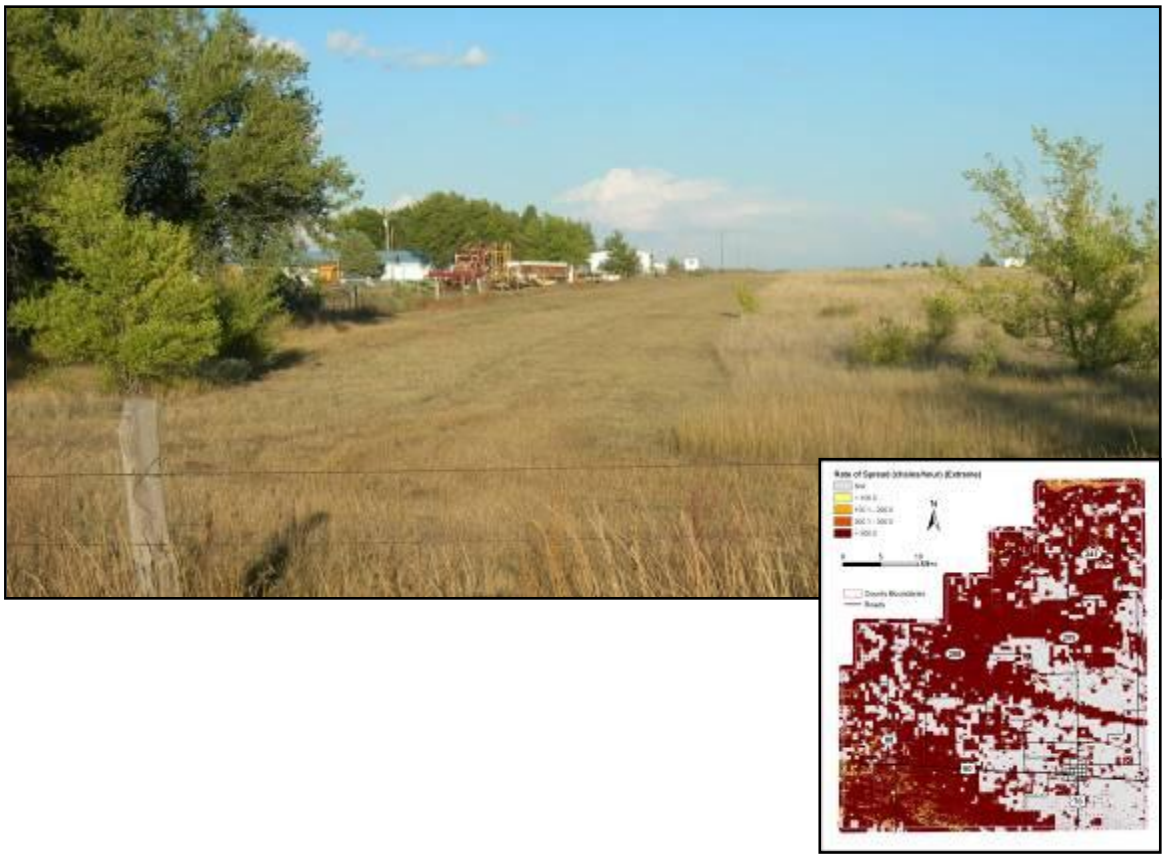
CURRY COUNTY, NEW MEXICO

Wildland Urban Interface
Community Wildfire Protection Plan



Prepared for:
Curry County, New Mexico

Submitted by:
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SIGNATURES

DECLARATION OF AGREEMENT AND CONCURRENCE

The following partners in the development of the Community Wildfire Protection Plan have reviewed and do mutually agree or concur with its contents:

J. Albin Smith, Chairman, Curry County Commission	3-18-08 Date
Ernesto Hurtado, NM EMNRD, Forestry Division (Las Vegas District)	4-28-08 Date
Ted Richardson, Pleasant Hill Volunteer Fire Department	5-2-08 Date
Cody Moberly, Field Volunteer Fire Department	3-26-08 Date
Tommy Coffin, Arcadview Volunteer Fire Department	3/25/08 Date
Ray Westerman, City of Clovis Fire Department	3-24-08 Date
Lewis Cooper, City of Texico Fire Department	4-8-08 Date
Kenny Jacobs, Village of Melrose Fire Department	5-9-08 Date
~~Jerome Howerton~~, Village of Grady Fire Department Wesley Jones,	4-14-08 Date

Concurrence

Cindy Wall, Central Curry Soil & Water Conservation District — Date 4-14-08

Gayla Brumfield, Mayor of Clovis — Date 3-20-08

Lance A. Pyle, Mayor of Melrose — Date 3-27-08

Wesley Shafer, Mayor of Grady — Date

Jerry Cunningham, Mayor of Texico — Date 4-8-08

Erik R. Nelson, District Resource Manager, New Mexico State Land Office — Date 4-23-08

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SUMMARY OF THIS DOCUMENT

This document incorporates new and existing information relating to wildfire for citizens, policy makers, and public agencies within Curry County, New Mexico. Wildfire hazard data is derived from the community wildfire hazard rating analysis (WHR) and the analysis of fire behavior potential, which are extensive and/or technical in nature. For this reason, detailed findings and methodologies are included in their entirety in appendices rather than the main report text. This approach is designed to make the plan more readable, while establishing a reference source for those interested in the technical elements of the Curry County wildfire hazard and risk assessment.

The Curry County Community Wildfire Protection Plan (CWPP) is the result of a community-wide fire protection planning effort that includes extensive field data gathering, compilation of existing fire suppression documents, a scientific analysis of the fire behavior potential of the study area, and collaboration with various participants: homeowners, Curry County officials, and New Mexico State Forestry. This project meets the requirements of the federal Healthy Forests Restoration Act (HFRA) of 2003 for community fire planning.

Special recognition goes to the State of New Mexico and the New Mexico Energy, Minerals and Natural Resources Department for funding this project.

The CWPP meets the requirements of HFRA by:

1. **Identifying and prioritizing fuels reduction opportunities across the landscape**
   See *Fuel Treatment section* on pages 27-29 of this document.

2. **Reducing structural ignitability**
   See pages 21-25 and Appendix B of this document

3. **Collaborating with stakeholders**
   See Appendix E of this document

THE NATIONAL FIRE PLAN

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

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

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

1. Respond to severe fires
2. Reduce the impact of fire on rural communities and the environment
3. Ensure sufficient firefighting resources

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

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

PURPOSE OF THE CURRY COUNTY CWPP

A) Promote firefighter and public safety
B) Identify Communities at Risk and Values at Risk
    i) Reduce fuel hazards and prevent fires
        (1) Consider fuels treatment prescriptions and locations
        (2) Consider Wildland Urban Interface Codes and Firewise Communities Program
C) Increase Fire Department Capacity
D) Improve the County's position as it competes for grants

GOALS AND OBJECTIVES

Goals for this project include the following:

1. Enhance life safety for residents and responders
2. Mitigate undesirable fire outcomes to property and infrastructure
3. Mitigate undesirable fire outcomes to the environment and quality of life

In order to accomplish these goals the following objectives have been identified:

1. Establish an approximate level of risk (the likelihood of a significant wildfire event for the study area)
2. Provide a scientific analysis of the fire behavior potential of the study area
3. Group Values at Risk into "communities" representing similar hazard factors
4. Identify and quantify factors that limit (mitigate) undesirable fire effects to the Values at Risk (hazard levels)
5. Recommend specific actions that will reduce hazards to the Values at Risk

OTHER DESIRED OUTCOMES

1. Promote community awareness:

   Quantify the community's hazards and risk from wildfire in order to increase public awareness and public action to mitigate the defined hazards.

2. Improve wildfire prevention through education:

   Awareness, combined with education, will help to reduce the risk of unplanned human ignitions.

3. Facilitate and prioritize appropriate hazardous fuel reduction:

   Organize and prioritize hazard mitigation efforts in an Action Plan with priorities, timelines and monitoring. This will assist stakeholders in focusing future efforts from both a social and fire management perspective.

4. Promote improved levels of response:

   The identification of areas of concern will improve the accuracy of pre-planning, and facilitate the implementation of cross-boundary, multi-jurisdictional projects.

COLLABORATION: COMMUNITY, AGENCY, CORE TEAM

Representatives involved in the development of the Curry County CWPP are included in the following table. Their names, organization, and roles & responsibilities are indicated in Table 1. For more information on the collaborative process that led to the development of this CWPP and Core Team contact information, see **Appendix E.**

Table 1. CWPP Core Team, Agencies and Development Team

Name	Organization	Roles / Responsibilities
Connie Harrison, Grant Administrator Danny Davis, Road Superintendent	Curry County	Local information and expertise, including community risk and value assessment, development of community protection priorities, and action plan including establishment of fuels treatment project areas and methods.
	Curry County Fire Depts.	
Tommy Lofton, Chief	Broadview Fire Dept.	
Cody Moberly, Chief	Field Fire Dept.	
Ted L. Richardson, Chief	Pleasant Hill Fire Dept.	
Tim Peterson, Battalion Chief Rick Potter, Captain	City of Clovis Fire Dept.	
Jim Schoeffel	City of Clovis Police Dept.	
Emery Wes Jones, Chief	Village of Grady Fire Dept.	
Kenney Jacobs, Chief Scott Morris	Village of Melrose Fire Dept.	
Richard Chandler, Base Wildland Manager	Cannon Air Force Base	
Lewis Cooper, Chief	City of Texico Fire Dept.	
Ernesto Hurtado, District Forester Eugene Pino, Fire Management Shannon Atencio, Forester Terrell Treat, Office of Forest and Watershed Health	New Mexico State Forestry	Approval of CWPP minimum standards. Local information and expertise, including community risk and value assessment and action plan.
Shelley Rossbach, Facilitator Fred Rossbach, Local Project Manager	The Placitas Group, Inc.	Facilitation of planning process and development of the CWPP.
Chris White, CEO, Urban Interface Specialist Rodrigo Moraga, Managing Member, Fire Behavior Analyst Mark McLean, GIS Project Manager Marc McDonald, Project Manager Quinn MacLeod, WUI Project Specialist	Anchor Point Group LLC Consultants	Development of the CWPP, decision-making, community risk and value assessment, development of community protection priorities, establishment of fuels treatment project areas and methods.

STUDY AREA OVERVIEW

Curry County was established in 1909 and named after George Curry, Territorial Governor of New Mexico (1907-1910). It is located on the east central side of New Mexico and is adjacent to the state of Texas. Curry County is 1408 square miles or approximately 901,049 acres (Anchor Point Group 2007), making it one of the smallest counties in New Mexico. Most of the lands are privately owned. The approximate population for the county is 45,000 (U.S Census 2002). The County Seat is Clovis, New Mexico with a population of 31,100. Other municipalities located in Curry County are the Town of Texico and the Villages of Melrose and Grady.

Cannon Air Force Base is a major presence in the community and has recently been revitalized with the assignment of a new mission. There are no federal land management agency lands, such as the U.S Forest Service or Bureau of Land Management, located in the county. There are approximately 60,700 acres of state lands that are primarily leased for agriculture and grazing.

The dominant land cover type is non-forest watershed made up of grasslands and agriculture. The grasslands are representative of the Southern Shortgrass Prairie Eco-region and the Western Great Plains Shortgrass Prairie Terrestrial Habitat Type, (Comprehensive Wildlife Strategy for New Mexico, New Mexico Game and Fish, 2006). Topography is relatively flat with rolling hills that reach elevations ranging from 4,100 to 4,800 feet above sea level. Two major drainages cross the county from northwest to southeast and result in rolling, broken country with grass and shrub vegetation. Average rainfall is 18.6 inches per year with 84% of the precipitation occurring between April and October (Soil Survey of Curry and Southwest Quay Counties-Interim Report, USDA-Natural Resource Conservation Service, 2007).

Figure 1 and **Table 2** show the communities that define the Wildland Urban Interface (WUI) study area. For the purposes of this project, the most populated areas were divided into 6 communities. Each community represents certain dominant hazards from a wildfire perspective. The overall hazard ranking of these communities was determined by considering the following variables: fuels, topography, structural flammability, availability of water for fire suppression, egress and navigational difficulties, as well as other hazards, both natural and manmade. The methodology for this assessment uses the Wildfire Hazard Rating (WHR) community hazard rating system developed specifically to evaluate communities within the WUI for their relative wildfire hazard.[1] The WHR model combines physical infrastructure such as structure density and roads, and fire behavior components like fuels and topography, with the field experience and knowledge of wildland fire experts. For more information on the WHR methodology please see **Appendix B**.

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

Figure 1. Curry County Community Hazard Rating Map

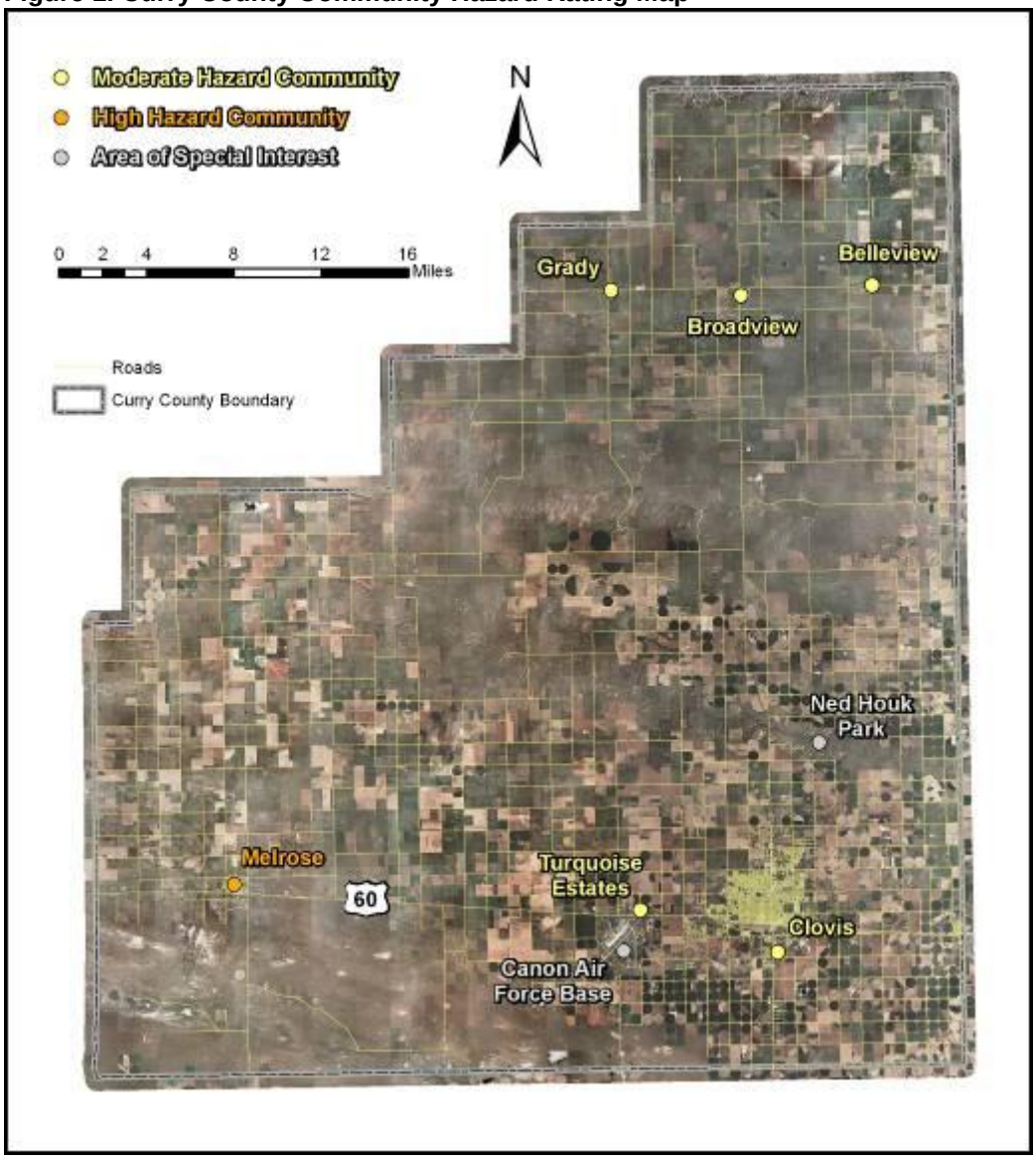


Table 2. Curry County Community Hazard Ratings

Melrose	HIGH
Grady	MODERATE
Clovis (Woodson Way & Lockwood Dr)	MODERATE
Bellview	MODERATE
Turquoise Estates	MODERATE
Broadview	MODERATE

VALUES AT RISK

Curry County is located on the east central side of New Mexico and is adjacent to the state of Texas. Its land area is 1408 square miles or approximately 901,049 acres (Anchor Point Group, 2007), making it one of the smallest counties in New Mexico. Most of the lands are privately owned. The approximate population for the county is 45,000. The County Seat is Clovis, New Mexico with a population of 31,100 (U.S Census 2002). Other municipalities located in Curry County are the Town of Texico and the Villages of Melrose and Grady.

Curry County fire suppression is provided by a mixture of county and municipal fire departments. The County has organized three (3) rural fire departments; Broadview, Field and Pleasant Hill. Like many rural departments most of their responses are related to wildland fire. The fire departments are continually challenged to recruit and train members and to provide adequate water delivery capacity to extinguish fires. They rely on mutual aid from neighboring fire departments in the Villages of Melrose and Grady and the Town of Texico. These municipalities all have developed water systems and fire hydrants for fire suppression. Clovis F.D. employs full-time career firefighters and provides significant mutual aid to the County and other municipalities, including assistance with incident management and communications. Cannon Air Force Base maintains a fire organization with career firefighters, including specialists trained in wildland fire that can provide mutual aid on wildfires. In addition, Curry County has organized a fleet of road graders housed around the county for mutual aid. All the fire departments work very well together.

A significant wildland urban interface (WUI) fire occurred in nearby Floyd, NM in Roosevelt County in the fall of 2005. A grass fire started on Melrose Range, part of the Cannon Air Force Base operation area, and pushed by high winds, spread rapidly into the Village of Floyd, NM. Residents were hurriedly evacuated but a number of structures were burned and one home was destroyed. An estimated 26,000 acres burned. There was a tremendous fire response from multiple area fire departments, but it dramatized how quickly fire protection resources from can be overwhelmed in a large, fast moving "WUI" fire. The Texas State Forest Service conducted a case study of the 2005 and 2006 grass fires that destroyed many homes in Texas and can provide valuable lessons learned (http://txforestservice.tamu.edu (search "case study"). After action reviews conducted by Curry County Fire Departments documented the importance of increasing firefighting capacity, including equipment, training, communications and organization. The fire was also a call for citizens to be aware of the danger from wildfire and take action around their homes to better protect them.

WILDLAND URBAN INTERFACE

The entire area of Curry County is considered to be potential wildland urban interface. For this project, the most populated areas at risk from wildfire were divided into six (6) communities. Each community represents certain hazards from a wildfire perspective. Fuels, topography, structure ignitability, availability of water for fire suppression, egress and navigational difficulties as well as other hazards both natural and manmade are

considered in the overall hazard ranking of these communities. The hazard assessment identified one (1) of the six (6) communities in the study area to be a high hazard area.

Within the last year, the County has received several subdivision applications. In the future, new development in potential wildland urban interface areas could add communities at risk and increase the fire protection workload.

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

COMMERCE AND INFRASTRUCTURE

The Curry County economy is dominated by agriculture, transportation, construction and government service. The eastern portion of the county is on the edge of the Ogallala Aquifer that supports irrigated agriculture. There are numerous center-pivot irrigation circles. Curry County leads New Mexico in corn, wheat, and sorghum production (New Mexico County Extension Service). Large dairy operations have become prevalent in the last 20 years. The Southwest Cheese Company, one of the largest manufacturers of cheddar cheese in the country, started production in 2006 (Kathy Louise Schuit, New Mexico Business Journal, 2006). About 70 trains from the Burlington Northern Santa Fe railroad system roll through the county each day. Cannon Air Force Base is a major presence in the community.

There are 19,200 housing units within the County. The median household income with earnings is $37,500 whereas the state median income is $43,900. The median income for all households in the county is $28,900 and for a family is $33,900. About 15.5% of families and 19.0% of the population are below the poverty line (U.S Census, 2000).

HISTORY AND LIFESTYLE

The Clovis Community College located in Clovis, NM, offers two year degree programs and Eastern New Mexico University in nearby Portales, NM in Roosevelt County offers a variety of four year degrees. The area had a significant cultural and archeological history including the discovery of the “Clovis Man”, just south of Clovis, NM, with artifacts documenting man’s existence in North America over 12,000 years ago (www.developclovis.com).

Ned Houk Park is recognized as an important area of interest in the Curry County CWPP. The park is located 10 miles north of Clovis on New Mexico Highway 209 and provides 3320 acres for recreation including picnic and play grounds, hiking, fishing, and a museum.

ENVIRONMENT

The dominant land cover type is non-forest watershed made up of grasslands and agriculture. The grasslands are representative of the Southern Shortgrass Prairie Eco-region and the Western Great Plains Shortgrass Prairie Terrestrial Habitat Type (Comprehensive Wildlife Strategy for New Mexico, New Mexico Game and Fish, 2006).

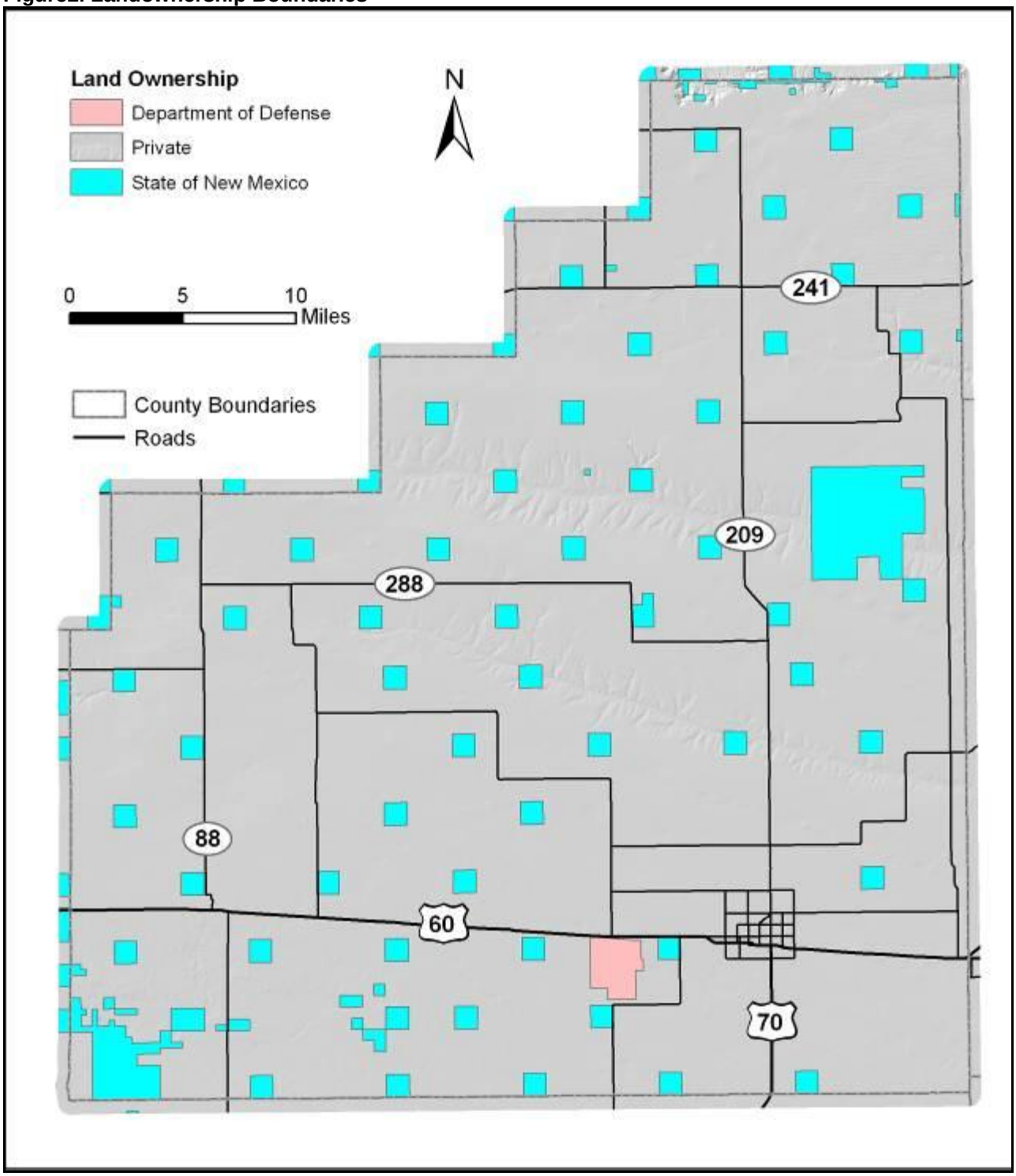
Curry County soils are very susceptible to wind erosion. Disturbances such as a fire or a plowed fuel break can quickly cause significant soil erosion. Soil Bank programs in the 1950's and 1960's and the Conservation Reserve Program (CRP) in the mid-1980's encouraged the introduction of lovegrasses to stabilize the soil and prevent erosion. Lovegrasses are fire-adapted – once established, these non-native grasses are persistent and very difficult and expensive to displace with native vegetation. Curry County has over 200,000 acres of "CRP grass" meant to stabilize soils; however it also provides a uniform bed of vegetation that periodically fuels very intense wildfires.

The area is host to a number of wildlife species. The lesser-prairie-chicken has received much attention in this habitat type and conservation efforts have provided excellent examples of collaborative efforts between state, federal land private land managers and conservation organizations. To protect wildlife, CRP management activities, such as mowing grass for fuel breaks, are prohibited during nesting season, from April to October.

The following is the federal threatened and endangered species list for Curry County (New Mexico Game and Fish Department, Bison-M): **Texas Horned Lizard, Desert King Snake, Gray Catbird, Yellow-billed Cuckoo, Bald Eagle, Peregrine Falcon, Peregrine Arctic Falcon, Ferruginous Hawk, Swainson's Hawk, Mississippi Kite, Burrowing Owl, Mountain Plover, Snowy Western Plover, Lesser Prairie-Chicken, Loggerhead Shrike, Least Tern, Black Tailed Prairie Dog, Red Fox, Swift Fox and White Sands Wood Rat.**

Through public involvement, local support, and a regional perspective, the fuels reduction and other mitigation elements described in this document can and should enhance and protect the values of the study area.

Figure2. Landownership Boundaries



CURRENT RISK SITUATION

For the purposes of this report the following definitions apply:

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

Hazard is the combination of the wildfire hazard ratings of the Wildland Urban Interface (WUI) communities and fire behavior potential, as modeled from the fuels, weather and topography of the study area.

The majority of the County is at a high risk for WUI fires. This assessment is based on the analysis of the following factors:

1. Curry County fire departments respond to approximately 100 fire incidents annually. It is important to note that from year to year, the number of acres burned is somewhat consistent; this is primarily due to the grass type fuels, which represent the predominant fuel model. Grass type fuel models react quickly to dry and warm conditions, therefore even small fires have the potential to become quite large especially in windy conditions. Not all county fire departments were able to provide fire occurrence data, like most small departments administrative duties take a secondary role after emergency response.
2. Curry County fire departments provide fire suppression assistance to a number of neighboring counties. These counties have an equal to or increased level of fire occurrence. One fire of particular note was the Floyd Fire which burned 26,000 acres in November of 2005. This significant fire required countless outside resources to contain, a number of structures were burned and one home was destroyed, and the entire community of Floyd was evacuated. The relevance here is that had the wind direction been from the normal south / southwest direction this difficult to contain fire would have impacted Curry County with the high rated community of Melrose being the first populated community threatened.
3. New Mexico State Forestry fire reports track larger, extended attack fires within the county eligible for reimbursement from the state. These statistics reflect an active fire history for the years available. NMSF reports 36 fires which burned 4075 acres from July 2003 to July 2006. **Table 3** displays the number of recorded fire starts in each month for that period. The largest fire occurred in June, 2006 and burned 1000 acres. It is important to note that fires have the ability to grow to a large size during most months of the year. Fire cause is primarily human related; only 7 of the 36 fires were caused by lightning.

Table 3: Fires Reported to NM State Forestry per Month from July 2003 to July 2006

January – 5	May – 2	September – 1
February – 3	June – 11	October – 0
March – 2	July – 3	November – 4
April – 2	August – 3	December – 0

FIRE BEHAVIOR POTENTIAL

The fire behavior potential of the study area was modeled (see **Appendix A**) as a part of the wildfire hazard analysis carried out for this study. This model can be combined with the community wildfire hazard ratings (WHR), structure density and Values at Risk information to generate current and future "areas of concern." **Figures 3 and 5** show the fire behavior potential for the analysis area in the average weather conditions between April 1 and November 1. Weather observations from the Melrose Range Remote Automated Weather Station (RAWS) were averaged for a two-year period (2006-2007) to calculate these conditions.

Figures 4 and 6 show the fire behavior potential for the analysis area, given ninety-seventh percentile weather data. In other words, the weather conditions existing on the five most severe fire weather days in each season for the two-year period were averaged together to provide the weather data for this calculation. It is a reasonable assumption that similar conditions may exist for at least five days of the fire season during an average year. In fact, during extreme years, such conditions may exist for significantly longer periods.

Weather conditions are extremely variable and not all combinations are accounted for. These outputs are best used for pre-planning and not as a stand-alone product for tactical operations. This model can be combined with the WHR and Values at Risk information to generate current and future "areas of concern," which are useful for prioritizing mitigation actions. It is recommended that when this information is used for tactical operations, fire behavior calculations be done with actual weather observations during the fire event. For greatest accuracy, the most current Energy Release Component (ERC) values should be calculated and distributed during the fire season to be used as a guideline for fire behavior potential. For a more complete discussion of the fire behavior potential methodology, please see **Appendix A**.

Figure 3. Flame Length, Moderate Conditions

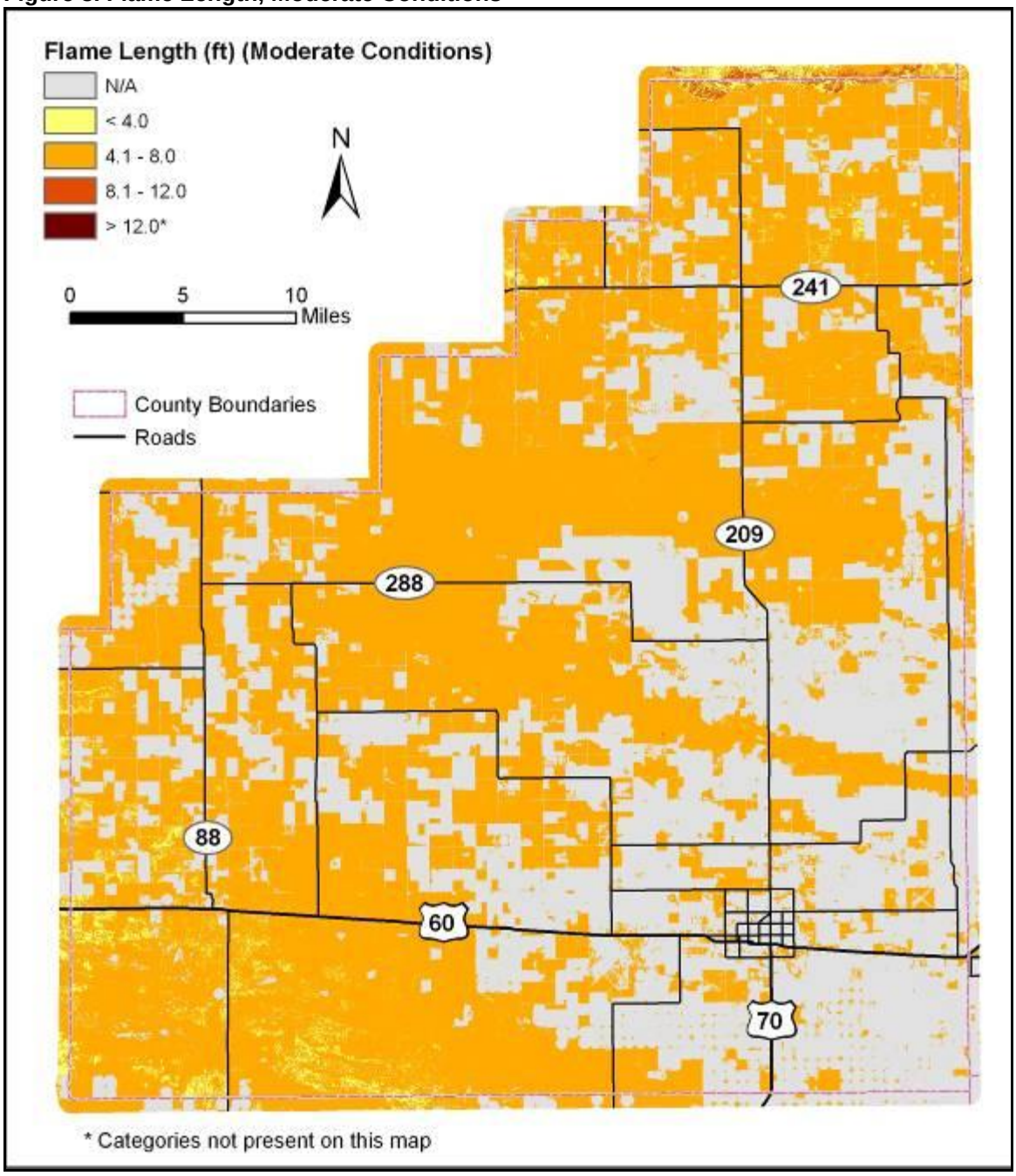


Figure 4. Flame Length, Extreme Conditions

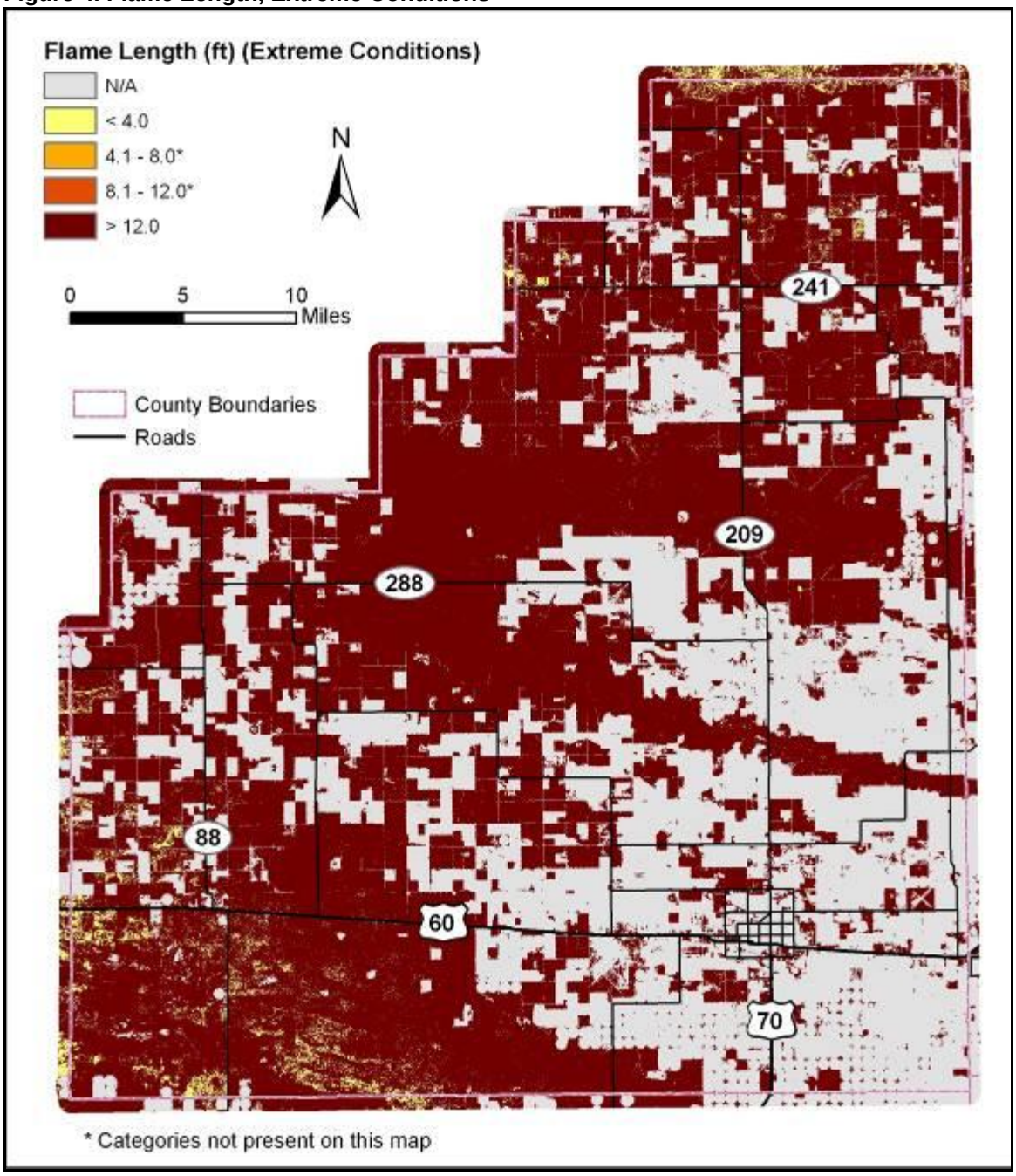


Figure 5. Rate of Spread, Moderate Conditions

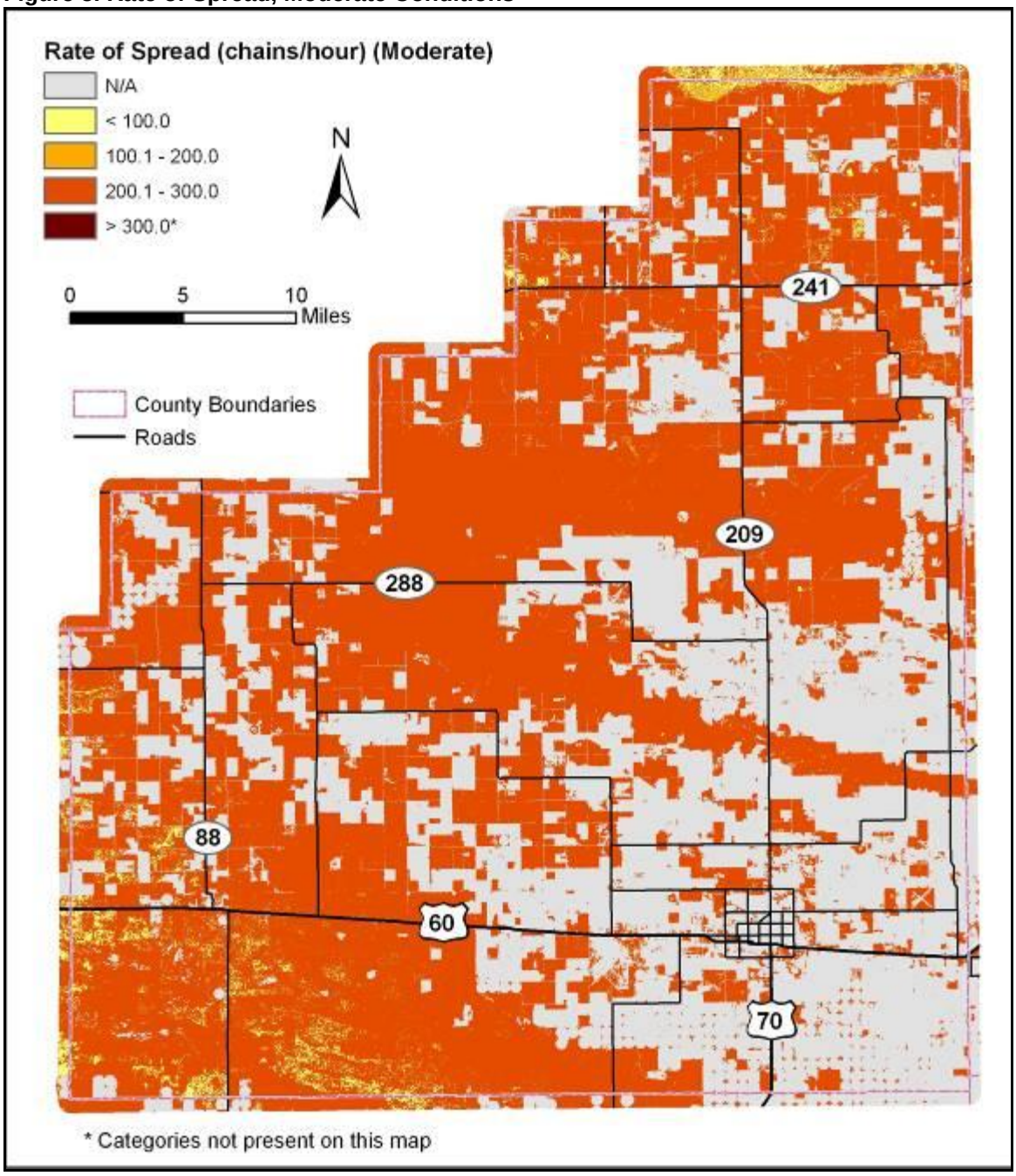
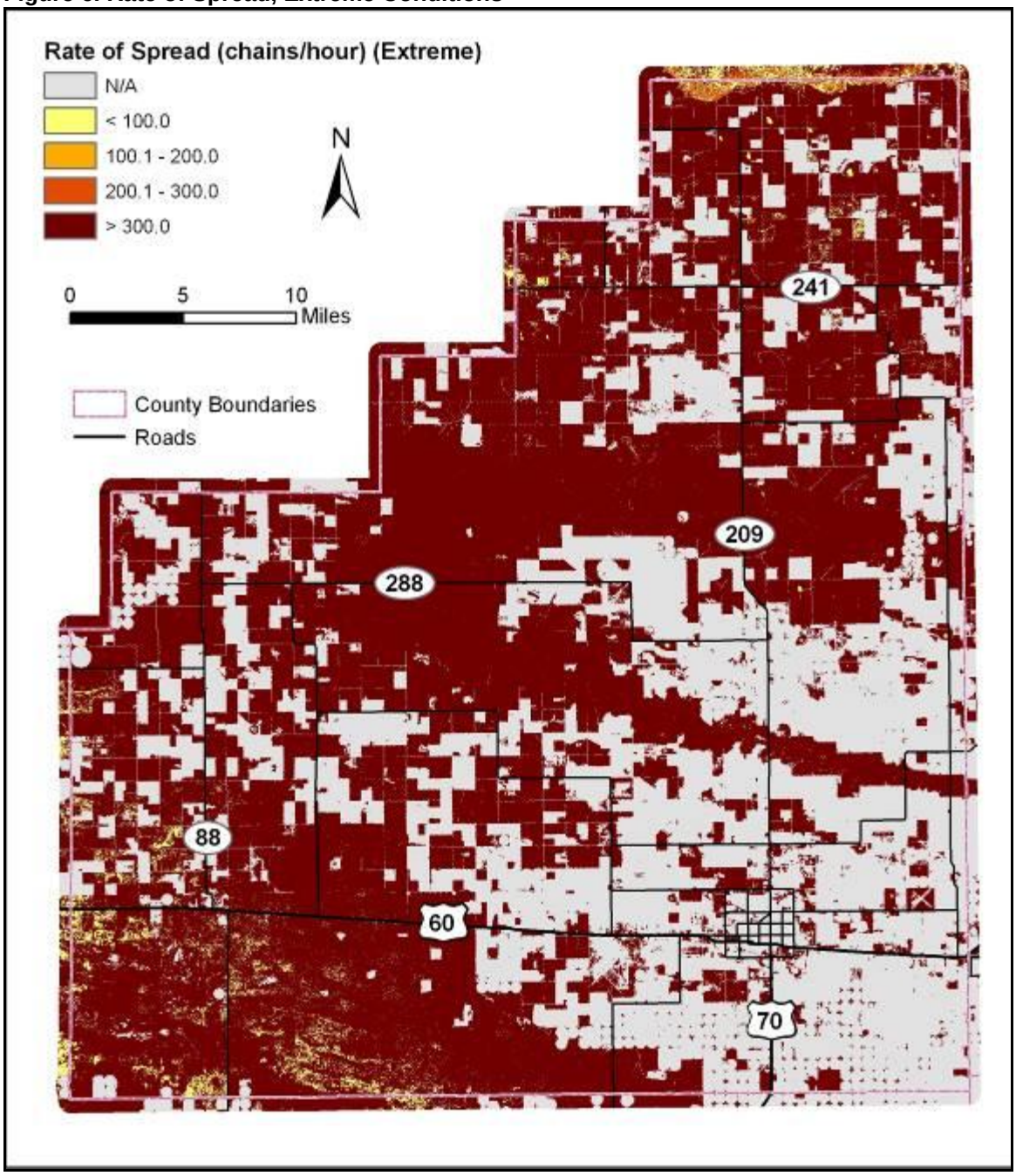


Figure 6. Rate of Spread, Extreme Conditions



ACTION PLAN

The action plan is the heart of the CWPP. It details the prioritized actions that the County and cooperators want to take to reduce the risk of wildland fire damage to people, property and the environment. It will require a high level of commitment of landowners, citizens and public officials to accomplish the tasks shown in this action plan and reduce the risk of catastrophic wildland fire in Curry County.

The major topics in the Action Plan are:

1. Organization and Funding
2. Fire Prevention
3. Reducing Structure Ignitability
4. Fuels Treatments
5. Local Preparedness and Firefighting Capabilities
6. Water Supply
7. Areas of Special Interest

Projects described in this Action Plan will be on-going, accomplished or substantially initiated over the next ten years. The projects have been prioritized, but this is not meant to be restrictive. If the chance arises to accomplish a lower priority project, the Fire Chiefs should take advantage of the opportunity. The Curry County Community Wildfire Protection Plan will be a living document that can periodically be adjusted to reflect lessons learned and new ideas.

The Curry County Fire Chiefs will take the lead in monitoring the progress of the proposed projects. The Curry County Manager's Office will be the "keeper" of the official copy of the plan.

ORGANIZATION AND FUNDING

The purpose of this organization and funding section is to provide recommendations about how to best achieve certain administrative activities related to this CWPP. The underlying issue is that of funding. Like many rural areas of New Mexico, funding for projects ranging from creating agreements to maintaining fire apparatus is always the number one issue.

ACTION ITEMS

- **Priority Level Very High.** Create a County fire chiefs' association to coordinate fire program activities and communicate with the County Manager.
  - Sample - http://www.kcfca.com/

- **Priority Level Very High.** Develop a multi-agency annual operating plan to address operations, communications, training, fire prevention, and interagency agreements.

- **Priority Level High.** Work with the County Manager to clarify the fire department budget process. Develop long-term secure funding.

- **Priority Level High.** Work with the State Fire Marshal to explore opportunities to increase funding for operations and equipment. Consider development of additional County sub-stations. Apply for State Fire Marshal special grants for purchase of wildland fire "brush trucks". (http://www.nmprc.state.nm.us/sfm.htm)

- **Priority Level High.** Work with New Mexico State Forestry to assist Curry County with the following issues:

  - Obtaining additional funding directly targeted at the maintenance of fuel breaks (Grant information is available at www.nmforestry.com)
  - Obtaining a grant so the county can create and fund a Wildfire Coordinator position using the Volunteer Fire Assistance program
  - Submitting grants for equipment
  - Submitting paperwork so the county is reimbursed for wildfire suppression response

- **Priority Level High.** Conduct "after action reviews" on multi-jurisdictional fire incidents. Include responding agencies and cooperators such as New Mexico State Forestry.

- **Priority Level High.** Communicate with the public to understand their concerns about fire protection.

FIRE PREVENTION

Curry County is experiencing continuing land development, most of which is within or adjacent to the City of Clovis. There is likely to be a varied understanding among property owners of the hazards associated with the threat of a wildfire. An approach to wildfire education that emphasizes safety and hazard mitigation on an individual property level should be undertaken, in addition to fire department efforts at risk reduction.

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

ACTION ITEMS

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

- **Priority Level High.** Obtain "Smokey Bear" signs for use along major highways to inform the public of the current fire danger and to promote fire prevention. Ensure fire danger messages are kept up to date to maintain credibility and effectiveness. Place signs in the following locations listed by priority as funds allow:

    1. NM Highway 467 at the county line, south of Cannon AFB
    2. US Highway 60 at the county line, east of Melrose
    3. NM Highway 469 at the county line, north of Grady
    4. NM Highway 267 at the county line, south of Melrose
    5. NM Highway 209 at Ned Houk Park
    6. NM Highway 77 and state line, east of Pleasant Hill
    7. NM Highway 241 and state line, east of Bellview
    8. US Highway 70 at county line, south of Clovis

- **Priority Level High.** Conduct fire prevention campaigns during times when fire danger is high. This should be done during the spring, for example, when fires can start in dry fuels and spread rapidly in windy conditions. Create fire prevention messages in the local newspaper and on the radio to raise public awareness of the danger of wildfires.

- **Priority Level High.** Provide Firewise fire prevention materials to encourage all homeowners/landowners to take responsibility and voluntarily implement defensible space practices that will reduce the chance of their homes igniting during a wildfire. Consider having firefighters distribute Firewise materials door to door to provide fire prevention and home protection advice in person.

- **Priority Level High.** Consider adopting local fire ordinances to control open burning during periods of high fire danger. Develop partnerships between fire

districts, County Sheriff, New Mexico State Forestry law enforcement, and New Mexico Environment Department to enforce fire restrictions.

- **Priority Level High.** Ensure that the Address Map books are updated to reflect information stemming from this CWPP. As recommended in other areas of this CWPP, they should include the individual home assessments. Every piece of emergency equipment in the county should have a copy (county and municipal fire departments, the county road department, Cannon AFB, emergency management, etc.). Command/Supervisor vehicles will need multiple copies or the ability to generate multiple copies. This will allow for the distribution of specific maps to incoming mutual aid resources that may not have the maps.

- **Priority Level Moderate.** Fire districts will work with the Curry County Land Use Committee to discuss methods to reduce structure ignitability in the event of a wildfire. The International Code Council Wildland Urban Interface Code may be considered in the future but fire districts must first work with landowners to educate them on how to create defensible space to protect their homes and communities. Fire districts can use Firewise and fire prevention programs to encourage homeowners to voluntarily reduce their hazard and risk from wildfire.

- **Priority Level Moderate.** Help organize an All-Hazards Symposium. This should coincide with Fire Prevention week in October and be sponsored by the (newly created) Curry County Fire Chiefs Association, County Emergency Management, etc.

    - Provide updates to the CWPP recommendations.
    - Provide and receive citizen information which can help to direct public education programs.

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

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

REDUCING STRUCTURE IGNITABILITY

The community-level assessment identified all six of the communities in the study area to be at high or moderate hazard level. Construction type, condition, age, fuel loading near the structure, and position are all contributing factors that make homes more susceptible to ignition under even moderate burning conditions. There is also a likelihood of rapid fire growth and spread in these areas, due to fast burning or flashy fuel components which promote extreme fire behavior.

Table 4 illustrates the relative hazard rankings for communities in the study area.

- A rating of 19 or less indicates an area of extreme hazard.
- A rating of 20 to 26 indicates a very high hazard.
- A rating of 27 to 33 indicates high hazard.
- A rating of 34 to 40 indicates moderate hazard.
- A rating of 41 or greater indicates a low hazard.

Table 4. Community Ratings

COMMUNITY	SCORE	HAZARD RATING
Melrose	31	HIGH
Grady	35	MODERATE
Clovis – Woodson Way & Lockwood Drive	36	MODERATE
Bellview	36	MODERATE
Turquoise Estates	37	MODERATE
Broadview	38	MODERATE

Many ranches and individual home sites exist outside of the established communities. The following recommendations apply to all structures that could be threatened by wildfire.

*** An aggressive program of *evaluating and implementing defensible space* for homes will do more to limit fire-related property damage than any other recommendation in this report.**

Without question, any type of dense/flammable vegetation should be removed from around a home in order to reduce the risk of structural ignition during a wildfire. The question really is, “How much should be removed?” There are several different versions of defensible space recommendations from different organizations across the country. They all endorse the same basic concepts, the distances will differ depending on the local fire behavior and other factors such as the dominate fuel type and topography, etc. All recognize the fact that areas exposed to winds will require the defensible space distances to be increased.

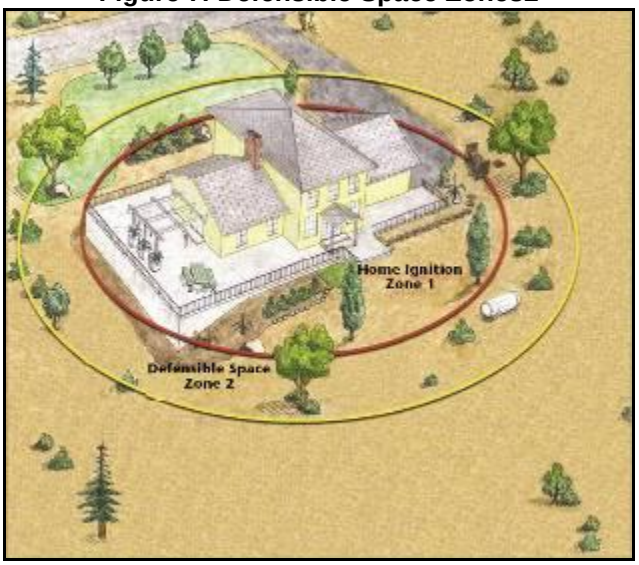
The term “clearance” leads some people to believe that all vegetation must be removed down to bare soil. This is not the case. Removing all vegetation unnecessarily increases erosion and will encourage the growth of weeds in the newly disturbed soil. These weeds are considered “flashy fuels,” which actually increase fire risk because they ignite so easily.

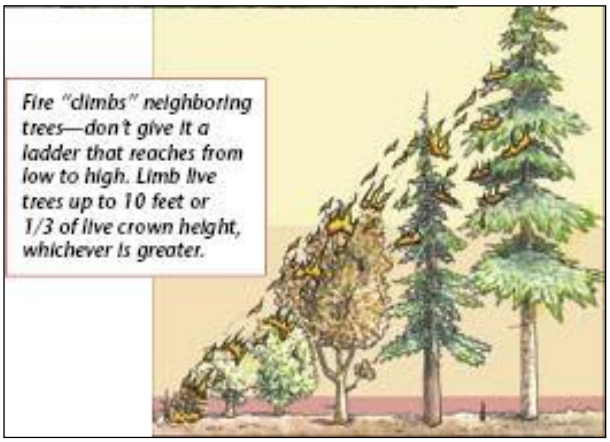
*** The most important element for the improvement of life safety and property preservation for every home in the study area is *compliant, effective defensible space*.**

ZONE 1 (within 10 feet of the home) is shown as Home Ignition Zone 1 below, suggests eliminating all flammable materials (fire-prone vegetation, wood stacks, wood decking, patio furniture, other yard debris, etc.). Irrigated grass, rock gardens, non-flammable decking, or stone patios would be desirable substitutions.

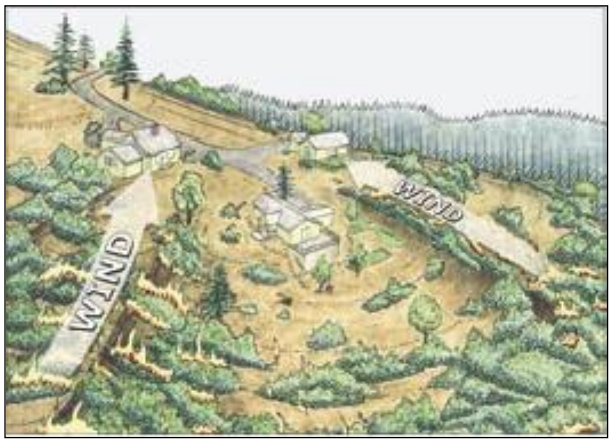
ZONE 2 Defensible Space (10 to 100 + feet from the home – areas of high winds the Defensible Space will need to be expanded to 150 feet) suggests removing dead and dying grass, shrubs and trees. For areas with multiple windbreaks reduce the density of the windbreak closest to the home and other structures. Mow the grass down short next to the windbreak. Rake out the accumulated needle litter from beneath the shrubs. Remove dead stems from trees and shrubs annually.

Figure 7. Defensible Space Zones2





Eliminate Ladder Fuels



Increase Defensible Space in Windy Areas

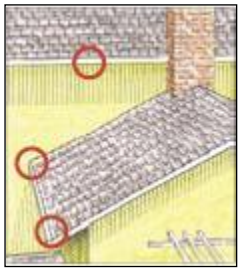
2 http://www.firesafecouncil.org/education/attachments/landscapinggrassland.pdf; referenced 10-1-07

Maintaining Your Defensible Space[3]

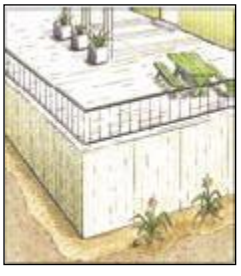
Your home is located in a ecosystem that is dynamic, and always changing. Trees, shrubs, and grass continue to grow, plants die or are damaged, new plants begin to grow, and plants drop their leaves and needles. Like other parts of your home, defensible space requires maintenance. Use the following checklist each year to determine if additional work or maintenance is necessary.

DEFENSIBLE SPACE AND FIREWISE ANNUAL CHECKLIST

- ✓ Grass and weeds are mowed to a low height (mow early in the morning).
- ✓ Attic, roof, eaves and foundation vents are screened and in good condition. Stilt foundations and decks are enclosed, screened or walled up.
- ✓ Trees and shrubs are properly thinned and pruned within the defensible space. Slash from the thinning has been disposed of properly.
- ✓ Roof and gutters are clear of debris.
- ✓ Branches overhanging the roof and chimney are removed.
- ✓ Chimney screens are in place and in good condition.
- ✓ An outdoor water supply is available, complete with a hose and nozzle that can reach all parts of the house. Fire extinguishers are checked.
- ✓ The driveway is wide enough. The clearance of trees and branches is adequate for fire and emergency equipment. (Check with your local fire department.)
- ✓ Road signs and your house number are posted and easily visible.
- ✓ There is an easily accessible tool storage area with rakes, hoes, axes, and shovels for use in case of fire.
- ✓ Practiced family fire drills and fire evacuation plan. Escape routes, meeting points and other details are known and understood by all family members.
- ✓ Trash and debris accumulations are removed from the defensible space.



Clean Gutters and Roof



Enclose Decks

Maintain Chimneys

3 http://www.ext.colostate.edu/PUBS/natres/06302.html, referenced 7/07

ACTION ITEMS

- **Priority Level High.** Conduct individual structure assessments as soon as possible. Please see **Appendix B** for more detailed community information. This data should facilitate the following important fire management practices:

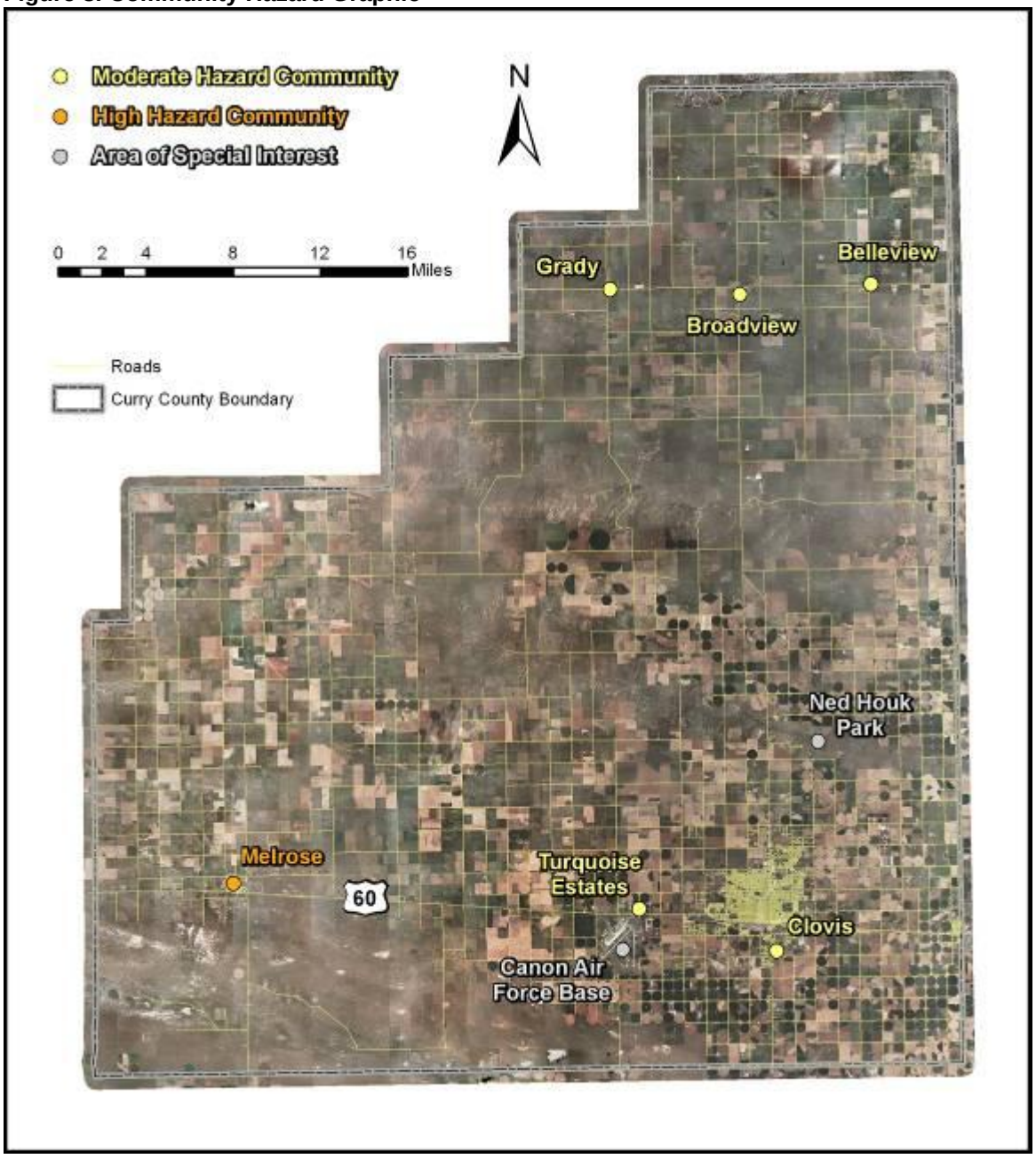
    - Establish a baseline hazard assessment for homes in these communities
    - Educate the community through the presentation of these assessments at neighborhood public meetings
    - Identify defensible space needs and other effective mitigation techniques
    - Identify and facilitate "cross-boundary" projects such as fuels modification projects within the CRP grass sections adjacent to the community
    - Develop a Pre-Attack/Operational Plan and eventually the entire county area. A pre-attack plan assists fire agencies in developing strategies and tactics that will mitigate incidents that occur.

- **Priority Level High.** Ensure that reflective address signs are present. Some homes will need signs at both the home and driveway. (See **Appendix D** for recommendations.)

- **Priority Level High**. Use the structure triage methodology provided in **Appendix C** to identify homes not likely to be defendable.

- **Priority Level High**. Create a brochure to promote defensible space and fire safety specifically for landowners and homeowners in grasslands.

Figure 8. Community Hazard Graphic



FUELS TREATMENTS

One of the most effective forms of landscape-scale fuels modification is the fuel break. A fuel break is an easily accessible strip of land of varying width (depending on fuel and terrain) in which fuel density is reduced, thus improving fire control opportunities. The use of fuel breaks under normal burning conditions can limit the uncontrolled spread of fires and aid firefighters in slowing the spread rate. Under extreme burning conditions, even the best fuel breaks are not effective, but they will help to eventually slow the spread of the advancing fire front.

To date, there are well over 200,000 acres of **Conservation Reserve Program** (CRP) grass within Curry County. The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices.[4]

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

Critical infrastructure was deemed not at risk by the core team. This is primarily due to the lack of heavier type of fuels (brush and timber). For improvements which may become a hazard, the general recommendation would be to create defensible space following the exact specifications as shown in the Reducing Structure Ignitability section, beginning on page 21.

ACTION ITEMS

- **Priority Level Very High.** Work with the New Mexico Department of Transportation (NM-DOT) to promote the highest degree of Right of Way (ROW) maintenance that their budget allows.

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

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

- **Priority Level High.** Encourage state and local Farm Service Agency offices to provide CRP program oversight to ensure appropriate management practices are followed and to create cost-share programs that encourage landowners to treat fuels and reduce fire hazard near communities and values at risk.

- **Priority Level High.** Work with the Central Curry Soil and Water Conservation District to obtain grants to treat noxious weeds and create fuel breaks within and adjacent to highway right-of- ways.

- **Priority Level Moderate.** Task an individual with locating and mapping the 209,000 acres of CRP grass parcels. This will help to identify those areas of elevated fire behavior potential which could serve to boost the initial attack response. USDA, Farm Service Agency advises that Curry County CRP grasslands are being mapped in 2007 with certified digitized data being available as early as January 2008.

RECOMMENDATIONS

- **Priority Level High.** The following areas are recommended to be mowed during times of high fire danger. Further ground truthing and funding may dictate adding to this list.

  ROAD TREATMENTS: (The list is arranged in order of priority)

  Specification:
  Minimum width along each side of 20 feet, height mowed to 5 inches

  A. Hwy 467.
  B. Hwy 267 / 268.
  C. US 60.
  D. Hwy 224.
  E. Hwy 311.
  F. Hwy 288.
  G. CR AB.
  H. Hwy 209.
  I. Hwy 241.
  J. Hwy 469.
  K. Ned Houk Park.

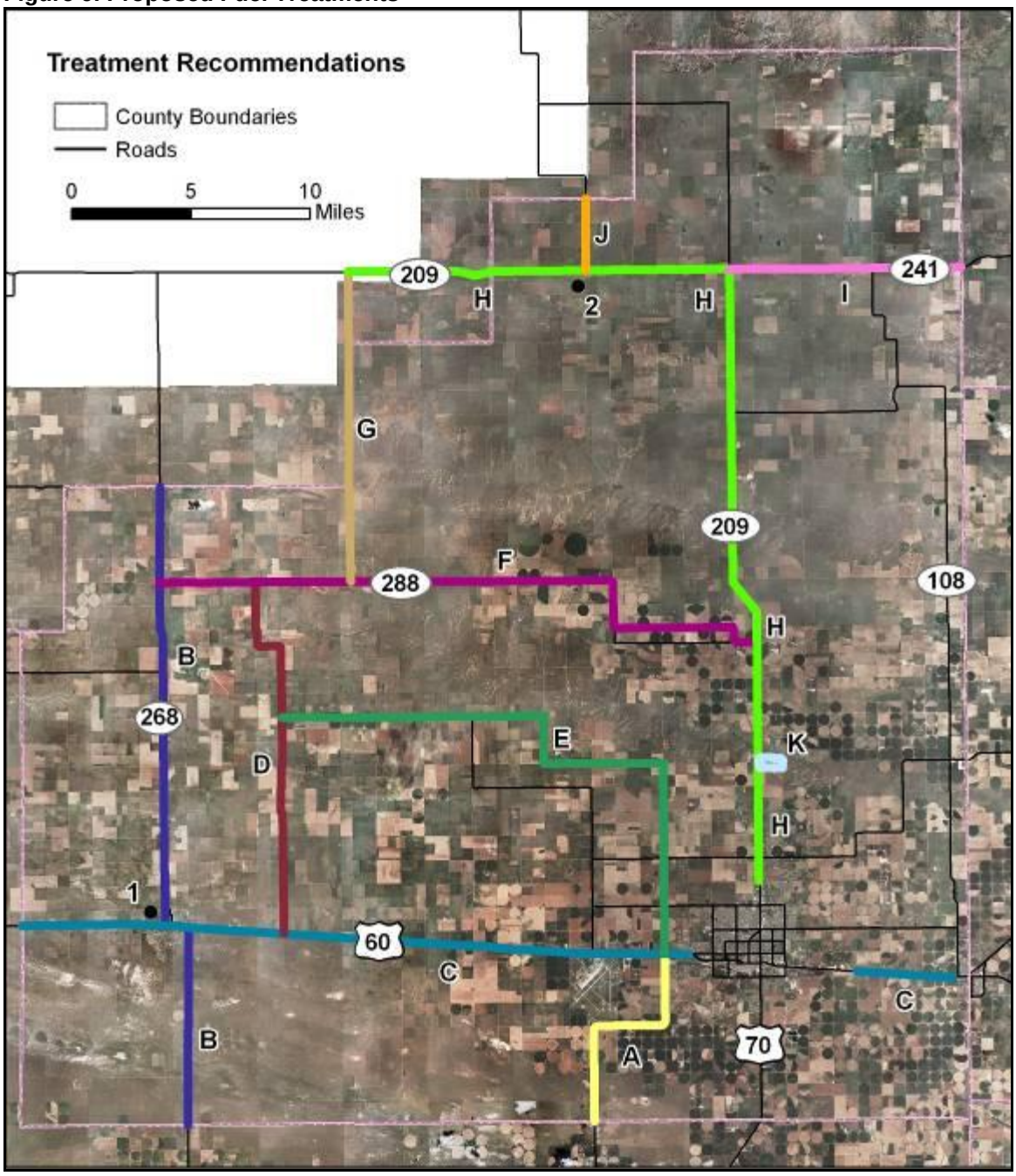
  FUEL BREAKS:

  Specification:
  Minimum width of 50 feet, height mowed to 5 inches.

  (1) Melrose – west side
  (2) Grady – west/south side

NOTE: Land ownership will determine the exact locations of the fuel breaks.

Figure 9. Proposed Fuel Treatments



LOCAL PREPAREDNESS AND FIREFIGHTING CAPABILITIES

Curry County fire suppression is provided by a mixture of rural fire departments and municipal / city fire departments. Field, Broadview/Bellview (Rosedale), and Pleasant Hill represent the rural fire departments. Melrose, Grady, Texico, and the City of Clovis provide services to their respective municipalities. Cannon Air Force Base provides emergency services to the air base and is available to the county for mutual aid. The County Road Department has a fleet of road graders housed around the county which are dispatched as a fire resource. Of particular mention is the fact that the working relationship between the rural fire departments and the municipal / city fire departments when faced with wildland fires is quite good.

Large wind driven fires that burn in the short and tall grass are suppressed using the strategy and tactics of mobile attack. Most fires are attacked directly with water apparatus (usually with personnel directing water streams while riding atop the apparatus), road graders in a flanking action or a combination of both. While the strategy and tactics are mostly effective, the safety of personnel is in question. Through the years numerous firefighters across the nation have been injured or killed when involved in suppression operations of the above described nature (riding atop apparatus). With the adoption of less dangerous tactics and the re-tooling of apparatus water handling systems, most fire departments are trending away from the need to place firefighters at undue risk riding atop apparatus.

During the meeting of the interested parties in September one of the most important discussion topics was that of funding for future fire apparatus purchases and maintenance of current fire apparatus. State and county funds have been available at times to assist, but budget cuts and other issues have surfaced that now raise questions of the validity of that funding.

Table 5. Current Fire Resources

Community	Unit No.	Type	Pump Size	Tank Size	Pump & Roll	Comments
CURRY COUNTY						
Broadview	201	Engine	1000	1000	Yes	Generator
1 Station	205	Tender	750	1500	Yes	Water Supply
9,000 gallon						Porta Tank
Water Storage	209	Brush	70	250	Yes	4 X 4, Ext. Equip
1 Station at	202	Engine	1250	1000	Yes	
Rosedale/Bellview	207	Brush	150	225	Yes	4 X 4/ Foam/Broadview # 2
No Water Storage						4 X 4/Broadview # 2
Field	401	Engine	500	1250	Yes	
1 Station	402	Engine	1000	1500	Yes	4 X 4, Freightliner Brush
18,000 gallon	405	Tender	1000	3000	No	Water Supply,2 Porta-tanks
Water Storage	408	Brush	70	300	Yes	4 X 4
	Rescue		N/A	N/A	N/A	Light Ext Equip.
Pleasant Hill	701	Engine	1250	1000	Yes	Monitor, 4-wheel drive
	705	Tender	250	2500	Yes	Porta-tank
	706	Tender	250	1760	Yes	Porta-tank, All wheel drive
1 Station						
24,000 gallon						
Water Storage	Rescue		N/A	N/A	N/A	Light Ext. Equip.
Curry County		3				Road graders
Road Department		Facilities				Blade/Cut Fire Lines
MUNICIPALITIES						
Grady	300	Command				Suburban Command Vehicle
	301	Engine	1250	1200	Yes	
1 Station	302	Engine	750	750	Yes	Extrication Equip
Hydrants	305	Tender	250	1200	Yes	Water and porta-tank
	306	Tender	525	1200	Yes	2-1/2 ton 6x6, All Wheel Dr.
ETA June 2008	307	Brush	525	1200	Yes	5 ton 6x6, All Wheel Dr.
	Amb		N/A	N/A	N/A	
Texico	501	Engine	1000	1250	Yes	
	502	Engine	1000	1250	Yes	
2 Stations	504	Engine	500	1250	Yes	4 X 4/Porta Tank/Foam
Hydrants	505	Tender	4000	650	Yes	Cascade/RescueTools
	508	Brush	300	250	Yes	Porta Tank
	Amb		N/A	N/A	N/A	4 X 4
	Amb		N/A	N/A	N/A	ALS
	Burn Tr					ALS
						Live Burn Trailer

Community	Unit No.	Type	Pump Size	Tank Size	Pump & Roll	Comments
Clovis	E-1	Engine	1500	750	No	1500' 5" Hose, Monitor Ext. equip.
	T-2	Engine	1500	500	No	1300' 5" Hose, Monitor
5 Stations	E-3	Engine	1250	750	Yes	1500' 5" Hose, Monitor,awd
Hydrants	E-4	Engine	1500	750	No	1300' 5" Hose, Monitor
	E-44	Engine				
	605	Brush	500	2000	Yes	Porta Tank, Monitor
	608	Brush	500	750	Yes	4 X 4
	Snorkel1		1500	380	No	75' Snorkel
	Rescue		N/A	N/A	N/A	Extrication Equip.
	606	Tender	400	2000	No	2- 2000 gal. folding tanks
	E-11	Engine	1250	750	Yes	1300" 5" hose
	Amb 1		N/A	N/A	N/A	ALS
	Amb 2		N/A	N/A	N/A	ALS
	Amb 3		N/A	N/A	N/A	ALS
	Amb 4		N/A	N/A	N/A	ALS
	Amb 5		N/A	N/A	N/A	ALS
	Amb 22		N/A	N/A	N/A	ALS
	Amb 33		N/A	N/A	N/A	ALS
	Amb 44		N/A	N/A	N/A	ALS
	Amb 55		N/A	N/A	N/A	ALS
Melrose	101	Engine	1000	750	Yes	Monitor
1 Station	102	Engine	1250	1000	Yes	Cascade,hose,Thermal IM
Hydrants	108	Brush	125	275	Yes	
	103	Engine	1500	500	No	
	106	Tender		6500		Pump/Quick dump/Draft
	Rescue		N/A	N/A	N/A	Ext. Equipment-generator lighting
	Amb. 1		N/A	N/A	N/A	ILS/Cell - 760-4953
	Amb.		N/A	N/A	N/A	ILS/Cell-760-6657
Cannon AFB	Crsh 8					Out of Service
Hydrants	Crsh 9		950	1000	Yes	130 Gal 3% AFFF
	Crsh 23		2000	3300	Yes	500 Gal 3% AFFF
	Rescue 10					Jaws, Air, Extrication Equipment
	E-9	Engine	1250	750	No	50 Gal 3% AFFF
	E-22	Engine	1000	600	No	55 Gal 3% AFFF, 1000' 5"
	E-24					Out of Service
	Tnk-26	Tender	1250	500	No	Quick Dump, & 5000 Gal Porta Tnk
	HazMat1					1 1/2 truck to pull HazMat Tr.
	Decon 1					For pulling Decon Trailer
	Tnk-18		500	2000	Yes	Melrose Bombing Range
	M-35			500	Yes	Melrose Bombing Range

Training has been provided in the past by both the New Mexico State Forestry and wildfire instructors from Texas to departments within Curry County. The Cannon AFB Wildland Fire Specialist may be a local training provider. There is a recognized need for additional wildfire training. During the interested party meeting the utilization of fire weather data, fire behavior predictions, and the addition of indirect fire attack tactics was discussed. There will be a need for more advanced training so as to ensure the highest amount of success when incorporating this new or seldom used information into the current fire operation strategies.

The City of Clovis Police Department provides emergency police and fire communications. The Police Radio Dispatch facility operates 24 hours, seven days a week using Computer Aided Dispatching. While the Clovis Police and Fire Departments are the main focus, they also dispatch and monitor fire frequencies for Curry County area fire and EMS services.[5] Communication issues were brought forward during the meeting of the interested parties in September.

ACTION ITEMS:

FIREFIGHTER TRAINING

- **Priority Level High.** Provide education and experience for all firefighters including:
    - I-100 (basic ICS) for all firefighters and I-200 (Intermediate ICS) for all fire officers. NIMS courses could satisfy these recommendations.
    - A Curry County tailored Basic Wildland Firefighting and Fire Behavior (NWCG S-130/190) for all City and County fire department members. This should be primarily grass fire fighting with a heavy emphasis on safety and plains type weather.
    - At a minimum, have the safety and structure triage units from S-215 Fire Operations in the Urban Interface presented to all City and County fire department members.
    - Organize and facilitate table-top or sand-table wildfire exercises with many agencies attending.
    - Organize and facilitate an annual wildfire interface training exercise within the communities outlined in this CWPP. Encourage multi-agency participation.
    - Encourage personnel to participate in out-of-county training opportunities.

5 http://www.police.cityofclovis.org/comms.html; referenced 10-8-07

Firefighter Safety

- **Priority Level High.** Provide minimum wildland Personal Protective Equipment (PPE) for all career and volunteer firefighters. (See NFPA Standard 1977 for requirements).

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

- **Priority Level High.** Encourage line and chief officers to participate in the Local Emergency Planning Committee (LEPC). Create and use a Type 3 Incident Management Team/Group for fire incidents

Dispatch / Communications

While it appears that a large percentage of the communication problems are slowly being resolved, a number still exist. Communication problems are very commonly linked to tragic results in regard to firefighter safety. To better prioritize the following recommendations, the funding available will need to be known.

- **Priority Level High.** The communications center needs to take an active role in providing county familiarization to their dispatchers. Request assistance from the county fire chiefs, who can provide first hand information. Consider sponsoring a "communications center open house" so as to encourage a tighter working relationship. Have the ability to program radios during evening hours when volunteer agencies are more available.

- **Priority Level High.** The communications center should have the ability to broadcast the daily fire danger to all departments (fire & roads). A system will need to be created and the NMSF may be of assistance. This could be used similar to tornado warning procedures.

- **Priority Level High.** Require a fire department chief officer respond to the dispatch center to provide technical assistance to the dispatchers during extended incidents. This would also be useful on all–hazard type incidents.

- **Priority Level High.** Publish a communication plan. List frequencies that will be used during a multi-agency incident. Also, plan for multiple incidents. Use clear text to describe the frequencies rather than the channel number. Consider programming radios with the same frequencies by channel number. Adopt and implement the Strategic Statewide Interoperability Communications Plan maintained by the New Mexico Department of Homeland Security-Office of Emergency Management.

- **Priority Level High.** New equipment received needs to be programmed and distributed to the field. Have the ability to program radios on-site when the fire departments conduct inter-agency trainings.

- **Priority Level High.** Inventory radio equipment and develop a replacement list and a list of needs. Investigate Homeland Security grants for communication purchases.

- **Priority Level High.** Acquire an 800 MHz / VHF interoperability “black box” such as the ACU 1000. Newer technology may exist and should be researched before purchasing. This type of device quickly permits the user to patch together multiple radio frequencies into one common channel. As mentioned above this could be used to assist with the communication incompatibility between the Curry County fire departments, the road department, and out-of-county resources. Investigate Homeland Security grants for communication purchases.

- **Priority Level High.** Investigate the need for an additional repeater site near the town of Grady. Investigate Homeland Security grants for communication purchases.

- **Priority Level High.** Alleviate confusion when people call into dispatch to advise that they are conducting an open burn. Develop a procedure with Clovis dispatch to notify fire districts.

- **Priority Level Moderate.** Contact the Plateau Cellular Phone Company to inquire if it is possible to secure a cellular phone cache (including mobile towers) for times of county wide emergencies.

Equipment

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

- **Priority Level High.** Develop an equipment maintenance and replacement plan.

- **Priority Level Moderate.** Task an individual with “type converting” all county apparatus (i.e. brush truck = type 6 engine). The typing scheme should follow the National Incident Management System (NIMS) model. This will help to serve future Homeland Security requirements. Cannon Air Force Base should be consulted as they may already be faced with this issue.

WATER SUPPLY

Due to the nature of the wildland fuels in the study area, water is a critical fire suppression resource.

- All municipalities, including Clovis, Grady, Melrose, Texico, are serviced by an adequate hydrant network.

- Most of Cannon Air Force Based is supplied by an adequate hydrant network, but the community of Turquoise Estates on Cannon AFB relies on a water tender shuttle from hydrants in Chavez Manor subdivision.

- Broadview has a 9,000 gallon water storage tank located at the main fire station. The tank is located on the ground and does not have a gravity flow.

- The community of Bellview does not have local water storage. The community has a fire district sub-station (Rosedale) but relies on the water storage tank located at the main fire station in Broadview.

- The Field Fire District has an 18,000 gallon gravity flow water storage tank at the main fire station.

- The Pleasant Hill Fire District has a 24,000 gallon gravity flow water storage tank at the main fire station.

Figure 10. Water storage tank, Grady, NM

- The City of Clovis Fire Department and Curry County are in the process of mapping private water sources, primarily located at local dairies that are able to provide mobile water shuttle water for fire suppression.

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

ACTION ITEMS:

- **Priority Level High.** A secondary means of retrieving water from the storage tanks in the event of a power outage should be considered. Some communities currently have a couple of different means. No matter the means, it is recommended that all elevated water tanks be able to flow water without the electric pumping system.
  - Piping allowing the water to flow freely via gravity pressure from the tanks.
  - Piping connections that allow the fire apparatus to “pull” the water out via a drafting operation.
- **Priority Level High.** Ensure hydrants are operational. Test hydrants annually, and guarantee that they are obstruction free and visible.

Figure 11. Poorly Visible, Obstructed Hydrant

AREAS OF SPECIAL INTEREST

INTRODUCTION

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

Figure 12. Ned Houk Park

NED HOUK PARK

Ned Houk Park is owned by the City of Clovis and is located north of the city. It is comprised of 3320 acres of grassland, ponds, and trees and is part of Running Water Draw.

RECOMMENDATIONS

- Mow grass and weeds along roads and trails to a low height of 5 inches. This should be a minimum of 10 feet from the edge of the road or trail.
- All buildings and improvements adjacent to wildland fuels should follow the recommendations as outlined within the “Reducing Structural Ignitability” section.
- The public should be provided with wildfire educational materials available at the entrance or other suitable location. Install “Smokey Bear” sign.
- Fire danger signage should also be posted at the entrance. The fire danger for the day should be displayed, and this information will need to be kept current.

Frio Draw

Frio Draw is a major drainage that runs from the northwest to the southeast in the northern 1/3rd of the county. The Frio Draw is included as an area of interest because it presents unique problems due to restricted access, poor roads, sandy soils, rolling topography and brushy fuel type with cottonwood trees that can make fire suppression very difficult. The ownership is private and state land. There are a few ranch compounds located in the draw that are at risk from wildfire. One major problem area in Frio Draw is located between New Mexico State Highway 209 and 108.

RECOMMENDATIONS

- Develop fire protection pre-attack plan that recognizes the unique problems for fire suppression. Use "Brush" trucks vehicles with all wheel drive.
- Contact private landowners and State Land Office to ensure access for fire suppression.

CANNON AIR FORCE BASE

Home of the 27th Special Operations Wing (27th SOW), Cannon Air Force Base is named after General John Kenneth Cannon, a World War II Mediterranean combat commander and former chief of U. S. Air Forces in Europe. The missions of the wing include infiltration, ex-filtration and re-supply of special operations forces; air refueling of special operations rotary wing and tilt-rotor aircraft; and precision fire support. These capabilities support a variety of special operations missions including direct action, unconventional warfare, special reconnaissance, counter-terrorism, personnel recovery, psychological operations and information operations.[6]

RECOMMENDATIONS

- Coordinate these recommendations with the base Wildland Fire Specialist.
- The advanced notification system should be maintained to advise Curry County fire departments when the bombing range has a fire start. This "courtesy call" serves to give all levels of emergency responders advance notice of an impending fire situation.
- Mow grass and weeds along roads to a low height consistent with the U.S. Air Force Bird Airstrike Regulations.
- All buildings and improvements adjacent to wildland fuels should follow the recommendations as outlined within the "Homes Mitigation section."
- Wildfire education materials should be made available to the public at the entrance or at other suitable locations.
- Fire danger signage should be posted and the information should be kept current.

6 http://www.cannon.af.mil/

GLOSSARY

The following definitions apply to terms used in the Curry County Community Wildfire Protection Plan.

1 hour Timelag fuels: Grasses, litter and duff; <1/4 inch in diameter.

10 hour Timelag fuels: Twigs and small stems; ¼ inch to 1 inch in diameter.

100 hour Timelag fuels: Branches; 1 to 3 inches in diameter.

1000 hour Timelag fuels: Large stems and branches; >3 inches in diameter.

ArcGIS 9.x: Geographic Information System (GIS) software designed to handle mapping data in a way that can be analyzed, queried, and displayed. ArcGIS is in its ninth major revision and is published by the Environmental Systems Research Institute (ESRI).

Defensible Space: An area around a structure where fuels and vegetation are modified, cleared, or reduced to slow the spread of wildfire toward or from the structure. The design and distance of the defensible space is based on fuels, topography, and the design/materials used in the construction of the structure.

Energy Release Component: An index of how hot a fire could burn. ERC is directly related to the 24-hour, potential worst case, total available energy within the flaming front at the head of a fire.

Extended Defensible Space (also known as Zone 3): A defensible space area where treatment is continued beyond the minimum boundary. This zone focuses on forest management with fuels reduction being a secondary consideration.

Fine Fuels: Fuels that are less than ¼ inch in diameter such as grass, leaves, draped pine needles, fern, tree moss, and some kinds of slash which, when dry, ignite readily and are consumed rapidly.

Fire Behavior Potential: The expected severity of a wildland fire expressed as the rate of spread, the level of crown fire activity, and flame length. Fire Behavior Potential is derived from fire behavior modeling programs using the following inputs: fuels, canopy cover, historical weather averages, elevation, slope, and aspect.

Fire Danger: Not used as a technical term in this document due to various and nebulous meanings that have been historically applied.

Fire Hazard: Given an ignition, the likelihood and severity of Fire Outcomes (Fire Effects) that result in damage to people, property, and/or the environment. Fire Hazard is derived from the Community Assessment and the Fire Behavior Potential.

Fire Mitigation: Any action designed to decrease the likelihood of an ignition, reduce Fire Behavior Potential, or to protect property from the impact of undesirable Fire Outcomes.

Fire Outcomes (aka Fire Effects): A description of the expected effects of a wildfire on people, property, and/or the environment based on the Fire Behavior Potential and physical presence of Values at Risk. Outcomes can be desirable as well as undesirable.

Fire Risk: The probability that an ignition will occur in an area with potential for damaging effects to people, property, and/or the environment. Risk is based primarily on historical ignitions data.

Flagged Addressing: A term describing the placement of multiple addresses on a single sign, servicing multiple structures located on a common access.

FlamMap: A software package created by the Joint Fire Sciences Program, Rocky Mountain Research Station. The software uses mapped environmental data such as Elevation, Aspect, Slope, and Fuel Model, along with fuel moisture and wind information, to generate predicted fire behavior characteristics such as Flame Length, Crown Fire Activity, and Spread Rate.

Flame Length: The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface) – an indicator of fire intensity.

Fuelbreak: A natural or constructed discontinuity in a fuel profile used to isolate, stop, or reduce the spread of fire. Fuelbreaks may also make retardant lines more effective and serve as control lines for fire suppression actions. Fuel breaks in the WUI are designed to limit the spread and intensity of crown fire activity.

ICP (Incident Command Post): The base camp and command center from which fire suppression operations are directed.

ISO (Insurance Standards Office): A leading source of risk information to insurance companies. ISO provides fire risk information in the form of ratings used by insurance companies to price fire insurance products to property owners.

Jackpot Fuels: a large concentration of discontinuous fuels in a given area such as a `slash pile.

Slash: Debris left after logging, pruning, thinning, or brush cutting; includes logs, chips, bark, branches, stumps, and broken understory trees or brush.

Spotting: Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

Structural Triage: The process of identifying, sorting, and committing resources to a specific structure.

Surface Fire: A fire that burns on the surface litter, debris, and small vegetation on the ground.

Timelag: Time needed under specified conditions for a fuel particle to lose 63 percent of the difference between its initial moisture content and its equilibrium moisture content.

Values at Risk: People, property, ecological elements, and other human and intrinsic values within the project area. Values at Risk are identified by inhabitants as important to the way of life of the study area and are specifically susceptible to damage from undesirable fire outcomes.

WHR (Community Wildfire Hazard Rating. AKA Community Assessment): A fifty-point scale analysis designed to identify factors which increase the potential for and/or severity of undesirable fire outcomes in WUI communities.

WUI (Wildland Urban Interface): The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Sometimes referred to as Urban Wildland Interface, or UWI.