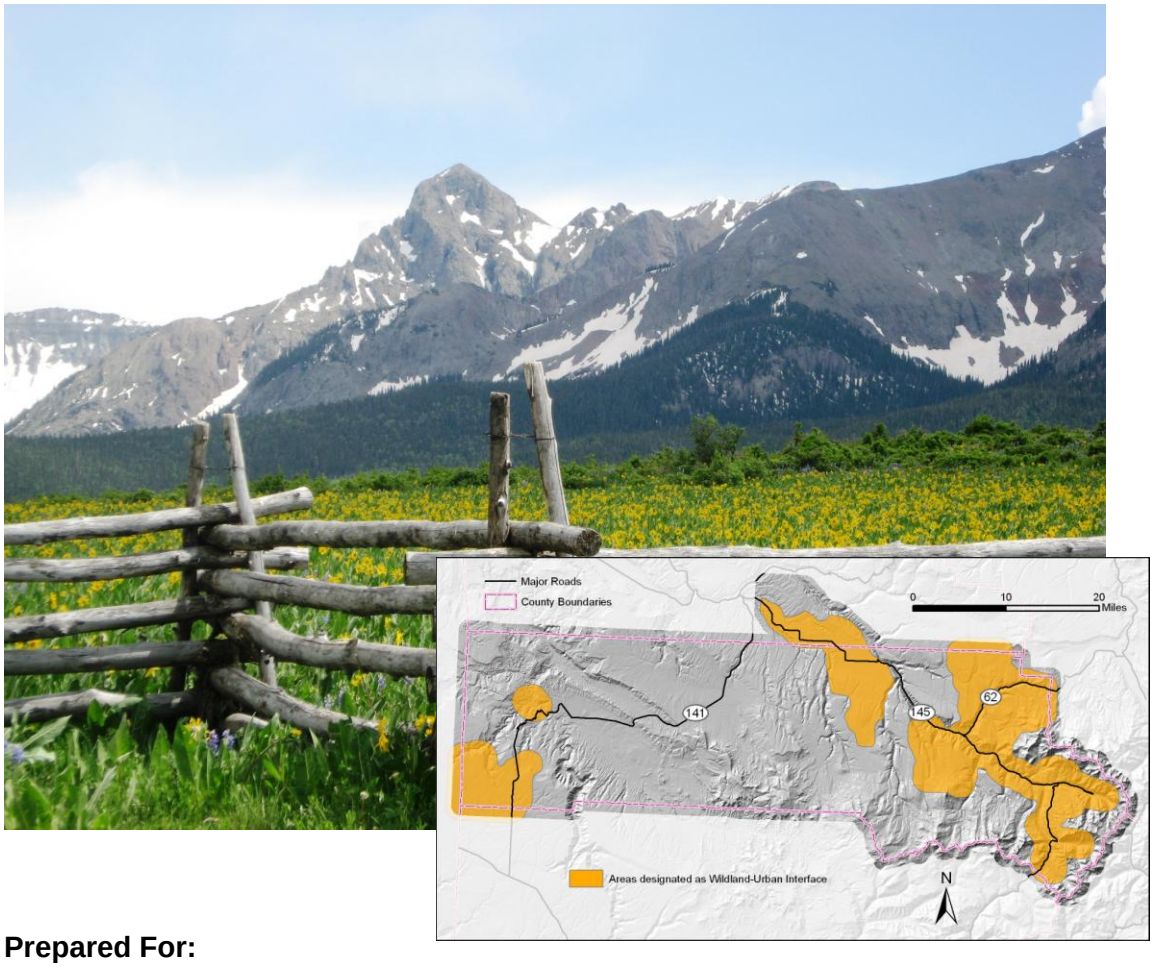
SAN MIGUEL COUNTY, COLORADO

Community Wildfire Protection Plan



Prepared For:
San Miguel County
Colorado

Submitted By:
Anchor Point Group
Boulder, Colorado
January, 2009

ANCHOR POINT
FIRE MANAGEMENT

TABLE OF CONTENTS

TABLE OF FIGURES

INDEX OF TABLES

PURPOSE

This document has the following primary purposes:

1. Provide a comprehensive, scientifically-based analysis of wildfire related hazards and risks in the Wildland-Urban Interface (WUI) areas of San Miguel County and a portion of Montrose County within the Norwood Fire Protection District.
2. Using the results of the analysis, generate recommendations designed to prevent and/or reduce the damage associated with wildfire to values in the study area.
3. Create a Community Wildfire Protection Plan (CWPP) document that conforms to the standards for CWPPs established by the Healthy Forest Restoration Act (HFRA) and the Colorado State Forest Service.
4. This plan will complement local agreements and existing plans for wildfire protection and aid in implementing a seamless, coordinated effort in determining appropriate fire management actions in the study area.

INTRODUCTION

San Miguel County CWPP 2008 (SMC CWPP) is the result of a County-wide planning effort that included extensive field data gathering, compilation of existing documents and GIS data, and scientifically-based analyses to guide recommendations designed to reduce the threat of wildfire related damages to values at risk. This document incorporates new and existing information (San Miguel County Fire Plan and the All Hazards Plan from 2005) relating to wildfire, which will be valuable to citizens, policy makers, and public agencies in San Miguel County, Colorado. This document meets the requirements of the federal Healthy Forest Restoration Act and CSFS guidelines of 2003 for community fire planning.

The assessment portion of this document estimates the hazards and risks associated with wildland fire in proximity to WUI areas. This information, in conjunction with identification of the values at risk, defines “areas of concern” and allows for prioritization of mitigation efforts. From the analysis of this data, solutions and mitigation recommendations are offered that will aid homeowners, land managers, and other interested parties in developing short-term and long-term fuels and fire management efforts.

Wildfire hazard data is derived both from the Community Wildfire Hazard Rating system (WHR) and from the analysis of Fire Behavior Potential, which are extensive and/or technical in nature. For the convenience of residents in the study area, each community’s detailed analysis and recommendations can be found in the main report. Detailed findings and technical analyses of interest are included in appendices rather than the main report text. This approach is designed to make the plan more readable, while establishing a reference source for those interested in the technical elements of the SMC CWPP wildfire hazard and risk assessment.

It should be noted that this CWPP is a “living document” that is only useful if it is updated annually. The current stakeholder organizations listed on page four will be primarily responsible for compiling and printing updates to the master copy, with the data being supplied by the fire chiefs or interested community leaders (e.g., HOA presidents, town managers).

For the purposes of this report the following definitions apply:

Risk is considered to be the likelihood of an ignition occurrence. This is primarily determined by the fire and ignition history of the area.

Hazard is the combination of the WHR ratings of the Wildland-Urban Interface (WUI) neighborhoods and the analysis of Fire Behavior Potential, as modeled from the fuels, weather, and topography of the study area. Hazard attempts to quantify the severity of undesirable fire outcomes to the values at risk.

Values at risk are the intrinsic values identified by citizens as being important to the way of life in the study area (e.g., life safety, property conservation, access to recreation, and wildlife habitat).

THE NATIONAL FIRE PLAN AND THE HEALTHY FOREST RESTORATION ACT

In the year 2000, more than eight million acres burned across the United States, marking one of the most devastating wildfire seasons in American history. One high-profile incident, the Cerro Grande fire at Los Alamos, NM, destroyed more than 235 structures and threatened the Department of Energy's nuclear research facility.

Two reports addressing federal wildland fire management were initiated after the 2000 fire season. The first report, prepared by a federal interagency group, was titled "Review and Update of the 1995 Federal Wildland Fire Management Policy" (2001). This report concluded, among other points, that the condition of America's forests had continued to deteriorate.

The second report, titled "Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000," was issued by the Bureau of Land Management (BLM) and the United States Department of Agriculture Forest Service (USFS). It became known as the National Fire Plan (NFP). This report, and the ensuing congressional appropriations, ultimately required actions to:

- Respond to severe fires
- Reduce the impacts of fire on rural communities and the environment
- Ensure sufficient firefighting resources

Congress increased its specific appropriations to accomplish these goals. 2002 was another severe season: more than 1,200 homes were destroyed and over seven million acres burned. In response to public pressure, congress and the Bush administration continued to designate funds specifically for actionable items such as preparedness and suppression. That same year, the Bush administration announced the HFRA initiative, which enhanced measures to restore forest and rangeland health and reduce the risk of catastrophic wildfires. In 2003, that act was signed into law.

Through these watershed pieces of legislation, Congress continues to appropriate specific funding to address five main sub-categories: preparedness, suppression, reduction of hazardous fuels, burned-area rehabilitation, and state and local assistance to firefighters. The general concepts of the NFP blended well with the established need for community wildfire protection in the study area. The spirit of the NFP is reflected in the SMC CWPP.

This CWPP meets the requirements of HFRA by:

1. Identifying and prioritizing fuels reduction opportunities across the landscape
2. Making recommendations to reduce structural ignitibility
3. Assessing community fire suppression capabilities
4. Collaborating with stakeholders

GOALS AND OBJECTIVES

Goals for this project include the following:

A. Enhance life safety for residents and responders.
B. Mitigate undesirable fire outcomes to property and infrastructure.
C. Mitigate undesirable fire outcomes to the environment, watersheds, and quality of life.

To accomplish these goals, the following objectives have been identified:

1. Establish an approximate level of risk (the likelihood of a significant wildfire event in the study area).
2. Provide a scientific analysis of the fire behavior potential of the study area.
3. Group neighborhoods into “communities” that represent relatively similar hazard management needs.
4. Identify and quantify factors that limit (mitigate) undesirable fire effects on the values at risk (hazard levels).
5. Recommend and prioritize specific actions that will reduce hazards associated with the values at risk.

OTHER DESIRED OUTCOMES

- Promote community awareness: Quantifying the community's hazards and risk from wildfire will facilitate public awareness and assist in creating public action to mitigate the defined hazards.
- Improve wildfire prevention through education: Community awareness, combined with education, will help to reduce the risk of unplanned human ignitions.
- Facilitate and prioritize appropriate hazardous fuel reductions: Organizing and prioritizing hazard mitigation actions will provide stakeholders with social and fire-management perspectives, allowing them to make better decisions about future efforts.
- Promote improved levels of response: The identification of areas of concern will improve the focus and accuracy of pre-planning, and facilitate the implementation of cross-boundary, multi-jurisdictional projects.

COLLABORATION: COMMUNITY/AGENCIES/COUNCILS

Many people have been involved in the development of this plan. The names of the core team representatives involved in the development of the San Miguel County CWPP are included in **Table 1**, along with their organizations and various roles and responsibilities. For more information on the collaborative process that led to the development of this CWPP, see **Appendix C, *CWPP Collaborative Effort*.**

Table 1. CWPP Core Development Team

Name	Organization	Roles / Responsibilities
Jennifer Dinsmore Chief Administrative Officer Emergency Manager	San Miguel County	Contract officer/Project liaison. Overall coordination of project logistics, finances and planning.
John Cheroske	Telluride Fire Protection District	Local information and expertise, including community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas..
Ted Mueller	Norwood/Redvale Fire Protection District	Local information and expertise, including community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas.
Ralph Sublett, Don Ayers	Egnar/Slickrock Fire Protection District	Local information and expertise, including community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas.
Jodi Rist, Vince Urbina	Colorado State Forest Service	Facilitation of planning process and approval of CWPP minimum standards. Provides input and expertise on forestry, fire and fuels, and FireWise concepts to private landowners.
Maggie McCaffrey	BLM Montrose	Input and expertise on existing and planned projects on adjacent federal lands.
Rod Moraga, Fire Behavior Analyst Chris White, Structure Protection Specialist Mark McLean, GIS Project Manager	Anchor Point Group LLC Consultants	Development of the CWPP document. Scientific analysis of fire behavior, community hazard and risk. Development of hazard mitigation actions and priorities. Establishment of fuels treatment project areas.

STUDY AREA OVERVIEW: MAPS & GRAPHICS

The study area includes all of San Miguel county and the portion of the Norwood FPD that extends into Montrose County. 30 individual “communities” were defined within the study area. The aggregate of these communities and the Wildland-Urban Interface (WUI) buffer surrounding them make up the WUI area of San Miguel County. For general reference, please see **Figures 2** and **3** on the following pages.

Other areas of the county contain flammable vegetation but have very limited infrastructure and development. In those areas, the WUI exists only to the extent that an individual structure is surrounded by wildland. In these cases there is no true community, nor, therefore, relevance to this CWPP. Individual homes and ranches not within a defined community are encouraged to implement the general recommendations for wildland fire protection in the **Home Mitigation** section, which begins on page 49.

As a reference for the rest of this document, please also refer to **Figures 4** and **5**, which show general topography. These maps of the slopes and elevations in the study area present information that is integral to wildfire risk analysis; they will therefore be helpful in interpreting this report.

See **Figure 1** on the next page for an overview of ownership throughout the county.

This page intentionally left blank.

Figure 1. San Miguel County Ownership

Figure 2. General Reference Map

Figure 3. SMC Areas Designated as Wildland-Urban Interface

Figure 4. San Miguel County Slopes

Figure 5. San Miguel County Elevations

This page intentionally left blank.

VALUES

This document incorporates content from the San Miguel Fire Plan, completed in 2005. The Values section that follows is taken from that plan, with minor editorial changes made for readability.

The Wildland-Urban Interface (WUI) is described as the area where structures and other features of human development meet and intermingle with undeveloped wildland or vegetative fuels. These human developments include communities and infrastructure such as power, gas and telephone lines. Communities within WUI risk substantial threats to life, property and infrastructure. Wildland fire within WUI is one of the most dangerous and complicated situations firefighters can face.

San Miguel County experienced 80.5% population growth since 1990.[1] The majority of the development and growth has been in the East County region, primarily in the box canyon formed by the San Miguel River where the town of Telluride lies. The nature of this dramatic and scenic steep sided valley has resulted in focused development pressures since the late 1980's. While there is significant growth within the San Miguel County, the County is managing growth so as not to increase vulnerability to hazards.

Additional details on projected growth and development, and growth management can be found in the Telluride Regional Area Master Plan and San Miguel County Comprehensive Development Plan. The limited availability of private land, overall remoteness of the County, presence of the Telluride Ski Resort and scenic splendor has led to a higher than normal cost of living in the Telluride Regional Area. This has contributed to an increase in the number of commuters that live outside the region. Many commute to work in Telluride over mountain passes from neighboring Ouray, Montrose, and Dolores Counties.

Analyzing Development Trends
Growth pressures, Telluride Regional area cost of living, and the desire to live in forested areas are spurring in growth in the wildland/urban interface in eastern San Miguel County and in other Colorado Counties. More structures in the woods put more people and property at risk to wildfires. San Miguel County is extremely concerned about wildfires and has initiated aggressive efforts to inform property owners of the risks, and what they can do to mitigate impacts.

[1] State of Colorado Natural Hazards Mitigation Plan, 2004

CURRENT RISK SITUATION

The following is also taken from the 2005 San Miguel Fire plan. Risk is based on the analysis of the following factors:

Past Occurrences
The 2002 wildfire season in Colorado was the worst on record. It began in April and continued until early fall, with the peak activity in June and July when several large and damaging fires burned simultaneously across the state. Southwest Colorado had its share of fires and close calls. Most damaging was the Missionary Ridge fire in nearby La Plata County that resulted in 70,485 acres burned, 12 structures lost, and 52 injuries.

San Miguel County was not spared in 2002. The West Beaver Fire began June 21 and was contained on July 1st. Lightning ignited the fire on the forested east slope of Lone Cone Mountain and consumed 580 acres. The cost of fighting the fire was $1.5 million. The Burn Canyon fire was started by lightning on July 7th in the Uncompahgre National Forest about six miles southwest of Norwood. The fire consumed 31,300 acres of forest and injured 9 persons. This fire was the largest naturally caused fire in Colorado's recent history. The cost of fighting the fire was $35.3 million. Several structures were threatened and residences in the community of Redvale were evacuated. Fortunately no structures were lost. Colorado received FEMA Fire Suppression Assistance/Fire Management Assistance for this fire.

Recent Fires are listed in **Table 2** on the next page.

Photos from the 2002 Burn Canyon Fire are shown in **Figure 6** on the page 16.

Figure 7 on page 17 shows the historic fire perimeters for San Miguel County.

RECENT FIRES IN SAN MIGUEL COUNTY

Table 2. Recent Fires in San Miguel County[2]

NAME	DATE	LOCATION	IMPACTS	CAUSE
West Beaver Fire	June 22, 2002	15 miles west of Telluride near Lone Cone Mountain.	Acres burned: 580 Structures lost: 0 Injuries: 1 Cost: $1.5 m	Lightning
Burn Canyon Fire	July 9, 2002	About six miles southwest of Norwood in the Uncompahgre National Forest.	Acres burned: 31,300 Injuries: 2 Cost: $35.3 m	Lightning
Beaver Fire	July 5, 2003	9 miles southwest of Placerville	Acres burned: 165	Lighting
Alta Lakes Fire	July 10, 2003	Alta Lakes 4 mi SW of Telluride	Acres burned: 120 Cost: $307,000	Human
Hamilton Mesa Fire	July 19, 2003	Hamilton Mesa	Acres burned: 2,064 Cost: $290,000 Structures Threatened: 3	Lightning
Craig Draw Fire	July 17, 2005	Craig Draw	Acres burned: TBD Cost: $3 million	Lightning

[2] Table taken from 2005 San Miguel Fire Plan

Figure 6. Burn Canyon Fire, 2002 (Assorted Photos)[3]

[3] Photos courtesy of San Miguel County Sheriff's Office

Figure 7. Historic Fire Perimeters

This page intentionally left blank.

The following three paragraphs are taken from the 2005 San Miguel Fire Plan.

Based on the statewide mid-level wildfire assessment performed in 1999 by the Colorado State Forest Service and Office of Emergency Management, San Miguel County has approximately 173,351 acres classified as moderate to high hazard, or 21% of the County.

The lack of fire protection districts, application of building codes, and resulting lack of insurance in the West End of the County puts new housing there at higher risk. In the Telluride Fire Protection District, some homeowners association's covenants do not allow for the creation of defensible space, and some even recommend cedar shake roofing, which is highly flammable and is strongly discouraged in WUI communities.

Lightning

Lightning poses a serious risk to people who pursue outdoor recreational activities, particularly in the Ophir/Telluride High Country Region and to agricultural and other field workers in the West End of the County. Lightning can also cause damage to buildings and is a frequent cause of wildfires. Lightning usually occurs during the thunderstorm season during June through September. The High Country Region experiences frequent lightning storms in the summertime.

Figure 8 below shows a federal land data set of ignition causes. Lighting is a significant cause of historic fire starts. Fuels reduction for any community adjacent to historic lightning events was therefore given a high priority rating. Additionally, campfires and human caused fires will continue to pose a threat. Fire awareness signage has been recommended throughout the study area to help limit human caused ignitions. It should be noted that the lack of ignitions on the west side of the county are reporting failures; the graphic displays only the ignition information that has been reported.

This page intentionally left blank.

Figure 8. SMC Ignition Causes

This page intentionally left blank.

FIRE REGIME CONDITION CLASS

Fire Regime Condition Class (FRCC) is a landscape evaluation of expected fire behavior as it relates to the departure from historic norms. FRCC is derived by comparing current conditions with some estimate of the historical range that existed prior to substantial settlement by Europeans. The condition class concept assumes that historical fire regimes accurately represent the conditions under which the ecosystem components within a fire-adapted ecosystem naturally evolved.

If fire intervals and/or fire severity have changed from the historical conditions, one would expect fire size, intensity, and burn patterns to consequently be altered in the event of a fire. Furthermore, if these basic fire characteristics have changed, a negative impact on the ecosystem components that had adapted to historical fire regimes is likely.

In this case, a severe fire could result in the loss of key ecosystem components such as soil, vegetation structure, and animal species; it could also alter key ecosystem processes such as nutrient cycles and hydrologic regimes. Consequently, the FRCC represents an index of hazards to key ecosystem components (e.g., soil productivity, water quality, floral and faunal species, large-diameter trees, snags, etc.) that have an impact on the overall health and desirability of a given wildland area.[4]

FRCC should not be confused with BEHAVE or FlamMap fire behavior models (detailed in the fire behavior section of this report), which instead provide the fire behavior potential analysis for expected flame length, rate of spread, and crown fire development. FRCC helps to predict the potential for negative consequences to the ecosystem by indicating the probability that key ecosystem components would be lost if a fire were to occur within the study area.

Table 3 on the next page shows the three categories of condition class used to qualitatively rank the potential of effects to key ecosystem components.

Figure 9 on the following page displays the return interval and condition class of the study area.

[4] Fire Regime Condition Class, website, http://www.frcc.gov/, July 2005.

Table 3. Condition Class Descriptions

Condition Class	Condition Class Description
1	Fire regimes are within their historical range, and the risk of losing key ecosystem components as a result of wildfire is low. Vegetation attributes (species composition and structure) are intact and functioning within a historical range. Fire effects would be similar to those expected under historic fire regimes.
2	Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components as a result of wildfire is moderate. Fire frequencies have changed by one or more fire-return intervals (either increased or decreased). Vegetation attributes have been moderately altered from their historical range. Consequently, wildfires would likely be larger, more intense, more severe, and have altered burn patterns than that expected under historic fire regimes.
3	Fire regimes have changed substantially from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have changed by two or more fire-return intervals. Vegetation attributes have been significantly altered from their historical range. Consequently, wildfires would likely be larger, more intense, and have altered burn patterns from those expected under historic fire regimes.

The analysis shown in Figure 9 below indicates that many of the Pinyon-Juniper forests in the study area fall into Condition Classes (CC) 2 and 3. This classification is supported by the volatile fire behavior that is seen in these stands. There is a high percentage of decadent wood in the trees that contribute to high intensity fires. The higher elevation forests are still within their historical range (CC 1) and are therefore less susceptible to more intense fires on a large scale. This does not mean that areas in CC 1 won't burn; it simply means that a fire in CC 1 is less likely to cause significant ecological damage. However, beetle kill can alter fire behavior by creating large areas of standing dead trees with red needles that easily ignite and spread fire into unaffected stands, thus creating, even within CC 1, the potential for large-scale damage from fire.

Figure 9. SMC Fire Regime and Condition Class

This page intentionally left blank.

HAZARD ANALYSIS

The hazard section of this document is the result of a detailed fire behavior analysis performed on the study area. The complete findings of this study can be found in **Appendix A**. The findings of the analysis have been mapped, and the maps should be combined with the WHR and values at risk information to generate current and future "areas of concern." This process will produce information that is for prioritizing mitigation actions.

FIRE BEHAVIOR MODELING LIMITATIONS AND INTERPRETATION

This evaluation is a prediction of likely fire behavior, given a standardized set of conditions and a single point-source ignition in every cell (each 30 x 30 meter area). It does not consider cumulative impacts of increased fire intensity over time and space. The model does not calculate the probability that a wildfire will occur. It assumes an ignition occurrence for every cell. These calculations may be conservative (under-predict) compared to observed fire behavior.

This model can be conceptually overlaid with the Community Wildfire Hazard Ratings (WHR) or other values at risk identification to generate current and future "areas of concern," which are useful for prioritizing mitigation actions. This is sometimes referred to as a "values layer."

However, the minimum mapping unit used for fire behavior modeling is one acre, so fine-scale fire behavior and effects are not considered in the model. Additionally, weather conditions are extremely variable, and not all combinations are accounted for. The fire behavior prediction maps are best used for pre-planning and not as a stand-alone product for tactical planning. If this information is used for tactical planning, fire behavior calculations should be done with actual weather observations during the fire event. For greatest accuracy, the most current Energy Release Component (ERC) values should be calculated and distributed during the fire season to be used as a guideline for fire behavior potential.

FIRE WEATHER AND FUEL MOISTURE

The fire behavior potential maps which follow are generated according to two categories of burning conditions – moderate and extreme. The moderate burning conditions maps (**Figures 10** and **12**) were generated with FlamMap 3.0 fire behavior modeling software (see **Glossary**). Weather observations from two Remote Automated Weather Station (RAWS) sites were used to derive relevant wind and fuel moisture variables for inclusion in FlamMap. The moderate conditions class (90th percentile) was calculated for each variable (1 hour, 10 hour, and 100 hour fuel moisture, woody fuel moisture, herbaceous fuel moisture, and wind speed) using the Fire Family Plus (see **Glossary**) computer software package. This weather condition class most closely represents an average fire season day.

The extreme conditions maps (**Figures 11** and **13**) were calculated using 97th percentile weather data. This means that the weather conditions of the most severe fire weather days (sorted by Spread Component) in each season. It is reasonable to assume that similar conditions may exist on at least three to five days of the fire season during an average year. In fact, during extreme years such conditions may exist for significantly longer periods. Even these calculations may be conservative compared to observed fire behavior. For a more complete discussion of the fire behavior potential methodology, see **Appendix A**.

FLAME LENGTH

Flame length is a particularly useful output because it can be used as a proxy for fire intensity. Note that flame length is not measured vertically; it is instead considered to be the entire distance from the base of the flame to the tip, irrespective of angle, and not simply the flame height above the ground. It is possible in high wind conditions to have very intense flames (high flame lengths) which are in fact relatively close to the fuel bed. **Figures 10** and **11** display the flame length predictions for the two weather scenarios described above.

The legend boxes in these figures give flame length in ranges which are meaningful to firefighters. Flame lengths of 4 feet and less are deemed low enough intensity to be suitable for direct attack by hand crews, and therefore represent the best chances of direct extinguishment and control. Flame lengths of less than 8 feet are suitable for direct attack by equipment such as bulldozers and tractor plows. Flame lengths of 8 to 12 feet are usually attacked by indirect methods and aircraft. In conditions where flame lengths exceed 12 feet, the most effective tactics are fuel consumption ahead of the fire by burnouts, or mechanical methods. Although indirect fire line and aerial attack are also used for fires with flame lengths of greater than 12 feet, the effectiveness of these tactics decrease as flame lengths increase, so their use is generally designed to slow rates of spread and reduce fire intensity, especially in areas where values at risk are concentrated.

Under moderate burning conditions, the model predicts that fires in many of the populated portions of the WUI could be attacked directly by either hand crews or equipment. However, it is important to note there is no significant transition zone between low flame lengths and high/extreme flame lengths. In areas where shrub fuels could become the primary carrier of the fire, firefighters should expect sporadic but significant increases in flame lengths and fire line intensity, as pockets of heavier fuels are consumed. Suppression resources working in shrub fuels or shrub fuels with a timber overstory should be alert to these increases and be prepared to disengage and employ alternative tactics to direct attack.

Under extreme burning conditions, high to extreme flame lengths are predicted in many of the areas where the WUI communities are found. Throughout the interface communities, the predicted flame lengths indicate that fires are likely to be too intense for direct attack by hand crews. However, hand crews would be vital for structure preparation, triage, and the construction of indirect fire line. Under extreme weather and fuel moisture conditions, the combination of high rates of spread and high fire intensity in many of the WUI communities will most likely make fire control difficult to establish and maintain.

Figure 10. Flame Length Predictions (Moderate Burning Conditions)

Figure 11. Flame Length Predictions (Extreme Burning Conditions)

RATE OF SPREAD

Figures 12 and **13** show the predicted rates of spread for the moderate fire weather and extreme fire weather scenarios, respectively. Rates of spread are expressed in chains/hour (CPH). A chain is a unit of measure commonly used by loggers and firefighters. It is equal to 66 feet. Therefore, one mile equals 80 chains. Rates of fire spread are influenced primarily by the wind, slope grade, fuel type/continuity, and fuel sheltering from the wind. Fire is the only force of nature which moves faster uphill than downhill. In areas where high to extreme rates of spread are predicted (ROS of >40 CPH or ½ mile per hour) it is possible fires could spread faster than humans can escape, creating extremely dangerous conditions for firefighters and evacuating residents. High rates of spread also make suppression efforts less effective and increase the tactical complexity of the incident.

In the moderate fire weather scenario, low to moderate rates of spread are predicted throughout the study area. However, there are pockets in all of the interface communities where higher (>80 CHP) rates of spread are expected, due to the dominance of continuous grass fuels and the lack of sheltering from the wind. Even under moderate burning conditions, firefighters should expect rates of spread to increase by as much as double in unsheltered areas where there is a continuous bed of fine fuels.

In the extreme fire weather scenario, high to extreme rates of spread will be encountered in all of the communities of the study area. Under extreme burning conditions, control efforts will be more difficult, and suppression tactics will need to be implemented further ahead of the fire. Firefighter safety will be an important consideration in planning suppression tactics as crews and apparatus could become over run or cut off easily by these fast-moving fires.

This page intentionally left blank.

Figure 12. Rate of Spread (Moderate Burning Conditions)

Figure 13. Rate of Spread (Extreme Burning Conditions)

CROWN FIRE ACTIVITY

In terms of crown fire activity, the outputs for moderate and extreme conditions were not significantly different. There are several reasons for this. The east side of the county had much lighter winds in both moderate and extreme conditions. Since most of the area is FM 8, 9 and 10, it is very sheltered from the wind. A 20 ft. wind of 12 mph will be reduced to 2-4 mph at mid-flame under the sheltering of the forest. The other issue is a limitation of the model. Shrub fuels (FM 5 and 6) will not technically crown. However, from a practical standpoint, the shrub fuels (Pinyon-Juniper and sage) in the study area could, under extreme burning conditions, exhibit runs that fully engulf continuous areas of plants and move across and above the canopy. It is best to use the flame length and rate of spread outputs to look at expected fire behavior for these fuels.

It can also be assumed that flame lengths of 12 feet or greater will torch trees. In areas where stringers or patches of trees exist there is a potential for small crown runs (group torching). Individual and group tree torching could be a significant problem for suppression resources, especially in high-density communities where torching could contribute significantly to structure damage and loss.

Figures 14 and **15** on the following pages display SMC crown fire data graphically.

This page intentionally left blank.

Figure 14. Crown Fire (Moderate Burning Conditions)

Figure 15. Crown Fire (Extreme Burning Conditions)

NEIGHBORHOOD IGNITABILITY ANALYSIS AND RECOMMENDATIONS

PURPOSE

The purpose of this section is to examine in greater detail the communities in San Miguel County, and to specifically address the issue of structural ignitibility, as mandated by HRFA. Communities in the study area were rated for hazard and risk – that is, the likelihood and severity of fire outcomes (fire effects) that result in damage to people, property, and/or the environment. Construction type, condition, age, position, and the fuel loading surrounding the structure are contributing factors in making homes more susceptible to ignition. Community hazard ratings are also influenced by factors related to the likelihood of rapid fire growth and spread due to fast-burning or flashy fuel components, and other topographic features contributing to channeling winds and promotion of intense fire behavior.

30 WUI communities were identified in this study, which represents an increase from the 2005 San Miguel Fire Plan. The increase in number is due to the more detailed analysis that generated this report. Of the 30 WUI communities in San Miguel County, two were found to represent an Extreme Hazard, five were rated Very High, six were rated High, nine were rated Moderate, and eight were rated Low.

Table 4 on the next page will allow for quick identification of a particular community's hazard rating.

Figures 16 and **17** on the following pages are color-coded maps of the WUI communities in the study area.

General recommendations applicable to any community situated in the Wildland-Urban Interface have been included at the beginning of this section, followed by specific recommendations for each community in the study area.

The recommendations are focused on fire mitigation techniques. The prescriptions are written with the guidance of sound forest management practices. The size and scope of the prescriptions are not large enough to have any major impact on ecosystems. It is recommended that when it is time to implement the prescriptions, a more extensive study be done to look at the health of the entire forest stand. The prescriptions can be modified to transition from mitigation to forest health treatments as they move away from the WUI.

Table 4. County-wide Hazard/Risk Ratings

Community Name	Fire Protection District	Hazard Rating
Aldasoro	Telluride	Low
County Line Road (Egnar)	Egnar/Slick Rock	Low
Egnar	Egnar/Slick Rock	Low
Norwood Agricultural Area	Norwood	Low
Ophir	Telluride	Low
San Bernardo/Priest Lake	Telluride	Low
Redvale	Norwood	Low
Slick Rock	Egnar/Slick Rock	Low
Egnar Agricultural Areas	Egnar/Slick Rock	Moderate
Gurley Lake Ranch	Norwood	Moderate
Hastings Mesa	Telluride	Moderate
Ilium Valley/Ames	Telluride	Moderate
Lower Mountain Village	Telluride	Moderate
Mountain View	Norwood	Moderate
Thunder Road	Norwood	Moderate
Two Rivers Subdivision	Telluride	Moderate
Telluride/Hillside	Telluride	Moderate
Miramonte Ranch	Norwood	High
Specie Mesa	Telluride	High
Iron/Mackenzie Springs	Telluride	High
Lower Valley	Telluride	High
Trout Lake	Telluride	High
Upper Mountain Village	Telluride	High
Beaver Pines	Norwood	Very High
Brown Ranch	Telluride	Very High
Fitts	Norwood	Very High
Lawson Hill	Telluride	Very High
Spud Patch	Egnar/Slick Rock	Very High
Deer Mesa	Norwood	Extreme
Mailbox	Norwood	Extreme

Figure 16. Norwood and Egnar Designated WUI Communities

Figure 17. Telluride Designated WUI Communities (Upper and Lower Valley)

GENERAL WILDFIRE SAFETY RECOMMENDATIONS

A combination of adequate access, ignition-resistant construction, and fuels management will help create a safer environment for emergency service personnel and citizens and will provide reasonable protection to structures from a wildfire. These techniques should also significantly reduce the chances of a structure fire becoming an ignition source to the surrounding wildlands.

ADDRESSING AND EVACUATION

Addressing

Almost all of the communities within the study area have some missing or inadequate street signage and/or addressing. For many homes, the only address marker is a homemade sign. These vary widely in type and location, and some cannot easily be identified as address markers. Many are not reflective and some are mounted in such a way that determining which driveway they belong to is difficult or impossible. In some communities, the street signs are flammable and non-reflective. For some homes, there is no address indicated at the house itself.

While residents may consider non-reflective wooden address signage to be decorative, it represents a serious hindrance to quick and effective response. Proper reflective signage is a critical operational need. Knowing at a glance the difference between a road and a driveway (and which houses are on the driveway) cuts down on errors and time wasted interpreting maps. This is especially true for out-of-district responders who do not have the opportunity to train on access issues specific to the response area. The value of the time saved, especially at night and in difficult conditions, cannot be overstated. It can make the difference between lives saved and lost.

RECOMMENDATIONS

- A program of replacing worn or difficult to read street signs was recommended in the 2005 CWPP and should continue to be implemented. Every intersection and street name change should have adequate, reflective signage.
- Multiple addressing on community driveways should be replaced with reflective markers that indicate the proper road fork, where applicable, for each address. This system should be repeated at every place where the driveway divides and an individual driveway leaves the community driveway.
- For each home, reflective markers should be placed where the driveway leaves an access road and on the house itself. These may be in addition to, or in place of, existing decorative address markers. Consistency in height and placement should be stressed.
- Lot markers and or address markers should be places when a building permit is issued for new construction. These should be replaced with permanent address markers as soon as the home has a certificate of occupancy.
- Where dead-end and private road markers occur, the addresses of homes beyond the marker should be clearly posted. This can be done with a group address marker, for example “14391-14393 Smith Road.”

Evacuation

The following information about evacuation and warning systems/plans was taken from the 2005 San Miguel Fire Plan.

Reverse 911

The County has implemented a Reverse 911 system to provide emergency notification to residents. The current stakeholder organizations listed on page four will be primarily responsible for compiling and printing updates. The Telephone Notification System (Reverse 911) may be activated by either the San Miguel County Dispatch Center or Montrose Dispatch. The system used a telephone database and stores telephone numbers and pre-planned groups who have been identified as being at high risk for hazards in the County. The Telephone Notification System allows dispatchers to pinpoint specific locations or general areas. A recording is broadcast to the affected area giving instructions on what to do. The Telephone Notification System is used when the authorities determine that a substantial risk exists.

Local Broadcast Media

The County also utilizes the EAS to broadcast warnings over local radio stations. The authority to initialize this utility lies with the incident commander and/or Sheriff. The request is made through the San Miguel Dispatch Center.

Wireless Emergency Notification System (WENS)

The county's Wireless Emergency Notification System (WENS) uses Short Message Service (SMS) communications to transmit warning messages to a citizen's cell phone, PDA and/or email. Warning messages may be completed through the dispatch centers via the web or from an authorized cell phone user.

This application allows local governments to stay in immediate contact with its citizens and allow them to be notified in the event of an emergency or wildfire event. This approach is much more valuable than typical email alerts because individuals are far more likely to have their cell phone or PDA with them rather than near their landline phone or being in front of their home computer.

PUBLIC EDUCATION

In a county as diverse as San Miguel, there is undoubtedly a varied understanding among property owners of the intrinsic hazards associated with living in a WUI area. In addition to community and emergency services efforts at risk reduction, an approach to wildfire education that emphasizes safety and hazard mitigation on an individual property level should be undertaken. Combining community values such as quality of life, property values, ecosystem protection, and wildlife habitat preservation with the hazard-reduction message will increase the receptiveness of the public.

A definitive shift to shared responsibility should be promoted. Homeowners must be made aware that fire suppression resources cannot be the only line of defense against wildland fires. Landowners and homeowners must take responsibility as key players in mitigation efforts. Defensible space planning, maintenance, ignition-resistant construction, and preventative landscaping techniques are critical to the mitigation of the loss of life and property during wildfire events.

The Telluride, Norwood and Egnar/Slickrock Fire Protection Districts, together with San Miguel County, conducted a Wildfire Mitigation Project in the fall of 2003 and spring of2004. The purposes of this project were:

- To assess structures with respect to access, materials and vegetation;
- To provide homeowners with specific information about how to make their homes less susceptible to wildfire;
- To make fighting fires safer for emergency personnel; and,
- To map structures and access in wildfire prone areas of the county.

The information collected has enabled firefighters, ambulances and Search & Rescue to locate structures more easily during an emergency. Firefighter safety has also been improved by providing information about local conditions and potential hazards.

The data collected was uploaded into a Geographic Information System. This system enables GIS personnel to provide maps to emergency service responders showing locations of structures threatened by fire or other disasters such as floods, mud slides, or severe winter storms. The results of this site survey were mailed to homeowners, providing information on how to mitigate wildfire hazard around their residence.

The remainder of this section, excluding the recommendations, was taken from the 2005 San Miguel Fire Plan.

Key Public Information

San Miguel County is comprised of 60 percent federal (BLM and USFS) lands, 2 percent state lands, and 38 percent private lands. The ownership pattern is largely interspersed parcels. In recent history, San Miguel County experienced a Type II fire, the Burn Canyon Fire in 2002 (30,292 acres). It also experienced multiple fire seasons with some level of fire restrictions.

San Miguel continues to grow in population within the Wildland-Urban Interface. The need exists to address wildland fire across jurisdictional boundaries. To that end, the following entities are working cooperatively to develop and implement a public information and education plan: San Miguel County Sheriff's Office, Telluride Fire District, Norwood Fire District, Egnar/Slickrock Fire Department, Colorado State Forest Service, Colorado Office of Emergency Management, Bureau of Land Management and US Forest Service.

In the event of a wildland fire in San Miguel County, the San Miguel Sheriff's Office (SMSO) will be updated daily on the status of the fire. For local fires the responsible jurisdiction will appoint an agency Public Information Officer. For fires that go into extended attack (Type I, II or III fires), upon arrival of sufficient dispatch personnel, SMSO dispatch may assign one deputy to the Montrose Interagency Dispatch Center or the Fire Information Center at the Incident Command Post (ICP) to serve as Communications/Public Information Officer for SMSO.

San Miguel County or the responsible jurisdiction will work closely with the fire information center in the Montrose Interagency Dispatch Center to coordinate fire information messages on all aspects of fire management, such as wildland fires, prescribed burns, and fire use fires.

Upon transition from local/state fire responsibility to an Incident Management Team and activation of an Incident Command Post (ICP), or by direction of the Sheriff for any fire event, San Miguel County Sheriff's Office (SMSO) shall establish an Information Hotline. The contact telephone number will be given to the local media for broadcast.

Additional information can be obtained at www.sanmiguelsheriff.com.

Homeowners may solicit wildfire education information through the San Miguel County Emergency Management Office. They may also be informed through the county and sheriff's office Web sites, electronic and other media, public meetings, and via Homeowner Association and/or neighborhood meetings. Consistent FireWise messages are desired through an interagency delivery system including the Sheriff, County emergency manager, and the local fire department. FireWise materials and presenters are available from the Colorado State Forest Service and other agency partners.

- www.csfs.colostate.edu/pages/wildfire.htm
- www.firewise.org
- www.firewise.org/co
- www.sanmiguelsheriff.com
- www.sanmiguelcounty.org
- www.telluridefire.com

Colorado State University Extension also has research-based Fact Sheets on Wildfire Mitigation and offers educational programs for the public.

- www.ext.colostate.edu/pubs/pubs.html#ag_wild

The FIREWISE organization is a national program sponsored by State and Federal forestry agencies. The FIREWISE program provides a web site, brochures and a recognition program for communities that have mitigated hazardous fuels and taken the steps necessary to reduce the threat of wildfire. This program offers a good framework to deliver Information and educational materials to homeowners. A combination of these and other resources should be used within San Miguel County to deliver the wildfire mitigation message.

RECOMMENDATIONS

- In addition to those listed above, use these web sites for a list of public education materials, and for general homeowner education:
    - http://www.fs.fed.us/fire/links/links_prevention.html
    - http://csfs.colostate.edu/pages/wf-protection.html
    - http://www.blm.gov/nifc/st/en/prog/fire/community_assistance.html

- Provide citizens with the findings of this study including:
    - Levels of risk and hazard
    - Values of fuels reduction programs
    - Consequences of inaction for the entire community

- Create a FireWise Council or similar WUI citizen advisory council to promote the message of shared responsibility. Too often, advice from government agencies can be construed as self-serving. Consequently, citizens may resist acting on this information. The FireWise Council should consist of local citizens, and its primary goals should be:
    - Bringing the concerns of the residents to the prioritization of mitigation actions
    - Selecting demonstration sites
    - Assisting with grant applications and awards

- Make use of regional and local media to promote wildfire public education messages in the fire districts.
- Develop a wildfire educational presentation explaining the concepts of defensible space and wildfire hazard mitigation. The information in this report should be incorporated into that presentation for the education of homeowners county-wide. This could be done through informational gatherings sponsored by the fire departments, Sheriff's Department Emergency Management, homeowners associations or neighborhood groups, such as local festivals, school events, times of extreme fire danger, and other times of heightened awareness concerning wildfire. It is far easier to bring the information to citizens than to bring citizens to the information, making this an especially powerful resource.
- Hire a Wildfire Mitigation Coordinator. The position should be designed to function as an inter-agency liaison between San Miguel County and the various local, state and federal partners with local interests in wildfire mitigation. The Wildfire Mitigation Coordinator would assist County staff and local fire protection districts in the coordination and implementation of wildland fire education programs, grant procurement, forest health management and fuels treatment management. The position would also be responsible for maintaining the Wildfire Safety Program and any plans that are currently in place, as well as coordinating updates to this CWPP.

LEGISLATIVE SUPPORT

MANAGING NEW DEVELOPMENT

Many areas of the District are platted but not developed. As more development occurs, it will be important to manage growth from a wildfire perspective.

Priority Level Moderate: The Fire District should work with the San Miguel County Building Department to discuss methods aimed at reducing structural ignitability in the event of a wildfire. The International Code Council Wildland-urban Interface Code may be considered in the future. This model code contains provisions addressing fire spread, accessibility, defensible space, water supply, and other information for buildings constructed near wildland areas.

For now, the fire district must work with landowners to educate them on how to create defensible space to protect their homes and communities. The fire district can use FireWise and fire prevention programs to encourage homeowners to voluntarily reduce their hazard and risk from wildfire.

The San Miguel County Annual Wildfire Operating Plan has been developed and implemented in San Miguel County. This annual operating plan (AOP) enables San Miguel County, local FPDs, CSFS, USFS, and BLM to set forth standard operating procedures, agree- upon policies, and responsibilities to implement cooperative wildland fire protection on all lands within San Miguel County. This AOP is revised and updated annually to provide detailed description of available resources/equipment and cooperative needs and commitments.

Town of Telluride Land Use Code
The purposes of the Telluride Land Use Code are to assure the proper and sensitive development of land within Telluride; to protect and enhance the quality of life in Town and its environs; and to establish a clear, consistent, predictable and efficient land development review process.

The regulations of the code that pertain to hazard mitigation are as follows:

1-103.G – Prevent Hazardous Development
Prevent development that creates or adds to existing geologic hazards, erosion, flooding, or other potential dangers to life and safety, or which detracts from the quality of life in the Town.

Mountain Village
Mountain Village has a Land Use Ordinance to guide development within the town limits. The town also has a CAD/GIS Office within the Building and Planning Department.

Norwood
Norwood has a Master Plan and Land Use Code to guide development within the town limits.

HOME MITIGATION

Community responsibility for self-protection from wildfire is essential. Educating homeowners is the first step in promoting shared responsibility. Part of the educational process is defining the hazard and risks both at the community level and the individual parcel level.

Communities in the study area were rated for hazard and risk – that is, the likelihood and severity of fire outcomes (fire effects) that result in damage to people, property, and/or the environment. Construction type, condition, age, the fuel loading of the structure/contents, and position are contributing factors in making homes more susceptible to ignition. Community hazard ratings are also influenced by factors related to the likelihood of rapid fire growth and spread due to fast-burning or flashy fuel components, and other topographic features contributing to channeling winds and promotion of intense fire behavior.

All communities that received a hazard level rating of Extreme, Very High, or High were recommended for a parcel-level analysis. In the Moderate level communities a parcel-level analysis was recommended only if the evaluator found that a significant number of homes had no, or ineffective, defensible space or a significant number of hazards near homes was detected. In short, the recommendation was made if the evaluator felt information gathered by a parcel-level analysis could be used to generate a noticeable improvement in the community's defensibility. See the next main section of this report, **Solutions and Mitigation by Fire Protection District**, for detailed information regarding individual community recommendations.

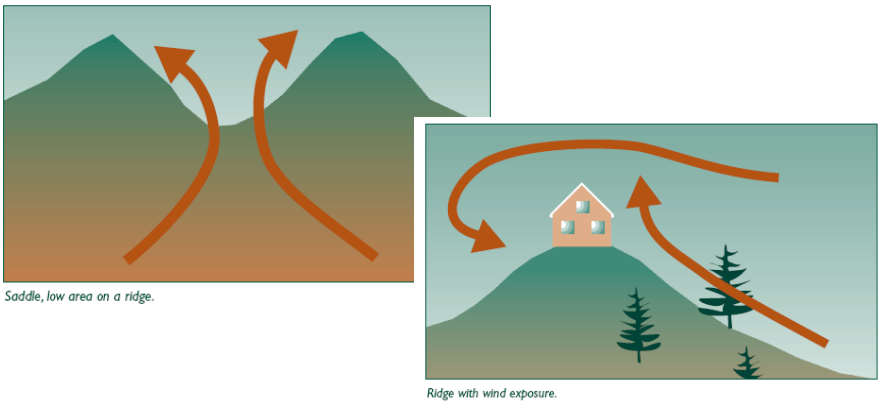
Note: Due to the nature of the area, scattered properties and ranches not related to a defined community most likely have hazard levels similar to homes within nearby communities that were evaluated for this CWPP. It will be important to prioritize parcel-level hazard surveys of these individual properties along with parcel-level surveys of the surrounding interface communities.

In addition to the recommendations listed for the individual communities, several general measures can be taken to improve fire safety. Ranches and small groups of homes that were not included in a community should follow these general recommendations (as well as anyone living in the Wildland-Urban Interface). In the following subsection, dedicated to Defensible Space Guidelines, a list of these general recommendations can be found.

DEFENSIBLE SPACE GUIDELINES

To improve life safety and preserve property, every home in the study area must have compliant, effective defensible space. This is especially important for homes with wood roofs and homes located on steep slopes, in chimneys, saddles, or near any other topographic feature that contributes to fire intensity. The following recommendations are intended to give homeowners enough information to immediately begin making their home fire-safe or improve existing home mitigation efforts. Defensible space must be maintained throughout the year.

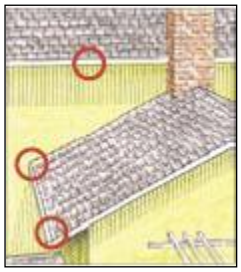
Figure 18. Saddle & Ridge Top Development[5]



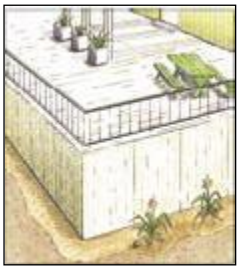
- Stay aware of the current fire danger in the area.
- Trees and shrubs should be properly thinned and pruned within the defensible space. Slash from the thinning should be disposed of properly.
- Attic, roof, eaves, and foundation vents should be screened and in good condition. Stilt foundations and decks should be enclosed, screened or walled up. Maintain and clean spark arresters on chimneys.
- Clean debris from your roof and gutters at least twice a year, especially during cure-up in autumn. Branches overhanging the roof and chimney must also be removed. Chimney screens should be in place and in good condition.
- Stack firewood uphill or on a side contour, at least 30 feet away from structures during the fire season.
- Don't store combustibles or firewood under decks.
- Propane tanks should be located at least 30’ from all structures. The area around the tank must be free of combustible material such as yard debris, weeds, etc.
- When possible, maintain an irrigated greenbelt around the home.
- Connect, and have available, a minimum of 50 feet of garden hose.
- Post reflective lot and/or house numbers so that they are clearly visible from the main road. Reflective numbers should also be visible on the structure itself.
- Trees along driveways should be limbed and thinned as necessary to maintain a minimum 13’6” vertical clearance for emergency vehicle access.

[5] *FireWise Construction*, Peter Slack, Boulder, CO

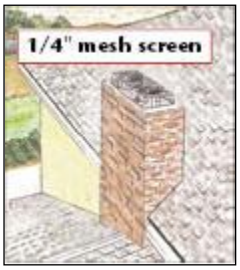
- Maintain your defensible space constantly:
    - Mow grass and weeds to a low height.
    - Remove any branches overhanging the roof or chimney.
    - Remove all trash, debris, and cuttings from the defensible space
- An outdoor water supply is available, complete with a hose and nozzle that can reach all parts of the house. Fire extinguishers are checked and in working condition. Hand tools such as shovels and rakes are easily accessible.
- Power poles have vegetation cleared away in a 5 foot radius.



Clean Gutters and Roof



Enclose Decks



Maintain Chimneys

Figure 19. Defensible Space Zones (Timber and Brush Lands)[6]

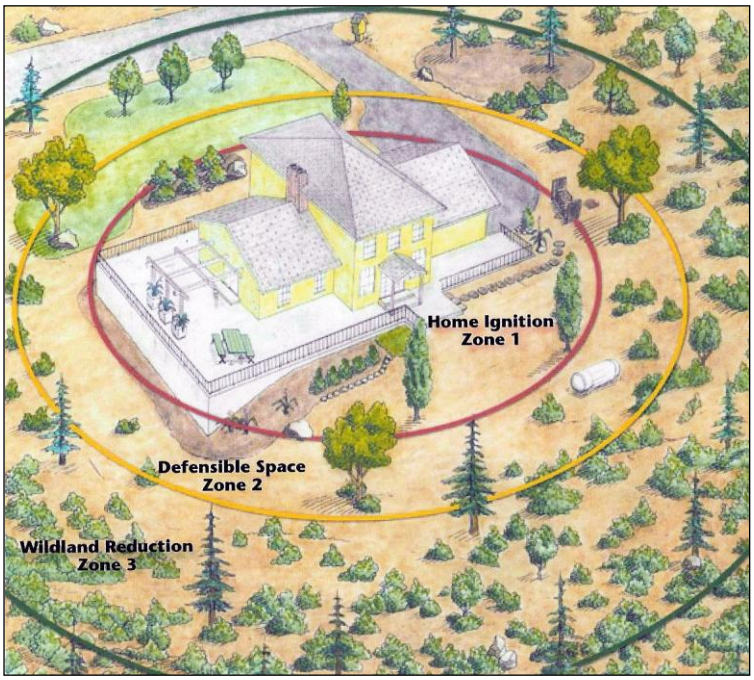
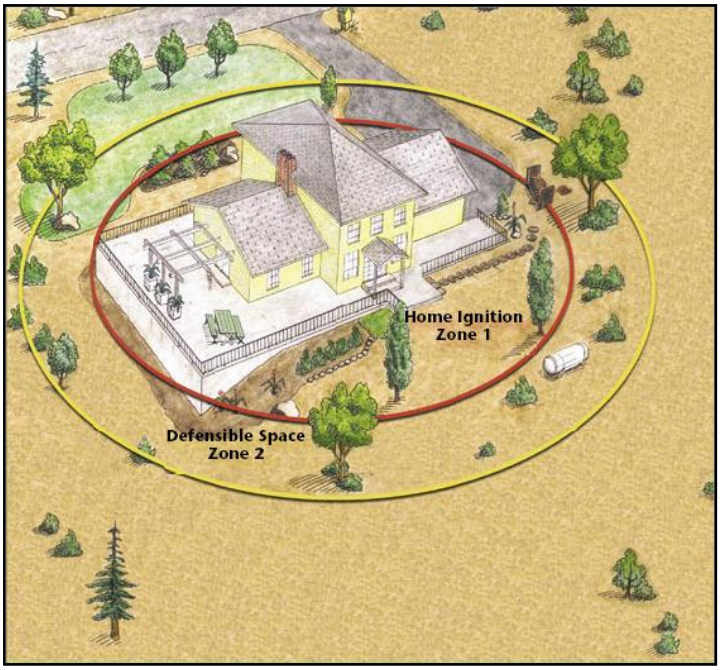


Figure 20. Defensible Space Zones (Agricultural/Grass Lands)[7]



ZONE 1 (within 15 feet of the home), shown as Home Ignition Zone, suggests eliminating all flammable materials (fire-prone vegetation, wood stacks, wood decking, patio furniture, umbrellas, etc.). Irrigated grass, rock gardens, non-flammable decking, or stone patios are desirable substitutions.

[6] A Homeowner's Guide to FireSafe Landscaping (2005), www.firesafecouncil.org, referenced 9/10/07
[7] *Ibid.*

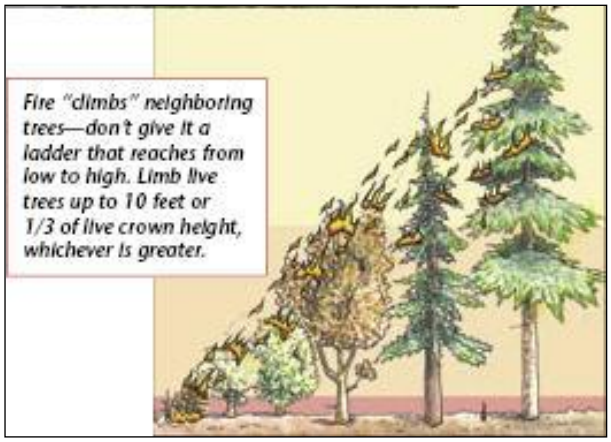
ZONE 2 Defensible Space (15 to 100 feet from the home – on steep slopes or areas of high winds the Defensible Space will need to be expanded to 150 feet) suggests thinning trees and large shrubs so there is at least 10 feet between tree tops (crowns). Crown separation is measured from the furthest branch of one tree to the nearest branch on the next tree. On steep slopes or areas subject to high winds, allow at least 1.5 times more space between tree crowns. Remove all ladder fuels from under these remaining trees. Prune all trees to a height of at least 10 feet, or 1/3 of the live crown height. Small clumps of 2 to 3 trees may be occasionally left but leave more space between the crowns of these clumps and surrounding trees. Isolated shrubs may remain, provided they are not under tree crowns. Remove dead stems from trees and shrubs annually. Where shrubs are the primary vegetation in Zone 2, refer to the "Brush and Shrubs" section below.[8]

ZONE 3 Wildland Reduction, aka Extended Defensible Space (beyond 100 feet), suggests a much more limited thinning and pruning to the standards in zone 2. The goal in this zone is to improve the health of the wildlands, which will also help to slow the approaching wildfire.

BRUSH AND SHRUBS

Brush and shrubs are smaller than trees, often formed by a number of vertical or semi-upright branches arising close to the ground. On nearly level ground (increase 1.5 times for slope and windy areas), minimum spacing recommendations between clumps of brush or shrubs is 2 1/2 times the height of the vegetation. Maximum diameter of clumps should be 2 times the height of the vegetation. All measurements are made from the edges of vegetation crowns.

For example: For shrubs 6 feet high, spacing between shrub clumps should be 15 feet or more apart (measured from the edges of the crowns of vegetation clumps). The diameter of shrub clumps should not exceed 12 feet (measured from the edges of the crowns). Branches should be pruned to a height of 3 feet.



Eliminate Ladder Fuels

Increase Defensible Space in Windy and Steep Areas

[8] http://www.ext.colostate.edu/PUBS/natres/06302.html, referenced 9/10/07

SOLUTIONS AND MITIGATION BY FIRE PROTECTION DISTRICT

COMMUNITY ASSESSMENT METHODOLOGY

The community level methodology for this assessment uses a Wildfire Hazard Rating (WHR) that was developed specifically to evaluate communities within the Wildland-urban Interface (WUI) for their relative wildfire hazard.[9] The WHR model combines physical infrastructure such as structure density and roads, and fire behavior components like fuels and topography, with the field experience and knowledge of wildland fire experts. It has been proven and refined by use in rating over 2,000 neighborhoods throughout the United States.

Many knowledgeable and experienced fire management professionals were queried about specific environmental and infrastructure factors, and wildfire behavior and hazards. Weightings within the model were established through these queries. The model was designed to be applicable throughout the western United States.

The model was developed from the perspective of performing structural triage on a threatened community in the path of an advancing wildfire with moderate fire behavior. The WHR survey and fuel model ground truthing are accomplished by field surveyors with WUI fire experience. The rating system assigns up to a maximum of 60 points based on seven categories: average lot size, slope, primary aspect, average fuel type, fuel continuity, dominant construction type and surface fuel loading. The higher the community scores, the lower its wildfire hazard. For example, a community with an average lot size of less than one acre and slopes of greater than 30% would receive 0 points for those factors, whereas a community with an average lot size of 5 acres and slopes of less than 15% would receive 16 points for the same factors. Additional hazards are then subtracted from the subtotal of points earned in the seven categories to give a final numeric value. The final value is then used to group communities into one of five hazard ratings: Extreme, Very High, High, Moderate, or Low. It is important to note that the position and numbering of the communities within each of these groupings should not be used as an indicator of relative hazard. The numeric rating score is not sufficiently precise to allow hazard sorting beyond the group adjective rating, and should not be used to draw conclusions about greater or lesser hazards among communities within a group.

After the initial hazard ratings are accepted by the stakeholder group, additional risk factors are considered for each community and a final Hazard rating is assigned. Risk factors can either raise or lower the final hazard rating.

It is important to note that not all groupings occur in every geographic region. There are some areas with no low hazard communities, just as there are some areas with no extreme hazard communities. The rankings are also related to what is customary for the area. For example, a high hazard area on the plains of Kansas may not look like a high hazard area in the Sierra Nevada. The system creates a relative ranking of community priorities in relation to the other communities in the study area. It is designed to be used by experienced wildland firefighters who have a familiarity with structural triage operations and fire behavior in the interface.

[9] C. White, “Community Wildfire Hazard Rating Form,” Wildfire Hazard Mitigation and Response Plan, Colorado State Forest Service, Ft. Collins, CO, 1986.

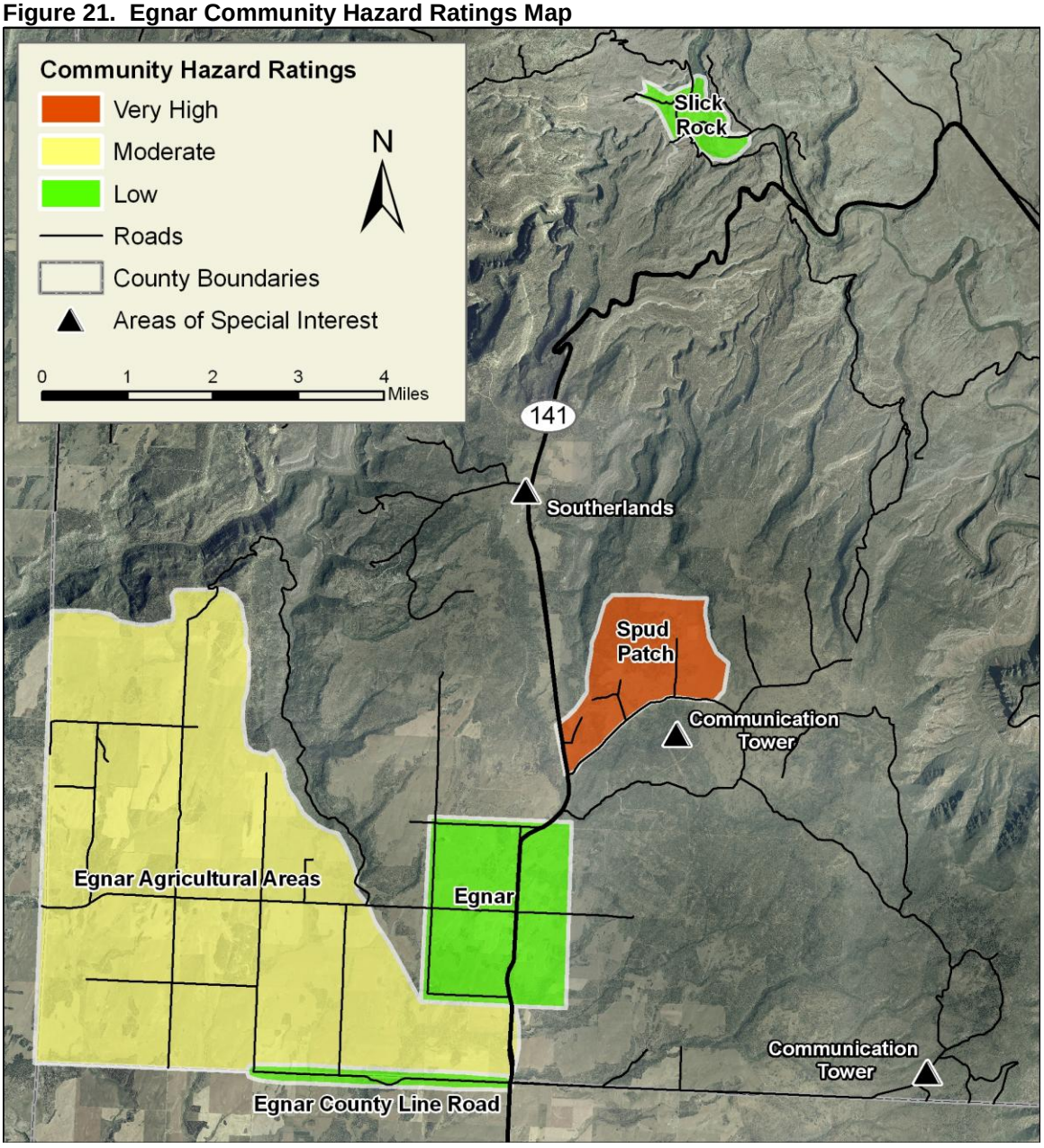
EGNAR/SLICKROCK FIRE PROTECTION DISTRICT

The Egnar/Slickrock area of San Miguel County is a rural area with mixed land use that includes communities on the edge of wildland fuels, and individual rural homes and farmsteads mixed in among agricultural land, rangeland and Conservation Reserve Program (CRP) lands, primarily planted in grass. Under extreme burning conditions and high winds many areas, especially CRP grass areas and Pinyon-Juniper (PJ) arroyos, have potential for rapid increases in fire intensity. These fires can quickly spread great distances due to high fuel loading and continuous fuels. These areas may also represent a high threat to life safety due to the likelihood of heavy smoke, heat and the potential to overwhelm the limited number of local suppression resources.

Table 5. Egnar Community Hazard/Risk Ratings

Community Name	Hazard Rating
Egnar	Low
County Line Road (Egnar)	Low
Slick Rock	Low
Egnar Agricultural Areas	Moderate
Spud Patch	Very High

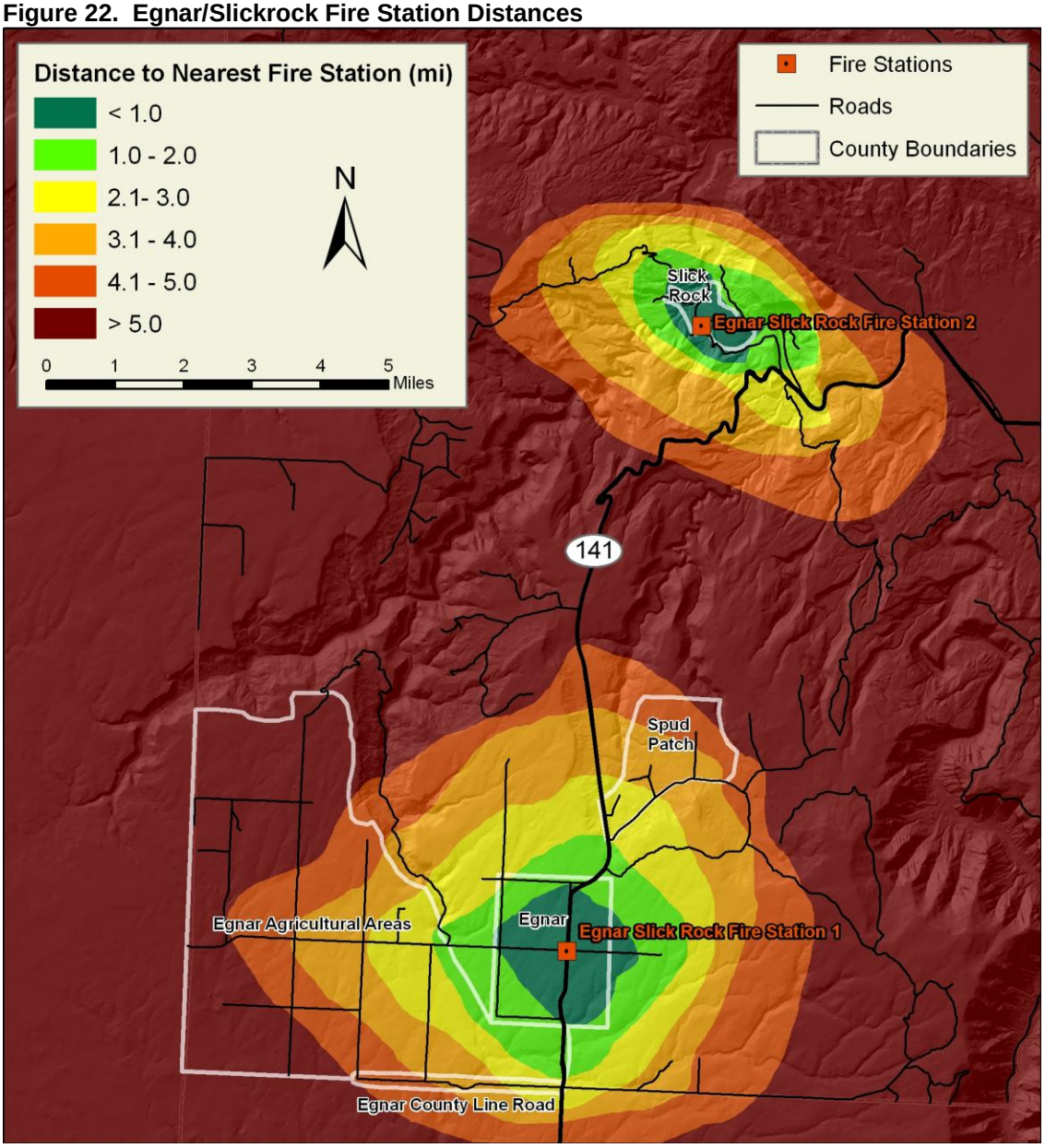
Figure 21. Egnar Community Hazard Ratings Map



LOCAL PREPAREDNESS, FIREFIGHTING CAPABILITIES, AND WATER SUPPLY

The Egnar Slickrock FPD is a volunteer department that provides fire protection to these populated areas which have been defined as a “community” as defined in this Community Wildfire Protection Plan.

Figure 22. Egnar/Slickrock Fire Station Distances



The department has two stations covering the district. The main station is located in Egnar. Station two serves the Slickrock area. Approximately 15 active volunteers service the district.

Station 1 – Egnar
Hwy 141 & H1 Rd.
Egnar, CO 81325

Station 2 - Slickrock
Road 58

APPARATUS

Station 1 – Egnar: Staffed by volunteers

- 1 – EMS Vehicle **(EMS-20)**
- 1 – Tactical Tender – 2000 gal with 750 GPM Pump **(T-21)**
- 1 – Engine – 750 gal with 750 GPM Pump – AWD **(E-20)**
- 1 – Type 6 Wildland Engine – 200 gal with 50 GPM pump **(Brush 20)**

Station 2 – Slickrock: Staffed by 4 volunteers

- 1 – T6 Wildland Engine, 250 gal. with 500 GPM Pump **(Brush 2)**
- 1 – 2000 gallon Water Tender with external pump **(Tanker 20)**

APPARATUS RECOMMENDATIONS

Priority Level High: 2000 gallon Tactical Tender with 500 GPM pump, AWD or 4 WD and equipped with spray bars for the suppression of grassland and scrubland fires.

- The Colorado State Forest Service manages an Engine program which should be investigated to potentially provide this engine to the district.

For more information, contact either of the following people:

Jodi Rist, District Forester
102 Par Place, Suite 1; Montrose, CO 81401-4196; PH (970) 249-9051;
FAX (970) 249-5718; csfsmo@lamar.colostate.edu

Gwen Rush
(303) 236-9465
Gwen_Rush@blm.gov

Priority Level High: Ensure all wildfire apparatus have the ability to discharge Class A firefighting foam. Foam is a proven agent which enhances the effectiveness of water especially when applied to thick grass. Most rural fire departments currently use this and can be a source of information and training for others.

Priority Level High: Develop an equipment maintenance and replacement plan.

Priority Level Moderate: Task an individual with "type converting" all district apparatus (e.g., brush truck = type 6 engine). The typing scheme should follow the National Incident Management System (NIMS) model. This will help to serve future Homeland Security requirements. San Miguel County should be consulted as they may already be faced with this issue.

TRAINING

Of the 15 volunteers, none are red carded but many have functional wildland experience. It was expressed through the interview process that the district does not have the training budget to be able to send firefighters out of district, particularly for multi-day trainings. Lodging and other travel and expenses are too high for their limited budget. Often, when free single-day training is available in the County, the department isn't notified and/or does not receive notification.

TRAINING RECOMMENDATIONS

Priority Level High: Select a FD member to receive e-mails from surrounding agencies and the County on training opportunities and to be responsible for notifying all FD personnel. Make cooperating agencies aware of your personnel's particular training needs so that they will know what opportunities to forward to your department.

Priority Level High: Identify at least one FD member whom would be willing to become red carded and provide basic in-house training opportunities.

Priority Level High: Provide education and experience for all firefighters including:

- I-100 (basic ICS) for all firefighters and I-200 (Intermediate ICS) for all fire officers. NIMS courses could satisfy these recommendations.
- Basic Wildland Firefighting and Fire Behavior (NWCG S-130/190) for all fire department members, tailored to meet the specific needs of Egnar/ Slickrock. This should be primarily grass and Pinyon-Juniper fire fighting with a heavy emphasis on safety and plains type weather.
- At a minimum, have the safety and structure triage units from S-215 Fire Operations in the Urban Interface presented to all fire department members.
- Organize and facilitate an annual wildfire interface training exercise within the communities outlined in this CWPP. Encourage multi-agency participation.
- Encourage personnel to participate in out-of-county and Utah based training opportunities.

Priority Level High: Obtain a comprehensive training resource list (video and print materials) for in-house training.

- Six minutes for Safety http://www.nifc.gov/sixminutes/dsp_sixminutes.php
- Wildland Fire Safety Training Annual Refresher http://www.nifc.gov/wfstar/index.htm
- County should be contacted to investigate the potential to provide assistance in grant writing to establish a training and equipment budget.

- Colorado Wildfire Academy
  - Find Grants to send a few individuals each year to the academy. Scholarships are available through the Colorado Wildfire Academy. Contact: Wendy Fischer at 719-589-1400 for more details.

FIREFIGHTER SAFETY

Priority Level High: Provide minimum wildland Personal Protective Equipment (PPE) for all firefighters. (See NFPA Standard 1977 for requirements.)

Priority Level High: Ensure that the current fire operations personnel rehabilitation system is sufficient. At a minimum each station should have drinking water and MRE's (meals ready to eat) to support their personnel for 24-48 hours.

WATER SUPPLY

There is a municipal hydrant system in Egnar that provides the majority of water sources for the department. Water supply is augmented by tender shuttles and a few cisterns. A large cistern is located at the main station. King Springs provides unlimited recharge to the 2,000 gallon tank in approximately 30 minutes.

Priority Level High: Need "water supply" signage at 5HN road turn off to the King Springs access road.

Priority Level High: All available water sources should be marked by GPS and posted on a map for incoming suppression resources. This should be updated as needed to maintain an up-to-date list.

Additionally, draft hydrant locations should be found along creeks and in any permanent water supply found within the community.

Figure 23. King Springs Water Supply

CRP GRASSES

There are hundreds of acres of **Conservation Reserve Program** (CRP) grass within the Egnar/Slickrock area of San Miguel County. The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices[10]

Unfortunately these CRP grass sections contain a high fuel load for wildfires. Contained within the recommendation below are the specifications referenced from the memo titled “Firebreaks on CRP,” dated January 31, 2006, from Rick Lopez, State Executive Director, USDA-Farm Service Agency (FSA). The Colorado State FSA Office is very interested in working with landowners and the local FSA Offices to investigate potential cost-share programs and management practices that would reduce the fuel hazards of CRP grass.

CRP GRASSES RECOMMENDATIONS

Priority Level Very High: Work with the Colorado Department of Transportation (C-DOT) to promote the highest degree of Right of Way (ROW) maintenance that their budget allows.

Priority Level Very High: Encourage individual landowners to mow fuels near homes and along roadways and fence lines during times of high fire danger. CRP sections will need to follow the guidelines as detailed in **Appendix B**.

Priority Level High: Encourage state and local Farm Service Agency offices to provide CRP program oversight to ensure appropriate management practices are followed and to create cost-share programs that encourage landowners to treat fuels and reduce fire hazard near communities and values at risk. The contacts found on the following page should be helpful in this regard.

Priority Level High: Work with the Central Egnar/Slickrock area of San Miguel Soil and Water Conservation District to obtain grants to treat noxious weeds and create fuel breaks within and adjacent to highway right-of- ways.

Priority Level Moderate. Task an individual with locating and mapping the CRP grass parcels. This will help to identify those areas of elevated fire behavior potential which could serve to boost the initial attack response.

10 http://www.nrcs.usda.gov/programs/crp/; referenced 10-12-07

PUBLIC EDUCATION AND FIRE PREVENTION

There is likely to be a varied understanding among property owners of the hazards associated with the threat of a wildfire. An approach to wildfire education that emphasizes safety and hazard mitigation on an individual property level should be undertaken, in addition to fire department efforts at risk reduction.

Provide communities and homeowners fire prevention educational materials through personal contact. Fire prevention and wildfire hazard mitigation education should be an ongoing effort.

FIRE PREVENTION RECOMMENDATIONS

Priority Level High: Implement fire prevention, fire preparedness, and defensible space and hazard reduction recommendations for each community.

Priority Level High: Obtain "Smokey Bear" signs for use along major highways to inform the public of the current fire danger and to promote fire prevention. Ensure that fire danger messages are kept up to date with Daily Fire Danger broadcast to maintain credibility and effectiveness.

CR 141 and 14R Road - Dry Creek Basin Store
Provide content for CDOT temporary signs during high Fire Danger and elevated levels of holiday traffic.

- CDOT in Dove Creek (970) 677- 2612

Priority Level High: Consider adopting local fire ordinances to control open burning during periods of high fire danger. Develop partnerships between fire districts, County Sheriff, Colorado and Utah State Forestry and local law enforcement.

FSA Service Center Office
Dolores County Farm Service Agency
408 Main St., Dove Creek; PH 970-677-2229: FAX 970-677-2453

Mailing Address:
PO Box 10; Dove Creek, CO 81234-0010

Paul R. White, County Executive Director; (970) 677-2229; paul.white@co.usda.gov

Richard P. Cervenka, Jr., Farm Loan Manager; (970) 565-8879 x107;
richard.cervenka@co.usda.gov

COMMUNITIES

1. Spud Patch – Hazard Rating: Very High

Description

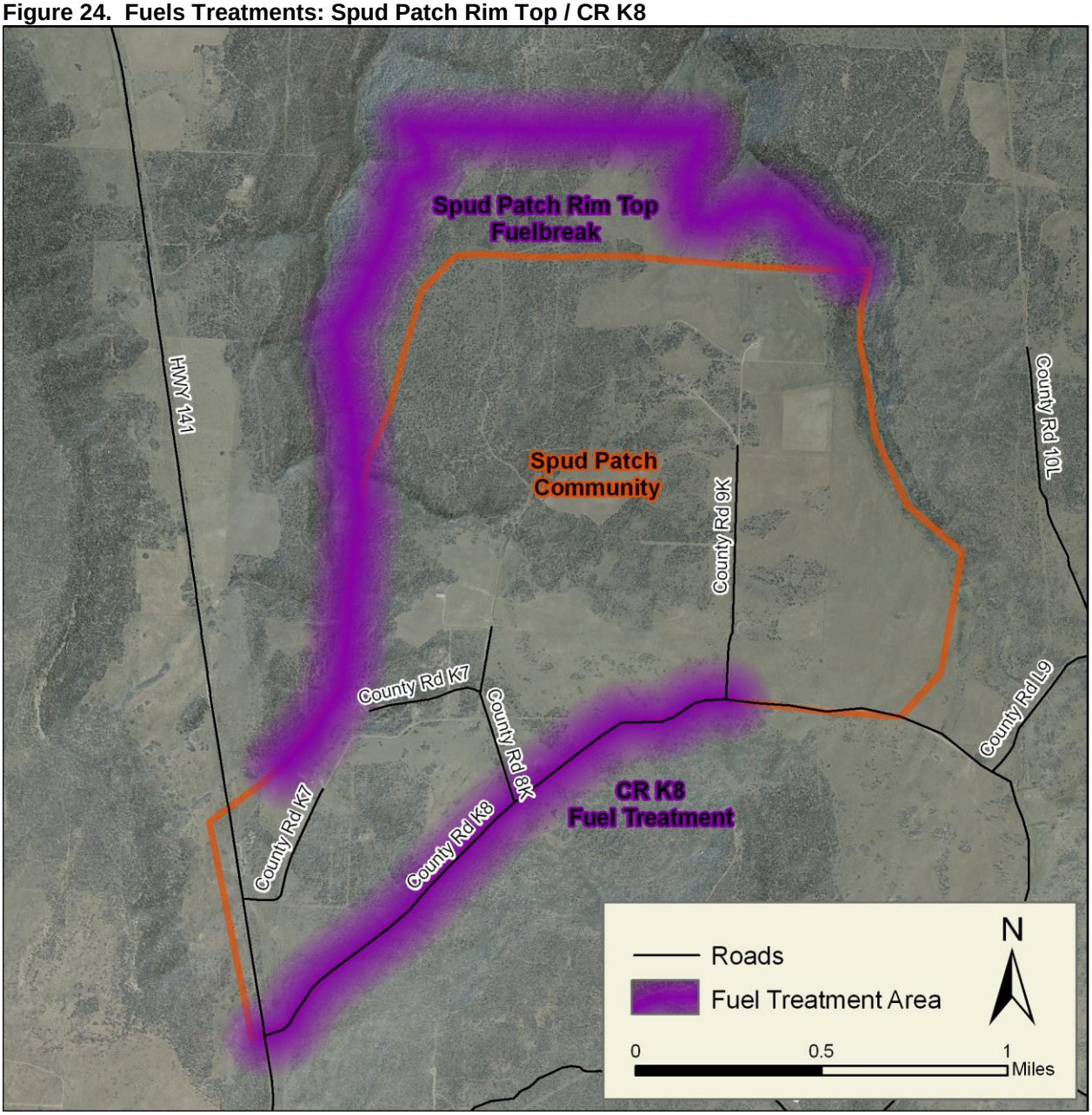
This community is of the highest concern within the district. Access is adequate from the main road, but it is one way in and out. If more homes are constructed, the road system should be improved by adding a secondary emergency escape route. There is no water supply within the community. There are some ponds to the south but no developed draft sites are present. A more formal access point and water supply system need to be developed.

The predominant fuels in this community are a mix of grass meadows and Pinyon-Juniper stands. The grass is a concern because it is easily ignited and fire will move rapidly through it in windy conditions. This in combination with the ladder fuels in the PJ stand make for a high potential for crown fire with fire intensity being moderate to extreme. The greatest concern is that the community is positioned on a mesa with heavily vegetated canyons below. Fire starts from the canyon bottoms would be very difficult to suppress and would increase in speed and intensity as it moved up onto the mesa.

SPUD PATCH RECOMMENDATIONS

- A fuelbreak and access road mitigation is recommended for this community (see map on next page).
- Install a minimum 30,000 gallon cistern in a safe area, strategically located in the community, to augment tender shuttle water supply.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.

Figure 24. Fuels Treatments: Spud Patch Rim Top / CR K8



2. Egnar Agricultural Area – Hazard Rating: Moderate

Description

This is a large area encompassing the more populated agricultural areas surrounding Egnar. The area is populated by small to medium sized homes on moderate to large size lots. The dominant construction is wood siding with a mix of asphalt and metal roofs. Most of the homes are built adjacent to agricultural land, but some are in close proximity to the large ravines, which exist throughout the area. Most of the homes and buildings have defensible space but many need mowing or weed whacking adjacent to structures to prevent grass fire ignitions of structures. Access is adequate with the exception of a few enclaves of homes built immediately adjacent to the ravine along 5HN Road. Some homes do not have any address markers and of those that do, most are low visibility and non-reflective. There is no formal water supply for fire suppression in this area and the nearest water source would be ponds and a water tank near King Springs. There are overhead power lines and propane tanks (some overgrown with vegetation), which may be a hazard to firefighters.

Fuels vary from tall-grass to agricultural fields to CRP lands with a heavy fuel component. There is some potential for crown fire in these areas and the fire intensity is moderate to low. The grass is a concern because it is easily ignited and fire will move rapidly through it in windy conditions. Ditches and laterals filled with old vegetation can provide an easy travel corridor for fire. The biggest threat is from some ravines and islands composed of Pinyon-Juniper that can burn intensely and become a crown fire. Additionally, embers from the Pinyon-Juniper can easily ignite the adjacent grass.

EGNAR AGRICULTURAL AREA RECOMMENDATIONS

- Consider adding one or two large cisterns (30,000 gallons or greater) in this community for fire suppression use.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.

3. Egnar – Hazard Rating: Low

Description

Egnar is the only town within the Egnar / Slickrock Volunteer Fire protection District. The Fire station is located within the town. This is a community of approximately 100 people built along HW 141. Most of the structures are residential or agricultural and built on moderate to large size lots. The dominant construction type is older wood siding with asphalt or metal roofs. Flammable yard clutter is a hazard at some homes. Most homes do not have address markers and those that do have wooden, non-reflective markers. Access is adequate with a grid, paved road system. There are hydrants for fire suppression, although the capacity and maintenance of the system is unknown.

Fuels vary from tall-grass to agricultural fields. There is little potential for crown fire and the fire intensity is moderate to low. The grass is a concern because it is easily ignited and fire will move rapidly through it in windy conditions. Ditches and laterals filled with old vegetation can provide an easy travel corridor for fire. There are some ravines and islands composed of Pinyon-Juniper that will burn more intensely and need to be thinned or cleared around the perimeter.

EGNAR RECOMMENDATIONS

- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Make certain any fire hydrants are visible, maintained and operable.

4. Egnar County Line Road – Hazard Rating: Low

Description

This area encompasses the agricultural areas along County Line Road. This area was separated out from the other agricultural area because of the higher traffic along the road and mutual aid agreements for fire response. In most other ways it is similar to the other areas.

The area is populated by small to medium sized homes on moderate to large size lots. The dominant construction is wood siding with a mix of asphalt and metal roofs. Most of the homes are built adjacent to agricultural land, but some are in close proximity to the large ravines, which exist throughout the area. Most of the homes and buildings have defensible space but many need mowing or weed whacking adjacent to structures to prevent grass fire ignitions of structures. Some homes do not have any address marker and of those that do, most are low visibility and non-reflective. Water supply is via the town hydrant system.

Fuels vary from tall-grass to agricultural fields to CRP lands with a heavy fuel component. There is little potential for crown fire in these areas and the fire intensity is moderate to low. The grass is a concern because it is easily ignited and fire will move rapidly through it in windy conditions. Ditches and laterals filled with old vegetation can provide an easy travel corridor for fire. The biggest threat is from some ravines and islands composed of Pinyon-Juniper that can burn intensely and become a crown fire.

EGNAR COUNTY LINE ROAD RECOMMENDATIONS

- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.

5. Slickrock – Hazard Rating: Low

Description

This area consists of residential homes along the river valley. There are a few commercial structures and historic buildings present as well. The fire station is located on the main road and volunteers live in the neighborhood. The road access is good and is of adequate width for passing vehicles. Most of the homes do not have conforming defensible space and varying levels of flammable materials in the yards. Other manmade hazards such as overhead power lines and propane tanks exist. The addressing is inconsistent in placement and lacks good visibility.

The fuels are mostly short and tall grass with some shrubs and Pinyon-Juniper. There is little potential for crown fire in these areas and the fire intensity is moderate to low. The grass is a concern because it is easily ignited and fire will move rapidly through it in windy conditions. The topography is flat along the river bottom with steeper slopes adjacent to the homes.

SLICKROCK RECOMMENDATIONS

- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.

AREAS OF SPECIAL INTEREST

In addition to residential communities, certain other properties have been identified by stakeholders as areas of special concern or interest. In some cases these areas present special problems for firefighters. A brief description of each of these properties is presented in this section, followed by recommendations, where applicable, designed to address concerns specific to the individual property. These recommendations are in addition to, not in place of, other recommendations in this report concerning the community or area where these properties are located.

The fire department survey did not reveal communication problems within the study area however the repeater towers are the only form of communication with County resources and dispatch. A fuels modification project is prescribed for these important infrastructure elements.

Communication Towers

Dispatch Tower

Priority Level High: Create defensible space around each tower complex. Ensure that fuels treatments extend to an adequate distance around buildings to protect combustibles from direct flame contact and excessive radiant heat. Remove fuels around propane tanks and create a non combustible ground cover around tanks (10 feet of gravel, etc.)

For the dispatch tower, improve access road and thin along road to facilitate structure protection. Establish and maintain backup power for the tower.

Priority Level Moderate: Sutherland/Ebberts Construction
Provide a wildfire safety brochure for all workers and new hires. Place brochures in common area or lunch room.

Priority Level Low: Gas wells on north side of the district were identified by the FD as an area of concern. Well pad size and vegetation coverage can vary significantly. A discussion with the local management company to address wildfire issues may be the best way to determine if any hazards exist.

NORWOOD FIRE PROTECTION DISTRICT

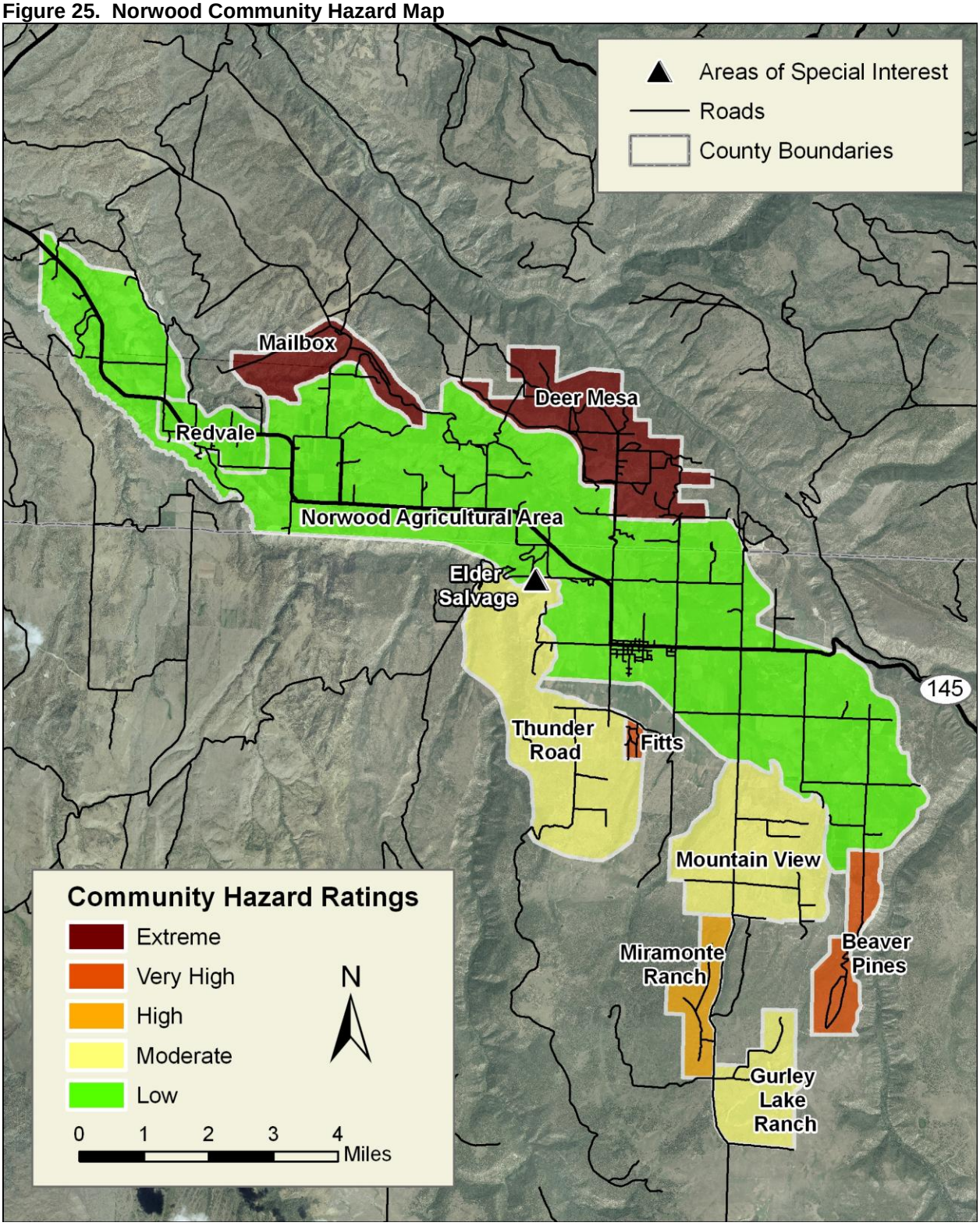
The Norwood Fire Protection District of San Miguel and Montrose County is comprised of mixed land use that includes communities on the edge of and intermixed with wildland fuels. The area consists of individual rural homes and farmsteads mixed in among agriculture land, rangeland and Conservation Reserve Program (CRP) lands, primarily planted in grass. Under extreme burning conditions and high winds many areas, especially CRP or fallow grass areas and cured hay fields have potential for rapid increases in fire intensity. These fires can quickly spread great distances due to high fuel loading and continuous fuels. These areas may also represent a high threat to life safety due to the likelihood of heavy smoke, heat and the potential to overwhelm the limited number of local suppression resources.

Additionally, several platted and developed communities are scattered throughout the district. This district exhibits the most significant fire history within San Miguel County. Prevalent lightning, recreational activities and agricultural burning increase the probability of wildfire in the district. The combination of community susceptibility and fire history generated two communities with the highest level of concern in the study area.

Table 6. Norwood Community Hazard/Risk Ratings

Community Name	Fire Protection District	Hazard Rating
Norwood Agricultural Area	Norwood	Low
Redvale	Norwood	Low
Gurley Lake Ranch	Norwood	Moderate
Mountain View	Norwood	Moderate
Thunder Road	Norwood	Moderate
Miramonte Ranch	Norwood	High
Beaver Pines	Norwood	Very High
Fitts	Norwood	Very High
Deer Mesa	Norwood	Extreme
Mailbox	Norwood	Extreme

Figure 25. Norwood Community Hazard Map



PREPAREDNESS AND FIREFIGHTING CAPABILITIES

The department has three stations covering the district. The main station is located in Norwood. Station two serves the Redvale area. Station 3 is in Dry Creek, but no communities were designated within 5 miles of this station. Therefore, it is not mapped in **Figure 26** on the following page.

Station 1 – Norwood
1605 Summit St.
Norwood, CO 81423
(970) 327-4800

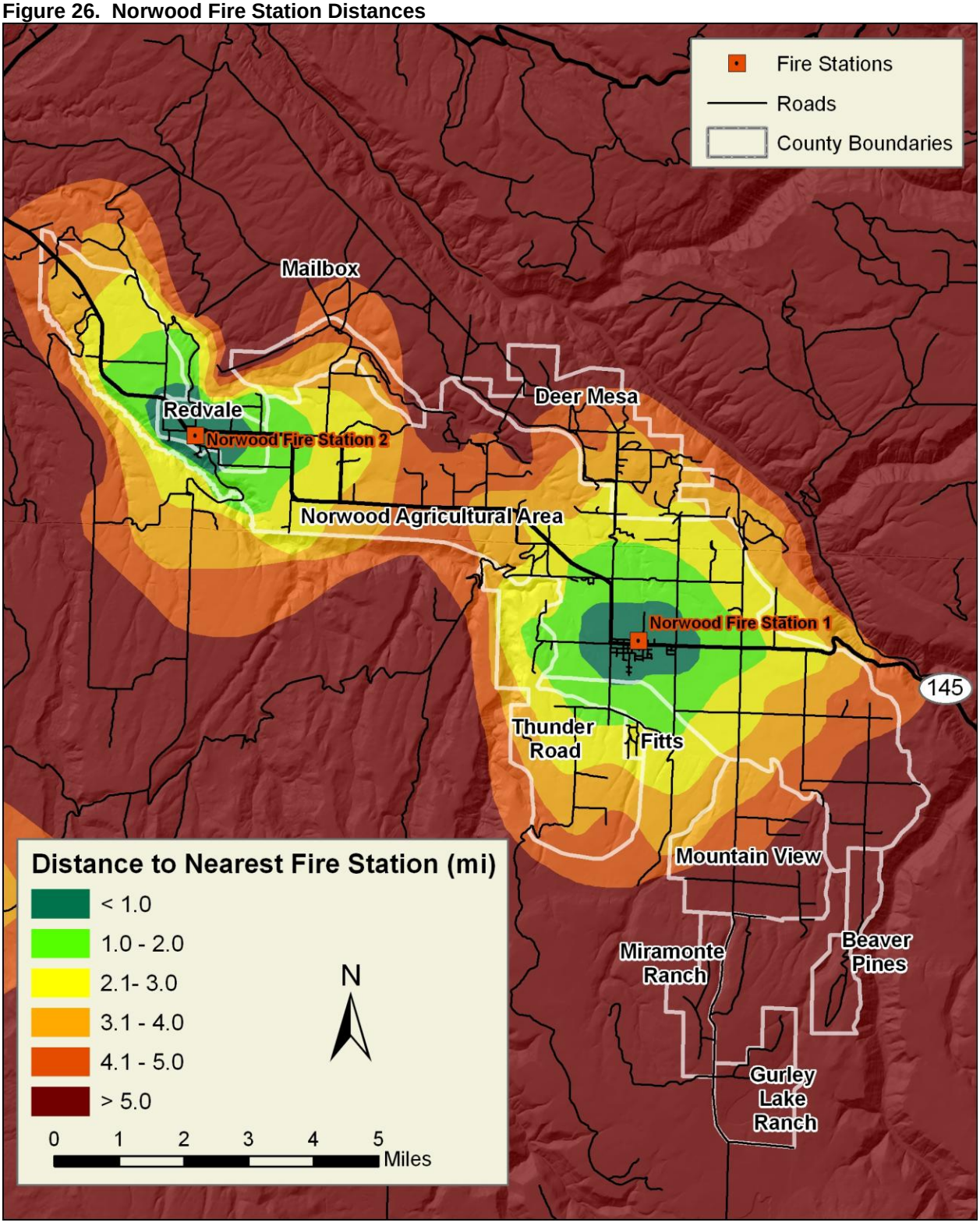
Station 2 – Redvale
600 Redvale Rd.
Redvale, CO 81431
[No Phone]

Station 1: Staffed by volunteers
- Apparatus
  - 1 - Utility Vehicle **(Utility-9)**
  - 2 - Ambulances
  - 1 - Engine – 1000 gal with 1250 GPM Pump **(E-8)**
  - 1 - Engine – 750 gal with 1000 GPM Pump – 4WD **(E-5)**
  - 1 - Tender 2,000 gal. **(T-6)**

Station 2: Staffed by volunteers
- Apparatus
  - 1 - T6 Wildland Engine **(E-6)**
  - 1 – T-3 Wildland Engine 1000 gallon- CSFS – 6X6 **(E-3)**

Station 3: located at Dry Creek
Staffed by volunteers
- Apparatus
  - 1- T-3 Engine 500 gal with 250 GPM 4WD **(E-4)**

Figure 26. Norwood Fire Station Distances



FIREFIGHTER TRAINING

Priority Level High: Provide education and experience for all firefighters including:

- I-100 (basic ICS) for all firefighters and I-200 (Intermediate ICS) for all fire officers. NIMS courses could satisfy these recommendations.
- A Norwood tailored Basic Wildland Firefighting and Fire Behavior (NWCG S-130/190) for all fire department members. This should be primarily grass and Pinion / Juniper fire fighting with a heavy emphasis on safety and plains type weather.
- S-215 Fire Operations in the Urban Interface should be presented to all fire department members.
- Organize and facilitate table-top or sand-table wildfire exercises with other county agencies attending.
- Organize and facilitate an annual wildfire interface training exercise within the communities outlined in this CWPP. Encourage multi-agency participation.
- Encourage personnel to participate in out-of-district training opportunities.

Priority Level High: Run the next County Fair as a Type 3 incident utilizing county wide and federal resources to plan and execute the fair. This will build trust and competency between the partners in preparation for the next significant fire event.

Training in preparation for this event should include:

- ICS 100, 200 and 300
- Practical or table top exercise with the designated Team.
- A training officer should be assigned to the team to facilitate OJT or Task Book competencies.
- Consider inviting experienced ICS personnel to proctor the incident and provide input during the After Action Review.

FIREFIGHTER SAFETY

Priority Level High: Provide minimum wildland Personal Protective Equipment (PPE) for all firefighters. (See the NFPA Standard 1977 for requirements.)

Priority Level High: Ensure that the current fire operations personnel rehabilitation system is sufficient. At a minimum each department should have drinking water and MREs (meals ready to eat) to support their personnel for 24-48 hours.

EQUIPMENT

Priority Level High: Ensure that all wildfire apparatus have the ability to discharge Class A firefighting foam. Foam is a proven agent which enhances the effectiveness of water, especially when applied to thick grass. Most fire departments currently use this and can be a source of information and training for others.

Priority Level High: Develop an equipment maintenance and replacement plan.

Priority Level Moderate: Task an individual with "type converting" all district apparatus (e.g., brush truck = type 6 engine). The typing scheme should follow the National Incident Management System (NIMS) model. This will help to serve future Homeland Security requirements. San Miguel and Montrose Counties should be consulted as they may already be faced with this issue.

WATER SUPPLY

Due to the nature of the wildland fuels in the study area, water is a critical fire suppression resource. The municipalities of Norwood and Redvale are serviced by a hydrant network. However, the hydrants in Redvale's system are not well identified, marked or maintained. The rest of the district (outside municipalities) only has hydrants for flushing purposes. Fire flow is currently unknown to the Fire District.

Immediately accessible water sources must always be considered to fully support fire operations, therefore the following recommendations are suggested.

Additionally, draft hydrant locations should be found along creeks and in any permanent water supply found within the community.

WATER SUPPLY RECOMMENDATIONS

Priority Level High: Expand current hydrant network to include all areas of the water district.

Priority Level High: Upgrade existing infrastructure throughout the district for standardized hydrant water delivery throughout the district.

Priority Level High: Create new year-round water storage resources in the district such as ponds, cisterns and tanks.

Priority Level High: A secondary means of retrieving water from the storage tanks in the event of a power outage should be considered. Some communities currently have a couple of different means. No matter the means, it is recommended that all elevated water tanks be able to flow water without the electric pumping system.

- Piping allowing the water to flow freely via gravity pressure from the tanks.
- Piping connections that allow the fire apparatus to "pull" the water out via a drafting operation.

Priority Level High: Ensure that hydrants are operational. Redvale hydrants should be tested annually and the results of these tests should be provided to the Fire District. Hydrants need to remain obstruction-free, well identified, and visible.

Priority Level High: All available water sources should be marked by GPS and posted on a map for incoming suppression resources. This should be updated as needed to maintain an up-to-date list.

PUBLIC EDUCATION AND FIRE PREVENTION

There is likely to be a varied understanding among property owners of the hazards associated with the threat of a wildfire. An approach to wildfire education that emphasizes safety and hazard mitigation on an individual property level should be undertaken, in addition to fire department efforts at risk reduction. It is important to provide communities and homeowners with fire prevention educational materials through personal contact. Fire prevention and wildfire hazard mitigation education should be an ongoing effort.

RECOMMENDATIONS

Priority Level High: Implement fire prevention, fire preparedness, and defensible space and hazard reduction recommendations for each community.

Priority Level High: Obtain "Smokey Bear" signs for use along major highways to inform the public of the current fire danger and to promote fire prevention. Ensure that fire danger messages are kept up to date to maintain credibility and effectiveness.

- 145 and Sanborn Park Road @ the River
- Signage at forest service boundary (Beef Trail Road and 44ZN road) near Miramonte
- Provide content for CDOT temporary signs during periods of high fire danger and elevated event traffic. CDOT contact is Montrose CSP Dispatch at 970-349-4392

Priority Level High: Consider adopting local fire ordinances to control open burning during periods of high fire danger. Develop partnerships between fire districts, County Sheriff, Colorado and Utah State Forestry and local law enforcement.

Visit these web sites for a list of public education materials. These are suitable for firefighters and homeowners alike:

- http://www.nwcg.gov/pms/pubs/pubs.htm
- http://www.firewise.org
- http://www.firesafecouncil.org/homeowner/index.cfm
- http://txforestservice.tamu.edu/main/default.aspx?dept=frp

Colorado State University Extension wildfire Fact Sheets can be found at:

- http://www.ext.colostate.edu/pubs/pubs.html#ag_wild

COMMUNITIES

1. Mailbox – Hazard Rating: Extreme

Description

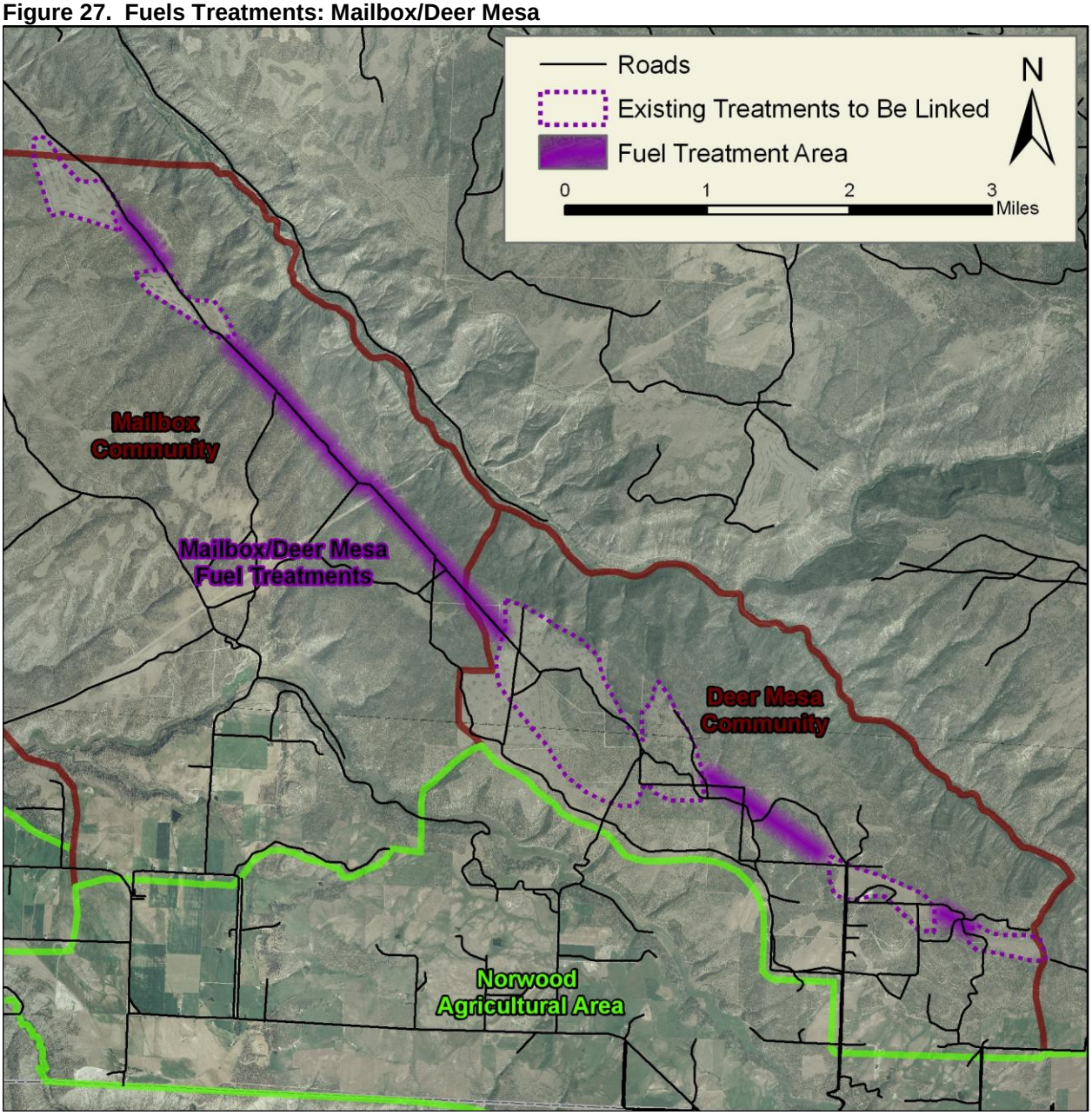
This community is made up of dispersed ranches on large acreages. Homesteads typically have several outbuildings and barns. Building construction is typical wood with mostly metal roofing. The Roads are dirt and vary in quality. Primary access roads are adequate when entering the community however they deteriorate in surface quality, width and steepness as they move deeper into the community. Road signage is good but there is virtually no individual home or ranch complex signage. There is no water supply for the community, but the seasonal stream on the south west side of the community may offer some draft sources. Given the dispersed nature of the home and ranches in this community, a centralized water supply would be difficult.

The fuels in this community are primarily Pinyon-Juniper stands. The stands are mature and/or overmature, and have a high percentage of dead wood. This is a concern for firefighters because it increases the probability of ignition in these stands. The fire intensity can be moderate to extreme and there is potential for crown fire under windy conditions. This area has a high occurrence of lightning strikes. There is a history of fires in the area as well.

MAILBOX RECOMMENDATIONS

- A fuel break is recommended for this community on the north side.
    - Significant fire history and historic frequent lightning in the area warrant protection from the federal land. The fuel break links existing treatment areas together to create a landscape scale fuels treatment (see **Figure 27**).
    - The treatment area on the north side was specifically designed for wildlife habitat improvement. Connecting the treatment areas with additional thinning may not coincide with the habitat improvement plan. Contact: Kevin Joseph, Fire Management Officer, Dolores Public Lands. 29211 Hwy 184 Dolores, CO 81323 (970) 882-6836 office (970) 799-1176 cell.
- A parcel level analysis and pre-attack plan should be completed for this community.
- Draft hydrant locations should be found along the creek and in any permanent water supply found within the community.
- Individual water cistern of a minimum 2,000 gallons should be made available at each ranch or home. Manufactured systems that utilize foam and water should be encouraged if the capability is an equivalent to water alone.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

Figure 27. Fuels Treatments: Mailbox/Deer Mesa



2. Deer Mesa – Hazard Rating: Extreme

Description

This community is made up of dispersed ranches on large acreages as well as home sites on small tracts. Ranches typically have several outbuildings and barns. Building construction is typical wood with mostly metal roofing. The Roads are dirt and vary in quality. Primary access roads are adequate when entering the community however they deteriorate in surface quality, width and steepness as they move deeper into the community. Road signage is poor to non-existent and several roads are 4WD only. There is virtually no individual home or ranch signage. Driveway access to homes can be very long through heavy mature/overmature Pinyon-Juniper.

There is no water supply for the community, but small stock ponds on the south side of the community may offer some draft sources. Given the disbursed nature of the home and ranches in this community, a centralized water supply would be difficult.

The fuels in this community are primarily Pinyon-Juniper stands. The stands are mature and/or overmature, and have a high percentage of dead wood. This is a concern for firefighters because it increases the probability of ignition in these stands. The fire intensity can be moderate to extreme and there is potential for crown fire under windy conditions. This area has a high occurrence of lightning strikes and there is a history of fires in the area as well.

DEER MESA RECOMMENDATIONS

- A fuel break is recommended for this community on the north side. (See **Figure 27** on page 84.) Significant fire history and historic frequent lightning in the area warrant protection from the federal land. The fuel break links existing treatment areas together to create a landscape scale fuels treatment.
- Draft hydrant locations should be found along the creek and in any permanent water supply found within the community.
- Individual water cistern of a minimum 2,000 gallons should be made available at each ranch or home. Manufactured systems that utilize foam and water should be encouraged if the capability is an equivalent to water alone.
- A parcel level analysis and pre-attack plan should be completed for this community.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

3. FITTS Subdivision – Hazard Rating: Very High

Description

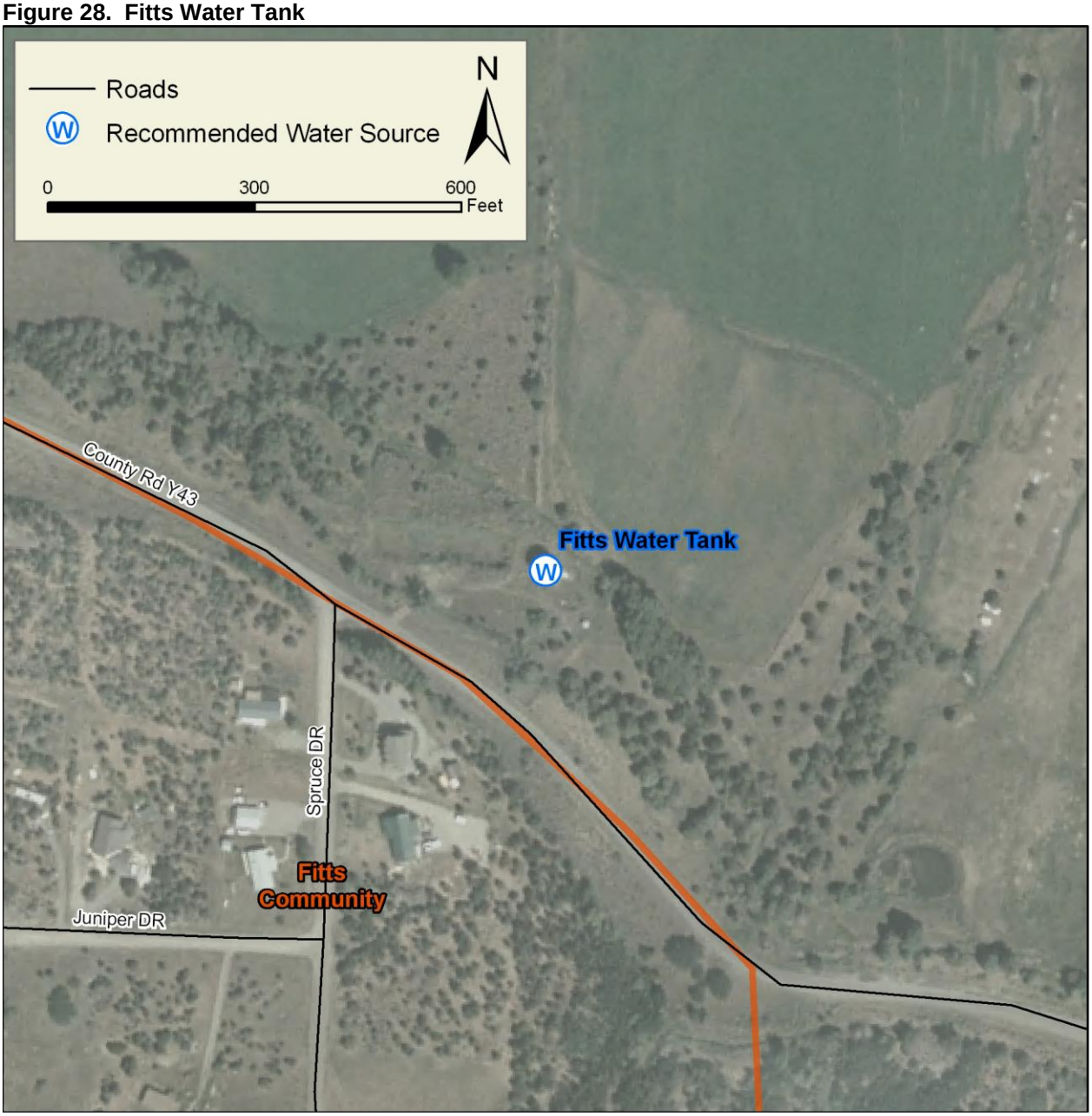
This community has the highest density of homes outside the town limits. Access is good from the main road, but the interior roads are mid-slope and steep. There is a two-track road that could be used as a second means of egress or access. The nearest fire station is 2-3 miles however there is no water supply to service the community. The greatest concern in this community is the steep, heavily vegetated draws and arroyos that bisect the community. Thick vegetation in close proximity to multiple homes creates a significant concern.

The fuels in this community are a mix of Gambel Oak, grass and Pinyon-Juniper. All of these fuels are a concern to firefighters because of their volatile nature. The fire intensity can be moderate to extreme and there is potential for crown fire under windy conditions. This vegetation should therefore be managed and maintained regularly.

FITTS RECOMMENDATIONS

- A large municipal water tank “Fitts Water Tank” is located north of the community. Access to this water supply should be provided to the Fire Department via a fire department connection. A “wet tap” with FDC and vehicle access is recommended. See **Figure 28** on the next page.
- Evaluate the two track road to determine if it could be used as a second means of egress or access. Road improvement and signage should be considered as well.
- Thin the heavily vegetated arroyos throughout the community
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.

Figure 28. Fitts Water Tank



4. Beaver Pines – Hazard Rating: Very High

Description

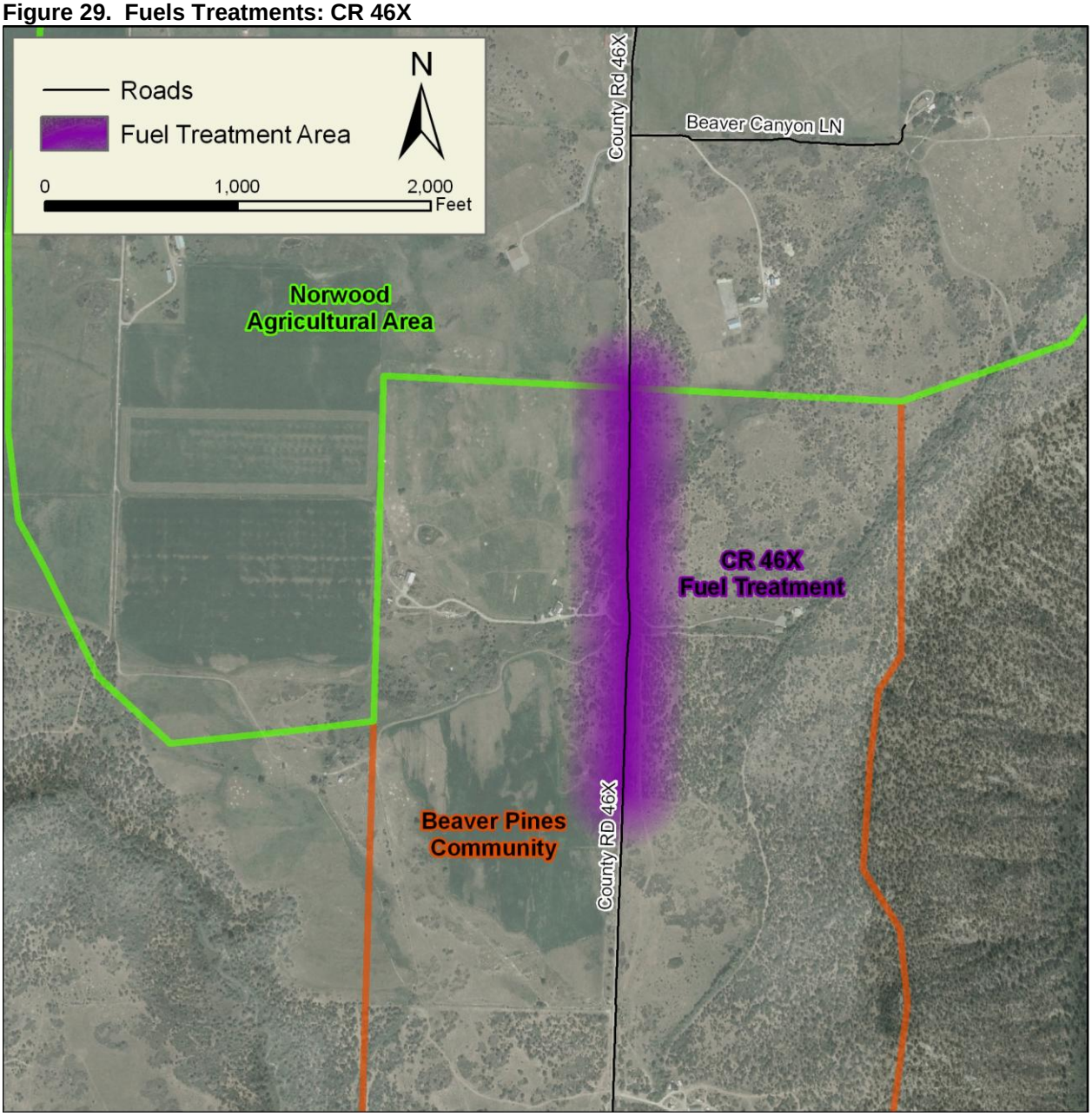
There are currently only a few homes built in this community. Access is poor from the main road (46X). The road is of varying width with few places to turn out and too narrow to allow for proper emergency vehicle access. The road quality also varies from the valley to the mesa top. This road is one way in and out. As more homes are constructed the road system should be improved by adding a secondary emergency escape route. Additionally, the nearest fire station is more than 5 miles away and via a steep winding grade. This creates a long response time to the community. There is also no water supply for the community. Cisterns are recommended and water supply should be evaluated as more homes are built.

The predominant fuels in this community are a mix of Gambel Oak and Ponderosa Pine. However, the road leading to the community has heavy amounts of PJ that could be a threat to evacuees and firefighters. There is potential for crown fire and the fire intensity is moderate to extreme. The mesa has Gambel Oak which can be very volatile and burn very hot under drought conditions. It should be managed and maintained regularly.

BEAVER PINES RECOMMENDATIONS

- A fuel break, and access road mitigation is recommended for this community. See **Figure 29** on the next page.
- Two 2,500 gallon cisterns are slated for installation. These installations should be a priority before the community starts to build out.
- Secondary evacuation route to Gurley Lake Ranch (see Gurley Lake for graphic)
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.

Figure 29. Fuels Treatments: CR 46X



5. Miramonte Ranch – Hazard Rating: High

Description

There are currently only a few homes built in this community. Access is adequate from the main road however the interior road is one way in and out. As more homes are constructed the road system should be improved by adding a secondary emergency escape route. Additionally, the nearest fire station is more than 5 miles away and via a very steep grade. This creates a long response time to the community. An adequate water supply system needs to be developed. It would be helpful to work with Gurley Lake Ranch in developing a water supply that could meet the needs of both communities.

The predominant fuels in this community are open grass meadow and a mix of decadent Gambel Oak. The grass is a concern because it is easily ignited and moves rapidly with the wind. This in combination with the large amount of dead standing oak creates potential for extreme fire behavior. Gambel Oak is very volatile and can burn very hot.

MIRAMONTE RANCH RECOMMENDATIONS

- Support the installation of a draft hydrant at Gurley Lake dam.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

6. Mountain View – Hazard Rating: Moderate

Description

There are currently only a few homes built in this community. Access is adequate from the main road 44Z-N, although this road is one way in and out. As more homes are constructed the road system should be improved by adding a secondary emergency escape route. Additionally, the nearest fire station is more than 5 miles away. This creates a long response time to the community. There is also no water supply for the community. Cisterns are recommended and water supply should be evaluated as more homes are built.

The predominant fuels in this community are a mix of Gambel Oak and Ponderosa Pine. However, the road leading to the community has heavy amounts of PJ that could be a threat to evacuees and firefighters. There is potential for crown fire and the fire intensity is moderate to extreme. The mesa has Gambel Oak which can be very volatile and burn very hot under drought conditions. It should be managed and maintained regularly.

MOUNTAIN VIEW RECOMMENDATIONS

- Thin, limb and trim along access route to provide for safer road.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.

7. Gurley Lake Ranch – Hazard Rating: Moderate

Description

There are currently only a few homes built in this community. Access is adequate from the main road however the interior road is one way in and out. As more homes are constructed the road system should be improved by adding a secondary emergency escape route. Additionally, the nearest fire station is more than 5 miles away and via a very steep grade. This creates a long response time to the community. Gurley Lake is a year round body of water. There is no formal access to the lake for fire apparatus. A more formal access point and water supply system need to be developed at the dam area.

The predominant fuels in this community are open grass meadows, a mix of low shrubs and Mature Ponderosa Pine. There is little potential for crown fire and the fire intensity is moderate to low. The grass is a concern because it is easily ignited and moves rapidly with the wind.

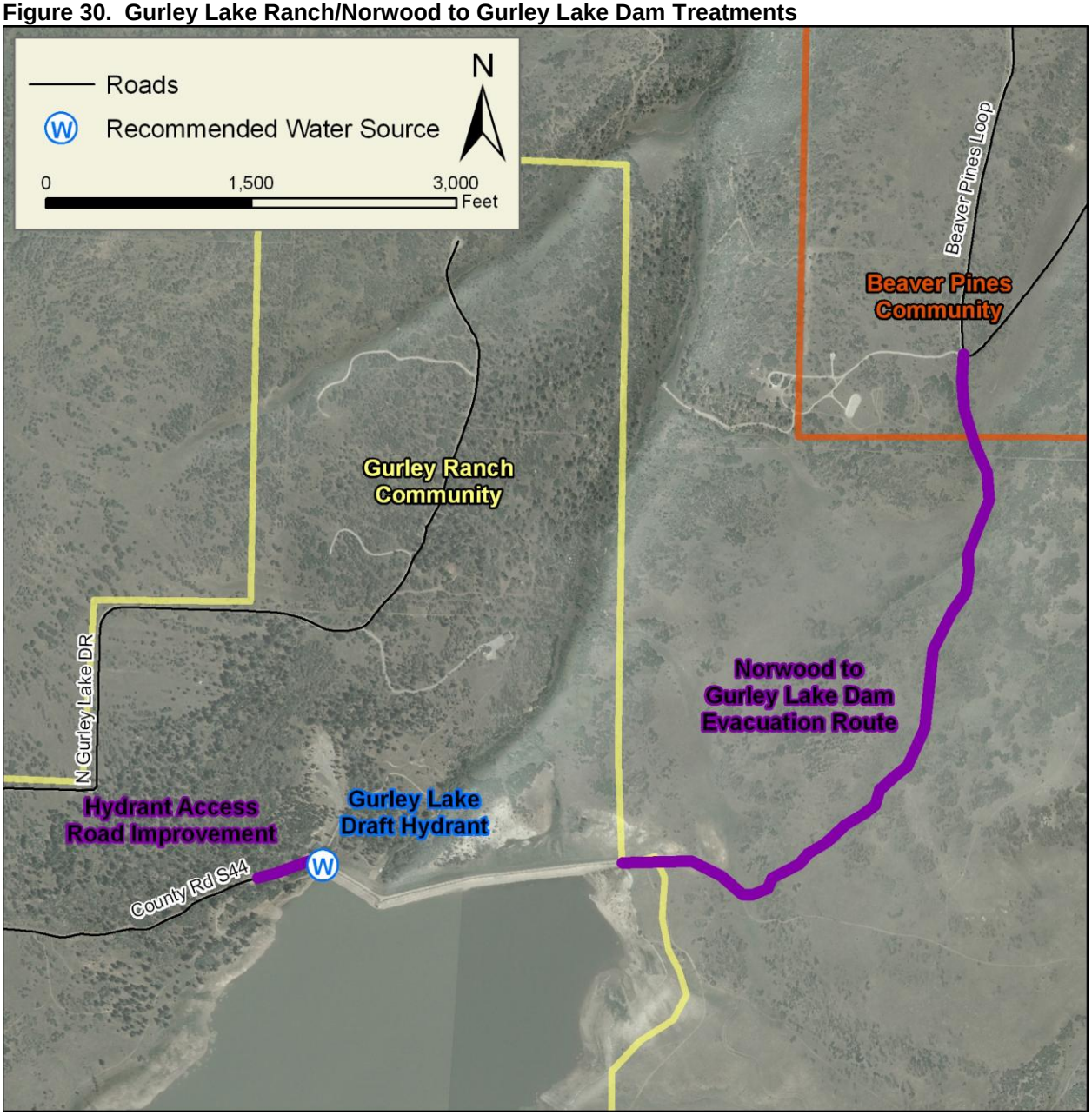
GURLEY LAKE RANCH RECOMMENDATIONS

- At least one draft hydrant should be installed at the dam on the North side of the lake.
- Engineer and improve the loop road and the bridge at the dam to provide continuous apparatus flow to the draft hydrant.
- A road connecting the dam road and hydrant to Beaver Pines should be supported by this community. This will also provide a secondary means of egress for the community.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

NOTE: A significant area of this community is designated as Gunnison Sage Grouse habitat. Prior to any fuels reduction activates, the CO Division of Wildlife should be consulted. The link below helps describe the Gunnison Grouse.

http://www.western.edu/bio/young/gunnsg/gunnsg.htm

Figure 30. Gurley Lake Ranch/Norwood to Gurley Lake Dam Treatments



8. Norwood Agricultural Areas – Hazard Rating: Low

Description

This is a large area encompassing the more populated agricultural areas surrounding Norwood. The area is populated by small to medium sized homes on moderate to large farms. Some small developments with residential size lots exist in the North West area of the designated agricultural area. The dominant construction is wood siding with a mix of asphalt and metal roofs. Most of the homes are built adjacent to agricultural land, but some are in close proximity to large ravines and pockets of brush and or timber. Most of the homes and buildings have defensible space but many need mowing or weed whacking adjacent to structures to prevent grass fire ignitions of structures. Access is adequate with the exception of a few enclaves of homes built on dead end roads. Some homes do not have any address markers and of those that do, most are low visibility and non-reflective. There is no water supply for fire suppression outside the town of Norwood. Several water towers are available in the area, but no Fire Department Connections exist. There are overhead power lines and propane tanks (some overgrown with vegetation) which may be a hazard to firefighters. Fuels are generally agricultural vegetation, however CRP lands and cured or neglected crop lands may have heavy fuel component mixed with woody fuels. The stringers of Pinyon-Juniper stands have plentiful ladder fuels and significant surface loads of dead and down materials.

NORWOOD AGRICULTURAL AREAS RECOMMENDATIONS

- Work with the Colorado Department of Transportation (C-DOT) to promote the highest degree of Right of Way (ROW) maintenance that their budget allows.
- Encourage individual landowners to mow fuels near homes and along roadways and fence lines during times of high fire danger adjacent to CRP sections and fallow fields.
- Consider “wet tapping” the water tanks to install a Fire Department Connection for fire suppression use.
- Review and implement the open burning recommendations in **Appendix B.**
- A “No Outlet” sign should identify all dead-end streets.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

9. Redvale – Hazard Rating: Low

Description

Redvale is in Montrose County and home to the Redvale fire station (Norwood FPD). This is a community of approximately 100 people built along HW 145. Most of the structures are residential or agricultural and built on small to moderate size lots. The dominant construction type is older wood siding with asphalt or metal roofs. Flammable yard clutter is a hazard at some homes. Most homes do not have address markers and those that do have wooden, non-reflective markers. Access is adequate with a grid, paved road system. There are hydrants for fire suppression, although the capacity and maintenance of the system is unknown.

The fuels in the community vary from landscaped lawns to agricultural crop lands. There is little potential for crown fire and the fire intensity is moderate to low. The grass lands are a concern because it is easily ignited and moves rapidly with the wind.

REDVALE RECOMMENDATIONS

- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Make certain any fire hydrants are visible, maintained and operable.

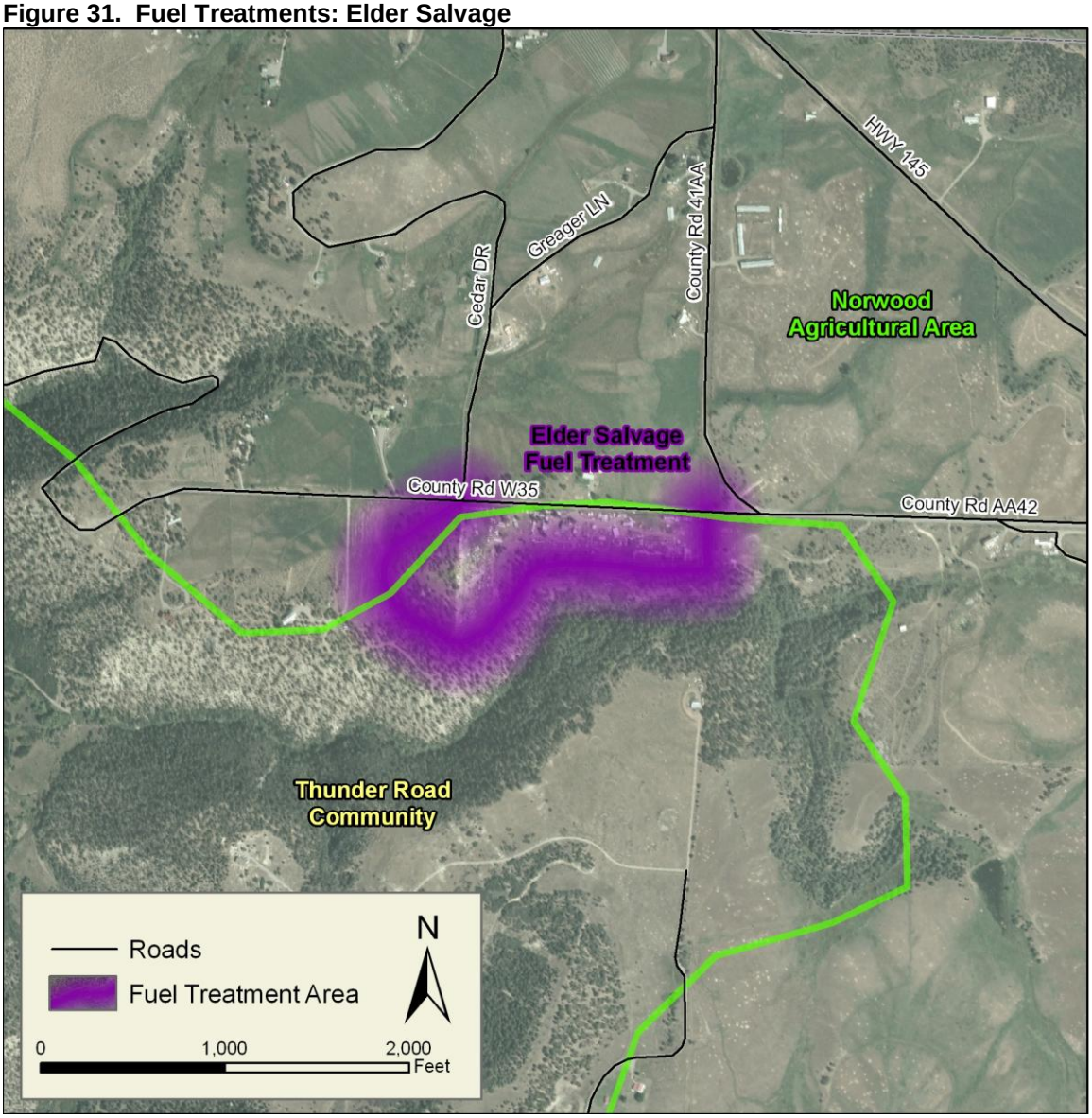
AREAS OF SPECIAL INTEREST

In addition to residential communities, certain other properties have been identified by stakeholders as areas of special concern or interest. In some cases these areas present special problems for firefighters. A brief description of each of these properties is presented in this section, followed by recommendations, where applicable, designed to address concerns specific to the individual property. These recommendations are in addition to, not in place of, other recommendations in this report concerning the community or area where these properties are located.

Elder Salvage Yard – Priority Level: Moderate

This active salvage yard has many potential ignition sources including welding, and heavy equipment use. Concern is both for a wildland fire entering the salvage yard and for a fire originating in the yard extending to the wildlands. A fuel break surrounding the operation is recommended. Although fuels reduction with annual maintenance will provide significant protection to both the operations and the surround lands, a permanent fuel break (dozer line to mineral soil or graveled line) would require little or no annual maintenance and provide long-term protection.

Figure 31. Fuel Treatments: Elder Salvage



TELLURIDE FIRE PROTECTION DISTRICT

The Telluride Fire Protection District covers 390 square miles of private property, BLM and Forest Service lands, from the county lines at the top of Dallas Divide, Lizard Head Pass, Bridal Veil Falls, and to Specie Creek Road to the west. The district is comprised of mixed land use that includes communities on the edge of and intermixed with wildland fuels. The area consists of individual rural home, larger-lot subdivisions, as well as high-density housing and commercial buildings and infrastructure. These areas may represent a high threat to life safety due to the likelihood of heavy smoke, heat and the potential to overwhelm the limited number of local suppression resources.

Additionally, several platted and developed communities are scattered throughout the district. Prevalent lightning and high recreational use increase the probability of wildfire in the district.

Table 7. Telluride Community Hazard/Risk Ratings

Community Name	Fire Protection District	Hazard Rating
Aldasoro	Telluride	Low
Ophir	Telluride	Low
San Bernardo/Priest Lake	Telluride	Low
Hastings Mesa	Telluride	Moderate
Ilium Valley/Ames	Telluride	Moderate
Lower Mountain Village	Telluride	Moderate
Two Rivers Subdivision	Telluride	Moderate
Telluride/Hillside	Telluride	Moderate
Iron/Mackenzie Springs	Telluride	High
Down Valley	Telluride	High
Trout Lake	Telluride	High
Upper Mountain Village	Telluride	High
Brown Ranch	Telluride	Very High
Lawson Hill	Telluride	Very High
Specie Mesa	Telluride	Very High

PREPAREDNESS AND FIREFIGHTING CAPABILITIES

This combination department has three stations covering the district. The main station is located in Telluride. Station 2 serves Mountain Village. Station 3 is in Placerville and services the lower valley. The district has approximately 60 volunteers and 5 full time career staff. Of these FD members approximately 40 are Red Carded. A few advanced qualifications in Wildfire Fire are held including Task Force Leader and Type 4 I.C.

Telluride, Station 1
131 W. Columbia, Telluride,
Colorado 81435
(970) 728-3801

Mountain Village, Station 2
411 Mountain Village Blvd,
Mountain Village, Colorado 81435
(970) 728-6007

Placerville Station
24400 Highway 145
Placerville, CO 81430
(970) 728-3802

Table 8. Telluride Fire Protection District Apparatus and Personnel

Station	Manufacture	Use	GPM	Water	Year	Wildland Type	Other
Station 1							
Engine 1	Rosenbaurer	Pumper	1250 gpm	500 gal	2006	Type 1	
Tower 1	E-One	Tower	1250 gpm	n/a	2003	n/a	95 ft
Rescue 1	Precision	Rescue	n/a	n/a	1999	n/a	
Ambulance 1	F450		n/a	n/a	2006	n/a	
Ambulance 11	F450		n/a	n/a	2006	n/a	
Vol Firefighters		22	8 Red Card				
	Highest Qual Level	*FFT2*					
Station 2							
Engine 2	Pierce	Pumper	1250 gpm	500 gal	2000	Type 1	
Ladder 2	Pierce	Ladder	1250 gpm	500 gal	1987	n/a	
Tender 2	International	Tender	250 gpm	1500 gal	2006	Type 2 Tactical	
Brush 2	F450	Brush	150 gpm	250 gal	2000	Type 6	
Ambulance 2	F450	Medical	n/a	n/a	2006	n/a	
Ambulance 4	F450	Medical	n/a	n/a	1996	n/a	
Chiefs Vehical	Explorer		n/a	n/a	1999	n/a	
Vol Firefighters		20	9 Red Card				
	Highest Qual Level	*ENGB*					
Station 3							
Engine 36	Frieghtliner	Pumper	1250 gpm	550 gpm	2000	Type 1	
Engine 39	Spartan	Pumper	1250 gpm	1000 gal	1986	Type 1	
Brush 34	International E-One	Brush	500 gpm	550 gal	2002	Type 3	CAFS
Brush 33	F350	Brush	150 gpm	250 gal	1991	Type 6	
Tender 31	Frieghtliner	Tender	250 gpm	2000 gal	2002	Type 1 Tactical	
Tender 32	Frieghtliner	Tender	250 gpm	2000 gal	2002	Type 1 Tactical	
Ambulance 3	F450	Medical	n/a	n/a	2006	n/a	
Suburban	Chevrolet	Recon	n/a	n/a	1999	n/a	
Vol Firefighters		19	19 Red Card				
	Highest Qual Level	*TFLD/ICT4*					

District Staff							
Firefighters Full Time		5	4 Red Card				
Paramedics Full Time		3					
	Highest Qual Level	*TFLD/ICT4*					
Volunteer Emt		30	1 Red Card				
Other							
Engine 15	Pierce	Pumper	1250 gpm	500 gal	1986	Type 1	
QRV Paramedic	Ford Expedition	Medical	n/a	n/a	2006	n/a	
Fire Marshal	Chevy Colorado		n/a	n/a	2008	n/a	
District Chief Vehical	Honda CVA		n/a	n/a	2008	n/a	
Mechanics Truck	Chevrolet	Mech	n/a	n/a	2000	n/a	

RECOMMENDATIONS

Firefighter Training

Priority Level High: Provide education and experience for all firefighters including

- I-100 (basic ICS) for all firefighters and I-200 (Intermediate ICS) for all fire officers. NIMS courses could satisfy these recommendations.
- A Telluride tailored Basic Wildland Firefighting and Fire Behavior (NWCG S-130/190) for all fire department members.
- S-215 Fire Operations in the Urban Interface should be presented to all fire department members.
- Organize and facilitate table-top or sand-table wildfire exercises with many agencies attending.
- Organize and facilitate an annual wildfire interface training exercise within the communities outlined in this CWPP. Encourage multi-agency participation.
- Encourage personnel to participate in out-of-district training opportunities.

Priority Level High: Run the next Bluegrass Festival or other significant event as a Type 3 incident utilizing county wide and federal resources to plan and execute the fair. This will build trust and competency between the partners in preparation for the next significant fire event.

- Training in preparation of this event should include
  - ICS 100, 200 and 300
  - Practical or table top exercise with the designated Team.
  - A training officer should be assigned to the team to facilitate OJT or Task Book competencies.

- Consider inviting experienced ICS personnel to proctor the incident and provide input during the After Action Review.

Priority Level Moderate: Develop a program to become cooperators with the Colorado State Forest Service for state and national wildfire response.

- The TFPD does not have enough wildfires in the district for fire fighters to gain competency. Cooperating with the CSFS provides substantial opportunity to learn and return with increased knowledge that can be share and utilized at the district level.

Firefighter Safety

Priority Level High: Provide minimum wildland Personal Protective Equipment (PPE) for all firefighters. (See NFPA Standard 1977 for requirements.)

Priority Level High: Ensure that the current fire operations personnel rehabilitation system is sufficient. At a minimum each department should have drinking water and MRE's (meals ready to eat) to support their personnel for 24-48 hours.

Equipment

Priority Level High: Ensure that all wildfire apparatus have the ability to discharge Class A firefighting foam. Foam is a proven agent which enhances the effectiveness of water especially when applied to thick grass. Most fire departments currently use this and can be a source of information and training for others.

Priority Level High: Develop an equipment maintenance and replacement plan.

WATER SUPPLY

Due to the nature of the wildland fuels in the study area, water is a critical fire suppression resource. Telluride and several of the communities are serviced by an adequate hydrant network. The Town of Mountain Village has a 3 million gallon tank which is stored in the Ski Ranches, two miles above the town. The water is available via hydrants throughout the town.

Immediately accessible water sources must always be considered to fully support fire operations; therefore, the following recommendations are suggested.

RECOMMENDATIONS

Priority Level High: Ensure that hydrants are operational. Test hydrants annually, and guarantee that they are obstruction free and visible.

Priority Level High: Support and facilitate the installation of draft hydrants and cisterns as described in the community recommendations to follow.

COMMUNITIES – LOWER VALLEY

Figure 32. Telluride FPD Communities – Lower Valley

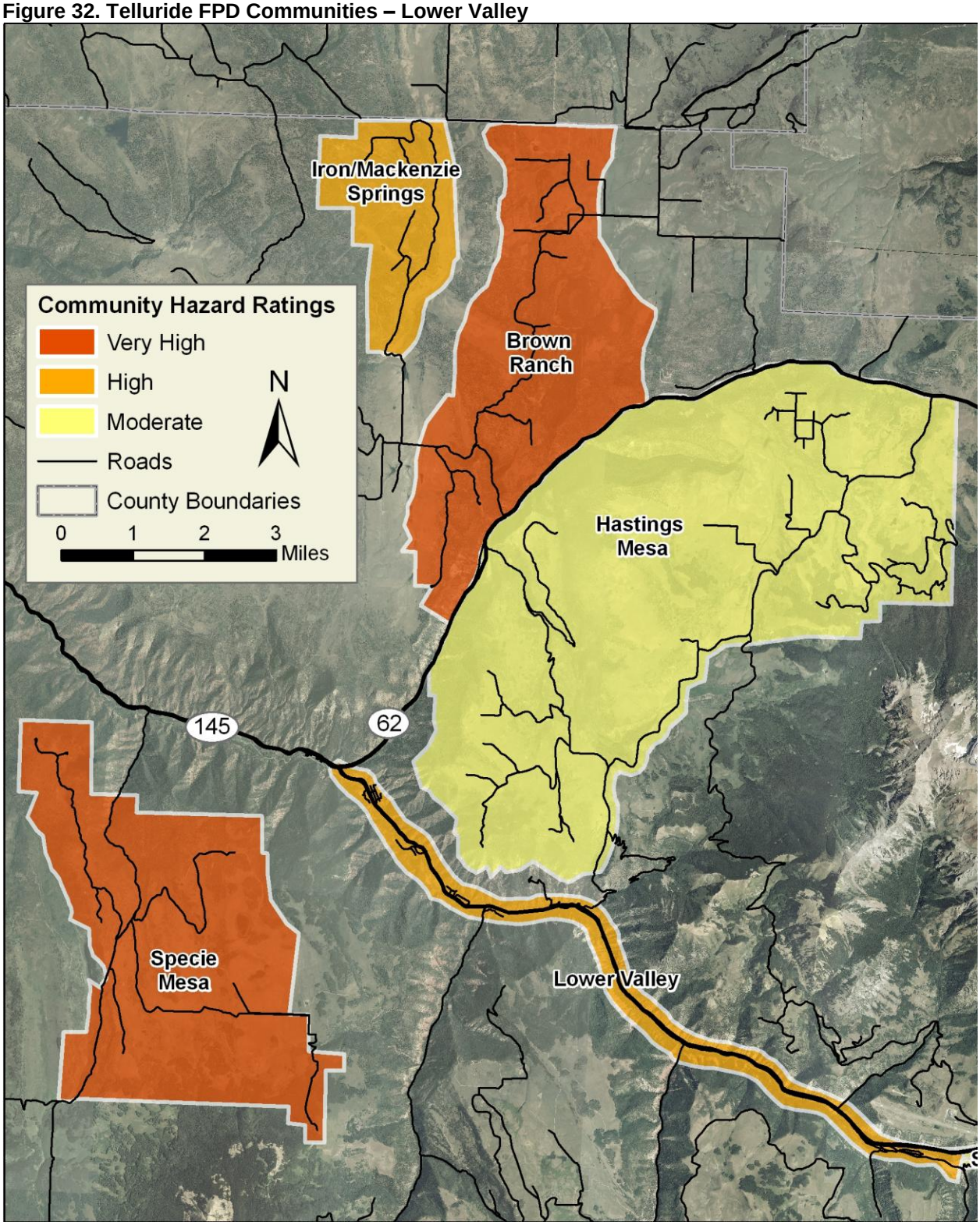
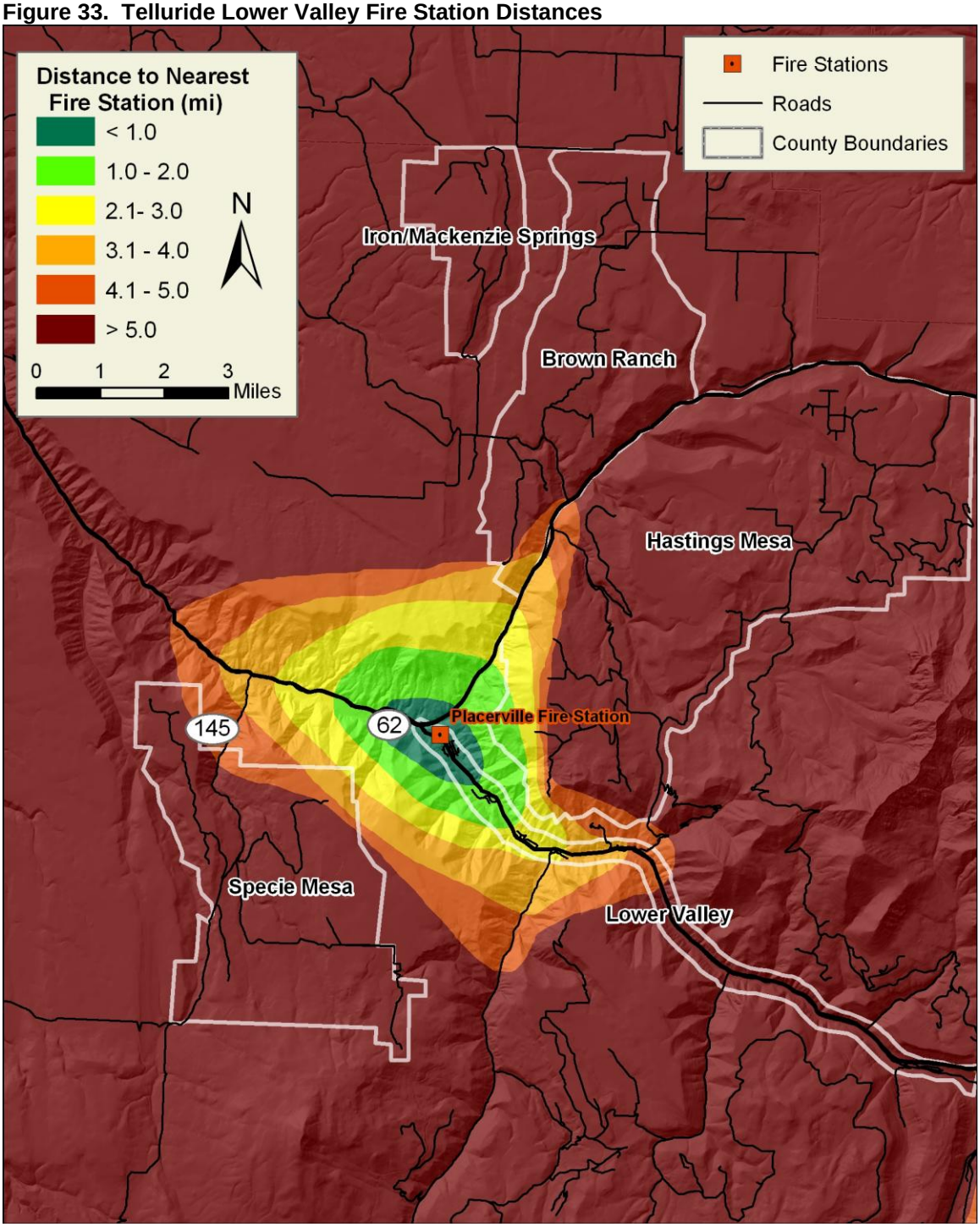


Figure 33. Telluride Lower Valley Fire Station Distances



1. Specie Mesa – Hazard Rating: High


Entrance to Specie Mesa Ranch Subdivision

Description

The Specie Mesa area includes the following residential subdivisions:

- The Peninsula (Peninsula Park, Peninsula, Peninsula Pines, Peninsula Point)
- Estates Ranches
- Specie Mesa Ranch
- Top of the World
- Views at Top of the World
- Several independent parcels including access to the Great American Ranch (Beaver Mesa)

These associations operate independently for the most important and do not generally cooperate on other activities.

Home construction is mostly consistent throughout the area: class-A roofing materials are common as is heavy log/timber construction or other wood siding and decks. Homes tend to be large with multiple outbuildings. More recently constructed homes in the Peninsula tend to have fire resistant roofing materials. Many homes are built in locations that maximize views. This also tends to locate them on or near steep canyon walls with extreme hazard. Lots are generally 35 acres in size though they can vary from 5 to over several hundred acres. Many driveways in the area are sub-standard in width and vegetative clearance and have trees or man-made obstructions that may block fire equipment access. Most homes have minimal water storage in the form of in-home storage tanks of 100 gallons or less to buffer well water supplies. There are also several large ranches in the area. Federal lands – National Forest and BLM – abut many properties in the area including all of the Peninsula and much of the remaining sub-divisions.

There is no municipal water supply in the area. There are several ponds in the area including two all year ponds in Specie Mesa Ranch, one small pond in the Estate Ranches and several other smaller ponds. There are also seasonal ponds in the Peninsula and elsewhere that could be converted with proper investment into permanent water storage facilities.

Fuels in the area are a mix of Ponderosa Pines, Gambel Oak, Pinyon Pines, Junipers, Firs and open grass meadows. Of particular concern is the dead oak which is often adjacent to or under Ponderosa Pines. The forest appears to be relatively uniform age with a few old-growth – up to 300 year old – Ponderosa Pines interspersed. Recent years of drought have killed a large percentage of the Gambel Oak and stressed the pines leading to die off and increased beetle

kill. The terrain bordering many of the subdivisions or partially included within them is extremely steep. Slopes such as those found in Saltado Creek Canyon with south and southwest facing slopes tend to be extremely dry and characterized by Pinyon/juniper forests with heavy clusters of oak and much deadfall. Prevailing winds tend to be from west to east and can be extremely strong in all seasons.

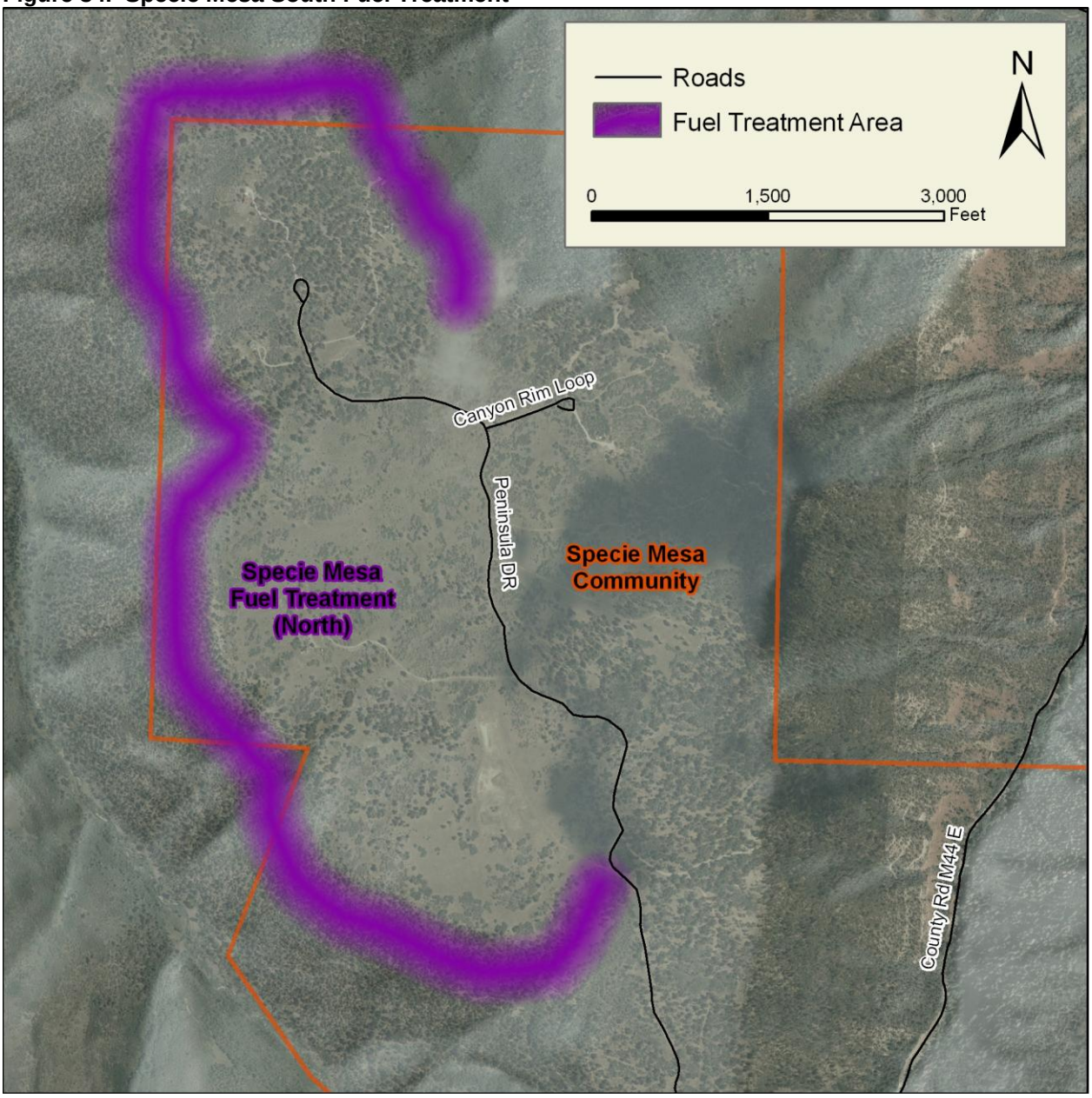
SPECIE MESA RECOMMENDATIONS

- Roadside brushing along all roads in all subdivisions should be conducted to improve visibility and safety since these roads are the subdivisions only access and egress. Brushing projects will need to be repeated every several years.
- M-44/Specie Creek Road should be treated to improve safety include thinning of hazardous areas of brush and forest. Particular attention should be given to stands of trees which threaten access. Most hazardous areas are on federal land or within the County's right of way.
- Access to one or both of the ponds in the Specie Mesa Ranch subdivision should be improved and a draft hydrant installed to facilitate drafting.
- One or more of the seasonal ponds in The Peninsula should be considered for improvement to maintain water all year. Such improvements would include lining. The owner of the large seasonal pond on "Sunset Watch" has indicated a willingness to work on a cooperative basis with the POA and the County to improve that pond which already has a dry hydrant installed. Others ponds should be examined for similar potential. Such improvements are very costly and some type of cost sharing would greatly improve the chances for such a project.
- Adequate defensible space for all structures and driveways is recommended. Structure survivability and access could be dramatically increased by limbing, mowing and or weed whacking for 150 feet around homes (greater on steep slopes), structures and 50 feet around driveways. Driveways should be examined and improved to facilitate emergency apparatus access and impediments to such access should be removed.
- Clear flammable vegetation and hazardous materials, including firewood, away from exposed decks, propane tanks and power lines serving subdivisions and the region.
- Safe zones and "shelter-in-place" zones for people and domestic animals should be identified and permanent signage installed to mark these areas.
- Owners Associations should consider programs like association provided chipping or burning of slash and other efforts to encourage fire mitigation work.
- Regular education programs as simple as yearly emails to subdivision owners with FireWise and other educational material links should be conducted by owners associations. Additionally the County should consider mailing fire safety information with tax or utility bills. Owners associations should be encouraged and facilitated in creating forest health and fire safety subcommittees perhaps with the goal of creating subdivision mini-community wildfire plans for each subdivision. Colorado State Law regarding cooperative owners' associations requires owners associations to conduct annual education efforts for owners. Fire safety and forest health are natural subjects for these education efforts.

- Work with federal and state agencies to create a buffer zone between federal and private lands to slow and reduce scale of fires that might move from steep canyon walls to mesa tops.
- Selective controlled burning on both private and federal land should be considered.
- The County should provide model Fire Safety and Forest Health regulations that subdivisions could modify and incorporate into their existing Covenants, Restrictions and Regulations. Model regulations might include defensible space, forestry regulations, construction materials and other best practices.
- The County should consider building regulations which place new structures away from canyon walls and set minimum safety requirements for building materials, driveway construction and other fire safety measures. New or replacement roofing materials should be required to be inflammable. Entrance gates for subdivision roads and driveways should be required to accommodate fire apparatus.

Figure 34 on the next page shows the proposed Specie Mesa South Fuel Treatment project, which runs along the main access route to the Specie Mesa community.

Figure 34. Specie Mesa South Fuel Treatment



2. Iron/Mackenzie Springs – Hazard Rating: High

Description

The area of Iron Springs and Mackenzie Springs includes the primarily residential areas of the mesa, with the exception of Brown Ranch, which is a separate community. Home construction is consistent throughout the community: Class A roofing materials and either heavy log/timber construction or other wood siding and decks. Homes tend to be large with multiple outbuildings. Lots are generally 5+ acres. There are several larger ranches in the area.

A significant history of fire ignitions has been recorded west of the community on Federal lands. It is also worth noting that a fire originating on Federal lands to the east could move uphill into the community. A geographic fuel break is not recommended until the area is more built out. The few homes within the area should focus on defensible space for the primary structure and all outbuildings.

The primary access/egress route is the X48 Road which runs over two miles from the intersection with HW 62 to the intersection of McKenzie Springs Road. The road is steep and crosses several drainages with heavy fuel concentrations. There is no municipal water supply in the area, but the district has proposed installing a draft hydrant in the pond south of the intersection of McKenzie Springs Drive and McKenzie Springs Road. Anchor Point supports this proposal.

The predominant fuels in this community are a mix of closed canopy Ponderosa Pine and Aspen. There is potential for crown fire and the fire intensity is moderate to extreme. There is some Gambel Oak in the understory, which can be very volatile and burn very hot under drought conditions. It should be managed and maintained regularly. Aspen stands are much less of a concern and usually act as natural firebreaks. However, the stands should be cleared of dead and down material to minimize the potential for fire spread.

IRON/MACKENZIE SPRINGS RECOMMENDATIONS

- Establish a community water supply through the installation of a draft hydrant on Mackenzie Springs Drive
- Gambel Oak should be thinned from the understory of the ponderosa.
- Dead and down material should be removed from Aspen stands.
- Adequate defensible space into Zone 3 is recommended for all homes, especially those located adjacent to the steep slopes and canyon edges.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

3. Brown Ranch – Hazard Rating: Very High

Description

Home construction in Brown Ranch is consistent throughout the community: Class A roofing materials, and traditional wood siding and decks. Homes tend to be large with multiple outbuildings. Lots are generally 5+ acres. There are several larger ranches in the area. The primary access route is the X48 Road which runs approximately one mile from the intersection with HW 62 to the intersection of Brown Ranch Road. The road is steep and crosses several drainages with heavy fuel concentrations. There is no municipal water supply in the area. A draft hydrant should be installed in the pond near the Z60 and 57 ½ Road to establish a community water supply.

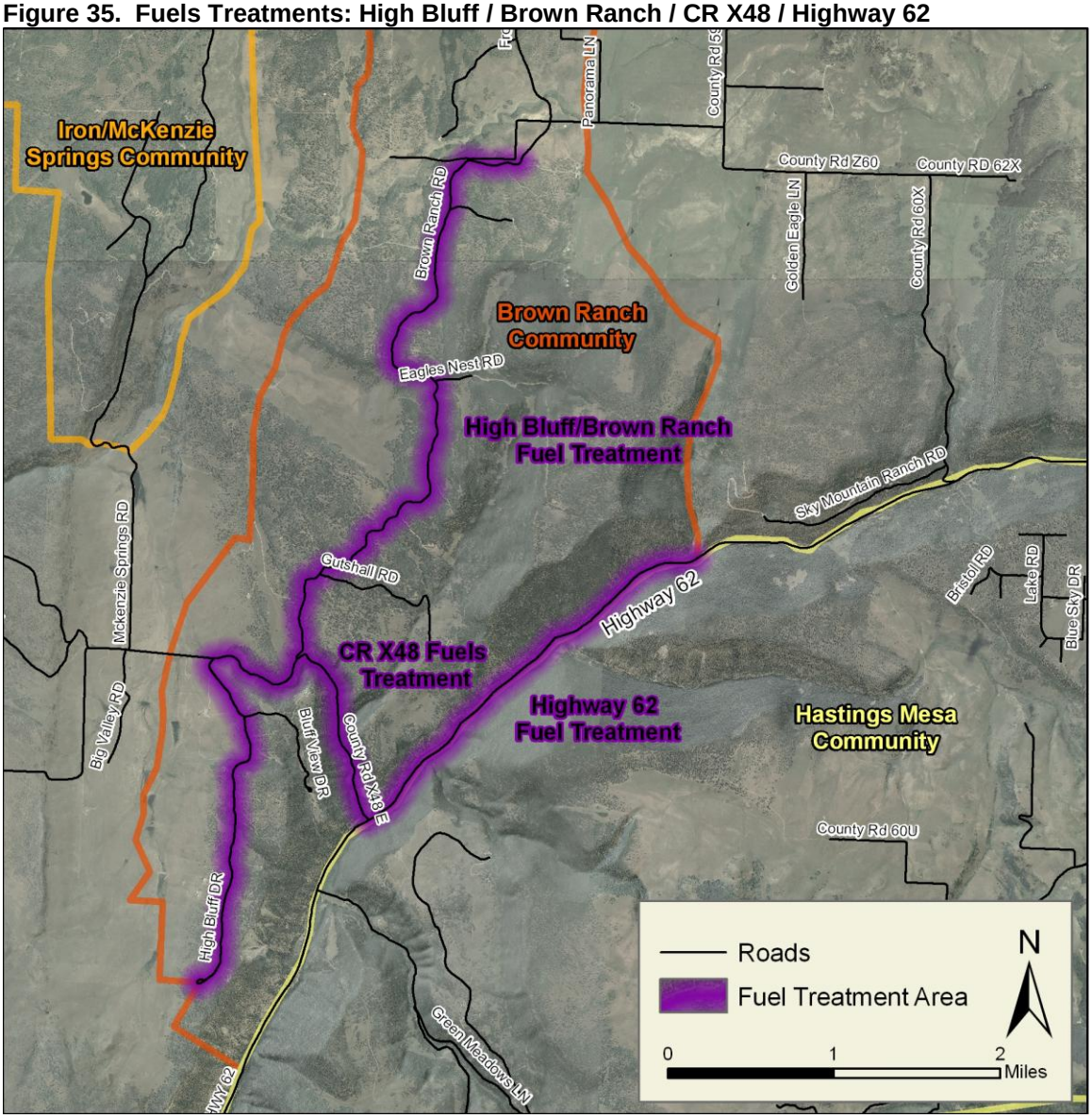
The fuels in this community vary from shrubs to Mixed Conifer. Mixed conifer stands have a potential for crown fire because low-lying limbs can act as ladder fuels. The community of Brown Ranch is concerned about the fire history west of the mesa. Fire behavior modeling and on-site inspections indicate a low potential for a fire moving off of Federal lands to the east and into the community. The large, grazed meadow and road system provide geographic fuel breaks for the community. The more probable fire threat is from an ignition off of HW 62 or from the lower (eastern) areas of the community running uphill into the community.

BROWN RANCH RECOMMENDATIONS

- Establish a community water supply.
- Install a draft hydrant on the Z 60 Road pond.
- Strategically locate a large cistern (30,000 – 50,000 gallons) to augment the draft hydrant and water tenders.
- Ensure that the large pasture area is grazed.
- For areas that are not grazed, ensure that Brown Ranch Road and High Bluff Road maintain a minimum of 20 feet of mowed grass and thinned trees and or brush on either side of the road.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

Figure 35 on the next page shows the proposed fuel treatment projects that will have an impact on the Brown Ranch, Iron Springs and Mackenzie Springs communities.

Figure 35. Fuels Treatments: High Bluff / Brown Ranch / CR X48 / Highway 62



4. Hastings Mesa – Hazard Rating: Moderate

Description

The area of Hastings Mesa includes the populated areas of the mesa including Old Elam Ranch, San Juan Village and the scattered homes and ranches throughout the mesa. Home construction is varied throughout the area, although Class A roofing materials and either heavy log/timber construction or traditional wood siding and decks are predominant. The primary access routes include the following: 56-V road off of Hwy. 62; 58P Road off of Hwy. 62 at Noel; and 58P off of Hwy. 145 at Sawpit. The roads are good dirt and gravel, but access to the mesa can be steep and winding, making the access and egress slow for responding apparatus. There is no municipal water supply in the area.

The fuels in this community are primarily open grass meadows, Gambel Oak and Aspen. The grass can easily ignite and spread rapidly into the Gambel Oak stands. Gambel Oak is very volatile and can burn very hot with extreme fire behavior under drought conditions. Aspen is typically a natural firebreak but dead and down material can allow fire spread through the stand.

HASTINGS MESA RECOMMENDATIONS

- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

5. Lower Valley – Hazard Rating: High

Description

This community area includes all the structures on Hwy. 145 from the junction of Hwy. 62 west to the bottom of the hill near Two River Subdivision. Placerville and Sawpit are part of this community. Home construction is consistent throughout the area: Class A roofing materials with wood siding and decks are predominant. All structures are accessed off of Hwy. 145. Roads and driveways accessing homes vary in quality, and many of the driveways are sub-standard in width and vegetative clearance. There is no pressurized municipal water supply in the area, although draft hydrants and draft locations along the river provide water supply.

The fuels vary, but there is generally a mix of riparian hardwoods and open grass in the valley bottom, with mixed conifer on the north-facing slopes and Pinyon-Juniper on the south-facing slopes. The biggest concern would be embers and flaming material cast down from a fire on the steep slopes.

LOWER VALLEY RECOMMENDATIONS

- Ensure that all bridges are evaluated and placarded for bridge load limits.
- Standardize both street and home addressing.
- Install draft hydrants in all historic draft sites along the river and sign appropriately.
- During times of extreme fire danger, use CDOT mobile electronic bulletin boards in conjunction with public events to increase public awareness along the Hwy. 145 Corridor.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

COMMUNITIES – UPPER VALLEY

Figure 36. Telluride Upper Valley Communities

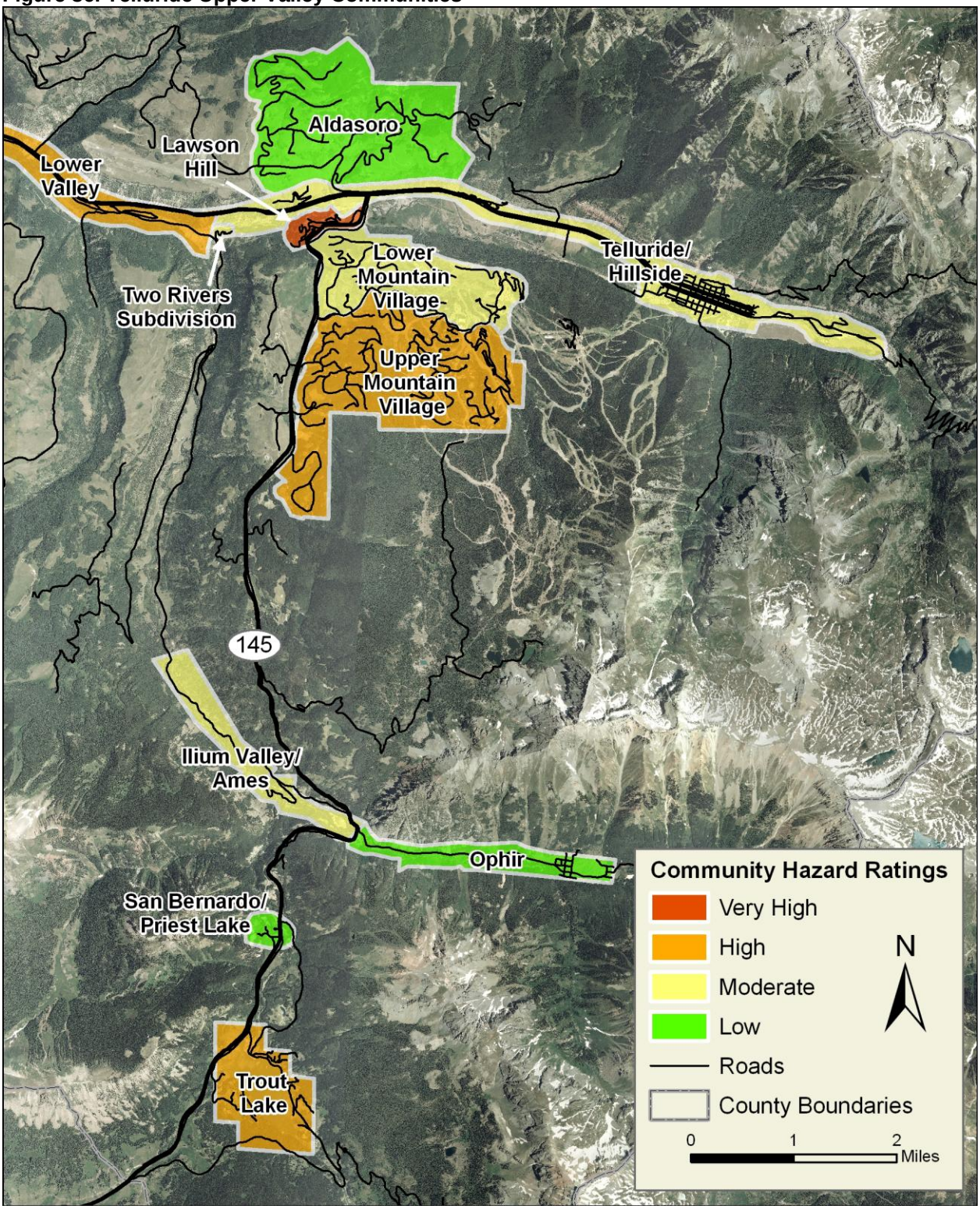
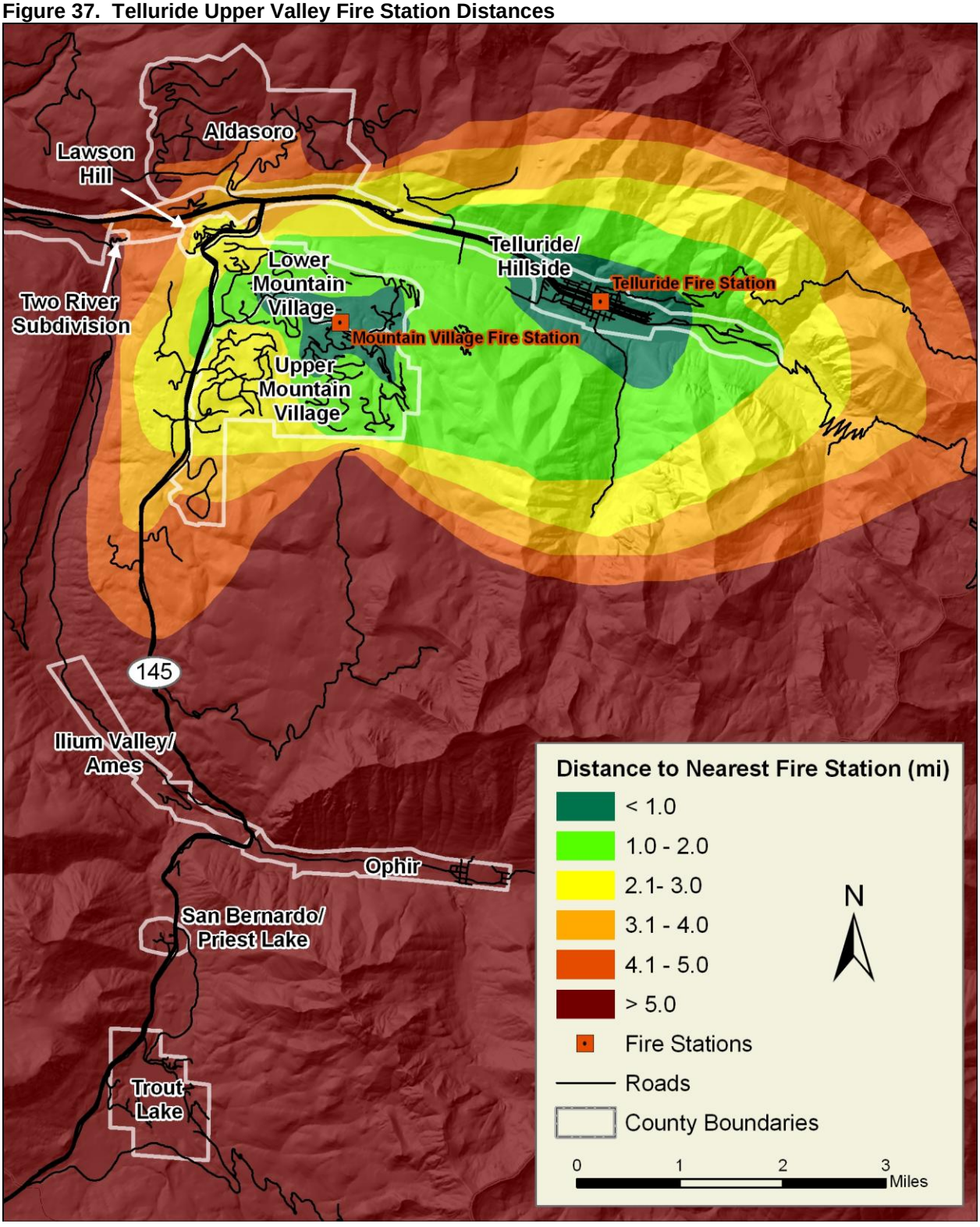
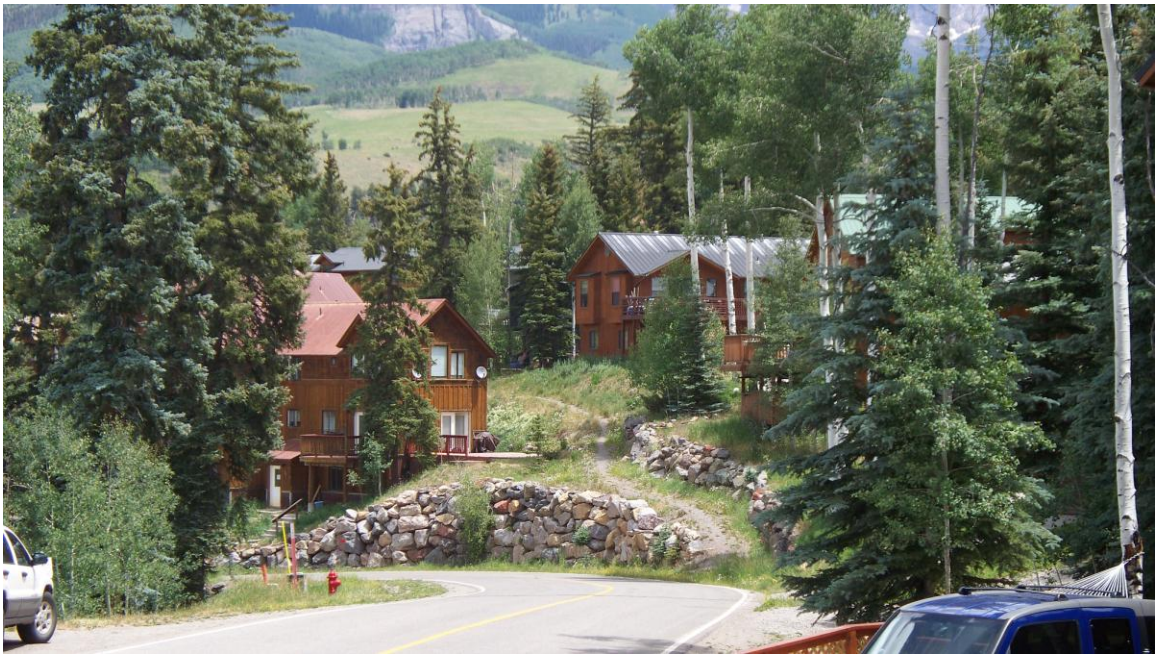


Figure 37. Telluride Upper Valley Fire Station Distances



1. Lawson Hill – Hazard Rating: Very High



Description

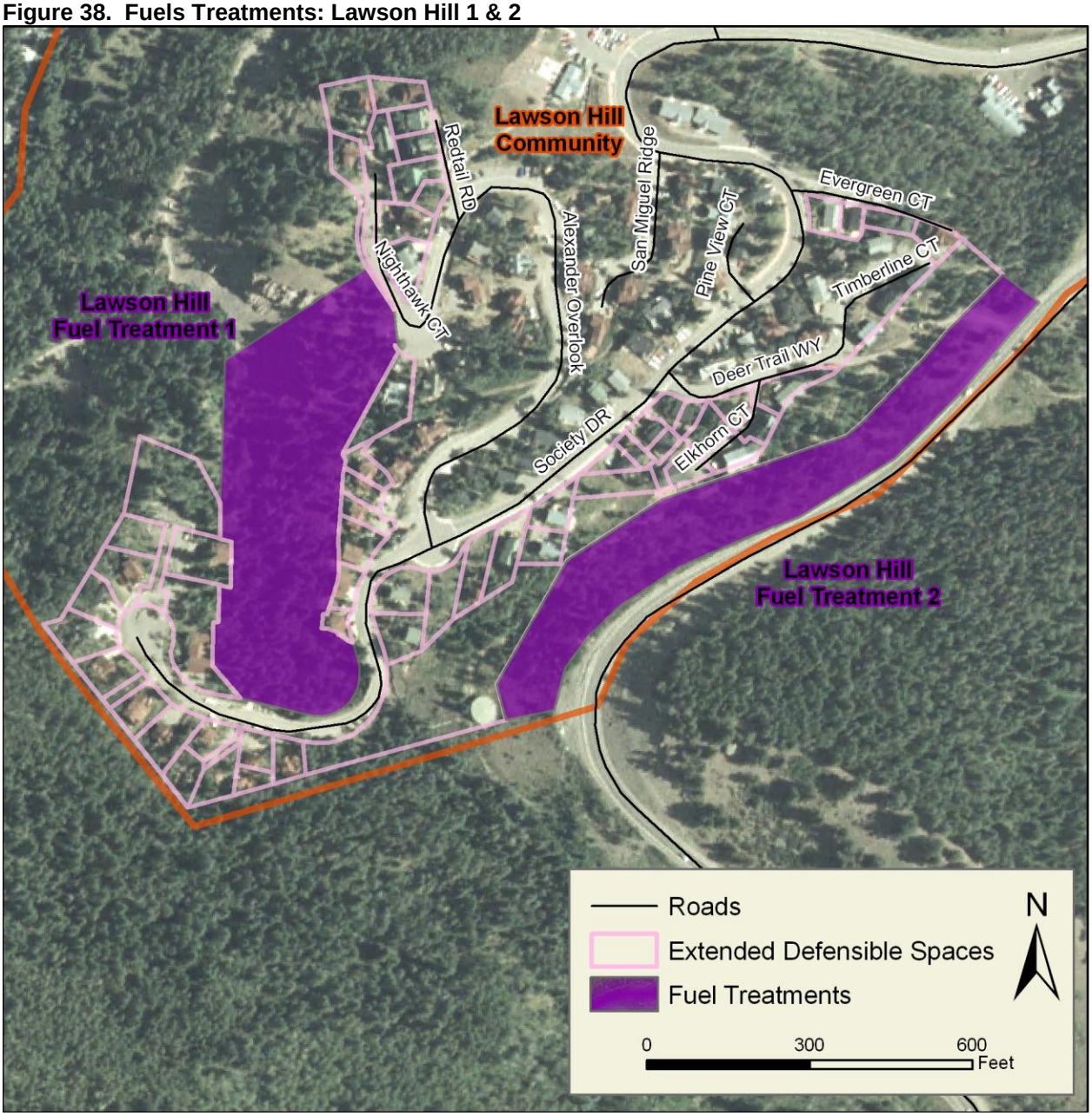
This community has a higher density of homes than most of the other surrounding areas. The primary access is via a paved winding and steep. The road is somewhat narrow for emergency equipment. There is a second means of egress in this community. However, it is gated and not maintained in the winter. It is not a paved surface and exits onto HWY 145. There is a lot of yard clutter and flammables stored under decks and under the wooden walkways between parking areas and the homes.

The fuels are a mix of Aspen and Conifer. The area is maintained with lawns and landscaping but the perimeter is more densely covered with Conifer. There is a very steep cliff to the southwest with a drainage that runs from the river south/southeast to the top of the community. There is heavy fuel loading along this drainage that should be mitigated.

LAWSON HILL RECOMMENDATIONS

- A fuelbreak is recommended in the drainage below Society Drive and towards Highway 145. Patch-cuts promoting re-growth of healthy young aspen should be implemented as well (see **Figure 38** on the next page).
- Linked defensible space is recommended for homes along Society Drive, Elkhorn court (see **Figure 38** on the next page).
    - Adequate defensible space is recommended for all homes.
- Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain any fire hydrants are visible, maintained and operable.

Figure 38. Fuels Treatments: Lawson Hill 1 & 2



2. Trout Lake – Hazard Rating: High

Description

This community is a mix of old and new construction with some wood shake roofs. The north side of the community is accessed through a narrow dirt road that loops around the lake and out to Hwy 145. The south side has only one way in and out. Some of the spur roads are steep, narrow and are not adequate for emergency equipment access. Trout Lake is a good water source but there is no formal water supply connection. The main road is an access to public lands to the east and increases traffic in the summer time. The lake is also public access. The nearest fire station is over 5 miles away via a steep road.

The fuels vary from Aspen stands to mixed conifer. The biggest concern is the south side of the community where the homes are built within the mixed conifer. The stand has bug kill, with standing dead trees that can significantly increase the fire potential.

TROUT LAKE RECOMMENDATIONS

- The historic railroad water fill tank should be inspected and mitigated.
- Install a dry hydrant connection at Trout Lake and develop access for emergency equipment.
- Mixed Conifer stands should be surveyed for beetle infestation and any infected trees removed. This should be done annually before summer.
- Provide fire safety information at the entrance / parking area on the lake. Provide fire safety information with all special use permits (weddings, etc.).
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

3. Upper Mountain Village – Hazard Rating: High

Description

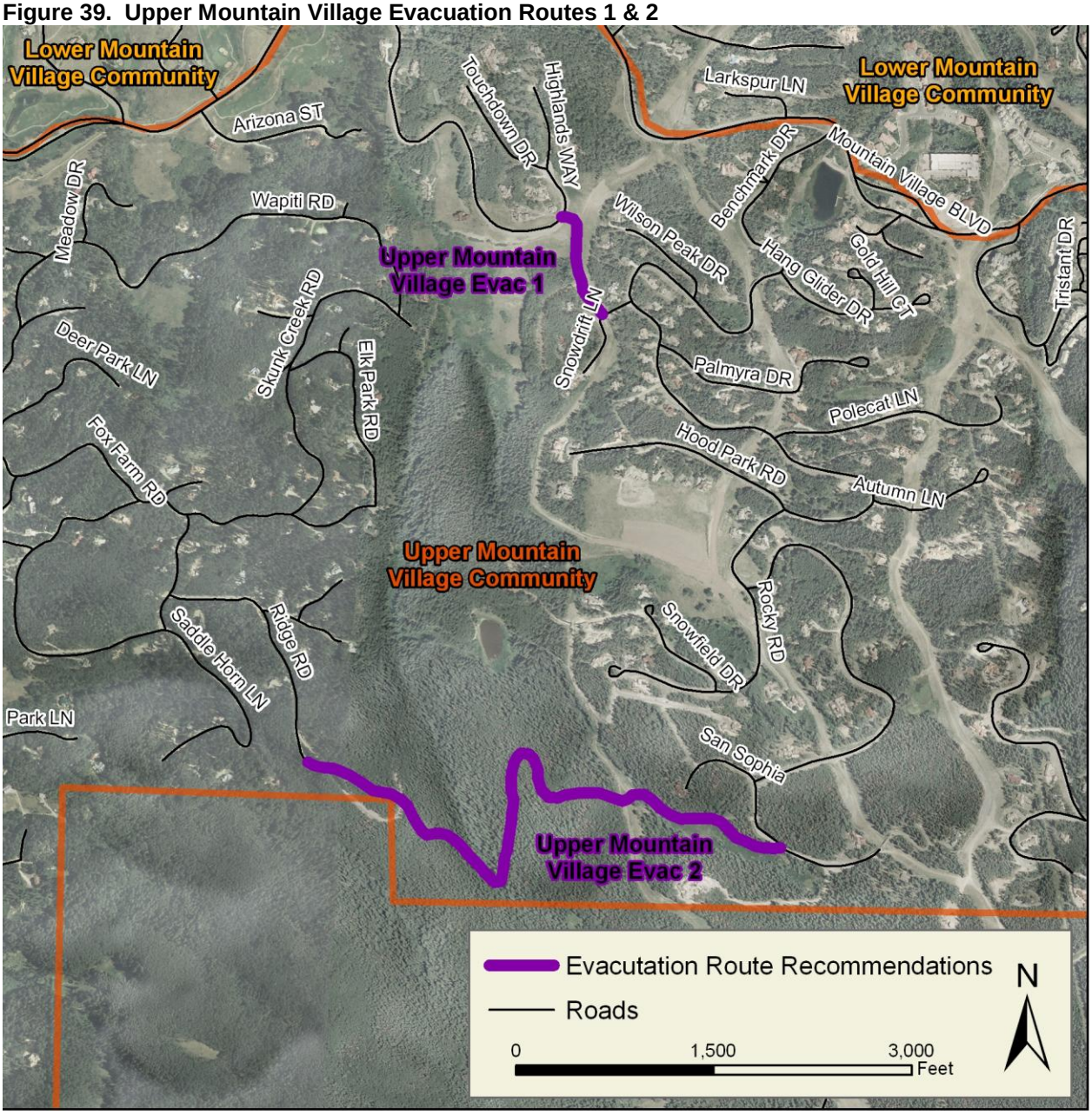
This includes the primarily residential area south of Mountain Village Blvd. as well as Fox Farm, Elk Run, and Raspberry Patch. The construction is similar throughout the area, although some of the construction is older in some of the sub-communities. The road system is good, but it is steep and winding. The area has hydrants and a fire station. There is a network of paths and ski runs that can be used as fuel breaks. The homes are more in the mixed conifer than the lower village. The biggest concern is the shake shingle roofs that are present on many of the structures. The area is patrolled regularly.

Fuels are primarily made up of Aspen stands and stringers of mixed conifer. Most of the homes are built adjacent to these conifer stringers and should maintain a good defensible space buffer. There is also more evidence of beetle kill in these stands. Aspen is rarely a concern for firefighters and acts as a natural fire break. However, some of the stands are in decline and may have dead and down trees and limbs that will burn more intensely. The mixed conifer will act as a ladder fuel and move fire into the crowns. Conifers generate embers and standing red trees will further contribute to intense torching and crowning. The biggest concern would be embers onto the shake shingle roofs.

UPPER MOUNTAIN VILLAGE RECOMMENDATIONS

- A secondary emergency egress should be explored between Ridge Road and San Sophia Drive (see **Figure 39**).
- A secondary emergency egress should be explored between Touchdown Road and Snowdrift Lane (see **Figure 39**).
- Aspen stands should be thinned in order to reduce fire intensity and improve the health of the stand.
- Mixed Conifer stands should be thinned and limbed to defensible space standards.
- Mixed Conifer stands should be surveyed for beetle infestation and any infected trees removed. This should be done annually before summer.
- All cedar shake roofs should be replaced by Class A roofing materials.
- Provide rental and property management companies with fire safety brochures that can be distributed and made available to guests in the summer months.
- Post fire danger for the day at the gate house entrance. This information will need to be kept current.
- Linked defensible space is recommended for all homes.
    - Simply limbing, mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters, could profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain any fire hydrants are visible, maintained and operable.

Figure 39. Upper Mountain Village Evacuation Routes 1 & 2



4. Two Rivers Subdivision – Hazard Rating: Moderate

Description

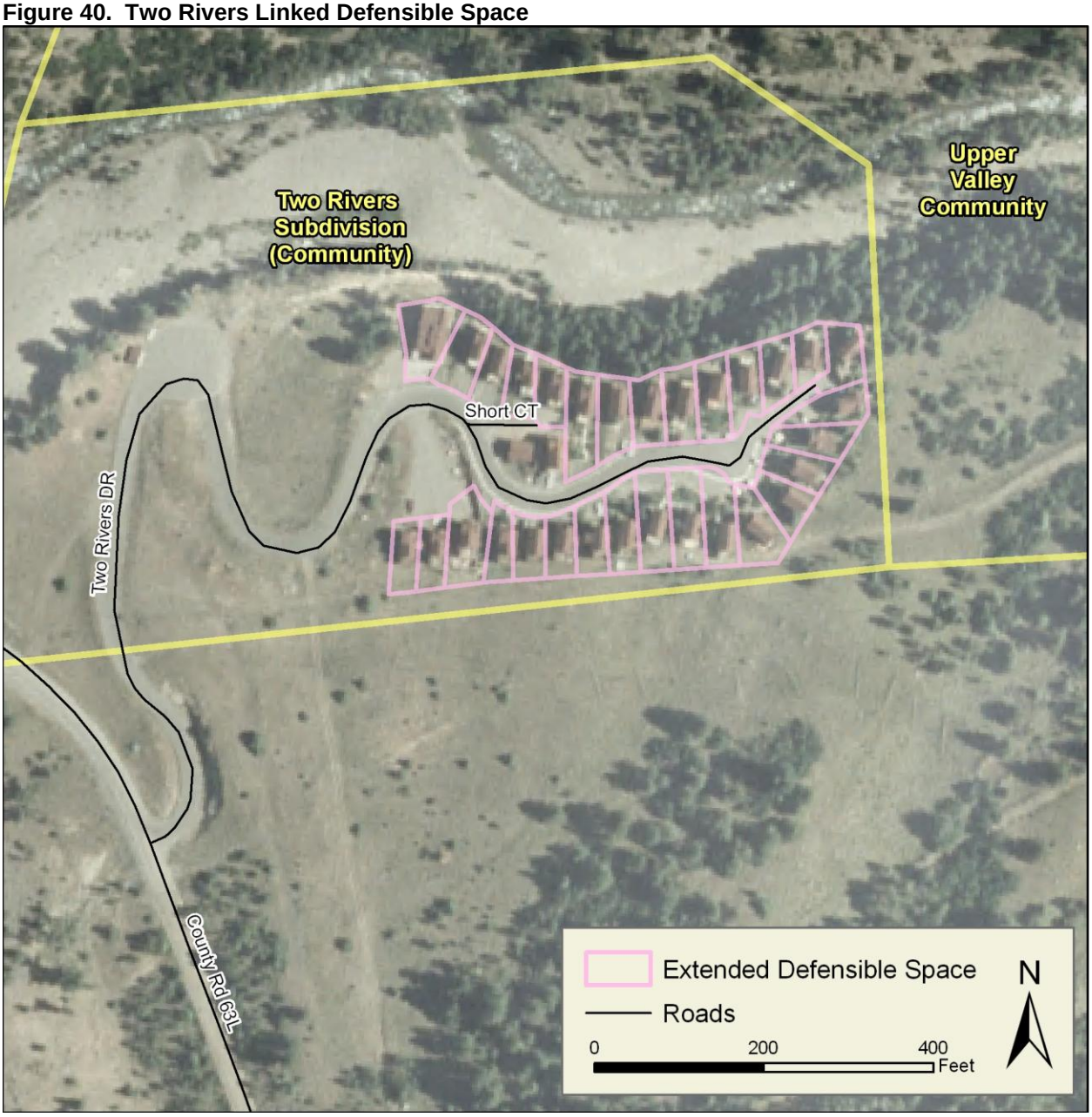
This community is made up of closely spaced town homes. The access is via Ilium road, which is well maintained and a paved road through the community. The community has a hydrant system; however, the fire department is more than 5 miles away. There are plans to develop more units to the west. Some of the units have exposed decks and combustibles stacked near or against the structure.

The fuels are mostly grass directly around the structures; however, there is a stringer of conifers to the north that could be an issue. The grass can easily ignite and move into the conifers. The conifers have branches to the ground (ladder fuels) and could move the fire up into the crowns casting embers back toward the homes.

TWO RIVERS RECOMMENDATIONS

- Extended and linked defensible space is recommended for all homes, especially those located on the outer perimeter adjacent to forest. Refer to **Figure 40** on the next page.
    - Simply limbing, mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters, could profoundly increase structure survivability. Clean leaf and needle litter from roofs and gutters and away from foundations.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain any fire hydrants are visible, maintained and operable.

Figure 40. Two Rivers Linked Defensible Space



5. Telluride/Hillside – Hazard Rating: Moderate

Description

This includes structures from Society Turn east including Telluride. There is a mix of construction types and land use in the area. The upper valley is more open then the lower valley and overall has better access for fire response. There are hydrants and stations located in close proximity to most of the area. Telluride has some narrow, steep streets on the north side that are of concern for fire response.

The fuels vary but generally, it is a mix of riparian hardwoods and open grass in the valley bottom and mixed conifer on the slopes. The south-facing slopes have Pinyon-Juniper and the north-facing slopes have mixed conifer. There is also a large open space area that is not maintained. While this is a wetland, the fuel loading is high and under drought conditions, could support a fire that would move quickly through the valley and towards the adjacent conifer slopes.

TELLURIDE/HILLSIDE RECOMMENDATIONS

- Make certain all fire hydrants are visible, maintained and operable.
- During times of high to extreme fire danger – utilize mobile CDOT signage along Hwy 145 to heighten awareness.
- Provide fire safety information at the trailhead / parking area on the east side of the large open space. (Hwy. 145 at the Conoco).
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
    - In Telluride, the homes backing up to natural fuels on the North side, should take particular care to create defensible space
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain any fire hydrants are visible, maintained and operable.

6. Ilium Valley/Ames – Hazard Rating: Moderate

Description

This community is positioned along the South Fork of the San Miguel River drainage. The homes are of mixed construction but are mostly class A or B roofing with wood siding. Several of the structures are of heavy timber or log construction resulting in a fire resistive home. Addressing for streets and homes is poor. There is dual access to this neighborhood on a steep narrow dirt road. This road would be challenging for emergency equipment. There is adequate water but no formal water supply. There is also an electrical transfer station with numerous power lines that should be inspected.

The fuels are mixed conifer and mixed hardwoods. This is a riparian area with mostly fire resistant species. However, the topography is a classic chimney that would accelerate fire through the drainage and up the hill. A fire start from below could loft embers into the more receptive conifers.

ILIUM VALLEY/AMES RECOMMENDATIONS

- Inspect transfer station and mitigate with defensible space if necessary.
- Install draft hydrants along the river and develop access for emergency equipment.
- Install a fire department connection to the private water tank above community.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.

7. Lower Mountain Village – Hazard Rating: Moderate

Description

This community includes the area north of Mountain Village Boulevard. There is a mix of construction types and land use in the area. The biggest concern is the shake shingle roofs that are present on almost all the structures. The road system is good with turnouts and several ways in and out of the village. The area has hydrants and a fire station. There is a network of golf courses, paths and trails that can be used as fuel breaks. The northeast portion of the community sits above a steep heavily forested slope. The area is patrolled regularly.

Fuels are primarily made up of large grass meadows and Aspen stands. There are stringers of mixed conifer throughout the area. Some of the homes are built adjacent to these conifer stringers and should maintain a good defensible space buffer. Grass is a flashy fuel that can spread fire quickly up the slope. Aspen is rarely a concern for firefighters and acts as a natural fire break. The stands may have dead and down trees and limbs that will burn more intensely. The mixed conifer will act as a ladder fuel and move fire into the crowns. The biggest concern would be embers onto the shake shingle roofs.

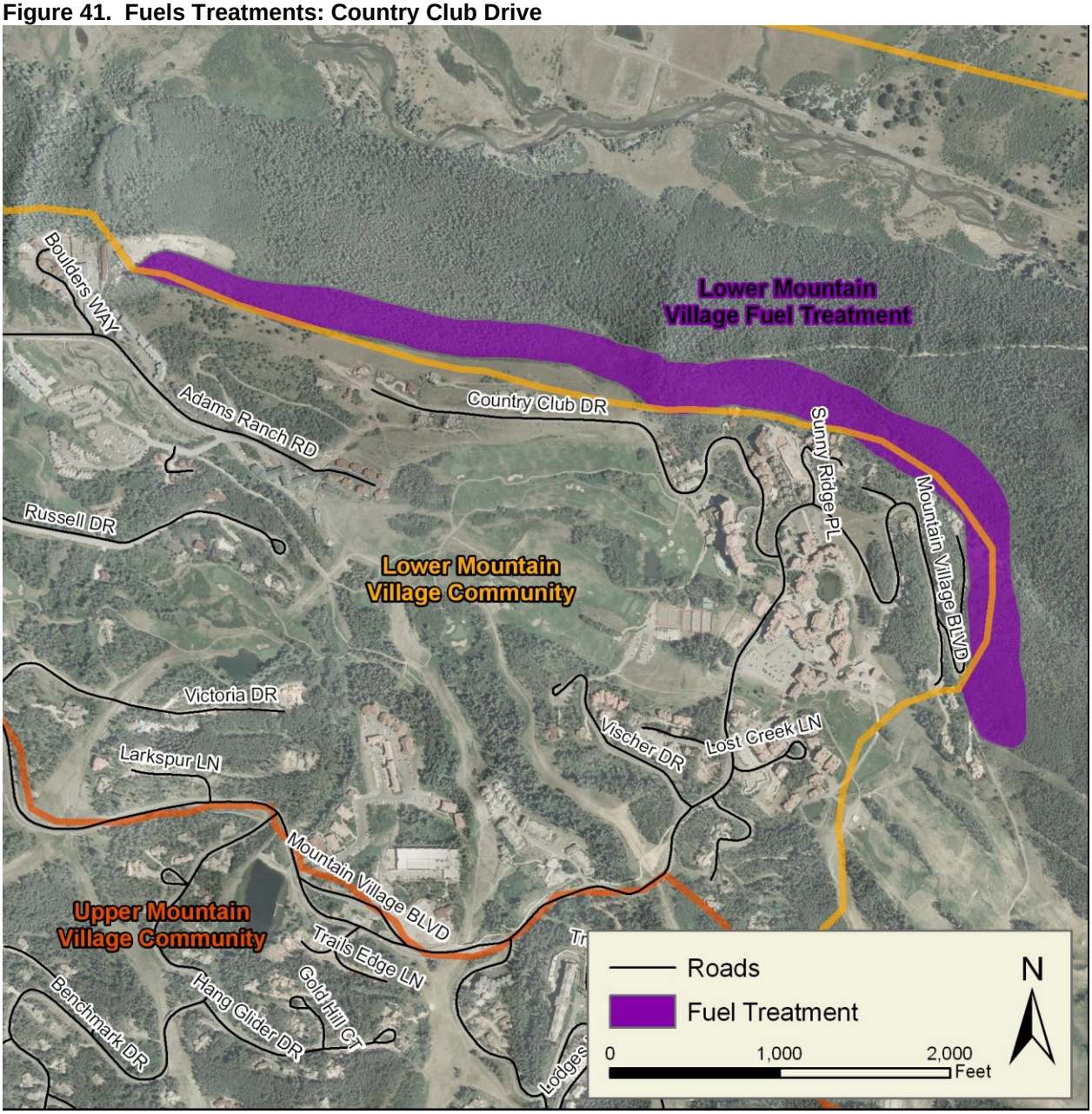
LOWER MOUNTAIN VILLAGE RECOMMENDATIONS

- A modified fuelbreak should be implemented along the northeast portion of the community near Country Club Drive. See **Figure 41** on the next page.
- Aspen stands should be thinned in order to reduce fire intensity and improve the health of the stand.
- Mixed Conifer stands should be surveyed for beetle infestation and any infected trees removed. This should be done annually before summer.
- Provide rental and property management companies with fire safety brochures that can be distributed and made available to guests in the summer months.
- Post fire danger for the day at the gate house entrance. This information will need to be kept current.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain any fire hydrants are visible, maintained and operable.

Golf Courses:

- Along cart and foot trails mow grass and weeds to a low height. This should be a minimum of 6 feet from the edge of the trail where possible.
- All buildings and improvements adjacent to wildland fuels should follow defensible space recommendations.
- During times of high fire danger, a “no smoking” policy should be enacted and enforced when on the course.
- Wildfire educational materials and fire danger signage should be available and posted at the clubhouse. The fire danger for the day should be displayed; this information will need to be kept current.

Figure 41. Fuels Treatments: Country Club Drive



8. Aldasoro – Hazard Rating: Low

Description

This community is positioned on a large sloping mesa. The homes are spread out on large open lots. The access road is paved but is steep and winding. Signage in the community is good. There are hydrants throughout the community; however, the nearest fire station is over five miles away.

The fuels are made up of large grass meadows and Aspen stands. Further up the slope is some mixed conifer. A few of the homes are built in the conifers and should maintain a good defensible space buffer. Grass is a flashy fuel that can spread fire quickly up the slope. Aspen is rarely a concern for firefighters and acts as a natural fire break. The stands may have dead and down trees and limbs that will burn more intensely.

ALDASORO RECOMMENDATIONS

- Aspen stands should be thinned to reduce fire intensity and improve the health of the stand.
- Provide rental and property management companies with fire safety brochures that can be distributed and made available to guests in the summer months.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain any fire hydrants are visible, maintained and operable.

9. Ophir – Hazard Rating: Low

Description

This community has varied construction. There are old historic structures and newer residences. Almost all the homes have metal roofs. The homes have lawns and are well maintained. Overall, the community lies on a gently sloping to flat open mesa. The density varies from block to block. At the bottom of the community are some old mines with significant amounts of old wood piled. Access is primarily one way in and out, however there is a 4 wheel drive route that goes west and climbs up and out of the vegetation. There is increased traffic in the summer because of this road. The community has hydrants and some fire boxes with hose and other equipment.

The fuels within the community are primarily grass with some landscape trees. The south-facing slopes are mostly Aspen and shrubs and eventually rise above the tree line. The west end of the road is primarily Aspen and grass as well. On the south side of the community are a few homes adjacent to or within a heavier mixed conifer stand. The biggest concern would be a wind driven grass fire that could spread quickly through the community.

OPHIR RECOMMENDATIONS

- Post fire awareness signs at the parking areas for climbers and other recreational users.
- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
    - Ensure all historic structures have defensible space.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain all fire hydrants and fire boxes are visible, maintained and operable.

10. San Bernardo/Priest Lake – Hazard Rating: Low

Description

This community is on a short one way in and out dirt road. The road is narrow and does not have adequate turnarounds for emergency equipment. The homes are of newer construction with Class A roofs. Addressing is good throughout the area. There are hydrants throughout the community. The nearest fire station is over 5 miles away. There is quite a bit of yard clutter and flammables stored under decks.

Fuels are primarily Aspen and grass. There are some conifers but not in continuous stands. A concern could be from a grass fire that would easily spread through the community.

SAN BERNARDO/PRIEST LAKE RECOMMENDATIONS

- Adequate defensible space is recommended for all homes.
    - Simply mowing or weed whacking for 50 feet around homes and structures, and cleaning leaf and needle litter from roofs and gutters and away from foundations, will profoundly increase structure survivability.
- Discourage the use of combustible materials for the construction of projections below roof line such as decks.
- Open areas below decks and projections should be enclosed or screened to prevent the ingress of embers and kept clean of flammable materials, especially where such openings are located on slopes above fuels. Use fine mesh metal screen (1/4″ or less) to cover eaves, roof, and foundation vents.
- Discourage the planting of flammable ornamental vegetation within 30 feet of homes.
- Add reflective addressing to all driveways or homes, using only non-combustible materials. A good guideline for this practice is to place the markers five feet above ground level on the right side of the driveway.
- Extended defensible space is recommended for most homes, due to the dangerous topography and heavy fuel loads in and adjacent to this community.
- Remove wood piles and any flammable yard clutter to at least 30 feet from structures and propane tanks. Wood piles should be located uphill or even with homes; never downhill.
- Wherever possible, on driveways and private roads longer than 300 feet, add pullouts for emergency apparatus. Turnarounds should be constructed at the end of long driveways and dead-end roads.
- Make certain any fire hydrants are visible, maintained and operable.

SAN MIGUEL SHERIFF'S OFFICE RESPONSE AREA (UNINCORPORATED)

The San Miguel County Sheriff is responsible for wildland fire suppression on all private and state lands in areas outside of fire protection district boundaries. Unincorporated San Miguel County is provided fire protection by three local Fire Protection Districts: Telluride Fire Protection District, Norwood/Redvale Volunteer Fire Department, and Egnar Slickrock Volunteer Fire Protection District. The Montrose Interagency Dispatch Center is responsible for wildland fire suppression efforts on public lands.

A map of the San Miguel Unincorporated areas can be found on the last page of this report.

PREPAREDNESS AND FIREFIGHTING CAPABILITIES

The San Miguel County Sheriff's Office has two stations, both of which contain wildland firefighting equipment. The main building is at the County Shop to the east of Norwood. The Dry Creek Basin substation is shared with the Norwood Redvale Fire Protection District. There are 12 deputies trained in basic wildland fire suppression. None of these individuals is Red Carded.

Norwood Fire Cache
39595 Hwy 145
Norwood, CO 81423
[No Phone]

Dry Creek Basin
369 CR U29E
Dry Creek Basin, CO 81431
[No Phone]

APPARATUS

Station 1, Norwood Fire Cache
Staffed by volunteers

- Apparatus
  - 1- T-6 Engine
  - 1- T-7 Engine
  - 1- Mobile Command Vehicle
  - 4- All Terrain Vehicles
  - 2- Ambulances

Station 2, located at Dry Creek Basin (shared with Norwood FPD)
Staffed by volunteers

- Apparatus
  - 1- T-3 Engine 500 gal with 250 GPM 4WD **(E-4)**

FIREFIGHTER TRAINING

Priority Level High: Provide education and experience for all existing and new members including:

- I-100 (basic ICS) for all firefighters and I-200 (Intermediate ICS) for all fire officers. NIMS courses could satisfy these recommendations.
- Introduction to Wildland Firefighting and Fire Behavior (NWCG S-130/190) for all new members.
- S-215 Fire Operations in the Urban Interface should be presented to all new members.
- Organize and facilitate table-top or sand-table wildfire exercises with other agencies.
- Encourage personnel to participate in out-of-district training opportunities.

Priority Level High: Run the next Bluegrass Festival or other significant event as a Type 3 incident utilizing county wide and federal resources to plan and execute the fair. This will build trust and competency between the partners in preparation for the next significant fire event.

- Training in preparation of this event should include
  - ICS 100, 200 and 300
  - Practical or table top exercise with the designated Team.
  - A training officer should be assigned to the team to facilitate OJT or Task Book competencies.
  - Consider inviting experienced ICS personnel to proctor the incident and provide input during the After Action Review.

Priority Level Moderate: Develop a program to become cooperators with the Colorado State Forest Service for state and national wildfire response.

- The SMSO does not have enough wildfires in district for fire fighters to gain competency. Cooperating with the CSFS provides substantial opportunity to learn and return with increased knowledge that can be share and utilized at the district level.

FIREFIGHTER SAFETY

Priority Level High: Hire a Wildfire Mitigation Coordinator. The position should be designed to function as an inter-agency liaison between San Miguel County and the various local, state and federal partners with local interests in wildfire mitigation. The Wildfire Mitigation Coordinator would assist County staff and local fire protection districts in the coordination and implementation of wildland fire education programs, grant procurement, forest health management and fuels treatment management. The position would also be responsible for maintaining the Wildfire Safety Program and any plans that are currently in place, as well as coordinating updates to this CWPP.

Priority Level High: Ensure that the current fire operations personnel rehabilitation system is sufficient. At a minimum each department should have drinking water and MREs (meals ready to eat) to support their personnel for 24-48 hours.

EQUIPMENT

Priority Level High: Ensure that all wildfire apparatus have the ability to discharge Class A firefighting foam. Foam is a proven agent which enhances the effectiveness of water, especially when applied to thick grass. Most fire departments currently use this and they can often be a source of information and training for others.

Priority Level High: Develop an equipment maintenance and replacement plan.

Figure 42. San Miguel Sheriff's Office Response Area (Unincorporated)