

COMMUNITY WILDFIRE PROTECTION PLAN



*North-West Fire Protection District
Park County*

COMMUNITY WILDFIRE PROTECTION PLAN
NORTH-WEST FIRE PROTECTION DISTRICT
PARK COUNTY, COLORADO

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Submitted By

Brian Roach: for the CWPP Team

Date

Concurred

Mike Roll

Date

Chief, North-West Fire Protection District

Mark Dowaliby

Date

Chair, Park County Board of Commissioners

Larry Long

Date

District Forester, Woodland Park District, Colorado State Forest Service

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INTRODUCTION

A Community Wildfire Protection Plan (CWPP) is a plan created by a community that is at-risk from wildfire. Park County has an overarching County wide plan. The Park County Plan provided a broad overview and included the necessary data to help get this more focused plan moving. This new CWPP builds upon the Park County Plan by focusing in on the North-West Fire Protection District (NWFPD), which is located in the North West corner of Park County.

The CWPP has several purposes: assess the wildfire risk, identify 'starter' projects, provide information about the NWFPD area, give residents information about how to reduce their risk, garner support for the fire department and fulfill requirements for CWPPs, allowing the community to qualify for grants and other assistance. Wildfire is part of the natural cycle, the same as rain or snow, insect and disease. The pine forests of the NWFPD are mainly Lodgepole pine; followed by Engelmann spruce, Bristlecone pine, and Sub-alpine fir dotted with aspen stands. The ecology of fire in various forest types is complex. What follows is a brief history of the area; in particular how it affects the overall forest and its human population.

Gold fever changed everything. In the 1860s the population exploded and heavy logging quickly followed. Many areas were burned intentionally to expose mineral rock. Almost all of the current forests in the NWFPD are a result of new growth after the fires and logging of the late 19th and early 20th centuries.

All these human activities and natural processes have created the current landscape. The fire regime of the high elevation forests of the NWFPD can generally be described as a long term fire return interval (100+ years) with high severity fire behavior. Fires do not occur very often but when they do they are stand replacing fires; they burn the whole forest. This is different than ponderosa pine and other lower elevation forests where historically, fires occur more often and stay on the ground. These two forest types require different management practices.

Fire occurrence is directly tied to fuel buildup, time and climatic conditions such as drought. Most forested areas of the NWFPD are 100 or more years old today. Fuel loadings, both tree density and down dead materials, are again capable of supporting high intensity fire in many locations. Insect or diseases, such as mountain pine beetle, will only accelerate that process.

The number of homes within the NWFPD CWPP area has increased significantly over the past 20 years. These homes, scattered within the forest, not only increase the risk to people and property from wildfires, it makes fire fighting harder and riskier. Federal and State agencies and the fire district must work together, using all their combined resources. And residents must take personal responsibility and make their homes more defensible.

Wildfire poses a very real risk to the NWFPD area and its residents. This plan is designed to assess hazards and provide mitigation project direction. This document represents the first step; the next steps are up to you.

1.0 CWPP Development and Stakeholder Involvement

Origin of the Community Wildfire Protection Plan

In 2000, more than 7 million acres burned across the United States, marking one of the worst wildfire seasons in American history. The fire season of 2002 was another reminder of the severity of wildfire in America, and included the Hayman wildfire, the largest in Colorado history. Since then the acreage burned each year has increased. In 2006, 9.1 million acres burned.

The fire seasons of 2000 and 2002 led to the passing of the Healthy Forest Restoration Act (HFRA) in 2003. Congress authorized communities in the wildland-urban interface (WUI) to prepare Community Wildfire Protection Plans. Once the CWPP is completed the US Forest Service (USFS) and the Bureau of Land Management (BLM) must consider action on the implementation of hazardous fuel reduction projects recommended on their lands.

HFRA requirements for Community Wildfire Protection Plans

The Healthy Restoration Act requires the following items of a CWPP:

- a. Collaboration between private landowners, local government, emergency services personnel and federal and state land managers.
- b. Identification and prioritization of fuel reduction projects, with recommendations for the future.
- c. Recommendation of actions that homeowners and communities can take to reduce ignitability of structures.

1.1 The Team

The team for the NEFPD CWPP is made up of:

Brian Roach	Chairman; Resident and Fire Volunteer
Theresa Springer	Resident; Representative of Coalition for the Upper South Platte
Lori Hodges	Resident and former head of county Emergency Management
Mike Roll	Resident; Chief, NW Fire Protection District
Mike Hessler	Resident; Fire Management Officer, US Forest Service
Craig Barraclough	Resident; Representative for Park County
Brian Foltz	Park County; Office of Emergency Management
Bryan Shane	Resident
Foss Smith	Resident
Chuck Soper	Resident
Matt Matwijec	Colorado State Forest Service
Dave Root	Colorado State Forest Service
John Chapman	Southern Rockies Conservation Alliance

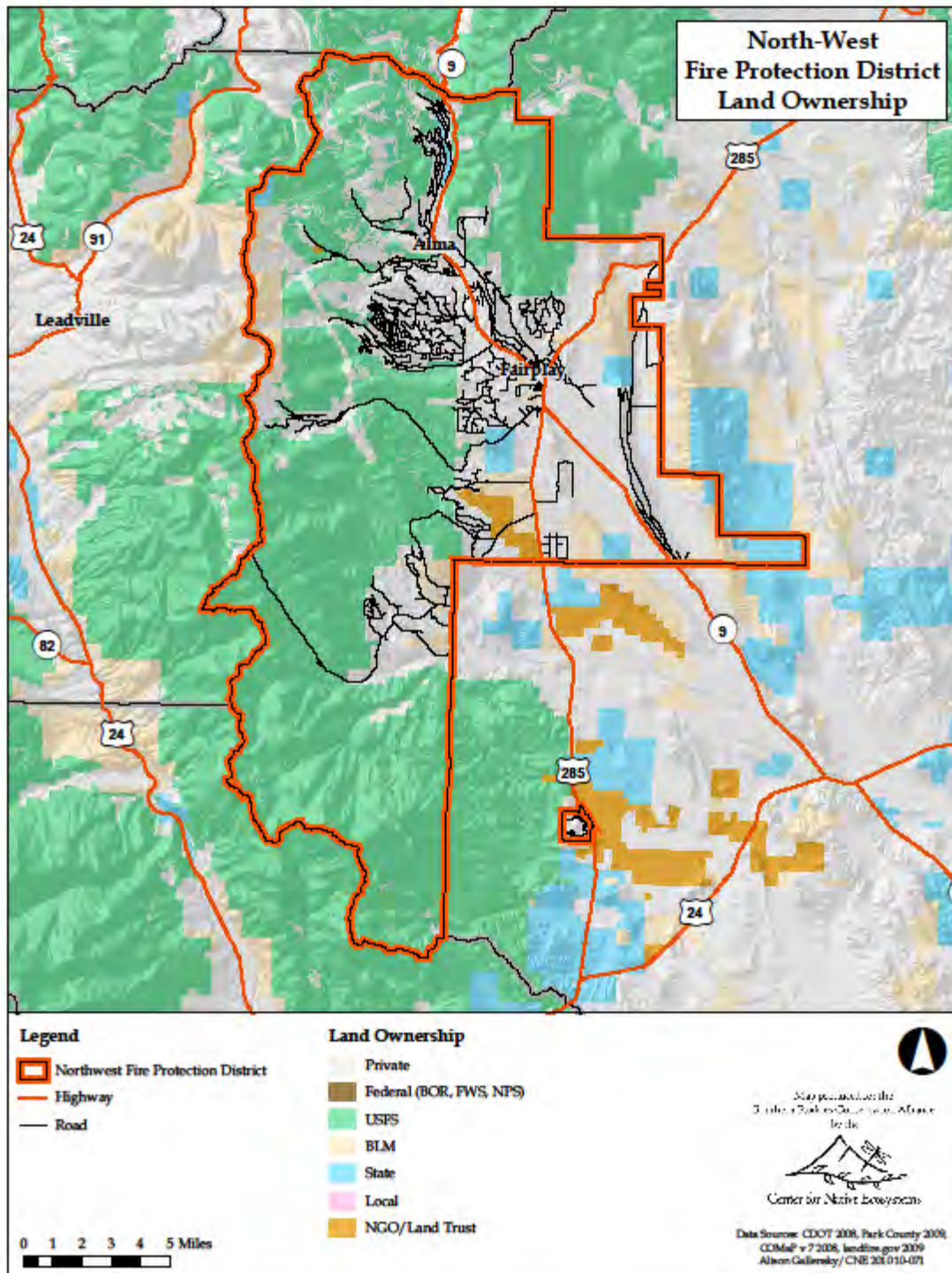
The team also conducted a general survey of residents to get their opinions as to the most important “Values at Risk” to be considered in the plan.

Wildland Urban Interface (WUI) Description

According to the guide, *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities*, “The wildland-urban interface (WUI) is commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels.” The county approach to community planning is detailed in the Park County Community Wildfire Protection Plan, available on both the Park County website and on the Colorado State Forest Service website.

Most of the factors and treatments that determine the survivability of a structure lie within one hundred yards of the structure, and are usually located on private lands. However, many other items beyond that distance are critical to a community. These include, among others, community water supplies and infrastructure, effects on property and real estate values, economic impacts to residents and businesses, aesthetic values, and a sense of community or why “we live here.” Because of those factors, it is important for this CWPP to define a WUI that includes all items critical to the area.

The Park County CWPP identified the WUI as lands within two miles of all subdivisions, and all identified towns or communities, including Fairplay and Alma, and all National Forest summer home groups. It also includes a half mile area along each side of all evacuation routes for all subdivisions and towns. The Park County WUI also includes all designated town or municipal watersheds. And, it includes a two-mile buffer around all water development and storage structures. The Wildland/Urban Interface for your plan is the North-West Fire Protection District.



The North-West Fire Protection District Boundary and CWPP area

1.2 Overall Goals and Objectives

The Park County Community Wildfire Protection Plan (CWPP) is the “umbrella” or strategic document for community wildfire protection planning in Park County. The Goals and Objectives section of that plan identified the need for more localized CWPP’s to be developed at the community, subdivision, and/or fire protection district level.

While the county wide goals and objectives apply provide broad strategic direction the following are specific goals and objectives for the NWFPD plan.

GOAL #1: Implement a local plan for the North-West Fire Protection District with recommended actions that include input from local stakeholders and the team.

This CWPP includes input from relevant agencies; the US Forest Service, Colorado State Forest Service, Colorado Division of Wildlife, Park County Government and Sheriff’s Office, and North-West Fire Protection District. Stakeholders include local residents and the Coalition for the Upper South Platte (CUSP). This collaboration provides a broad viewpoint to better serve local needs.

SPECIFIC OBJECTIVES:

- 1. Review the CWPP every six months, or as conditions dictate; make any changes deemed necessary.**
- 2. Evaluate the project priority list to update completions and adopt new projects.**
- 3. Monitor conditions, review progress, and provide accountability.**

GOAL #2: Reduce potential fire behavior in high risk locations by assessing wildfire hazard, prioritizing needs, and identifying site specific locations and fuels treatments across jurisdictional boundaries. Implement treatments in priority order.

This CWPP assesses the relative wildfire hazard on lands and subdivisions located within the NWFPD. It then identifies and prioritizes areas of greatest hazard and recommends initial treatments to reduce wildfire intensity and increase firefighting success.

SPECIFIC OBJECTIVES:

- 1. Conduct an updated red zone survey and rating of the NWFPD subdivisions.**
- 2. Develop a prioritized list of five to ten specific areas and associated treatment needs.**
- 3. Utilize the review process (see Goal #1 – Objective #1) to ensure the priority list is updated as conditions change and/or projects are implemented.**
- 4. Implement projects as grants or other funding becomes available; work with public lands management agencies to develop treatment objectives.**

GOAL #3: Increase the wildfire suppression capabilities and efficiencies within the NWFPD.

The effectiveness of fire suppression can be improved through a combination of training, interagency cooperation, pre-attack planning, and taking advantage of new technologies.

SPECIFIC OBJECTIVES:

1. Implement projects which create firefighter safety zones, and improve fire department access, public evacuation, and structure survivability. (See also Goal # 4)
2. Create a wildfire mitigation team at NWFD (fire department members and partners) to provide advice and carry out hazard analysis.
3. Develop a prioritized list of subdivisions or logical portions of subdivisions or other critical infrastructure for mitigation treatment.
4. Prepare at least one pre-attack plan annually.
5. Conduct pre-fire season coordination meeting annually between US Forest Service and NWFPD. Evaluate feasibility of conducting annual training exercise(s) with US Forest Service within the next year, and of increasing experience levels of NWFPD personnel through assignments with USFS crews.
7. Utilize grants or other funding to acquire “Red Zone” or similar software as well as handheld pc’s and laptops for at least all command vehicles and Type 3 and below engines within three years. Utilize current data and additional onsite structure data to populate software.
8. Work with Park County GIS department annually to ensure NWFD has up-to-date maps of road systems and structure locations. Incorporate mapping data into NWFPD software.
9. Work with Park County Road and Bridge and homeowner associations to ensure proper road signing with an objective of 95% plus coverage within the NWFPD.

GOAL #4: Decrease the susceptibility of homes, property, and community infrastructure to damage from wildfires. Decrease the likelihood of human caused wildfires.

The survivability of homes and other structures is often determined by the construction of the structure, and the vegetation conditions within the 100 yards surrounding it. This area is primarily private land. Homeowners, with the proper knowledge, can do much to modify those zones and improve survivability. With education and action almost all human caused fires can be prevented.

SPECIFIC OBJECTIVES:

1. Utilize the wildfire mitigation team (Goal #3 – Objective 2) to educate residents on defensible space, home construction, and fire prevention.
2. Update the NWFPD website with information on creating defensible space, construction techniques that reduce flammability, and potential contractors for mitigation work.
3. Conduct an annual multi-agency open house to raise awareness of wildfire mitigation and prevention techniques as well as wildfire risk.
4. Create a “showcase” on-the-ground project within the next 18 months to demonstrate fuels mitigation treatments and/or defensible space.
5. The CWPP Team and NWFPD to work with Park County government to assess the need for building code modifications to require all new site construction and building

additions or modifications to require creation of defensible space and require construction to meet standards for mitigation of structural ignitability.

GOAL #5: Implement *a program of community education and outreach*

Actions by home owners are critical to the success of lessening the effect of wildfire on subdivisions in the area. The cumulative effect of adjacent land owners mitigating the effects of wildfire has been shown to be highly effective.

SPECIFIC OBJECTIVES:

- 1. Reach out to inform home owners and develop their sense of “ownership.”**
 - a. Establish a Neighborhood Ambassador Program for the NWFPD area; enlist one person from each subdivision who will disseminate educational materials and set up community events, work days and represent their subdivision to the CWPP.**
 - b. Conduct an annual community outreach activity in advance of each fire/work season to discuss projects, educate new residents, and encourage residents to engage in Defensible Space and mitigation of Structural Ignitability activities.**
- 2. Support and assist the community and school programs in development of uses for slash and other forest products (biomass projects).**
- 3. Work with the school system to develop a curriculum on forest health and what land owners can do to protect their homes.**

2.0 The North-West Fire Protection District Area

2.1 Ecological Description

The boundary for the NW FPD Community Wildfire Protection Plan is the boundary of the fire district itself. The area encompasses 181,000 acres. It includes the incorporated communities of Fairplay and Alma as well as numerous subdivisions. More homes are located in those communities than in the incorporated towns. Some of these areas are: Placer Valley, Valley of the Sun, Beaver Creek Ranches, Foxtail, Warm Springs, Sportsman's Valley, and Redhill Forest.

The NWFPD lies in the northwest corner of Park County, at elevations between 9000 and 14000 feet. The climate is dominated by short cool summers and long cold winters. Strong winds, coming down slope off the Mosquito and Park Ranges, are common from fall through spring. Annual precipitation ranges from about 12 inches, in Fairplay, to 25-30 inches at the upper elevations along the Divide. Precipitation occurs primarily as snow during the long winter and from summer thunderstorms during the monsoons in July and August.

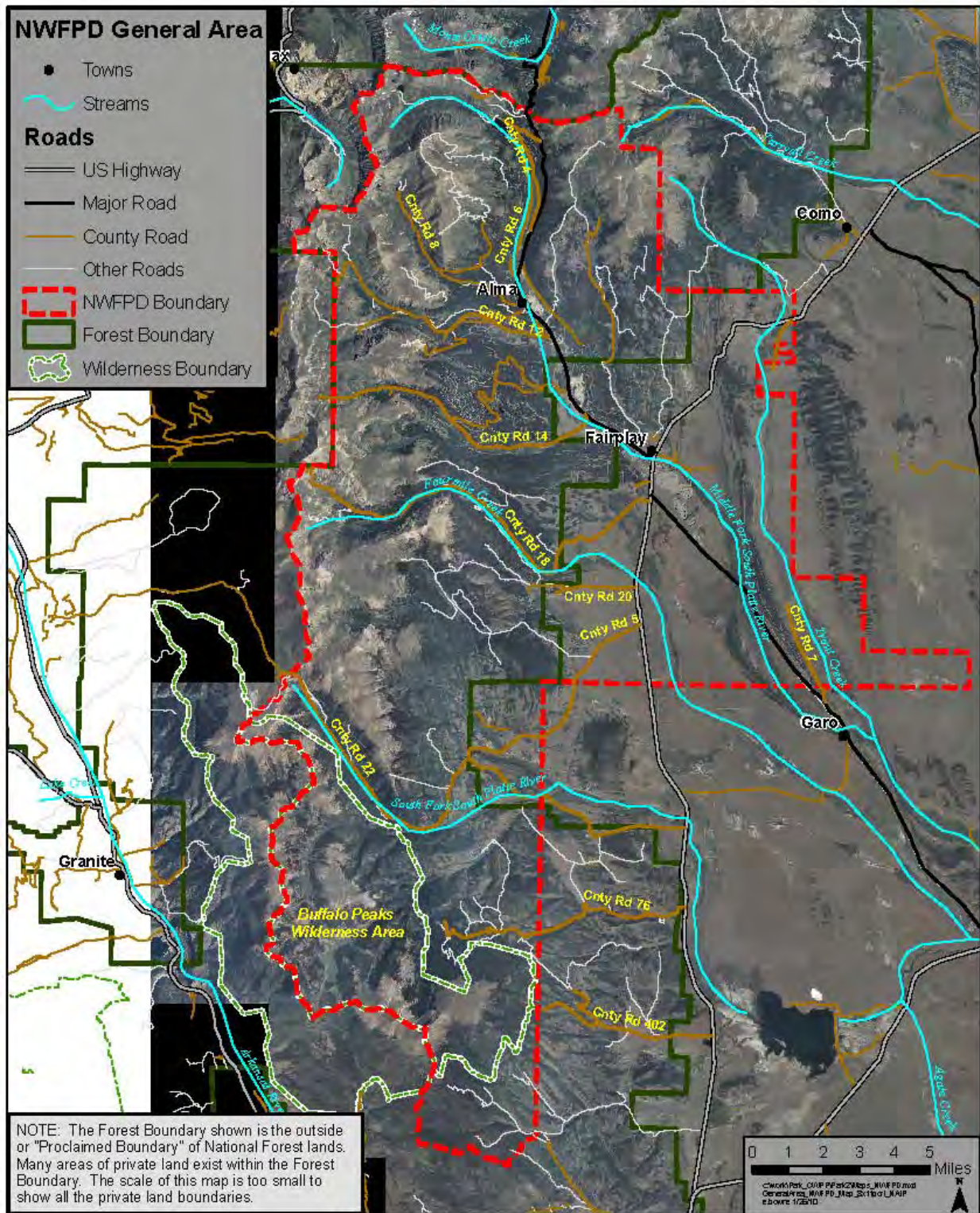
The current landscape was formed by folded and faulted ancient rock and more recently, by heavy glaciation during the last ice age. Soils are generally coarse textured, cold and shallow.

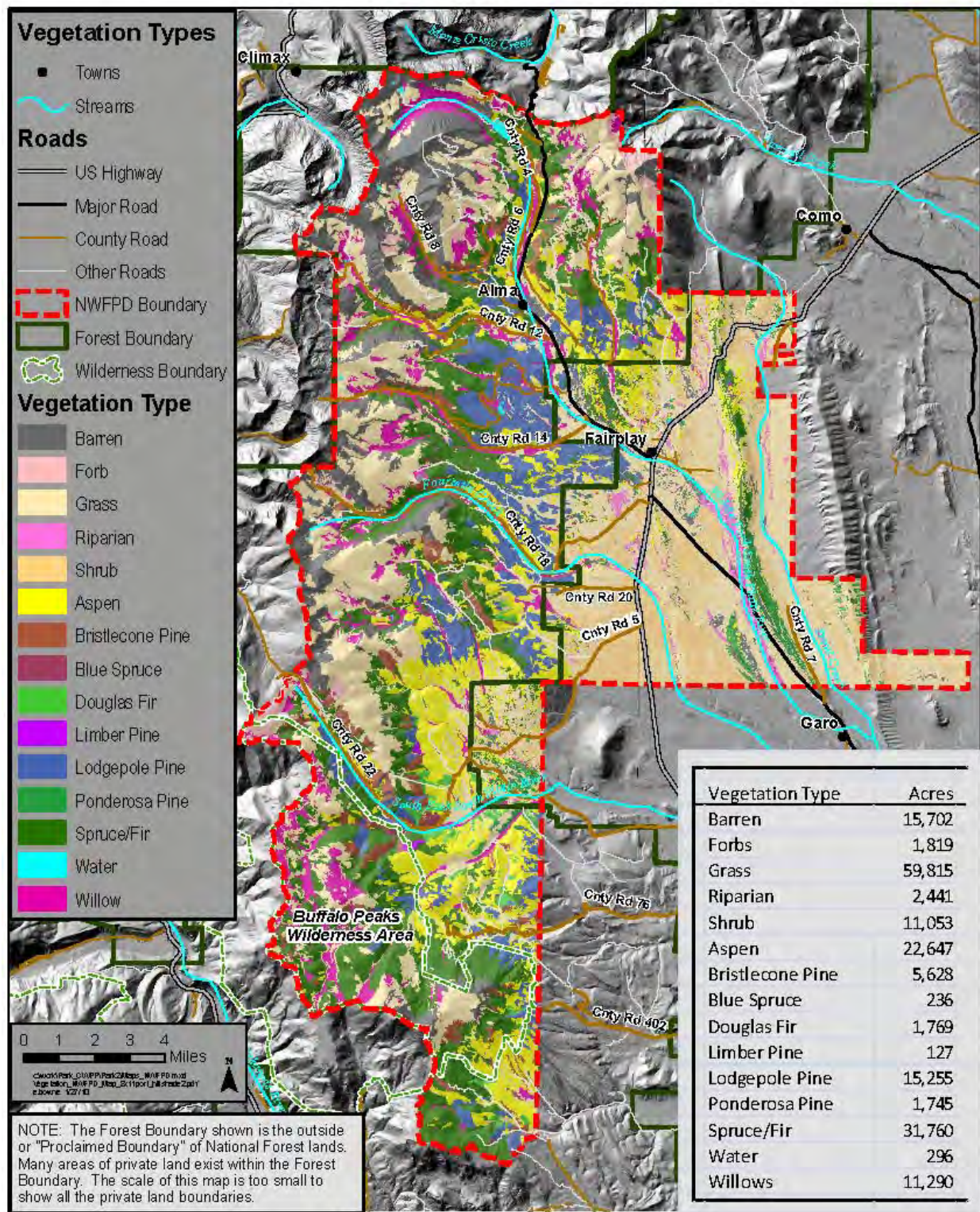
Vegetation includes the high elevation alpine meadows, subalpine and upper montane conifer dominated forests, and the grasslands of South Park itself.

Grasslands, across all elevation zones, cover about 40 percent of the District. The subalpine forest, generally found between 10,000 and 11,500 feet in elevation, is the primary (35 percent) forest cover type. Engelmann spruce dominates the higher elevations of the zone, with a very limited amount of subalpine fir. Bristlecone pine occurs on drier and harsher sites. Lodgepole pine is found mixed with spruce or in pure stands at approximately 10,000 to 10,700 feet. Aspen is also common throughout the area. Subalpine meadows and riparian areas of willows and sedges are another part of the subalpine landscape.

Shrubs, such as a mountain mahogany and mountain sage, can be found in the southern end of the District. South Park, including the NWFPD, is located at the intersection of several broad scale ecological settings. Many rare and unique plants are found in South Park because of that. One location of significance is the High Creek Fen, south of Fairplay. It is recognized by the Colorado Natural Heritage Program as a site of high significance, containing rare plant species. It is owned by The Nature Conservancy. Descriptions of rare species and of the High Creek Fen are in Appendix D. The district also contains the Alma State Wildlife Area and a small portion of the James Mark Jones State Wildlife Area.

The following maps provide an overall view of the vegetation. The first is an aerial view of the District. The next map is of the significant vegetation types.





2.2 Insects and Disease Conditions

Insects or diseases can have a significant impact on vegetation and fuel conditions. A more extensive description of insects and diseases can be found in Chapter VI of the Park County CWPP.

Currently, the biggest issue is the potential for a widespread outbreak of mountain pine beetle in the lodgepole pine of NWFPD. A severe epidemic north of the District in Summit County has resulted in a 50 to 90 plus percent mortality in lodgepole pine larger than seven inches in diameter. Mountain pine beetle on the southern edge of the NWFPD (mostly in the Hartsel FPD) has resulted in 10 to 60 percent mortality in the ponderosa pine.

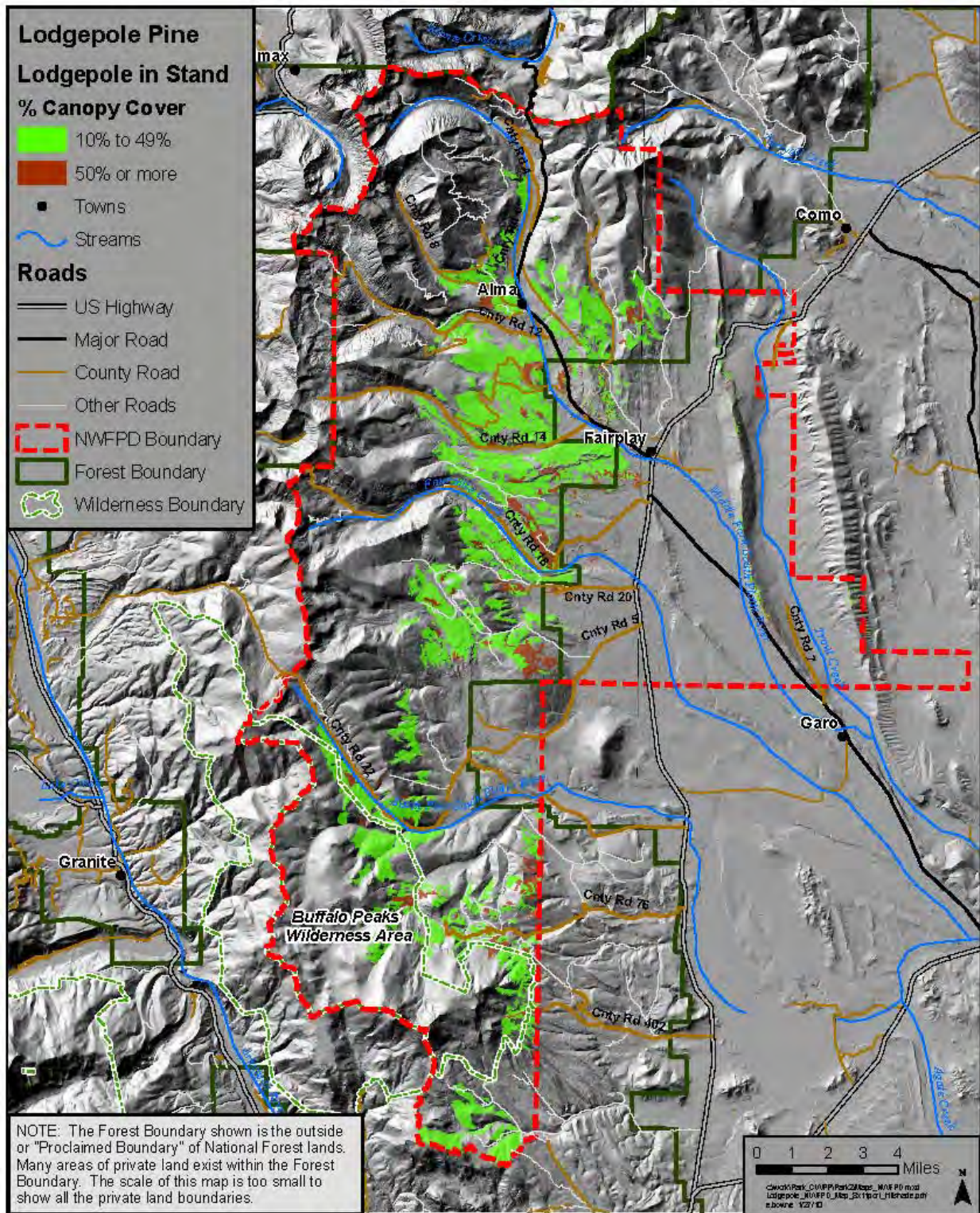
The major epidemic in Summit County and other counties to the north seems to be declining due to a lack of trees large enough for breeding. Pockets of lodgepole pine attacked by mountain pine beetle are found throughout northwestern Park County. It is difficult to predict whether this will become a full blown outbreak similar to Summit County.

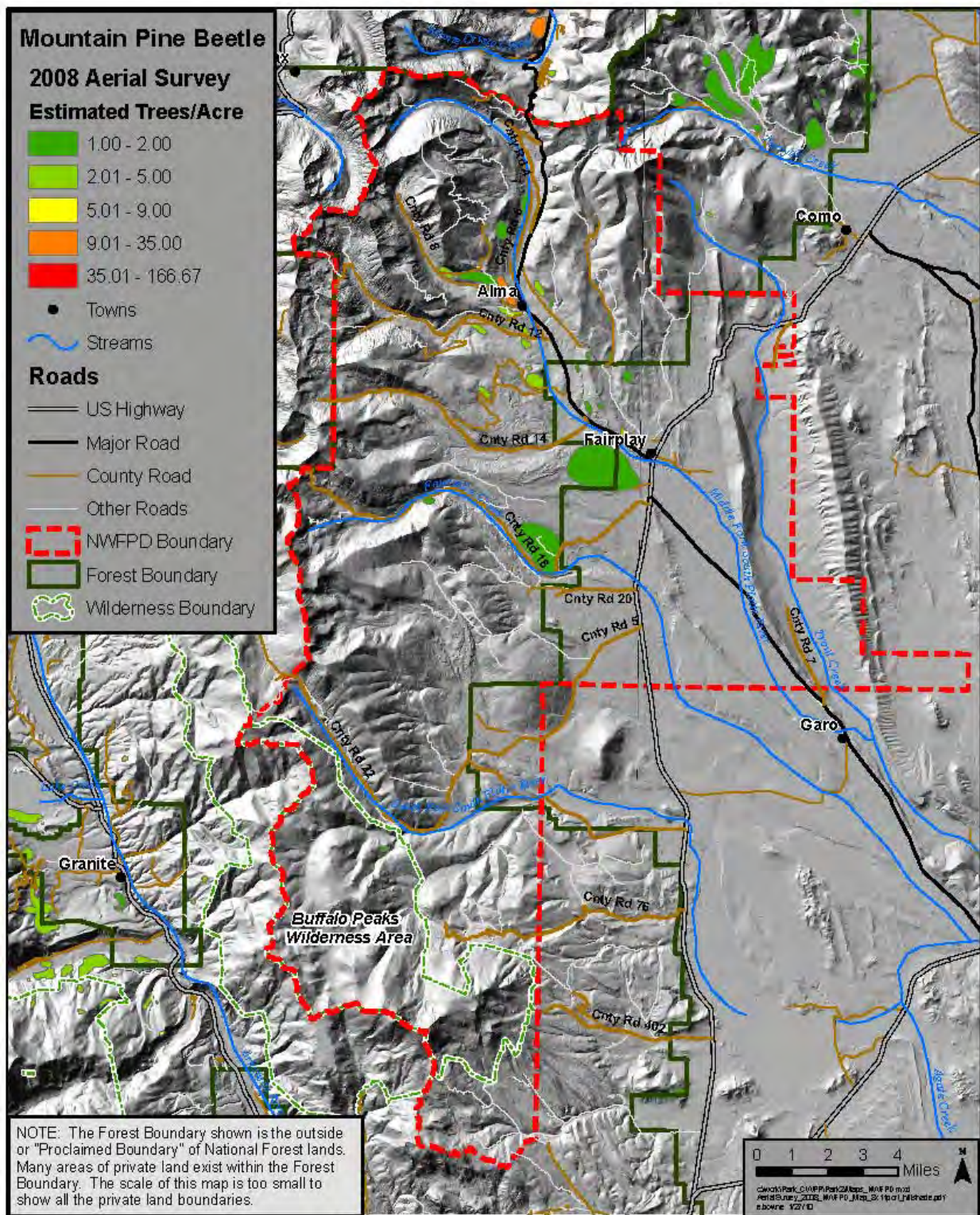
Obviously, an epidemic level of mountain pine beetle with high levels of mortality would create significant changes in potential fire behavior, fire effects, control, and firefighter safety. The following map displays forested areas of the NWFPD that contain lodgepole pine. These would be the areas most likely to see increased levels of mountain pine beetle.

Following that map are maps of aerial surveys conducted in 2008 and 2009. They are best estimates of an area (the polygons on the map) with “red flagged” beetle hit trees and how many “hit” trees there are per acre within that area. Each map is of that year’s survey only, the actual new hit trees since the last survey. So, there is an overlap in the areas of mountain pine beetle. The maps do not display exact locations of all mountain pine beetle attacks.

Occurrences of mistletoe are found throughout the area and affect forest health. A full description of tree and insect diseases is found in the Park County CWPP, and additional information can be found on the Colorado State Forest Service website:

<http://csfs.colostate.edu/>.





2.3 Fuel Treatment Issues

Subalpine forest vegetation presents additional challenges for fuel treatment activities. Engelmann spruce, subalpine fir, and lodgepole pine are all shallow rooted species growing in primarily shallow soils. Those growing conditions combined with commonly occurring strong winds creates a high level of blow-down potential if thinned.

These tree species evolved with high intensity and high severity fire behavior resulting in thin bark, which makes them very susceptible to damage from prescribed burning and mechanical equipment.

Thinning in these vegetation types can be done, but much care must be taken. Blow-down may still occur even if everything was done properly. Creating openings of varying sizes, regenerated with younger less flammable conifers or aspen, are an alternative at the landscape scale. Removal of the lower limbs of larger trees, cutting of small trees and shrubs as well as elimination of down, dead logs and other dead material is an effective tool.



US Forest Service treatment area with regeneration

Prescribed burning in lodgepole pine is possible, but difficult to avoid killing too many trees. Burning in the spruce fir is almost impossible. Pile burning works in both types.

Information on insect and disease problems and other forest management issues is available on the Colorado State Forest Service website at: www.csfs.colostate.edu or at the Woodland Park District Office located at 113 S. Boundary Street in Woodland Park.

Specific website links concerning tree insects and disease on the State Forest Service website are:

MPB- <http://csfs.colostate.edu/pdfs/MPB.pdf>

Dwarf Mistletoe- <http://csfs.colostate.edu/pdfs/DMT.pdf>

Sudden Aspen Decline- http://csfs.colostate.edu/pages/documents/sad_faqs_CSFS.pdf

Western Spruce Budworm- <http://csfs.colostate.edu/pdfs/WSBW.pdf>

3.0 VALUES AT RISK; HAZARDS AND SUBDIVISION ASSESSMENT

COMMUNITY ASSESSMENT STRATEGIES

The NEFPD CWWP is tied to the Park County CWPP. Please refer to that plan for additional information on community assessments and how the county as a whole was assessed for wildfire concerns. Assessments of landscape and subdivisions were done for the NW Fire Protection District. These assessments followed the same general methodology as the County Wide Plan. However updates and site specific items were added.

3.1 Area Hazard Assessment

LANDSCAPE ASSESSMENT

The overall wildfire hazard is determined using a combination of ignition risk, fuel conditions, and values at risk. This methodology utilizes objective scientific data. However, it is subjective in how the various inputs are weighted. The weighting is described below.

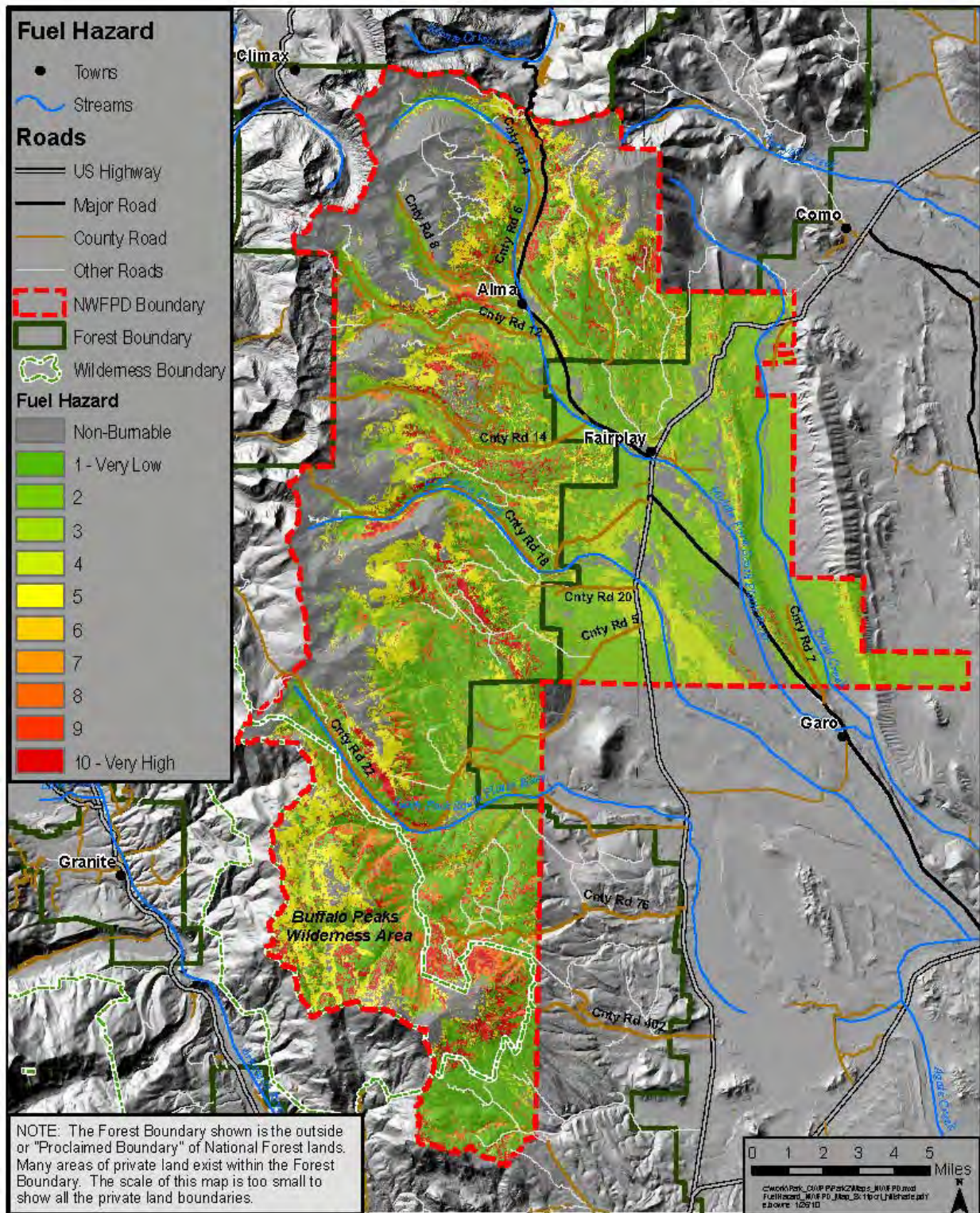
The objective is to recommend and prioritize mitigation projects by combining factors: the locations with the most to lose (values); locations with the most hazardous fuel conditions; and locations where fire is most likely to occur.

Fuels Hazard (Conditions)

The fuels hazard is a model representation of the type of fire behavior that could occur given the type of vegetation present on the landscape. The modeling produces flame lengths (measure of intensity), rates of spread, and type of crown fire (none, individual or groups of trees torching, or sustained fire runs through the crowns of trees). It is based on a fire behavior model which uses approximately 40 different fuel models. The models are mathematical representations of how fire would burn through a variety of vegetation types and surface fuel loadings (down dead, pine needles, etc.).

Weather and terrain play a critical role in how a fire burns in different fuels. The weather used for the modeling was based on weather and fuel moistures that could occur at some point during most fire seasons. It is representative of “High” or “Very High” fire danger conditions. The terrain is the actual terrain, from digital elevation models (“topographical map data”) located within the Fire Protection District.

The result is the following map. It is important to note that it is not exact. Its usefulness is it displays the relative fuels danger compared to other locations to determine priorities.



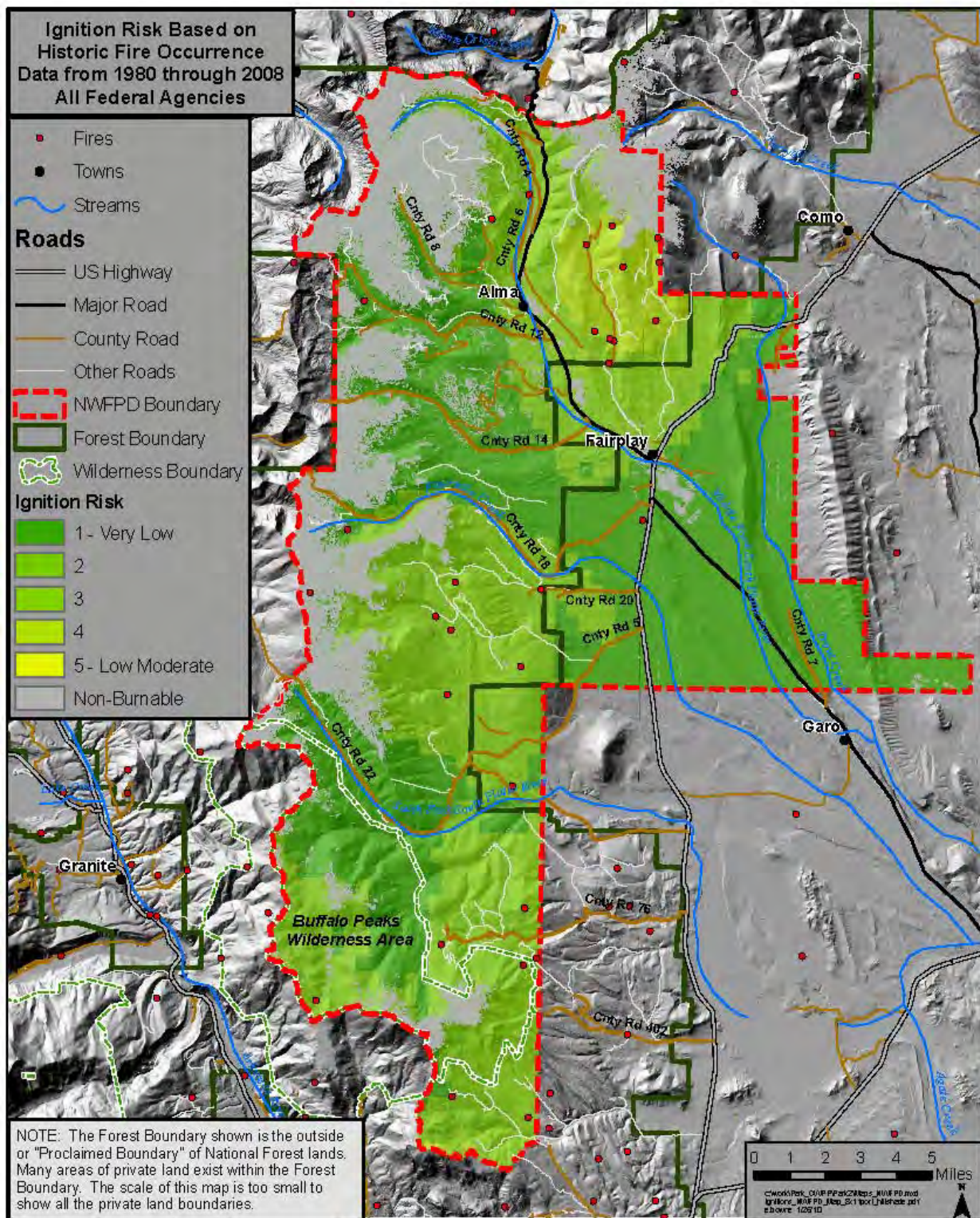
Ignition Risk

The ignition risk is the likelihood an actual fire will occur. Historical fire occurrence was used. It is the best overall and most quantifiable predictor of future fire behavior. Fire occurrence from 1980 to now, from all agencies, was utilized.

The NW Fire Protection District is located at high elevations with primarily subalpine vegetation. Nationally, these types of locations have a low fire occurrence. The NW Fire Protection District is no different and has the lowest fire occurrence in Park County.

Weather is generally cooler and moister at high elevations. Most years, fuels do not have a chance to dry to critical conditions between the time snow melts out and the summer monsoons occur. These vegetation types typically have heavier fuel loadings, but require a drought to create the conditions conducive of extensive fire.

Ignition risk, while displayed here, is not part of the assessment. The ignition risk is almost all the same, low, within the fire protection district. It does not help differentiate where the priority areas should be.



3.2 Values at Risk

In developing a CWPP it is necessary to consider how the community considers various “Values at Risk” in order to aid in setting project priorities. The values at risk are the community items that may be damaged or destroyed should a wildfire occur in a given location. While all communities contain similar valued categories such as life and property, utilities, natural resource, recreation and historical items, they are perceived differently depending upon their occurrence, the nature of the area, and the concerns of the residents.

Values – A community meeting at the NWFPD station afforded residents an opportunity to list their priorities for area Values at Risk. The resulting list:

1. Structures and Property
2. Watershed Protection
3. Utility Infrastructure
4. Historic Structures
5. Water Treatment Infrastructure

There are over 50 neighborhoods” or subdivisions (not counting the communities of Fairplay and Alma) in the NWFPD WUI area. Most have heavy fuels throughout their areas. A great majority of the structures do not have recognizable defensible space. Many have flammable material nearby, on the porch or under decks, increasing their vulnerability. A number of the structures have wood shingle or shake roofs. The composition and wooden roofs tend to hold pine needles and forest debris allowing accumulation that increases vulnerability to fire brands. Most of the structures are open to wildfire damage occurring from firebrand ignition and/or radiation ignition due to heavy forest fuels within the area.

The South Platte WUI area is a critical watershed supplying water to the Denver Metropolitan area. The area contains habitat for wildlife (birds, big game and numerous smaller species).

There are a number of older and locally historic structures in the area. A discussion of those on local, state and national listings and the importance of the area as a historic unit is in the appendices. Fire suppression in terms of wildfire is not a significant factor for many of these sites are within Fairplay or Alma.

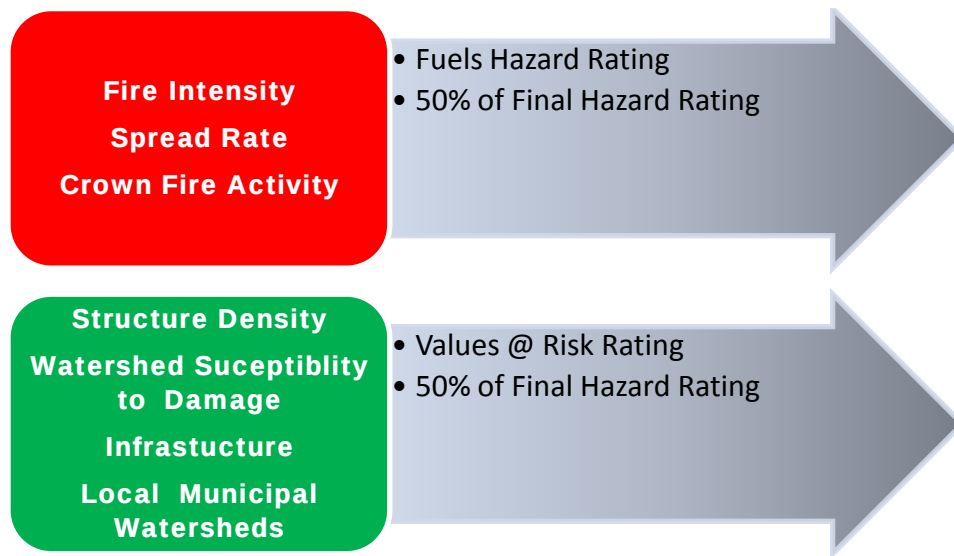
- **Access** - The primary access routes through the area are- Highways 9 and 285. A number of neighborhood routes need fuels thinning to make them safe ingress/egress routes during wildfire occurrences. Turnarounds are marginal or lacking. Road signs and home and cabin addresses are spotty at best.
- **Risk** - Because of the lack of defensible space around many home sites, natural fuel continuity, and steep slopes between some of the neighborhoods, it would be very difficult to protect many home sites from wildfire during periods of high to extreme fire danger.
- **Evacuation** - Evacuation planning is needed to minimize fire emergency confusion and risk to residents who might be asked to evacuate in the event of an emergency. Data that is

quantifiable and locatable on a map that represents those values must be available to do this type of GIS (Geographical Information Systems) landscape analysis. **The heaviest weighting for this analysis was given to structures first, and then watersheds.**

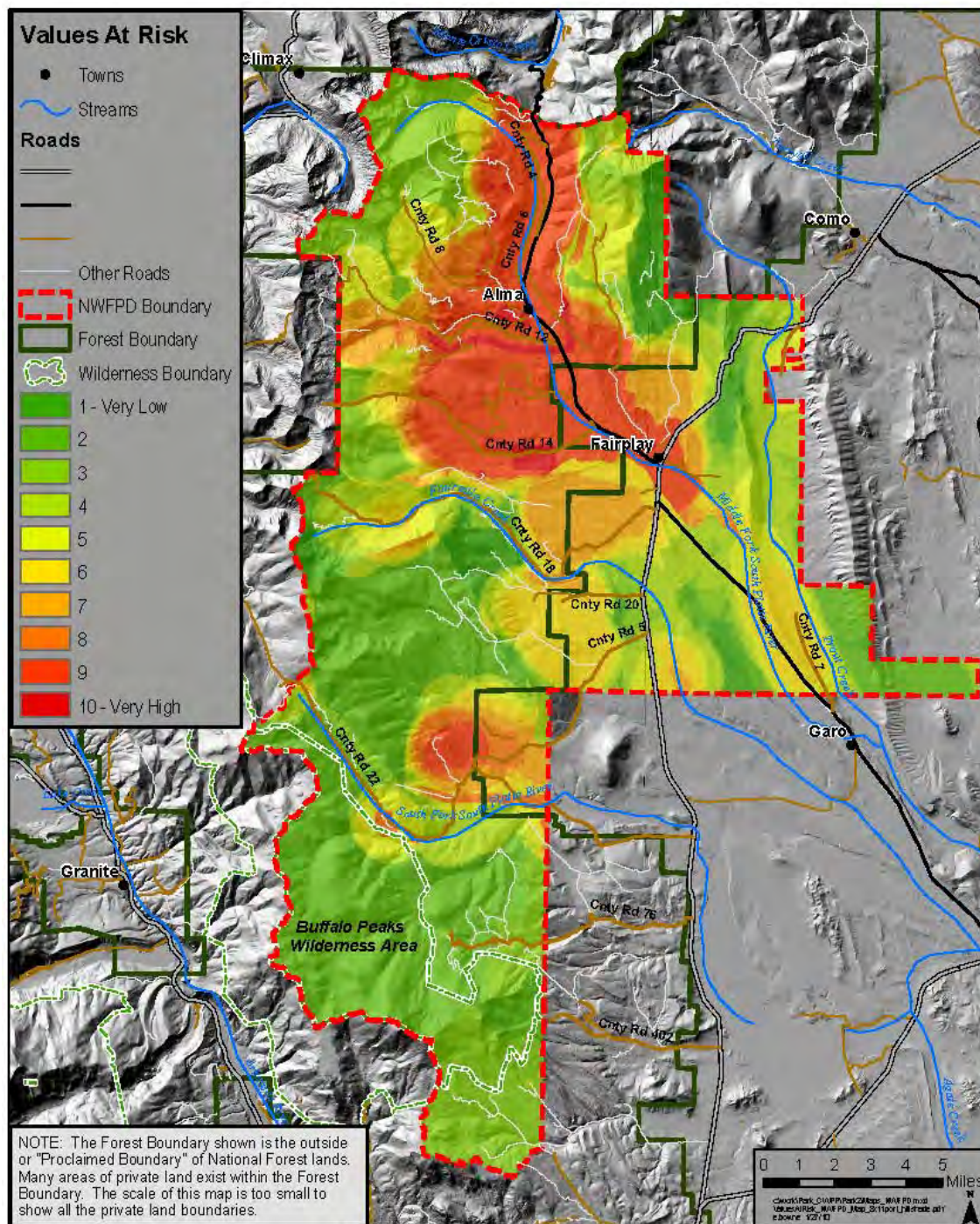
Overall Landscape Fire Hazard Rating

The overall rating is determined by combining all the factors mentioned. See County-Wide CWPP for additional details.

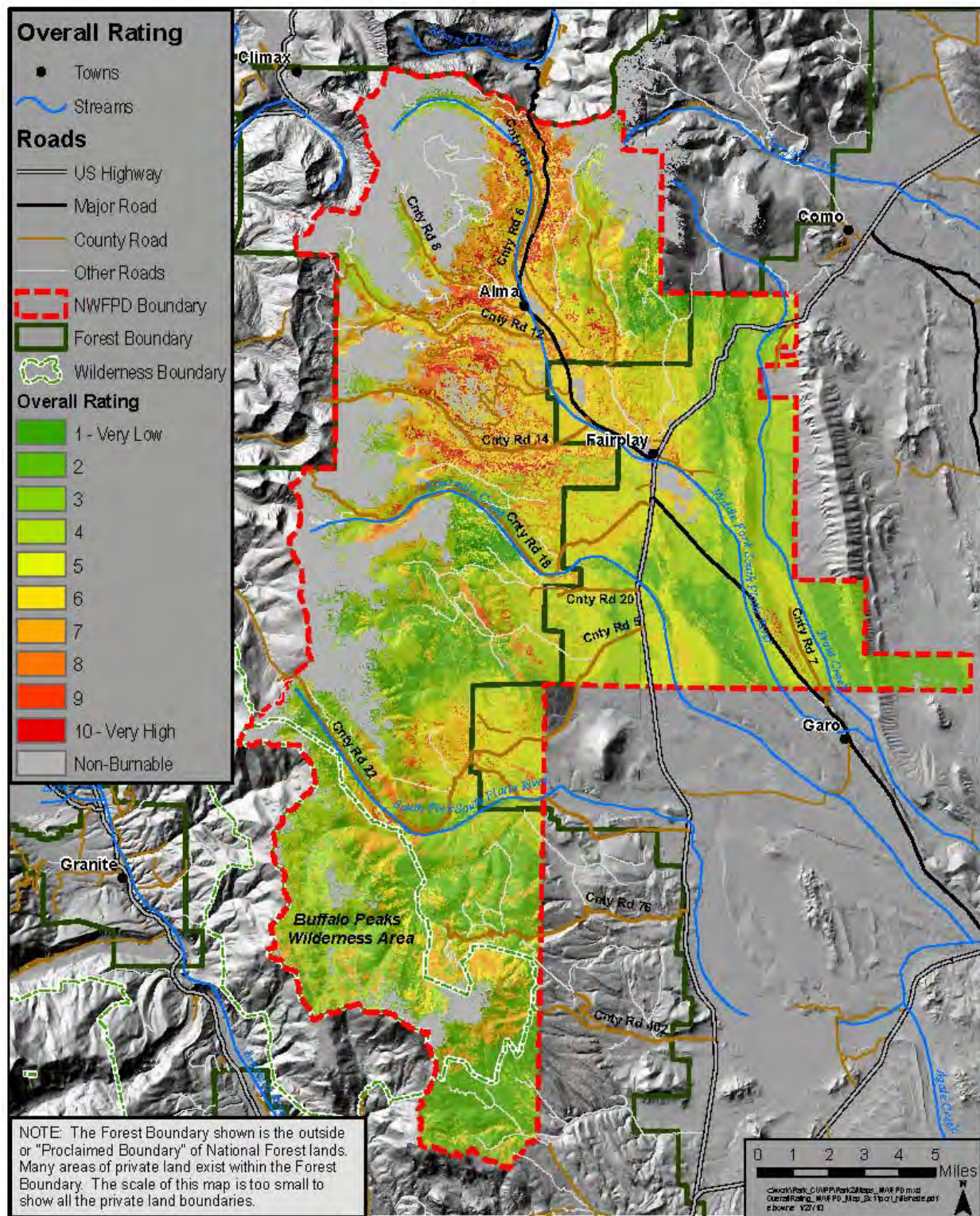
Ignition Hazard (Historical Fire Occurrence) was not utilized for the reasons noted above.



The overall rating is a combination of what type of fire behavior could occur and what could be damaged for a given location. The important part of the analysis is to make sure it provides differentiation or relative ratings across the landscape to be able to prioritize areas.



Composite Map combining hazard rating factors



3.3 SUBDIVISION ASSESSMENT

All of the subdivisions within the NW Fire Protection District were reassessed under an updated version of the rating system used in the County Wide CWPP. Ratings were performed by members of the NWFPD. These ratings are averages for the subdivision as a whole and are not meant to be indicative of individual homes or lots.

The factors used for evaluating the subdivisions are:

SUBDIVISION DESIGN

- Ingress/Egress
- Width of Primary Roads
- Accessibility
- Secondary Road Conditions
- Average Lot Size
- Signing

VEGETATION

- Vegetation Types
- Fuel Density
- Forest Health
- Defensible Space

TOPOGRAPHY

- Slope

FIRE PROTECTION

- Response Time
- Hydrants
- Draft Water Sources

STRUCTURE HAZARD

- Construction Materials

UTILITIES

- Location

North-West Fire Protection District: Hazard Rating Survey

Valley of The Sun NWFPD Park County, Colorado Mitigation Priority Area 1

1	*** Golden Hills Estates	90	8 homes lots of dead trees on far west corner very dry mistletoe and beetles close to major utility
2	*** Penn Mountain Estates	89	east facing quite a bit of dead near major utility
3	*** File 27	69	higher elevation not much damage couple acres of dead just past #134 13 homes
4	*** VotS File 4	83	high elevation faces east and north, lots of scattered dead very steep
5	*** Pine Ridge File 1	74	lots of fuel load east facing few houses
6	*** Platte River Ranch Estates	51	newer homes, good def space lots of conifer around major home owner
7	*** Vot S File 6, 15, 16, 30	74	higher elevation, NE facing not a lot of damage newer homes with some def space
8	*** VotS File 20	62	7 houses
9	*** VotS File 25 and Wilderness Acres	68	draft sources all around limited homes lots of fuel load
10	*** High Country & Wild Acres F2	74	older homes with limited def space. Beetles starting huge fuel load
11	*** Sacramento	84	lots of fuel load high hazard limited def space
12	*** VotS File 31	96	25 + homes sw facing no def space lots of fuel load steep
13	*** VotS File 19	51	4 houses beginning of beetle kill
14	Sun Mountain F1	70	lots of houses winding narrow roads lots of fuel load
15	*** Widdowfield	48	8 newer houses with good def space low hazard
16	*** Venture 72	57	2 houses not bad
17	***South Forty	57	5 houses far east end of Venture Rd, beginning of beetle kill
18	*** Guymard Rd	80	lots of house, steep, south facing slope narrow road
19	*** VotS File 23	63	no damage, campers and tee pees
20	*** VotS File 29	58	not bad easy access 3 campers and 13 houses
21	***Whispering Pines	61	9 houses closest to HWY 9
22	*** Gold Pan Lane	80	14 homes not much damage but large fuel load, steep

Foxtail Pines NWFPD Park County, Colorado Mitigation Priority Area 2

1	*** El Rancho Estate File 2	61	large lots looks like work is being done already
2	*** Ridgedale Park	72	7 homes good def space large fuel load small signs of beetles
3	*** Busch Run, Bud Way to Renshaw	56	a few houses lots of dead and beetle kill but houses look good with def space
4	*** Venture 73 Circle 73 rd	80	close to nat'l forest, west end of fox tail not much def space dead lodge pole
5	*** File 1	61	mostly aspen not a lot of def space but low danger
6	*** El Rancho File 1	64	large land owner who doesn't want to be bothered
7	*** Green Bottle Circle	52	low hazard good def space beg of beetles at NE corner

Placer Valley NWFPD Park County, Colorado Mitigation Priority Area 3			
1	*** NE corner 1-6, 15	88	sw facing steep slopes scattered dead huge fuel load Goldfinch lots of dead
2	*** nw corner 12,13,18,19,22	66	low hazard, higher altitude not bad
2	*** Lower Roberts Rd U7	73	10 homes lots of aspen no def space completed
3	*** File 20	85	east facing right next to natl forest steep tons of fuel load 1408 quartzville is bad
4	*** Central area	66	low hazard more aspen not much dead

Alma NWFPD Park County, Colorado Mitigation Priority Area 4			
1	*** Alma Park Estates	70	21 homes aspens and open meadows
2	*** Town	76	beetle kill btw 5th & N. Aspen lots of dead above Alma steep east facing slopes beetle kill above alma up park Hill rd dead trees above homes on Chisholm way South of Town beetle kill everywhere on County Rd 19
3	*** Park City South U1		low hazard
4	*** Adventure Placer	63	low hazard aspens and wide open meadows beetles at 490 adventure
5	**** KEY PLACER & HYNDMAN	102	SCARY dry dead and beetlekill rv's mobile homes narrow and bumpy roads

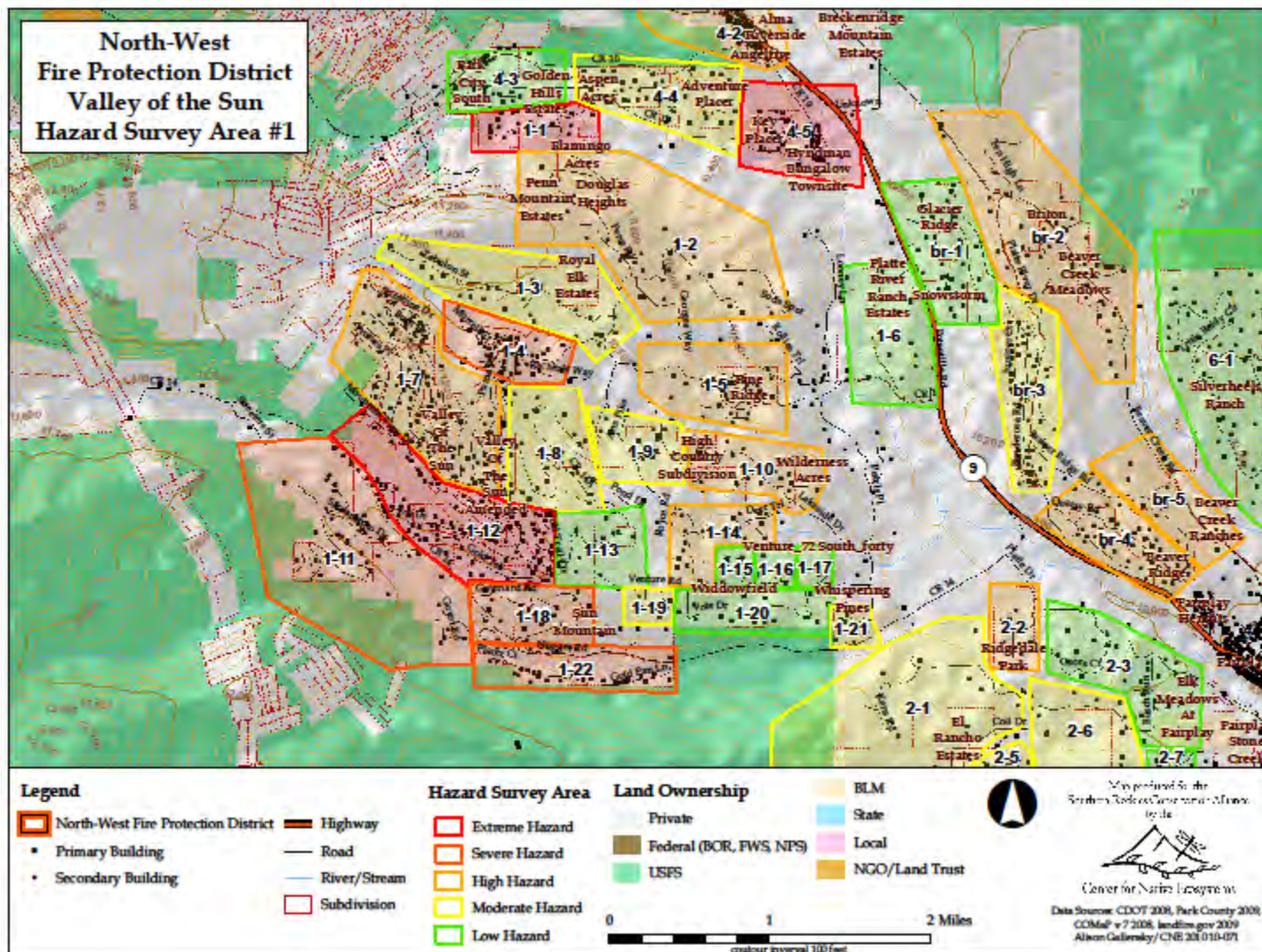
Warm Springs NWFPD Park County, Colorado Mitigation Priority Area 5			
1	*** Four Mile Creek Ranch	52	3 home, large ranches looks very good close to natl forest
2	*** File 4	75	45 + homes surrounded by natl forest dead trees closest to forest looks like no def space has been done mix of healthy aspen and pine
3	*** File 5	67	23 homes looks healthy few hydrants just needs def space
4	*** File 1	46	35 + homes mostly healthy aspen but NO def space
5	*** File 2	60	50 + homes mostly aspen limited def space
6	*** File 3	62	40+ homes looks good lots of healthy aspen

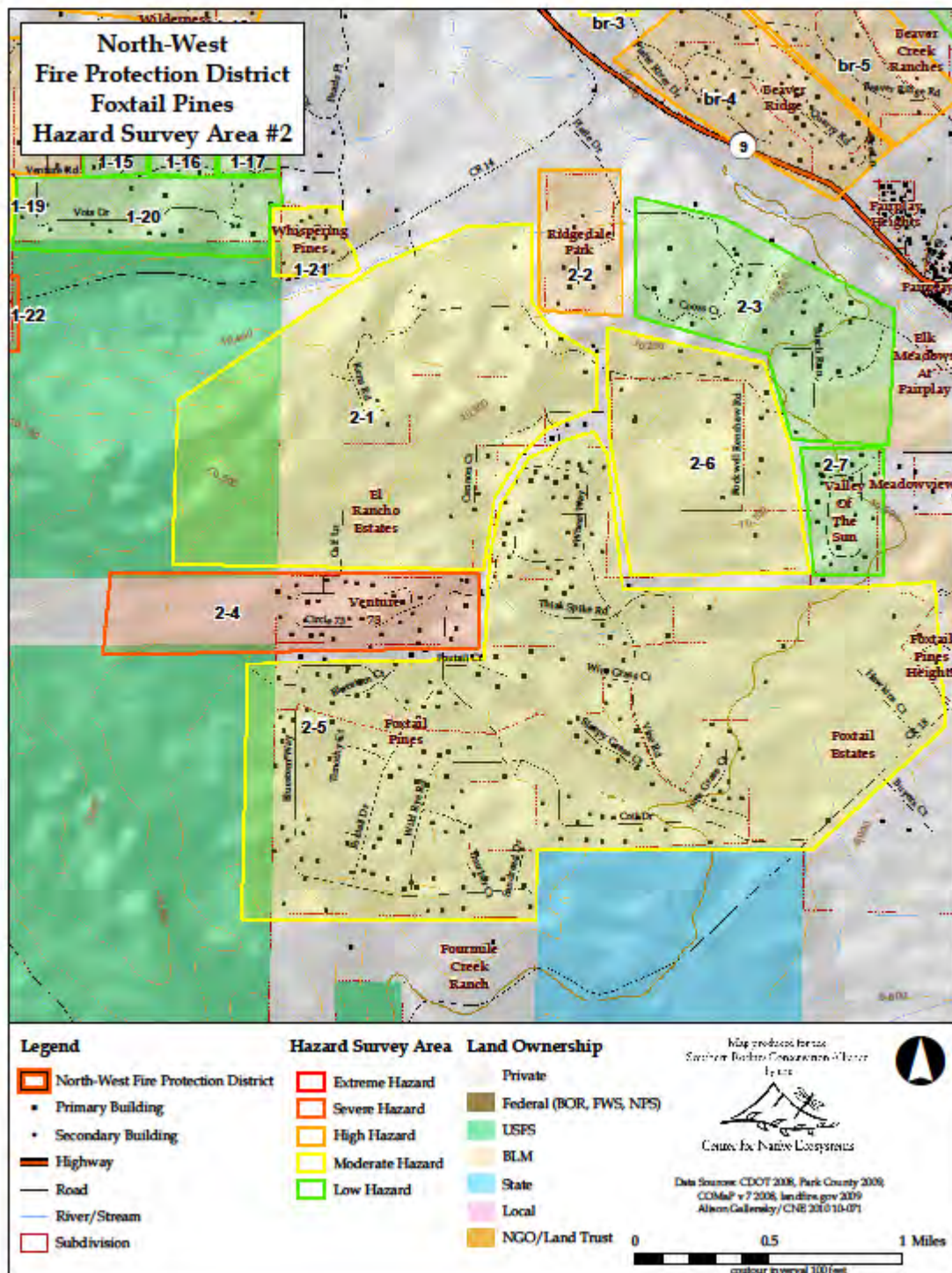
Silverheels NWFPD Park County, Colorado Mitigation Priority Area 6			
2	*** File 1	55	30 + homes mostly aspen low hazard
1	*** File 2	58	30 + homes mostly aspen, beginning of beetle kill at north end top of baldy circle

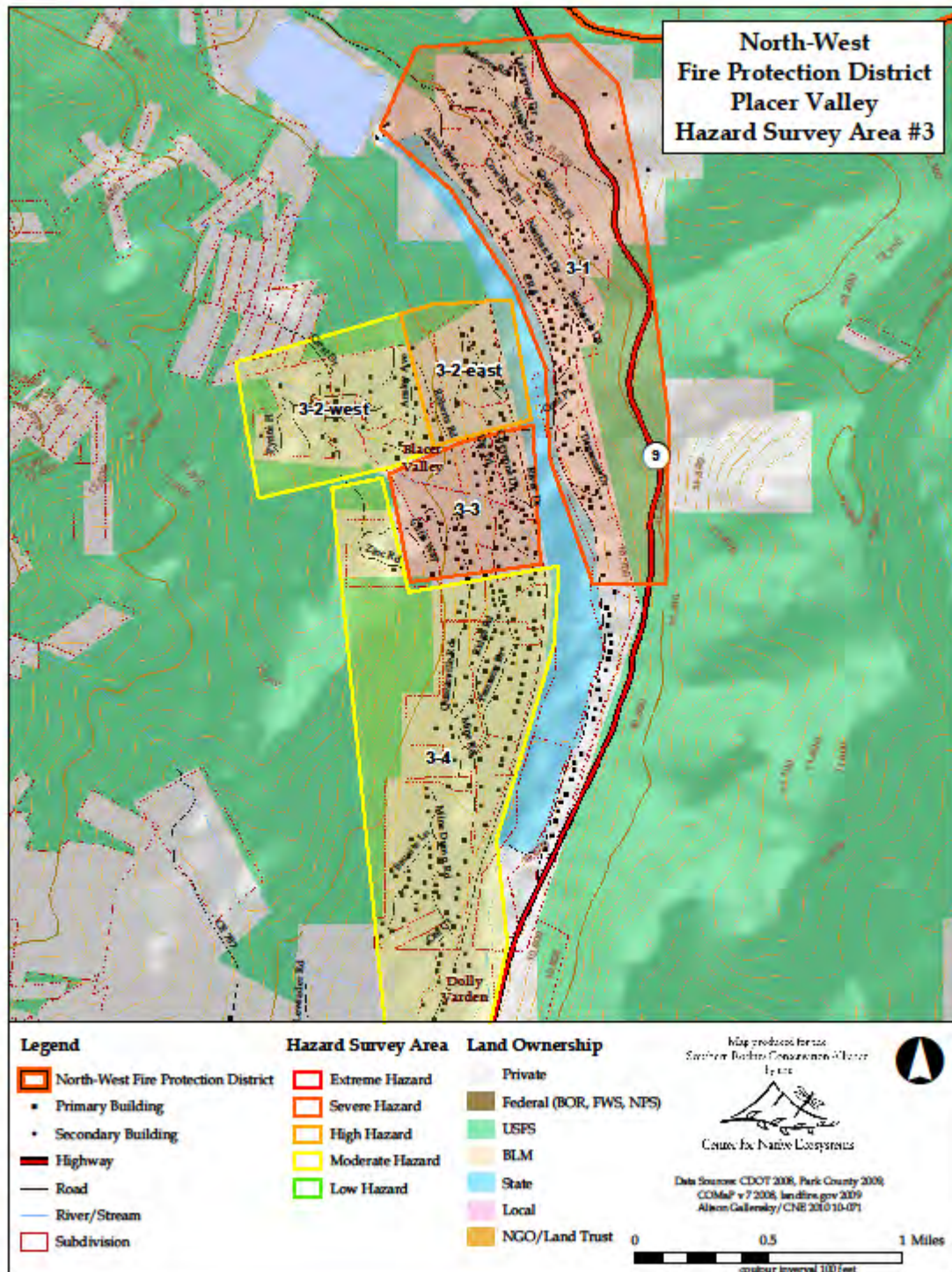
Red Hill Forest		82			
Steep east facing slopes with lots of dead downed trees with the beginning of beetle kill					
Farthest North lots are very difficult to get to					
Beaver Ridge East side of Valley of the Sun map, not a priority area but on the map					
1	*** Glacier Ridge	55	newer homes in mostly aspen	good def space	beetles at north end under utilities
2	*** Beaver Crk Meadows F1	77	15 homes	major beetle kill, old houses	
3	VotS 10, 11 Platte River Dr	60	Aspen, many year round residences, newer residences		
4	*** Beaver Ridge File 3	74	15 houses sw facing lots of fuel load		
5	*** File 1	74	8 homes on large lots mostly aspen but beginning of beetle kill		

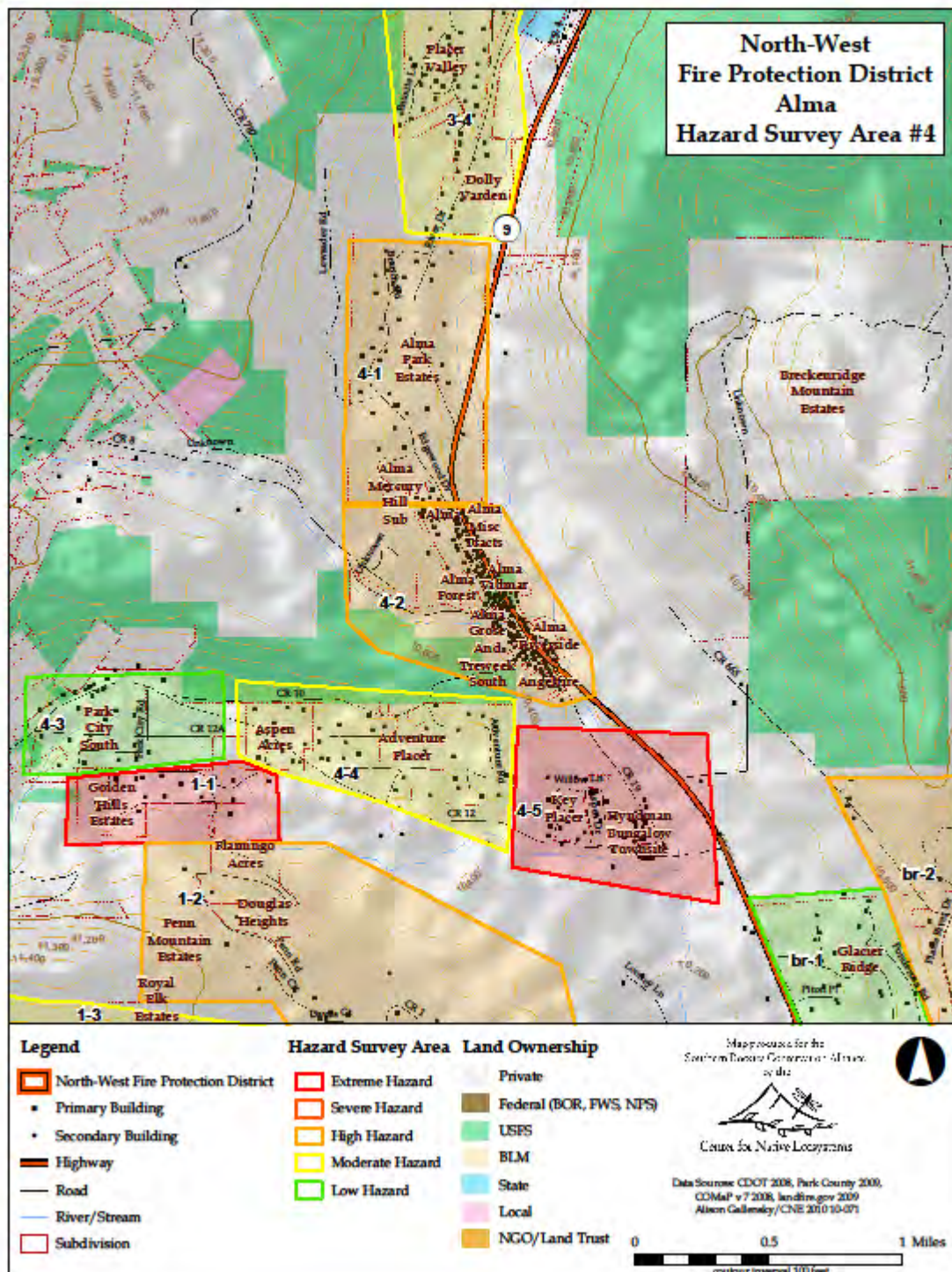
0-59	Low Hazard
60- 69	Moderate Hazard
70- 79	High Hazard
80 - 89	Severe Hazard
90 +	Extreme Hazard

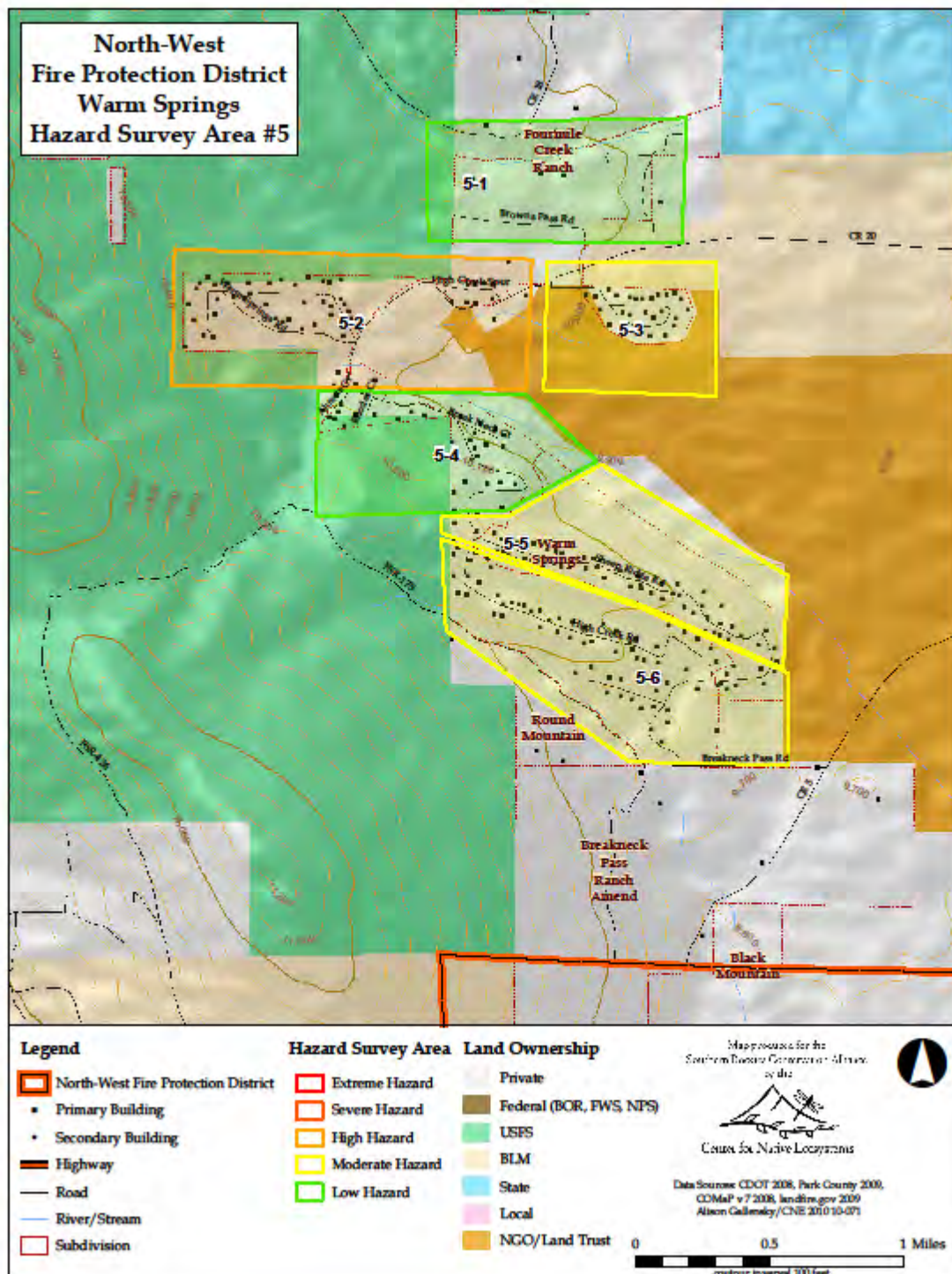
Following are maps of the hazard rated subdivisions/filings, color coded and numbered according to the above spread sheet.

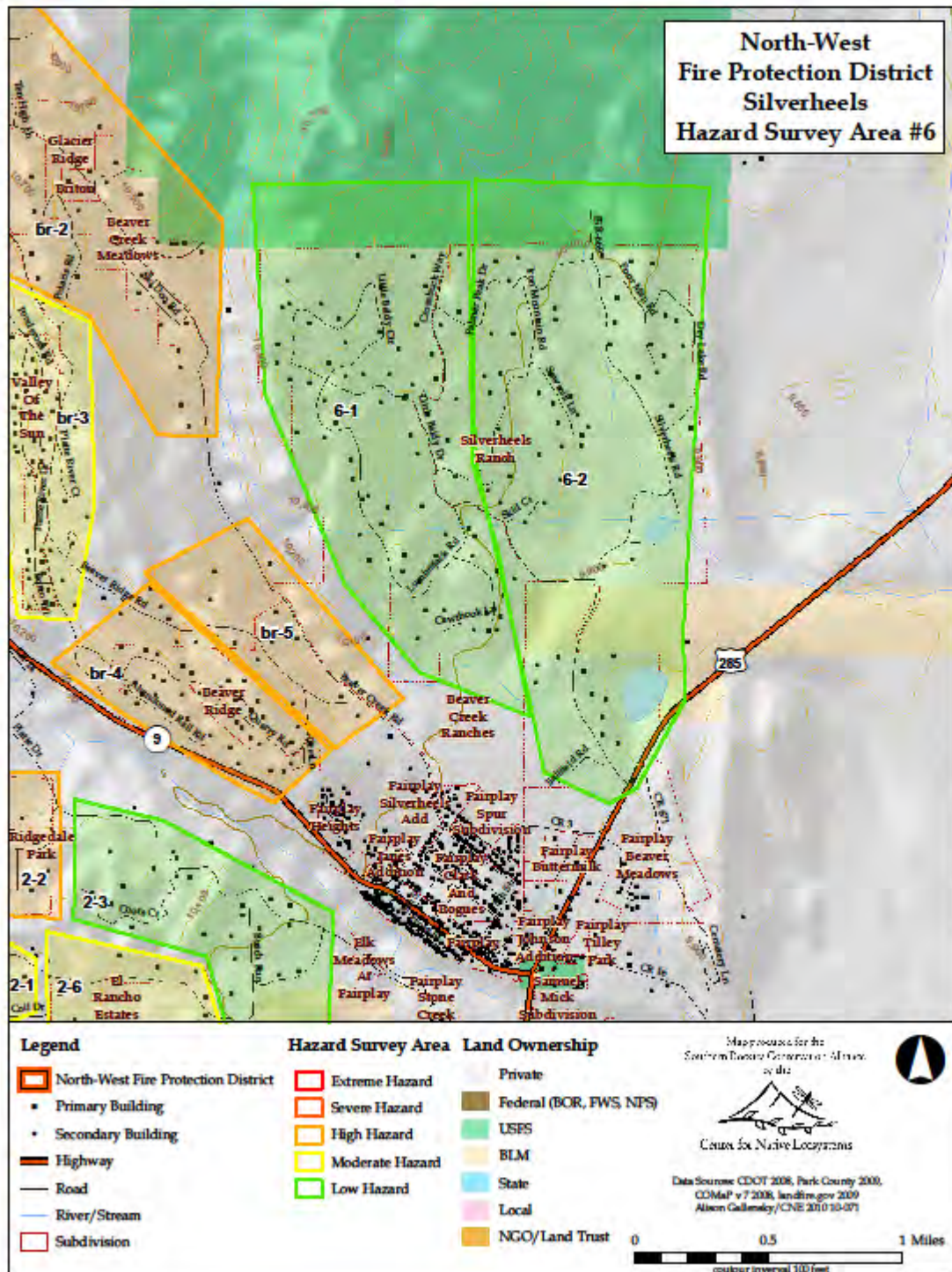


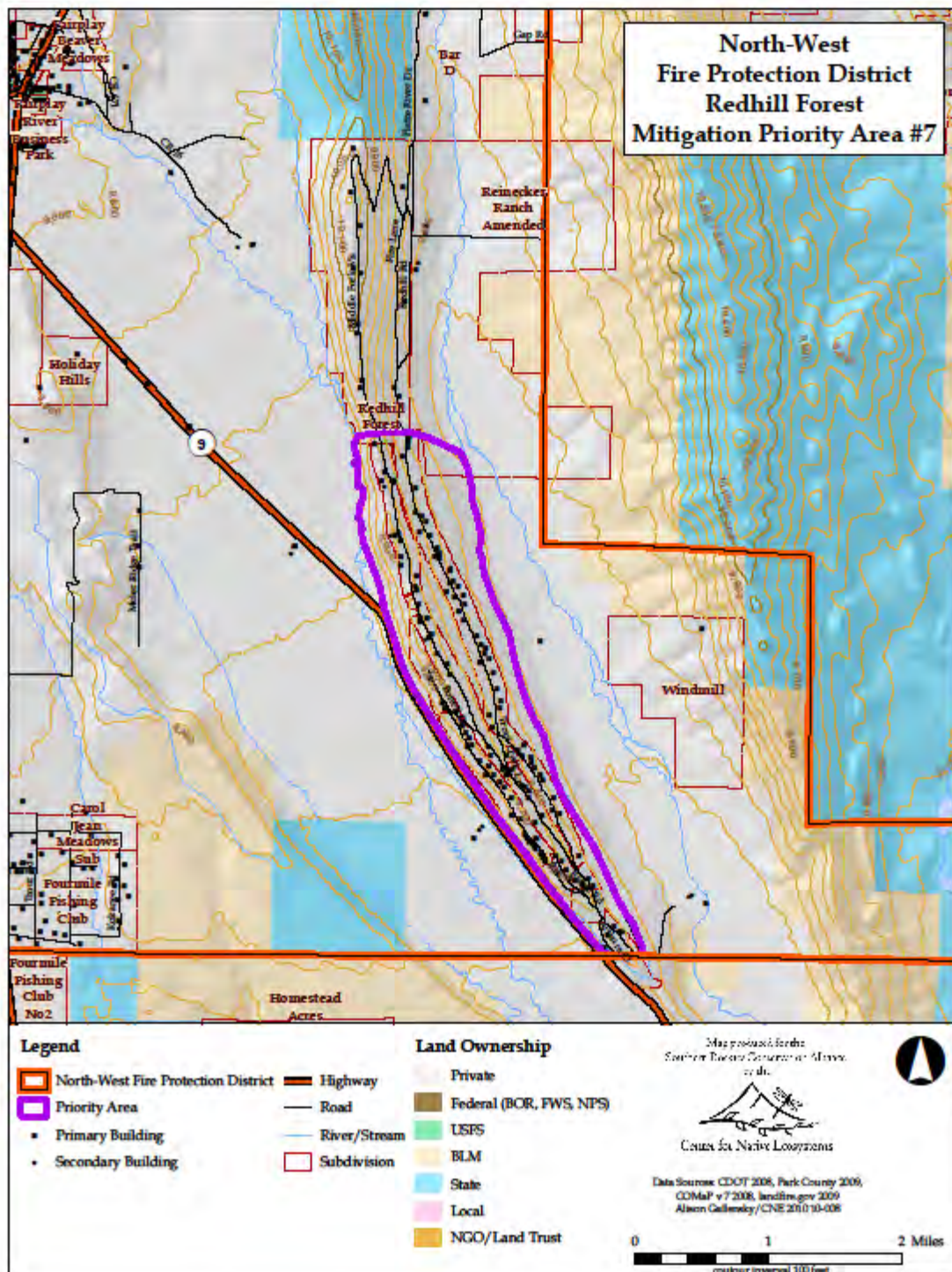












4.0 WILDLAND FIRE RESPONSE INFRASTRUCTURE AND CAPABILITIES

This section of the NWFPD CWPP details professional and voluntary resources available to respond to emergencies associated with wildland fire.

4.1 FIRE SERVICE RESPONSE

INITIAL ATTACK (First or initial actions taken on a fire)

The first line of responders for wildland fires within the NWFPD is the North-West Fire Department and US Forest Service. All wildland fires are managed using the Incident Command System which employs a wide range of organizational structures, depending on needs. Organizations can be scaled up and down as complexity dictates.

The closest available resources are dispatched to the fire incident. The jurisdictional agency assumes command of the wildfire when they arrive on scene, however, resources from all agencies may continue to be used. A Unified Command (multiple incident commanders from each relevant agency with one operation's chief) or a delegation of authority to a single Incident Commander is utilized in the event of a multi-jurisdictional fire.

Non-Federal Public Lands Outside of the Mutual Aid Area

The North-West Fire Protection District is the responsible jurisdictional agency for wildfire protection on private lands, State Land Board lands, State Parks and Recreation Areas, Colorado Division of Wildlife lands, and Denver Water Board Lands. If a wildfire exceeds the capacity of the North-West Fire Protection District, the Park County Sheriff assumes management and financial responsibility for the fire.

Federal Lands (National Forest and BLM public lands)

The US Forest Service and Bureau of Land Management are the jurisdictional agencies for federal lands within the NWFPD. The US Forest Service is responsible for initial attack on BLM lands within the District.

Federal – Local Mutual Aid Areas

The lands within one mile on either side of federal public land boundaries are a specifically designated mutual aid zone, where US Forest Service and local resources are responsible for responding.

EXTENDED ATTACK (The wildfire cannot be contained with initial actions)

The Incident Commander requests additional assistance, including mutual and automatic aid agreements with adjacent fire protection districts and/or county, state and federal resources, if the fire exceeds the ability of the initial attack resources.

Orders for additional resources will be made through either the Park County Dispatch and/or Pueblo Interagency Dispatch, depending on jurisdiction.

Mutual Aid, Automatic Aid and the Annual Operating Plan

The North-West Fire Protection District, Park County Sheriff's Office and the US Forest Service coordinate suppression efforts through a variety of agreements. Local resources are coordinated through mutual and automatic aid agreements. The Annual Operating Plan for the State Memoranda of Understanding (MOU) allows preplanned coordination between local, state and federal partners.

4.2 PARK COUNTY EMERGENCY MANAGEMENT

The Park County Sheriff's Office may provide incident management services at the request of the local non-federal fire jurisdiction when the fire exceeds their ability to manage it. The Office of Emergency Management (OEM) is primarily responsible for providing logistical support to the incident and management of the Emergency Operations Center (EOC).

County officials will become involved as readily available resources are depleted, complexity escalates, and the need for a higher level of management occurs. At that time, Park County officials will confer to determine special provisions or actions needs to be taken. The need for activation of the Emergency Operations Center (EOC) would be considered.

Resources from adjacent counties, through the automatic aid agreement, can be requested from Park County Dispatch. Higher level Incident Management Teams and other resources requested from further away would be coordinated by the EOC, Colorado Division of Emergency Management, and/or Pueblo Interagency Dispatch.

Emergency Operations Center

An Emergency Operations Center (EOC) is a specialized facility which includes personnel and equipment that is specifically designated for use in emergency situations. It serves as:

1. A resource coordination center with communications equipment.
2. An operations center for government officials, emergency support function representatives, volunteers and special agencies.
3. An information center that gathers analyzes and disseminates information.

Currently Park County does not have a permanent EOC in place. There will be one within the new county dispatch center, when that is completed within the next year.

The Pueblo Interagency Dispatch is managed by the US Forest Service. Its primary purpose is to support initial attack on two National Forests (including the Pike – San Isabel), and BLM, US Fish and Wildlife, and National Park Service lands in southeastern Colorado. They are the dispatch link to the Geographical Coordination Center and the National Interagency Coordination Center.

Community Emergency Response Team

FEMA has established programs for training of local residents in dealing with multi-hazards. Park County has a Citizen Corps Program, as it is known, with a local coordinator. Citizen Emergency Response Training (CERT) is provided by the County. CERT training is designed to

provide citizens basic knowledge and skills in disaster survival and rescue that will improve their ability to survive until responders or other assistance can arrive. This voluntary group is used when professional first responders are in need of additional human resources for the completion of incident objectives. They are activated by authorization of The Park County Office of Emergency Management Director or the Chief of the local Fire Protection District.

4.3 EQUIPMENT

The NWFPD has a variety of resources, such as structure and wildland engines, that can be dispatched in the event of a wildland fire. Park County also has a wide range of support equipment and personnel, such as Telecommunications, Road and Bridge, Human Services, Mapping and GIS. The Park County Sheriff's Office can provide law enforcement and evacuation needs and search and rescue. The local Ranger District of the US Forest Service has wildland engines and initial attack squads available, and USFS law enforcement officers.

Neighboring fire departments and counties can provide additional equipment. The US Forest Service has equipment at stations spread across the National Forest and can also bring in a wide range of resources including aircraft.

4.4 WATER RESOURCES

The NW Fire Protection District has a Tactical Tender (2200 gallons), and a Type 3 Tender (3000 gallons).

There are drafting hydrants in place in Redhill Forest and Warm Springs Subdivisions. There are also drafting hydrants on County Roads 5 and 14. Two 1000 gallon cisterns are located in the Valley of the Sun subdivision, and a 1500 gallon cistern in Placer Valley.

There are also numerous locations along streams and other water bodies where engines and tenders could either draft water or pump water. There are also several bodies of water in the District where helicopters could dip. *However, they need to be assessed for helicopter operations and safety, and agreements with owners need to be completed.*

4.5 EMERGENCY MEDICAL SERVICES

NWFPD provides first response emergency medical services to the area. Higher level medical personnel and ambulances are available from South Park Ambulance and are stationed in Fairplay. Additional medical personnel and equipment are available from neighboring jurisdictions.

There is a small clinic in Fairplay, as well as regional hospitals with ER's within an hour driving time. They are located in Salida and Frisco. Level 1 and 2 trauma centers and a regional certified burn center are located in Denver. Air ambulance service is available from the Denver and Colorado Springs metro areas, as well as Frisco.

4.6 CIVILIAN STAGING/EVACUATION AREAS AND FIREFIGHTER STAGING AND SAFETY ZONES

There are no designated locations for staging and safety zones in the District. One of the objectives of this document is to create and/or designate them.

4.7 PUBLIC INFORMATION

The primary methods to inform the public of emergency related issues, such as evacuation, will be by “Reverse 911” calls, local radio stations, and in person by law enforcement personnel.

Other methods will be used to keep people informed about the wildfire situation, such as information boards at local locations, in person by public information officers, press releases to the media, and public meetings.

4.8 CRITICAL UTILITIES

There are two major 230 KV transmission lines that cross a portion of the NWFPD. The Breckenridge-Malta crosses Highway 9, between Alma and Fairplay, while the Waterton-Malta line runs east from Weston Pass.

There is an aqueduct that connects Montgomery Reservoir (above Alma) to Colorado Springs, however almost all of it is underground.

5.0 RECOMMENDED ACTIONS

As stated, a fundamental purpose of a Community Wildfire Protection Plan is to “establish community priorities and recommendations.” Following are two sections, one describing how priority zones were selected, and the section detailing project areas selected for this initial plan. As projects are completed or conditions change additional projects will be added in ongoing action by the CWPP team.

5.1 Criteria for Establishing Priority Zones

Division of the CWPP area into priority locations will enable fire mitigation projects to proceed in an organized fashion. As much as possible, priority zones were drawn to include areas with common features. Among the features considered were forest types, fuel loads, ingress and egress routes, and values. Consideration was given to a number of factors. These are:

1. **Values at risk:** Life and property are always the first values. Other values at risk as rated in the survey of area residents: watershed protection; utility infrastructure; historic structures; and water treatment infrastructure.
2. **Current level of activity.** Experience has shown that wildfire mitigation efforts are most effective when the community is involved. The cooperative activity by landowners within each zone was considered. Those with active mitigation programs were targeted for initial mitigation projects. In communities where there has been little coordinated effort, the first priority will be to educate and increase awareness.
3. **Proximity to public lands priority zone.** The Healthy Forest Restoration Act builds on efforts to restore healthy forest conditions near communities and essential community infrastructure. The Act emphasizes the need for federal agencies to work collaboratively with communities in prioritizing and developing hazardous fuel reduction projects.

Existing CWPPs: *One community (Redhill Forest) has an existing CWPP.* This plan does not override the existing CWPP, and it is considered incorporated into this plan. The priorities in the Redhill Forest plan will remain as established by that community.

Applying the above criteria, the following communities (ranked highest to lowest) have been identified by the CWPP as priorities for fuels mitigation projects within the NWFPD. Below is a brief description of the Values at risk and Wildfire hazard for each community.

1. Valley of the Sun:

Values at risk and overall hazards

- High number of structures; many of them older
- High population density
- Major utility corridor
- Limited ingress/egress (high potential for entrapment)

- Recreation; borders and accesses public lands

Wildfire hazard

- Steep terrain in and around community
- Dense Lodgepole pine forest and fuel loading
- Beginnings of mountain pine beetle (MPB) mortality along utility corridor
- Lack of defensible space and high structural ignitability potential
- Poor road signage, narrow roads, lack of safety zones and escape routes
- High potential for human caused wildfire

2. Foxtail Pines:

Values at risk and overall hazards

- High population density; many year-round residents
- Large number of structures; many of them older construction
- Recreation; area bounded by USFS land on the western side

Wildfire hazard

- Dense Lodgepole pine forest within and bordering subdivision
- Beginning of MPB kill and long term presence of dwarf mistletoe
- Lack of defensible space
- High potential for structural ignitability
- Danger of human caused wildfire ignition
- Active Home Owners Association (HOA); good candidate for a Firewise Community

3. Placer Valley:

Values at risk and overall hazards

- Large number of structures with high potential for structure ignitability
- High population density.
- State Wildlife area
- Closest inhabited area to main water source of Montgomery Dam
- Headwaters area for Upper South Platte Watershed

Wildfire hazard

- Very steep terrain; high rate of fire spread under hazardous conditions
- Dense spruce and lodgepole pine forest; heavy fuel loading
- Large area with dead trees due to MPB kill, especially close to Colorado Hwy 9
- Dispersed use by off-highway vehicles (OHV), hikers and campers poses threat of human caused wildfire
- Active HOA; good candidate for a Firewise Community

4. Town of Alma:

Values at risk and overall hazards

- Numerous structures and full time residents
- Historically important structures in the area
- Utility corridor
- Middle fork of the South Platte river, downstream water supply
- Mining access

Wildfire hazard

- Steep terrain
- Lodgepole pine forest on dry east facing slope above town
- Presence of MPB and Western Spruce budworm
- Lack of defensible space and high structural ignitability potential

5. Warm Springs:

Values at risk and overall hazards

- Large population with year round residents
- Numerous structures
- Recreation; borders public lands
- Hot springs in area

Wildfire hazard

- Dense Lodgepole pine forest borders subdivision to the west
- Beginnings of MPB mortality
- Borders USFS land; dispersed use by OHV, hikers and campers poses threat of human caused wildfire
- Active HOA; good candidate for Firewise Community
- Community owns a wood chipper

6. Silverheels:

Values at risk and overall hazards

- Large population and numerous structures
- Recreation, bordered to the North by public lands

Wildfire hazard

- High potential for structural ignitability
- Large amount of down and dead material in aspen stands
- Lack of defensible space; Heavy fuel loads close to structures
- High potential for human caused wildfire
- Active HOA; good candidate for Firewise Community
- Some mitigation programs already in place

7. Redhill Forest:

Values at risk and overall hazards

- Large population and numerous structures
- Utility corridor

Wildfire hazard

- Lack of defensible space around structures
- High fuel loads in Douglas-fir stands
- Limited road access
- Power lines crossing ingress/egress
- Active HOA; good candidate for a Firewise Community
- Subdivision CWPP already in place

5.2 PROJECT RECOMMENDATIONS

As the area covered by this plan is necessarily large, we have not attempted to delineate every possible mitigation project within each priority zone. For the purpose of this plan the CWPP identified preferred mitigation projects only in the top three priority communities; Valley of the Sun, Foxtail Pines, and Placer Valley.

All priority zone communities will be encouraged to work with the CWPP committee to develop detailed mitigation plans in line with these recommendations. Development of the Neighborhood Ambassador Program and community education will be crucial to the success of future fuels mitigation projects.

It will not necessary to create a separate CWPP for each neighborhood, but rather a simple implementation document developed by the community with assistance of the CWPP committee that shows the priorities on a map with a brief description of the treatment needs. **Community buy-in will be important in selection and development of mitigation priorities.**

1. Valley of the Sun- Community Action Priorities

- Host at least one community meeting annually at NWF station; this could be a combined meeting of all communities.
- Establish a Neighborhood Ambassador Program within the community
- Educate landowners on defensible space and provide options for slash removal
- Identify and remove in a timely manner beetle infested trees as part of mitigation efforts
- An emergency evacuation plan and pre-attack plan should be developed by the county and fire district. This would include evacuation route signage.
- Seek cost share funds for landowners to implement fuels mitigation projects
- Participate in area biomass utilization program
- Action by Qwest to mitigate fuels and MPB kill along utility corridor

Fuels Mitigation Projects (See following Map for Priority Area #1))

- 1-1 Create a fuelbreak and promote a healthy forest using mechanical equipment or hand crews to the east of Key Placer along CR 19 and south of Adventure Placer along CR 12. Concentrate on the elimination MPB infested trees and dwarf mistletoe infested trees to create openings in the forest.
- 1-2 Create a fuelbreak south-southwest of Golden Hill Estates- using patch cuts in Lodgepole pine forests to promote uneven aged forests and aspen regeneration. Work can be accomplished by local contractors, contracted hand crews (Youth Legacy Corps, Depart. of Corrections) or mechanical tree harvest where slopes allow. Preferred project area is along major utility corridor and to the north towards the sub-division.
- 1-3 Develop roadside thinning projects along Venture Rd., CR 1, 12, 14, 14A- Work with Park County Road and Bridge Department to identify areas along ingress/egress most in need of fuels reduction. Identify right of way on either side of road and develop strategy to reduce fuels.
- 1-4 Create defensible space along Mountain View Drive. Work with County Road and Bridge to identify county road right of way and encourage landowners within right of way to clean up down and dead fuels. Utilize CUSP chipper program to eliminate fuels. Identify areas for small patch cuts to open up spots for excess snow from winter plowing.
- 1-5 Explore the potential of a Good Neighbor Project on USFS land south of County Road 14. Use mechanical fuels treatment in areas where slopes allow. Create openings in pure Lodgepole pine stands. This uneven aged forest management can be accomplished by a series of patch cuts to create openings, reduce fuel loadings, and promote aspen regeneration and establishment of younger Lodgepole pine age classes.

2. Foxtail Pines

Community Action Priorities

- Host at least one community meeting annually at NWF station; this could be combined with all communities.
- Establish a Neighborhood Ambassador Program and FireWise community
- Educate landowners on defensible space
- Identify and mitigate current MPB infestations
- Provide options for slash removal; burn pit days, community wide chipping projects
- Seek cost share funds for landowners to implement fuels mitigation projects
- An emergency evacuation plan and pre-attack plan should be developed by the county and fire district. This would include evacuation route signage.
- Develop local biomass utilization program.
- Preserve county roadway chip and seal

Fuels Mitigation Projects (See following Map for priority area #2)

2-1 Explore the potential of a Fuels Reduction and or Good Neighbor Project on USFS land south of CR14, west of Venture 73 stretching northeast to Busch Run and Kern's roads and southeast to Fourmile Creek Ranch. A fuelbreak exists on private land west of Venture 73 and could easily be tied into and extended onto public lands. Thinning would require patch cuts to open the forest to a desired condition.

2-2 Establish the Venture 73 loop as a demonstration project for healthy forests and defensible space. Currently, there is a high level of dwarf mistletoe infestation in the lodgepole pine stands and forest thinning efforts have already begun. An effort to increase the forest management with a community fuels chipping program could be a starting point.

2-3 Implement defensible space projects on Bluestem Way where forests are over-crowded. Eliminate down and dead in aspen stands.

3. Placer Valley

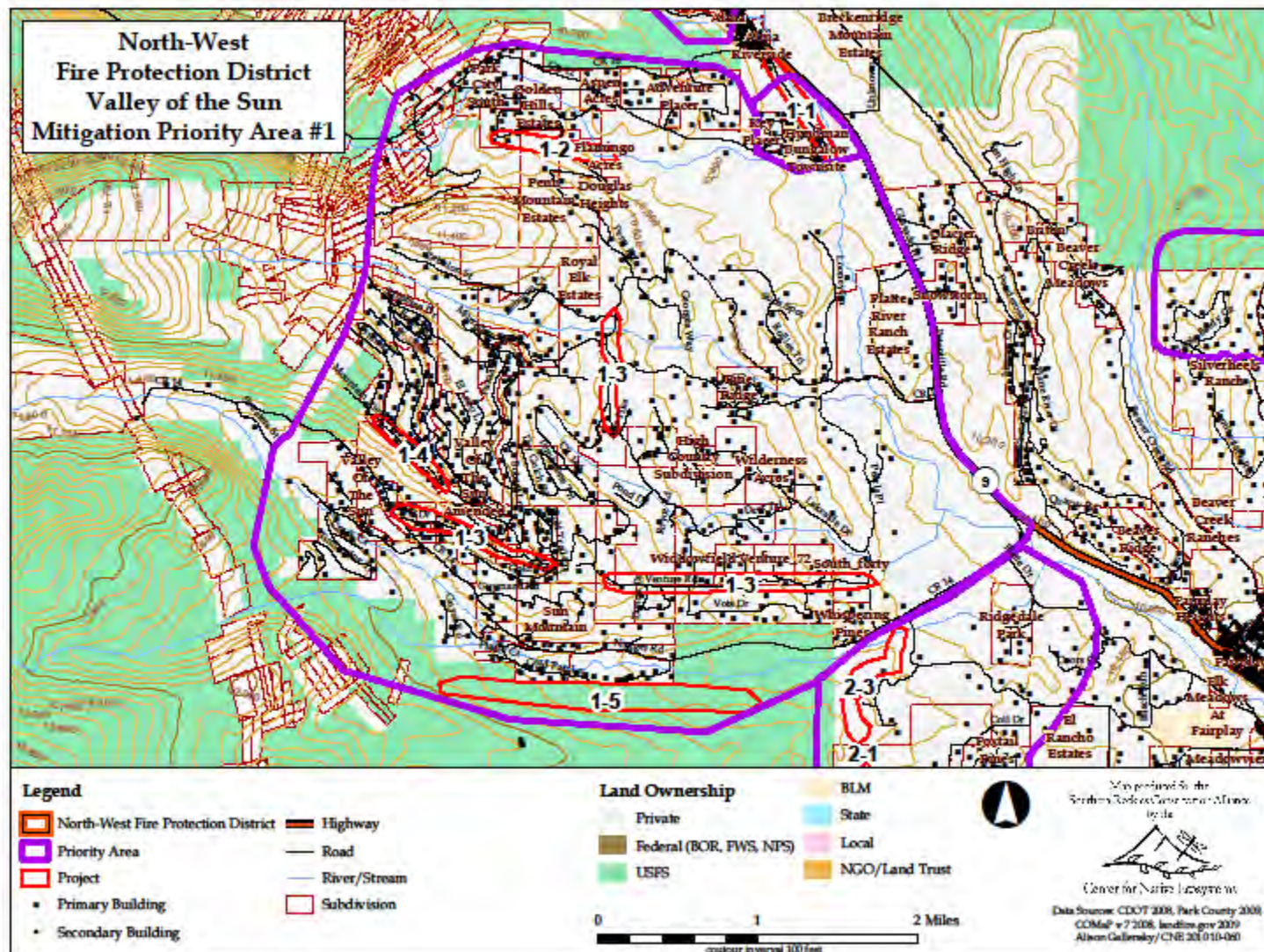
Community Action Priorities

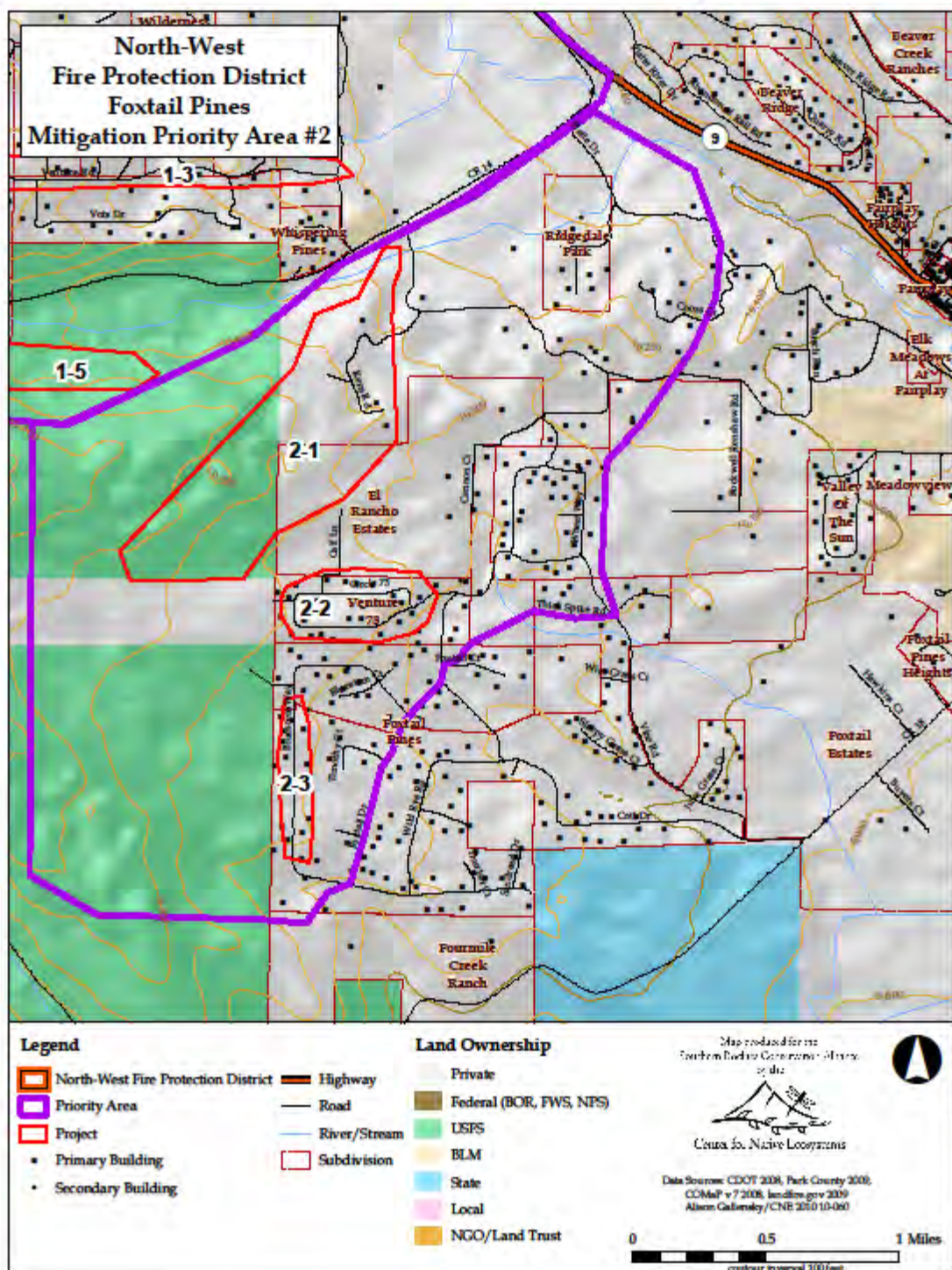
- Host at least one community meeting annually at NWF station; could be combined with all communities.
- Establish a Neighborhood Ambassador Program and FireWise community
- Identify and mitigate current MPB infestations
- Educate landowners on defensible space
- An emergency evacuation plan and pre-attack plan should be developed by the county and fire district. This would include evacuation route signage.
- Remove down and dead from aspen stands
- Provide options for slash removal; create burn pit opportunities
- Seek cost share funds for landowners to implement fuels mitigation projects
- Develop local biomass utilization program
- Work with Qwest to mitigate fuels in power-line right of ways

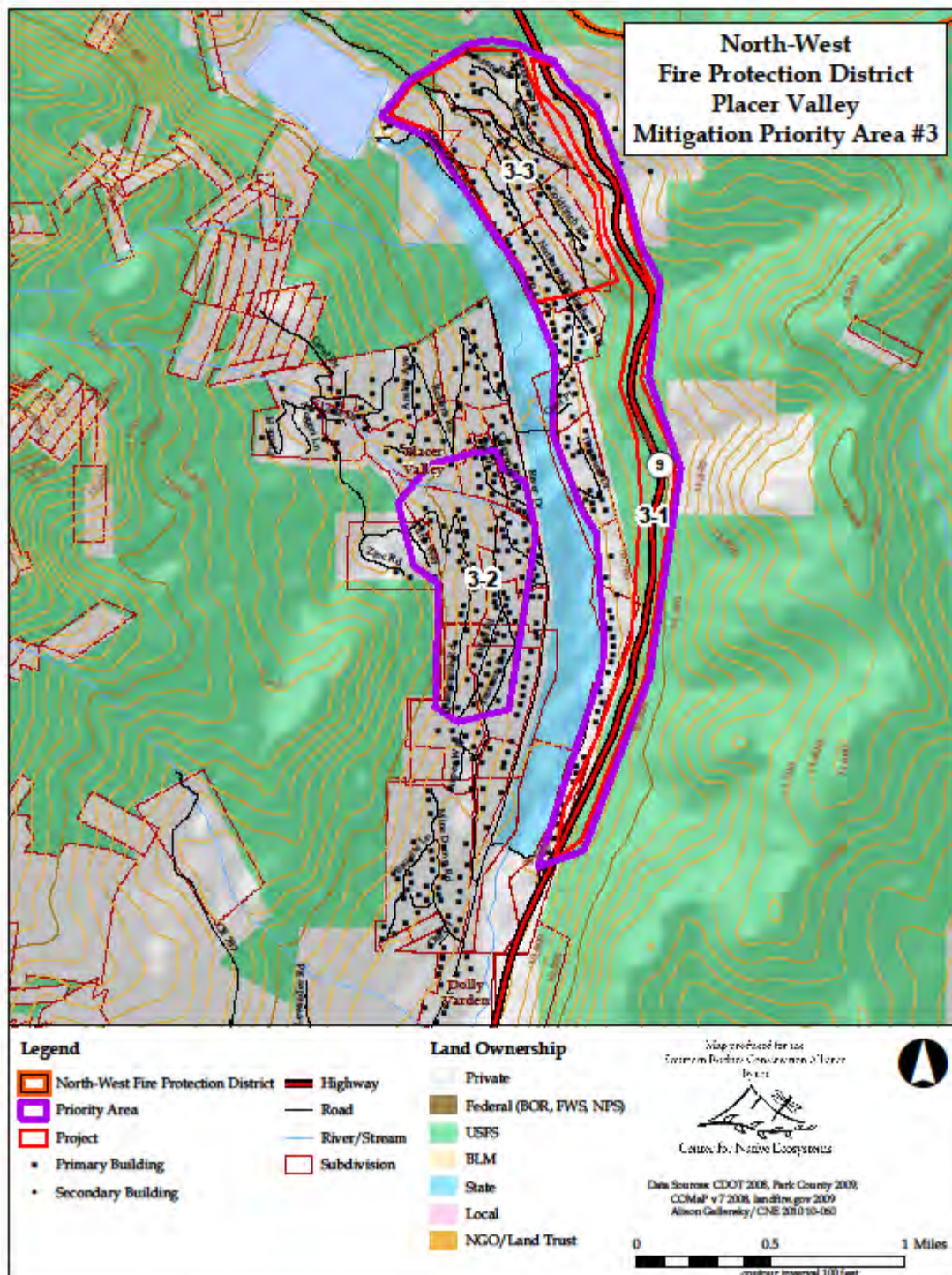
Fuels Mitigation Projects (See following Map for priority area #3)

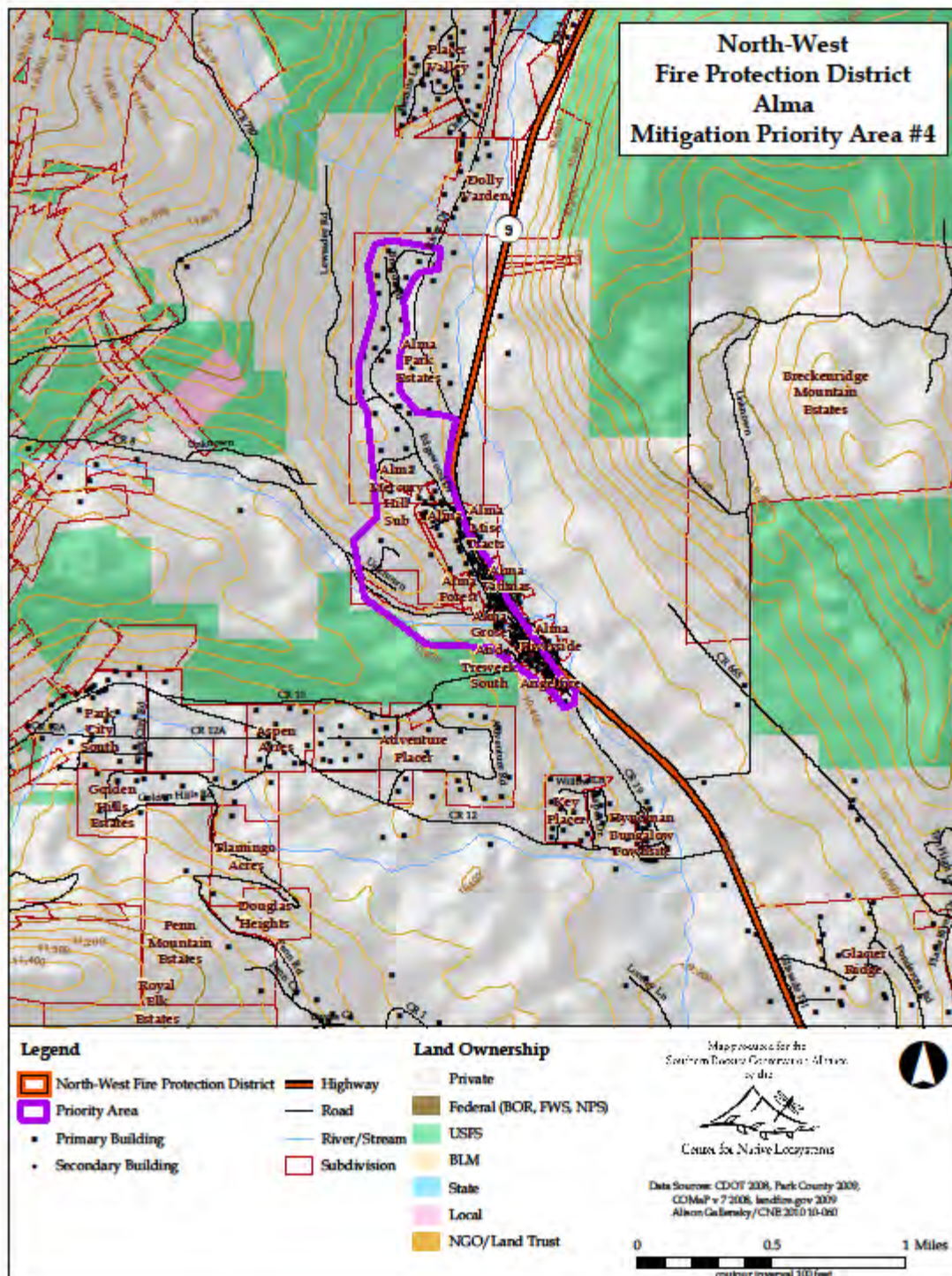
3-1 Remove dead standing trees on south side of Hwy 9 from Hoosier pass down to southeast entrance of County Road 4. All dead trees within falling distance of Hwy 9 should be cut. This would be a collaborative effort between USFS, CDOT, County Road and Bridge, town of Alma, CSFS, CUSP, etc. High priority, multi phased project, would require full planning process before implementation. NWF CWPP team could facilitate meetings.

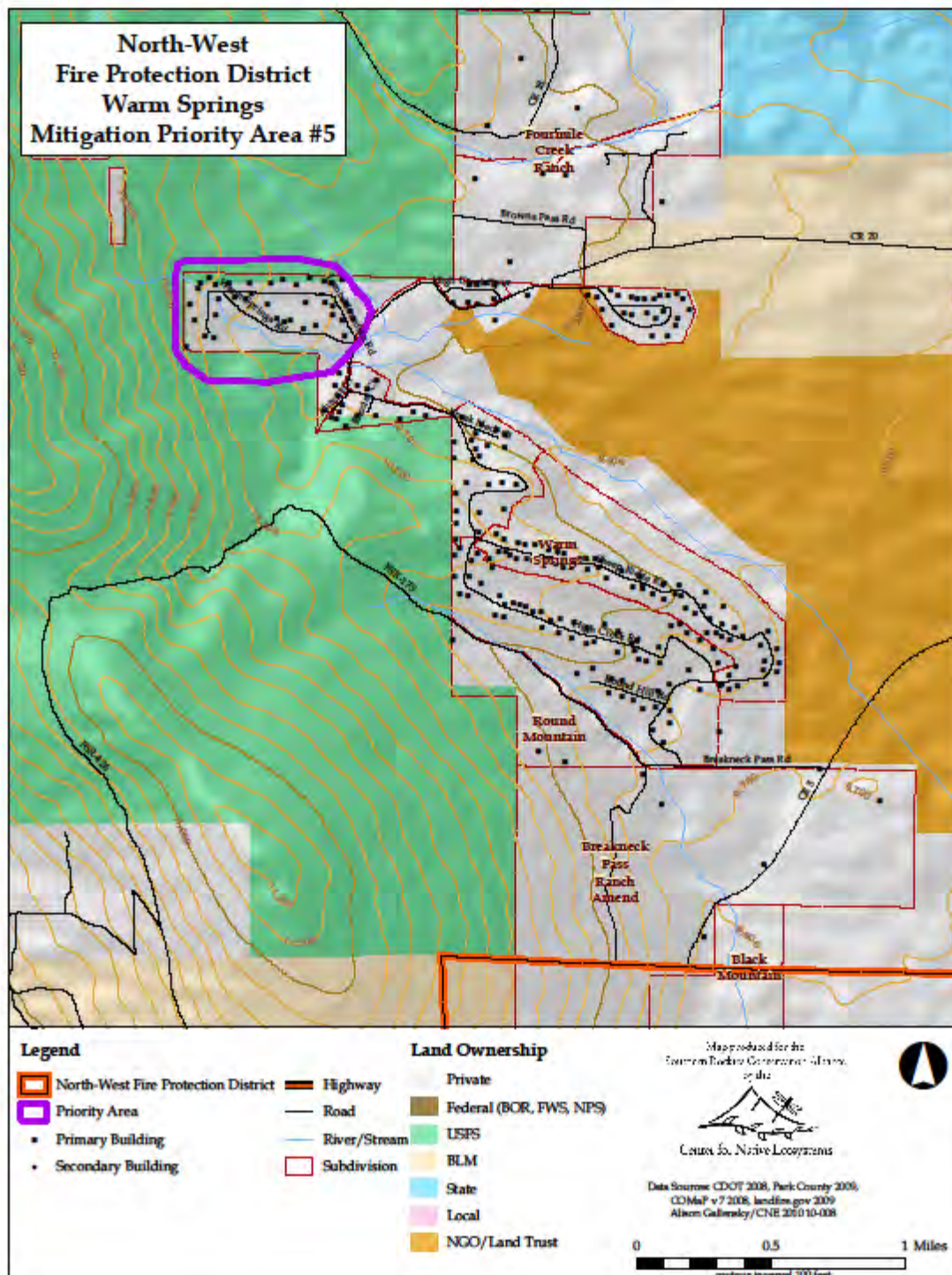
- 3-2 Implement defensible space projects on Peterson, Ridge, and Quartzville Roads. At a minimum, encourage landowners to clean up the down and dead aspen on their property.
- 3-3 Reduce fuels below Montgomery Reservoir on Cowbird Trail, Goldfinch Lane, and Nuthatch Drive by creating defensible space and completing roadside thinning. Work with County Road and Bridge to identify road right of ways and utilize hand crews and private contractors to eliminate slash.

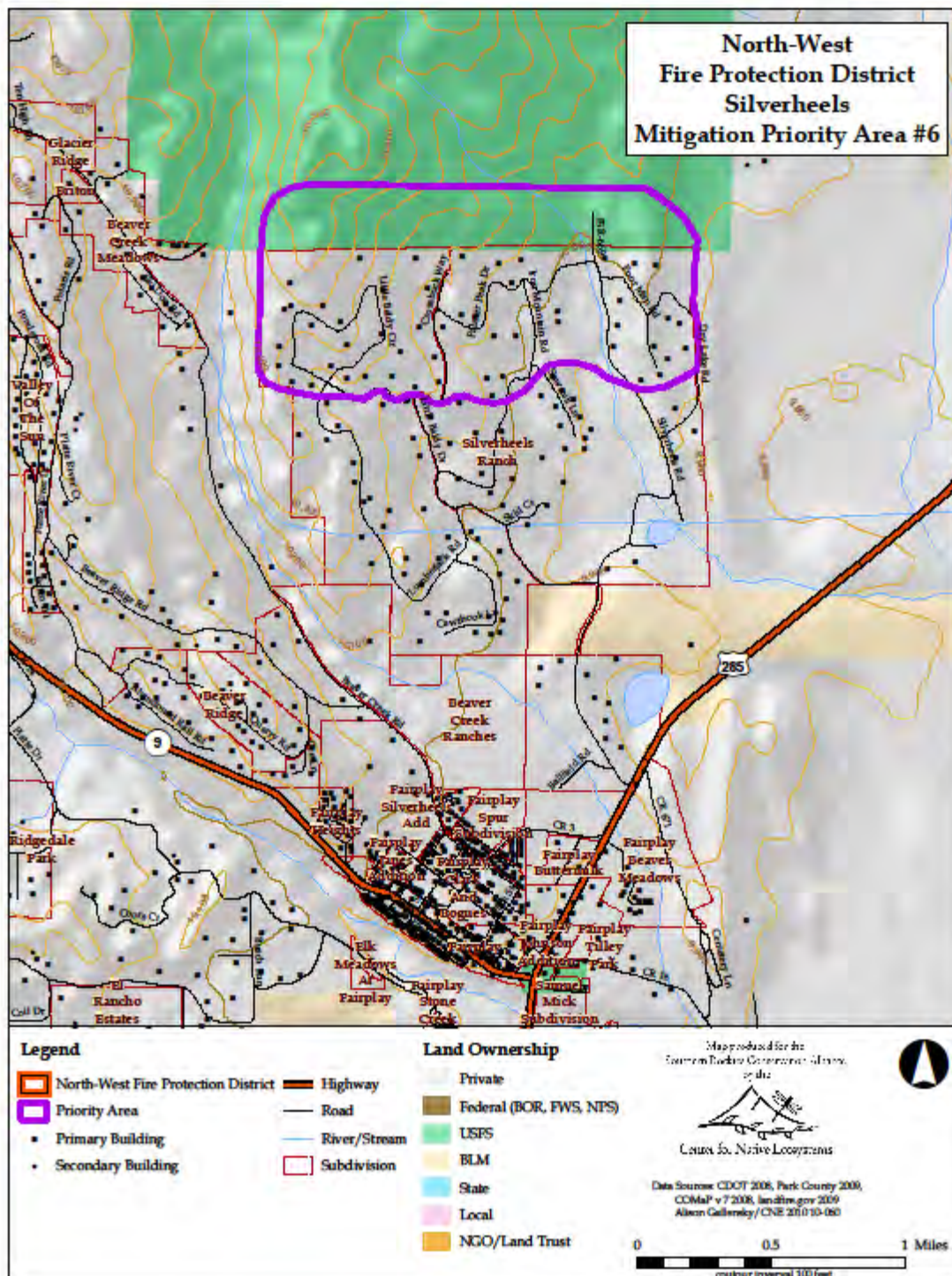


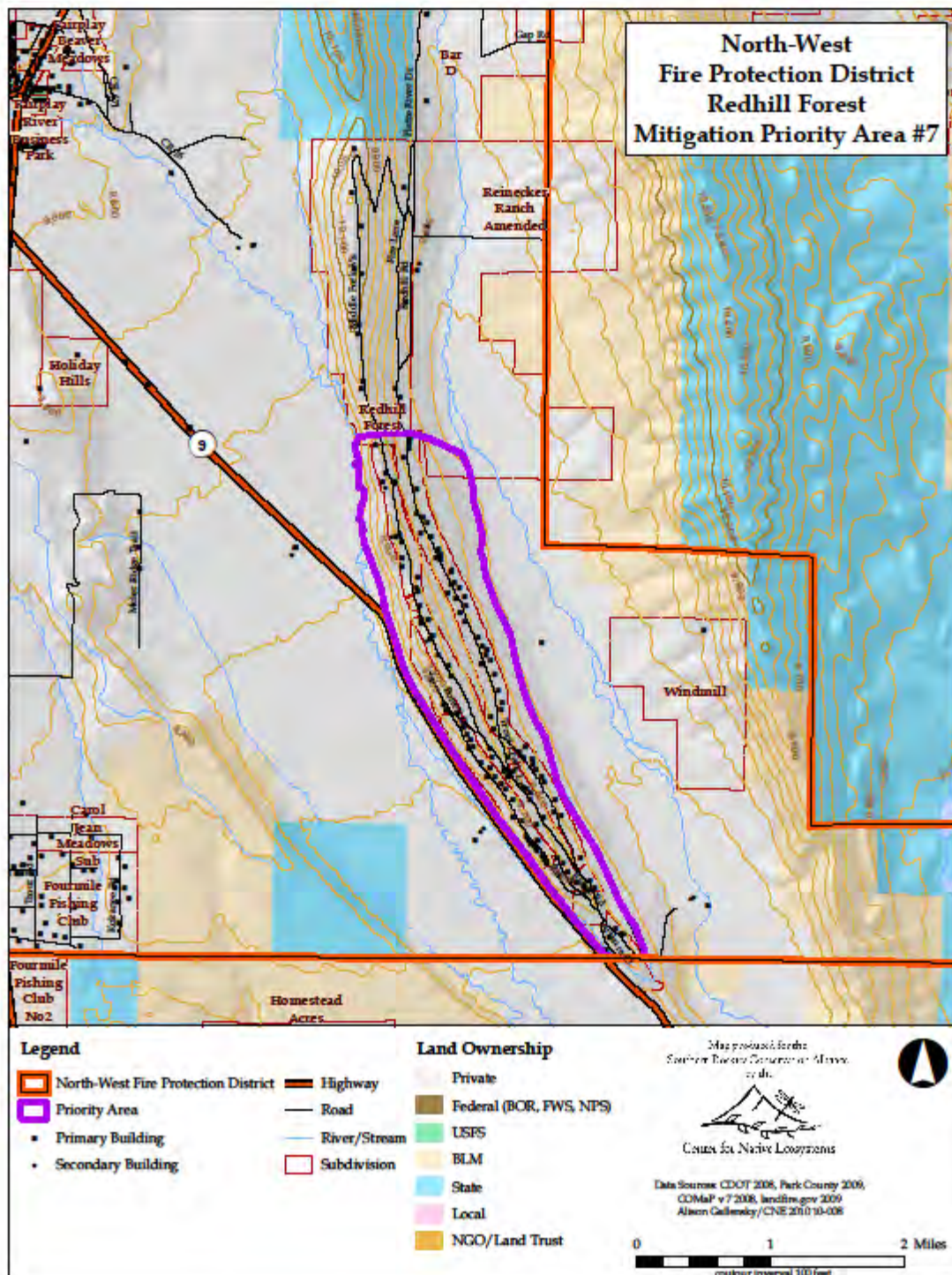












6.0 LAND OWNER ACTION; DEFENSIBLE SPACE

Defensible space is an area around a structure where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire towards the structure. It also reduces the chance of a structure fire moving from the building to the surrounding forest. Defensible space provides *room for firefighters to do their jobs*. **Your house is more likely to survive a wildfire** if grasses, brush, trees and other common forest fuels are managed to reduce a fire's intensity.

You, as residents of the North-West Fire Protection District CWPP area, are the most important component of the plan! Homeowners are often discouraged from completing defensible space because they believe their lot sizes are too small for effective fuel mitigation. **But your actions are truly meaningful** in protecting life, property, and the beauty of the area. Wildfire is a natural part of an ecosystem. The actions you take will determine how fire affects your property.

To quote the Colorado State Forest Service, "Fire is capricious. It can find the weak link in your home's fire protection scheme and gain the upper hand because of a small, overlooked or seemingly inconsequential factor."

You do not have to clear cut your property! Defensible space can be created in an esthetically pleasing manner that maintains privacy and the natural character of the community, and restores forest health.



Before Defensible Space Treatment



After Defensible Space Treatment

The CWPP cannot mandate you take any action. It is hoped you will see how defensible space can be attractively created and realize when everyone takes action the broader neighborhood landscape is protected. The advantage of the CWPP is that it provides a framework for individuals and neighbors to work together to reduce fire hazard and restore forest health.

Communities with a CWPP are eligible for cost share programs and Colorado State income tax deductions for fuel mitigation expenses.

Research indicates homes with fire resistant roofs and defensible space have an 85 percent chance of surviving a wildfire while homes with neither of these characteristics have a 15 percent survival rate.

An effective defensible space consists of flame resistant vegetation (aspen or large diameter trees without lower limbs) within 30 feet of the structure, the use of low flammability landscaping plants, mowed grass, lack of firewood stacks, and absence of fuel tanks immediately adjacent to structures. Structural ignitability is the fire resistance of materials used in the buildings themselves, and the design of the structure.

Full descriptions of effective actions can be found at the national website www.firewise.org, and in the Colorado State Forest Service publication *Creating Wildfire-Defensible Zones*, on the agency's website at <http://www.csfs.colostate.edu/>. **Consult with a forester; advice is available from the Colorado State Forest Service district office at 113 S. Boundary Street in Woodland Park (687-2921), and from consulting foresters.**

A Summary of Defensible Space Actions

On larger properties the landowner has the opportunity to mitigate fire hazard over a much larger area. As the area of mitigation increases, the margin of safety increases as well. Take action on your property in three zones:

Zone 1 is the area of maximum modification and treatment. It consists of an area of 15 feet around the structure in which all flammable vegetation should be removed.

1. Stack firewood at least 30 feet away and uphill from structures.
2. If you have grass keep it well watered and mowed. Do not have shrubs directly beneath windows or next to foundation vents. Trim back tree limbs that overhang the house or encroach on the chimney area. If you have a favorite tree next to the home consider it part of the structure and remove nearby trees to avoid fire spreading into the home.
3. Use rock or bare earth landscaping beneath decks and do not use the area for storage.

Zone 2 is an area of fuel reduction. It is transitional between Zones 1 and 3. The size of this Zone depends on the slope of the ground where the structure is built. Typically, the defensible space should extend *at least* 75 to 125 feet from the structure. Remove stressed, diseased, dead or dying trees and shrubs. Thin and prune the remaining larger trees and shrubs. Remove ladder fuels to 8 feet above ground and thin trees in zones 1 and 2 to space their upper crowns 15' feet apart.

Zone 3 is an area of traditional forest management and is of no particular size. It extends from the edge of your defensible space to your property boundaries. Trees need not be thinned as heavily as in Zone Two, but should be separated enough that they receive sufficient sunlight, water and nutrients.

Mitigation of Structural Ignitability

1. **Most structures *DON'T* ignite from direct flame contact**, but from radiant heat (heat that doesn't warm the intervening air but does warm objects). As a fire burns the heat passes through air and windows to objects inside the home that warm to the point of ignition then smolder for hours. ***You have an important role making the house less resistant to radiant heat.*** Use non-combustible roofing material and non-combustible siding (Class C or better), and spark arresters on chimneys.
2. **Embers or fire brands also ignite house fires.** During fires the air contains embers and tosses them anywhere, including onto unburned fuels. The Hayman fire created spot fires miles downwind. Embers can get stuck in "traps" on roofing, such as beside chimneys or in gutters and start new fires. Clean pine needles out of gutters and off roofing. ***Screen attic and foundation vents with fine mesh screening.***
3. **Large windows are a threat** to homes because they allow radiant heat to enter the structure. Remove lacey and other decorative curtains when a fire approaches to prevent radiant heat from igniting them through the glass. Large windows, especially single-pane windows, are vulnerable to breaking from debris blowing in fire-generated winds and embers. Double and triple pane windows are more resistant to heat transfer.

Signing and Evacuation; all Properties:

1. **Homes need visible address signing** at the ends of their driveways. Emergency personnel respond based on street addresses and last names.
2. **Create an evacuation plan – in advance.** Include a meeting place outside your area, and a family member or friend outside of your area who can be a point of contact. Think of the **Four Ps**: Pets, Pills, Papers, and Photos. You may have only a short time to evacuate.
3. If you do leave set a ladder in the driveway and connect garden hoses to spigots so firefighters can use your equipment to help defend your home.

7.0 IMPLEMENTATION AND FOLLOW UP

Creating and implementing this CWPP has the potential to significantly reduce possible wildfire effects. This will require the efforts of a committed community CWPP team with the assistance and cooperation of adjacent agencies (county, state Federal), local interest groups, and the citizens of the area. *The effectiveness of this plan will be the result of actions taken over time; completion is only the beginning.*

Maintenance and administration of the Community Wildfire Protection Plan are critical.

Accomplishing property defensible space, retrofit of structures to defensible standards, fuels mitigation projects, and completing such objectives as escape routes, additional water sources, and other goals require time, funding and resources. Ongoing community education and demonstration events are needed to demonstrate the necessity of taking personal action. Grant funding, contract crews, and volunteer projects will be spread out over a number of years.

Maintenance of the Plan

The CWPP is meant to be a “*living document*” which is updated annually to pursue priority concerns in wildfire hazard mitigation throughout the NWFPD area. The overall goal of maintaining the CWPP is accomplished through: 1) ongoing monitoring of plan accomplishments and effectiveness; 2) adjusting the plan to account for changes in wildfire hazard conditions, response capabilities, technologies and other circumstances; 3) setting goals and selecting projects for the coming year; 4) seeking funding and other project assistance; and 5) facilitating community project days and other events.

The CWPP team will be an ongoing team as long as the community and planning efforts have need of such direction. The team shall operate under the umbrella of the NWFPD. The CWPP team will sustain itself through recruitment of new members as needed, and selection of a team chair person from among its members. If direction or assistance is needed to maintain operations the NWFPD Chief will evaluate the continuing need and seek to reconstitute a CWPP management team.

The NWFPD CWPP committee will establish guidelines for representation and operation at its first meeting following county and state acceptance of this plan. Following are some guidelines to be considered by the team:

The composition of the CWPP team should retain professional representation from CUSP, the towns of Fairplay and/or Alma, Park County, the NWFPD, Colorado State Forest Service, and the US Forest Service (Pike National Forest). Representation from area neighborhoods is very important and up to three neighborhoods should be represented at any one time. This representation should be on a rotating basis to involve different areas and reduce the impact on participants.

Team meetings will be held at least quarterly (it may be desirable to meet more often as summer approaches each year) to review plan goals, actions and public response. Each year the CWPP team will conduct a performance review to evaluate accomplishments and problems over the past year. The team will also consider any proposed changes to the CWPP for the upcoming year and select project goals. The team should consult with the State Forest Service, USFS, and NWFPD, and reach out to neighborhood stakeholders during plan review and project development. Timing should be guided by grant submission dates.

The overall CWPP evaluation, recommended changes, and upcoming project goals will be presented to the public through various media: city and county meetings; newspaper; Community Wildfire days; CUSP, city, county and fire department websites; and outreach to neighborhood organizations.

The NWFPD CWPP and contact list will be available on the Park County, CUSP, NWFPD, and town of Fairplay websites along with a list of contacts so the public can offer ideas at any time for the team to consider.

The CWPP team, in conjunction with CUSP and/or other groups, will organize or take part in an annual community open house each spring to keep the public continuously aware of healthy forest restoration and wildfire mitigation needs and opportunities.

The team will develop or participate in demonstration days in area neighborhoods to showcase projects, techniques, and new ideas. Such events contribute greatly to public education and encourage people to become involved.

The CWPP team will follow up on completed projects, using a monitoring and evaluation format which addresses the following issues:

- 1) *Implementation*: Will track the CWPP project(s) as laid-out for the year and assess the success level of execution;
- 2) *Execution of project*: What issues occurred that either aided or impeded the project?
- 3) *Maintenance Needs and Monitoring*: Evaluates, determines and prioritizes areas that have been treated in the past, but are in need of maintenance treatments to maintain effectiveness as originally intended. Lessons learned from monitoring and data collection will be useful for modifying project plans to better meet CWPP goals and objectives.

Outreach to Subdivisions and Neighborhoods: Neighborhood Ambassadors

The WPHFI area is large and has a significant number of neighborhoods scattered throughout the WUI. The CWPP Team will utilize an approach similar to the **Neighborhood Ambassador Program** in effect in southwest Colorado. This involves reaching out to neighborhoods to recruit an ambassador from each area who will mobilize their neighborhood to improve wildfire readiness and communicate CWPP actions.

The CWPP team will provide neighborhood volunteer ambassadors:

- Orientation to the CWPP and upcoming actions
- Training and support
- Materials for education and handout to neighborhood residents
- Names of agency and other wildfire experts to contact for assistance
- Information as to grants or other assistance that neighborhoods may want to pursue with the CWPP Team
- Ability to network with other ambassadors

The ambassadors will:

- Develop connections with official groups such as HOAs.
- Provide education and information to their neighborhoods
- Help select and carry out projects, events or activities
- Work with the CWPP team, local fire departments and agencies to develop plans and actions relevant to their neighborhood
- Develop connections with other ambassadors and stay up to date with CWPP actions by attending meetings

Biomass

Effective use of biomass created in by mitigation actions is important. As more land owners and agencies take action there will be an increasing amount of woody material requiring disposal. Park County is taking a lead with its Energy Efficiency/Renewable Energy (EERE) initiative. Projects (as described in Appendix B) are underway in Fairplay. The CWPP team should be aware of what is happening and be a part of ongoing efforts.

APPENDICES

- A: Historic/cultural sites of importance in NWFPD**
- B: Biomass Usage in NWFPD**
- C: Sensitive and Rare Species and the High Creek Fen**

APPENDIX A

HISTORIC/CULTURAL SITES OF IMPORTANCE IN NWFPD

Park County was one of the few counties laid out when the area now known as Colorado became a separate territory carved from the Kansas Territory.

Gold was first discovered just to the east of the NWFPD territory in 1803 by a trapper. He confided to explorer Zebulon Pike of his discovery, but neither was very interested in gold, and it wasn't until 1859 when gold was found in the area of Cherry Creek, soon to be called Denver City, that anyone recalled that gold was up in the South Park.

Prospectors first panned for gold along Tarryall Creek near what is now Como. Squabbles arose and many came to the confluence of Beaver Creek and the Middle Fork of the South Platte River where they vowed to "play fair" with one another. Fairplay diggings proved satisfactory, and Buckskin Gulch began to sprout deep rock mines, yielding rich deposits of gold and silver. Alma became another settlement and prospered as some of the gold deposits were worked out. Silver was found on the tops of the 14ers of Mts. Lincoln, Democrat, Bross, Cameron and Sherman and along the surrounding lower mountains and ridges.

Out in the lower areas of the South Park, ranchers began to raise cattle and world-class hay, and the mountains yielded precious minerals in successive waves of bonanzas.

Still remaining as a national treasure trove of natural and cultural resources, the South Park area has extremely rare plant life, including plants to be found nowhere else in the world and including one of the largest stands of ancient Bristlecone Pines in the West.

Besides the natural riches within Park County are the cultural resources dotting the landscape and clustered in tiny communities. Many of the barns built in the late 1890s still store hay and house cattle, while mining structures mark the spots where millions of dollars of riches were pulled from the ground.

Within the NWFPD area are 1870s churches, an 1880s school, a 1920s hotel and even an 1870s courthouse that are still serving Park County. Many have been placed on national, state and local registers of historic places. Ranches still boast historic homesteads and barns that have been designated or are eligible to be designated on historic registers, as are mining structures.

South Park City Museum is a collection of not only over 60,000 artifacts from the settlement of the area, but the treasures are housed in 34 buildings that are themselves artifacts of the era, from a trapper's cabin to a nationally registered brewery and saloon. Six other buildings have been designated as Park County Historic Landmarks, and the whole museum is eligible for listing as a National Historic District.

So overwhelming is the importance of the cultural and natural resources within the NWFPD, that, while designated properties should be pinpointed as particularly important to protect, the entire area is a significant legacy to not only the local residents, but also to the state and even the nation.

It is because of this cultural wealth within Park County that Laura Bush designated all of Park County as a Preserve America Community in 2006. The Preserve America Community program provides funds to further preserve, protect and promote the history of an area to be enjoyed by locals and visitors alike.

When studies showed the presence of rare plants, gold medal fishing, pristine stands of trees and abundant wildlife coupled with untouched pre-historical sites and the continued presence and use of buildings dating to the early settlers, the National Park Service helped establish the South Park National Heritage Area, one of only 49 such Congressionally designated areas in the United States. This program will provide up to \$1 million per year to help the people of Park County to preserve and promote the riches of the land and history of the South Park.

Designated Historical Properties Within the North-West Fire Protection District

Alma Area

Alma Cabin/ Clesson Cabin – South Main Street – Park County Historic Landmark Estimated to have been built in the 1860s. It is probably the oldest structure still remaining in the town. The cabin was once owned by the local freight hauler who traversed the former buffalo trail that is now Colorado highway 9 to and from the gold fields of Blue River and Breckenridge, Buckskin Joe and the Mosquito district.

Alma Ladies' Aid Society Hall – North Main Street Park County Historic Landmark. The building was once the office for one of Alma's many smelters. Ladies Aid Societies flourished in the years after the Civil War as did large number of fraternal organizations as both social and charitable groups and Alma's was very active. They took over the building for use as a gathering place, adding a stage for plays, musical performances and guest speakers.

Alma School/Town Hall -Buckskin Road – State Register, Park County Historic Landmark. A rare architectural style for the area, the 1930s Mission-style Alma School housed both the elementary and high school students until the 1950s.

Alma Stone Church/ Community Center - North Main Street – State Register, Park County Historic Landmark. The Rustic- style stone church was constructed during the mining revival in the 1930s. It has been rehabilitated and now is available as a meeting hall.

Paris Mill – Buckskin Gulch Road (CR 8) – Park County Historic Landmark. The 1894 mill processed gold, silver and lead ores from the surrounding mines. The mill is one of the only remaining mill sites to retain the original mining equipment. It is undergoing hazardous material remediation and stabilization. It is hoped the mill can be rehabilitated for interpretation of mining practices in the area. It is eligible for designation to the National Register of Historic Places.

Snowstorm Dredge – Highway 9 between Alma and Fairplay Park County Historic Landmark. This floating ore processing plant is one of the only remaining dredges in the west. It sits in the middle of the Snowstorm Placer Claim, still in reclaimable condition, with all of its processing equipment still inside.

Fairplay Area

Fairplay Hotel – Main Street, National Register of Historic Places, Park County Historic Landmark. The Fairplay Hotel was built in 1923 on the site of a previous hotel dating to the 1870s. It was designed by prominent Denver architect William Bowman. The Fairplay Hotel has been the central economic keystone of the town since it opened its doors, hosting local club meetings, weddings, dances, festivals and special dinners, as well as generations of regular visitors.

Fairplay School/Edith Teter Elementary School - Hathaway Street State Register. The original two-story Italianate school was built in 1881. The “upper grades” were literally on the second or upper floor, while the “lower grades” were educated on the first level. The school is still an active elementary facility, but will become an administrative building when new schools are built.

Park County Courthouse - Main Street, National Register of Historic Places, Park County Historic Landmark. This three-level, sandstone Italianate building was constructed in 1874, following a devastating fire that ravaged portions of the town. It still serves to house county offices and the Fairplay Branch of the Park County Library.

Sheldon Jackson Chapel/ South Park Community Church - Sixth and Hathaway Sts National Register of Historic Places. Dedicated in 1876, the church is an excellent, well-preserved example of the Carpenter Gothic style. It includes lancet windows, extensive wood trim, and an intricately detailed bell tower. The congregation was organized in 1874 by Sheldon Jackson, a Presbyterian missionary who was active throughout the Colorado frontier.

South Park City Museum - Fourth and Main Sts. This museum contains a collection of buildings, some of which are on their original sites and some which have been saved from destruction, which now are used to interpret the life of a mining town of the 1880s. Two of the original buildings are on the National Register of Historic Places, and five of the original buildings are Park County Historic Landmarks. The entire museum is eligible for nomination as a Park County Historic District and may qualify for listing on the National Register.

Denny House - Third and Front Sts. Within the South Park City Museum. Park County Historic Landmark 02/19/09. Built in 1881 by Leonhard Summer, owner of the Summer Saloon and Summer Brewery, the house boasts the false front favored by his brother in the nearby Mayer House as well as a more conventional gable roof and deep porch in another wing. It is currently a museum exhibit.

Fairplay Coal Company/ Lougenbaugh Coal and Ice Company Third and Front Sts. Within the South Park City Museum; Park County Historic Landmark 02/19/09. This property includes an office building, a U-shaped, shed-type storage building and a barn that were built in 1935 to house the Fairplay Coal Company. The office area now is used to display photographs and other artifacts to interpret the importance of the burro to the area’s mining history. The storage sheds house horse-drawn transportation vehicles including a hearse, buggy and sled as well as fire fighting articles.

Mayer House - Third and Front Sts. Within South Park City Museum. Park County Historic Landmark 02/19/09. Associated with the house's most famous occupant, Col. Frank Mayer, author, buffalo hunter and adventurer, the house was actually built in 1880 by Joseph Summer. It is on its original site, and is notable for the false front usually associated with business establishments. It is now used as a museum exhibit representing the architecture of the early town.

Smoke House - Third and Front Sts. Within South Park City Museum Park County Historic Landmark 02/19/09. The smokehouse is built of local sandstone in a manner similar to that of the adjacent nationally registered Summer Saloon and Summer Brewery.

South Park Lager Beer Brewery - 3rd & Front Sts. National Register 06/25/1974, Constructed by Leonard Summer in the mid-1870s, the primarily stone, two-story building was associated with the Summer Saloon.

Summer Saloon - 3rd & Front St. National Register 05/08/1974. Built in 1879 by Leonard Summer, adjacent his brewery operation, the one story building is of red sandstone quarried near Red Hill Pass.

Outlying Area

Trout Creek Annex Ranch 3242 CR 7. National Register of Historic Places 5/08/08. Park County Historic Landmark 01/29/08. Trout Creek Ranch was settled by Edward Pellew Arthur, an English gentleman who not only had agricultural experience in his native Liverpool area, but also had superintended a sheep operation in Queensland, Australia for a number of years.

APENDIX B

BIOMASS USAGE IN NWFPD

A key component of the Park County Commissioners sponsored Energy Efficiency / Renewable Energy (EERE) Initiative is the development of a successful biomass for heating applications industry. In December 2009, the first wood pellet boiler system was commissioned at the South Park Parks and Recreation Center in Fairplay; heating from wood will replace approximately 30,000 gal of propane annually. The Park County Re-2 School District is implementing a new / renovated facilities project in Fairplay that is projected to use approximately 500 tons of wood for heating instead of propane or natural gas; this project is in the Design phase with construction during 2011 and 2012. All county buildings are being reviewed for potential use of both solar and wood renewable energy to supply electricity and heating. Candidates on the working list include larger buildings such as the County Services / R&B building as well as smaller buildings such as a new Search and Rescue building in Fairplay and R&B buildings distributed throughout the county. CDOT buildings are also on the potential opportunity list.

In addition to County buildings, the EERE Initiative will be promoting wood pellets for residential heating and both wood pellets and chips for small commercial buildings; the Colorado Governor's Energy Office (GEO) will be launching a rebate / incentives program state wide at the end of March that will support these renewable energy sources; the EERE Initiative has received a grant from the GEO for a coordinator position to promote energy efficiency and renewable energy throughout the county.

APPENDIX C

NORTH-WEST FIRE PROTECTION DISTRICT

Sensitive and Rare Species and the High Creek Fen

Game Species and Watchable Wildlife

(Center for Biological Diversity, CO Div. of Wildlife, USFWS,

CO Natural Heritage Program)

Common Name (G)=Global Name (S)=State Name	Typical Habitat
MAMMALS	
American Black Bear summer and fall concentration human conflict area	Habitat: Prefers mixed deciduous-coniferous forests with a thick understory, but may occur in various situations.
Bighorn Sheep migration pattern; production (lambing) area; summer concentration area; winter range	Habitat: Mesic to xeric, alpine to desert grasslands or shrub-steppe in mountains, foothills, or river canyons. Many of these grasslands are fire-maintained. Escape terrain (cliffs, talus slopes, etc.) is an important feature.
Black-footed Ferret	Habitat: grasslands, steppe, and shrub steppe Diet: Prairie dogs, other small mammals, birds, insects. It has been estimated that about 100 -150 hectares of prairie dog colony are needed to support one ferret.
Dwarf Shrew	Habitat: Various habitats including rocky areas in alpine tundra and partly into subalpine coniferous forest, other types of rocky slopes (e.g., with ponderosa pine), sedge marsh, subalpine meadow, dry brushy slopes, arid shortgrass prairie, dry stubble fields, and pinyon-juniper woodland.
Elk migration pattern & corridor; highway crossing; production (calving) area; summer concentration; resident population; winter concentration; severe winter range	Habitat: Uses open areas such as alpine pastures, marshy meadows, river flats, and aspen parkland, as well as coniferous forests, brushy clear cuts or forest edges.
Gunnison's Prairie Dog	Habitat: High mountain valleys and plateaus at elevations of 1,830-3,660 meters; open or slightly brushy country, scattered junipers and pines. Burrows usually on slopes or in hummocks.

colonies	
Lynx	Habitat: Generally occurs in boreal and montane regions dominated by coniferous or mixed forest with thick undergrowth, but also sometimes enters open forest, rocky areas, and tundra to forage for abundant prey. Den sites tend to be in mature or old growth stands with a high density of logs Diet: Small mammals and birds, particularly snowshoe hare
Moose concentration area; priority habitat; summer range; winter range	Habitat: Prefers mosaic of second-growth forest, openings, swamps, lakes, wetlands. Requires water bodies for foraging and hardwood-conifer forests for winter cover. Avoids hot summer conditions by utilizing dense shade or bodies of water. Young are born in protective areas of dense thickets.
Mountain Goat migration corridor; summer range	Habitat: Alpine and subalpine habitat; steep grassy talus slopes, grassy ledges of cliffs, or alpine meadows. Usually at timberline or above. May seek shelter and food in stands of spruce or hemlock in winter. Young are born on rock ledges or steep cliffs.
Mule Deer migration pattern migration corridor; highway crossing; concentration area; winter concentration area; critical winter range; severe winter range; resident population	Habitat: Coniferous forests, desert shrub, chaparral, grasslands with shrubs.
Pronghorn migration pattern; concentration area	Habitat: Desert, Grassland/herbaceous, Shrubland/chaparral
Wolverine	Habitat: Alpine and arctic tundra, boreal and mountain forests (primarily coniferous). Limited to mountains in the south, especially large wilderness areas. Usually in areas with snow on the ground in winter. Riparian areas may be important winter habitat. May disperse through atypical habitat. When inactive, occupies den in cave, rock crevice, under fallen tree, in thicket, or similar site. Terrestrial and may climb trees. Young are born in a den among rocks or tree roots, in hollow log, under fallen tree, or in dense vegetation, including sites under snow.
AMPHIBIANS	
Boreal Toad	Habitat: Mainly subalpine lakes, reservoirs, ponds, creek pools, marshy areas, wet meadows, and adjacent terrestrial habitats. Seeks shelter under logs or rocks or in rodent burrows or other below-ground spaces. Eggs and larvae develop in shallow areas of ponds, lakes, or reservoirs, or in pools of slow-moving streams.
BIRDS	
American Peregrine Falcon	
Bald Eagle Roost sites; winter forage; winter range	<u>Habitat:</u> Preferentially roosts in conifers or other sheltered sites in winter in some areas; Perching in deciduous and coniferous trees is equally common in other areas.

Great Blue Heron foraging areas; historic nest area	Habitat: Freshwater marshes, along lakes, rivers, fields, and meadows.
Mountain Plover	Habitat: Nesting habitat includes high plains/short grass prairie and desert tablelands. Preferred winter habitat consists of short-grass plains and fields, plowed fields, and sandy deserts.
Western Snowy Plover	Habitat: Beaches, dry mud or salt flats, sandy shores of rivers, lakes, and ponds. Nests on the ground on broad open beaches or salt or dry mud flats, where vegetation is sparse or absent (small clumps of vegetation are used for cover by chicks); nests beside or under object or in open.
White-tailed Ptarmigan overall range; winter range	Habitat: alpine tundra, especially in rocky areas with sparse vegetation. Summer habitats in the Rocky Mountains consistently include moist, low-growing alpine vegetation. In Colorado, percent canopy cover of willow was higher at winter feeding sites than at random sites. Nests in alpine tundra, in rocky areas or sparsely vegetated, grassy slopes. Tends to search for vacant territory in natal area. High fidelity to breeding territory in successive years.
Wild Turkey overall range; production (nesting) area	<u>Habitat</u> : Forest and open woodland, scrub oak, deciduous or mixed deciduous-coniferous areas, especially in mountainous regions. Roosts in trees at night. Severe winters and/or lack of winter habitat are important limiting factors in many northern areas.
INSECTS	
Alberta Arctic	Habitat: Montane swales in intermountain "parkland". Larval host is genus Festuca.
Polixenes Arctic	Habitat: Dry, grassy, rocky tundra or alpine but not fell fields etc.
Tiger Beetle (S) Prairie Long-lipped Tiger Beetle (G)	Habitat: open ground trails in woodland areas. Approximately follows the distribution of the Ponderosa Pine-bunchgrass association
FISH	

Greenback Cutthroat Trout CDOW designated critical cutthroat trout habitat	Cold water streams and lakes in So. Platte & Arkansas River drainages.
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PLANTS	
Alpine Braya (S) Low Braya (G)	
Altai cottongrass	Habitat: Fens in a few mountain ranges
Arctic Braya (S) Smooth Rockcress (G)	
Arctic Draba (S) White Arctic Whitlow-grass (G)	
Avery Peak Twinpod	Habitat: Rocky, open alpine tundra
Bodin Milkvetch	
Bristle-stalk Sedge	
Canadian Single-spike Sedge (S) Bulrush Sedge (G)	
Clawless Draba	Habitat: Rocky, gravelly slopes and talus, alpine; usually granite bedrock. 3300 m (11,000 ft) and above.
Colorado Divide Whitlow-grass	Habitat: Scree slopes and edges of talus slopes and sometimes in fell fields
Colorado Larkspur	Habitat: Open, alpine meadows above 3500 m
Colorado Tansy-aster	Habitat: Gravelly places or rock outcrops, often on sandstone or limestone, in dry mountain tundra at about 2600 m elevation.
Colorado Wild Buckwheat	Habitat: Subalpine and alpine. Gravelly or sandy soil, often subalpine and alpine slopes, sometimes montane grasslands. 8500-12,500 ft.
Downy Indian-Paintbrush	Habitat: Rocky tundra, high peaks of the Continental Divide
Dwarf Hawksbeard (S) Dwarf Alpine Hawk's-beard (G)	
Few-flowered Ragwort	
Globe gilia	Habitat: Alpine ridgetops with gravelly, calcareous soils. 3660-4270 m elevation.

Gray's Peak Whitlow-Grass	Habitat: Gravelly alpine slopes and knolls at elevations above 3500 m.
Greenland Primrose	
Hoary or Silver Willow	Habitat: Occurs in bogs and swampy places and occasional in wet, usually alkaline, habitats
Intermountain Bitterweed	Habitat: Mountain brush, sagebrush and aspen communities, often in meadows at 2,500 to 3,000 m. elevation.
Kotzebue's Grass-of-Parnassus	
Lancepod Whitlowgrass	
Leadville Milkvetch (S) Molybdenum Milkvetch (G)	Habitat: alpine tundra, 3625 to 3960 m elevation, on rocky soils where vegetation mats form 100% cover.
Lime-loving Willow (S) Lanate Willow (G)	
Little Bulrush (S) Rolland's Leafless-bulrush (G)	Habitat: Calcareous ledges, gravels, shores, seepage areas, mires and bogs.
Livid Sedge	Habitat: Peat bogs and swampy woods
Northern Rockcress (S) Boreal Whitlow-grass (G)	
Pale Blue-Eyed Grass	Habitat: Wet, poorly drained meadows, stream banks, roadside ditches, and irrigated hay meadows where standing water is available through the early growing season.
Pale Moonwort	Habitat: Most often found in open habitats of sparse to dense herbaceous vegetation, such as grasslands (e.g. fescue grasslands in valleys). open meadows and fields. sand dunes, sand hills, sandy ridges, oak barrens, open exposed hillsides, and cliff tops.
Parry's Crazy-weed	
Penland Alpine Fen Mustard	Habitat: Alpine tundra above 3700 m elevation and downslope from snowfields, which provide melt water all summer.
Porslid's Whitlow-grass	Habitat: Moist to sometimes drier sites, generally rocky or gravelly, in the subalpine and alpine zones on ridges, slopes, cliffs, ledges, and summits.
Porter Feathergrass	Habitat: boggy wetlands elevated from the water table on peat hummocks.

Reflected Moonwort	Habitat: Grassy slopes, roadsides, and at the edges of lakes at elevations between 2900 and 3350 m. Usually in gravelly soils. Disturbed subalpine forest sites (e.g. avalanche chutes, gravel bars, logged areas)
Rocky Mountain Columbine	Habitat: Cliffs and rocky slopes, subalpine and alpine. Elev. 9000-12,300 ft.
Rothrock Townsend-daisy	Habitat: Areas above timberline that retain snow into summer. Also high plateau ridgetops in openings in ponderosa pine (Pinus ponderosa) forest. 2440-4115 m elevation.
Salt-lick Mustard (S) Saltwater Cress (G)	
Sea Pink	
Slender Cottongrass	
Snow Grass (S) Ice Grass (G)	
Thick-leaf Whitlow-grass	Habitat: Alpine tundra, typically in talus or rock stripes (ridges), 10,000 to 12,000 feet.
Tundra Buttercup (S) Arctic Buttercup (G)	
Weber's Draba (S) Weber's Whitlow-grass (G)	Habitat: Amid rocks along streamlets near timberline (about 3500 m elevation).
Weber saussurea (S) Weber's Saw-wart (G)	Habitat: Generally occurs on rocky, exposed limestone slopes, talus, and ridges, in high elevation, subalpine to alpine sites. 2850 - 4350 m.
Woods Draba (S) Few-seed Whitlow-grass (G)	
Yellowstone Whitlow-grass	
NATURAL COMMUNITIES	
Drummonda Willow/Mesic Form	

Extreme Rich Fen	
Mixed Foothills Shrubland	
Montane Grasslands	
Montane Riparian Forest	
Montane Riparian Shrubland	
Montane Riparian Willow Carr	
Montane Riparian Willow Carr	
Montane Riparian Willow Carr	
Montane Wet Meadow	
Montane Woodlands	
Montane Woodlands	
Subalpine Riparian/Wetland Carr	
Subalpine Riparian Willow Carr	
Subalpine Riparian Willow Carr	
Timberline Forest	
Upper Montane Woodlands	
Wet Meadow	

Colorado Natural Heritage Program

Level 4 Potential Conservation Area (PCA) Report

Name: High Creek Fen

Site Code S.USWRO1*1689 **IDENTIFIERS: Site ID** 1365

Site Alias: High Creek at Warm Spring

Network of Conservation Areas (NCA)

NCA Site Code: Contained in the South Park site (S.USCOHP8*3727).

LOCATORS: Latitude 390732N; **Longitude** 1060004W

County Park (CO)

Watershed Name: South Platte Headwaters

SITE DESCRIPTION

High Creek is east of the Mosquito Range foothills in a depression at the base of several large glacial outwash fans that are fed by ground water flowing from the Mosquito Range. This fen is **the most ecologically diverse, floristically rich fen known in the Southern Rocky Mountains. It contains more rare plant species than any other wetland location in Colorado, and includes 14 plant species that are rare in Colorado. It is one of the largest and most intact wetlands left in South Park;** other wetlands in the area have been destroyed or greatly altered. High Creek Fen is owned and managed by The Nature Conservancy of Colorado. In its entirety, this site includes High Creek Fen, and also includes lands that stretch for several miles upstream along High Creek. It includes Warm Springs at the upstream end of the site.

Groundwater discharge is especially common along the west edge of the riparian area along the base of the hills. In the upper (upstream) portions of the site the occurrences of Canadian single-spike sedge (*Carex scirpoidea*) and few-flowered ragwort (*Packera pauciflora*) are quite large, but adjacent to a mined area and grazed. The best-developed extreme rich fen elements (both communities and plants) occur (farther downstream) at the base of a hill on the west side of High Creek, sandwiched between the hill and the creek, but also occur in patches in other areas in the Warm Springs area.

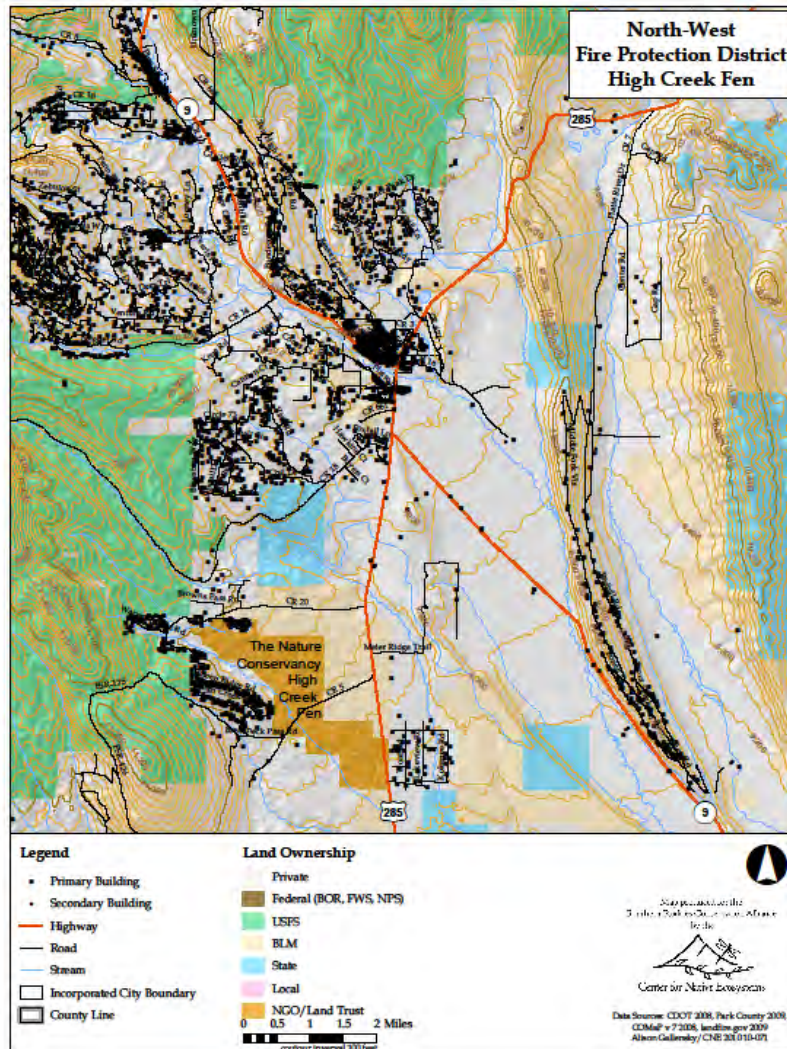
Boundary Justification: This site, containing 5,694.04 acres, was designed to encompass all elements known to occur in High Creek Fen system, and an area on the upstream end of the site that had peat removed. Boundaries also include adjacent natural wetlands,

SITE SIGNIFICANCE

Biodiversity Significance Rank: B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site is rich with state and globally imperiled plants and plant communities. The site supports excellent (A-ranked) occurrences of two globally imperiled (G2/S1) plant communities, *Kobresia myosuroides* - *Thalictrum alpinum* and *Kobresia simpliciuscula* - *Trichophorum pumilum*, and several other globally and state rare elements. It is the most extensive and highest quality example of extreme rich fens in all of South Park. It also contains nine rare aquatic and semi-aquatic macroinvertebrates not yet found at any other extreme rich fen. All but the upper, mined portion of the site is in good condition.



High Creek Fen