

# San Miguel County CWPP Update



Prepared by  
Anchor Point Group  
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## Executive Summary

This document provides an update to the 2008 Community Wildfire Protection Plan (CWPP) of San Miguel County. This update is not a replacement for the CWPP document, but rather seeks to provide a summary of significant changes relevant to the area-wide fire protection planning effort from February of 2008 to May of 2019. It is a result of a collaborative effort by county stakeholders.

## Introduction

This document is the result of a study to identify and quantify changes in conditions or values at risk that could affect fire protection planning and response within San Miguel County. As such, it neither replaces nor intends to duplicate information found in the 2008 CWPP, but rather provides information regarding relevant changes occurring between February of 2008 and May of 2019 within the study area. Participants in this project include San Miguel County OEM and Fire Marshall, New Mexico State Forestry, and the Santa Fe National Forest.

The assessment portion of this document reports changes in the hazards and risks associated with wildland fire to values at risk in the study area. New information on values at risk and progress on past projects has also been captured. This information allows for the prioritization of mitigation efforts. From an analysis of this data, solutions and mitigation recommendations are offered that will aid land managers and San Miguel County emergency representatives in directing short-term and long-term mitigation efforts.

## Goals and Objectives

This document has the following primary goals:

1. Provide a comprehensive, scientifically-based analysis of any changes to wildfire related hazards and risks within San Miguel County.
2. Support existing and future wildfire mitigation actions.
3. Enhance life safety for residents, visitors and responders.

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

1. Establish any changes in the approximate level of risk (the likelihood of a significant wildfire event in the study area).
2. Provide an updated scientific analysis of the fire behavior potential.
3. Define any new values at risk and any changes to the values at risk discussed in the 2008 CWPP.
4. Identify and quantify any additional factors that limit (mitigate) undesirable fire effects to the Values at Risk.
5. Recommend specific actions needed to further reduce hazards to the Values at Risk.
6. Evaluate existing mitigation efforts in light of the updated fire behavior analysis.
7. Identify any changes that could affect firefighter safety and/or response.

## How to Use This Document

It is important to note some of the recommendations in this report are generalized by design. Specific fuels reduction prescriptions should be developed with the consultation of a representative of San Miguel County, a qualified fire mitigation specialist and a forester or landscape architect, depending on vegetation.

## Disclaimer

Recommendations in this document are not prescriptive but are intended to assist in the identification of possible solutions or actions to reduce the impact of wildfire on values at risk. The views and conclusions in this document are those of Anchor Point and the project stakeholders and should not be interpreted as representing the policies of any governmental entity, fire agency or signatory entity.

The methodology used is proprietary and as such may not match other existing hazard and risk ratings. In the event the language in this document conflicts with any regulatory documents, policies or local laws, this document does not supersede those documents.

*For the purposes of this document the following definitions apply:*

***Risk*** is the likelihood of an ignition occurrence. This is primarily determined by the fire history of the area and the current and expected availability and condition of fuels.

***Hazard*** is the combination of the structural ignition ratings and the analysis of fire behavior potential modeled from 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 stakeholders as important to the study area (e.g. life safety, property conservation, and cultural values).

## Study Area Overview

San Miguel County is located in northeastern New Mexico. The County covers approximately 4,736 square miles in area making it the 9<sup>th</sup> largest county in land area in the state. The area extends 118 miles east to west and about 57 miles north to south. The western part of the County is in the foothills of the Sangre de Cristo Mountains, the central part is on the plains and the eastern part in the valleys of the Canadian and Conchas Rivers.

The approximate population for the County is 27,970 in 2015. The County seat is Las Vegas, New Mexico which has a population of approximately 13,280. Of particular mention is that the population of the county has dropped by 1355 in the past 9 years.

Private lands make up the majority of land ownership in the area with approximately 2,466,000 acres representing 81% of the area. There are approximately 390,600 acres of federal lands throughout the County. The Santa Fe National Forest is approximately 340,440 acres. The BLM manages approximately 48,600 acres, primarily located in the eastern portion of the County. The NPS manages the Pecos National Historical Park near Pecos.

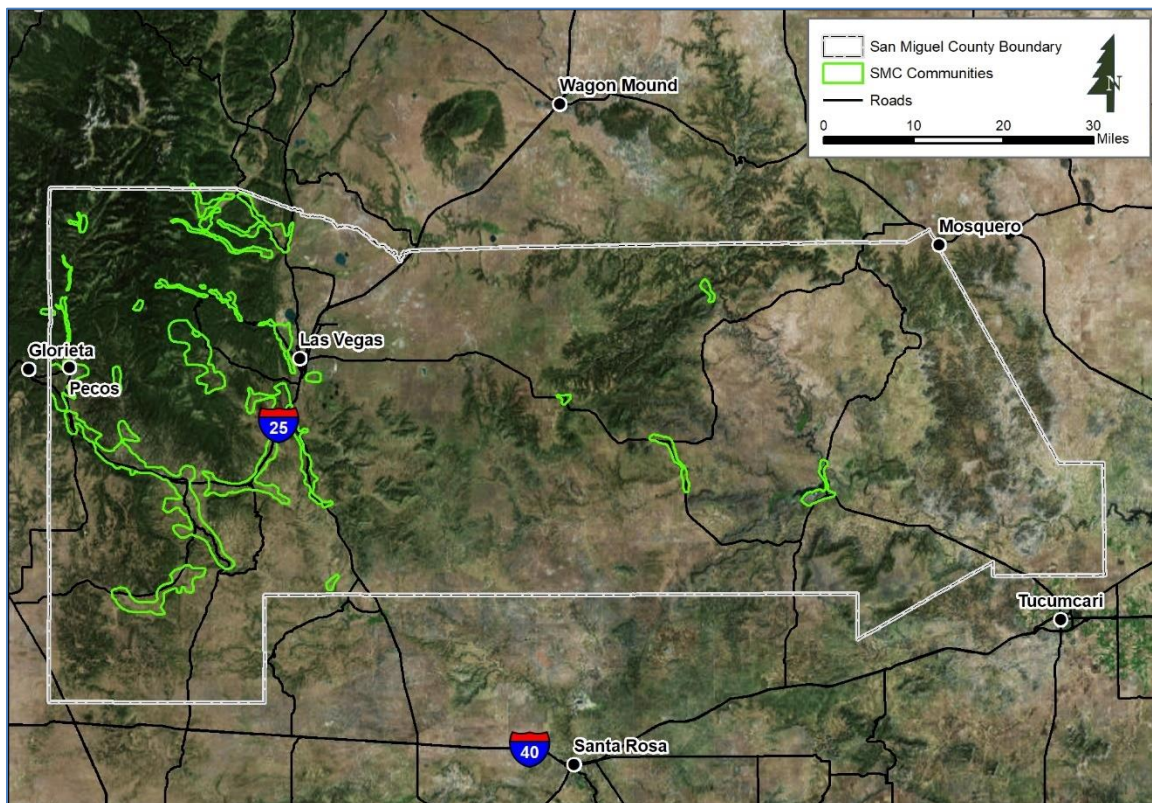


Figure 1 Project Overview Map

## Values at Risk

There have been no significant changes to the values at risk detailed in the 2008 CWPP. Please refer to that document for more information.

## Communities

Since 2008 it appears that several communities have had development. Two additional areas are now considered communities bringing the total to 33 defined communities. 27 communities have high to extreme Wildland Hazard Ratings (see appendix A for details on their make-up and WHR). New development has been included into adjacent existing communities. It appears that new and more fire resistive construction materials and techniques have been used.

Unfortunately, there has been little improvement county-wide in the existing structures to make them more fire resistant. While a significant number of fuel reduction projects were completed since 2008, most are not within the communities themselves. Therefore, the original 2008 CWPP community ratings remain the same.

## Areas of Special Interest

Areas of special interest were identified in the original CWPP, mostly in the form of camps and retreats such as El Porvenir Church Camp, the Western Life Camp, and Camp Blue Haven. In some cases, these areas present special problems for firefighters due to the fact that they have fluctuating time tables and occupancies.

Other areas that present challenges fall into the infrastructure category. These would be water treatment facilities, communication installations, electrical power stations and alternative energy production sites.

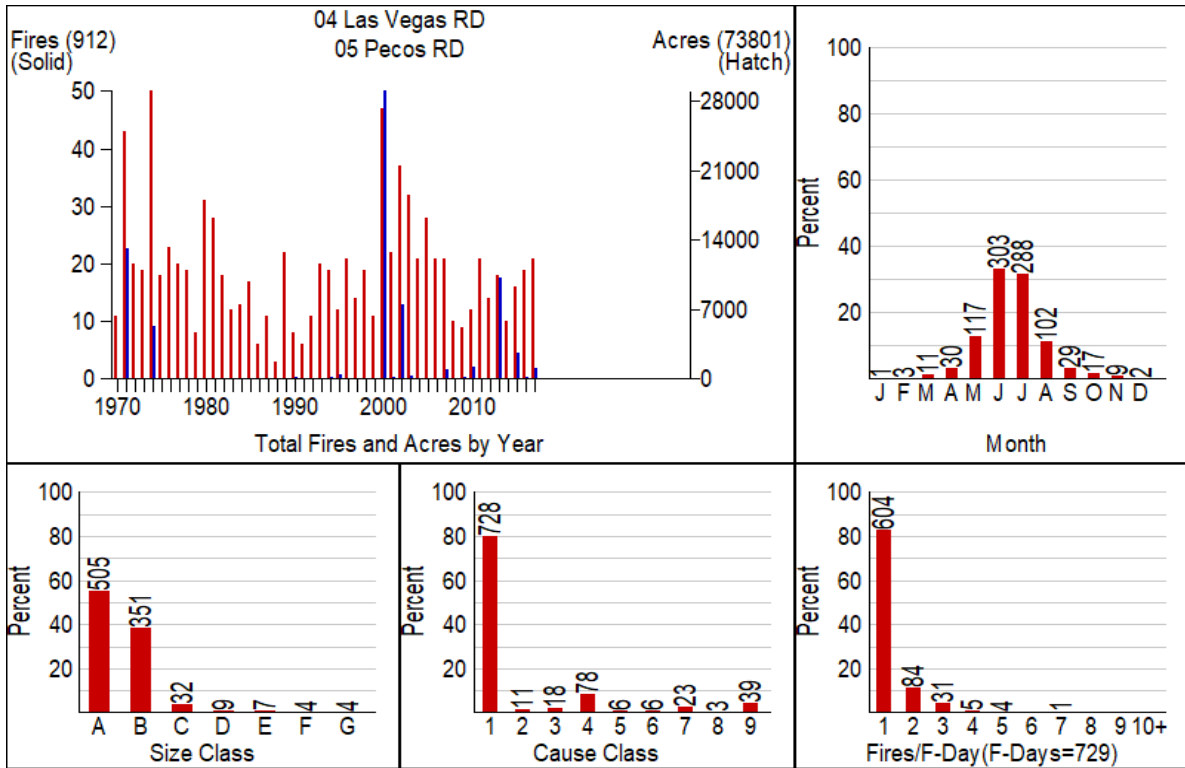
## Current Risk Situation

The majority of the county is at a high risk for Wildland Urban Interface (WUI) fires. This assessment is based on the analysis of the following factors:

1. San Miguel County and New Mexico State Forestry (NMSF) responded to 27 wildland incidents in 2018 as of August 29th. This data is summarized from information provided by the NMSF which includes fire statistics from local agencies. It is important to point out that fires have the ability to burn and grow to a large size during most months of the year due to the size of the County and the vast differences in fuel types.
2. According to the 2010 New Mexico Statewide Assessment, Strategy and Response Plan. The Wildfire Risk data model identifies areas within San Miguel County that rate as a relatively high risk for destructive wildfires.<sup>1</sup>
3. The surrounding federal lands report a moderately active fire history. Fire occurrences for the Las Vegas and Pecos Ranger Districts of the Santa Fe National Forest ( Figure 2) were calculated from the USDA Forest Service Historical Archive for the forty-seven-year period from 1970-2017.

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<sup>1</sup> [http://www.emnrd.state.nm.us/SFD/documents/New\\_MexicoNatural\\_ResourceAssessment.pdf](http://www.emnrd.state.nm.us/SFD/documents/New_MexicoNatural_ResourceAssessment.pdf)



<b>Size Class (in acres)</b>	<b>A</b> < ¼	<b>B</b> ¼ - 9	<b>C</b> 10 - 99	<b>D</b> 100-299	<b>E</b> 300-999	<b>F</b> 1000 - 4999	<b>G</b> 5000 +		
<b>Causes</b>	<b>1</b> Lightning	<b>2</b> Equipment	<b>3</b> Smoking	<b>4</b> Campfire	<b>5</b> Debris Burning	<b>6</b> Railroad	<b>7</b> Arson	<b>8</b> Children	<b>9</b> Misc.

Figure 2 Fire History on Pecos Ranger District



Figure 3 Tres Lagunas Fire in 2013

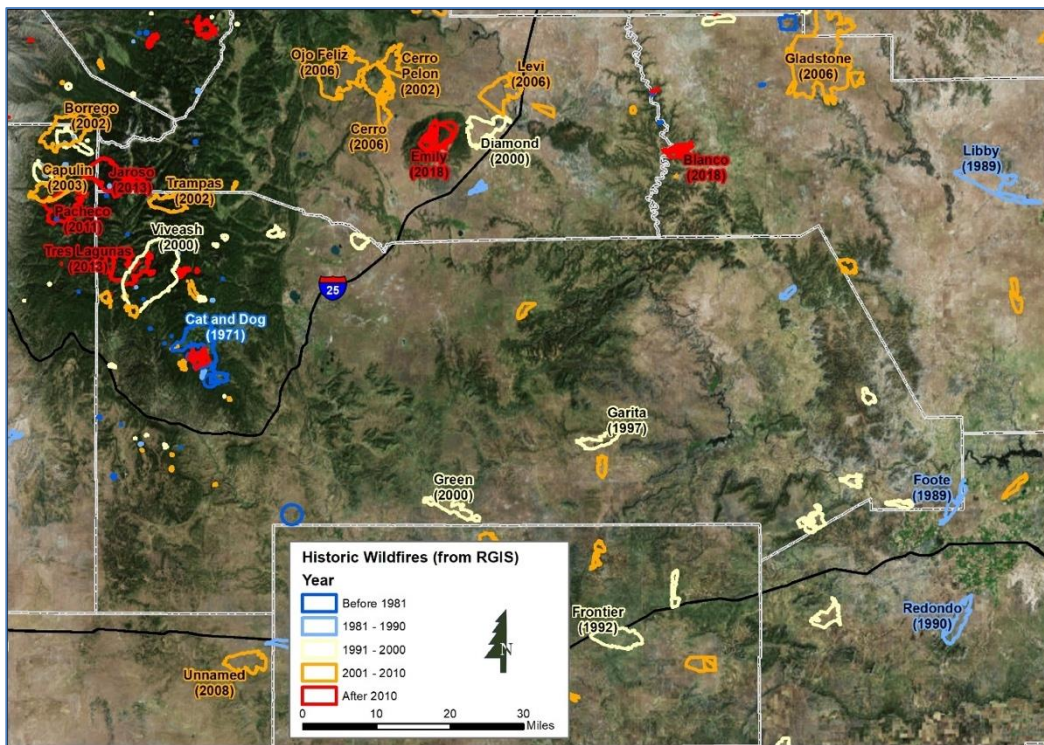


Figure 4 Historic Wildfires in and adjacent to the project area



## **Local Preparedness and Fire Department Capabilities**

San Miguel County fire districts provide all risk emergency response services to all of the unincorporated areas of the County. Services include wildland fire and structural fire prevention and suppression, emergency medical services, hazardous materials mitigation and rural search and rescue. There are 12 fire districts, with 14 main stations, 5 sub-stations and 2 in the planning stages. The fire districts are comprised of approximately 250 volunteers utilizing 60 fire trucks of varying types and capabilities. For wildland fire response the County has adopted the national wildfire qualifications system (“Red Card” system). The County has a full-time Fire Marshall that oversees the volunteer fire districts.

New Mexico State Forestry’s Las Vegas District, located at Storrie Lake State Park in Las Vegas also provides fire suppression response for wildland fires on state and private lands in San Miguel County. San Miguel County fire districts often provide first response or initial attack. New Mexico State Forestry then provides support or assumes responsibility for extended attack incidents. The County has agreements with the State to provide reimbursement for wildfire responses beyond initial attack.

The Santa Fe National Forest Pecos/Las Vegas Ranger District administers a large portion of the forested lands in the County. They provide initial attack fire suppression resources and they can mobilize a significant number of resources for extended attack wildfire suppression through their local, regional and national interagency dispatch centers. Other federal agencies such as the Bureau of Land Management and the National Park Service, Pecos National Historical Park have limited initial attack resources in the County but participate in the interagency dispatch and mobilization.

The San Miguel County Road Department can respond to wildfires with road graders. The State of New Mexico Department of Transportation also responds to wildfires.

The Office of Emergency Management develops goals and maintains programs and systems intended to coordinate the efforts of all local governmental departments and agencies during times of emergencies. These efforts fall into the four main categories of mitigation, preparedness, response and recovery.

## **RECOMMENDATIONS**

The major topics are:

1. Local Preparedness and Firefighting Capability
2. Organization and Public Information
3. Reduction of Structural Ignitability
4. Fuel Treatments
5. Evacuation/Access Route Identification and Improvement
6. Areas of Special Interest

The projects have been prioritized but it is not meant to be restrictive. If an opportunity arises to accomplish a lower priority, then effort should be taken. The San Miguel County Community Wildfire Protection Plan will be a living document that can periodically be adjusted to reflect lessons learned and new ideas.

## Firefighting Capabilities

Fire suppression is provided by a mixture of rural fire departments, town/city fire departments, New Mexico State Forestry, and Federal land management agencies.

The County Fire Marshall should take the lead on these proposed projects.

**Coordination:** Better coordination between agencies will greatly enhance the safety and effectiveness during fire suppression.

**Very High Priority:** The County Fire Marshall should meet with the following three groups:

- County Fire Chiefs;** ensure they meet on a regular basis. Since it can be difficult to have all the Chiefs meet in person every time, consider the use of the “Poly Comm” training system, Skype, Google Hangouts or another means of conducting the meetings remotely.
- San Miguel County fire agencies.** Request a meeting with the New Mexico State Forester and the Santa Fe National Forest Fire Management Officer to discuss ways of improving interagency firefighting effectiveness along with the suggested agenda topics.
- Adjacent counties fire administrators.** Request to meet with the Santa Fe County Fire Chief and the Mora County Fire Administrator. Discuss the suggested agenda topics that would be most applicable.

Suggested agenda topics:

- Ensure response agreements including aviation assets are current. Discuss ways of improving the response.
- Streamline communication plans. Standardize as much as possible.
- Update response maps. Strive to digitize these for ease of updating in the future.
- Joint training opportunities.
- Prescribed fire opportunities.
- Fire incident financial reimbursement guidelines to include RX fire and fuels reduction work.

**High Priority:** Update county response maps and make available to other agencies and counties both before and during emergencies. Task the E9-1-1 Rural Addressing Division with the following:

- Update all county fire district response maps.
- Create more detailed maps for use in “Higher Risk Communities”. Field information should be compiled by the Fire District having jurisdiction.



- Have all maps created as “Geo-Referenced” PDF’s for use on smartphones, tablets and laptops in the field. The Avenza<sup>2</sup> program allows for use with out a data connection.
- Consider storing response maps mentioned above on the county website. A QR code can be created that allows for smartphones and tablets to “scan” the image which allows for quick access to the website. Other response information can be stored and retrieved in this fashion, such as communication plans, emergency contact phone numbers, written emergency guidelines, etc.

### **Organizational:**

**Very High Priority:** Investigate the feasibility of developing a Countywide 5-person wildfire/fuels mitigation crew. The crew would be available for wildfire and prescribed fire incidents. Additionally, the crew would be used to assist Fire Districts, State Forestry and other agencies/groups with fuel reduction projects and public education events. The make-up of the crew would consist of 1 full-time supervisor/planner and 4 seasonal firefighters. The supervisor would work directly for the Fire Marshall. Partial funding of the crew could come from interagency incident reimbursements and private landowner donations or fees for fuel reduction work.

**Communications:** Ensure that all fire districts have the capability to communicate with Santa Fe county, Mora county, NM State Forestry, Santa Fe National Forest, County Road Division and NMDOT.

**Very High Priority:** County emergency resources are dispatched from multiple centers. Strive to limit the amount of “dead communication zones”. Are communication repeaters in the best positions? Are additional repeaters needed? Is funding available from the State to improve communications?

**High Priority:** Publish, in digital form, a list of frequencies for each fire district and list the associated channels. Consider organizing frequencies in similar configurations.

**High Priority:** Task the Fire Districts with creating an inventory of radio equipment and create a list of needs for replacement and new acquisitions. Maintain “narrow banded” field programmable radios and create a repair/replacement budget.

**High Priority:** Develop and publish a “Extended Attack” communications plan for incidents that require multi-fire agency response. This should be in coordination with NM State Forestry and the SFNF.

**High Priority:** Conduct communications equipment training to include how to field program hand-held radios.

**Training:** Continue to provide basic, red card refresher and ICS training to all fire personnel as suggested in the original CWPP. Consider holding classes at different times of the year.

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<sup>2</sup> <https://www.avenza.com/avenza-maps/>

**Very High Priority:** Work to increase the capability of the “Poly Comm” system used for remote access trainings. This should be coordinated by the person most familiar with the current system.

**High Priority:** Strive to develop a County Training Program to facilitate local training for structural and wildland firefighting. Consider tasking an interested Fire District Chief or their designee.

**High Priority:** Work with state and federal agencies to combine wildfire suppression and ICS training.

- Suggest that all agencies publish their up-coming training courses on a common website.
- Organize and facilitate table-top or sand-table wildfire exercises.
- Organize and facilitate an annual wildfire interface training exercise within the communities outlined in this CWPP and encourage multi-agency participation.
- Encourage personnel to participate in Federal and NMSF prescribed fire opportunities. With advance notice more volunteer firefighters may be able to attend.

**High Priority:** Train local fire districts on how to create defensible space around homes.

### **Firefighter Safety & Readiness:**

**High Priority:** Provide minimum wildland Personal Protective Equipment (PPE) for all career and volunteer firefighters. (See NFPA Standard 1977<sup>3</sup> for requirements).

**High Priority:** 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.

**High Priority:** Bridge Load Limits: Ensure that load limits are posted on all bridges.



<sup>3</sup> <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1977>

## **Equipment:**

**High Priority:** Have each Fire District develop and publish a list of fire equipment by location. Assist them with developing an equipment needs and replacement list. NM State Forestry can assist with securing equipment from the Federal Excess Property program.

**High Priority:** Coordinate with NM State Forestry to train and equip San Miguel County Road Division and NMDOT. Provide or assist them with acquiring fire shirts, fire shelters, radios and water apparatus hose fitting adapters, etc.

## **Water Supply:**

In San Miguel County, like many of the mountainous and rural areas of New Mexico, water is a critical fire suppression issue. Only a few communities have a reliable source of water via hydrants. Most of the communities are reliant on seasonal ponds and creeks. Immediately accessible water sources must always be considered to fully support fire operations; therefore, the following recommendations are suggested.

**Very High Priority:** Need to map existing water sources and make them known. Be sure to label water sources that can serve to accommodate a helicopter water bucket and engine draft sites. Fire Districts can retrieve the field data. The Fire Marshall can compile and submit to the E9-1-1 Rural Addressing Division for production of the maps. These could also become a “layer” in the Avenza mapping program.



**High Priority:** Where secondary pressurized water sources exist (golf course, development landscaping, and other types of sprinkler systems) develop a procedure detailing how to quickly activate these systems.

**High Priority:** Develop a plan to install cistern water supply systems around the County. Seek input from the Fire Districts and prioritize. Grant funding may be available thru the NM State Forestry.

**High Priority:** Hydrants that are designated for use by water tenders for wildland/rural fire operations need to be tested annually. They must also have adequate area to support these larger apparatuses and be easily recognizable even at night.

## Emergency Management Administration and Public Outreach

The purpose of this section is to provide recommendations on how to best achieve certain administrative goals related to this CWPP. The underlying objective is to work with community groups and citizens to educate, inform and involve them in achieving the goals of this CWPP.

The OEM Manager (with assistance from the County Fire Marshall) should take the lead on these proposed projects.

### **Emergency Management Administration:**

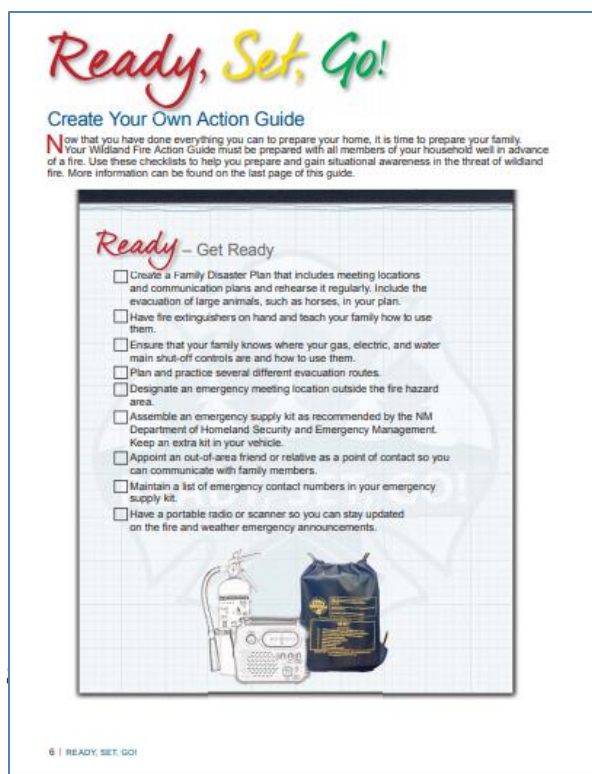
**Very High Priority:** Provide timely and accurate information to citizens before, during and after emergencies. Use the PIO position to lead or assist. Continue to use local radio (English and Spanish), reverse 911, internet and first responders to provide the public with information.

Increase reverse 911 system effectiveness by using a simple system that the general public can easily sign up for. Advertise the system at every opportunity. FD's public awareness, county public events, etc. (Testing of the system can be at the individual or community level providing it can be done with little risk of distributing misinformation)

**High Priority:** Currently the Public Information Officer (PIO) is a collateral duty. Train-up additional personnel in the functions so there is not a gap in this important position.

**High Priority:** During the Tres Lagunas fire in 2013, the local ARES group (amateur radio emergency service) was utilized to assist with communications. A formal agreement should be written up describing their detailed function.

**High Priority:** Increase animal rescue capabilities. A CERT (community emergency response team) could be formed to help with this.



### **Public Outreach:**

Within San Miguel County, there is likely to be a varied understanding among property owners of the hazards associated with the threat of a wildfire. County fire Districts (with the assistance of the wildfire crew) should provide educational materials to homeowners through personal contact. The current “open burning” policy is another way of reaching the public.

**Very High Priority:** New Mexico State Forestry participates in several nationally-recognized programs that guide home and landowners with wildfire prevention and preparation. Consider adopting these two

information pamphlets as the counties source of information to the public. “Ready, Set, Go!” and “Living With Fire”.<sup>4</sup> Both of these provide excellent information.

**Very High Priority:** Display fire preparation/prevention pamphlets, emergency notification system information and other materials in “kiosk” type holders. Post office buildings, fire stations and community mailbox clusters are all excellent places to install these. Simple, clear, brochure holders available at an office supply store work well.

**Very High Priority:** To improve response, ensure that reflective address signs are openly displayed on non-combustible posts. Some homes will need signs at both the home and driveway. Consider standardizing color and size.

**High Priority:** Obtain additional “Smokey Bear” fire danger signs to inform the public of the current fire danger and to promote fire prevention.

**On-Going:** County Fire Districts and communities should conduct “Chipper Days” to encourage homeowners to create defensible space by providing them help with slash disposal either by chipping on-site or removing slash off site.



**On-Going:** Continue to conduct fire prevention campaigns multiple times a year. Create fire prevention messages in the local newspaper and on the radio to raise public awareness of the danger of wildfires. Also consider holding workshops on how to create defensible space and promote the safe use of chainsaws (this could be performed by the wildfire crew).

**On-Going:** Continue to promote the Firewise Program. NFPA's Firewise USA® program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses.<sup>5</sup>

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<sup>4</sup> <http://www.emnrd.state.nm.us/SFD/FireMgt/FirePreventionandOutreachProgram.html>

<sup>5</sup> <https://www.nfpa.org/Public-Education/By-topic/Wildfire/Firewise-USA>

# Reduction of Structure Ignitability

An approach to wildfire education that emphasizes safety and hazard mitigation on an individual property level should be continued by adopting the New Mexico State Forestry “Living With Fire, a Guide for the Homeowner”.<sup>6</sup>

Of the thirty-three (33) communities in the study area, the community-level assessment identified two (2) that are at extreme risk, seven (7) at very high risk, and twenty (20) at high risk. Construction type, condition, age, fuel loading of the area, and position are contributing factors in making homes more susceptible to ignition under even moderate burning conditions.

Outside of the established communities many ranches and individual home sites exist. The following recommendations apply to all structures which could be threatened by wildfire.

**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. These 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.

### 5 Steps to Creating an Effective Defensible Space

The term defensible space refers to the area between a house and an incoming wildfire when the vegetation has been managed to reduce the wildfire threat and allow firefighters to safely defend the home.

As the forest that surrounds an individual home improves the likelihood of a home surviving without incident. Unfortunately, when some homeowners have the space defensible space, they receive a large measure of fire ground surrounding their home. While there are many reasons why this is not a desirable situation, it is an important factor in determining the right space for your home.

**Step One**  
 The size of the defensible space is usually determined by a fire department's recommended distance to the area for your home. It varies depending on the structure, vegetation surrounding the home and the amount of fuel load. The recommended distance is usually 100 feet to 200 feet from the house.

**Step Two**  
 Remove the fuel load from the defensible space. This includes dead grass, weeds and flowers, dead trees, and other fuels that are not attached to the house.

**Step Three**  
 Within the Defensible Space Zone, native trees and shrubs, pines, junipers and other species should not occur in dense stands. Create stands of trees and shrubs in a regular, widely spaced pattern. The distance between trees and shrubs should be greater than the height of the tallest tree in the stand.

**Step Four**  
 Vegetation that can carry a fire from lower growing plants to taller plants is called ladder fuel. Ladder fuel branches should be removed to a height of at least 10 feet.

**Step Five**  
 The proper management of the fuels near the house is the most critical step in creating an effective defensible space. For most homeowners, the Lean, Clean and Green Area is the most important. The area within the defensible space should be managed to reduce the amount of fuel load and to create a fire resistant zone around the house.

**Lean, Clean & Green Tips**

- Remove all dead, diseased, and damaged plants, including saplings, seedlings, and shrubs, from the defensible space.
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**Maintenance**

Maintaining a defensible space is an ongoing activity. Plants grow back and landscape vegetation needs to be routinely removed and replaced. Regular maintenance is essential to the success of your defensible space.

**Little Green Cuts**

Remove all dead, diseased, and damaged plants, including saplings, seedlings, and shrubs, from the defensible space.

**Large Trees**

On flat to gently sloping terrain, Pinyon pine and Fir should be spaced to provide an average separation between crowns of at least 10 feet. For homes located on steep slopes, the separation distance should be greater. When selecting trees for removal, consider cutting vulnerability, damaged or weak trees.

**Diagram:** Shows tree spacing with '2x' and '10 feet' labels.

**Diagram:** Shows a house with a defensible space zone and various vegetation management steps.

# Fuels Treatments

Reducing vegetation is one of the most effective ways to reduce the risk of catastrophic wildland fire. In order of priority, vegetation in San Miguel County should be treated as follows:

1. Around homes in the form of defensible space. The standards should follow the recommendations in the Reduction of Structural Ignitability section.
2. Along evacuation and travel routes.

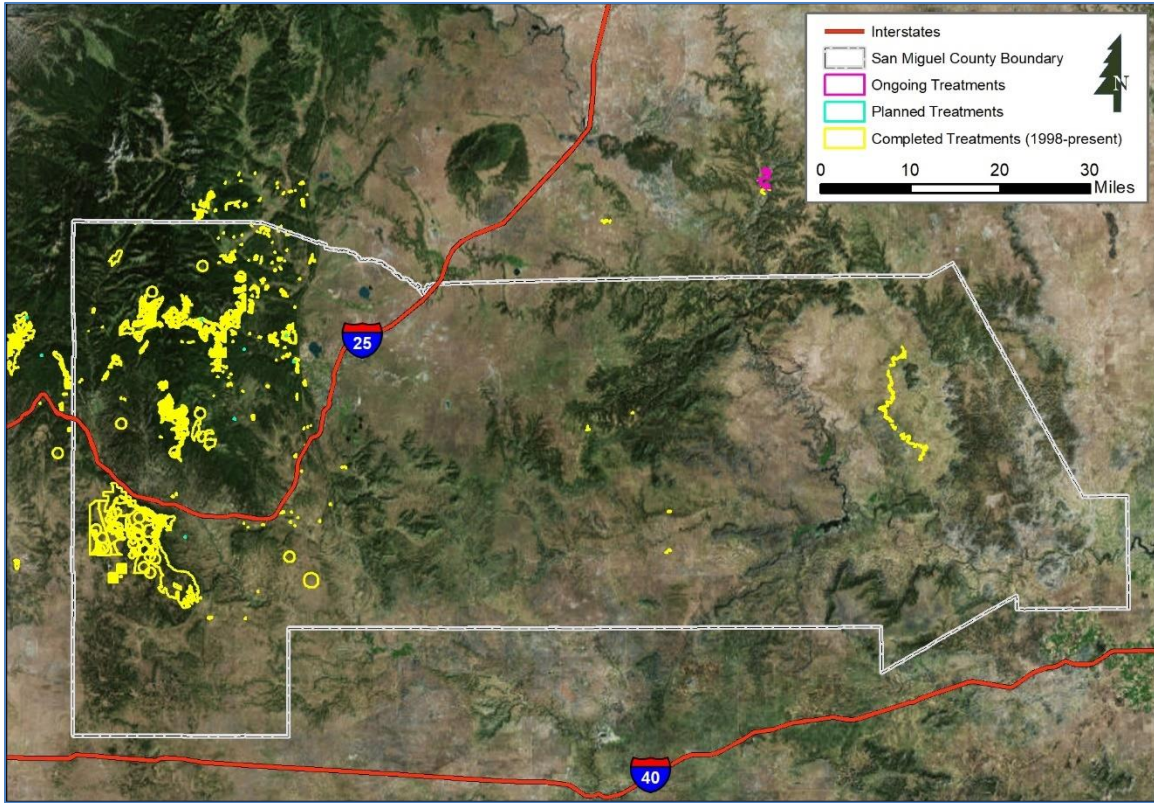
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3. In the creation of landscape fuel breaks.
4. Around critical infrastructure.
5. Municipal Watershed treatments will be covered in a separate report.

### **Completed, Ongoing and Planned Projects in the County**

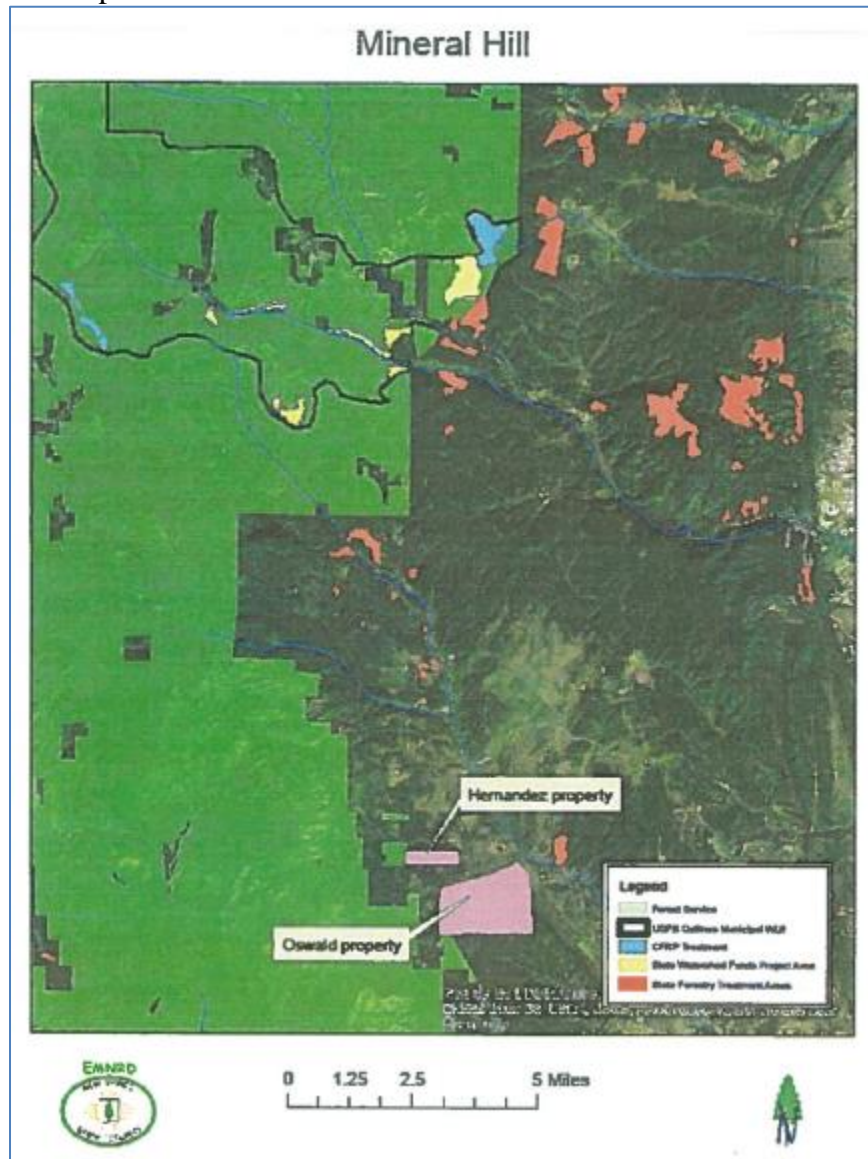
- The principal public land managers in the study area are the USDA Forest Service, the Bureau of Land Management, U. S. Fish and Wildlife Service and the National Park Service (NPS). In addition, the New Mexico State Forestry Division is actively working with private landowners to encourage forest health and fire hazard reduction projects.
- All of these entities have completed ongoing, and/or planned fuels reduction treatments in the study area. These treatments vary from prescribed fire to hazardous fuels removal. The map in Figure 5 shows the boundaries of treatment areas for projects in and near communities. More detailed information on each treatment can be gathered from the respective agency. A thorough “ground truthing” should determine the condition of the treatment.
- Follow-up maintenance is critical to the continued success of fuel breaks. It is important to revisit the treatment prescriptions to determine re-entry dates.



*Figure 5 Completed, Ongoing and Planned Fuels Treatment Projects*

## Fuels Treatment Recommendations – General

**Very High Priority:** Support and assist, mechanical and prescribed fire fuels treatments on Federal land management agency (USFS, BLM, NPS, and USFWS) lands to reinforce fuels treatment projects on private lands.



**Very High Priority:** Support and assist, mechanical fuels treatments on state and private lands. NMSF and NM Soil and Water Conservation have funding programs to assist county and private landowners with fuels treatments. It is recommended to make contact with these two agencies to better understand those programs.

**High Priority:** Meet with the County Road Division and NMDOT to better understand their right-of-way mowing operations. Encourage them to prioritize mowing near high risk communities **before** times of high fire danger.

**High Priority:** Encourage individual landowners to create defensible space including mowing fuels near homes, along roadways and fence lines **before** times of high fire danger.

### **Thinning for Fuels Reduction Specific to Evacuation/Travel routes and Landscape Fuel Breaks**

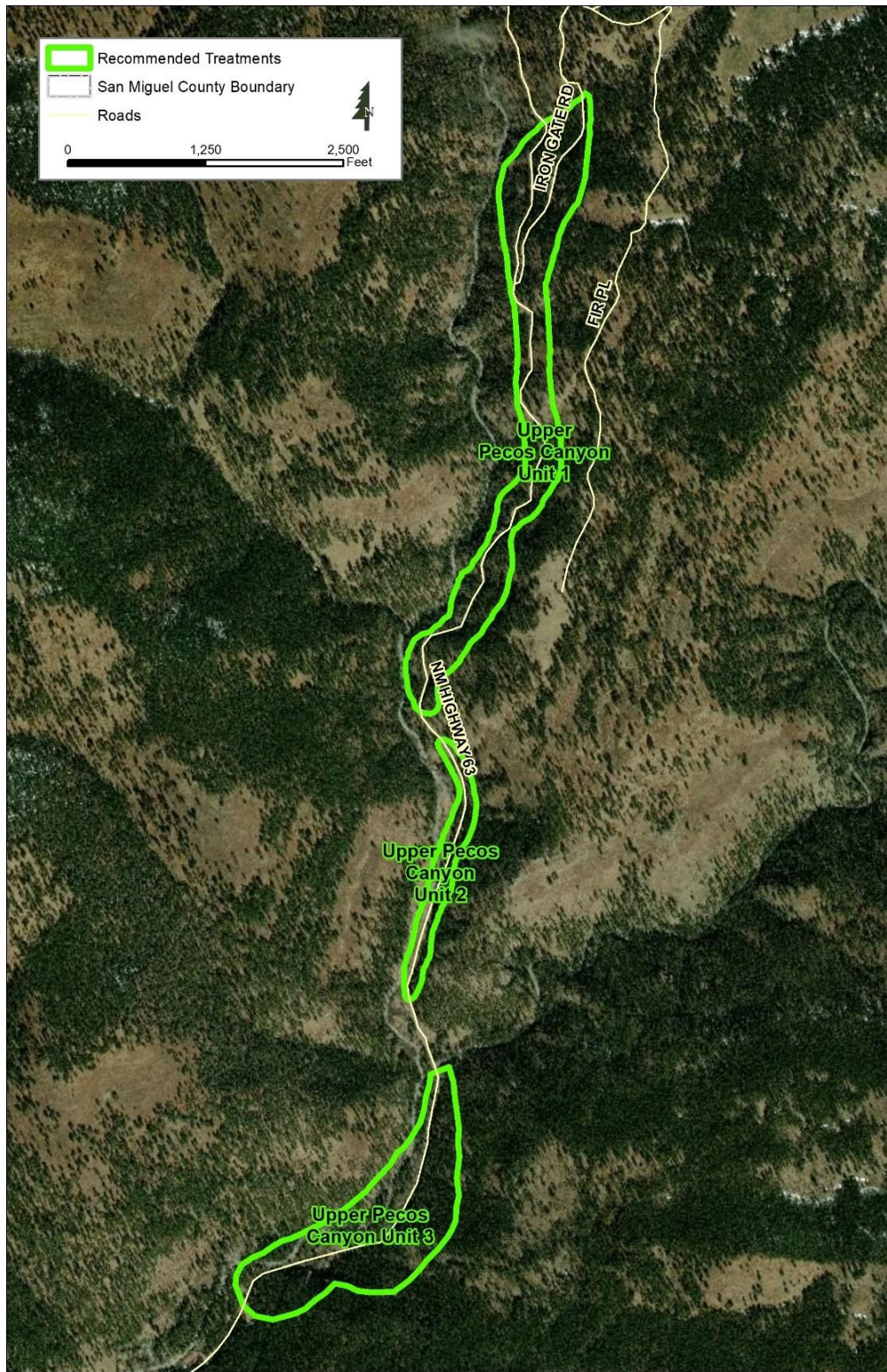
- The federal agencies will determine the fuel reduction specification depending on the type of treatment for a given area.
- For state and private lands, refer to the current publication of the New Mexico Forest Practices Guidelines.<sup>7</sup>



### **Recommended Treatments – Specific to Evacuation/Travel Routes**

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<sup>7</sup> <http://www.emnrd.state.nm.us/SFD/ForestMgt/documents/ForestPracticesGuidelines2008.pdf>



Figure

*Recommended Treatments*

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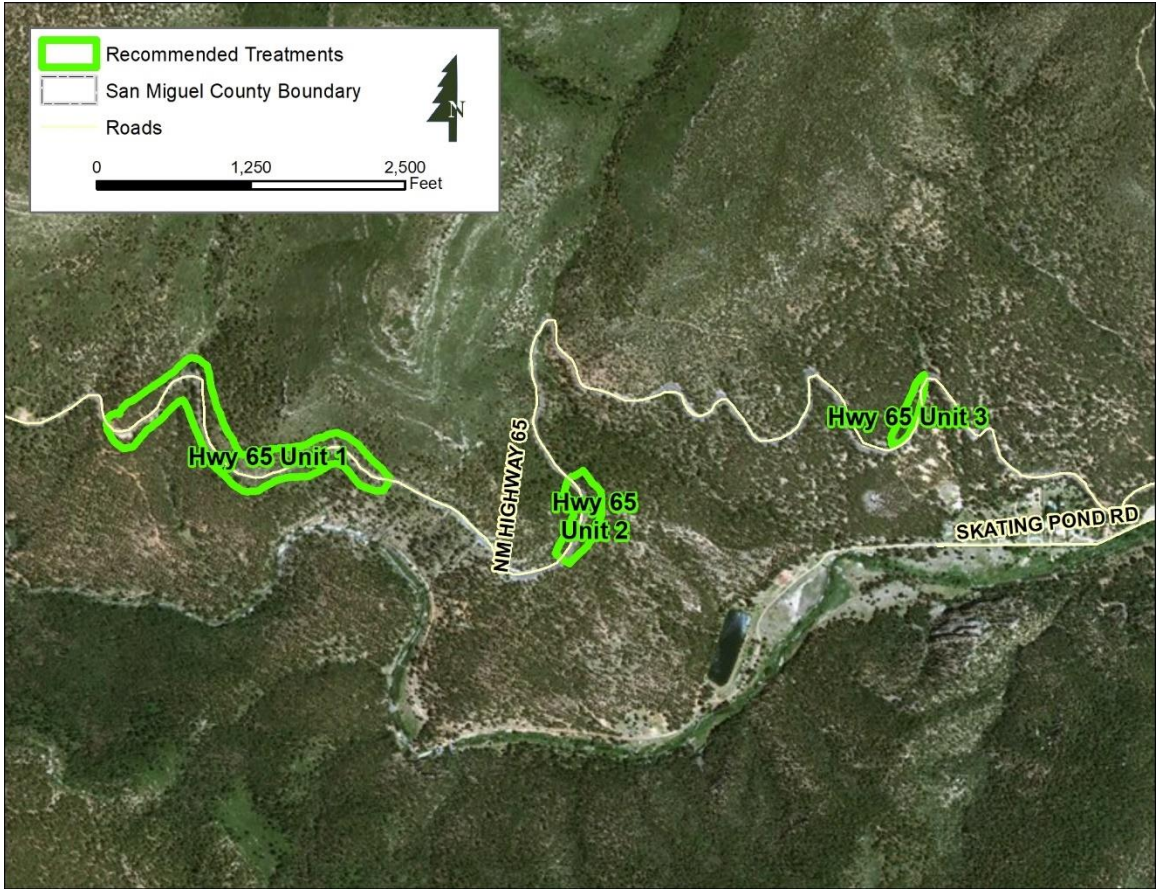


Figure 7 Recommended Treatments

## Recommended Treatments – Specific to Landscape Fuel Breaks

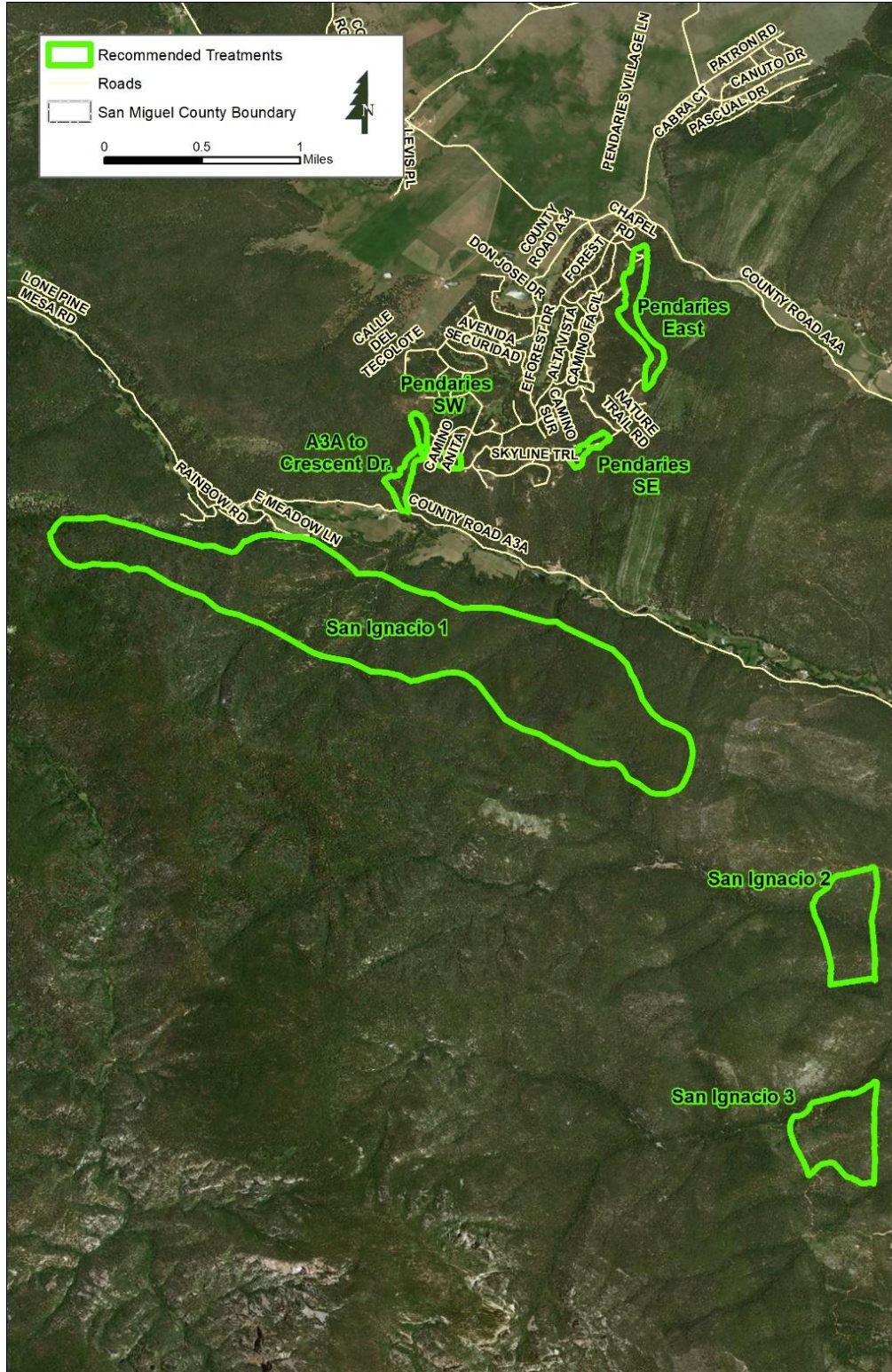


Figure 8 Recommended Treatments

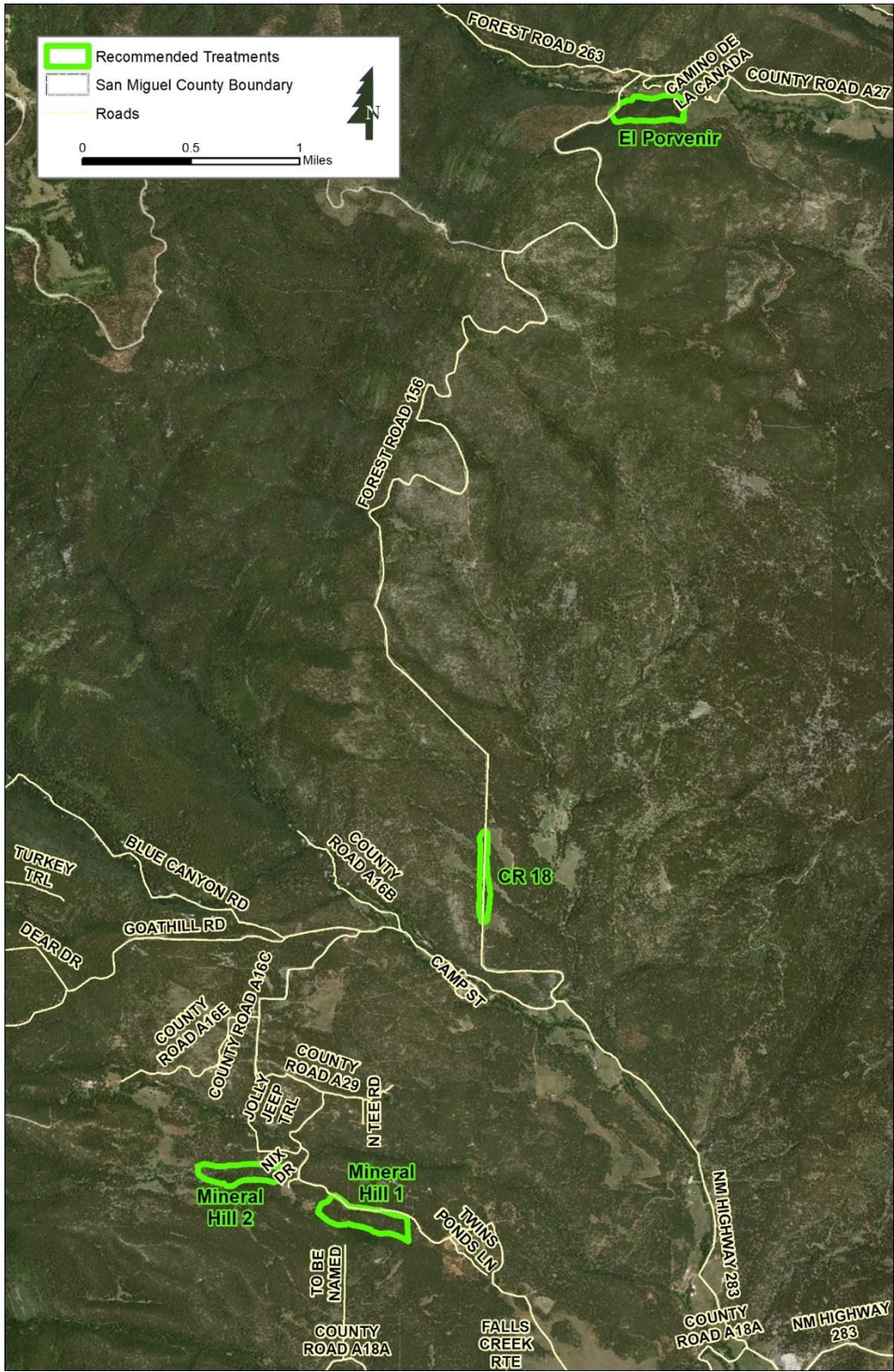


Figure 9 Recommended Treatments



### **Evacuation/Travel Route Treatments**

- A. A3A to Crescent Dr. -Pendaries
- B. Upper Pecos Canyon units 1-3
- C. Hwy 65 unit 1-3
- D. County Road 18, north of camp Blue Haven

### **Landscape Fuel Breaks**

- E. USFS, San Ignacio units 1-3
- F. Private, El Porvenir
- G. Private, Pendaries SW
- H. Private, Pendaries SE
- I. Private, Pendaries East
- J. Private, Mineral Hill 1
- K. Private, Mineral Hill 2

### **EVACUATION/TRAVEL ROUTE TREATMENTS – (Suggested priority)**

- A. **A3A to Crescent Dr.** Hazardous fuels reduction efforts along the dirt road belonging to the Thunder Ranch from County road 3A north into the Pendaries community. This will also serve as a secondary means of egress for Pendaries and San Ignacio communities. Some treatments have been completed in this area, ground truthing to verify the quality and then fuels mitigation consisting of limbing and thinning.
- B. **Upper Pecos Canyon (units 1, 2, 3).** Hazardous fuels reduction efforts along Highway 63. Fuels mitigation consisting of limbing and thinning is recommended. This entire project will benefit all the communities located off of highway 63 which are rated from HIGH to EXTREME hazard.
- C. **Highway 65 (units 1, 2, 3).** Hazardous fuels reduction efforts along this road below the town of Gallinas to above the town of Montezuma. Fuels mitigation consisting of limbing and thinning is recommended Fuels treatments have been completed all along this proposed project, thorough ground truthing will need to verify the quality. This project will allow for a safer egress of the communities up canyon.
- D. **CR 18, north of camp Blue Haven.** Hazardous fuels reduction efforts along this short section of County road 18 would tie together previous fuels projects. Fuels mitigation consisting of limbing and thinning is recommended. This project would provide another means of egress.

### **Landscape Fuel Breaks – (Suggested priority)**

- E. **USFS, San Ignacio units 1-3.** These proposed fuel breaks would serve to complete the gaps between existing projects. This would directly lessen the impact from a wildfire to the San Ignacio community.

- F. **Private, El Porvenir.** This fuel break would serve to connect USFS projects to an area of less fire intensity and a private fuel break. This would provide direct benefit to the Western Life Camp and adjacent communities.
- G. **Private, Pendaries SW.** This fuel break would connect an existing treatment to the egress route thinning mentioned above (treatment A). This would help to lessen the impact of a wildfire to the community.
- H. **Private, Pendaries SE.** This fuel break would connect existing treatments. The residence located on Big Valley View Lane could be incorporated. This would help to lessen the impact of a wildfire to the community.
- I. **Private, Pendaries East.** This fuel break would connect existing treatments. Residences adjacent to the project area could be incorporated. This would help to lessen the impact of a wildfire to the community.
- J. **Private, Mineral Hill unit 1.** This fuel break would connect the primary road of the area to lands of less fire behavior potential. Residences adjacent to the project could be incorporated. This would serve to protect the community from the effects of a wildfire from the south and southwest.
- K. **Private, Mineral Hill unit 2.** This fuel break would connect the residence located off of Nix Drive to lands of less fire behavior potential. Residences adjacent to the project could be incorporated. This would serve to protect the community from the effects of a wildfire from the south and southwest.

## CRITICAL INFRASTRUCTURE FUELS TREATMENTS

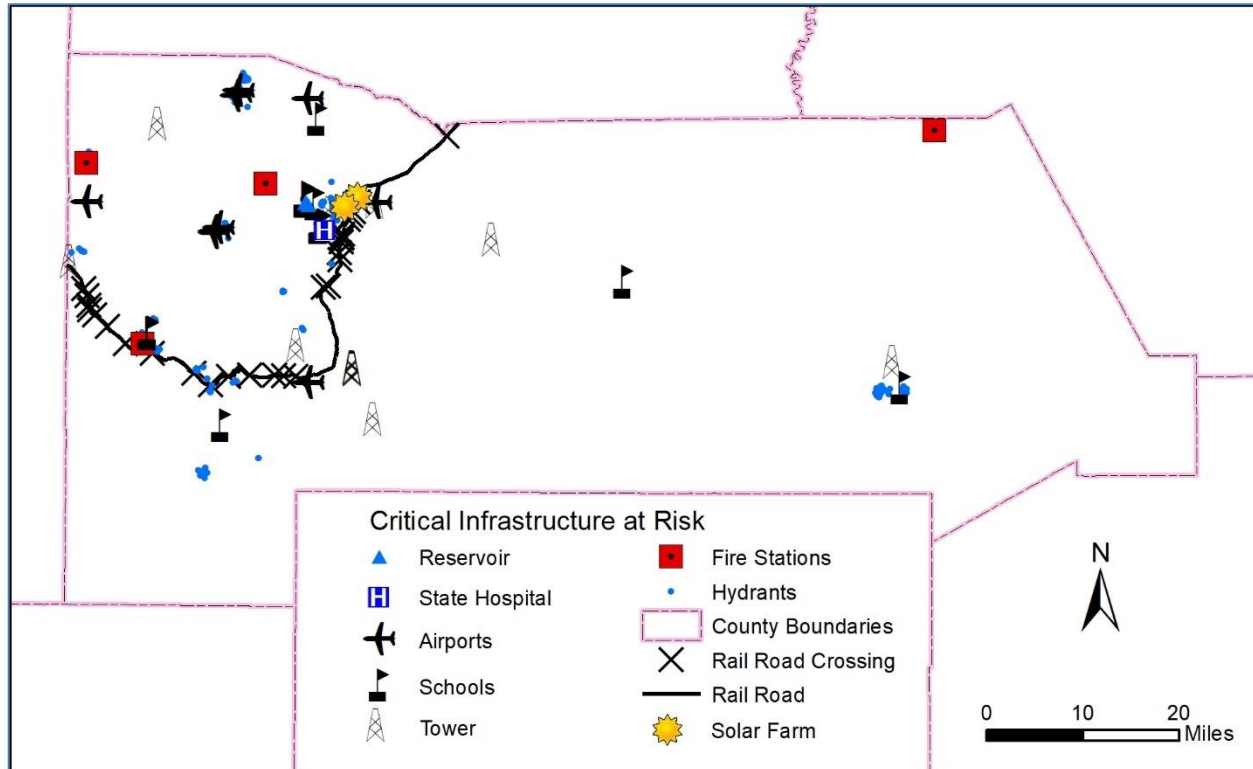


Figure 10 Infrastructure locations

1. **Communication Site Mitigation. Priority level – Very High.** Communication sites are a vitally important component of emergency operations and normal means of communications of the general public. Each site should be evaluated and basic wildfire mitigation measures implemented.
2. **Solar Power Generating Plants. Priority level – Very High.** Two know plants exist north of Las Vegas. The solar panel manufacturer should be consulted and recommendations suggested to protect them from damage from a wildfire. These sites should then be evaluated, and measures taken to protect them. A continuing maintenance schedule will need to be put in place.
3. **Power Line Thinning. Priority level - High.** There are over 150 miles of power lines (14 KV) within the Santa Fe National Forest in San Miguel County. The rural electric cooperative has been advised to cut any tree that can potentially fall into a power line. In the future new power lines will be required to be under ground. There are additional high voltage power lines (120/230 KV) that run along Interstate I-25 from the County line to Las Vegas, to north of Tecolote and southwest to Rowe Mesa. These power lines should also be maintained to reduce fuels within their right-of-way.



## Evacuation/Access Route Identification and Improvement

Many of the communities in the study area would benefit from having all evacuation/access routes wide enough to safely accommodate both residents leaving the area and emergency responders entering the area. To achieve this, a combination of road side pullouts, road surface improvement, and roadside thinning of the vegetation will need to take place.

In the event that residents and responders alike are not able to safely escape, the pre-planning of safety zones should be considered. The safety zone should be improved so as to accommodate a large number of people and equipment (civilians and firefighters), if this is not possible additional safety zones should be considered. In some areas several communities may have a need for the same safety zone. A helicopter landing zone / med-evac site should be incorporated into the safety zone (located where it can be kept secure for safety reasons). The areas will need to be well marked. Educational materials supported by public meetings will need to be generated. **Safety zones are areas of last resort and their locations should be considered carefully.**

### Evacuation/Access Route Recommendations - General

**Very High Priority:** The Mineral Hill community should be more thoroughly planned for evacuation needs. The community has little fuel reduction work and those residents on the West and Northwest areas would benefit most from the recommendations below.

**Very High Priority:** Contact the County Road Division and NMDOT to request information on when roads are coming up for repair/resurfacing. Meet with planners to determine the feasibility of widening narrow sections and installing additional turn-outs.

**Very High Priority:** Designate potential evacuation routes and safety zones. Evacuation routes and safety zones should be marked.

**High Priority:** Determine the routes and safety zone locations, submit to the E9-1-1 Rural Addressing Division for production of the maps. These could also become a “layer” in the Avenza mapping program.

**High Priority:** Plan and practice evacuations with the communities that are affected.



### TIME UNTIL FIRE ARRIVAL (TUFA)™

A critical evaluation is determining how long it will take a fire to reach a facility or evacuation route. Anchor Point’s Time Until Fire Arrival™ (TUFA™) modeling is the only fire modeling available that calculates how long it will take a fire to reach a value at risk or road that is essential to evacuating citizens and making operational decisions. Traditional fire behavior moves away from a point of ignition, while TUFA modeling starts away from an evacuation route and calculates how long the fire will take to reach the road from any potential ignition point. This produces a map of the time that responders have to save lives and property. This analysis can be very helpful in identifying areas along evacuation routes that are susceptible to rapid fire impingement. Once this is identified, appropriate fuels reduction or other mitigation can be prescribed. This analysis in conjunction with traditional fire behavior can pinpoint areas

where heat and smoke are most likely to impact the road. Adjustments to route planning and or alternative routes can then be established to avoid the most critical areas.

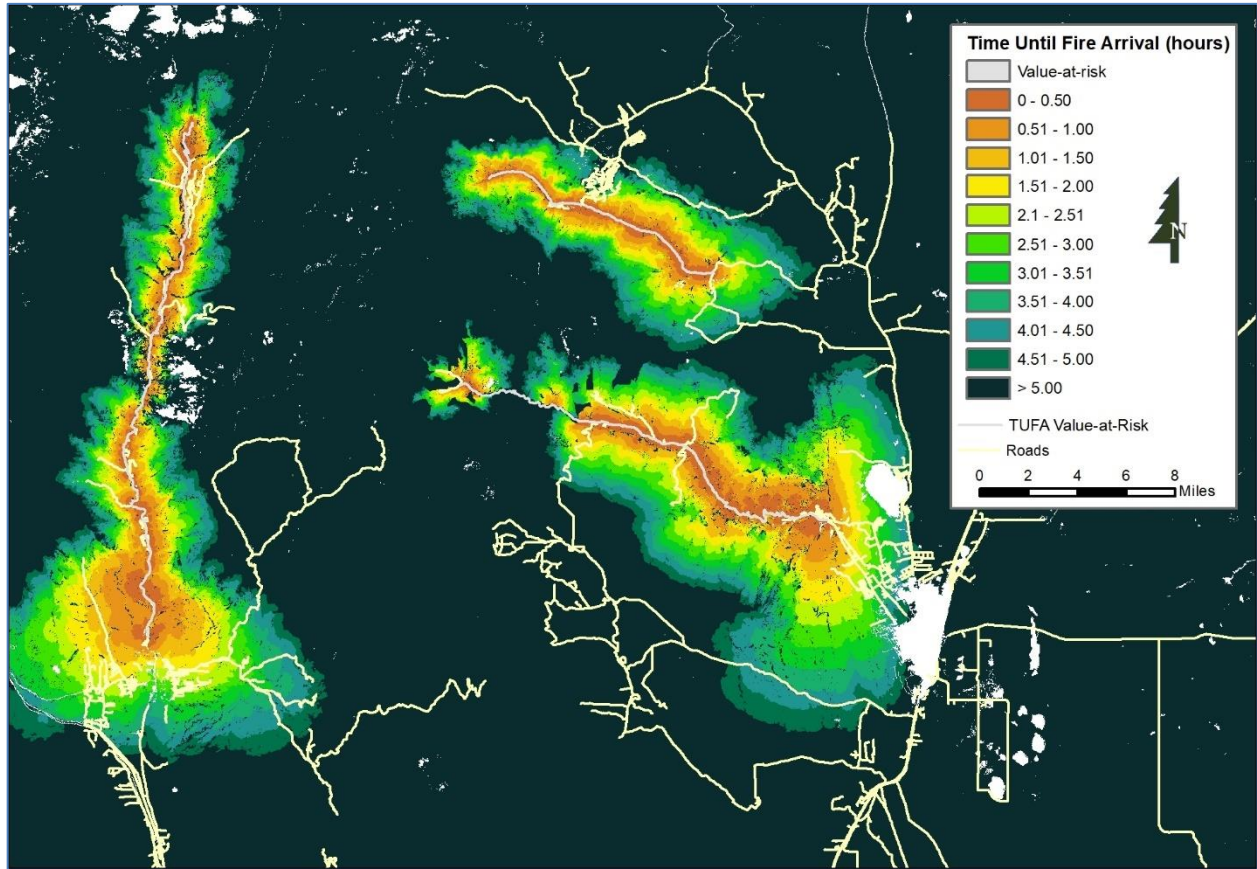


Figure 11 Primary Evacuation/Access Routes

## Evacuation/Access Route Recommendations - Specifics

1. **Pecos Canyon.** This project focuses on efforts to create a viable evacuation/access route along Highway 63 from Monastery Lake to the northern end of Cowles. Additional road pullouts should be constructed in areas void of significant vegetation. As of this writing it appears that repair/resurfacing efforts are taking place.
2. **Chapel Road.** This project focuses on efforts to create a viable evacuation/access route along the private road within Thunder Ranch from County road 3A north into the VERY HIGH rated Pendaries community. The road surface may need improving and additional road pullouts should be constructed in areas void of significant vegetation. Improve road signage made of non-combustible materials and post detailed maps showing major intersection locations to help direct evacuating residents and visitors out of the area.
3. **Highway 65.** This project focuses on efforts to create a viable evacuation/access route from the upper end of the HIGH hazard rated Upper Gallinas community to the town of Montezuma.
4. **County Road 18A.** This project focuses on efforts to create a viable evacuation/access route along this County road 18A which is a loop off of the 19A road. The road surface will need improving and additional road pullouts should be constructed in areas void of significant vegetation. Improve road signage to help flow out of the area.
5. **County Road 3A.** This project focuses on efforts to create a viable evacuation/access route along County road 3A from the upper end of the San Ignacio community down to highway 518. The road surface will need improving and additional road pullouts should be constructed in areas void of significant vegetation. Improve road signage to help flow from the area.

## AREAS OF SPECIAL INTEREST

In addition to residential communities, camps and recreation retreats such as the El Porvenir Church Camp, the Western Life Camp, and Camp Blue Haven have been identified as areas of special concern or interest. In some cases, these areas present special problems for firefighters. 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.

## RECOMMENDATIONS

- Coordination of these recommendations should be by the San Miguel County Fire Marshall.
- Completed and proposed fuel reduction projects should be evaluated for effectiveness and updated. If a “protect in place” strategy is considered it should be evaluated and approved by all fire officials.
- Develop individual evacuation plans for camps. Post them in the camps, give them to local law enforcement, fire districts and San Miguel County OEM. Provide emergency training to camp managers and their staff.

- Workers and participants should be provided with wildfire educational materials and made aware of the dangers associated with wildfires.
- Fire danger signage should also be posted at the entrance. The fire danger for the day should be displayed, and this information will need to be kept current.
- An advanced notification system should be created to advise the church camp of a wildfire start in the area. This could be the most difficult to achieve as communications in these areas is generally poor.
- All buildings and improvements adjacent to wildland fuels should follow the recommendations as outlined within the “Reducing Structural Ignitability” section.