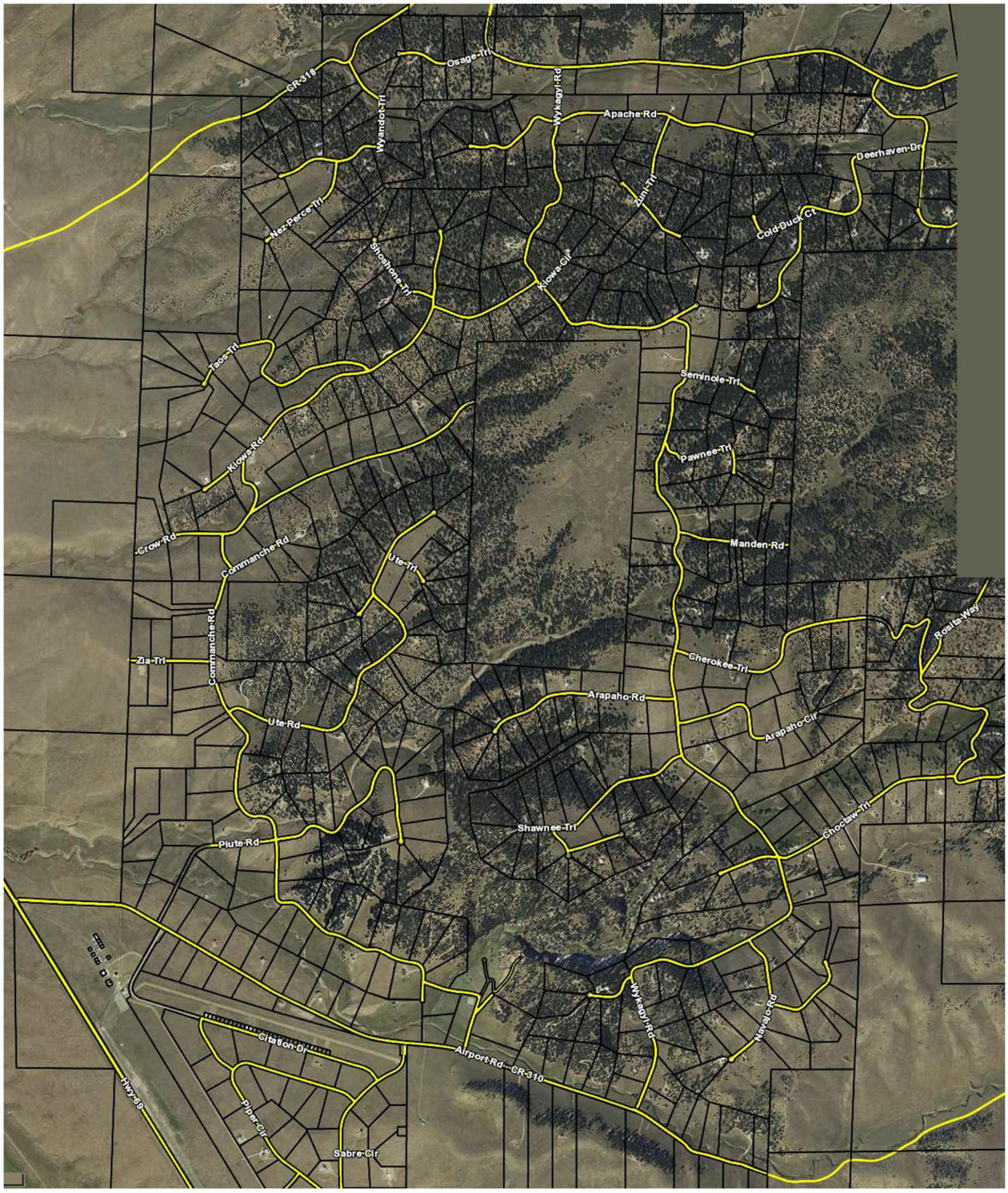
SECTION 2: ENVIRONMENTAL FACTORS

Fuels

Fuels within the subdivision reflect the fuels present throughout Custer County. Elevations within Cuerno Verde range from 8227 ft. to 8897 ft. Conditions within the subdivision support grasses, shrub, pinion and ponderosa pine. Random pockets of aspen clusters exist within the subdivision. South aspect slopes support mostly pinion pine with the carrier as short, sparse, dry climate grasses. North aspect slopes support ponderosa pine with the carrier as long needle litter and sparse grasses. Multiple open meadows of short, sparse grasses, low and moderate dry climate grasses and shrub exist within the subdivision. All fuel combinations are available to burn. Snapshots of the subdivision were compared with USFS standard fire behavior fuel models for clarity only. Modifying fuel continuity, size, volume and arrangement is an important factor in making Cuerno Verde more fire resistant.

The satellite view on the following page demonstrates fuels characteristic of properties within the Cuerno Verde subdivision.

Fuels Map



Appendix D: Examples of Fuel Models

Weather

Due to the topography of Custer County, weather conditions within the County can vary dramatically. Cuerno Verde subdivision is situated such that the property experiences the National Weather Service averages for the County.

Seasonal temperature averages are:

Summer	high - 71°F	low - 43°F
Winter	high - 45°F	low - 21°F
Spring & Fall	high - 60°F	low - 34°F

Average rainfall 15 inches/yr

Average snowfall 62 inches/yr

Average humidity high - 71% low - 32%

Wind conditions: average wind speed – 8.1 mph dominant wind direction – westerly

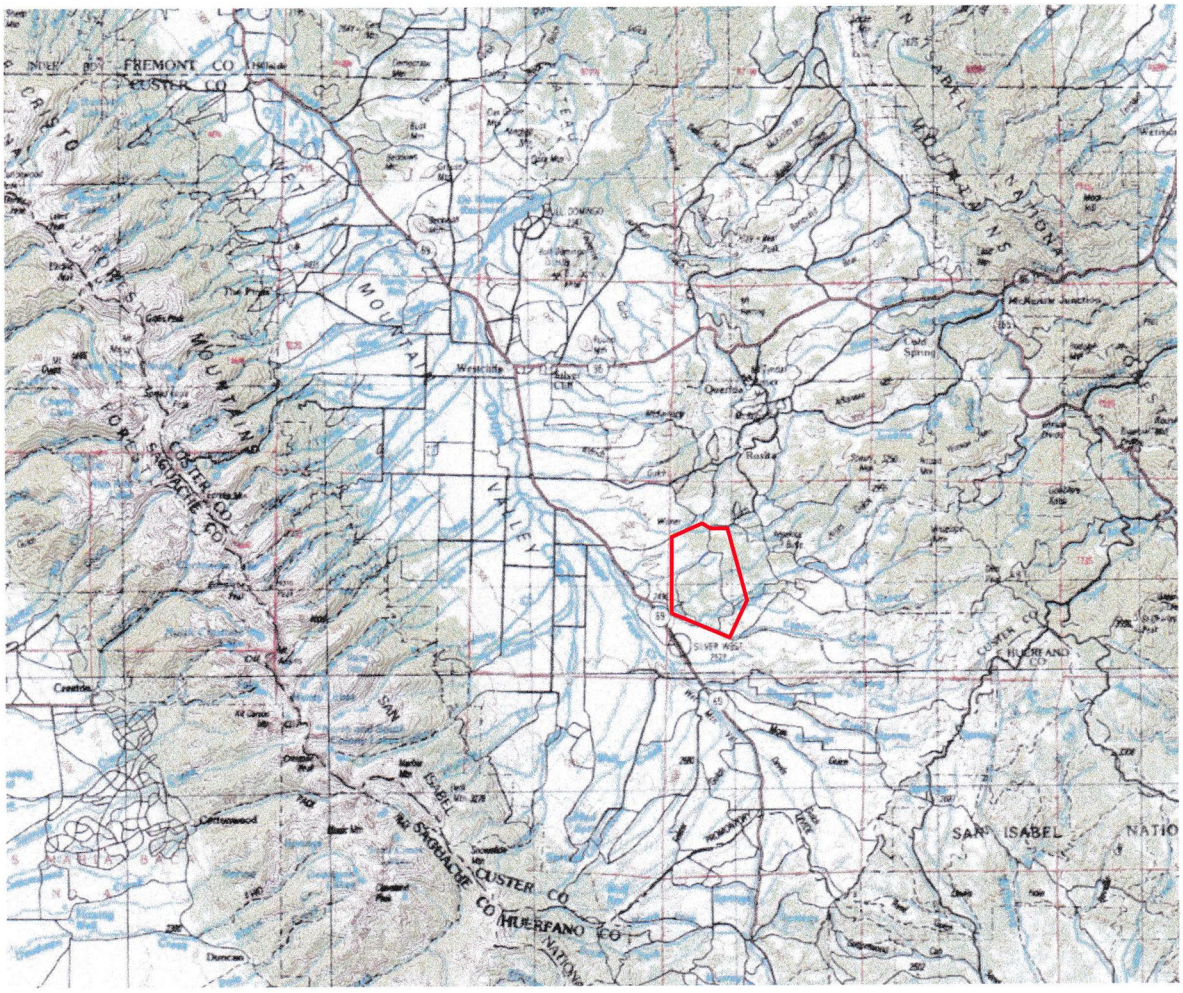
Days of Sunshine: 320+/yr

Appendix E: Weather Graph

Topography

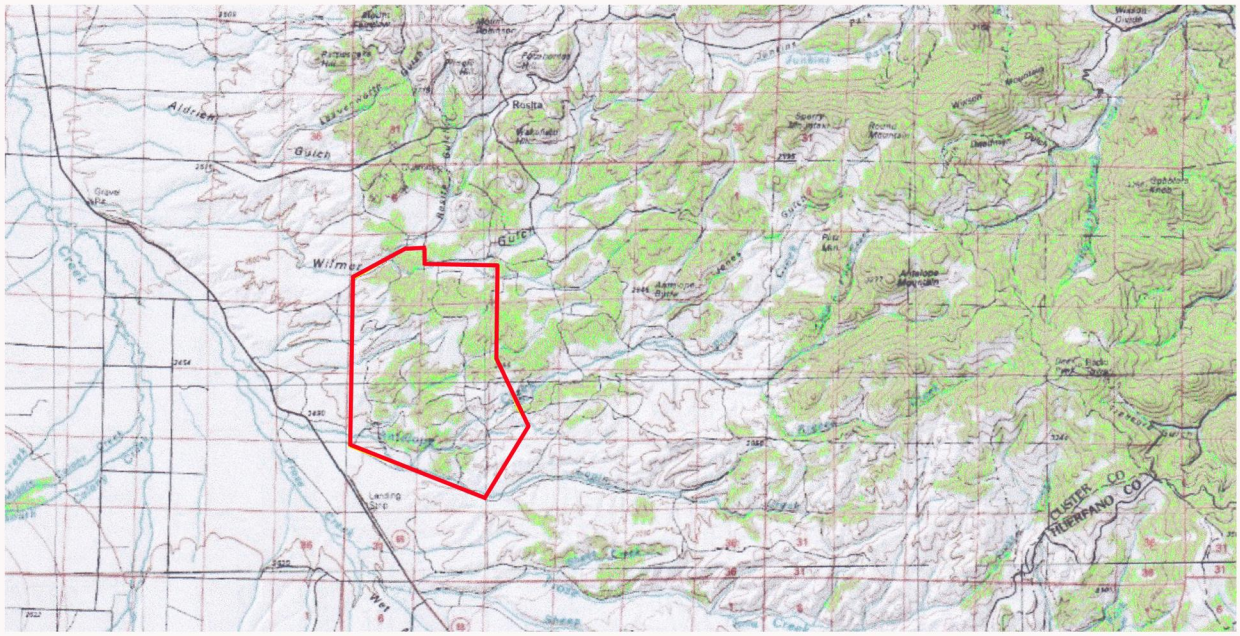
Cuerno Verde subdivision is located in Township 22S, 23S and Range 72W occupying all or parts of sections 7, 8, 17, 18, 19, 20, 21, 28, 29 and 30. Cuerno Verde topography is unique within Custer County. Peaks in the Sangre de Christo range form the western border of the County. The Sangre de Christo peaks west of the subdivision exceed 13,000 ft. in elevation with five peaks exceeding 14,000 ft. The Wet Mountain range forms the eastern border of the County. Peaks in the Wet Mountains average 10,200 ft. Runoff from mountain snow melt and rain flows into the Custer County portion of the valley floor forming Texas Creek and Grape Creek. The creeks flow north to join the Arkansas River in Fremont County. Creeks and small canyons within the Wet Mountains and Cuerno Verde subdivision align east to west. In the event of wildfire, the small canyons, creeks and drainages can funnel local and prevailing westerly winds, dramatically increasing wind velocity, making fire suppression difficult and dangerous for firefighters.

Custer County Topo Map



Boundary of Cuerno Verde "The Pines"

Cuerno Verde “The Pines” Topo Map



Boundary of Cuerno Verde “The Pines”

SECTION 3: PROJECT PLANNING

Understanding reduction of fuels as the only environmental factor available to reduce fire risk, an immediate impact is possible by reducing light and moderate fuels in immediate zone by mowing, trimming branches and raking.

Cuerno Verde Owners Association is initiating a two-phase project plan:

Phase One: 2019

- **Educate owners on composition and benefits of a healthy forest and actions necessary to establish and maintain a healthy forest;**
- Awareness using the fire risk assessment as an educational tool to indicate fire risk features within the immediate and intermediate zones;
- Continuing education using approved websites and classes to demonstrate methods of fuel modification and landscaping ("mitigation") and emergency preparedness;
- Support and expand volunteers to assist owners with mitigation efforts;
- Encourage owners to install reflective resident address signs and enroll in Code Red notification service;
- Seek funding to purchase equipment to assist with current fuel reductions and maintenance of mitigation efforts;
- Collaborate with Custer County Road and Bridge (CCR&B), Custer County Board of Commissioners (CCBOC) and CCOEM to install emergency evacuation signs including signs to indicate dead end roads within the subdivision;
- Collaborate with adjoining properties to identify alternative (undeveloped cross country) emergency evacuation routes;
- Collaborate with CCR&B and CCBOC to improve county owned subdivision roads with emphasis on widening to NFPA standards and removal of obstructive vegetation;
- Coordinate with Sangre de Christo Electric Co-Op to clear and maintain open space around transformers within the subdivision;
- Where applicable, coordinate with adjoining subdivisions on any project;
- Post emergency evacuation routes and evacuation sites on Association website;
- Print the Community Map on large-scale plastic or cloth, display at the Association Clubhouse and provide copies to law enforcement, firefighters and other emergency responders.
- Initiate funding for installation of engineered NFPA compliant emergency dry barrel fire use cisterns;

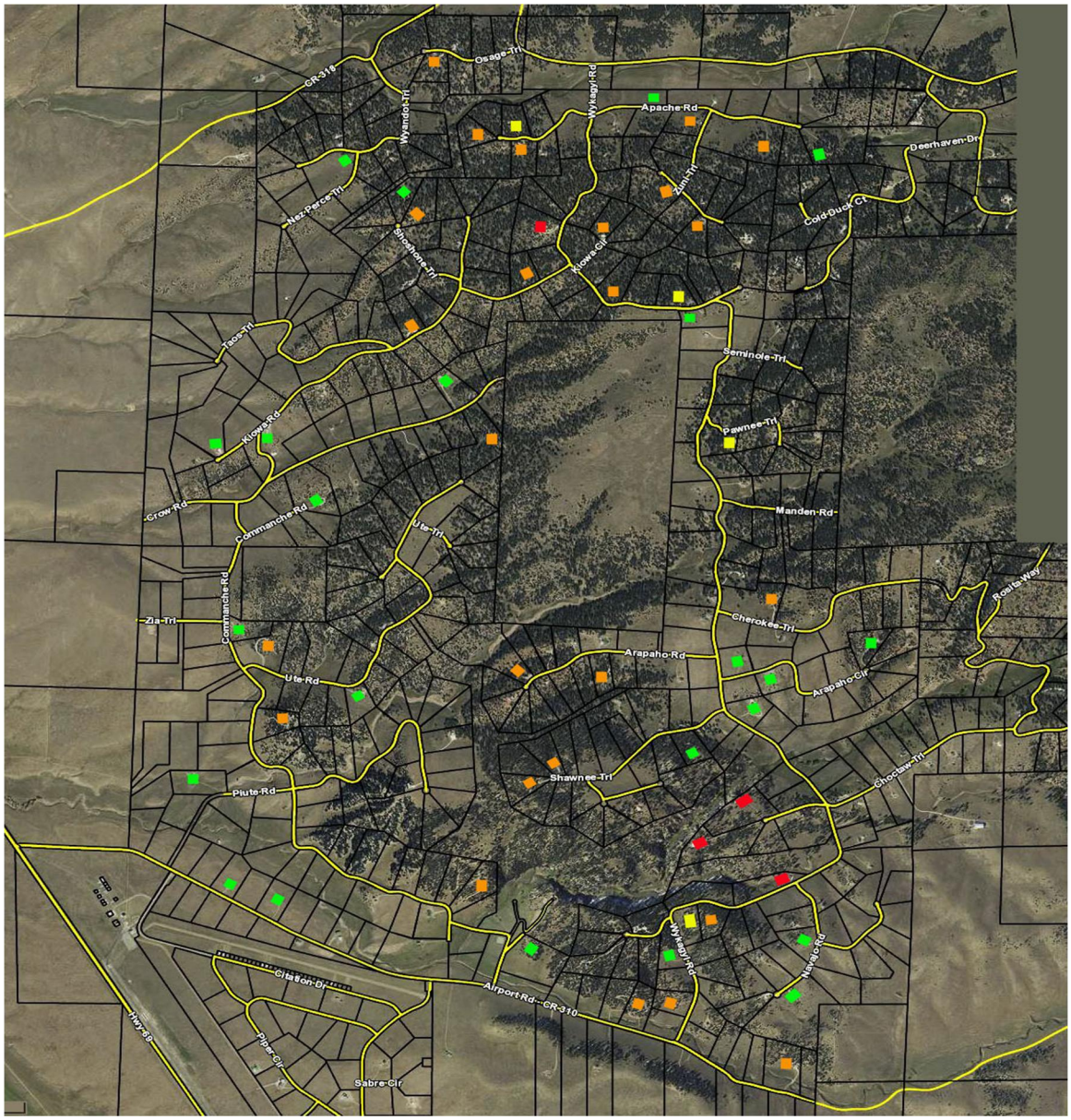
Estimated Phase One Cost - $12,000 to $17,000

Phase Two: 2020

- Seek funding to complete installation of emergency dry barrel fire use cisterns;
- Seek funding to mitigate Association common property;
- Seek funding to assist owners with mitigation of property through certified contractors.

Estimated Phase Two Cost - $70,000 to $90,000

Project Map



Color-coded properties are identified as initial mitigation projects.

SECTION 4: BARRIERS TO SUCCESS

For three years, Cuerno Verde Owners Association has demonstrated exceptional willingness to be self-reliant and motivated to initiate fuel mitigation and provide educational opportunities for owners. A Fire Mitigation Committee (FMC) was appointed. The FMC established and maintained a mitigated forest fuels collection sight on Association common property. An Association website was developed to provide owners with valuable information on living in the wildland urban interface. The Architectural Control Committee includes approved NFPA Firewise information to owners for construction projects and land use. The Association intent is to combine demonstrated results with secured funding to purchase tools, trailers, power equipment and hired licensed contractors thus assisting owners in mitigation efforts. Unfortunately, there are barriers to the success of the Associations efforts to complete all objectives detailed in the CWPP. Identified barriers are:

- Cost of contracted mitigation including required maintenance;
- Loss of interest by owners due to lack of funding or owner resources;
- Loss of interest by owners due to time commitment;
- Factors of complexity, expense and danger in fuel mitigation;
- Failure to maintain mitigation practices due to cost and time requirement;
- Failure to maintain mitigation practices due to absence of fire events;
- Age of owner population;
- Failure to receive funding to assist owners' mitigation efforts;
- Failure to receive funding to install engineered water sources to provide firefighters with resources necessary to successfully extinguish wildfires.

SECTION 5: OWNERS RESPONSIBILITIES

- Acquire a property fire risk assessment through the WMFPD or CSFS;
- Create the recommended defensible space around home and outbuildings;
- Install approved, reflective address signs at driveway entrance (available at nominal cost from WMFPD);
- Reduce potential for home and outbuilding ignition by use of fire-retardant Class A construction materials (**Appendix F**)
- Maintain areas under decks free of combustible materials;
- Store wood piles away from structures in open space;
- Remove vegetative litter from gutters and roof;
- Remove overhanging branches ten feet above driveway to provide safe passage of firefighting and emergency apparatus;
- Remove mitigated forest fuels from property;
- Prepare a Disaster Supply/Emergency Evacuation Kit (**Appendix G**)
- Plan for pets and livestock;
    - Maintain ID information and health records;

- Maintain a list of relatives and associates for shelter of pets and livestock during an emergency evacuation;
- Compile a list of public locations for shelter of pets and livestock during an emergency evacuation.

SECTION 6: COMMUNITY MAP

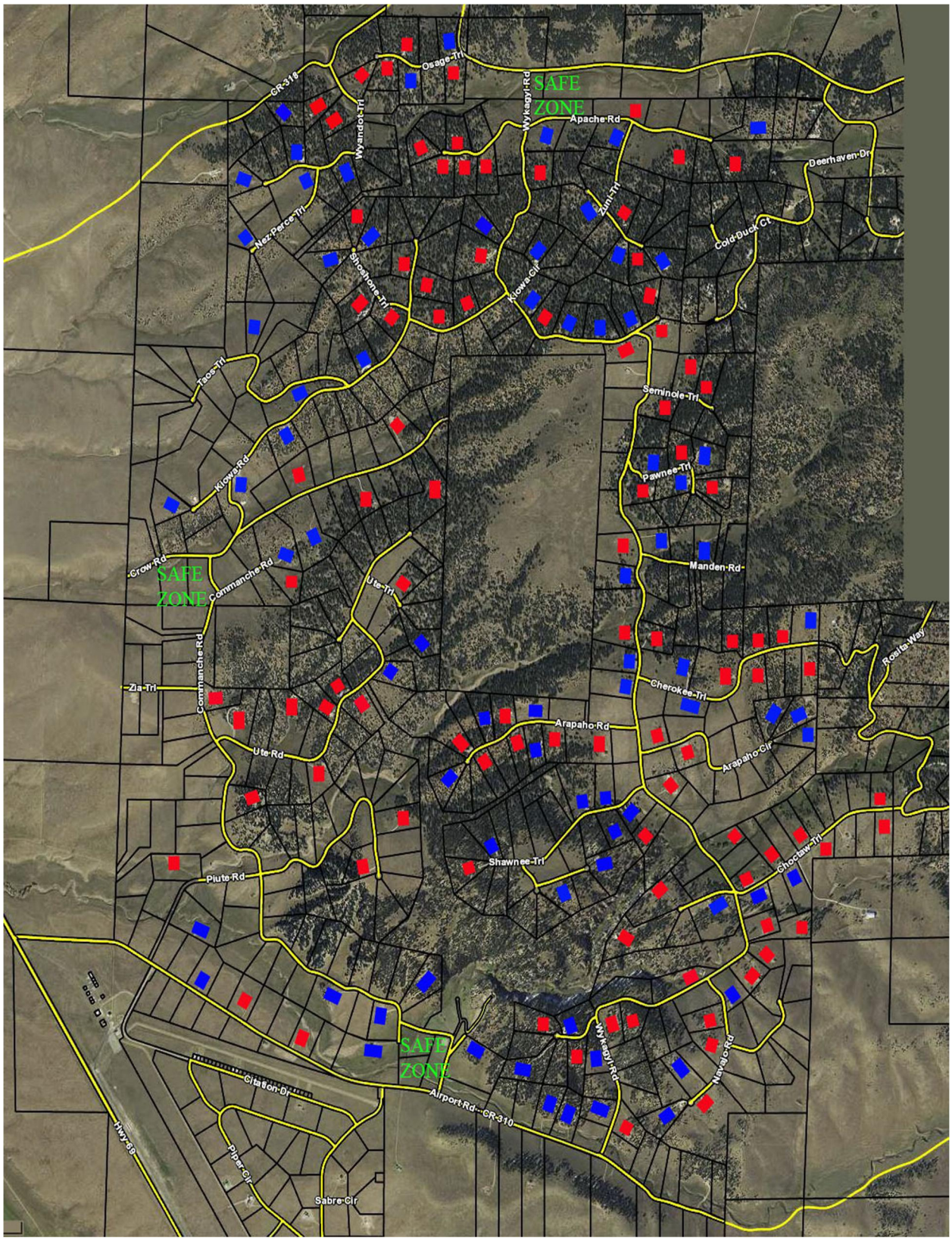
As part of development of the CWPP, the Association Board of Directors, the Fire Mitigation Committee and owners created a map of the subdivision, containing information to aid emergency responders during a wildfire response. Association representatives surveyed the subdivision with the Wet Mountain Fire Protection District Chief to evaluate apparatus turnarounds, staging areas, accessible driveways, fire safe zones and water supplies.

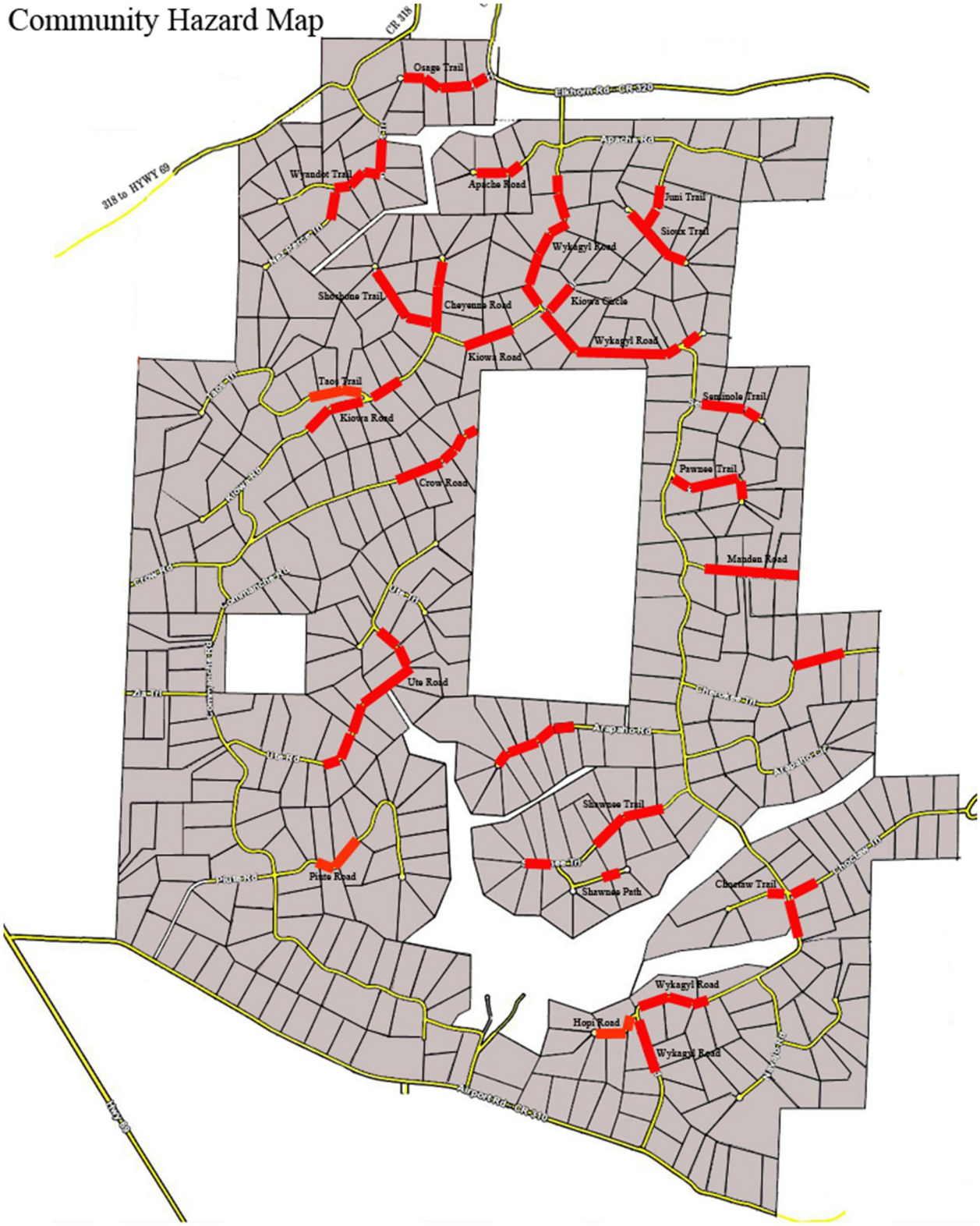
Community Map Items of Note:

- There are five (5) roads (County Road 310, County Road 318, County Road 320, Wykagyl Road and Commanche Road) allowing ingress/egress (evacuation) from properties within the subdivision. The subdivision measures four (4) miles by two (2) miles with a north/south through road and an internal loop road. Thirty (30) dead end roads ending in cul-de-sacs radiate off the ingress/egress roads. The dead end roads vary in length from one hundred (100) feet to thre thousand (3000) feet.
- The through road and loop road within the subdivision are accessible by fire apparatus. There are numerous dead end roads ending in cul-de-sacs. Approximately one-half of the dead end roads are accessible by fire apparatus. The remaining dead end roads require surface improvement and widening of the right of way to allow fire apparatus access. No roads within Cuerno Verde are accessible for one motion apparatus turnaround.
- All power and utility lines within the subdivision are buried eliminating the risk of downed electrical lines or aerial hazards to medical or fire-fighting aircraft. During a wildfire event, if possible, it is essential to clear an area of 6-8 feet around the above ground transformers to avoid overheating.
- Designated Community Map Safe Zones suitable for fire apparatus and personnel are located as follows:

  Apache Rd/Wykagyl Rd - (38º 03’ 46” N, 105º 21’ 16” W)
  CR 310/Clubhouse Way - (38º 01’ 19” N, 105º 21’ 37” W)
  Crow Rd/Commanche Rd - (38º 02’ 33” N, 105º 22’ 30” W)

Community Map





Items of note:

- Roads serve as fire breaks and anchor points;

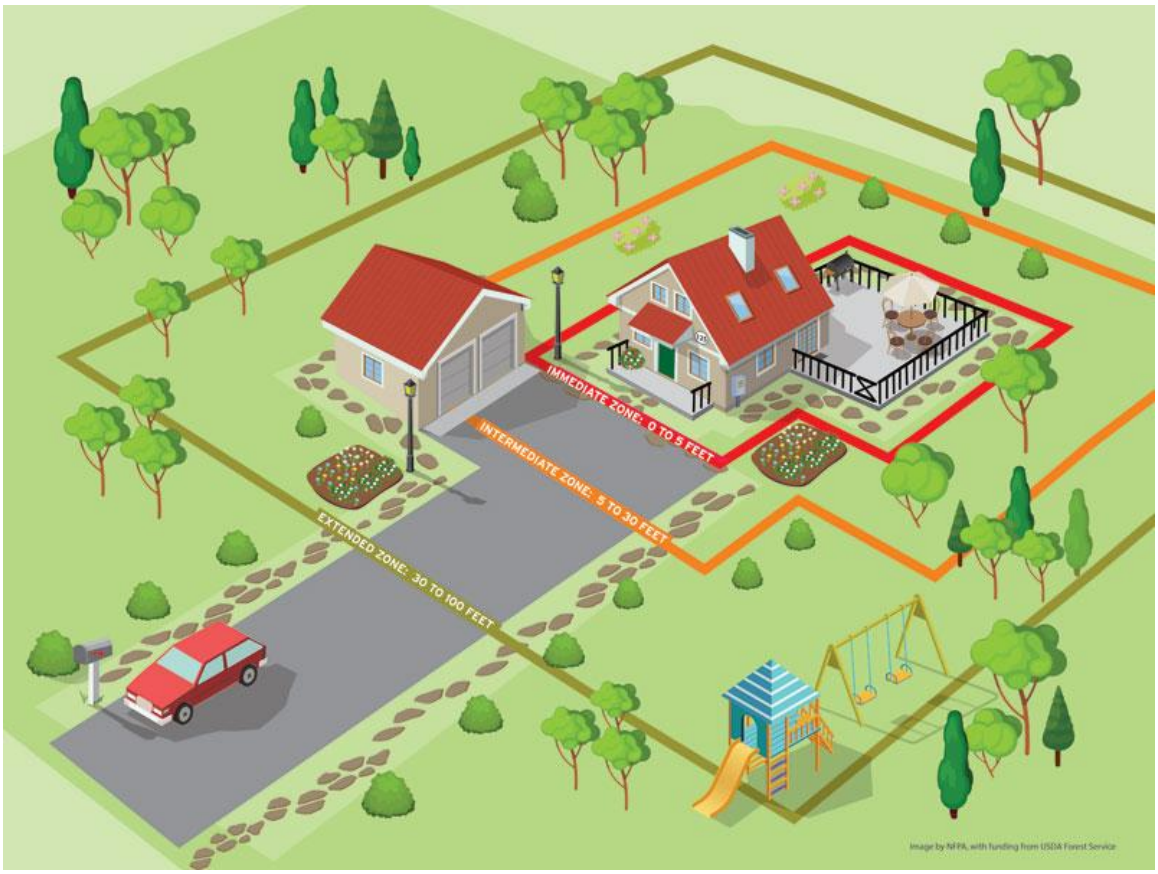
- No designated one motion apparatus turnarounds are available;
- Roads with red shading offer restricted passage due to overhanging canopy;
- No water source available within the subdivision.

SECTION 7: OWNER EDUCATIONAL INFORMATION

Primary Objective

What is the Home Ignition Zone?

The concept of the home ignition zone was developed by retired USDA Forest Service fire scientist Jack Cohen in the late 1990s, following some breakthrough experimental research into how homes ignite due to the effects of radiant heat. The HIZ is divided into three zones.



Immediate zone

Home and area 0-5' from furthest exterior point of the home

- Should be a non-combustible area as science states this zone is most vulnerable to embers
- BEGIN MITIGATION WITH THE HOME then move into the landscaping section of the Immediate Zone

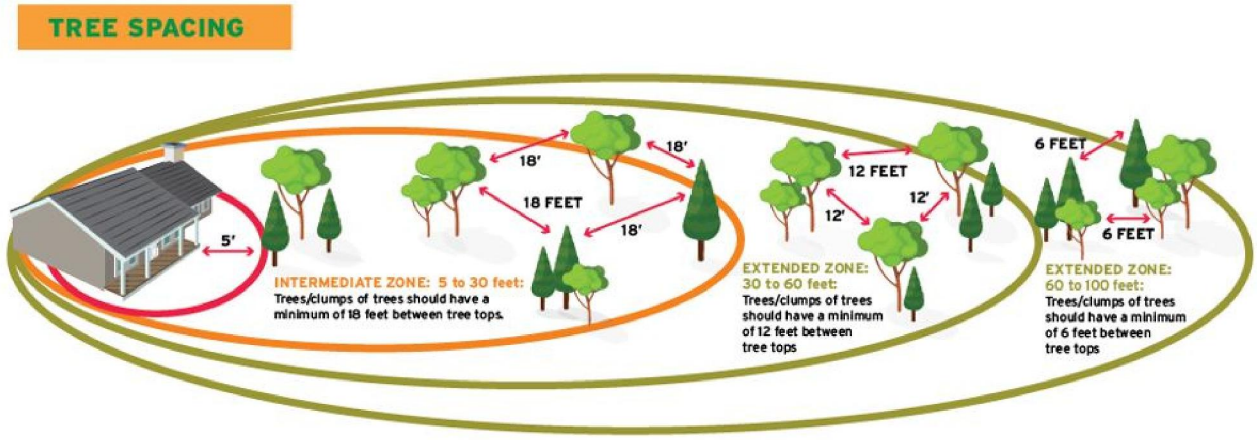
- Clean roofs and gutters of dead leaves, debris and pine needles that could catch embers.
- Replace or repair any loose or missing shingles or roof tiles to prevent ember penetration.
- Reduce embers that could pass through vents in the eaves by installing 1/8 inch metal mesh screening.
- Clean debris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

Intermediate zone

5-30' from the furthest exterior point of the home

- Landscaping/hardscaping – employ fire-resistant landscaping and create breaks that can decrease fire behavior

- Clear vegetation under and around stationary propane tanks.
- Create fuel breaks with driveways, walkways/paths, patios, and decks.
- Keep lawns and native grasses mowed to a height of four inches.
- Remove ladder fuels (vegetation under trees) to prevent surface fire reaching crowns.
- Prune trees six to ten feet from the ground; do not exceed 1/3 of the overall tree height.
- Space trees to a minimum of eighteen feet between crowns with the distance increasing with the percentage of slope.
- Tree placement should be planned to ensure the mature canopy is no closer than ten feet to the edge of any structure.
- Trees and shrubs within this zone should be limited to a few small clusters to break the continuity of the vegetation across the zone.



Extended zone

30-100 feet, out to 200 feet

- Landscaping – the goal is not to eliminate fire but to interrupt fire's path, reduce flame height and retain fire on the ground

- Dispose of heavy accumulations of ground litter/debris.
- Remove dead plant and tree material.
- Remove small conifers growing between mature trees.
- Remove vegetation adjacent to outbuildings within this zone.
- Trees 30 to 60 feet from the home should have at least 12 feet between canopy tops.
- Trees 60 to 100 feet from the home should have at least 6 feet between canopy tops.

Secondary Objective

Maintenance of mitigated areas is critical. Vegetation grows, therefore, mitigation must be ongoing.

Tertiary Objective

Provide owners with information on use of fire-resistant construction materials. While most effective for new construction, use of these materials is advantageous for remodeling, additions and landscaping**.**

Websites

- CVOA Firewise Tab: http://www.cuernoverde.org
- National Wildfire Coordinating Group "Inciweb": https://inciweb.nwcg.gov
- Colorado State Forest Service, Protect Your Home, Property & Forest from Wildfire: https://csfs.colostate.edu/wildfire-mitigation/protect-your-home-property-forest-from-wildfire
- Insurance Institute for Business and Home Safety's Research Center Ember Storm Video: www.youtube.com/watch?v=IvbNOPSYyss
- Prepare For Wildfire: http://www.readyforwildfire.org/Hardening-Your-Home/
- The Fire Line: Wildfire in Colorado: https://www.youtube.com/watch?v=WbwHRU187Tk
- Colorado State Forest Action Plan: http://csfs.colostate.edu/forest-action-plan/
- Colorado State Forest Service: https://csfs.colostate.edu/
- CSFS wildfire-related publications: http://csfs.colostate.edu/pages/wf-publications.html

- Community Wildfire Protection Planning: http://csfs.colostate.edu/pages/community-wf-protection-planning.html
- Colorado's "Are You FireWise?" information: http://csfs.colostate.edu/pages/wf-protection.html
- National Fire Protection Association's Firewise Communities USA: http://www.firewise.org
- Fire Adapted Communities: http://fireadapted.org/
- Ready, Set, Go!: http://wildlandfirersg.org
- Custer County OEM: oem.custercountygov.com/fire
- https://fam.nwcg.gov/fAMWEB
- http://www.fs.fed.us/rm/pubs/rmrs_gtr153.pdf
- https://daroinc.com/fire-cisterns/
- https://nfpd.org/?=content/cistern-info
- https://www.NWCG.org
  publication 461 – Incident Response Pocket Guide

Appendix A: Duties of Cuerno Verde Owners Association Board of Directors

- Maintain a complete record of all Board actions;
- Supervise all officers, committee members, agents and contractors;
- Oversee the annual meeting of members;
- Certify the payment of assessments by members;
- Obtain and maintain liability and hazard insurance on Association property;
- Insure fiscal officers are bonded;
- Supervise and maintain all common areas;
- Insure payment of taxes on common property and filing of required tax forms
- Enforce the water augmentation plan;
- Administer and enforce the Declaration;
- Administer the Community Wildfire Protection Plan and amend as required
- Monitor adjacent development and new law to maintain owner property rights and value;
- Appoint members of the Architectural Control Committee and other relevant committees.

Appendix B: Wet Mountain Fire Protection District Preparedness to Respond Document

Preparedness to Respond

Wet Mountain Fire Protection District Stations and Apparatus

The Wet Mountain Fire Protection District (WMFPD) consists of six stations and approximately 28 volunteer firefighters.

Main Station – 215 N. 4th Street Located in the Town of Westcliffe, primary response station for all areas			
ID	**WD**	**DESCRIPTION**	**TYPE**
Command-343		Command Vehicle	
Engine-4		Brush Truck	Type 6
Engine-7	6x6	Heavy Brush Tender	Tactical, Type 1
Engine-14	4x4	Pumper	Type 1
Engine-11	4x4	Pumper	Type 2
Engine-15		Brush Truck	Type 6
Rescue-1		Heavy Rescue Pumper	Type 1
Rescue-9		Rescue Truck	
Tender-8	6x2	Tender	Tactical, Type 1
Fire Ranger 1		UTV	
Fire Range 2		UTV	
Trailer 2		750 gal. water tank on trailer	
Trailer 3		14' Studebaker 22 Rescue Boat with Mercury motor	

Rosita Station – 7113 County Road 328			
NAME	**WD**	**DESCRIPTION**	**TYPE**
Engine-3	4x2	Pumper	Type 3
Engine-12		Brush Truck	Type 6

DeWeese Station – 7113 County Road 241			
NAME	**WD**	**DESCRIPTION**	**TYPE**
Engine-5	4x2	Pumper	Type 3
Engine-12		Brush Truck	Type 6

Hillside Station – 72000 Hwy 69 N			
NAME	**WD**	**DESCRIPTION**	**Type**
Engine-6		Brush Truck	Type 6

Page **18** of **48**

Boneyard Station – 2901 County Road 265			
NAME	**WD**	**DESCRIPTION**	**TYPE**
Engine-2	4x2	Pumper	Type 2
Engine-10		Brush	Type 6

Blizzardine Station (at Silver West Airport)			
NAME	**WD**	**DESCRIPTION**	**Type**
Engine-32	4X4	Pumper- Not in service at this time.	Type- not determined at this time.

Staging Areas

The District has identified locations where responding mutual aid fire departments may be staged for assignment in the early stages of a wildland event, or until an Incident Command Post or alternate staging area is established. These locations are listed in Appendix A. These should follow NWCG guidelines for firefighter safety zones, and based on all personnel in full Personal Protective Equipment (PPE). Diameters to be adjusted based on surrounding fuel loading.

Water Supplies

Firefighting water supplies are typically available through hydrant systems in the developed portions of the towns of Westcliffe and Silver Cliff that are served by the Round Mountain Water and Sanitation District. Rural areas are dependent on cisterns, agricultural irrigation ponds and lakes. The Fire District has set a goal to map these potential water supplies, and establish agreements with the landowners. It should be noted USFS requires a "Use Agreement" with landowners prior to emergency water use.

Cisterns or hydrants are usually intended for use during structure fires in which, typically, only one house is on fire at any one time. Structural firefighting resources are not required to be mobile. The opposite occurs during a wildland fire in which resources must be mobile, and prepared to move quickly out of harm's way.

Water supplies are critical for maintaining lower Insurance Services Organization (ISO) ratings that affect homeowner insurance rates. In unincorporated areas of the county there are currently no requirements for providing water supplies. Communities should consider providing for the establishment of available water supplies with approved equipment connections per the Fire District.

Appendix C: Values at Risk

Population at Risk

During Fire Season, population of 334 souls

Residences at Risk

One hundred eighty-three (183) residences

Outbuildings at Risk

One hundred fifty-one (151) outbuildings

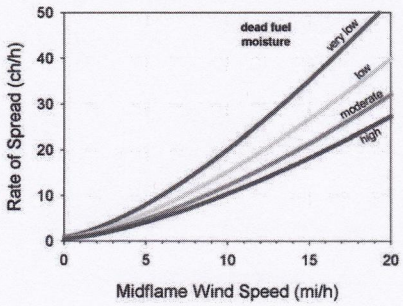
Appendix D: Examples of Fuel Models

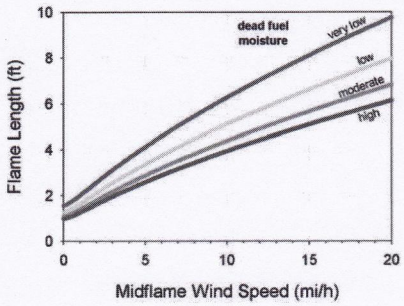
TL8 (188)

Long-Needle Litter

Description: The primary carrier of fire in TL8 is moderate load long-needle pine litter, may include small amount of herbaceous load. Spread rate is moderate; flame length low.

Fine fuel load (t/ac)	5.8
Characteristic SAV (ft-1)	1770
Packing ratio (dimensionless)	0.03969
Extinction moisture content (percent)	35





USDA Forest Service Gen. Tech. Rep. RMRS-GTR-153. 2005

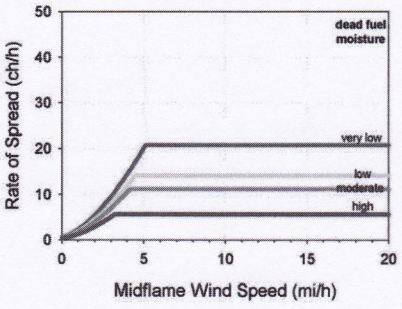
Long-Needle Litter Fuels

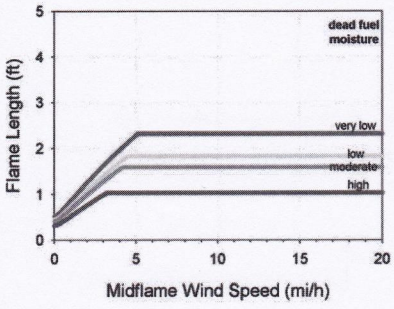
GR1 (101)

Short, Sparse Dry Climate Grass (Dynamic)

Description: The primary carrier of fire in GR1 is sparse grass, though small amounts of fine dead fuel may be present. The grass in GR1 is generally short, either naturally or by grazing, and may be sparse or discontinuous. The moisture of extinction of GR1 is indicative of a dry climate fuelbed, but GR1 may also be applied in high-extinction moisture fuelbeds because in both cases predicted spread rate and flame length are low compared to other GR models.

Fine fuel load (t/ac)	0.40
Characteristic SAV (ft-1)	2054
Packing ratio (dimensionless)	0.00143
Extinction moisture content (percent)	15





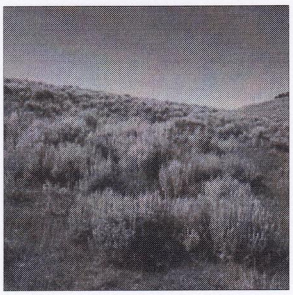
Short, Sparse Dry Climate Grass Fuels

Short, Sparse Dry Climate Grass Fuels

Short, Sparse Dry Climate Grass Fuels

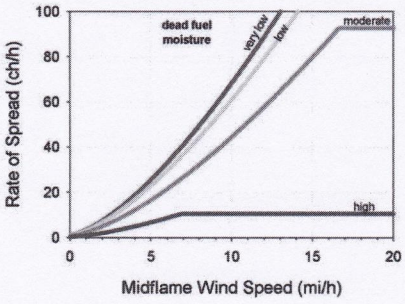
GS2 (122)

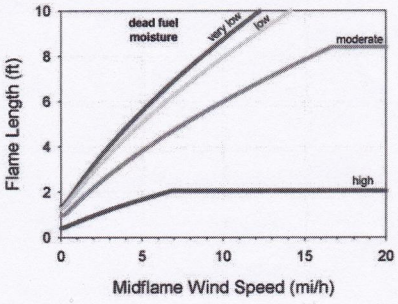
Moderate Load, Dry Climate Grass-Shrub (Dynamic)



Description: The primary carrier of fire in GS2 is grass and shrubs combined. Shrubs are 1 to 3 feet high, grass load is moderate. Spread rate is high; flame length moderate. Moisture of extinction is low.

Fine fuel load (t/ac)	2.1
Characteristic SAV (ft-1)	1827
Packing ratio (dimensionless)	0.00249
Extinction moisture content (percent)	15



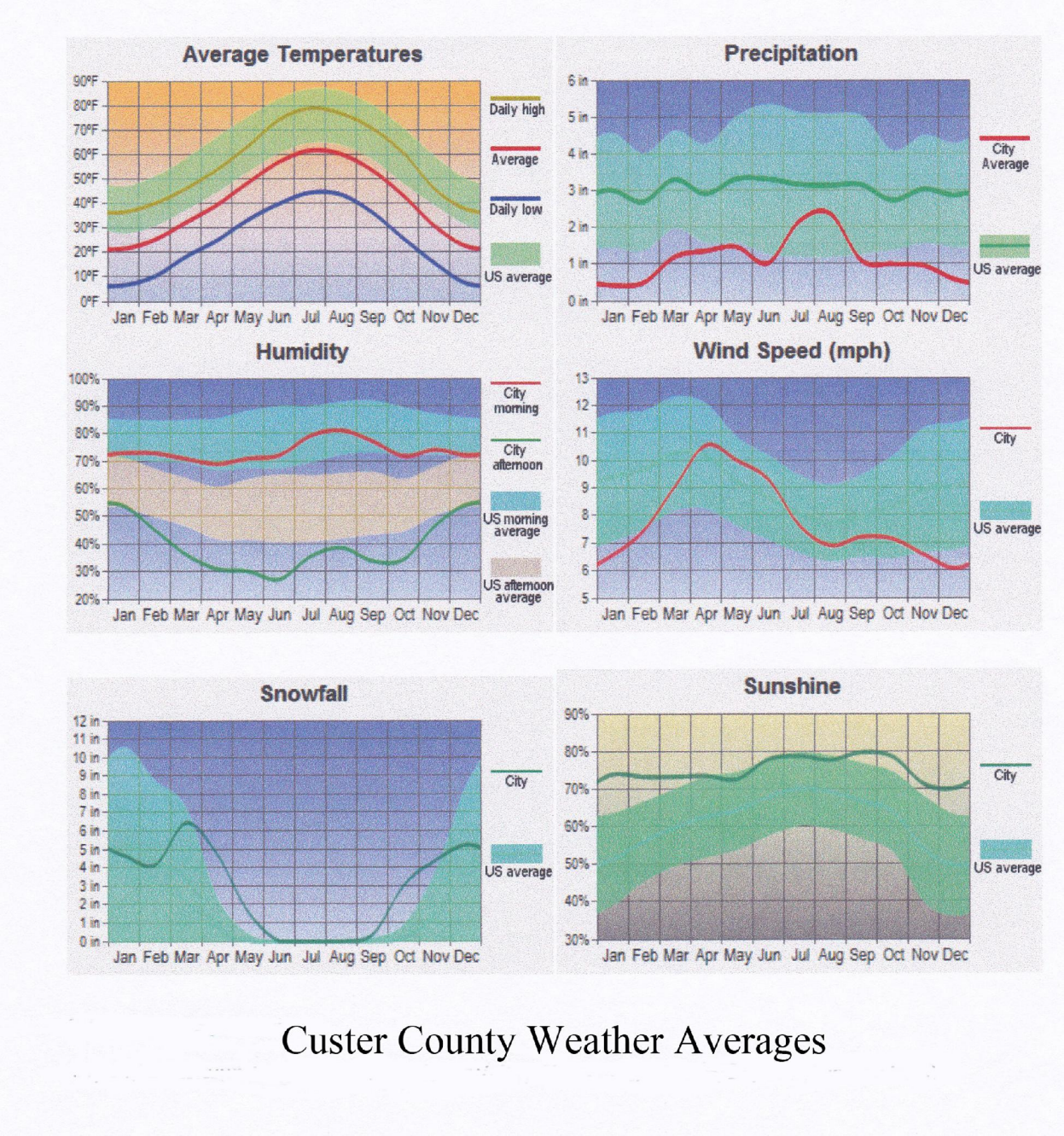


Moderate Load, Dry Climate Long Grass-Shrub Fuels

Moderate Load, Dry Climate Long Grass-Shrub Fuels

Moderate Load, Dry Climate Long Grass-Shrub Fuels

Appendix E: Weather Graph



Custer County Weather Averages

Appendix F: NFPA Class A Fire Rating

Identification

The National Fire Protection Association (NFPA) is responsible for instituting standards and codes for dealing with fire prevention. Their responsibilities range from building codes to what kind of gear firefighters need to suit up in when tackling an inferno.

Considerations

When taking on a construction project it's important to be aware of the flame spread rating (FSR) assigned to construction materials by the NFPA. The ASTM E 84 or "tunnel test" determines the FSR. The test measures how quickly flames spread across a surface using cement-asbestos board as 0 and red oak as 100 for the scale.

Features

The most stringent rating available for building materials is Class A. Class A materials have an FSR of 0 to 25. The classification system provided by the NFPA allows architects and engineers to select the best materials for fire safety when starting new projects.

Building Materials

Metal, brick, masonry, stone are common Class A Rated materials. When selecting composite building materials like decking, trim, or roofing, look for the FSR rating.

Recommended Website:
http://osfm.fire.ca.gov/codedevelopment/wildfireprotection

Appendix G: Disaster Supply/Emergency Evacuation Kit

Store items in airtight plastic bags and place in one or two easy-to-carry containers such as plastic bins or duffel bags.

Basic Emergency Supply Kit:

- Water - one gallon of water per person per day for at least three days, for drinking and sanitation
- Food - at least a three-day supply of easy-open non-perishable food
- Battery-powered or hand crank radio and a NOAA Weather Radio with tone alert
- Flashlight
- Extra batteries
- First aid kit (consult American Red Cross for exact items)
- Compass
- Whistle to signal for help
- Dust mask to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers to turn off utilities
- Local map
- Cell phone with chargers and a backup battery

Additional Emergency Supplies

- Prescription and non-prescription medications
- Glasses and contact lens
- Infant formula, bottles, diapers, wipes, diaper rash cream
- Food and water for pets
- Cash or traveler's checks
- Important documents: identification, insurance policies, and bank records saved electronically or in waterproof container
- Sleeping bag or warm blanket for each person
- Complete change of clothing appropriate for climate
- Sturdy shoes
- Household chlorine bleach and medicine dropper to disinfect water
- Matches in a waterproof container
- Sunscreen
- Feminine supplies and personal hygiene items
- Mess kits, paper cups, plates, paper towels and plastic utensils
- Paper and pencil
- Books, games, puzzles

Pet Evacuation Considerations

- Carriers
- Shelter locations
- Transport
- Medications

Maintaining Evacuation Kit

- Store canned food in a cool, dry place
- Store boxed food in secure plastic or metal containers
- Replace expired items
- Update kit as requirements change

Evacuation Routes

- Determine and utilize CVOA Evacuation Routes

Recommended Website:
https://www.fema.gov/media-library-data/1390846764394-dc08e309debe561d866b05ac84daf1ee/checklist_2014.pdf

Appendix H: Glossary

Carriers: Materials within a natural environment that serve as the primary fuel to sustain a wildland fire. Examples are: leaf and needle litter, grasses, shrubs and trees.

Class A Roof: Effective against severe fire test exposures, as classified by the Universal Building Code (UBC). Under such exposures, roof coverings of this class are not readily flammable, afford a fairly high degree of fire protection to the roof deck, do not slip from position, and are not expected to produce flying brands.

Class B Roof: Effective against moderate fire test exposures, as classified by the Universal Building Code (UBC). Under such exposures, roof coverings of this class are not readily flammable, afford a moderate degree of fire protection to the roof deck, do not slip from position, and are not expected to produce flying brands.

Class C Roof: Effective against light fire test exposure, as classified by the Universal Building Code (UBC). Under such exposures, roof coverings of this class are not readily flammable, afford a measurable degree of fire protection to the roof deck, do not slip from position, and are not expected to produce flying brands.

Crown Fire: A fire that advances from top to top of trees or shrubs more or less independent of a surface fire. Crown fires are sometimes classed as running or dependent to distinguish the degree of independence from the surface fire.

Crown Fuels: Secondary or primary overstory - chaparral and brush types.

Defensible Space: An area within the perimeter of a parcel, development, neighborhood or community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from an approaching wildfire or defense against encroaching wildfires or escaping structure fires.

The perimeter as used herein is the area encompassing the parcel or parcels proposed for construction and/or development, excluding the physical structure itself.

The area is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, street names and building identification, and fuel modification measures.

In simplest terms, it is adequate space between structures and flammable vegetation which allows firefighters a safe working area from which they can attack an oncoming wildfire. Defensible space is the best element of fire protection for individual property owners.

Extended Zone: The area 30-100, out to 200 ft. from the furthest exterior of the home

Felling: The act of cutting trees by manual or mechanical means.

Fire Hazard Mitigation: Various methods by which existing fire hazards can be reduced in a certain area, such as fuel breaks, non-combustible roofing, spark arresters, etc.

Fire Management: The activities concerned with the protection of people, property, and forest areas from wildfire and the use of prescribed burning for the attainment of forest management and other land use objectives, all conducted in a manner that considers environmental, social and economic criteria.

Fire Suppression: All activities concerned with controlling and extinguishing a fire following its detection.

Forest Fire: Any wildfire or prescribed burn that is burning in forest, grass, alpine or vegetative life biome.

Fuel: Any combustible living or dead material.

Fuel Management: The act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological or manual means, or by fire in support of land management objectives.

Grass Fire: Any fire in which the predominant fuel is grass or grasslike.

Immediate Zone: The area 0-5 ft. from furthest exterior of the home.

Intermediate Zone: The area 5-30 ft. from the furthest exterior of the home.

Ladder Fuels: Fuels that provide vertical continuity between the surface fuels and crown fuels in a forest stand, thus contributing to crown fires.

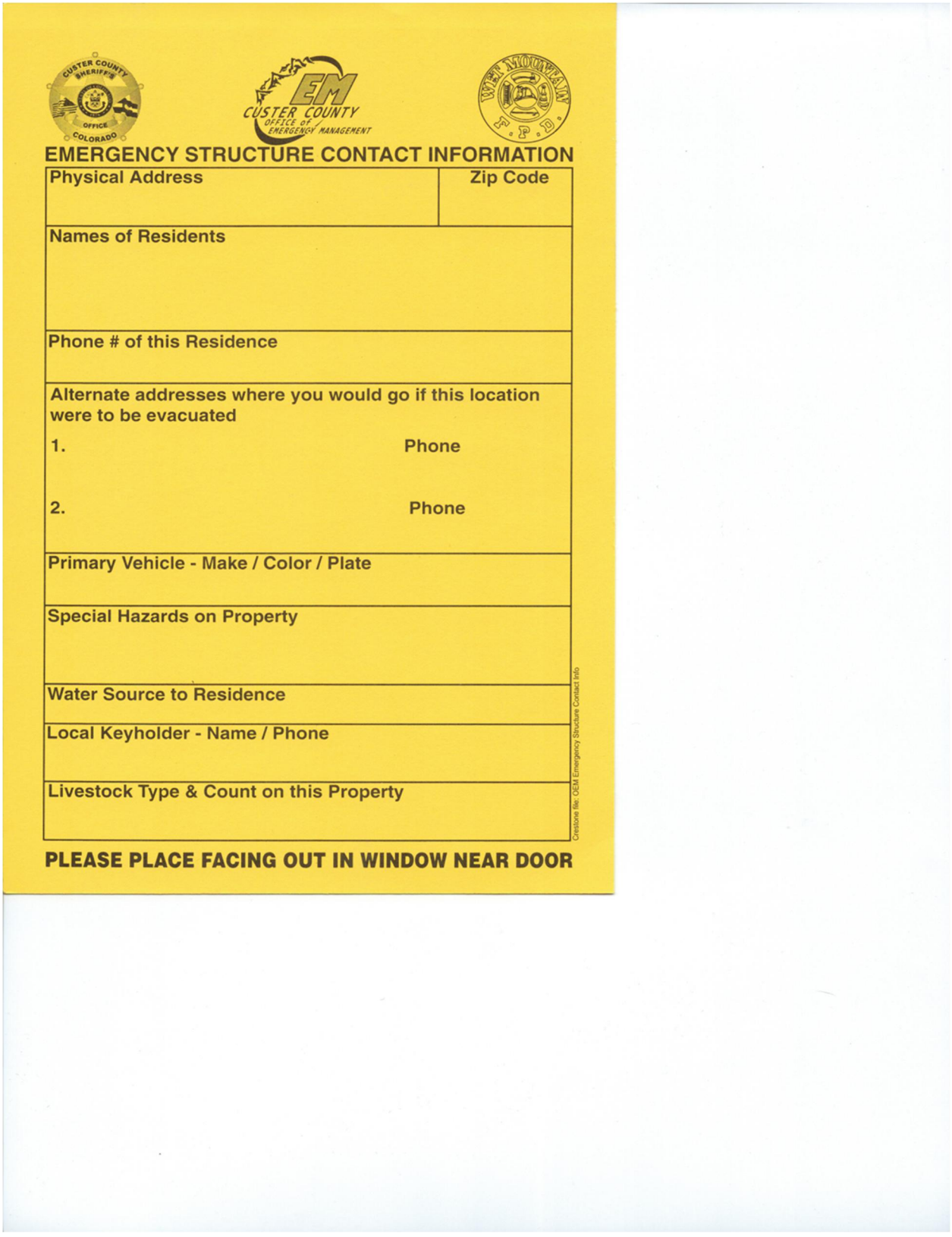
Surface Fire: Fire that burns loose debris on the surface, which includes dead branches, leaves, and low vegetation.

Surface Fuel: Fuels lying on or near the surface of the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low stature living plants.

The link below is the complete list of terminology used by the National Wildfire Coordination Group, Glossary of Wildland Fire Terminology:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fswdev3_009827.pdf

Appendix I: Emergency Contact Information Notice



CUSTER COUNTY SHERIFF'S OFFICE COLORADO

CUSTER COUNTY OFFICE OF EMERGENCY MANAGEMENT

WEST MOUNTAIN F.P.D.

EMERGENCY STRUCTURE CONTACT INFORMATION

Physical Address	Zip Code
Names of Residents	
Phone # of this Residence	
Alternate addresses where you would go if this location were to be evacuated 1. Phone 2. Phone	
Primary Vehicle - Make / Color / Plate	
Special Hazards on Property	
Water Source to Residence	
Local Keyholder - Name / Phone	
Livestock Type & Count on this Property	

Crestone Ike: OEM Emergency Structure Contact Info

PLEASE PLACE FACING OUT IN WINDOW NEAR DOOR

Appendix J: CVOA Fire Mitigation Committee Meetings

March 2017 – CSFS Office – Canon City, CO – John Grieve (CSFS)

April 2017 – Wet Mountain Fire Protection District Office – Westcliffe, CO – Board of Directors (WMFPD)

April 19-21, 2017 – Pueblo, CO – Colorado Wildland Conference 2017 = Vince Dougan (FMC), Don Munden (FMC)

May 2017 – Wet Mountain Fire Protection District Office – Westcliffe, CO – Board of Directors (WMFPD)

June 17, 2017 – CVOA FMC Meeting – Westcliffe, CO

June 2017 – Wet Mountain Fire Protection District Office – Westcliffe, CO – Board of Directors (WMFPD)

June 29, 2017 – CVOA FMC Meeting – Westcliffe, CO

July 201 – Wet Mountain Fire Protection District Office – Westcliffe, CO – Board of Directors (WMFPD)

July 26, 2017 – CVOA FMC Meeting – Westcliffe, CO

August 3, 2017 – CVOA FMC Meeting – Westcliffe, CO

August 2017 – Wet Mountain Fire Protection District Office – Westcliffe, CO – Board of Directors (WMFPD)

September 2, 2017 – CVOA Annual Meeting – Cindy Howard (Director, Custer County OEM), Basel Lane (Wet Mountain Fire Protection District)

October 31, 2017 – CVOA FMC Meeting – Westcliffe. CO

June 16, 2018 – Wildfire and Emergency Preparedness Seminar – Westcliffe, CO – Board of Directors (CVOA)

July 16, 2018 – Wildfire and Emergency Placard Preparation – Westcliffe, CO – Board of Directors (CVOA)

August 2018 – Survey of CVOA properties – Jim Griffin & Vince Dougan (FMC), Kit Shy (Wet Mountain Fire Protection District)

August 2018 – Discussion of Grants – Jim Griffin (FMC), Cindy Howard (Custer County OEM)

August 29, 2018 – CVOA Member Notification of PILT Funds for Mitigation – Westcliffe, CO – Board of Directors (CVOA)

September 15, 2018 – Discussion of Draft of CWPP – Board approval to submit to Cindy Howard (Custer County OEM) and John Grieve (CSFS)

October 10, 2018 – Discussion of buried water tanks – addition to CWPP – Jim Griffin (FMC)

November 17, 2018 – Report on CWPP comments from agencies – Jim Griffin (FMC)

January 14, 2019 – OEM Office – Westcliffe, CO – CVOA FMC, John Grieve (CSFS), Cindy Howard (Director, Custer County OEM)

January 24, 2019 – CVOA – Westcliffe, CO – Matt Clark (CVOA Board), Don Munden (FMC)

February 3, 2019 – CVOA FMC Meeting – Westcliffe, CO

February 13, 2019 – MAWFP Meeting – Canon City, CO – Vince Dougan, Matt Clark, Don Munden

April 10, 2019 – MAWFP Meeting – Westcliffe, CO – Matt Clark (BOD), Don Munden (FMC)