

UNION COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN



PREPARED BY
WILDLAND FIRE CONSULTANT

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We the undersigned endorse and support the Union County Community Wildfire Protection Plan:

UNION COUNTY MANAGER

County Manager Kelley Beagle Acting For 7/30/08
Angie Gonzales date

UNION COUNTY COMMISSION

County Commission, Chair [Signature] 7-8-08
Richard Arguello date

UNION COUNTY FIRE MARSHALL

Union County Fire Marshall [Signature] 6-18-08
Jim O'Bryant date

Union County Community Wildfire Protection Plan, June 2008

INTRODUCTION TO COMMUNITY WILDFIRE PROTECTION PLANS

The Healthy Forest Restoration Act, which was signed into law in December 2003, first defined a Community Wildfire Protection Plan, or CWPP, and established incentives for communities to create a CWPP. In March 2004, the *Handbook for Wildland-Urban Interface Communities* was published offering a detailed, user friendly, how-to manual for creating a CWPP.

A CWPP is a plan developed by a community in an area at-risk from wildland fire.

The CWPP is a collaborative product involving interested parties, local government, local fire fighting agencies, the state agency which oversees forest management and, if present in the vicinity, federal land management agencies.

A valid CWPP has two objectives:

- ◆ To identify and prioritize the surrounding area, both federal and nonfederal lands, for hazardous fuels reduction treatments, as well as recommending methods for achieving hazardous fuels reductions.
- ◆ The plan recommends measures for reducing structural ignitability throughout the at-risk community.

In addition to enhancing safety and reducing risk to human structures and watersheds, communities with CWPPs are also given priority for USFS and BLM funded hazardous fuels reduction projects as authorized under the HFRA.

PREPARING A COMMUNITY WILDFIRE PROTECTION PLAN

STEP ONE: CONVENE DECISION MAKERS

Form a core team made up of representatives from the appropriate local governments, local fire authority, and state agency responsible for forest management.

STEP TWO: ENGAGE INTERESTED PARTIES

Contact and encourage active involvement in plan development from a broad range of interested organizations and stakeholders.

Identify and engage local representatives of the USFS and BLM.

Contact and involve other land management agencies as appropriate.

STEP THREE: ESTABLISH A COMMUNITY BASE MAP

Work with partners to establish a baseline map of the community that defines the community's WUI and displays inhabited areas at risk, forested areas that contain critical human infrastructure, and forest areas at risk for large-scale fire disturbance.

STEP FOUR: IDENTIFY PROBLEMS TO BE ADDRESSED

Work with partners to identify problems to be addressed, including fuel hazards; risk of wildfire occurrence; structural ignitability; local preparedness capability; and location of homes, businesses, essential infrastructure and other community values at risk.

This "community risk assessment" can be simple or complex depending on the resources available to the community and partners.

STEP FIVE: ESTABLISH COMMUNITY PRIORITIES AND RECOMMENDATIONS

Use the base map and community risk assessment to facilitate a collaborative community discussion that leads to the identification of local priorities for fuel treatment, reducing structural ignitability, and improving fire response capability.

Clearly indicate whether priority projects are directly related to protection of communities and essential infrastructure or to reducing wildfire risks to other community values.

STEP SIX: DEVELOP AN ACTION PLAN AND ASSESSMENT STRATEGY

Consider developing a detailed implementation strategy to accompany the CWPP, as well as a monitoring plan that will ensure its long-term success.

STEP SEVEN: COMPLETE THE COMMUNITY WILDFIRE PROTECTION PLAN

Consider the CWPP complete for the year and date stamp the document.

Communicate the results to the community and partners.

Collect information to update the plan for revision the following year.

COMMUNITIES AND THE WILDLAND–URBAN INTERFACE

The wildland–urban interface (WUI) is commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. This WUI zone poses tremendous risks to life, property, and infrastructure in associated communities and is one of the most dangerous and complicated situations firefighters face. Both the National Fire Plan and the Ten-Year Comprehensive Strategy for Reducing Wildland Fire Risks to Communities and the Environment place a priority on working collaboratively within communities in the WUI to reduce their risk from large-scale wildfire. The HFRA builds on existing efforts to restore healthy forest conditions near communities and essential community infrastructure by authorizing expedited environmental assessment, administrative appeals, and legal review for hazardous fuels projects on federal land. The Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and it places priority on treatment areas identified by communities themselves in a CWPP.

ROLE OF COMMUNITY WILDFIRE PROTECTION PLANS

The HFRA provides communities with a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal funds may be distributed for projects on nonfederal lands. A CWPP is the most effective way to take advantage of this opportunity.

BENEFITS TO COMMUNITIES

In the context of the HFRA, a CWPP offers a variety of benefits to communities at risk from wildland fire. Among those benefits is the opportunity to establish a localized definition and boundary for the wildland–urban interface. In the absence of a CWPP, the HFRA limits the WUI to within ½ mile of a community’s boundary or within 1 ½ miles when mitigating circumstances exist, such as sustained steep slopes or geographic features aiding in creating a fire break. Fuels treatments can occur along evacuation routes regardless of their distance from the community. At least 50 percent of all funds appropriated for projects under the HFRA must be used within the WUI as defined by either a CWPP or by the limited definition provided in the HFRA when no CWPP exists.

In addition to giving communities the flexibility to define their own WUI, the HFRA also gives priority to projects and treatment areas identified in a CWPP by directing federal agencies to give specific consideration to fuel reduction projects that implement those plans. If a federal agency proposes a fuel treatment project in an area addressed by a community plan but identifies a different treatment method, the agency must also evaluate the community’s recommendation as part of the project’s environmental assessment process.

UNION COUNTY'S NEED FOR A CWPP

"It's just a grass fire..."

It has been said that more fatalities have occurred while fighting grass fires than any other wildfire type. In Ordway, CO a farm town in the eastern plains of Colorado, a wildfire in April 2008 was a stark reminder of how devastating grass fires can be. The entire community was evacuated, 24 buildings were destroyed including eight homes, 14 square miles burned and two firefighters lost their lives. In Cross Plains, TX a community in the flat, northern plains will never underestimate the potential destruction of a grass fire. In December 2005 a wildfire devastated the town. 85 homes and 25 mobile homes were destroyed and two firefighters and 17 civilians lost their lives. These communities were very similar to the communities found throughout the grasslands of Union County. Neither of these fires took place during what is typically thought of as the "fire season".

New Mexico has been experiencing severe drought conditions for the last several years. This coupled with the fire management practices of the past several decades to "fight fire safely and aggressively" have disrupted the natural wildfire cycle. The result has been a shift in species composition in many areas as grass-dominated landscapes give way to shrubs and trees. Rainfall in the summer leads to increased fuel loads and the dry fall and winter leave these fuels dried and prone to ignition.

Communities, property owners and fire personnel must prepare and preplan for wildfires by recognizing the risk and potential of grass fires, reducing fuel loads, preparing fire suppression resources, and raising awareness on what homeowners can do to protect their property before the fire.

COLLABORATION

In accordance with the HFRA this CWPP is a collaborative product involving interested parties, local government, local fire fighting agencies, the NM State Forestry-Cimarron District Office and the Cibola National Forest-Kiowa Rita Blanca National Grasslands. Table 1 lists the representatives from each entity that worked together to form the Union County CWPP Core Team.

Table 1. Core Team Members

Angie Gonzales	Union County Manager	575-374-8896
Justin Bennett	Union County Commissioner	
Jim O'Bryant	Union County Wildland Coordinator/ Fire Marshall	575-207-7233
Levon Sink	Union County E-911/GIS	575-374-6075
Ferron Lucero	Union County Emergency Management	505-207-5454
Nancy Walls Justin Thompson	USFS Cibola National Forest	505-374-9652
Ernie Lopez Christopher Lopez	EMNRD Forestry Division Cimarron District Office	505-376-2204
Harry Staven	Town of Clayton	505-207-5431
Charles Jordan	NM State Parks Clayton Lake State Park	505-374-8808
Ervin Dickens Lonnie Wiseman Randy Skaggs Fred Sinclair	Clayton Fire & Rescue	505-374-8756
Garland King John King	Capulin Fire Department	505-360-0295
Brad Atwater	Town of Folsom Folsom VFD/EMS	505-278-3546
Cathy Daniel Bud Daniel	Dry Cimarron FD	575-451-7466
Marty Mathis Sterlin Shields	Amistad VFD	
Patrick Riley Jeff Harris Bill Brockman	Rabbit Ear Fire Department	575-374-2446
Randy Podzemny Joe Reeser Beverly Reeser	Sedan VFD	575-374-9090
Phillip Bramblett	Grenville VFD	575-278-2507
William Parsons Lee Dixon	Des Moines VFD	505-278-2999
Paul Briesch	Des Moines EMS	505-278-2101
Pamela Lile	American Red Cross	575-278-3458
David Graham	NMSU Extension Service	505-207-7884
	Citizens via newspaper, mail outs, e-mail, and public postings	

Union County hosted several Core Team meetings. The Core Team worked together to accomplish the goals of this CWPP which include:

- Working with partners to identify problems to be addressed, including fuel hazards; risk of wildfire occurrence; structural ignitability; local preparedness capability; and location of homes, businesses, essential infrastructure and other community values at risk.
- Establishing Community Priorities and Recommendations
- Defining the Union County WUI
- Developing the Base Map
- Using the Base Map and community risk assessments to facilitate a collaborative community discussion that leads to the identification of local priorities for fuel treatment, reducing structural ignitability, and improving fire response capability.
- Providing recommendations for the reduction of fire danger within the WUI and to Critical Infrastructure
- Developing an Action Plan
- Identifying Fire Department needs
- Recommendations for improving fire response capabilities

Table 2 lists the meeting dates and places.

Table 2. Core Team Meetings

July 23, 2007	Clayton, NM
November 16, 2007	Des Moines, NM
November 17, 2007	Clayton, NM
February 6, 2008	Clayton, NM
February 28, 2008	Clayton, NM
March 6, 2008	Clayton, NM

UNION COUNTY, AN INTRODUCTION

Union County is located in the northeast corner of New Mexico, bordering Colorado to the north, and both Oklahoma and Texas to the east. The terrain in northwestern Union County consists of high mesas, deep canyons and desiccated plateaus with volcanic mountains scattered throughout. The southern and eastern portions of the county consist mostly of plains with some scattered hills and arroyos. These grassy plains are well suited for cattle ranching; as a result Union County relies heavily upon agriculture for revenue and employment.

POPULATION

While Union County has remained primarily a ranching area since it was first settled significant changes have occurred in its population and economy. The Union County population has fallen from 14, 221 (1920 census) to 4,174 (2000 census). Union now has the fourth smallest population of New Mexico's 33 counties. Major causes for the decrease were first, the Dust Bowl and depression of the 1930s, which drove most of the homesteaders from their farms, and the second, the need to own much more land to make a living in the cattle industry.

WATER

Union County is mainly dependent on groundwater except for the Dry Cimarron River Valley where less than 3,000 acres are irrigated, and Tramperas Creek area where less than 1,500 acres are irrigated.

After the discovery of ground water for irrigation, farming began to grow again in the 1950s. The acreage being irrigated continued to grow from 1972 through 1984, while number of acres of dryland farming decreased. In the past ten years, the number of acres of irrigated and dryland farming has remained constant.

Most of the groundwater irrigation is located along a strip about 8 miles wide on the east side of the county from a few miles north of Clayton to the Quay County line. The potential for expanding irrigation is limited by lack of water and by economic restrictions.

LAND USE

Union County consists of approximately 2,422,800 acres. The average elevation is 4,970 feet. The average annual rainfall is 15 inches and the temperatures range from highs in the 70's to lows in the 30's.

Land use in the County is 93% grazing, crop lands include 64,477 irrigated acres, 31,739 dry land acres and commercial timber utilizes 17,122 acres.¹

There are 800 acres of inland water.

LAND OWNERSHIP

The land ownership consists of United States Forest Service, Bureau of Land Management, National Parks, State land and privately-owned land. There are also several archaeological sites peppered throughout the County, including the Santa Fe Trail which runs from the northeastern part of the County southwest toward Gladstone.

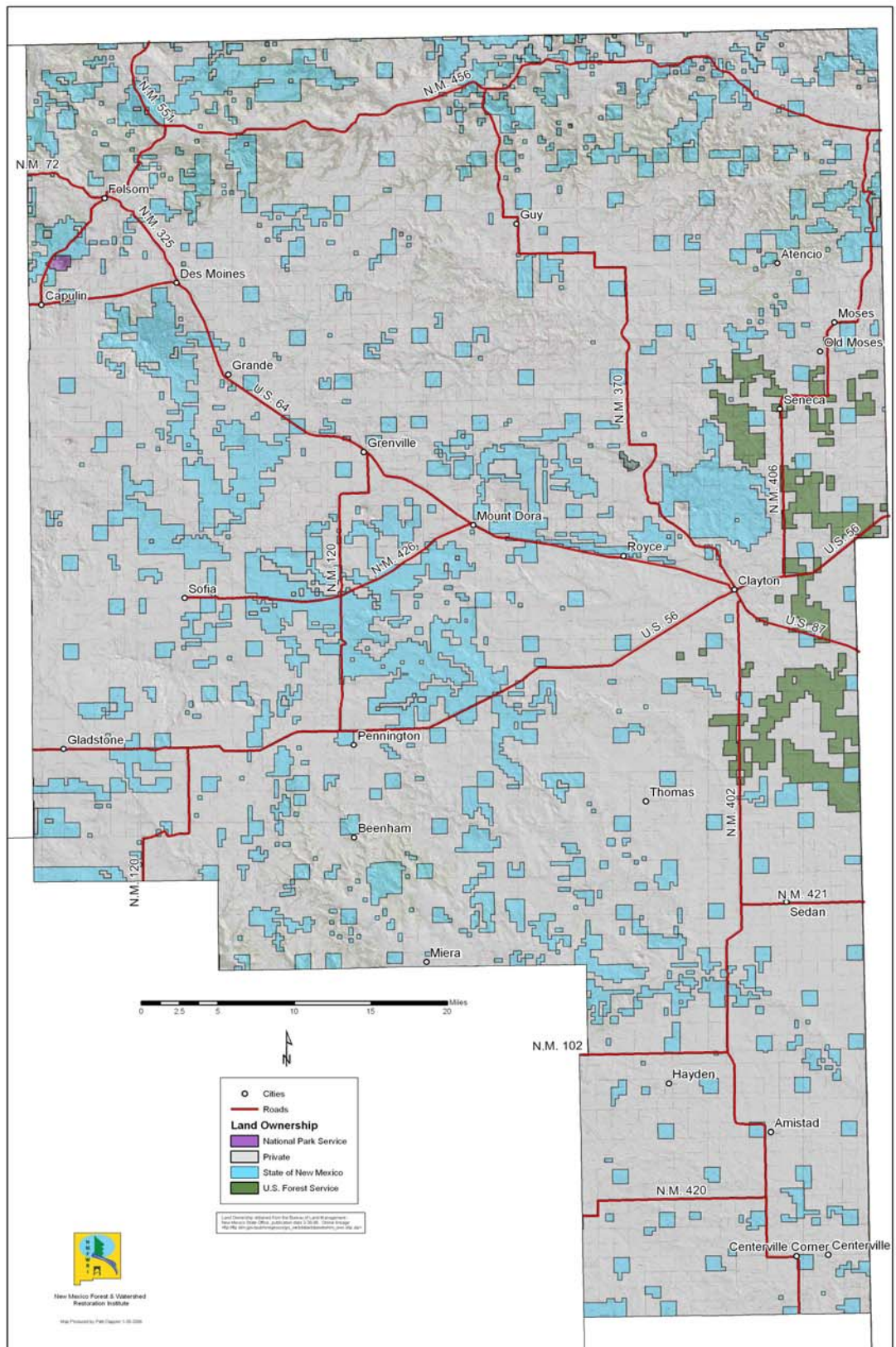
Table 3. Land Ownership

Land Status	Size in acres	Percent of total County
Privately owned	1,922,069	79%
U.S. Forest Service	57,542	2%
BLM	503	>1%
National Parks	740	>1%
State	441,946	18%
Total	2,422,800	100%

The County consists of several small communities. Four of the communities are incorporated and include; Clayton, Des Moines, Grenville and Folsom. Nine of the communities are un-incorporated and include; Capulin, Amistad, Gladstone, Sedan, Mt. Dora, Hayden, Strong City, Thomas and Seneca.

1. Union County Comprehensive Plan 2002, Tab 5

Union County Land Ownership



UNION COUNTY FIRE HISTORY

Union County is within the Cimarron District of the NM State Forestry Division. It is the policy of EMNRD State Forestry that all wildfires be reported to the District Office. When a wildfire is reported the NM State Forestry will issue a fire number and fills out a Wildfire Report which is then added to the State database utilizing the Fire Management System or FMS. FMS is then able to generate reports and provide statistical and historical fire information for the state.

In the past the fire departments in Union County have not been in the habit of reporting all wildland fires to NM State Forestry as is required of them. The current fire personnel are working to change that. The fire history on record at NM State Forestry is therefore incomplete. This history is included only to give a vague idea of some of the fire activity in Union. It may be noted that in the time period represented no railroad fires were reported. This has certainly not been the case. This fire history is included to acknowledge that the departments have been slack in reporting and have made a commitment to meet their reporting requirements.

Sixty Two wildfires were reported to New Mexico State Forestry between August 1996 and April 3, 2008. Of those fires 40% burned less than 100 acres, 78% burned less than 1,000 acres. With a total of over 92,203 acres reported burned.

Table 4. Fire by Size

Fire Size	# of Fires	Percent
0-10 acres	12	19%
11-99 acres	13	21%
100-500 acres	17	27%
501-999 acres	7	11%
1,000-4,999 acres	7	11%
5,000-9,999 acres	3	5%
10,000-19,999 acres	2	3 %
20,000 +	1	2%
Total	62 fires	92,203 acres

Lightning was the leading cause of fires over the last decade, causing 58% of all reported fires in Union County. Humans caused 22% either by equipment use, burning debris, hot ashes, smoking or children.

Table 5. Fires by Cause

Cause	# of Fires	Percent
Lightning	36	58%
Miscellaneous	11	18%
Equipment Use	7	11%
Debris Burning	3	5 %
Power line	2	3 %
Hot ashes	1	2%
Smoking	1	2 %
Children	1	2 %
Total	62	

Eighty seven percent of the fires reported were Grass fires. 6% burned in Pinon/Juniper all caused by lightning and 3% in brush all caused by lightning. The complete Fire Management System (FMS) Report on record with NM State Forestry is included in the appendix of this CWPP.

Table 6. Fires by Fuel Type

Fuel Type	# of Fires	Percent
Grass	54	87%
Pinon/Juniper	4	6 %
Brush	3	5 %
Other Woodland	1	2 %
Total	62	

FUEL HAZARDS

FUEL AND WEATHER HAZARDS

There are several areas within Union County where the condition of vegetative fuels is such that, if ignited, they would pose a significant threat to communities and/or firefighter safety. Union also experiences high wind events quite often. The predominant winds are from the south/southwest.

CONSERVATION RESERVE PROGRAM LANDS

There are several tracts of Conservation Reserve Program, or CRP, land along the East flank of the County. CRP land is land which is under government contract to be reseeded to native grass and un-harvested for ten years. CRP was started in 1985 to take fragile, marginal land from crop production. The goals of the program were to reduce soil erosion, decrease sedimentation, increase herbaceous cover, improve water quality, and provide financial incentives for participants. One of the CRP fuel management requirements is that the fuels be managed once every three years during the ten year contract period. This requirement has not been enforced. The resulting tracts have multiple years' growth of grass that is very tall, dense and dry. The CRP land poses a high threat to the communities and ranch homes they are near.

GRAZELANDS AND RAILROAD LINES

Surrounding each of the WUI Communities are large tracts of pasture/graze land that pose a threat of a large scale running grass fire entering or surrounding the communities, ranch headquarters and homes. In addition to the graze land is the presence of railroad lines surrounding the communities. Some treatment recommendations agreed upon by the Core Team included Defensible Space Education, evacuation education, regular mowing, prescribed burning on private and public lands and strategically placed fuel breaks.

FORESTED AREAS

Within the Folsom Fire District there is a forested, mountain area north and west of the community of Folsom called Pine Forest. The area is beginning to see an influx of property owners who are building homes. The home sites require extensive defensible space treatments and on-scene water storage sites need to be developed in order for the local Volunteer Fire Department to provide adequate Fire protection to the developing “Subdivision”. The CWPP core team expressed a desire to see the County Commission adopt some Wildland Urban Interface Zoning Codes to address development in forested areas to provide for firefighter safety and to lower the risk of property loss due to wildfire. The County Commission is reviewing the International Urban-Wildland Interface Code (ICC) and considering adopting part or all of the Code. Whether the Commission officially decides to adopt the ICC or not, the CWPP Core Team would recommend the Code be referenced as it has several helpful standards for WUI properties. Another source of helpful information for those building or living in the Wildland Urban Interface is the website, Firewise.org, and the NM State Forestry Division’s Publication, “Living with Fire”. Some recommendations are included in the section of this plan entitled, “Protect Yourself: Living in the Wildland Urban Interface”.

WATERSHEDS

The Northern strip of Union County has an abundance of moderate to heavy fuels, including Pinon/Juniper, Ponderosa Pine and Oak Brush, within the Dry Cimarron Watershed area. These forested areas are a priority area for hazardous fuels mitigation. There is an abundance of Pinon-Juniper in the south central part of Union in an area known as the Tramperas Watershed. This area is also a priority for Hazardous Fuels Mitigation. These priority areas also correspond to the areas that are rated as Fire Regime Condition Class 2 and 3 within the county, as illustrated in the Union County FRCC map. Fire Regime Condition Class is an evaluation of expected fire behavior as compared to the departure from historic norms. According to the FRCC map the watersheds have a moderate to high departure from historic norms.

FIRE REGIME CONDITION CLASS

FRCC IN UNION COUNTY

Fire Regime Condition Class (FRCC) as it relates to Wildfire risk in Union County provides an estimation of expected fire behavior as compared to historic “norms” in Union. The majority of the County is within the natural, historical range of, fuel composition, fire frequency, severity and pattern. There are large areas that show a moderate departure and some small areas where a high departure has been measured.

EXPLANATION OF FRCC

The USFS in conjunction with USDA FireLab, USGS and the Nature Conservancy has developed a website called “LANDFIRE” (visit <http://www.landfire.gov> for current data). Included in this data is LANDFIRE Rapid Assessment Fire Regime Condition Class (FRCC) data which delineates a standardized, interagency index to measure the departure of current conditions from reference conditions. FRCC is defined as a relative measure describing the degree of departure from the reference fire regime. This departure results in changes to one (or more) of the following ecological components:

- vegetation characteristics (species composition, structural stages, stand age, canopy closure and mosaic pattern)
- fuel composition
- fire frequency, severity and pattern
- other associated disturbances (such as insect and disease mortality, grazing and drought)

FRCC CLASSIFICATION

FRCC is composed of three classes:

FRCC 1 - Within the natural (historical) range of variability (“reference fire regime”) of vegetative characteristics; fuel composition, fire frequency, severity and pattern and other associated disturbances.

FRCC 2 - Moderate departure from reference fire regime of vegetative characteristics; fuel composition, fire frequency, severity and pattern and other associated disturbances.

FRCC 3 - High departure from the reference fire regime of vegetative characteristics; fuel composition, fire frequency, severity and pattern and other associated disturbances.

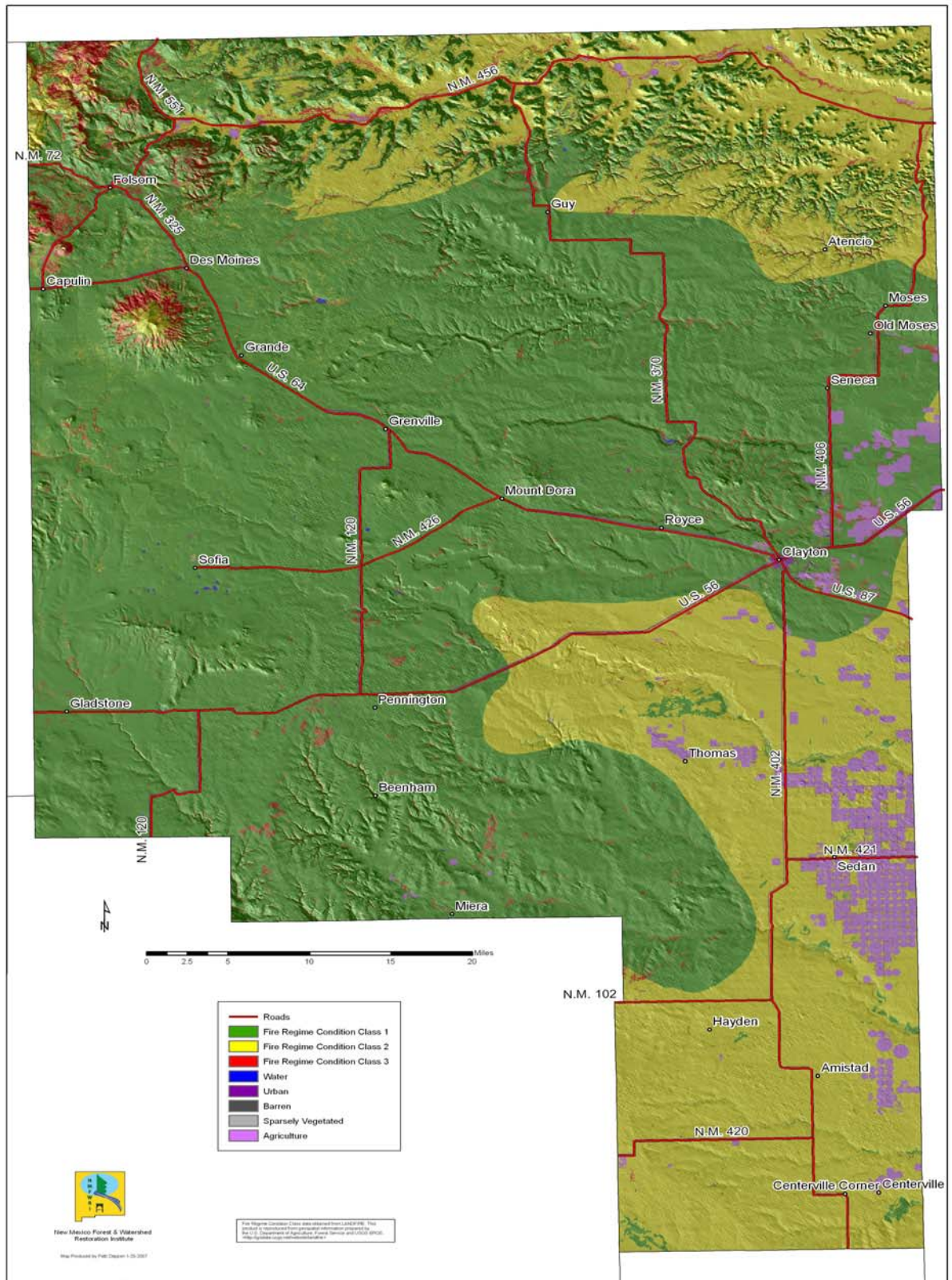
FRCC AND THE UNION COUNTY WILDLAND URBAN INTERFACE

Most of Union County is classified as FRCC 1 and 2. There are some FRCC 3 areas within the Folsom and Capulin WUIs. Most of the grasslands are within the FRCC 1 areas. The FRCC 2 areas correspond with the Forested Dry Cimarron Watershed WUI area in the northern portion of the County and in the CRP WUI areas to the southwest. (See FRCC Map)

Table 7. FRCC and the Union County WUI

WUI COMMUNITY	HAZARD ASSESSMENT Low, mod.,high or extreme	FRCC Rating
Folsom	Moderate	FRCC 1 & 3
Capulin	Moderate	FRCC 1 & 3
Des Moines	Low	FRCC 1 & 3
Grenville	Low	FRCC 1
Clayton	Low	FRCC 1 & 2
Sedan	Low	FRCC 2
Amistad	Low	FRCC 2
Strong City	Low	FRCC 1
Hayden	Low	FRCC 2
Thomas	Low	FRCC 2
Mt. Dora	Low	FRCC 1
Gladstone	Low	FRCC 1

Union County Fire Regime Condition Class



map date 01/2008

WILDFIRE SCIENCE

TYPES OF WILDFIRE

In order to change potential wildfire conditions and impact the associated fuels, it is necessary to understand the various types of wildfire and the conditions in which they exist. Fire scientists and managers recognize three general types of wildland fire, depending on the fuel stratum in which the fire is burning.

- A ground fire is one that burns in the ground fuels such as duff, organic soils, roots, rotten buried logs, and so forth. Ground fuels are characterized by higher bulk density than surface and canopy fuels. Ground fires burn with very low spread rates, but are sustainable at relatively high moisture contents. Fuel consumption through ground fire can be great, causing significant injury to trees and shrubs. Although ground fuels can be ignited directly, they are most commonly ignited by a passing surface fire.
- A surface fire is one that burns in the surface fuel layer, which lies immediately above the ground fuels but below the canopy, or aerial fuels. Surface fuels consist of needles, leaves, grass, dead and down branch wood and logs, shrubs, low brush, and short trees. Surface fire behavior varies widely depending on the nature of the surface fuel complex.
- A crown fire is one that burns in the elevated canopy fuels. Canopy fuels normally consumed in crown fires consists of the live and dead foliage, lichen, and fine live and dead branch wood found in a forest canopy. They have higher moisture content and lower bulk density than surface fuels.¹

Three types of crown fire are generally recognized, passive, active, and independent.

1. A passive crown fire, also called torching or candling is one in which individual or small groups of trees torch out, but solid flame is not consistently maintained in the canopy. Passive crowning encompasses a wide range of fire behavior, from the occasional tree torching out to a nearly active crown fire. The increased radiation to surface fuels from passive crowning increases flame front spread rate, especially at the upper end of the passive crown fire range. Embers lofted during passive crowning can start new fires downwind, which make containment more difficult and increase the overall rate of fire growth. Passive crowning is common in many forest types, especially those with an under story of shade-tolerant conifers.
2. An active crown fire, also called a running or continuous crown fire, is one in which the entire surface/canopy fuel complex becomes involved, but the crowning phase remains dependent on heat from the surface fuels for continued spread. Active crown fires are characterized by a solid wall of flame extending from the fuel bed surface through the top of the canopy. Greatly increased radiation and short-range spotting of active crown fires lead to spread rates much higher than would occur if the fire remained on the surface. Medium and long-range spotting associated with active crowning leads to even greater rates of fire growth.
3. An independent crown fire is one that burns in canopy fuels without aid of a supporting surface fire. Independent crown fires occur rarely and are short lived, requiring a combination of steep slope, high wind speed, and low moisture content. Many apparently independent crown fires may actually be active crown fires in which the canopy phase is momentarily pushed ahead of the surface phase under the influence of steep slope or strong wind²

FUELBEDS

Fire behavior and severity depend on the properties of the various fuels (live and dead vegetation and detritus) strata and the continuity of those fuel strata horizontally and vertically. The fire hazard for any particular forest stand or landscape can be characterized by the potential for the fuels to cause specific types of fire behavior and effects. Understanding the structure of fuelbeds and their role in the initiation and propagation of fire is the key to developing effective fuel management strategies.³

Fuelbeds are classified in six strata:

- tree canopy
- shrubs/small tree
- low vegetation
- woody fuels
- moss, lichens, and litter
- ground fuels (duff).

Each of these strata can be divided into separate categories based on physiognomic characteristics and relative abundance. Modification of any fuel stratum has implications for fire behavior, fire suppression, and fire severity.

SURFACE FUELS

Surface fuels consist of grasses, shrubs, litter, and woody material lying on, or in contact with the ground surface. Crown fuels as those suspended above the ground in trees or vegetation (vines, mosses, needles, branches, and so forth). High surface fire intensity usually increases the likelihood for igniting overstory canopy fuels, but surface fuel types with longer residence times can contribute to drying aerial fuels in a forest canopy, which also leads to torching (when a tree's or group of trees' foliage ignites carrying the fire into the canopy).

CROWN FUELS

Crown fuels are the biomass available for crown fire, which can be ignited from a surface fire via the understory shrubs and trees, or from crown to crown. The shrub/small tree stratum is also involved in crown fires by increasing surface fireline intensity and serving as "ladder fuels" that provide continuity from the surface fuels to canopy fuels, thereby facilitating crown fires. These essentially bridge the vertical gap between surface and crown strata. The size of this gap is critical to ignition of crown fire from a surface fire below.

AERIAL FUELS

Aerial fuels separated from surface fuels by large gaps are more difficult to ignite because of the distance above the surface fire, thus requiring higher intensity surface fires, surface fires of longer duration that dry the canopy before ignition, or mass ignition from spotting over a wide area. Once ignited, high density canopy fuels are more likely to result in a spreading crown fire (active crown fire) than low density canopies.³

UNION COUNTY WILDLAND URBAN INTERFACE

In the context of the Healthy Forest Restoration Act, a CWPP offers a variety of benefits to communities at risk from wildland fire. Among those benefits is the opportunity to establish a localized definition and boundary for the wildland–urban interface. In the absence of a CWPP, the HFRA limits the WUI to within ½ mile of a community’s boundary or within 1 ½ miles when mitigating circumstances exist. Several Wildland Urban Interface (WUI) Communities have been identified and defined in Union County by the Core Team and from Community Feedback obtained in the public meetings. Based upon fuel types, past fire behavior and local fire resource response times and fire experience the default HFRA ½ mile radius boundary was not deemed sufficient.

The Core Team defined the Union County WUI by designating the following communities:

- 5 mile radius around Clayton
- 5 mile radius around Folsom
- 2 mile radius around Sedan
- 2 mile radius around Amistad
- 2 mile radius around Capulin
- 2 mile radius around Des Moines
- 2 mile radius around Grenville
- 2 mile radius around Hayden
- 2 mile radius around Mt. Dora
- 2 mile radius around Strong City
- 2 mile radius around Gladstone
- Thomas
- Tramperas Watershed
- Dry Cimarron Watershed

A five mile radius was placed around Clayton because Clayton is the most populous area in Union County. The core team wanted to ensure that a sufficient “buffer zone” around the community was designated and to include the infrastructure surrounding the community in the Clayton WUI. Folsom has a five mile radius because of the forested areas around and within the community. A two mile radius around the remaining WUI communities was deemed sufficient.

The entire Tramperas and Dry Cimarron Watershed areas were significant enough to be included in the Union County Wildland Urban Interface. A fold-out map is included, “Union County WUI Map”, which illustrates the WUI and Infrastructure at risk.

WUI COMMUNITY RISK ASSESSMENT RATINGS

Each community was assessed using a nationally recognized Wildfire Hazard Subdivision Assessment Form to rate the Wildfire Hazard of a subdivision or community. The form was modified from a form presented in the Firewise Communities Workshop Handbook (1997). A blank assessment form is included in the appendix of this CWPP. The Wildfire Hazard Subdivision Assessment Form may be used by individual property owners to find their home and/or properties hazard assessment.

Points are given for categories including:

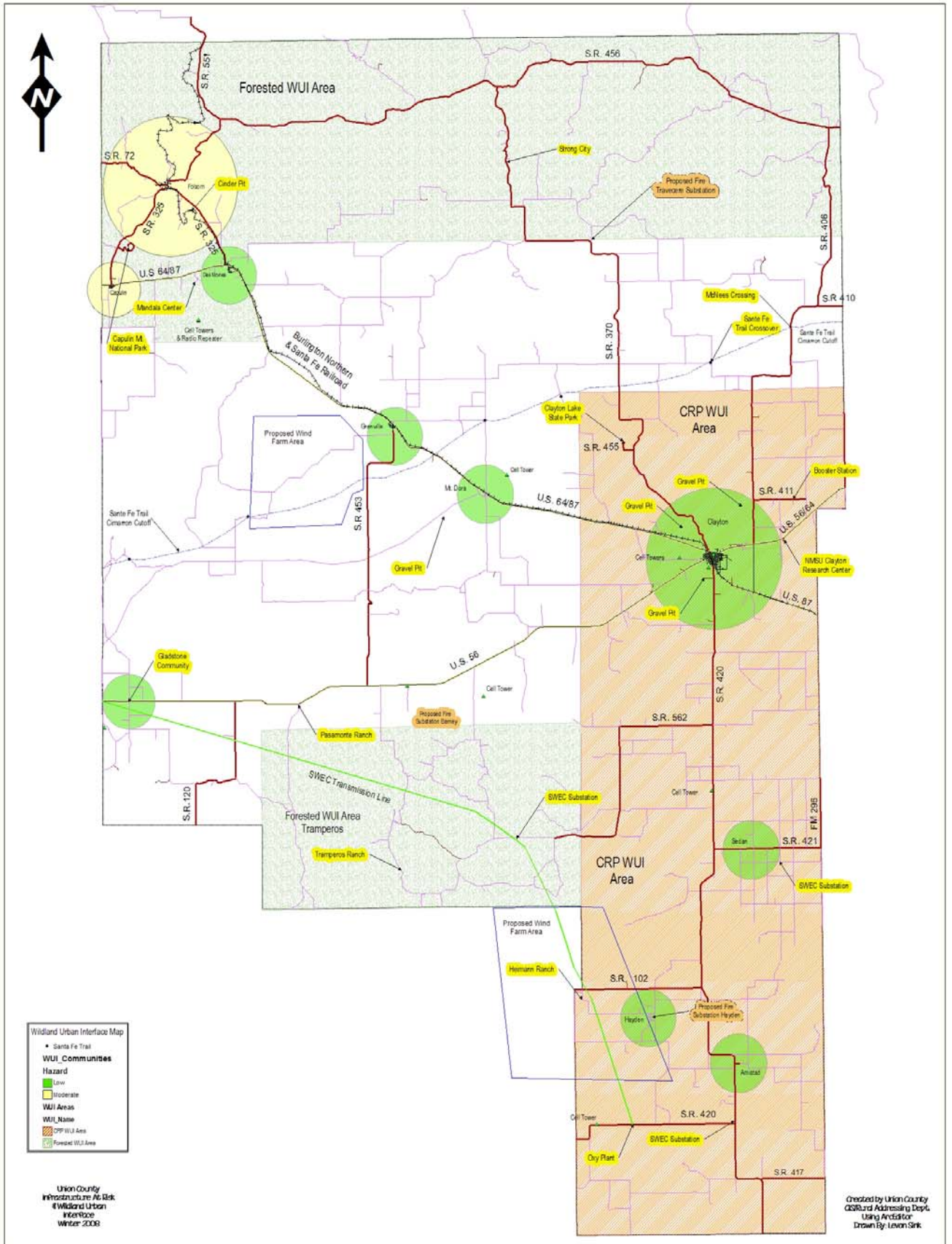
- Ingress and Egress, road width and accessibility
- Lot size, driveway design, street signs
- Fuels types
- Defensible space treatments
- Topography
- Fire history
- Weather
- Building materials, roof and siding
- Available fire protection
- Distance to available Water sources
- Placement of utilities

When tallied the points are then given a fire hazard rating as follows:

<i>Low Hazard</i>	<i><49 points</i>
<i>Moderate Hazard</i>	<i>49-68 points</i>
<i>High Hazard</i>	<i>69-83 points</i>
<i>Extreme Hazard</i>	<i>84+ points</i>

Table 8. WUI COMMUNITY'S RISK ASSESSMENTS

WUICOMMUNITY	SCORE	HAZARD ASSESSMENT LOW, MODERATE, HIGH, EXTREME
Folsom	51	Moderate
Capulin	52	Moderate
Des Moines	38	Low
Grenville	42	Low
Clayton	30	Low
Sedan	35	Low
Amistad	30	Low
Strong City	41	Low
Hayden	38	Low
Thomas	42	Low
Mt. Dora	48	Low
Gladstone	39	Low



CRITICAL INFRASTRUCTURE AT WILDFIRE RISK

One of the steps in the development of this CWPP was to establish a community base map by working with partners to establish a baseline map of the community that defines the community's WUI and displays inhabited areas at risk, areas that contain critical human infrastructure, and forest areas at risk for large-scale fire disturbance.

Critical human infrastructure has been identified in Union County by the Core Team and from Community Feedback obtained in the public meetings. A fold-out map is included, "Union County WUI Map", which illustrates the WUI and Infrastructure at risk.

- Livestock Research Center
- Feedlots
- CO₂ pipeline and wells
- Scenic Byways
- Santa Fe Trail
- Ports-to-Plains highway
- Electrical Substations and SWEC Transmission Lines
- Future wind generator field sites
- Clayton Lake State Park and Wildlife Refuge
- Mandala Center
- Prison
- Cell Towers
- Repeater Towers
- Recreation Sites
- Oxy station
- PNM gas lines leading into Clayton
- Gravel pits
- Historic Buildings and sites
- Railroad

LIVESTOCK RESEARCH CENTER AND FEEDLOTS

Union County has five feedlot operations with a combined capacity of 70,000 head. Five miles east of Clayton is the Clayton Livestock Research Center where NM State University and the US Forest Service research problems in health, nutrition and management of cattle.

CO₂ PIPELINE AND WELLS

The county also holds the largest and purest carbon dioxide field referred to as the Bravo Dome. Most of the CO₂ is piped to the permian basin for oil recovery in West Texas. Because this natural resource has a high purity rating, it is also trucked, in the liquid form, to companies where it is used for medical applications. Some CO₂ is being processed into dry ice and delivered to companies that ship perishables. The royalties paid to the private landowners for extracting this natural resource is probably the reason the per capita income in Union County remains in the top five for the state average. There is potential for other product development utilizing CO₂ which will be pursued at the local and state level.

SCENIC BYWAYS AND SANTA FE TRAIL

The Dry Cimarron Scenic Byway was designated in the early 90s. The Dry Cimarron and The Santa Fe Trail Byway continue to be developed and efforts to improve and promote both byways continue.

PORTS-TO-PLAINS HIGHWAY

The Ports-to-Plains Trade Corridor is an uninterrupted multi-lane divided highway that will transport goods and people from Mexico and the Border Region through West Texas, Oklahoma, New Mexico, Colorado and ultimately Canada and the Pacific Northwest.

ELECTRICAL SUBSTATIONS AND SWEC TRANSMISSION LINES

Tri-State Electric owns a transmission line that runs south from Colorado to an Oxy, Inc. facility commonly referred to as the Bravo Dome CO₂ plant.

FUTURE WIND GENERATOR FIELD SITES

Union County has been contacted by some wind farm development companies indicating an interest in exploring the county for wind generation development. Foresight Energy out of California has secured property leases and available space on a distribution line, erected monitoring towers and is recording data. Wind generation development is a top priority activity for the county because of its revenue potential.

CLAYTON LAKE STATE PARK AND WILDLIFE REFUGE

Clayton Lake State Park and Wildlife Refuge is 12 miles north of Clayton via NM 370. The area is owned by the New Mexico State Game Commission and the Department of Game and Fish, with significant funding by the Sport Fish and Wildlife Restoration Act. The lake is a popular recreation site in Union County, set among rolling grasslands, Clayton Lake State Park offers excellent trout, catfish and bass fishing. A half-mile walk to the lake's spillway is the dinosaur trackway, containing more than 500 footprints dating back more than 100 million years.

MANDALA CENTER

The Mandala Center is a not-for-profit organization incorporated in June 1996. It serves as a retreat center in a dramatic setting at milepost 383 on US 64/US 87, three and a half miles west of Des Moines in the northeastern sector of New Mexico. It sits at 7000 feet on the slopes of Sierra Grande, with sweeping views including the Fuji-like Capulin Volcano National Monument.

PUBLIC LANDS IN UNION COUNTY

CLAYTON LAKE STATE PARK AND WILDLIFE REFUGE

Some concern was expressed over the wildfire risk at the Clayton Lake State Park, especially during large public events like the annual fishing derby. At one of the Core Team meetings the Park Manager expressed his concern over the risk. The policies of the State Park and Wildlife Refuge do not allow for any fuels reduction. As a result the Park has an abundance of fuels and overgrowth. There is one primary access route in and out of the park, the road in places is narrow and has sharp bends. The capacity of the park is 4,000 people, during events like the fishing derby the park's capacity reaches its limit. The park has some fire suppression equipment at the park, but limited personnel to sufficiently suppress a large scale wildfire. The park relies heavily upon the local volunteer fire departments for fire protection. At the Core Team meeting the local fire departments were made aware of the situation at Clayton Lake State Park and renewed a commitment to the State Park to increase the fire departments presence at the lake during large events. The fire departments also made a commitment to staff wildfire apparatus at the park 24 hours during the fishing derby to patrol and distribute fire evacuation plans to the public. The evacuation plan is included in the appendix of this CWPP. The park manager made a commitment to;

- ◆ Do defensible space treatments around campsites,
- ◆ Make and distribute evacuation plans to all park attendees, and
- ◆ To pre-identify safety zones throughout the park. These safety zones will be clearly identified and included in the evacuation plan.

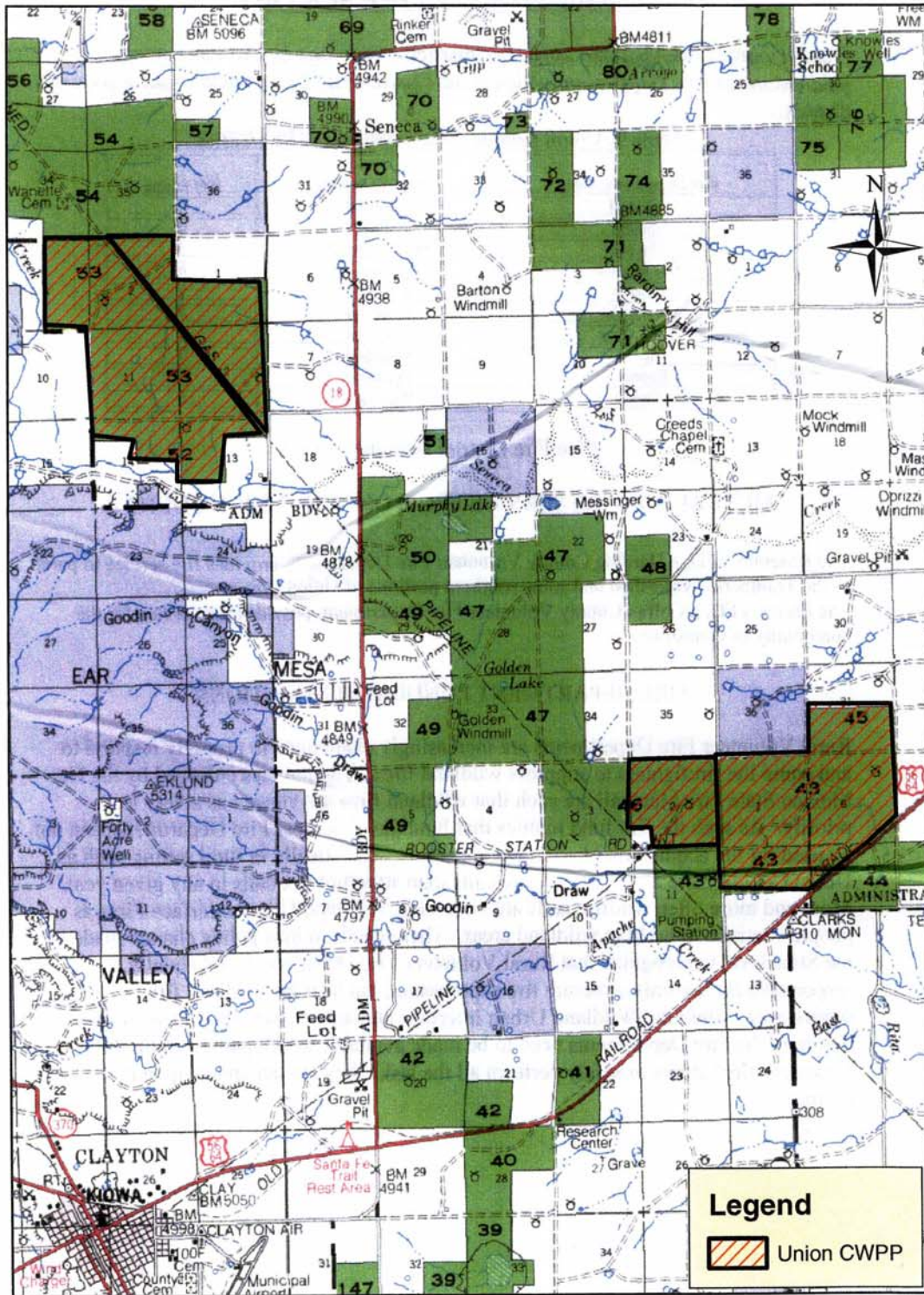
KIOWA NATIONAL GRASSLANDS PROPOSED PROJECTS

The Kiowa and Rita Blanca National Grasslands, which are managed by the Cibola National Forest have a five year fuels management plan. The attached map highlights the proposed prescribed burn areas throughout Union County. All federal and state requirements will be met and the appropriate public notices will be made prior to any burning. The two proposed areas are both identified as "Union CWPP" on the attached "Proposed Fuels Project" map. The proposed areas are:

- ◆ north of Clayton approximately eight miles and include section 53 and part of section 52,
- ◆ and northeast of Clayton approximately eight miles just north of the Texas state line and include sections 43, 45 and 46.

For more information on proposed fuels reduction projects on the National Grasslands contact the local Cibola National Forest Office during regular business hours.

Proposed Fuels Projects



UNION COUNTY FIRE SERVICE

Union County is divided into seven fire districts. Only one district has a municipal, paid/volunteer Fire Department which is the Clayton Fire Department in the Rabbit Ear district.

Table 9. Union County Fire Departments by District

Fire Department Name	Volunteer or Paid	ISO Rating
Amistad	Volunteer	9
Capulin	Volunteer	9
Clayton	Paid/Volunteer	6
Des Moines	Volunteer	9
Folsom	Volunteer	7
Grenville	Volunteer	9
Rabbit Ear	Volunteer	9
Sedan	Volunteer	9
Rosebud	Volunteer	9
Farley	Volunteer	9

(See Fire District Boundary Map)

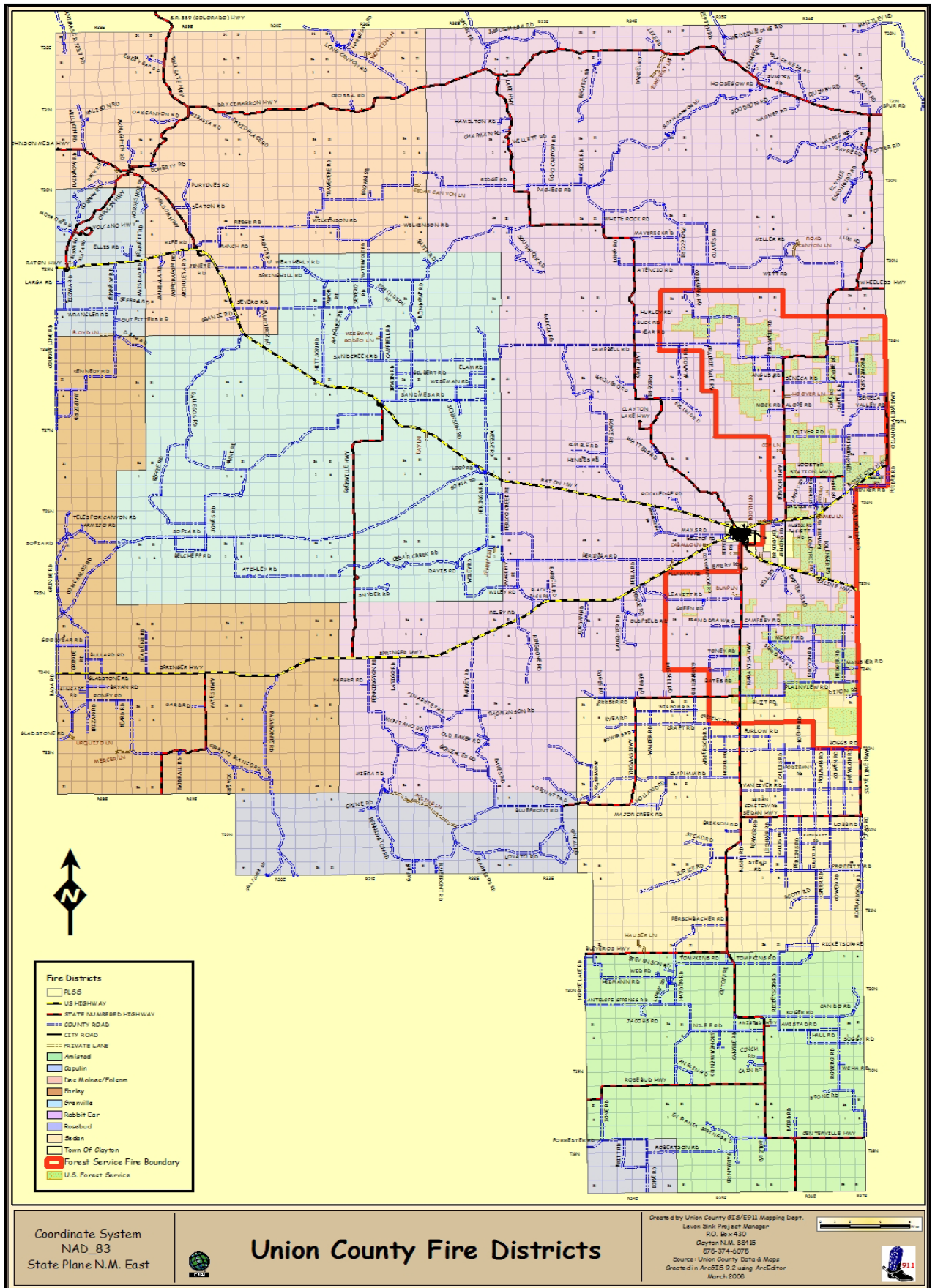
MUTUAL AID FIRE SERVICE FROM OUTSIDE UNION COUNTY

The Rosebud VFD, a Harding County Volunteer Fire Department, provides fire service to parts of the Tramparas Watershed and some southern portions of Union County.

The Farley VFD, a Colfax County Volunteer Fire Department, provides fire service for the community of Gladstone.

FIRE DEPARTMENT FUNDING RESTRICTIONS

Rural Volunteer Fire Departments are increasingly challenged to properly respond to and equip the firefighters to suppress wildland fires. The policies enforced by the New Mexico State Fire Marshall are such that wildland fires are viewed as a very low priority. As such the fire fund monies that fund the Volunteer Fire Departments can not be used for the acquisition of wildland apparatus. Statistically in rural setting such as Union County there are more wildfire calls than structure fire calls in any given year. More and more often wildfire calls are becoming Wildland Urban Interface Fires as people continue to build in wildland areas. There needs to be a policy change made at the State level to recognize that Rural Volunteer Fire Departments are equally responsible for not only structure fire suppression, but also for wildland fire suppression within the Wildland Urban Interface and also outside of it. The monies that fund the Fire Departments need to be made available to adequately equip the Volunteer firefighters to safely perform all the tasks they are depended upon to perform.



FIRE RESPONSE PROCEDURES

To report a wildfire in Union County, one may call 911. When 911 is called dispatch at the Clayton Police Department, which is staffed 24 hours, answers. Based on the location of the fire incident given by the caller, the dispatcher pages out the Fire Department of the affected district. Locations are determined by address and/or Latitude/Longitude coordinates the landline call originated from. If the call originated from a cell phone, Union County is Phase II compliant, however the caller may still need to give the dispatcher a physical description of the location.

All Union County Fire Departments are currently being paged or toned out over their radios on the following frequencies;

Table 10. Union County Fire Frequencies

Department	Rx	Tx	Tone
Amistad			
Capulin			
Clayton	153.980	155.925	127.3
Des Moines			-updates pending-
Folsom			
Grenville			
Rabbit Ear			
Sedan	155.865	155.850	136.5
Rosebud			
Farley			
NMSF	154.310	154.310	
Cibola National Forest	170.525	170.525	203.5

If the responding department finds they need more assistance, the next closest district is called in by the fire department. All the County fire departments have mutual aid agreements with each other. There are also Mutual Aid agreements with the neighboring counties and Texas. Joint Powers Agreements are on file with NM State Forestry, the US Forest Service, the Bureau of Land Management, Harding County and Colfax County. (Copies of these Agreements are included in the Appendix of this CWPP) If the fire is beyond the scope of the local resources NM State Forestry, Cimarron District Office is notified. Due to the distance from NM State Forestry the local US Forest Service is usually dispatched through a Resource Order (and vice versa). The USFS has Air Resources and local Ground Crews.

LOCAL PREPAREDNESS

Union County has a part-time Emergency Management Officer and a part-time Wildland Fire Coordinator. Included in the Appendix of this CWPP is the annual “Wildfire Operating Plan” which is created every year by the Wildland Coordinator in conjunction with the Fire Chiefs, NMSF and the US Forest Service. The “Wildfire Operating Plan” includes standard operating procedures, a communication plan and other pertinent information that is updated every Spring. Some other emergency preplanning has been done.

EMERGENCY COMMUNICATIONS

“The Union County All-Hazard Emergency Plan”, authenticated December 13, 2005, on file in the Union County Courthouse states:

“The Clayton Police Department dispatch is a 24 hour operation and can be used as an emergency communications hub to notify appropriate officials in the event of a significant emergency. The State Police, District Thirteen Dispatcher in Raton covers Union County and may be among the first to know of a disaster. Regardless of who first becomes aware of an emergency with a potential for disaster, they will contact a county official (such as the Sheriff, Chairman of the County Commission or the County Administrative Assistant). The county official contacted will determine if the Emergency Operation Center (EOC) must activate and make all necessary notifications.”

Union County All-Hazard Emergency Plan, Annex A, V., C., County Emergency Operations Center (EOC) Activation, page 11

EVACUATION PROCEDURES

The Plan also includes an Evacuation Plan in Annex J, Part II and III, which states:

C. Potential evacuation areas due to natural disasters (flood, wildfire, Etc.) Include the low lying areas in the populated areas. Good warning and prior education are essential for proper flood evacuation and the system should be tested frequently. Wildfire can lead to more than evacuation problems if it gets near hazardous materials. Again evacuation plans should be tested and improvements made from lessons learned.

H. The American Red Cross will select and provide shelters during all but war emergency evacuations. Evacuees will be housed in public-type buildings (i.e., schools, churches, etc.) and not in private residences. Homeowners, however, will be encouraged to share their homes with evacuees.

And in Part IV it states:

C. Evacuation due to natural or man-made hazards will normally be ordered by the Chief Elected Official of the affected political subdivision. In a situation where rapid evacuation is critical to the continued health and safety of the population, the on-scene command authority may order evacuation.

2. Evacuation routes for a natural or man-caused disaster will be selected by law enforcement officials at the time of the evacuation decision.

The plan in its entirety can be obtained from the county Administrator at the County Courthouse during normal business hours.

UNION COUNTY “AG” PLAN

Union County adopted the, “Agricultural Prevention, Preparedness, Response and Recovery Union County Agricultural Industry” Plan, October 2006. The first revision was completed February 2007. A copy of this “Ag Plan” is included in Appendix 6.

UNION COUNTY ACTION PLAN

In addition to giving communities the flexibility to define their own WUI, the HFRA also gives priority to projects and treatment areas identified in a CWPP by directing federal agencies to give specific consideration to fuel reduction projects that implement those plans. The Union County Core Team used the base map and community risk assessments to facilitate a collaborative community discussion that lead to the identification of local priorities for Fuels Reduction Projects, Education and Outreach, Reducing Structural Ignitability and Improving Fire Response Capability.

The following table, Wildfire Hazard Mitigation Recommendations, lists priority projects that are directly related to protection of communities and essential infrastructure or to reducing wildfire risks to other community values. The projects described will be on-going, completed or at least initiated in the next ten years. The Union County Wildfire Protection Plan is a living document that should be updated regularly and adjusted to reflect accomplishments, new data, changed priorities and lessons learned.

Table 12. Wildfire Hazard Mitigation Recommendations

WUI Or Infrastructure at Risk	Potential for Reducing fire danger	Proposed prescription to reduce fire danger, improve fire response capabilities and for hazardous fuels treatment	Responsible party
Clayton	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Awareness signs along Highway • Mow along Railways • Increase water storage capacity • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or fire use • VFD Substation in Northern & Southwestern part of FD 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • USFS • Railroad • County/ VFDs • Property Owners • Property Owners/VFDs • Rabbit Ear VFD and NM State Fire Marshall
Folsom	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Awareness signs along Highway • Mow along Railways • Increase water storage capacity • Fuels reduction by Rx burn or Fire Use • Fuel Break along WUI Boundary 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • USFS • Railroad • County/ VFDs • Property Owners/ VFDs • Property Owners

WUI Or Infrastructure at Risk	Potential for Reducing fire danger	Proposed prescription to reduce fire danger, improve fire response capabilities and for hazardous fuels treatment	Responsible party
Grenville	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Mow along Railways • Increase water storage capacity • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • Railroad • County/ VFDs • Property Owners • Property Owners/VFDs
Mt. Dora	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Mow along Railways • Increase water storage capacity • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • Railroad • County/ VFDs • Property Owners • Property Owners/ VFDs
Sedan	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Awareness signs along Highway • Increase water storage capacity • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • USFS • County/ VFDs • Property Owners • Property Owners/ VFDs
Amistad	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Awareness signs along Highway • Increase water storage capacity • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • USFS • County/ VFDs • Property Owners • Property Owners/VFDs

WUI Or Infrastructure at Risk	Potential for Reducing fire danger	Proposed prescription to reduce fire danger, improve fire response capabilities and for hazardous fuels treatment	Responsible party
Des Moines	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Awareness signs along Highway • Mow along Railways • Increase water storage capacity • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • USFS • Railroad • County/VFD • Property Owners • Property Owners/ VFDs
Capulin	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Awareness signs along Highway • Increase water storage capacity • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • USFS • County/ VFDs • Property Owners • Property Owners/ VFDs
Hayden	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along highways • Increase water storage capacity • Fuel Break along WUI Boundary • VFD Substation • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • NM-DOT • County/ VFDs • Property Owners • Amistad VFD and NM State Fire Marshall • Property Owners/ VFDs
Strong City	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along main road • water storage • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • County • County/ VFDs • Property Owners • Property Owners/VFDs
Gladstone	Good	<ul style="list-style-type: none"> • Public education • Defensible Space • Mow along main road • water storage • Fuel Break along WUI Boundary • Fuels reduction by Rx burn or Fire Use 	<ul style="list-style-type: none"> • Interagency Outreach/Education Team • Property Owner • County • County/ VFDs • Property Owners • Property Owners/VFDs

WUI Or Infrastructure at Risk	Potential for Reducing fire danger	Proposed prescription to reduce fire danger, improve fire response capabilities and for hazardous fuels treatment	Responsible party
Clayton Lake State Park (wildlife refuge)	Poor	<ul style="list-style-type: none"> Defensible space around campsites Educate park visitors about evacuation procedures & any pertinent fire restrictions guidelines Increased fire department presence during large events 	<ul style="list-style-type: none"> State Park State Park Local VFDs
Cell and Repeater Towers	Moderate	<ul style="list-style-type: none"> Fuel reduction by mowing, grazing, mechanical removal 	<ul style="list-style-type: none"> Tower Owners
Transmission Lines and electrical substations	Moderate	<ul style="list-style-type: none"> Fuel reduction by mowing, grazing, mechanical removal 	<ul style="list-style-type: none"> Property Owners and SWEC
Railroad Lines	Good	<ul style="list-style-type: none"> Mow along Railways 	<ul style="list-style-type: none"> Railroad
Port to Plains Highway	Good	<ul style="list-style-type: none"> Mow more frequently along highway 	<ul style="list-style-type: none"> NM-DOT
Tramperas Watershed	Good	<ul style="list-style-type: none"> Public education Fuels reduction by thinning, Rx burn, fire use, mechanical removal 	<ul style="list-style-type: none"> VFDs Property Owners/NRCS
Dry Cimarron Watershed	Good	<ul style="list-style-type: none"> Public education Fuels reduction by thinning, Rx burn, fire use, mechanical removal 	<ul style="list-style-type: none"> VFDs Property Owners/NRCS
CRP Lands	Good	<ul style="list-style-type: none"> Fuel breaks around boundaries Shred land to remove invasive species, annually if needed. (Can shred 100% of the acreage once in ten years, usually no more than 50% in one year.) Graze, once in ten years 	<ul style="list-style-type: none"> Property Owners Property Owners Property Owners

In order to implement the Wildfire Hazard Mitigation Recommendations the following measures need to be taken:

- The Core Team has agreed to form an Interagency Outreach/Education team which will address; Public education on fuels reduction, Fire Wise, defensible space and fuel breaks
- County Ordinances addressing WUI fuels reduction

- More water storage tanks placed strategically throughout the County or agreements drafted to use existing privately owned tanks
- Fuels reduction programs and fuel breaks via mowing, grading, grazing, fire use, Prescribed burns, and thinning
- Wildfire Use Plans on Private Land
- Wildfire Use Plans on Public Lands
- The State Land permit fees need to be addressed for projects that will reduce fire danger
- Projects should be monitored by local VFD, county wildland coordinator, NRCS, NMSF, local officials and property owners.

FUELS REDUCTION TREATMENT OPTIONS

Fire behavior responds to fuels, weather, and topography. Changes to fuels, for example from prescribed fire burning or thinning, are related to potential fire behavior at that site and have resulted in reduced severity of wildfires where fuel treatments have occurred.

For many fuel management objectives, the goal is to limit surface fires from becoming crown fires. Crown fires are the main contributor to a wildfire being considered severe, fuel conditions that are conducive to crown fires must be modified in order to eliminate severe wildfire. The nature of crown fires--- intense, fast moving, and destructive---suggests that potential for damage is great whenever a crown fire occurs. Assessing the hazard posed by crown fires is therefore a matter of assessing the potential for their occurrence—of identifying the physical situations that lead to crown fire occurrence.²

The most effective strategy for reducing crown fire occurrence and severity is to:

- reduce surface fuels
- increase height to live crown
- reduce canopy bulk density
- reduce continuity of the forest canopy³

The three basic categories of tools available to forest managers for altering vegetative conditions are;

- prescribed fire
- mastication
- mowing
- thinning.

The effectiveness of each of these methods in altering the structure of or reducing the amount of ground and ladder fuels, and reducing crown bulk density is different. Consequently, each of these leaves residual stands with different vegetative characteristics and environmental effects.

Each type of treatment also has a different set of financial costs, and in times of tight budgets the choice of which method to use is important in achieving the best combination of risk reduction and environmental effects within the available budget⁴

PRESCRIBED FIRE

Prescribed fire is generally used to remove ground fuels, under story vegetation, and small trees, and sometimes to kill larger trees. It is not a precise way of reducing stand density, and several prescribed fires spread over many years are often necessary to accomplish management objectives. Prescribed fire is, however, often seen as more environmentally benign than other methods for modifying vegetation.

WILDFIRE USE

The application of the appropriate management response to naturally ignited wildland fires to accomplish specific resource management objectives in pre-defined designated areas. Unlike Prescribed fire, wildfire use is a fuel management option that uses wildfires that start in pre-designated areas. The fire suppression policies of the NM State Forestry on privately owned land has been to, "Fight fire safely and aggressively". The NM State Forestry and the local fire departments have done a very good job of safely and aggressively suppressing fire in New Mexico. As a result the natural wildfire cycle has been altered. Recently a shift in the fire management practices has begun to take place. More and more land managers are seeing the benefits of wildfire. The fire personnel in Union County are beginning to explore the possibility of using wildfire for its inherent benefits. The policy is still to fight fire safely and aggressively, but in some areas it is more beneficial, safer and cost effective to let "nature take its course" and allow the naturally occurring wildfire to not be actively suppressed but monitored. In order to use wildfire the land owners, fire departments and NM State Forestry need to pre-identify potential areas that would benefit from wildfire and have a wildfire use plan in place.

MASTICATION

Mastication or grinding is a special case of thinning without removal of the thinned materials. In the case of mastication, the thinned materials are ground and left on the site. This does not remove the biomass, but cuts it into smaller pieces leaving the material distributed on the ground, adding to the surface fuel load. If the masticated material exceeds 2 or 3 inches, there is a potential to alter the moisture regime adversely affecting tree growth and survival.

THINNING

Thinning is also quite precise and, like prescribed fire, can include removal of biomass from the site, some of which may be in the form of merchantable trees. Thinning is not particularly useful at reducing under story plants or ground fuels, and it typically adds to the surface fuel load in the form of tops and limbs if not removed. In the Southwest it is generally recommended to pile and burn thinned trees, chip or remove from the site.

Like mastication, the precision of thinning makes it useful for accomplishing large changes in vegetative structure and composition in one entry.⁴

There is no one-size-fits-all recommendation for how mechanical thinning or prescribed fire should be used at a given location in order to reduce wildfire risk, but thinning of both canopy and ladder fuels is generally needed to reduce crown fire potential.⁵

1 USDA Forest Service Research Paper RMRS-RP-29. 2001.

2. (Scott, Joe H, Reinhardt, Elizabeth D. 2001. Assessing crown fire potential by linking models of surface and crown fire behavior. USDA Forest, Service, Rocky Mountain Research Station, research paper RMRS-RP-29. 3-6).

3. Graham, Russell T, McCaffrey, Sarah, Jain, Theresa B. 2004. Science basis for changing forest structure to modify wildfire behavior and severity. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-120. 8-12

4. (Fight, Roger D, Barbour, James R. 2005. Financial analysis of fuel treatments. USDA Forest Service, Pacific Northwest research Station, General Technical Report PNW-GTR-662. 1-2).
5. (Lowe, Kimberly. 2006. Northern Arizona University, Ecological Restoration Institute, Working papers in southwestern ponderosa pine forest restoration, number 15).

OPEN BURNING REQUIREMENTS

When determining which fuels treatment to utilize on your land consider what will be done with the resulting materials. When doing a prescribed burn or burning piles be aware that the NM Environment Department, Air Quality Bureau, Environmental Improvement Board has a statewide Open Burning Policy in place. Title 20 Environmental Protection, Chapter 2 Part 60 Open Burning states that effective December 31, 2003, Open burning of vegetative material under this section shall meet the following requirements:

- for purposes of disposal of such material, burning of areas with non-piled vegetative material does not exceed ten acres per day, or burning of piled, vegetative material, including material gathered in a pit or open container, does not exceed one thousand cubic feet of pile volume per day. In determining daily burn area and daily burn pile volume, areas or piles that are within three hundred feet of each other shall be considered to constitute a single burn if the burning occurs on the same day and on property under ownership or possessory control of the same person.
- burning shall be conducted at least 300' from any occupied dwelling, workplace or place where people congregate, which is on property owned by or under possessory control of, another person;
- burning shall begin no earlier than one hour after sunrise, and shall be extinguished no later than one hour before sunset
- burning shall be attended at all times
- the appropriate local fire department or dispatch or firefighting authority shall be notified prior to burning
- for burns exceeding one acre per day or 100 cubic feet of pile volume per day, the burner shall provide prior notice of the date and location of the burn to all households within one quarter of a mile of the burn
- If the burn will be within one mile of other people, you must visually monitor the smoke from the burn. Watch the smoke and note the color of the smoke and the direction it goes.
- the burner shall consider alternatives to burning prior to igniting a burn
- material to be burned shall be as dry as practicable
- effective June 1, 2004, open burning of household waste, other than vegetative material is prohibited.
-

For more information please contact New Mexico Environment Department, Air Quality Bureau, Smoke Management Program, 2044 Galisteo Street, Santa Fe, NM 87505 1-800-224-7009.

FUELS REDUCTION PROJECTS

Altering, or treating the vegetation is the most effective way to reduce the risk of large-scale, catastrophic wildfires. Priority should be placed upon the following fuels reduction projects in Union County:

1. Defensible space treatments around homes and structures. Guidelines are included in the preceding pages of this CWPP and in the appendix.
2. Fuel Breaks around all WUI communities identified. See the Union County Wildland Urban Interface list and map on pages 21-23 of this CWPP.
3. In the Dry Cimarron and Tramperas Watershed areas.
4. Around and along critical human infrastructure as identified on the Critical Infrastructure at Risk of Wildfire and the WUI map on pages 23-35.

These Fuels Reduction Projects are in order of priority but the list is not intended to be restrictive. If the opportunity to accomplish a lower priority project before a project of higher priority the opportunity should be taken advantage of.

EDUCATION AND OUTREACH

INTERAGENCY OUTREACH/EDUCATION TEAM

The Union County CWPP Core Team has agreed to form an Interagency Outreach/Education team which will address; Public education on fuels reduction, Fire Wise, defensible space and fuel breaks. The team will consist of members from the USFS, County Wildland Coordinator and county firefighters. The education and Outreach/Education team should also be responsible for monitoring the projects outlined in this CWPP, seeking funds for the projects and updating the CWPP. The team will have a presence at public events such as fairs to hand out literature with wildfire hazard mitigation recommendations. The team will also have a presence in the public schools to educate the students on ways to identify and mitigate wildfire hazards.

PROVIDE DEFENSIBLE SPACE EDUCATION TO HOMEOWNERS

Among private homeowners in Union County there are varied levels of understanding of the wildfire hazards that exist. It is important to reach out to the citizens of Union County and educate them about safety and how to identify risks, as well as the options available to mitigate the risks. This will require an on-going commitment from the Interagency Outreach/Education team. Included in the appendix of this plan is a Guide for the Homeowner, and an Overview Protecting Your Home from Wildfire which may be reproduced and distributed. Firewise.org also has information for education and outreach. The NM State Forestry publication, Living with Fire is an excellent handout for public events.

PROVIDE FOR PUBLIC AWARENESS

There are several human caused wildfire annually in Union County. One suggestion to mitigate the number of fires caused by human recklessness or ignorance of current high risk conditions, was the use of signs on the highway with Fire Prevention themes and/or daily fire danger ratings. A request for the NM Department of Transportation to mow the right of way along the highways more frequently has also been placed.

RECOMMENDATIONS TO REDUCE STRUCTURAL IGNITABILITY

- Despite our best prevention efforts, much of New Mexico will continue to experience wildfire.
- The number of homes located in New Mexico's high fire danger, wildland urban interface is greatly increasing every year.
- Many of these homes, neighborhoods, and communities are not prepared to survive a wildfire.

LIVING IN A HIGH WILDFIRE HAZARD AREA

The potential for loss of human life and property due to wildfire across New Mexico is growing. In response, local, state, federal, private, and nonprofit organizations have banded together to create *Living With Fire*, a wildfire threat reduction program for homeowners. The *Living With Fire* program is not about fire prevention. Its purpose is to teach people how to live more safely with the threat of wildfire. For many areas in our region, it is not a question of "if" wildfire will occur, but "when."

BENEFITS OF PRE-FIRE PLANNING

Why do some houses survive a wildfire, while others are destroyed? Research findings prove that house survival during wildfire is not random, miraculous, or "dumb luck." Rather, it is how the house is built, the characteristics of the adjacent vegetation and other fuels, and routine maintenance that often determine which homes burn and which survive. These types of actions are called "pre-fire" activities. Pre-fire activities are actions completed before a wildfire occurs which improve the survivability of people and the home. The "winners" will be the people who implement pre-fire activities.

Wildfire will threaten your house in three ways...

CONTACT BY FLAMES

This type of threat occurs when vegetation and other fuels burning near the house produce flames that come in contact with the home and ignite it. Often, it happens when fire burns through a uniform layer of vegetation right up to the house. Direct contact by flames is probably what most homeowners visualize when they think of a house burning during wildfire.



FLYING EMBERS

More houses burn due to flying embers than any other reason. If fire conditions are right, embers can be lifted high into the air and transported more than a mile. Burning embers can also be carried by wind and fire whirls. If these burning embers land in easily ignitable materials, a new fire can start.



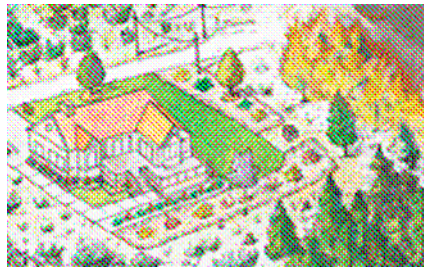
RADIATED HEAT

Radiated heat melted the vinyl siding on this house. Flames never came in contact with it. Radiated heat is produced by invisible electromagnetic waves that travel out in all directions from a flame. When a house receives enough radiated heat for sufficient time, it will ignite. Sometimes radiated heat can burst windows and allow burning embers to enter the house.

The most effective thing a homeowner can do to reduce the structural ignitability of their homes and other structures is to create a defensible space around their structures.

The term “defensible space” refers to the area between a house and an oncoming wildfire where the vegetation has been managed to reduce the wildfire threat and allow firefighters to safely defend the house.

In the event that firefighters are not available, defensible space also improves the likelihood of a home surviving without assistance. Unfortunately, when some homeowners hear the term “defensible space,” they envision a large expanse of bare ground surrounding their home. While this is certainly effective at increasing home survivability, it is unacceptable for aesthetic reasons and can contribute to soil erosion. It is also unnecessary.



SIMPLE STEPS TO CREATE AN EFFECTIVE DEFENSIBLE SPACE

STEP ONE

- ◆ Determine the size of an effective defensible space: The size of the defensible space is usually expressed as a distance extending outward from the house in all directions. The recommended distance is not the same for every home. It varies depending on the Dominant vegetation surrounding the home and steepness of slope. Use the Recommended Defensible Space Distance table to determine the right size for your home.

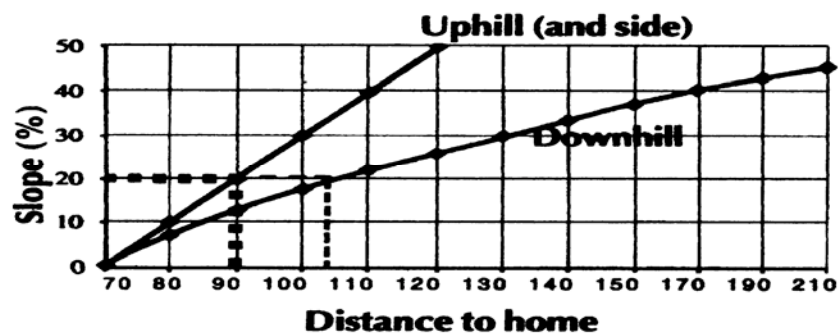


Figure 2: This chart indicates the minimum dimensions for defensible space from the home to the outer edge of Zone 2. For example, if your home is situated on a 20 percent slope, the minimum defensible space dimensions would be 90 feet uphill and to the sides of the home and 104 feet downhill from the home.

- ◆ Once the recommended distance for defensible space is known, mark it by tying strips of cloth or flagging to shrubs. This becomes the “Defensible Space Zone.” If the Defensible Space Zone exceeds your property boundaries, seek permission from adjacent landowners before doing work on their property. It is important to note that the effectiveness of the Defensible Space Zone improves when entire neighborhoods implement defensible space practices.

STEP TWO

- ◆ Remove dead vegetation: Within the recommended Defensible Space Zone, remove:
 1. dead and dying trees
 2. dead native and ornamental shrubs
 3. dead branches
 4. dead leaves, needles, and twigs that are still attached to plants, draped on live plants, or lying on the ground within 30 feet of the house
 5. dried grass, weeds, and flowers

STEP THREE

- ◆ Create a separation between tree branches and lower growing plants: If trees are present within the Defensible Space Zone, there should be a separation between the lower growing vegetation and the lowest tree branches. Vegetation that can carry a fire burning in low growing plants to taller plants is called “ladder fuel.” The recommended separation for ladder fuels is three times the height of the lower vegetation layer.
- ◆ Prune the lower tree branches, shorten the height of shrubs, or remove lower plants. Do not, however, remove more than one-third of the total tree branches. When there is no understory vegetation present, remove lower tree branches to a height of at least 2 feet above ground. During a fire, this will help prevent burning needles and twigs that are lying on the ground from igniting the tree.

STEP FOUR

- ◆ Create a separation between trees and shrubs: Within the Defensible Space Zone, native trees and shrubs, such as ponderosa pine, piñon, juniper, and sagebrush should not occur in a dense stand.
- ◆ Dense stands of trees and shrubs pose a significant wildfire threat. Thin dense tree and shrub stands to create more space between them.

STEP FIVE

- ◆ Create a Lean, Clean, and Green Area extending at least 30 feet from the house: There are two goals for the Lean, Clean, and Green Area. The first goal is to eliminate easily ignitable fuels, or “kindling,” near the house. This will help prevent embers from starting a fire in your yard. The second goal is to keep fire intensity low if it does ignite near the house. By proper management of the fuels near the house, a fire would not be able to generate enough heat to ignite the home. For most homeowners, the Lean, Clean, and Green Area is also the residential landscape. This area often has irrigation, is planted with ornamental vegetation, and is regularly maintained.

LEAN, CLEAN, AND GREEN AREA TIPS

- Remove most or all flammable wildland plants, including big sagebrush, bitterbrush, rabbitbrush, cheatgrass, pinon, juniper, and manzanita. If you wish to retain a few of these as specimen plants, make sure they are free of dead wood and leaves, pruned to reduce the amount of fuel, and separated from adjacent brush fields.
- Select less flammable plants for the home landscape. Some rules of thumb in selecting landscape plants for the Lean, Clean, and Green Area are...
- Shorter plants, less than 2 feet tall, are better choices than taller plants.
- When green, herbaceous plants, such as grass and non-woody flowers, are better choices than shrubs and trees.
- Deciduous shrubs and trees are better choices than evergreen types. Avoid planting juniper, mugo pine and arborvitae.
- Emphasize the use of hard surfaces and mulches. Hard surfaces include materials such as concrete, asphalt, and brick. Mulches include rock and wood types. Wood mulches should not be used within 3 feet of the house.
- Clear all flammable vegetation from within 10 feet of the propane tank.
- Remove tree limbs that are within 10 feet of the chimney, touching the house or deck, within 6 feet of the roof, or encroaching on power lines.
- Create a noncombustible area at least 3 feet wide around the base of the house. Emphasize the use of irrigated herbaceous plants, such as lawn, ground covers, and flowers. Also use rock mulches and hard surfaces.

STEP SIX

- ◆ Maintain the Defensible Space Zone: Maintaining a defensible space is an ongoing activity. Plants grow back and flammable vegetation needs to be routinely removed and disposed of properly.
- ◆ Before each fire season, reevaluate your property using the previous five steps and implement the necessary defensible space recommendations.

IMPROVING FIRE DEPARTMENT CAPACITY

The greatest needs the fire departments expressed were Communications, Water, Training and Equipment. There is also a very real need for substations in the Rabbit Ear and Amistad Fire Districts.

COMMUNICATIONS

Good, Reliable Communication is vital for firefighter safety when fighting fire. The communication system in place in Union County is in need of an upgrade. There are large “dead” areas in the County where radio or even cell coverage are nonexistent. The Fire Departments need updated radio equipment and repeater sites to improve the Communications County Wide. The fire departments also need to be able to communicate across jurisdictional, county and state boundaries.

WATER

There are few natural draft sites in Union County, most departments rely on community storage tanks to draft water from. More water tenders are needed to increase water shuttling capabilities. In the event of a large scale WUI fire, water will become critically low very quickly. Each of the Fire Departments needs to have their own water storage tanks strategically placed throughout the Fire Districts. This will provide for quick turn around times when refilling equipment and will also not overburden community water supplies when fighting large scale fires. The increased water capacity will also help to improve fire department ISO ratings. The fire chiefs are working on agreements with land owners to use private storage tanks to draft. The proposed new substations will need a minimum of 10,000 gallon water storage tanks at the department. When the new storage tanks and/or agreements are in place the County should map the water sources and provide maps to the fire departments. The fire departments should then have a map in every fire vehicle.

TRAINING

The Greatest challenge a Volunteer Fire Department faces in ensuring that each of the Volunteer Firefighters gets all the training they need to safely and effectively fight fire. The Union County Fire Departments are no exception. There is a critical need for training among the firefighters. These trainings should be held locally to accommodate the volunteers. All firefighters are required to have at least the Introductory Wildfire Training which includes the S-130/190, I-100 and L-180 trainings and the annual fireline safety refresher. It is also recommended that each volunteer have;

- S-211 Portable Pumps and Water Use,
- S-215 Fire Operations in the Wildland Urban Interface
- S-290 Intermediate Fire Behavior
- Annual sand table exercises conducted with representatives from all local, state and federal emergency responders present.
- Training on defensible space guidelines.

There needs to be some sort of compensation for the firefighters to make attending the required trainings more feasible. Firefighters need verifiable, identifiable training certificates working toward red card requirements.

EQUIPMENT

There is an overall need for more and better equipment in all of the Fire Departments. Older, unreliable, unsafe equipment needs to be retired and replaced. Fire fund monies need to be made available to purchase wildland equipment.

Table 11. Fire Department Needs

Besides the consumable items that the Fire Departments always need to replenish such as, hose {Hard line hose (1" to 4")} and tools each of the departments expressed the following equipment needs:

Fire Dept.	Wildland apparatus and gear
Rabbit Ear FD	<ul style="list-style-type: none"> • Type II Water Tender, 2000 gal or greater • (2) Type VI wildland fire engines 4x4 • (2) total pump replacement units for Type VI engines • (4) Motorola hand held radios • 35 sets wildland PPE and boots • 35 sets Bunker gear • 35 next generation fire shelters and packs
Amistad VFD	<ul style="list-style-type: none"> • Type II Water Tender, 2000 gal or greater • (1) Type VI wildland fire engine, 4x4 • (4) Motorola hand held radios • 10 sets wildland PPE and boots • 10 sets Bunker gear • 10 next generation fire shelters
Grenville VFD	<ul style="list-style-type: none"> • Type II Water Tender , 2000 gal or greater • (4) Motorola hand held radios • 10 sets wildland PPE and boots • 10 sets Bunker gear • 10 next generation fire shelters
Capulin VFD	<ul style="list-style-type: none"> • Type II Water Tender, 2000 gal or greater • (4) Motorola hand held radios • 10 sets wildland PPE and boots • 10 sets Bunker gear • 10 next generation fire shelters
Des Moines VFD	<ul style="list-style-type: none"> • (4) Motorola hand held radios • 10 sets wildland PPE and boots • 10 sets Bunker gear • 10 next generation fire shelters
Folsom VFD	<ul style="list-style-type: none"> • (4) Motorola hand held radios • 10 sets wildland PPE and boots • 10 sets Bunker gear • 10 next generation fire shelters
Sedan VFD	<ul style="list-style-type: none"> • (4) Motorola hand held radios • 20 sets wildland PPE and boots • 20 sets Bunker gear • 20 next generation fire shelters

SUBSTATIONS

The Rabbit Ear District covers the largest area of land in Union County, it takes over 90 minutes to get to the northern parts of its district from the Fire Department. In order to improve fire response the Rabbit Ear Volunteer Fire Department needs a substation in Travecere located in the northern part of the district and a substation to the southwest in the Barney area, (see Fire District map for locations). The Rabbit Ear Volunteer Fire Department did place a request with the NM State Fire Marshall for a Substation up north in the Travecere area and the request was denied due to population requirements. The Amistad Fire District also needs a substation in the Hayden area.

We the undersigned endorse and support the Union County Community Wildfire Protection Plan:

UNION COUNTY MANAGER

County Manager Kelley Beards Acting For 7/3/08
Angie Gonzales date

UNION COUNTY COMMISSION

County Commission, Chair [Signature] 7-8-08
Richard Arguello date

UNION COUNTY FIRE MARSHALL

Union County Fire Marshall [Signature] 6-18-08
Jim O'Bryant date

Union County Community Wildfire Protection Plan, June 2008

We the undersigned endorse and support the Union County Community Wildfire Protection Plan:

UNION COUNTY FIRE DEPARTMENTS

Amistad VFD Fire Chief Marty Mathis date
Marty Mathis

Capulin VFD Fire Chief Garland King 7-3-08 date
Garland King

Clayton City Fire Chief Terry Short 7/22/08 date
Terry Short

Des Moines VFD Fire Chief Lee Dixon 6/19/08 date
Lee Dixon

Folsom VFD Fire Chief Darien Brown 6-18-08 date
Darien Brown

Grenville VFD Fire Chief Phillip Bramblett 7-30-08 date
Phillip Bramblett

Rabbit Ear VFD Fire Chief Pat Riley 6-18-08 date
Pat Riley

We the undersigned endorse and support the Union County Community
Wildfire Protection Plan:

**EMNRD STATE FORESTRY DIVISION,
CIMARRON DISTRICT**

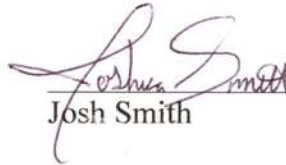
District Forester


Ernie Lopez _____ 6/12/08
date

We the undersigned endorse and support the Union County Community Wildfire Protection Plan:

HARDING COUNTY FIRE DEPARTMENT
Rosebud Fire & Rescue Inc.

Rosebud Fire Chief


Josh Smith

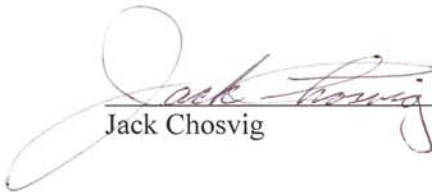
7/29/08
date

FOLSOM

We the undersigned endorse and support the Union County Community Wildfire Protection Plan:

TOWN OF CLAYTON

Mayor


Jack Chosvig

7/21/08
date

We the undersigned endorse and support the Union County Community
Wildfire Protection Plan:

**EMNRD STATE PARKS DIVISION
CLAYTON LAKE STATE PARK**

Manager



Charles Jordan date

We the undersigned endorse and support the Union County Community
Wildfire Protection Plan:

**BUREAU OF LAND MANAGEMENT,
TAOS FIELD OFFICE**

Field Office Manager



Sam Des Georges

6/17/2008

date

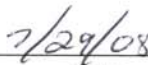
USFS

We the undersigned endorse and support the Union County Community
Wildfire Protection Plan:

**NATIONAL PARK SERVICE,
CAPULIN VOLCANO NATIONAL MONUMENT**

Head Ranger


Mark Davison


date

ctj

We the undersigned endorse and support the Union County Community
Wildfire Protection Plan:

**NORTH EASTERN SOIL AND WATER CONSERVATION
DISTRICT**

Chair

Justin Bennett
Justin Bennett

7-29-08
date

We the undersigned endorse and support the Union County Community
Wildfire Protection Plan:

TOWN OF DES MOINES

Mayor


Jess Yeargin 07/31/08
date

APPENDIX

1. A Guide for the Homeowner
2. Overview Protecting Your Home from Wildfire
3. Clayton Lake State Park Evacuation Plan
4. Funding Sources
5. Community Assessment Form
6. “Ag” Plan”
7. Annual Operating Plan

APPENDIX 1
A GUIDE FOR THE HOMEOWNER
PROTECT YOURSELF!
Living in the Wildland Urban Interface

This reference guide is included to provide tips and recommendations to homeowner's on how to reduce structural ignitability and improve preparedness when it comes to wildland urban interface fires.

BEFORE THE FIRE - Reducing Structural Ignitability

Building Materials

- Roofs – the most vulnerable part of a home to ignition by falling embers. Metal roofs provide the best resistance to ignition. Slate, tile, Class A Asphalt shingles also provide fire resistance. Avoid wood and other combustible materials for roofs. Keep gutters clear of debris such as leaves.
- Siding, decks and fences – noncombustible materials are recommended, adobe, stucco, block, brick, noncombustible siding. Keep the area below the deck clear of leaves and debris, screen off the area leaving openings no larger than one-half inch. Do not stack firewood on or below deck or right up against the home. Keep other flammable materials, paint, oil, gasoline in approved containers away from the home and any ignition source.

Potential Ignition Sources

- Chimneys and Fireplaces – Inspect your chimney and damper at least twice a year. Clean the chimney before first use and periodically thereafter, depending on frequency of use. Have the spark arrestor inspected and confirm that it meets the latest safety code. Keep chimneys and stovepipes clear of leaves, limbs and debris.
- Ashes – Never place hot ashes in a nonmetal container or dump them on the ground. Place in a metal container and either soak with water or cover and allow to cool for several days before disposing.
- Propane Tanks – should be at least 30 ft. from any structure. Keep flammable at least 10 ft. from tank. Learn how to turn the tank off and on. In case of fire, turn off the gas before evacuating *if* time and safety allow.
- Fireworks – never allow children to play with or ignite fireworks or other incendiaries unattended.
- Smoking – Never throw lit cigarettes, cigars, etc. into a fuel source such as dead leaves, dry grass, debris, etc. Always use an ashtray and make sure to fully extinguish.
- Burning ditches- Before attempting to burn ditches a call should be made to the local fire department or State Forestry office to ensure there are no fire restrictions in place. Also the State Forestry can provide a weather forecast for the area you are planning on burning. A call to the local fire department should be made to inform them that you are planning to burn, the size of area you planning to burn, the fuel type you are going to burn and how long you expect to be burning.

Defensible Space

- Zone 1 – this is the area closest to the structure. This well-irrigated area encircles the structure for at least 30 ft. on all sides, providing space for fire suppression equipment in the event of an emergency. Plantings should be limited to carefully spaced low flammability species. If possible maintain a mowed green lawn. Remove dead vegetation and leaves, exposing mineral soil is recommended in a 2 ft. wide perimeter along the foundation of the structure. Focus on fuel breaks such as concrete patios, walkways, rock gardens, and irrigated grass or garden within this zone. Gravel is recommended over wood chips or pine needles.
- Zone 2 – Low flammability plant materials should be used here. Plants should be low-growing, and the irrigation system should extend into this section.
- Zone 3 – Place low-growing plants and well-spaced trees in this area, remembering to keep the volume of vegetation low.

- Trees – all trees within the safety zones should have lower limbs removed to a height of 6-10 ft. remove all branches within 15 ft. of your chimney or overhanging part of your roof.
- Ladder fuels – are short shrubs or trees growing under eaves of the house or into the tree canopy that can “carry” fire up. The removal of ladder fuels within about 100 ft. of the structure will help limit the risk of crown fire around the structure.

Access

Limited access may prevent firefighters from reaching homes in the event of a WUI fire.

- In the event of a WUI fire, leave your gate open
- Keep driveway uncluttered and at least 12 ft. wide
- Slope of driveway should be less than 10 percent
- Trim overhanging branches to allow at least 13.5 ft. of overhead clearance
- Ensure overhead line are at least 14 ft. above ground
- Consider a turn around within your property at least 45 ft. wide especially if you driveway is more than 300 ft. in length.
- Bridges must be designed to hold the weight of a fire engine

DURING THE FIRE

When Fire Threatens – Before an evacuation is called

- Do not jeopardize your life
- Park your car facing the direction of escape with windows rolled up
- Place all valuable you want to take with you in the vehicle
- Open your Gate
- Close all windows, doors, vents in house
- Disconnect automatic garage openers
- Leave exterior doors unlocked
- Close all interior doors
- Move furniture away from windows and glass doors
- Remove lightweight curtains
- Close heavy curtains, drapes, and blinds
- Leave a light on in each room
- Turn off propane tank
- Move firewood and flammable patio furniture away from house
- Connect garden hoses to outdoor faucets
- Place a ladder against the side of home opposite the direction of the approaching fire

When Evacuation is Ordered

- Leave immediately
- Check out at designated location, if one is set up
- Do not try to enter an area that is being evacuated

AFTER THE FIRE

- Do not attempt to return until it has been deemed safe to do so
- Check for hazards, such as gas or water leaks, downed electrical lines, etc.

More information can be obtained at www.firewise.org or by visiting your local NM State Forestry Office in Cimmaron, New Mexico. You can also call to request a

“Living with Fire, a Guide for the Homeowner from your local State Forester.

APPENDIX 2

OVERVIEW PROTECTING YOUR HOME FROM WILDFIRE

Do you live in or near wildland areas? In the wildland/urban interface, fire is a natural force that cannot always be stopped. Firefighters do not have the resources available to save every home; some homes are so closely surrounded by flammable vegetation that they cannot be saved. You must take responsibility to reduce fuels that could carry a wildfire to your home.

Create a Defensible Space

- Remove all trees and large shrubs within 20 feet of the home.
- To a distance of 100 feet (200 feet on steep lots), remove some trees and shrubs to create 10 feet of space between adjoining tree's outermost branches. Prune lower branches of remaining trees up to 10 feet off the ground.
- Remove ladder fuels, young trees and shrubs planted close to larger trees that could carry a ground fire into the tops of large trees.

Minimize Flammable Debris

- Keep roofs and rain gutters free of needles, leaves, and other flammable material.
- Keep firewood and other flammable debris a minimum of 50 feet from the house, preferably on the uphill side.
- Mow grasses to a height of less than 6 inches within 50 feet of the home.

Use Fire Resistant Construction and Landscaping

- Wood shake shingle roofs are highly flammable. Convert roof to Class A fire resistant materials such as fiberglass-asphalt, metal and tile.
- Construct decks and siding with non-combustible materials.
- Screen openings under decks and attic and foundation vents.
- Check with local nurseries to learn about fire resistant landscaping.
- Call your local State Forestry office for more information.

If a Wildfire is Burning Near Your Home

- Stay calm. Call 911 to report a fire.
- Cover all eave and roof vents.
- Cover large picture windows with plywood.
- Close all windows and doors; open drapes.
- Evacuate to a safe location

More information can be found at [FireWise](#), a resource of many proportions. How to make defensible space around your home. Rate your home chances of surviving a wildland fire. Interactive items, publications, other links. Brought to the Internet by The National Wildland/Urban Interface Fire Protection Program.

APPENDIX 3
Clayton Lake State Park
2008
Fire Evacuation Plan

Clayton Lake State Park:

Clayton Lake State Park (CLSP) is located in Union County, eleven miles North of the Town of Clayton, via highway 370. The 400 acre park is located in a canyon, surrounded by relatively flat rangeland. Although there are few trees in the area, and much of the terrain consist of rock, the park itself has not been grazed in over fifty years, which has allowed the native prairie grasses to flourish, creating a fire hazard in areas of the park.

Fires in CLSP are relatively rare, and historically have been quickly suppressed by staff, but drought conditions increase the chance of larger fires. Heavy fuels, limited firefighting resources and staff, and a single entrance/exit route contribute to potential threats to life and property. Due to the park being located in a canyon, there are no alternative routes leaving the park.

The staff at CLSP consists of: Manager, two Rangers and a Park Technician. Occasionally a Camp Host Volunteer would be available for assistance.

Assisting Agencies:

Local agencies include the Rabbit Ear Volunteer Fire Department, with one pumper truck and three “fire trucks”(trucks specifically designed to fight grass fires), The Kiowa National Grasslands, with one pumper truck and one fire truck, and if requested, the Town of Clayton, with three pumper trucks, three fire trucks, and a tanker (for hauling additional water).

Historically, for regional fires that were large enough, other agencies respond, such as Boise City (OK) fire department, Kenton (OK) volunteer fire department and the Sedan (NM) volunteer fire department. These three agencies are each approximately 40 – 50 miles away, limiting their response time.

The local emergency teams are available by phoning 911. Individual agency numbers are:

Clayton Police Department: 374-2504
Rabbit Ear Volunteer Fire Department: 374-0922
Kiowa National Grasslands: 374-9652
Clayton Fire Department: 374-2435.

Communications:

In the event of an evacuation, communications between park staff will be conducted via the park base station and hand-held two way radios. Due to the park being located in a canyon, cell phone reception is unreliable. The Clayton Police Department dispatch is the central contact, as they maintain emergency communications for all agencies in county by both phone and radio.

Campgrounds:

There are no fire hydrants at CLSP, although pumper trucks can replenish their tanks from the lake. There are standard frost-free hydrants available to replenish backpack tanks located at the comfort station, Roadrunner group shelter and in the electrical sites.

Due to the prevailing winds and vegetation, the two campgrounds most susceptible to wildfire are Peach Point and the Rock Garden, both located on the west side of the park. The Cove and Electrical campgrounds are relatively devoid of vegetation, and also have the shortest evacuation route if needed. Although the Chicano Beach campground is located at the extreme end of the park from the entrance/exit, it is relatively secure, as there are only two campsites, and very little vegetation. The dinosaur track way is located on the Clayton Lake dam spillway, devoid of fuel.

Fire Plan:

In the event of a fire, either in the park or surrounding rangeland, regardless of size, park staff immediately notifies the Clayton Police Dispatch via radio or park phone. At this point, the Rabbit Ear Volunteer Fire Dept. is immediately dispatched. Response time in the past has been approximately 25-30 minutes.

The park manager will maintain contact with the Clayton Dispatch via radio.

For small fires, not requiring immediate evacuation of the park, park staff will immediately proceed to the fire with the park's water tank trailer. This trailer carries 300 gallons of water, and has a pressure pump to spray water. Two staff members will operate the water tank trailer, while the Park Manager will assess the danger, and if circumstances warrant, the third staff member will alert park visitors of the possibility of evacuation.

Evacuation:

If the fire warrants evacuation of CLSP, two staff members will immediately be dispatched to the West side of the park, and began notifying visitors in the South Loop, Rock Garden and Peach Point campgrounds of the need to evacuate. In the event that fire prevents vehicles from the Rock and Peach Point campgrounds from reaching the exit, staff will direct them to the Chicano Beach area, since, as noted, there is little vegetation in that area.

The third staff member will begin notifying campers in the cove campground and the electrical sites. The Park Manager will notify Clayton Dispatch of the decision, notify any occupants of the park residence, than will immediately turn off the valve on the propane tank that services both the comfort station and the visitor center. The Park Manager will attempt to maintain a count of vehicles evacuating, and request dispatch to station a local officer at the city limit to ensure all vehicles have arrived safely back in town.

In the event that the fire is located at the park exit, all visitors will be advised to assemble on the North Point, a large, flat area adjacent to the lake, with very little vegetation.

After all visitors have been advised to evacuate, three staff members will assist visitors as needed. As two roads merge into the single park exit, the park manager will be stationed there, to direct traffic and to advise arriving agencies on areas where they are needed.

After staff ensures all visitors have been evacuated, park staff will assemble at the park exit. At this time, two staff members will pull pay-tubes and put all receipts in the fireproof safe at the shop, the other two will remove computers out of the visitor center office, and place in park vehicles for safe keeping.

Park staff will then continue to assist the agencies as needed.

Once the emergency has ended and permission has been give to return to the park, the Park Manager and staff will make a complete survey of the buildings, campgrounds and equipment. All safety precautions will be followed. **No electrical or gas systems should be energized or turned on until they have been inspected and have been found safe for use.** All damaged areas, damage to equipment, buildings or other state property should be noted, and if possible, photographed.

APPENDIX 4 FUNDING SOURCES

The following section provides information on federal, state, and private funding opportunities for conducting wildfire mitigation projects.

FEDERAL FUNDING INFORMATION

Source: Pre-disaster Mitigation Grant Program

Agency: Department of Homeland Security Federal Emergency Management Agency (DHS FEMA)

Website: <http://www.fema.gov/government/grant/pdm/index.shtm>

Description: The DHS includes FEMA and the U.S. Fire Administration. FEMA's Federal Mitigation and Insurance Administration is responsible for promoting pre-disaster activities that can reduce the likelihood or magnitude of loss of life and property from multiple hazards, including wildfire. The Disaster Mitigation Act of 2000 created a requirement for states and communities to develop pre-disaster mitigation plans and established funding to support the development of the plans and to implement actions identified in the plans. This competitive grant program, known as PDM, has funds available to state entities, tribes, and local governments to help develop multi-hazard mitigation plans and to implement projects identified in those plans.

Source: Funding for Fire Departments and First Responders

Agency: DHS, U.S. Fire Administration

Website: <http://www.usfa.dhs.gov/fireservice/grants/>

Description: Includes grants and general information on financial assistance for fire departments and first responders. Programs include the Assistance to Firefighters Grant Program (AFGP), Reimbursement for Firefighting on Federal Property, State Fire Training Systems Grants, and National Fire Academy Training Assistance.

Source: Conservation Innovation Grants (CIG)

Agency: National Resource Conservation Service

Website: <http://www.nm.nrcs.usda.gov/programs/cig/cig.html>

Description: CIG State Component. CIG is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program (EQIP) funds are used to award competitive grants to non-federal governmental or nongovernmental organizations, tribes, or individuals. CIG enables the Natural Resources Conservation Service (NRCS) to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches to address some of the nation's most pressing natural resource concerns. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with federal, state, and local regulations. The NRCS administers the CIG program. The CIG requires a 50/50 match between the agency and the applicant. The CIG has two funding components: national and state. Funding sources are available for water resources, soil resources, atmospheric resources, and grazing land and forest health.

Source: Volunteer Fire Assistance

Agency: USDA Forest Service

Website: <http://www.fs.fed.us/fire/partners/vfa/>

Description: USDA Forest Service funding will provide assistance, through the states, to volunteer fire departments to improve communication capabilities, increase wildland fire management training, and purchase protective fire clothing and firefighting equipment. For more information and an application, go to NMForestry.com

Source: Economic Action Programs

Agency: USDA Forest Service

Website: <http://www.fs.fed.us/spf/coop/programs/eap/index.shtml>

Description: USDA Forest Service funding will provide for Economic Action Programs that work with local communities to identify, develop, and expand economic opportunities related to traditionally underutilized wood products and to expand the utilization of wood removed through hazardous fuel reduction treatments. Information, demonstrations, application development, and training will be made available to participating communities. For more information, contact a Forest Service Regional Representative.

Source: Catalog of Federal Funding Sources for Watershed Protection

Agency: N/A

Website: <http://cfpub.epa.gov/fedfund/>

Examples of the types of grants found at this site are:

Native Plant Conservation Initiative,

http://www.nfwf.org/AM/Template.cfm?Section=Browse_All_Programs&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=3966

Targeted Watershed Grants Program, <http://www.epa.gov/owow/watershed/initiative/>

Pre-disaster Mitigation Program, <http://www.fema.gov/government/grant/pdm/index.shtm>

Environmental Education Grants, http://www.epa.gov/enviroed/grants_contacts.html

Source: Firewise

Agency: Multiple

Website: <http://www.firewise.org>

Description: The Wildland/Urban Interface Working Team (WUIWT) of the National Wildfire Coordinating Group, is a consortium of wildland fire organizations and federal agencies responsible for wildland fire management in the United States. The WUIWT includes the USDA Forest Service, USDI Bureau of Indian Affairs, USDI BLM, USDI Fish and Wildlife Service, USDI National Park Service, FEMA, U.S. Fire Administration, International Association of Fire Chiefs, National Association of State Fire Marshals, National Association of State Foresters, National Emergency Management Association, and National Fire Protection Association. There are many different Firewise Communities activities that can help homes and whole neighborhoods become safer from wildfire without significant expense. Community cleanup days, awareness events, and other cooperative activities can often be successfully accomplished through partnerships among neighbors, local businesses, and local fire departments, at little or no cost. The Firewise Communities recognition program page (<http://www.firewise.org/usa>) provides a number of excellent examples of these kinds of projects and programs.

The kind of help you need will depend on who you are, where you are, and what you want to do. Among the different activities individuals and neighborhoods can undertake, the following actions often benefit from some kind of seed funding or additional assistance from an outside source:

Thinning/pruning/tree removal/clearing on private property—particularly on very large, densely wooded properties

Retrofit of home roofing or siding to noncombustible materials

Managing private forest

Community slash pickup or chipping

Creation or improvement of access/egress roads

Improvement of water supply for firefighting

Public education activities throughout the community or region

Some additional examples of what communities, counties, and states have done can be found in the National Database of State and Local Wildfire Hazard Mitigation Programs at <http://www.wildfireprograms.usda.gov>. You can search this database by keyword, state, jurisdiction, or program type to find information about wildfire mitigation education programs, grant programs, ordinances, and more. The database includes links to local websites and e-mail contacts.

Source: The National Fire Plan

Website: <http://www.forestsandrangelands.gov/>

Description: Many states are using funds from the NFP to provide funds through a cost-share with residents to help them reduce the wildfire risk to their private property. These actions are usually in the form of thinning or pruning trees, shrubs, and other vegetation and/or clearing the slash and debris from this kind of work. Opportunities are available for rural, state, and volunteer fire assistance.

Source: Staffing for Adequate Fire and Emergency Response (SAFER)

Agency: DHS

Website: <http://www.firegrantsupport.com/safer/>

Description: The purpose of SAFER grants is to help fire departments increase the number of frontline firefighters. The goal is for fire departments to increase their staffing and deployment capabilities and ultimately attain 24-hour staffing, thus ensuring that their communities have adequate protection from fire and fire-related hazards. The SAFER grants support two specific activities: (1) hiring of firefighters and (2) recruitment and retention of volunteer firefighters. The hiring of firefighters activity provides grants to pay for part of the salaries of newly hired firefighters over the five-year program. SAFER is part of the Assistance to Firefighters Grants and is under the purview of the Office of Grants and Training of the DHS.

Source: The Fire Prevention and Safety Grants (FP&S)

Agency: DHS

Website: <http://www.firegrantsupport.com/fps/>

Description: The FP&S are part of the Assistance to Firefighters Grants and are under the purview of the Office of Grants and Training in the DHS. FP&S grants support to projects that enhance the safety of the public and firefighters who may be exposed to fire and related hazards. The primary goal is to target high-risk populations and mitigate high incidences of death and injury. Examples of the types of projects supported by FP&S include fire-prevention and public-safety education campaigns, juvenile fire-setter interventions, media campaigns, and arson prevention and awareness programs. In fiscal year 2005, Congress reauthorized funding for FP&S and expanded the eligible uses of funds to include firefighter safety research and development.

STATE FUNDING INFORMATION

Source: State and Private Forestry Programs

Agency: National Association of State Foresters

Website: http://www.stateforesters.org/S&PF/coop_fire.html

Description : The National Association of State Foresters recommends that funds become available through a competitive grant process on Wildland-Urban Interface hazard mitigation projects. State fire managers see opportunities to use both the State Fire Assistance Program and the Volunteer Fire Assistance Program to improve the safety and effectiveness of firefighters in the interface, as well as in other wildland fire situations. To ensure firefighter safety, minimize property and resource loss, and reduce suppression costs, land management agencies, property owners, local leaders, and fire protection agencies must work cooperatively to mitigate interface fire risks, as well as to ensure that wildland firefighters receive the training, information, and equipment necessary to safely carry out their responsibilities.

The 2007 Western WUI Grant Program is a specific grant available under the State Fire Assistance Program. It includes opportunities for hazardous-fuels reduction, education, and community and homeowner actions. An application and instructions can be found at: http://www.firesafecouncil.org/news/attachments/2007_CDF_application-process_final168.pdf

Source: New Mexico Association of Counties 2007–2008 Wildfire Risk Reduction Program **Agency:** New Mexico Association of Counties

Website: <http://www.nmcounties.org/wildfire.html>

Description: This program targets at-risk communities by offering seed money to help defray the costs of community wildfire protection projects. During the past two years, the Wildfire Risk Reduction Grant Program has primarily funded projects for the development of Community Wildfire Protection Plans (CWPP), a prerequisite to all other activities. In 2007, priority was given to projects that requested funding for hazardous fuel reduction, wildfire prevention, and community outreach activities that were identified in completed CWPPs.

PRIVATE FUNDING INFORMATION

Source: The Urban Land Institute (ULI)

Website: <http://www.uli.org>

Description: ULI is a 501(c)(3) nonprofit research and education organization supported by its members. The institute has more than 22,000 members worldwide, representing the entire spectrum of land-use and real estate development disciplines, working in private enterprise and public service. The mission of the ULI is to provide responsible leadership in the use of land to enhance the total environment. ULI and the ULI Foundation have instituted Community Action Grants (http://www.uli.org/Content/NavigationMenu/MyCommunity/CommunityActionGrants/Community_Action_Gr.htm) that could be used for Firewise Communities activities. Applicants must be ULI members or part of a ULI District Council. Contact actiongrants@uli.org or review the web page to find your District Council and the application information.

Source: Environmental Systems Research Institute (ESRI)

Website: <http://www.esri.com/grants>

Description: ESRI is a privately held firm and the world's largest research and development organization dedicated to geographic information systems. ESRI provides free software, hardware, and training bundles under ESRI-sponsored Grants that include such activities as conservation, education, and sustainable development, and posts related non-ESRI grant opportunities under such categories as agriculture, education, environment, fire, public safety, and more. You can register on the website to receive updates on grant opportunities.

APPENDIX 5

Wildfire Hazard Home Assessment Form

A. Community Name:	Points	My Points here
Fire protection provided by:		(choose the best one)
1. INGRESS AND EGRESS:		
Two or more primary roads		
One road, primary route		
One way in and out		
2. PRIMARY ROAD WIDTH:		
20 feet wide or more		
Less than 20 feet		
3. ROAD ACCESSIBILITY:		
Smooth road, grade <5%		
Rough road, grade >5%		
Other		
4. SECONDARY ROAD TERMINUS:		
Loop Road, cul de sacs with Outside radius > 50 ft		
Loop Road, cul de sacs with Outside radius <50 ft		
OR		
Dead end driveway less than 200 ft to my house		
Dead end driveway longer than 200ft to my house		
5. AVERAGE LOT SIZE:		
More than 10 acres		
Between 1-10 acres		
Less than 1 acre		
6. STREET SIGNS:		
Present (4" in size & reflective)		
Not Present		
VEGETATION		
1. FUELS:		
Light Fuels, grasses		
Medium Fuels, light brush, small trees		
Heavy Fuels, dense brush, timber		
Slash, down & dead fuels		
2. DEFENSIBLE SPACE:		
More that 100ft of treatment around my house		
30-70 ft treatment from my home & bldgs		
No defensible space treatment, the fuels are right up to my house		
TOPOGRAPHY		
1. SLOPE:		
Less than 9%		
Between 10-20%		
Between 21-30%		
Between 31-40%		

Greater than 41%	
ADDITIONAL RATING FACTORS	
10. Rough topography that contains steep canyons around or on the way to my house	
11. Areas with a history of higher fire occurrence than surrounding areas due to special situations such as heavy lightning, railroads, escaped debris burning, arson, etc around or near my home	
12. I live in an Area that is periodically exposed to unusually severe fire weather and strong winds	
E. ROOFING MATERIALS	
1. CONSTRUCTION MATERIALS	
Class A roof: example non combustible tile or metal	
Class B roof	
Class C roof: ex.	
Non- rated: ex. Wood shingles	
F. EXISTING BUILDING CONSTRUCTION	
14. Materials	
Noncombustible siding & non combustible deck	
Noncombustible siding with a wood deck	
Combustible siding and deck	
G. AVAILABLE FIRE PROTECTION	
15. Water Source Available (on site)	
500 gpm hydrants <1000 ft apart	
Hydrants above or draft site	
No hydrants or draft site	
16. Water source Available (off-site)	
Source within 20 min. round trip	
Source within 21-45 min. round trip	
Source > 46 min. round trip	
H. UTILITIES (GAS, ELECTRIC)	
17. Placement	
All underground utilities	
One underground, one above	
All aboveground	
L. ADD UP YOUR POINTS	
1. Low Hazard	<49 points
2. Moderate Hazard	49-68 points
3. High Hazard	69-83 points
4. Extreme Hazard	84+ points

APPENDIX 6

AGRICULTURAL PREVENTION, PREPAREDNESS, RESPONSE and RECOVERY for the UNION COUNTY AGRICULTURAL INDUSTRY

Developed to be incorporated into the UNION COUNTY ALL-HAZARD EOP

Union County Agricultural Preparedness committee:

Mr. Ferron Lucero, Union County Emergency Manager

Mr. David Graham, Union County NMSU Extension Agricultural Agent

Dr. Manny Encinias, NMSU Cooperative Extension Livestock Specialist

Dr. Donald Reif DVM., Clayton Veterinarian

Mr. Lavon Sink, Union County 911 coordinator

Ms. Shelly Carter, Union County Commission and Producer

Mr. Justin Bennett, Union County Commission and Producer

Mr. Joel Gilbert, New Mexico Livestock Board Inspector for Union County

REVISED: FEBRUARY 2008

IN CASE OF AN ACTUAL OR SUSPECTED AGRICULTURAL EMERGENCY,
YOUR FIRST CALLS SHOULD BE TO ONE OF THE FOLLOWING:

UNION COUNTY EMERGENCY MANAGER: 575-374-8896 or 575-207-5454

UNION COUNTY EXTENSION AGENT: 505-207-7884 or 374-9361

NMLB INSPECTOR: 505-278-2232

UNION COUNTY SHERIFF: 505-374-2583

AGRO-GUARD 1-888-442-NMSP (6677)

Agricultural Prevention, Preparedness, Response, and Recovery Plan (APPR) for Union County

- A. Agencies, organizations, and individuals identified in this plan are familiar with it, and will execute their assigned responsibilities, including the timely reporting of agricultural emergencies.
- B. If an agricultural emergency is discovered in Union County, the entire agricultural complex of the county, region, and possibly the entire U.S. may be at risk.
- C. There is the potential for the state to incur a disease and/or threat of disease as a result of an act of terrorism.
- D. Numerous local, state, federal and volunteer organizations will play a role in preventing, preparing, responding, and recovering from ANY agricultural emergency.
- E. Certain agricultural emergencies and large scale disasters quickly require federal involvement.
- F. New Mexico Emergency Management (NMEM) coordinates assistance to local jurisdictions by state and federal agencies in case of a disaster.
- G. The New Mexico Livestock Board (NMLB) and the New Mexico Department of Agriculture (NMDA) will use the National Incident Management System (NIMS) to manage the response to an agricultural emergency, including but not limited to highly contagious animal or plant diseases threatening agricultural production in New Mexico.
- H. The Area Veterinarian in Charge (AVIC) for the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA, APHIS, VS) will assist the State Veterinarian as appropriate in any animal health emergency.
- I. An agricultural disease emergency involving animals and/or plants in New Mexico, the United States, or surrounding countries may significantly restrict the intrastate, interstate, and international movement of animals (especially livestock), as well as harvested animal and plant products.
- J. The function of and access to public utilities, water, roads, and veterinary medical supplies may be severely restricted or inaccessible after a disaster or in the event of quarantine due to an agricultural emergency.
- K. The incursion of highly contagious animal diseases and catastrophic events will necessitate mass culling of livestock (animals and/or birds), crops, carcass and crop removal and disposal.
- L. Response efforts could also encompass culling of non-domesticated populations such as wildlife.
- M. Animal carcasses, un-harvested crops, unused animal feed, manure and other organic matter may create sanitation, pest, and vector control issues.
- N. Widespread bio-security control measures may be implemented. Suspected infected locations and transport vehicles may need to be cleaned and disinfected.
- O. Quarantine of areas may be required where there are confirmed or suspect cases. Special operational procedures within these zones may be required. Law enforcement may be required for quarantine enforcement.
- P. Agricultural emergencies may lead to long term economic impacts requiring long term federal and state assistance programs for recovery.
- Q. Producers directly involved in the agricultural emergency (i.e. losing animals or crops, euthanasia and disposal of animals, etc.) may require psychological counseling and support.

Response to Agriculture Emergency Events in Union County

NATURAL or MAN MADE disaster response will follow this emergency plan.

The agriculture industry in Union County is a major contributor to the economy of the state and to the nation. The negative impact of an outbreak of disease, or impact of a natural or man-made disaster could result in economic losses of enormous scale.

Effective disease control and an efficient, well-organized response to a disaster requires full utilization of available resources and cooperation of all local, state, and federal agencies in order to minimize the impact on the agriculture industry.

The New Mexico Livestock Board and the New Mexico Department of Agriculture are the primary state agency with statutory authority pertaining to animal and plant issues. The NMLB is responsible for, but not limited to, coordinating disease control procedures, disposition of abandoned, disabled, or dead animals, and agro-terrorism. The NMDA is responsible for, but not limited to, coordinating disease control procedure and disposition of diseased crops and agroterrorism. This plan recognizes certain catastrophic events related to agriculture as events requiring activation of the state emergency operations plan. This plan supports the control efforts of public health agencies in controlling zoonotic and botanical diseases and law enforcement in acts of terrorism where either animals or plants are the vehicle for dissemination of a chemical or biologic agent.

The purpose of the Union County APPRR Plan is consistent with the National Response Plan (NRP), National Incident Management System (NIMS) with the overall intention of protecting the agricultural resources by providing a guide for a rapid and coordinated response to an agricultural emergency. This plan coordinates the application of local, state, federal, and volunteer resources in mitigation, preparedness, response, and recovery efforts to assist production agriculture in an agricultural emergency to provide for a seamless integration of county, state, and federal response.

This plan identifies the roles and responsibilities of the APPRR participants to protect the public health and the agricultural industry of Union County New Mexico. The New Mexico APPRR will be activated only when Union County's APPRR and capabilities are exceeded.

An agriculture emergency could be declared because of a natural occurrences (snow, rain, wind, drought, or infestation of an insect or plant), or when a highly contagious, infectious, or economically devastating disease or agent is confirmed in Union County, New Mexico, other states (especially an adjacent state), or a country adjacent to the United States (i.e. Canada and Mexico). The introduction of agricultural diseases could be accidental or intentional (bio-terrorism/agroterrorism). Any factor causing a substantial impact on the safety, sustainability, and stability of the county agriculture industry, and food supply from animal or plant sources may be categorized as an agricultural emergency.

The Union County APPRR utilizes emergency response levels (ERLs) to designate which activities will take place in the event of imminent or actual threats affecting Union County. The State Veterinarian, the NMLB, NMDA, and the Cooperative Extension Service will, on a continuing basis, assimilate information relative to the presence of diseases in other countries, the United States, and New Mexico.

A daily level of preparedness, which includes routine monitoring and surveillance, will be maintained.

Defining ERL 1 for Union County:

First-responders for Union County will be: Local NMLB inspectors, Agricultural Extension Agent, and local veterinarians. Incident Command will be the responsibility of the first "first responder" on scene and will remain their responsibility until the emergency is declared a ERL2, or when someone arrives with more expertise or authority

Local Response to an ERL 1:

1. In consultation with first responders group (*local NMLB inspectors, UnionCounty Extension agent, and local veterinarians*) assign the emergency response level to the incident.
2. Determine the scope and level of initial response, initiate a task force, and prioritize response activities.
3. Determine the location and size of possible affective areas.
4. In consultation with other agency personnel, strategically assign duties and areas of responsibility.

5. Notify appropriate industry groups of the presence of the threat and request their support to contain and remedy the problem.

Notification Groups:

Emergency Manager – Union County Manager (575) 374-8896 or 575-207-5454

Dispatch—911

Union County Road Superintendent: 374-9590 Barn or 374-2899

NMLB Inspector ----278-2232

Union County Extension Agent-- 374-9361 or cell 207-7884 or Home 278-2188

Union County Sheriff -- --374-2583

Union County Fire Marshal—Contact through dispatch 911

Clayton Police-- Chief 374-2504

Clayton Fire Department--Fred --374-2501

Union County General Hospital-- Administrator 374-2585

Clayton Veterinarian-- --374-2332 or 8166

Gas Company-- Arthur Propane 374-9241

Electric Companies-- Southwestern Electric 374-2451 and PNM 800-950-1997

Chemical Suppliers-- Poole Chemical (806)362-4261, 244-9775, 800-392-3849

Feed Suppliers-- Bradley Supply 374-2594 or 374-3333

Feedlot -- Union County Feedlot, 374-2516, Clayton Cattle Feeders, 374-2571,

7H Cattle Feeders- 374-2591, Schmitz Feedlot 374-8193.

PRODUCERS INVOLVED TO BE IDENTIFIED AND NOTIFIED BY Local Livestock Inspector and Extension Agent.

In the event of an ERL 2:

The Local Livestock Inspectors and the Union County Extension agent will alert the office of the New Mexico State Veterinarian and/or The New Mexico Department of Agriculture at which time they will become the Incident Command and the New Mexico State Emergency Plan will take precedence.

In the event of an ERL 3:

The Federal Emergency authorities may become involved according to the New Mexico plan, and at this time the National Emergency Plan will take effect. The New Mexico Livestock Board (the office location of the State Veterinarian) and the New Mexico Department of Agriculture are the lead agencies in any domestic animal health or plant related emergency. NMLB and NMDA will respond by using the National Incident Management System (NIMS) protocol. The specific components will be under the unified command of the State Veterinarian's office and the USDA Area Veterinarian in Charge (AVIC) for animal health emergencies or the NMDA and the USDA/PPQ for plant emergencies. Their overall responsibility will encompass command and management of the disease event, overseeing the management and dissemination of resources, establishing a communication and information management system and securing supporting technologies. The State Veterinarian, AVIC, and State Plant Pathologist (NMDA) may use any or all of the following action steps to control and/or eradicate the disease encountered in the event.

1. Assign the emergency response level to the incident.
2. Determine the scope and level of initial response and initiate a task force.
3. Determine the location and size of possible affective areas.
4. Establish quarantine area(s) and issue quarantine orders as needed.
5. In consultation with other agency personnel, strategically assign duties and areas of responsibility.
6. Determine appropriate movement restrictions for animals, people, equipment, feeds, commodities, and conveyances.
7. Prepare information for dissemination to the public, producers, processors and other concerned groups through Joint Information Center.

8. Notify NMEM and allied parties when a livestock disease sample being sent to the Foreign Animal Disease Diagnostic Lab (FADDL, Plum Island, NY) for analysis is highly likely to be a highly contagious or infectious disease or agent.
9. Coordinate with NMEM, USDA, NMDOT, NMSP, local jurisdictions, and other agencies as needed in locating staging area(s) outside of the quarantined area.
10. Conduct livestock disease assessments at the site of the event to determine needs and priorities.
11. Coordinate state-level livestock disease emergency response and recovery.
12. Prioritize activities and areas of greatest urgency for state response and recovery personnel in the field.
13. Coordinate with the USDA, APHIS, VS, and Emergency Programs Staff and provide liaison between other federal, state and local organizations when required.
14. Direct disease investigations, epidemiological investigations and trace outs to determine source of disease and scope of disease outbreak.
15. Identify contaminated feed, livestock, and agricultural products that must be destroyed and disposed of or decontaminated.
16. Identify and approve, with notification to NMDEQ, animal carcass disposal sites, sites for burning animal carcasses, contaminated feed, or other items that are contaminated.
17. Identify and approve, with coordination with DEQ, temporary waste disposal sites for effluent from cleaning and disinfecting stations.
18. Coordinate with appropriate organizations for the deployment of inspectors and veterinarians for agricultural response and recovery.
19. Establish and/or coordinate appropriate regulatory controls.
20. Provide advisories and related public information.
21. Coordinate with OSP, county and local law enforcement for site security and related issues.
22. Maintain ongoing animal agriculture surveillance of affected communities in order to rapidly identify and address disease-related problems.

LOCAL GOVERNMENT

Local emergency management officials will be actively involved in the response and will be utilized. Each county has a comprehensive emergency management plan, which provides the framework for the jurisdiction's response to emergencies and disasters. Counties will utilize their resources and provide an additional line of communication with local farmers, industry groups and community.

STATE AGENCIES

New Mexico Emergency Management (NMEM) may activate the state emergency management plan and emergency control center to:

1. Support LOCAL, NMDA and AHID by providing statewide coordination for logistical support, security, bio-security, support personnel, procurement of supplies, equipment, vehicles, food, lodging, and administrative support during livestock disease response and recovery emergencies. Coordinate with NMDA, AHID for the provision of bio-security training to support agencies and provide bio security training to agency personnel designated for operations in the affected area.

New Mexico State Police (OSP may: Provide law enforcement support to conduct traffic checkpoints and roadblocks, and, secure quarantined areas and related sites during livestock emergencies. Coordinate with local law enforcement throughout response and recovery, and provide law enforcement support for issuing search warrants and other support as needed.

New Mexico Department of Human Service Acute and Communicable Disease prevention may: Coordinate with NMDA, AHID if a zoonotic condition exists, support public information efforts and provide veterinary and epizootiologic support to an emergency. The Department of Health Services, Office of Mental Health and Addiction Services may provide or coordinate mental health staff to assist in crisis counseling efforts.

Department of Environmental Quality (DEQ) may: assist and coordinate with NMDA on subjects such as carcass disposal, cleaning and disinfection and other issues that may influence soil, water, and air quality, Liaison with Environmental Protection Agency to address issues that may arise, provide lab emergency response support.

New Mexico Department of Fish and Wildlife (NMDF&W) may: provide disease surveillance in free-ranging wildlife and wildlife in zoos, parks, and other natural areas, survey for and/or dispose of contaminated items and wild animals, conduct wild animal inventories in the area of a disease event to identify susceptible species. In collaboration with the State Veterinarian's office, collect animals, specimens, and samples for disease testing to determine presence of disease or impact of disease on wildlife. In consultation and cooperation with the State Veterinarian's office, conduct disease control and elimination activities in wildlife's, support public information efforts throughout the emergency, Provide bio-security training to personnel designated for operations in the affected area based upon training provided by NMDA, AHID and USDA, support animal movement restrictions in New Mexico throughout the emergency. Assist NMDA, AHID with law enforcement support as requested. Assist with euthanasia procedures for infected livestock or wild animals. Assist with the disposal of infected livestock or wild animals.

New Mexico Department of Transportation (NMDOT) may: Assist in the movement of state resources during emergencies. Provide traffic control and routing assistance, barricades, and road monitoring. Provide equipment and operators to assist with animal disposal.

Department of Administrative Services (DAS) may: assist in the identification of resource providers and in purchasing of supplies, equipment, and services needed during a state-level livestock or crop emergency.

New Mexico National Guard may be called upon for support

- 1) Assist with cleaning, disinfection of equipment, facilities and the decontamination of personnel working at the site based upon NMDA, AHID and USDA guidance.
- 2) Assist with transportation and logistical issues.
- 3) Assist with recovery operations.

New Mexico State University (NMSU)

- 1) The College of Agriculture and Home Economics may provide support and expertise throughout the emergency as requested by NMDA, AHID.
- 2) NMDA Veterinary Diagnostic Laboratory may provide appropriate diagnostic support services as requested by NMDA, AHID.
- 3) The Cooperative Extension Service may provide reliable coordination, communication, and information dissemination between the EOC, the industry groups and local communities during emergencies.

New Mexico Department of Parks and Recreation (NMDP&R) may be a resource for logistical support, storage and parking. Depending on the location, the state agency may have land that could be utilized to dispose of animals by burial.

New Mexico OSHA (NM-OSHA) may:

- 1) Provide technical assistance on worker safety and health issues.

- 2) Liaison with Federal OSHA when worker safety and health issues are coordinated pursuant to OSHA regional and national emergency management plans, or under the National Response Plan.
- 3) Assist and coordinate with NMDA on subjects such as worker protection related to incident-specific health and safety site plans (HASP), risk (hazard/exposure) assessments, personal protective equipment (PPE) and respiratory protection programs, responder training, and/or decontamination.
- 4) Assist and coordinate with NMDA on actions such as personal exposure monitoring and laboratory analysis of occupational exposure samples; data collection, interpretation and sharing; and reports and recordkeeping.
- 5) Assist and coordinate with NMDA on technical information resources to facilitate effective risk management and risk communication.

Federal agencies

United States Department of Agriculture (USDA), Animal Plant Health Inspection Service (APHIS) may:

- 1) Assist in disease eradication activities including quarantine, evaluation, slaughter, disposal, cleaning and disinfecting, epidemiology, trace-back, vector control and transportation permitting arrangements.
- 2) Consult with state and local authorities regarding eradication proceedings.
- 3) Collect, analyze, and disseminate technical and logistical information.
- 4) Define training requirements for casual employees or support agencies involved in eradication operations.
- 5) Issue a declaration of extraordinary emergency.
- 6) Coordinate with state and local agencies to define quarantine and buffer zones.
- 7) Prepare information for dissemination to the public, producers, processors and other concerned groups through the Joint Information Center.
- 8) Allocate funding for compensation to the owner(s) of depopulated animals.
- 9) Define restrictions on interstate commerce.

USDA, Food Safety Inspection Service (FSIS)

The FSIS is charged with protecting the Nation's food supply by providing inspectors and veterinarians in meat, poultry, and egg product plants and at ports-of-entry to prevent, detect, and act in response to food safety emergencies. FSIS has developed the infrastructure needed to confront new biosecurity challenges. FSIS may assist state and local authorities in disease eradication activities and/or food-borne illness emergency investigations.

USDA APHIS Plant Protection Quarantine (PPQ)

USDA APHIS PPQ safeguards agriculture and natural resources from the risks associated with the entry, establishment or spread of animal and plant pests and noxious weeds. An FAD could enter the US and New Mexico on smuggled plants or animal food products. PPQ is an agency that is critical in preventing a FAD from entering the US and New Mexico intentionally by agroterrorists or unintentionally by world travelers.

Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency may recommend implementation of the NRP if conditions are warranted. The conditions required for FEMA involvement are usually largescale Union County Community Wildfire Protection Plan, June 2008

natural disasters, e.g., flooding, earthquake, etc. The NRP provides a mechanism for organizing, coordinating, and mobilizing federal resources to augment state and local resources.

Food and Drug Administration (FDA)

One of FDA's mandates is to protect the public health by assuring the safety of our nation's food supply. FDA also has an important role in prevention and control of contaminated animal feed. FDA may assist state and local authorities in disease eradication activities and/or food-borne illness emergency investigations.

Federal Bureau of Investigation (FBI)

The FBI is the agency responsible for investigating cases of bio-terrorism or agro-terrorism. When food animals are the target of a terrorist's attack and evidence suggests a foreign animal disease may have been intentionally introduced or threatened, NMDA will notify the FBI.

Environmental Protection Agency (EPA)

The federal agency that may collaborate with the state DEQ on decisions of carcass disposal, cleaning and disinfection and their effect on soil, air and water.

Department of Homeland Security (DHS)

In an agro/bio-terrorism event, specific agencies that NMDA may be involved with that are under DHS are, US Customs, Immigration and Naturalization Services, Customs Border Protection, FAD Diagnostic Lab at Plum Island and other agencies noted above such as FEMA and NMEM.

Volunteer and industry groups

Volunteer groups such as The Red Cross, Humane Societies, Animal Shelters, and Veterinary Medical Associations may provide resources such as personnel, equipment, technical assistance, rescue and sheltering, planning, training, animal medical care and public health issues. Activities will be coordinated via liaison with the Incident Command. The New Mexico livestock industry groups (i.e. producer organizations, livestock markets, slaughtering establishments, rendering facilities and other allied groups) may, upon request from the NMDA, AHID act as liaison on matters relating to livestock industries affected by an animal disease outbreak such as participate as members of state and local jurisdiction planning teams and assist state and local jurisdictions in the response and recovery phases of emergencies. Provide assistance to families affected by quarantine, euthanasia, and disposal activities during the emergency. Provide support for disease control and eradication activities. Provide appropriate information for dissemination to industries and the public. Identify individuals who may be qualified to assist with disease control efforts. Develop a list of qualified appraisers. Support exercises and drills as a participant during the exercise and design period and conduct of the event. Include state and local jurisdictions in business and industry activities. When ERL 2 is activated, the NIMS Incident Command System (ICS) will be used to manage the response at the county or local jurisdiction where the incident occurred and at the state and federal level. Unified Command would be utilized at all levels since the event would involve multi-jurisdictional or multi-agencies. The State Veterinarian, in conjunction with the AVIC, will direct all animal disease investigation, surveillance, diagnostic, bio-security, animal depopulation, carcass disposal, cleaning/disinfection and recovery activities. Primary and support agencies will coordinate through the State Veterinarian, NMEM and County Emergency Operations Center (EOC). An ICS will be established at the outbreak area(s) to ensure the most effective response and use of personnel and equipment. An Area Command Center will be instituted at the state Emergency Operations Center (EOC) or the New Mexico Department of Agriculture, when an incident occurs in more than one location and the span of control exceeds the capability of the initial ICS. All acts of terrorism may be directed to the nation's food supply, either as the target or as a vehicle of chemical, radiological and biologic weapons of mass destruction. Acts of terrorism are a federal crime and the response to such events are authorized and outlined in the -- National Response Plan (NRP). The Secretary of Homeland Security is the principal federal official responsible for domestic incidents. The Federal Bureau of Investigation (FBI) is the primary federal agency that would be notified when an act of terrorism is suspected. All other activities will proceed as consequences of such an event as described in the NRP. The event will proceed according to the NRP, the extraordinary state of emergency and the state emergency operations plans.

Recognizing that the ability to respond to and recover from emergency events is a result of mitigation, planning, training and exercise, all primary and support agencies will participate in such activities to maintain a state of readiness.

The New Mexico Department of Agriculture in cooperation with the USDA APHIS Veterinary Services is responsible for the development of this plan. NMDA and USDA APHIS VS will be responsible for plan updates and other ongoing maintenance. NMDA, under the direction of the State Veterinarian's office, will play a central role in ensuring that the plan continues to reflect the latest generally accepted veterinary principles and is maintained at a level to protect the health of New Mexico's animal populations and citizens of New Mexico.

The maintenance and updating of this plan may be timed in accordance with the processes of changes in government structure, exercises performed, critiques of actual emergency situations, or guidance from state and federal government.

Periodic plan testing is essential for determining the ongoing effectiveness of the plan as the legal environment, technology, livestock industry, the field of veterinary medicine, disease threats and other key parameters change over time. The NMDA will work in partnership with local and other state and federal agencies to ensure that adequate testing and maintenance of this plan occurs.

It is highly recommended that regardless of the ERL level, the nature of the emergency, or degree of the disaster, LOCAL emergency response teams be involved in all planning, coordination, and implementation of emergency actions.