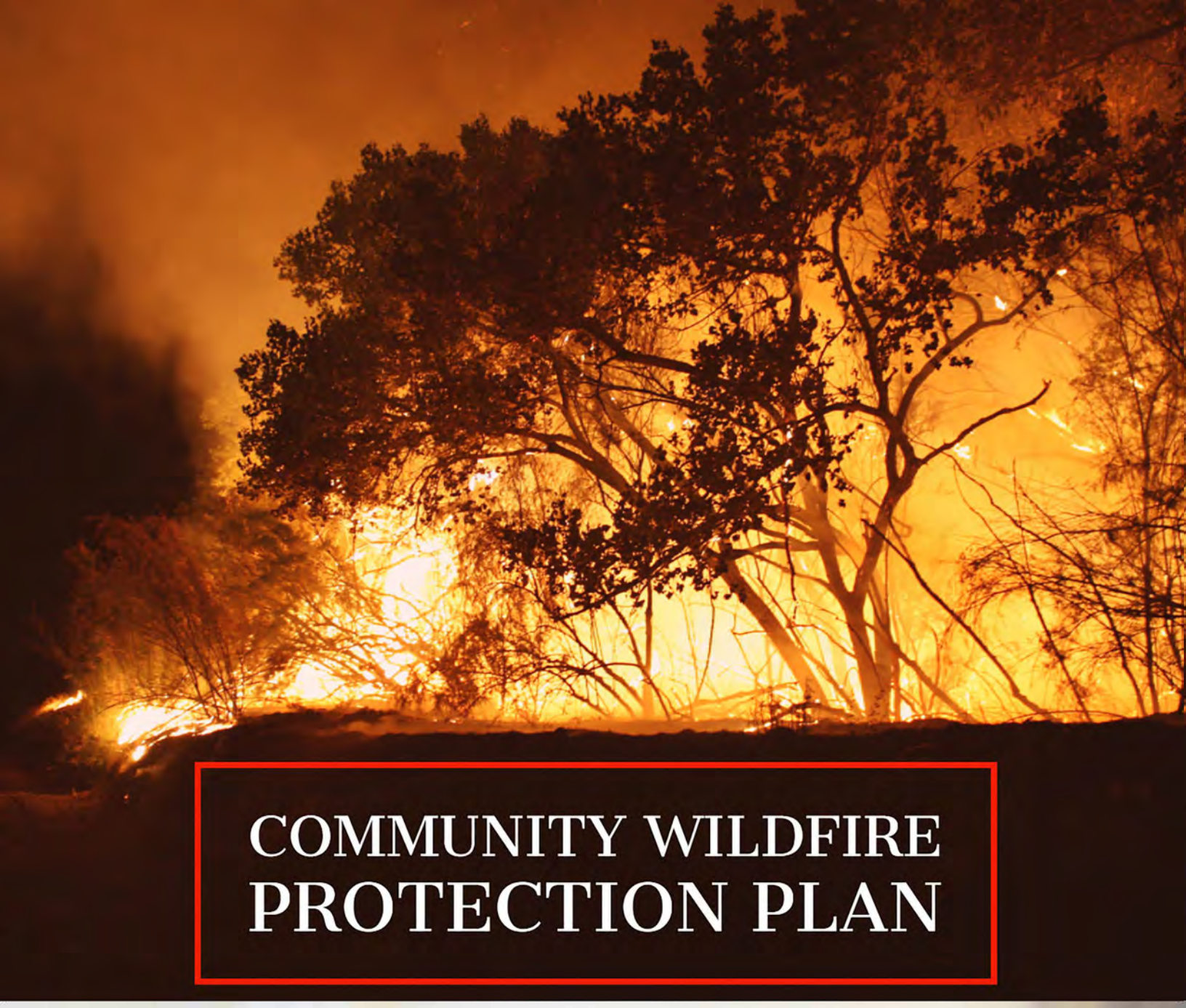

COMMUNITY WILDFIRE PROTECTION PLAN

Valencia County
New Mexico

June
2018

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EXECUTIVE SUMMARY

This Valencia County Community Wildfire Protection Plan (VCCWPP) addresses hazards and risks of wildland fire throughout Valencia County (hereafter referred to as the County) and makes recommendations for fuel reduction projects, public outreach and education, structural ignitability reduction, and fire response capabilities. The County comprises a diverse landscape and landownership, but a population with one common concern, the need to prepare for wildfire to reduce the risk of loss of life and property.

Community members in the County are familiar with large fires, as several have occurred in recent years, including the Rio Grande Complex (2000), the Belen Fire (2007), and the Trigo fire (2008). This VCCWPP has been developed to assist the County in ensuring that a catastrophic wildfire will be avoided in the future by assessing areas at risk and recommending measures to decrease that risk.

The purpose of the VCCWPP is to assist in protecting human life and reducing property loss due to wildfire throughout the County. The plan is the result of a community-wide wildland fire protection planning process and the compilation of documents, reports, and data developed by a wide array of contributors. This plan was compiled in 2017/2018 as an update to the original 2012 VCCWPP. Both versions of the VCCWPP were developed in response to the federal Healthy Forests Restoration Act (HFRA) of 2003.

The VCCWPP meets the requirements of the HFRA by:

1) Having been developed collaboratively by multiple agencies at the state and local levels in consultation with federal agencies and other interested parties.
2) Prioritizing and identifying fuel reduction treatments and recommending the types and methods of treatments to protect at-risk communities and pertinent infrastructure.
3) Suggesting multi-party mitigation, monitoring, and outreach.

4) Recommending measures and action items that residents and communities can take to reduce the ignitability of structures.

5) Soliciting input from the public on the Draft VCCWPP.

A group of multi-jurisdictional agencies (tribal, federal, state, and local), organizations, and residents joined together as a Core Team to develop this CWPP Update. Many of these Core Team members had been part of the previous planning process in 2012 and were also part of a CWPP planning process for the Middle Rio Grande Bosque Community Wildfire Protection Plan (MRGBCWPP), that incorporated the entire Valencia County Bosque. Core Team members have also had many years of experience working in fire management in the County.

The planning process has served to identify many physical hazards throughout the County that could increase the threat of wildfire to communities. During development of the 2012 plan, the public helped to identify community values that it would most like to see protected. By incorporating public and Core Team input into the recommendations, treatments are tailored specifically for the County. The VCCWPP emphasizes the importance of collaboration among multi-jurisdictional agencies in order to develop fuels mitigation treatment programs to address wildfire hazards. The County has a committed team of career and volunteer firefighters, who work arduously to protect the life and property of citizens, but without homeowners taking on some of the responsibility of reducing fire hazards in and around their own homes, these resources are severely stretched. A combination of homeowner and community awareness, public education, and agency collaboration and treatments are necessary to fully reduce wildfire risk.

A significant amount of fire mitigation work has been completed by the County and other stakeholders since the 2012 VCCWPP was completed. These actions include but are not limited to- fuel reduction work in the Rio Grande bosque to reduce the potential for catastrophic wildfire; the completion of defensible space treatments in the wildland urban interface to reduce the potential for structural ignitability; expansion of firefighting capability through the procurement of funds to purchase vital firefighting equipment to support the many fire departments throughout the county; and the development of emergency management plans to support safe and effective evacuation of people and animals in the event of a wildfire or other emergency.

Some of the highest risk areas identified in this VCCWWP are communities located within and adjacent to the Rio Grande bosque. Wildland fire is historically an intermediate disturbance in riparian forests of the southwestern United States and not part of a semi-annual disturbance regime, like flooding. More recently, wildfires have become a key component of the bosque ecosystem, as the natural hydrologic regime has been altered and invasive species have become more common throughout the area. Treatments to fuels in these bosque areas contribute to decreasing the likelihood of wildfire's negative impacts on communities in the County WUI. Continued preventive activities are needed however to further reduce the negative impacts that wildland fire can have on communities and community members living in the WUI.

Some residents that live outside of the bosque are also prone to high wildfire risk. Communities located in grassland and shrubland areas of the County need to prepare for fast paced wildfire spread in these fine fuels. Recommendations for improving wildfire mitigation in these communities may include focusing on actions to reduce the presence of weeds in WUI communities, encouraging residents to mow borders around their property; encouraging residents to harden their homes to potential flame impingement from fast moving grass fires; and, equipping fire departments to respond quickly to these fast-paced wildfire events.

The VCCWPP provides background information, a risk assessment, and recommendations. Unlike the 2012 CWPP much of this background information is housed in several appendices to the main document to focus the main document on analysis and action items. Chapter 1 provides a general overview of CWPPs and describes actions that have been taken to mitigate wildfire risk since 2012, Chapter 2 presents an overview of the fire environment and specific information about fuel types, Chapter 3 describes the results of the risk assessment and community descriptions, and Chapter 4 provides recommendations broken down by the 3 main goals of the National Cohesive Wildfire Strategy- Restore and Maintain Landscapes, Create Fire-Adapted Communities and Improve Wildfire Response. Recommendations outlined under each goal include action plans and monitoring strategies for implementing fuels reduction projects, reducing structural ignitability, improving fire response capabilities, and initiating public outreach and education. Chapter 5 describes monitoring strategies and details regarding implementation of actions. The plan does not require implementation of any of the recommendations, however, the message throughout this document is that the greatest fire mitigation could be achieved through the joint actions of individual homeowners and local, state, and federal governments. It is important to stress that this document is an initial step in raising public awareness and treating areas of concern and should serve as a tool in doing so.

The VCCWPP should be treated as a live document to be updated annually or immediately following a significant fire event. The plan should continue to be revised to reflect changes, modifications, or new information. These elements are essential to the success of mitigating wildfire risk throughout Valencia County and will be important in maintaining the ideas and priorities of the plan and the communities in the future.

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ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
APNM	Animal Protection of New Mexico
ATV	all-terrain vehicle
BAER	Burned Area Emergency Rehabilitation
BLM	Bureau of Land Management
BTU/ft/sec	British Thermal Units per foot per second
CARs	Communities at Risk
CFRP	Collaborative Forest Restoration Program
ch/hr	chains per hour
CIG	Conservation Innovation Grants
Cohesive Strategy	National Cohesive Wildland Fire Management Strategy
County	Valencia County
CVARs	Community Values at Risk
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
DEM	digital elevation model
DHS	Department of Homeland Security
EAS	Emergency Alert System
EMS	Emergency Management System
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ESRI	Environmental Systems Research Institute
FAC	Fire-adapted Community
FEMA	Federal Emergency Management Agency
FLAME	Federal Land Assistance, Management and Enhancement Act
FP&S	Fire Prevention and Safety
FRCC	Fire Regime Condition Class
FRI	fire return interval
GAID	Geographic Area Interagency Division
GIS	Geographic Information System
GPS	global positioning system
HFRA	Healthy Forest Restoration Act
HIZ	Home Ignition Zone
I-25	Interstate 25
ICC	International Code Council
ISO	International Standards Organization
JPA	Joint Powers Agreement
MFI	mean fire interval
MRGCD	Middle Rio Grande Conservancy District
NEPA	National Environmental Policy Act

NFP	National Fire Plan
NFPA	National Fire Protection Association
NIFC	National Interagency Fire Center
NM	New Mexico Highway
NMCC	New Mexico Climate Center
NMDHSEM	New Mexico Department of Homeland Security and Emergency Management
NMDOT	New Mexico Department of Transportation
NM-FPTF	New Mexico Fire Planning Task Force
NMSF	New Mexico State Forestry
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWCG	National Wildfire Coordinating Group
PERI	Public Entity Risk Institute
PNM	Public Service Company of New Mexico
PPE	personal protective equipment
RAWS	remote automated weather station
RFA	Rural Fire Assistance
SAF	Society of American Foresters
SAFER	Staffing for Adequate Fire and Emergency Response
SHPO	State Historic Preservation Office
SWCA	SWCA Environmental Consultants
ULI	Urban Land Institute
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VCC	Vegetation Condition Class
VCCWPP	Valencia County Community Wildfire Protection Plan
VCFD	Valencia County Fire Department
VDEP	Vegetation Departure
VSWCD	Valencia Soil and Water Conservation District
WRCC	Western Regional Climate Center
WUI	wildland urban interface
WUIWT	Wildland Urban Interface Working Team

CHAPTER 1. INTRODUCTION

Based on feedback from the Community Wildfire Protection Plan (CWPP) Core Team, the structure of this 2018 CWPP update has been changed to create a more streamlined document. Much of the background information used to inform the development of the 2012 plan and 2018 revisions has been moved to various appendices.

The document and appendices are structured as follows:

Chapter 1	The CWPP provides an overview of the activities that have occurred in Valencia County (hereafter referred to as the County) since the 2012 CWPP was developed.
Chapter 2	The fire environment and development of the risk/hazard assessment is described.
Chapter 3	The risk assessment findings, including detailed community assessments are presented.
Chapter 4	Mitigation priorities and project recommendations are structured around the goals of the National Cohesive Wildfire Strategy—1) Restore and Maintain Landscapes (fuel reduction projects; 2) Fire Adapted Communities (public education and outreach and structural ignitability projects); and 3) Wildfire Response (project to improve fire-fighting capability).
Chapter 5	Post-fire actions, monitoring, implementation, and timelines for updating the CWPP are discussed.

Appendix A	Background information on the development of CWPPs is provided.
Appendix B	Background information about the County, including land use, climate, demographics, and natural and cultural resources
Appendix C	Baseline fire data and information regarding the fire behavior modeling process
Appendix D	Map products used in analysis
Appendix E	All wildfire hazard assessment forms
Appendix F	All other supporting documents
Appendix G	Information on funding sources for project implementation

Overview of Valencia County´s Community Wildfire Protection Plan

While ecosystems are able to naturally adapt to wildland fires, communities located amidst forests and grasslands require a plan for preparing for, reducing the risk of, and adapting to wildland fire events. The population in contact with wildland fire is increasingly growing as more people are moving into the wildlands (Bushey 2012). Living in the wildland urban interface (WUI) means that both communities and individuals must learn how to prepare for wildland fires and reduce their negative impacts. A Community Wildfire Protection Plan helps accomplish both goals and attempts to reduce, but not eliminate, the extreme severity or risk of wildland fire. Eliminating all risk is not possible given various uncontrollable factors (such as climate) that affect wildland fire.

In 2012, community members of Valencia County, representing federal, state, and local agencies, expressed an interest and need for community wildfire protection planning and as a result convened to develop a CWPP for the County to seek to reduce the threat to life and property that wildfire poses to communities in the WUI. Information on the evolution of CWPPs and federal policy guiding their development is provided in Appendix A. This 2018 CWPP update was initiated in response to changing wildfire hazards in the County since 2012, as well as to revise the recommended actions and projects proposed in 2012, many of which have been implemented since that plan's inception.

This CWPP, entitled the Valencia County CWPP (or VCCWPP for short), is a countywide plan that evaluates wildfire threat to communities and infrastructure and identifies measures that homeowners, land managers, and fire districts can take to reduce the impact of wildfire to life, property, and other Community Values at Risk (CVARs).

NEED FOR A CWPP

Communities located in a fire's path, from the bosque to the grasslands, will face many questions and challenges in the event of a wildland fire. Fire traverses the landscape without stopping at political boundaries, which presents a need for all communities to prepare for wildfire. Over the last decade the number of acres burned in New Mexico has been highly variable (Figure 1-1). New Mexico wildfire statistics are closely tied to climate and weather patterns, with high fire occurrence coinciding with drought periods, following wet years, and with climatic cycles associated with the El Nino-Southern Oscillation. Since the mid-1900s, the frequency of dry summers has increased, fuels have accumulated as a result of fire suppression, and there are more human-caused ignitions as populations have grown and extended into the wildland urban interface (Ellis 2018).

The cost of fire suppression and post-fire recovery has risen steadily over the last century. The costs for suppressing wildfires on public lands have exceeded the amount appropriated almost every year since 1990, according to the U.S. Government Accountability Office (Wells 2007). The most expensive year on record for wildfire suppression costs across the country was 2017, with over $2 billion spent. Continuous fire activity and the extended length of fire season is blamed for the rising costs (U.S. Department of Agriculture [USDA] 2017). According to data from EMNRD, most wildland fires (97%) occurring in Valencia County are human caused(Table 1-1) Expenditure for the suppression of fires occurring on state and private lands in the County has almost reached 5 million dollars from 2000-2017. During that period, 53% of those fires have been caused by debris burning, costing an estimated $749,985. Other common human causes include, campfires, equipment use, incendiary devices, power lines, and smoking (Figure 1-2).

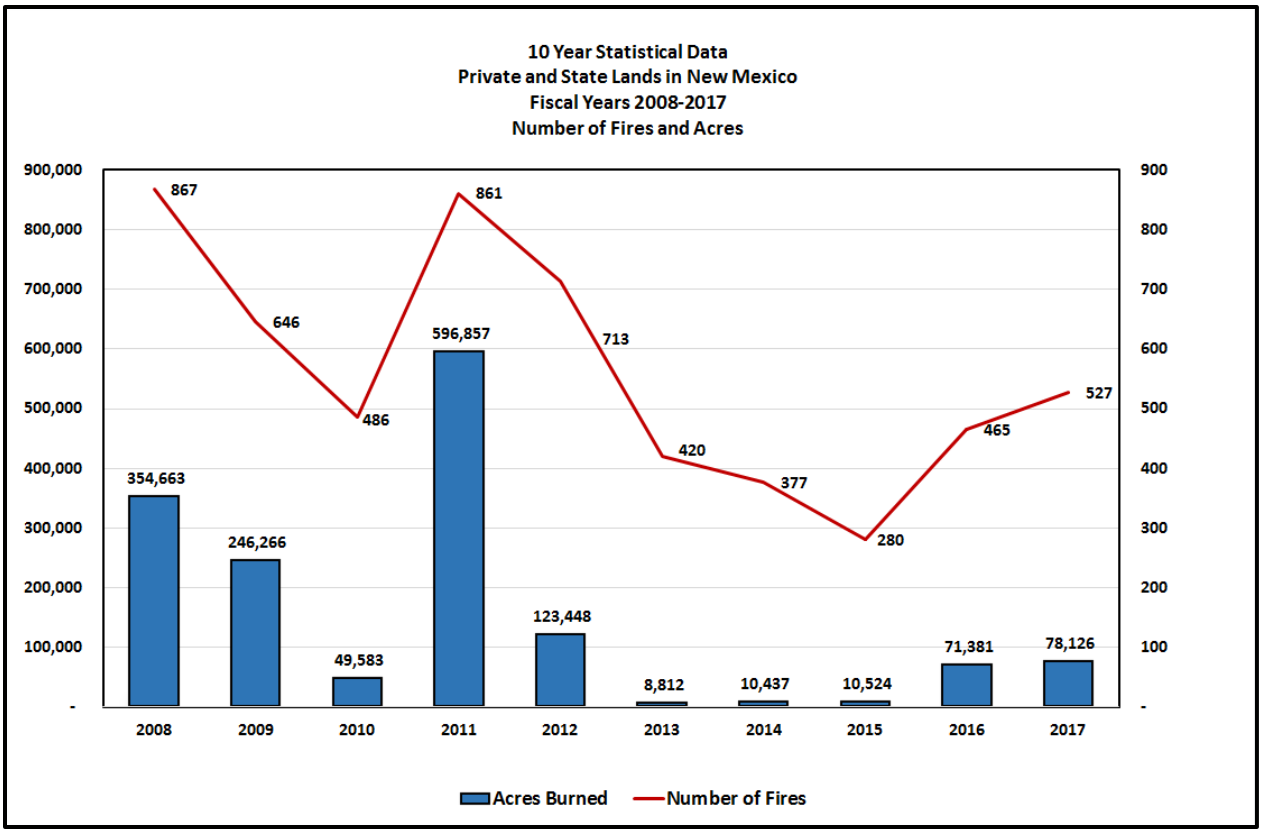

Figure 1-1. Number of fire and acres burned on State and private lands in New Mexico, 2008–2017. Source: EMNRD 2018.

Table 1-1. Valencia County State and Private Wildfire Acres and State Expenditure, 2000-2017 (Source: EMNRD).

Fire Cause	Total Number of Fires	Private Acres Burned	State Acres Burned	Total Acres Burned	Est. State Expenditure
Cause Not Designated	2	3,988	0	13,709	$3,369,423
Human Caused	930	2,572	854	3,934	$1,403,404
Natural Caused	27	711	81	2,245	$146,856
Total	**959**	**7,271**	**935**	**19,888**	**$4,919,683**

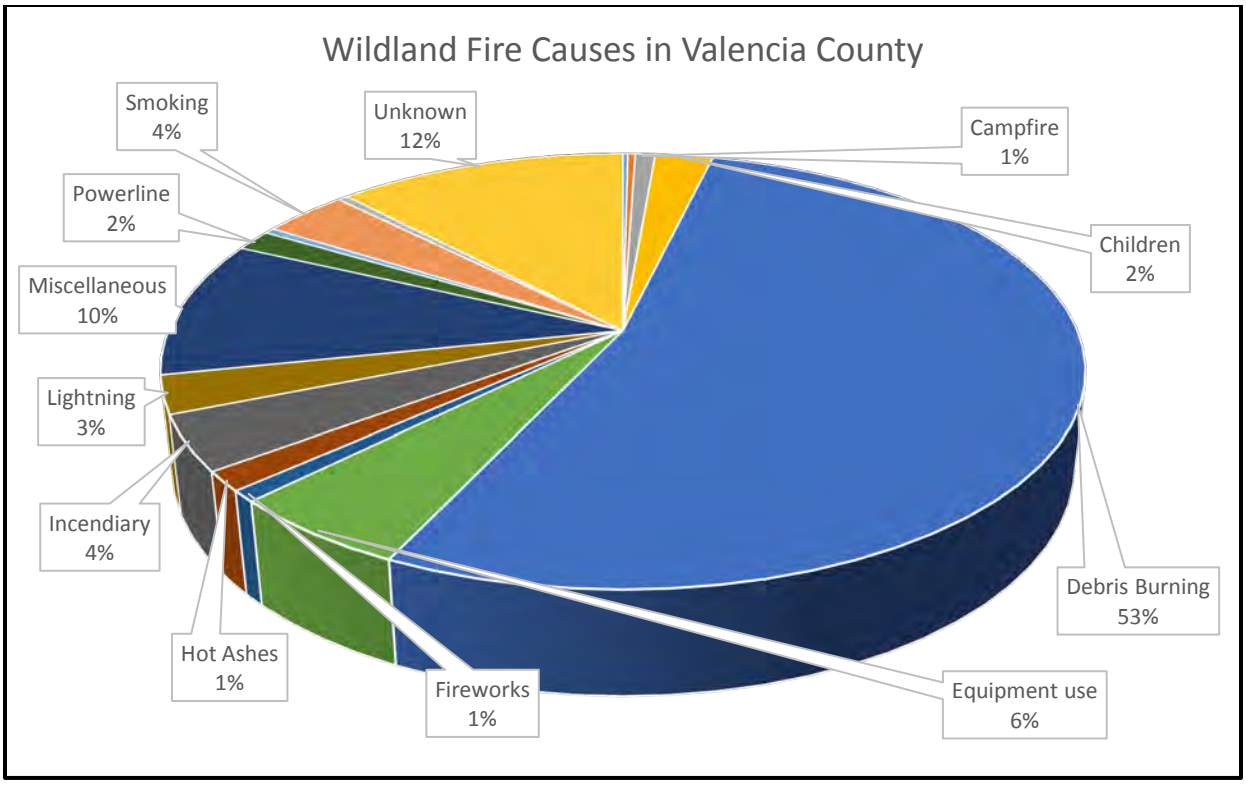

Figure 1-2. Wildland fire causes in Valencia County from 2000-2017. Source: EMNRD. Note- Percentages less than 1% are not labelled, but include railroads, spontaneous combustion, and building fires.

The County is a mixture of urban and rural land use, with the most populated areas surrounding the Rio Grande bosque, and shortgrass prairie grassland, agricultural land, and ranchland in the periphery. The majority of the population lives in the municipal areas of Los Lunas, Belen, and Tome. Many communities are served solely by volunteer fire departments (VFDs) and emergency response staff.

While the County does not exhibit the typical characteristics of communities that are highly prone to fire, such as steep slopes or dense timber, much of the County is made up of grassland areas that experience strong winds and are currently undergoing prolonged drought, making them extremely prone to high-severity wildland fire. Grasslands have often been perceived as being at lower risk of wildland fire, particularly in relation to forested regions. Although fire services are well developed in the County, particularly when compared to surrounding counties, some communities are still poorly prepared for potentially large-scale fires.

The central vein of the County is composed of the Rio Grande River and associated bosque environments. These bosque areas make up the primary wildland-urban interface for the County. Communities are at risk from fires starting in the bosque, and fires starting outside of the bosque are easily transmitted into bosque fuels and have the potential to spread rapidly from community to community. Although the role of fire in lowland riparian forests in the arid Southwest is not well understood, it is largely accepted that fire was not an important part of the bosque system historically. Since humans have altered the natural flow of the Rio Grande, however, fuels that would previously have been dispersed by frequent flooding, have been able to accumulate, increasing hazards to natural and human-ignited fires. Cottonwood trees are not well adapted to wildfire and high mortality is observed in areas burned under current conditions.

Due to the intense human use of the bosque, bosque fires are becoming increasingly common. Typical causes of bosque fires include debris burning, arson, illegal campfires, and careless disposal of cigarettes and other smoking material. Because some bosque areas are difficult to access by suppression crews, fires can often grow quickly and put WUI homes and the fragile bosque environment at risk.

The remainder of the County comprises grassland and grass/shrub fuels. Fire is one of the most important ecological processes in grasslands and occurred naturally for millennia and, more recently, as a result of anthropogenic practices such as land clearing by Native Americans and early pioneers (Rickel 2005). Fires helped rejuvenate the land, recycling nutrients and increasing productivity. However, as grasslands became increasingly settled, many landowners feared fire damage and fire suppression became a dominant practice. This altered the natural fire frequency and fire regime of New Mexico's grasslands; species composition shifted in many areas, and grass-dominated landscapes gave way to shrubs and trees (Rickel 2005). Over the last decade, fire rarely has been applied as a management tool, largely due to the prevalence of drought. Ranchers depend on spring rains to replenish grasses and grazing, and wildfire puts fodder production at risk. As a result, fires continue to be suppressed in the County and throughout New Mexico.

Grassland fires can be difficult to maintain. They move quickly across the landscape due to the speed and fire behavior with which these light, flashy fuels burn. Many factors contribute to fires in grassland ecosystems, including:

- Annual and seasonal fluctuations in precipitation;
- Increased fuel loading resulting from set-aside programs and shifting land use practices;
- Expansion of roads and railroad through grassland areas, which provide sources of ignition;
- Growing WUI, which is encroaching into a fire-dependent ecosystem; and
- The number of animals carried on the land.

THE GOAL OF A CWPP

The goal of a CWPP is to enable local communities to improve their wildfire-mitigation capacity, while working with government agencies to identify high fire risk areas and prioritize areas for mitigation, fire suppression, and emergency preparedness. Another goal of the CWPP is to enhance public awareness and understanding by helping residents better understand the natural- and human-caused risk of wildland fires that threaten lives, safety, and the local economy. The minimum requirements for a CWPP, as stated in the Healthy Forest Restoration Act (HFRA), are:

- **Collaboration:** Local and state government representatives, in consultation with federal agencies or other interested groups, must collaboratively develop a CWPP (Society of American Foresters [SAF] 2004).
- **Prioritized Fuel Reduction:** A CWPP must identify and prioritize areas for hazardous fuels reduction and treatments and recommend the types and methods of treatment that will protect one or more CARs and their essential infrastructures (SAF 2004).
- **Treatments of Structural Ignitability:** A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan (SAF 2004).

The VCCWPP addresses all the requirements for completion of a CWPP outlined in the HFRA.

PLANNING PROCESS

In 2012, representatives from various government agencies—along with members of fire departments and local communities—formed a Core Team (please see Section 1.6) and participated in decision-making activities that led to the development of the original CWPP. Many of the original Core Team were reconvened to provide input on this CWPP update. As was the case in 2012, stakeholder involvement was important in producing a meaningful document that included all collaborators' diverse perspectives.

The SAF, in collaboration with the National Association of Counties, the National Association of State Foresters, the Western Governors' Association, and the Communities Committee, developed a guide entitled Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities (SAF 2004) to provide communities with a clear process to use in developing a CWPP. The guide outlines eight steps for developing a CWPP and was followed in preparing the VCCWPP. The eight recommended steps are as follows:

1. **Convene Decision Makers:** Form a Core Team made up of representatives from the appropriate local governments, local fire authorities, and state agencies responsible for forest management.
2. **Involve Federal Agencies:** Identify and engage local representatives of the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM). Contact and involve other land management agencies as appropriate.
3. **Engage Interested Parties:** Contact and encourage active involvement in plan development from a broad range of interested organizations and stakeholders.
4. **Establish a Community Base Map(s):** Work with partners to establish a baseline map (or maps) defining the community's WUI and showing inhabited areas at risk, forested areas that contain critical human infrastructure, and forest areas at risk for large-scale fire disturbance.
5. **Develop a Community Risk Assessment:** Work with partners to develop a community risk assessment that considers fuel hazards; risk of wildfire occurrence; homes, businesses, and essential infrastructure at risk; other CVARs; and local preparedness capability. Rate the level of risk for each factor and incorporate this information into the base map(s) as appropriate.
6. **Establish Community Priorities and Recommendations:** Use the base map(s) and community risk assessment to facilitate a collaborative community discussion that leads to the identification of local priorities for fuel treatment, reduction of structural ignitability, and other issues such as improvement of fire-response capability. Clearly indicate whether priority projects are directly related to the protection of communities and essential infrastructure or reducing wildfire risks to other community values.
7. **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.
8. **Finalize Community Wildfire Protection Plan:** Finalize the CWPP and communicate the results to community and key partners.

A large amount of literature was used to inform the development of the 2012 CWPP and this 2018 update. Information on the documents that were used throughout this process is provided in Appendix A.

CORE TEAM AND PUBLIC ENGAGEMENT

The Core Team for the VCCWPP update is composed of approximately 15 people, ranging from community members to those representing various agencies and levels of government (see Appendix A). Representatives from the County; fire departments in the towns of Los Lunas, Belen, and Bosque Farms;

the Valencia County Fire Department; Isleta and Laguna Pueblos; the New Mexico State Forestry Division (NMSF); the Bureau of Indian Affairs (BIA); the Cibola Ranger District of the USFS; the BLM; the Middle Rio Grande Conservancy District (MRGCD); the U.S. Fish and Wildlife Service (USFWS); the Whitfield Wildlife Conservation Area; the Valencia Soil and Water Conservation District (VSWCD); and community members from homeowner associations throughout the County make up the Core Team.

All members have experience or interest in preparation for wildland fires, planning, response, mitigation, and/or education. The Core Team met twice over the course of 5 months in 2017–2018 to discuss issues related to completing the project. The Core Team drives the planning process in its decision making, data sharing, experience, and communication with community members who are not on the Core Team. The group met for the first time in December 2017, and the final meeting was held on May 8, 2018.

Engaging interested parties is critical in the CWPP process because substantive input from the public will ensure that the final document reflects the highest priorities of the local community. Information on public outreach used in the development of the CWPP is provided in Appendix A.

PROJECT AREA

The project area includes all of Valencia County as delineated by its geographic and political boundaries. The project boundary encompasses multiple cities, towns, pueblos, communities, roadways, and railroads. The largest municipal area is the county seat of Los Lunas. Other communities in the County include Belen, Bosque Farms, Tome, Jarales, City of Rio Communities, Meadowlake, El Cerro Mission, Peralta, Valencia, Casa Colorada, Tierra Grande, Salomon Estates, and Southwest Mesa (Figure 1-3). Since the 2012 CWPP was developed a large area of the County was signed into trust to the Pueblo of Isleta. Detailed delineation of this area, called Comanche Ranch can be found in Appendix D, Map 15.

In developing the VCCWPP, a large amount of background information on the County is compiled and analyzed, including location and land use data, climate and weather data, baseline vegetation data, historic conditions, population and demographics, and firefighting capability and resources. This information is presented in Appendix B, Valencia County Background.

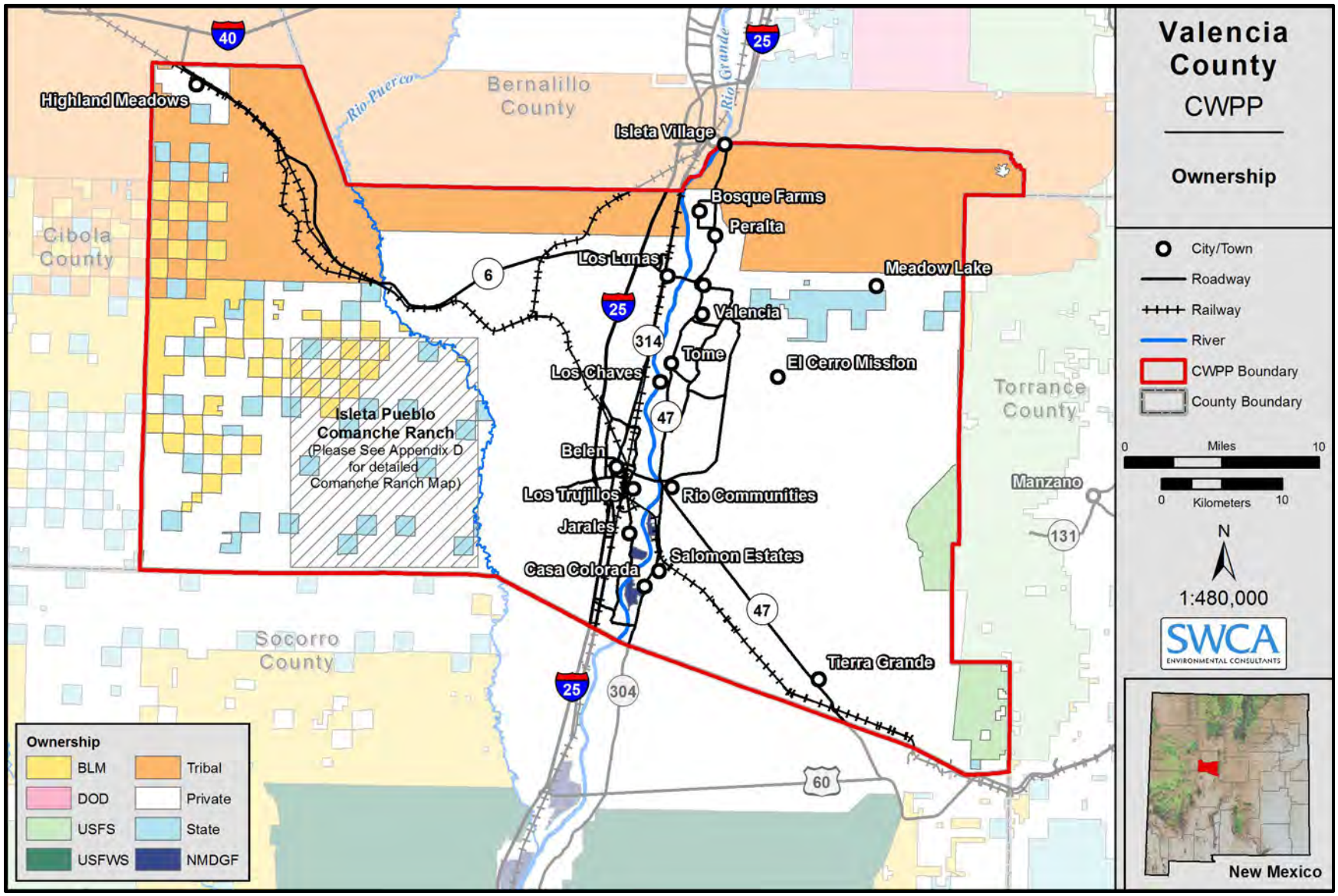

Figure 1-3. Valencia County with land ownership.

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WILDFIRE MITIGATION ACTIONS TAKEN SINCE 2012

The County has made significant progress in mitigating the risk that wildfire poses to communities in the WUI. Since 2012, there have been many notable accomplishments in the County that have helped to reduce wildfire risk and hazard. Many of these actions were identified in the 2012 CWPP (Table 1-2).

Table 1-2. Valencia County Wildfire Prevention and Community Protection Accomplishments since 2012

2013
NM State Forestry Volunteer Firefighter Assistance Grant (VFA) Award—for Valencia County Fire Department (VCFD) Wildland Coordinator.
NM Association of Counties Wildfire Risk Reduction Grant for Living with Fire Pamphlet.
Developed Bosque Pre-Plan. All bosque gates were mapped with a GPS. The VCFD Wildland Coordinator worked with the Valencia County GIS Department. A bosque gate key inventory and gate key list was developed and would be updated annually.
Valencia County public outreach flyer developed and distributed regarding safe disposal of fire place ashes.
Valencia County public outreach flyer developed and distributed regarding weed abatement.
NM State Fire Marshal Grant secured—Rebuild VCFD Tome Adelino District 2 Tenders 2-5 and 2-6, both on the Resource Mobilization Plan.
2014
Valencia County budgeted and hired for the position of Wildland Captain for the VCFD.
NM State Forestry VFA Grant—Wildland line packs and shelters were purchased for all volunteer districts.
Assessment of Readiness for Rio Grande Bosque report completed (Appendix F).
Living With Fire Pamphlet completed and printed, copies were provided to all County and Municipal fire departments[1].See Appendix F.
Valencia County open burning hours and regulations were revised and included in Living With Fire pamphlet to improve public education regarding the burn ordinance.
VCFD command staff has been trained and issued ticket books to increase enforcement of the burn ordinance.
NM State Forestry contracted with VCFD to complete bosque thinning project for 38 acres in Jarales.
NM Fire Marshal Grant—Rebuild Valencia County Fire Department Los Chavez District 7 Tenders 7-2 and 7-6, both are on the Resource Mobilization Plan.
2015
NM Association of Counties Wildfire Risk Reduction Grant received for utilizing the wildland hazard assessment system to assess home hazard.
Two NM Fire Marshal Grants—50,000-gallon fire suppression water tank for VCFD Tome-Adelino District 2 Valley Station, 1,500-gallon tactical water tender for VCFD Manzano Vista District 10.
NM Fire Marshal Grant— Rebuild Valencia County Fire Department Valencia El Cerro D3 Tender 3-4.
Four NM State Forestry VFA Grants for VCFD— Tome-Adelino D2 portable pumps and hoses, Valencia El-Cerro D3 personal protective equipment (PPE), Los Chavez D7 PPE, Jarales D7 PPE. All career staff were issued a line pack with fire shelter. Each Valencia County Volunteer Fire District has at least four line packs with fire shelters to place on apparatus that respond to wildland fires.
Prescribed burn training agreement between South Central Mountain RC&D Council Inc., USFS Cibola National Forest Mountainair Ranger District, and VCFD Wildland Team initiated.

[1] https://www.co.valencia.nm.us/DocumentCenter/View/84/Living-and-Working-with-Fire-in-Valencia-County-PDF

Table 1-2. Valencia County Wildfire Prevention and Community Protection Accomplishments since 2012 (Continued)

Community clean-up day held in March to mitigate tumbleweed fire hazard in the El Cerro Mission/Monterey Park area. Prescribed burn used to remove accumulated tumbleweeds. Provided training opportunity for incident personnel.
Bosque Monitoring initiated at Belen High School and Belen Rio Grande Elementary as part of science class.
Volunteer stipend program enacted to help with volunteer firefighter recruitment and participation.
All hydrants in the County were mapped and entered into the VCFD Emergency Reporting database.
VCFD established an agreement with the USFS Mountainair Ranger District to assist with prescribed fire projects on their district.
2016
Jarales Bosque thinning project completed.
Burn notice posted on Valencia County website.
Valencia County News Bulletin began running a monthly column called "Firehouse Chats," to provide an opportunity for the VCFD to provide important information to the public regarding fire safety and fire prevention.
Home hazard assessments were completed on 207 homes in 2016. The assessments used a comprehensive rating system (see Appendix F) and were completed by 25 VCFD firefighters following a period of training. VCFD plans to continue to train firefighters to complete more assessments; advertising is needed in order to educate more residents on the benefits of the assessment.
Village of Los Lunas and Valencia County Emergency Managers completed the following plans for the County and Municipality: Valencia County Shelter Trailer Standard Operating Procedure—Provides direction and guidelines towards the efficient deployment of the shelter support equipment provided through the Valencia County Office of Emergency Management. Animal Welfare Plan—This plan is to establish how animal welfare (household pets, companion animals, unclaimed animals, service animals, and livestock) response activities will be coordinated to meet the needs generated by disasters affecting Valencia County. Valencia County Shelter Management Plan—Provides for the protection of the population from the effects of hazards through the identification of shelters and the provision of mass care. Additionally, this will also provide an understanding of the assignment of personnel to open shelters to house evacuees during a natural, technological, and/or human-caused man-made-disaster.
2017
VCFD starts a 13- acre bosque thinning project in Tome contracted with NM State Forestry.
Burn/No Burn telephone message put in place.
VCFD institutes Facebook page. Burn notice posted on page daily. Red-flag days posted.
City of Belen Guide to Restricted Open Burning developed and distributed to community members. Belen follows the countywide burn/no burn day notices, but they also require a written burn permit that is good for 30 days. The public must still call in and only burn on burn days. This is outlined in the Living with Fire pamphlet.
Whitfield Wildlife Conservation Area and VCFD Training prescribed burn (pile burn).
Los Lunas Green Waste Composting project initiated to provide a drop-off location for green waste and slash. Scheduled to open March 2019.
Every fire department in the County has improved their ISO rating since the 2012 CWPP was developed.
VCFD has developed a new communication plan with multiple zones that is being implemented by VCFD, Peralta Fire Department FD and Bosque Farms Fire Department. The departments have a wildland zone on Wildland Team Bendix King radios to use if they respond to a fire that requires State and Federal assistance.
New volunteer nominal fee program to provide incentives for volunteer fire fighters to attend training will begin in July 2018.

CHAPTER 2. FIRE ENVIRONMENT

There are several different types of fires that may take place in the County, and they are referred to using the following terms:

Wildland Fire:	Any non-structure fire that occurs in vegetation or natural fuels. Wildland fire includes prescribed fire and wildfire.
Wildfire:	An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.
Prescribed Fires:	Any fire intentionally ignited by management actions in accordance with applicable laws, policies, and regulations to meet specific objectives.
Managed fire to meet resource objectives:	Event where naturally occurring fires are allowed to burn under carefully prescribed conditions in order to accomplishment resource management objectives.

FIREFIGHTING CAPABILITY

Both volunteer and career fire departments respond to structure fires and wildfires throughout the County. The County has a career administrative staff and eight full-time career firefighters with three part-time career staff (Appendix F). The county has seven volunteer fire districts including Tomé/Adelino, Valencia/El Cerro, Meadow Lake, Los Chavez, Highland Meadows, Jarales/Pueblitos/Bosque, and Manzano Vista. County Fire Department staff totals 16 career firefighters, 1 administrative assistant, and 88 volunteer firefighters. Municipal stations in the County include the Village of Bosque Farms, the Village of Los Lunas, the City of Belen, the Town of Peralta, and the City of Rio Communities Rio Grande Estates. Municipal Fire Department staff total 34 career firefighters, and 86 volunteers.

The County has been making huge strides with its wildfire program over recent years, investing in equipment and training for safe and effective wildland fire suppression. Valencia County FD (VCFD) was awarded NM State Forestry VFA Grants for 2011, 2012, and 2013 to fund the position of Wildland

Coordinator. From 2014 to present, VCFD has added a budgeted part-time position of Wildland Fire Captain.

Many of the County and municipal firefighters in the County, receive basic wildfire training and attend annual wildland fire refreshers (Figure 2-1). The VCFD Wildland Captain instructs five to six RT130 Wildland Safety Refresher Trainings annually from January through March. These trainings are held at different venues including county and municipal fire departments. Five to six Arduous Pack Tests are also conducted.

The VCFD also hosts National Wildfire Coordinating Group (NWCG) classes annually including:

- S131/133 Firefighter Type 1/Look up, Look down, Look Around in October.
- L280 Followership to Leadership in November.
- S130, S190, L180, I100 Basic WL FF Training in December.
- S211 Portable Pumps and Water use.

Many firefighters also hold chainsaw qualifications and other wildland NWCG qualifications. All trainings are posted on VCFD web page, Facebook page, and training calendar. All have online sign up.

County firefighters have also been sent to other NWCG Wildland Trainings around the state. They are supported with county training car and per diem. The VCFD uses and maintains the Incident Qualification System for administering Red Cards to firefighters and follows the same guidelines as the NMSF in accordance with (NWCG) guidelines.

The VCFD has also hosted two fire expos in 2014 and 2015, which included a wildland fire component.

In recent years the County has been successful in obtaining a number of grants for the purchase of wildland equipment, including a wildland equipment trailer for deployments, fire shelters (Figure 2-2), radio equipment, pumps, weather observation equipment, hand tools, hoses, and personal protective equipment (PPE). The VCFD applies for NM State Forestry VFA grant funding annually. Goals that have been accomplished since 2012 are provision of wildland hose packs and tools on all county brush trucks and a wildland equipment trailer with additional portable pumps, tools and hoses for large fire response. Wildland personal protective equipment (PPE) has been provided for all County firefighters. A future goal of the VCFD is to provide a wildland hose pack and wildland tools for all structural engines as well as tenders.

The VCFD also has a Wildland Team that is also open for municipal firefighters. These firefighters complete extra training and participate in Resource Mobilization Deployments. The red carded Wildland Team firefighters also assist with large extended attack fires in the county such as the Rattlesnake Fire in July 2016 and the Strawberry 3 Fire in March 2018.

Figure 2-1. Valencia County fire department basic wildland firefighter training field day

Figure 2-2. Fire shelter deployment training

Volunteer firefighters provide service throughout the County; however, the demand for their services is heightened in rural or outlying areas because the distance and access to these remote areas often slow the response time of the career departments. While volunteers may be closer in vicinity, they often have full-time jobs and need additional travel time to respond to fires, as they must first travel from an unspecified location to the fire station and then to a fire. Firefighting resources have to respond to all emergency response including Emergency Management System (EMS), motor vehicle collisions, hazmat, structural fires and automobile fires. Any large incident, including a wildfire, stretches resources to respond to additional emergencies. The County has a very high call volume, especially EMS, which stretches resource response capability. These factors and others contribute to the increased challenges of responding to fire in rural areas.

It is important that homeowners understand the limitations of fire responders in the County and the condition of the surrounding ecosystem. Responsibility should be placed on the landowner or homeowner to mitigate the risk of wildfire on his or her own properties. In addition, homeowners/farmers need to follow safe burning practices and control their prescribed fires. When building homes in proximity to bosque forests or grassland areas, homeowners need to understand the risks associated with this choice. Fires occurring in these areas usually have increased risk of loss of life and property. Wildfires in the bosque have the potential to become crown fires due to thick understory fuels, which act like ladders and allow surface fires to climb or transform into crown fires, which are very difficult to suppress and burn much hotter than surface fires. Fire response is often contingent upon the actions of the homeowner, particularly when impending fire risk requires evacuation.

LOCAL RESPONDERS

Volunteer and career firefighters at the County and community levels have similar capabilities throughout the entire year, while state and federal responders are affected by fire season. In spite of the continuous level of capabilities, ebbs and flows occur within the volunteer service. Recruiting and retaining volunteers is challenging due to peoples' lifestyles and the training requirements one must follow to be a volunteer firefighter. Although several volunteer firefighters are present in the County, not all are available to respond to every fire. It is difficult for the County to fully commit resources

to extended wildfire attack due to needing resources available to respond to new initial emergency responses. Also, volunteers do not all have the ability to stay for multiple operational periods.

STATE AND FEDERAL RESPONDERS

The availability of resources is dictated by the state and federal wildland fire season. Valencia County is within the NMSF Bernalillo District 6. It is one of eight counties in this district. The district has three type 6 engines to cover this district. The engines are not always available due to staffing or other response commitments. From approximately April 15 through July 15, resources are most plentiful around the region. This time period is considered the Southwest fire season, so multiple crews, engines, helicopters, and air tankers are available. However, from July 15 to October 31 firefighting focus often changes to other regions, such as to the Northwest United States and California. During this period, the time frame to obtain resources is extended, sometimes taking up to 48 hours. During the winter months, obtaining resources is difficult because many firefighters are employed seasonally from April through October. Given the changing fire regimes, wildfires now occur throughout the entire year, extending beyond the state and federally designated wildland fire season. Resources are limited for fires that occur outside this time frame.

FIRE MANAGEMENT POLICY

The County has a central dispatch and all municipal and County agencies are dispatched through the same 911 dispatch center. County and municipal fire response work closely together utilizing mutual aid agreements. The County has mutual aid agreements with Socorro and Torrance Counties. NMSF responds to wildland fires on state and private lands that are non-municipal, non-tribal, and non-federal. County resources are required to report all escaped wildfires to NMSF Bernalillo District. Additional resource needs are channeled through NMSF for federal wildland fire suppression resources.

Valencia County uses a full suppression strategy. Large mesa and bosque fires with extreme fire behavior require indirect attack and structure protection tactics.

EMERGENCY MANAGEMENT AND EVACUATION

Evacuation procedures are established by the County and Municipal Emergency Managers. The County plans for emergency procedures as outlined in the Valencia County Comprehensive Emergency Management Plan (Valencia County 2014).

Since 2012 several plans have been developed related to evacuation and emergency management. These plans addressed a recognized need, highlighted in the 2012 CWPP.

Valencia County Shelter Trailers SOP

Provides direction and guidelines towards the efficient deployment of the shelter support equipment provided through the Valencia County Office of Emergency Management.

Valencia County Shelter Management Plan

Provides for the protection of the population from the efforts of hazards through the identification of shelters and the provision of mass care. Additionally, this will also provide an understanding of the

assignment of personnel to open shelters to house evacuees during a natural, technological, and/or human-made-disaster.

Animal Welfare Plan

This plan is to establish how animal welfare (household pets, companion animals, unclaimed animals, service animals, and livestock) response activities will be coordinated to meet the needs generated by disasters affecting Valencia County.

The public can request access to these plans from the County Emergency Manager, however some content is protected due to personal contact information.

The County also have an Evacuation / Re-Entry plan, but there is no designated Evacuation Route within the County. All evacuations are incident driven.

A future goal of the VCFD, Emergency Managers and the Wildland Captain is to adopt the 'Ready, Set, Go program', which is a program managed by the International Association of Fire Chiefs (IAFC) and helps fire departments to teach individuals who live in the WUI how to best protect themselves and their properties from fire risk.

WILDLAND URBAN INTERFACE

The WUI is composed of both interface and intermix communities and is defined as a group of areas where human habitation and development meet or intermix with wildland fuels (USDA and USDI 2001:752–753). Interface areas include housing developments that meet or are in the vicinity of continuous vegetation; these areas consist of less than 50% vegetation. Intermix areas are those areas where structures are scattered throughout a wildland area of greater than 50% continuous vegetation and fuels and must meet or exceed a minimum of one house per 40 acres. Depending on the surrounding fuel conditions, topography, and present structures, wildland areas of up to 1.5 miles from structures may be included in the WUI (Stewart et al. 2007).

The WUI creates an environment in which fire can move readily between structural and vegetative fuels, increasing the potential for wildland fire ignitions and the corresponding potential loss of life and property. Human encroachment into wildland ecosystems in recent decades has increased the extent of the WUI and has therefore had a significant influence on wildland fire management practices. The expansion of the WUI into areas with high fire risk combined with the collective effects of past fire-management policies, resource management practices, land use patterns, climate change, and insect and disease infestations has created an urgent need to modify fire management practices and policies, while understanding and managing fire risk effectively in the WUI (Pyne 2001; Stephens and Ruth 2005; Bushey 2012). Fuels and fire management mitigation techniques have been proven effective with strategic planning and implementation in WUI areas (Bushey 2012); however, all WUI mitigation focus areas will be different and should be planned for accordingly.

A CWPP offers the opportunity for land managers to collaborate and establish a definition and a boundary for the local WUI; to better understand the unique resources, fuels, topography, and climatic and structural characteristics of the area; and to prioritize and plan fuels treatments to mitigate for fire risks. At least 50% of all funds appropriated for projects under the HFRA must be used within the WUI area. The County has an extensive WUI, where automobile fires can ignite wildfires, as in the Mesa Fire of 2007;

structure fires ignite wildland fires and threaten other structures, as in the Congrejos Fire of 2008; and wildland fires ignite vehicles, sheds, barns and haystacks.

In 2012, the Core Team defined the WUI as the area 1.5 miles from the boundaries of all communities and a 1.5-mile buffer from all roads and railroads that serve as ignition sources as well as evacuation zones (Figure 2-3. Valencia County WUI map.

Any critical infrastructure (see Map C.1 in Appendix D) that is not incorporated into the 1.5-mile buffer is also incorporated into the WUI by extension. During the 2018 update the Core Team were invited to revise the WUI definition or delineation. The Core Team unanimously agreed to keep the WUI delineation the same as the 2012 plan.

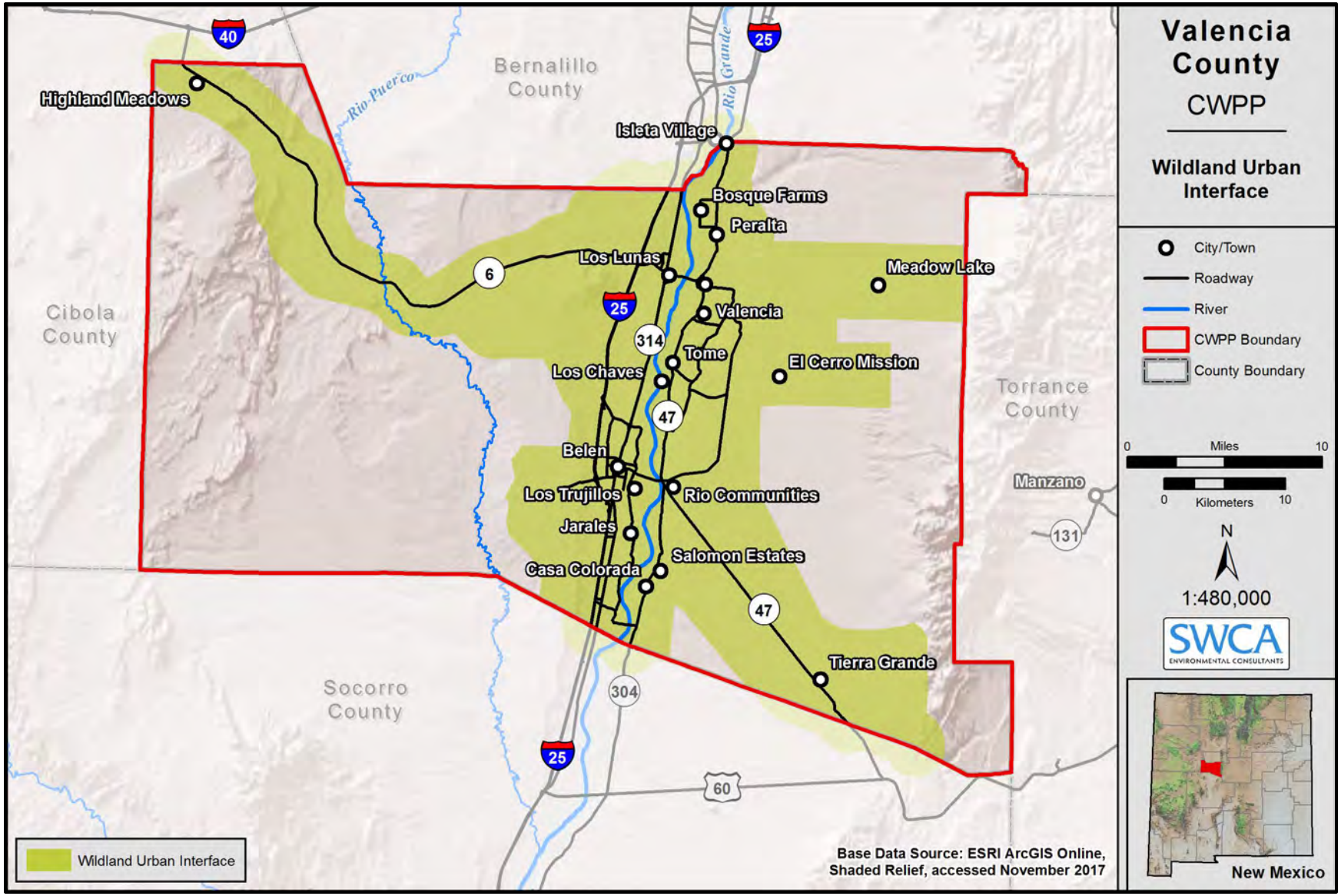

Figure 2-3. Valencia County WUI map.

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RECENT FIRES IN VALENCIA COUNTY

Over the past 50 years, high fuel loads, the growth of non-native species and 10+ years of extensive drought have led to heightened risk of fire in the County, particularly in the Middle Rio Grande Bosque (U.S. Army Corps of Engineers [USACE] 2004). Human-caused ignitions are the most common causes of fires throughout the County; many fires start as controlled fires that get out of control, trash burning, welding sparks, structure fires etc. Lightning ignitions are generally infrequent in the County, but most common throughout the monsoon season, which typically takes place from July through August. Fire records obtained and combined from the NMSF and federal land management agencies (such as the BLM and USFS) show that the greatest fire occurrence in the County takes place in March and June each year (Figure 2-4. Monthly fire occurrence in Valencia from 1971 to 2017

High fire occurrence in March was noted by County fire personnel and is related to the onset of spring ditch and agricultural burning. The number of fires occurring each year varies considerably (Figure 2-5), with a stark increase in the number of fires after 1999 and a decline since 2010. Some of the variation in fire numbers is a result of new fire reporting protocols.

A primary concern of residents in the WUI is the growing number of human-caused ignitions, particularly with the development and improvement of roads, residences, and recreational opportunities into wildland areas. Human-caused fires increase the numbers of fire events that take place overall and increase the probability of fire occurrence throughout the year, including the winter months. This is particularly true in grassland and bosque ecosystems.

Most ignited fires are detected early and suppressed before they gain acreage; however, depending on environmental conditions and response time, they may spread rapidly across a sizable area, becoming difficult to suppress before they are effectively controlled. Most fires that are ignited within the Middle Rio Grande Bosque area of the County are usually less than 10 acres in size. However, within the last two decades, the County and neighboring counties have experienced an increased number of fires that grow to greater than 100 acres, highlighting the risk of a bosque fire quickly growing out of control and impacting communities. The Rio Grande Complex of 2000, which spread across Valencia and Socorro Counties, was a stark example of this, burning over 5,000 acres of bosque and grassland. Later in 2007 the Belen fire burned 700 acres of the Belen bosque on both east and west sides of the river, consuming one house, barns, and outbuildings (Figure 2-6). A series of fires have occurred in the County between 2008 and 2017 (Figure 2-7 through Figure 2-12), however the number of bosque fires has reduced over the last 5 years (Rob Barr, personal communication, 2018).

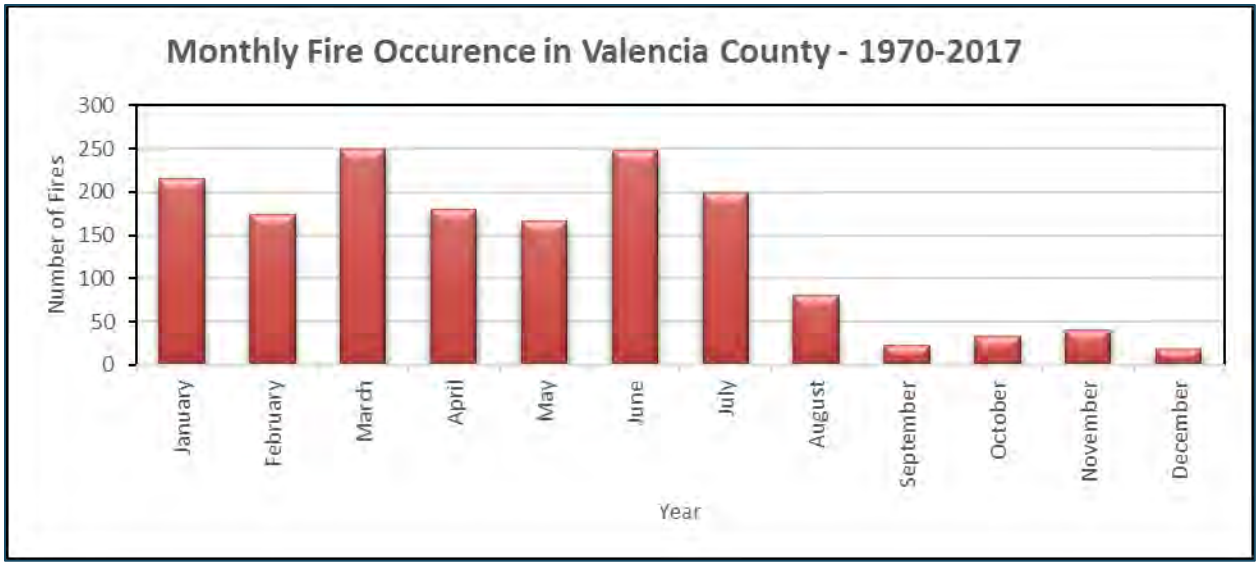

Figure 2-4. Monthly fire occurrence in Valencia from 1971 to 2017

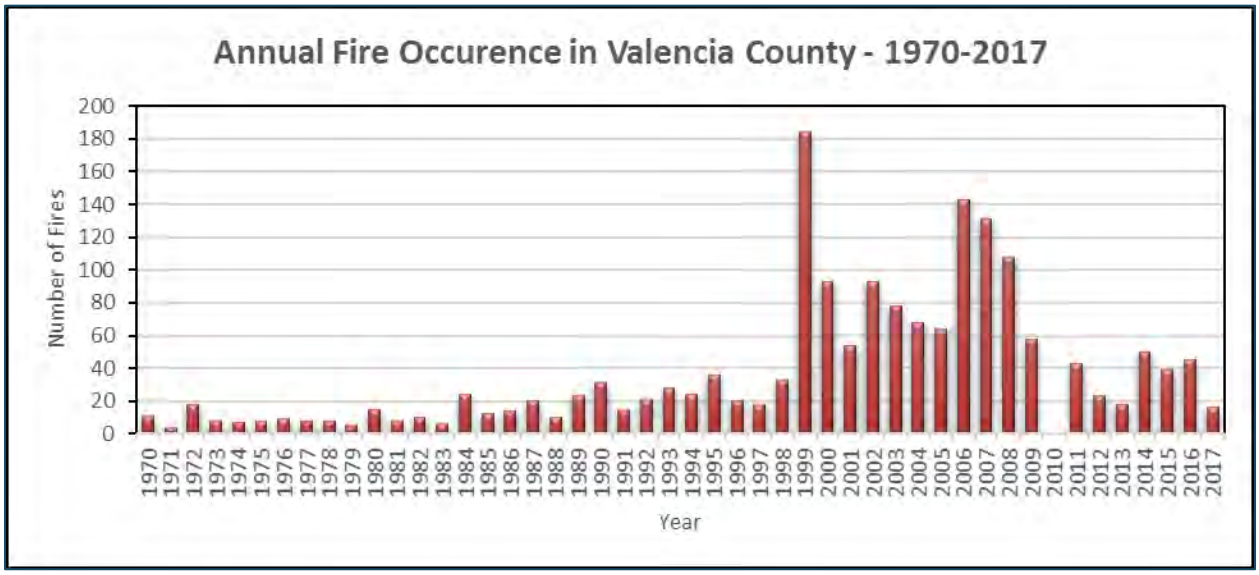

Figure 2-5. Annual fire occurrence from 1970 to 2017.

Figure 2-6. Belen bosque fire.

Figure 2-7. Banco fire, 2008.

Figure 2-8. Trigo fire, 2008, began on the west side of the Manzanos.

Figure 2-9. Stable fire, bosque south of Belen, June 2010.

Figure 2-10. Stable fire at night.

Figure 2-11. Monsoon fire, Los Chavez bosque, 2011.

Figure 2-12. Manzano Fire 2018.

Figure 2-13 shows wildfire occurrence throughout the County 2009–2017. The fires that have occurred since the completion of the 2012 CWPP are depicted in red. The majority of fires clearly occur along the Rio Grande corridor, within the WUI.

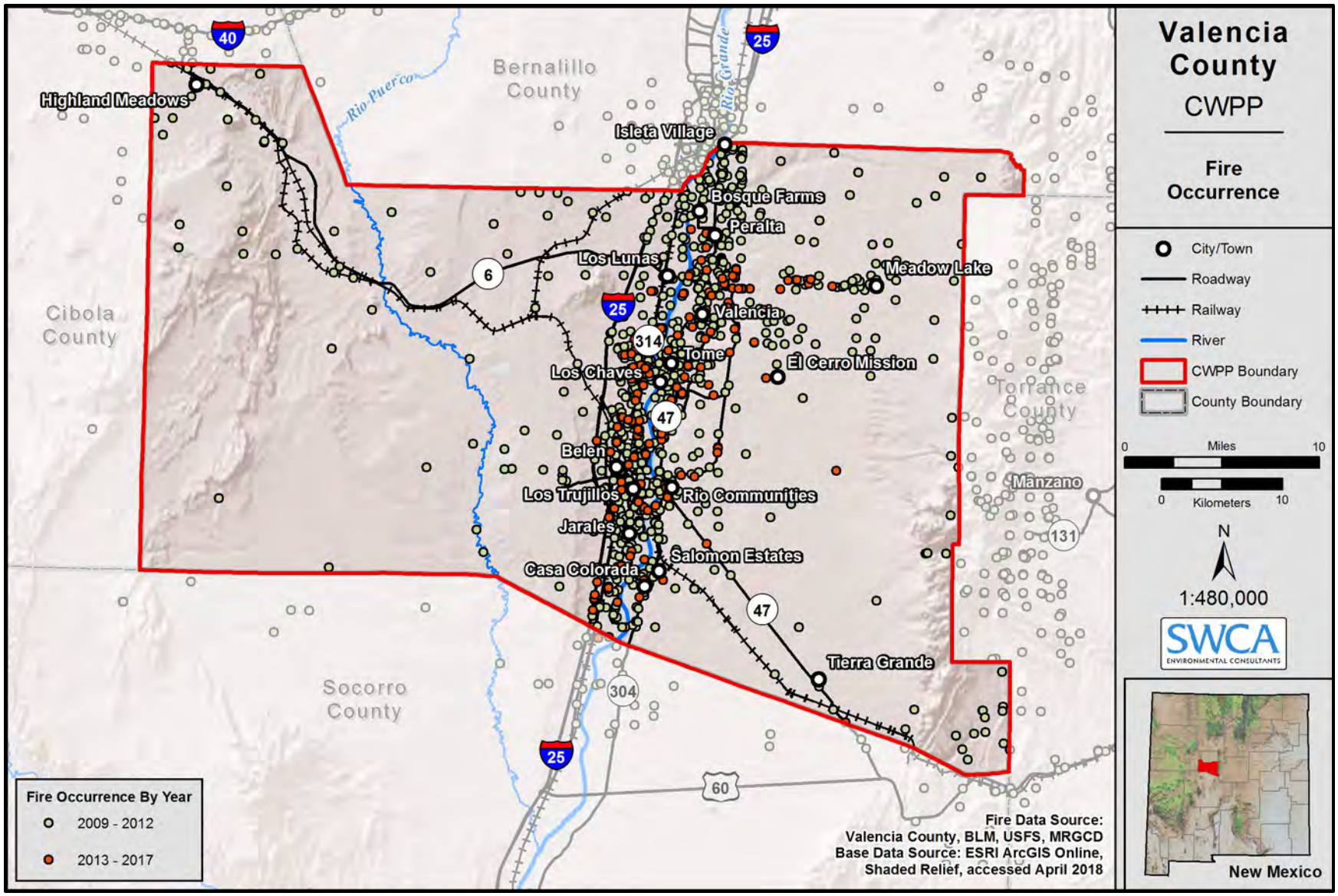

Figure 2-13. Fire occurrence in Valencia County showing fires that have occurred since the 2012 CWPP was developed.

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CHALLENGES TO FUTURE FIRE AND FUELS MANAGEMENT EFFORTS

In addition to all the anthropogenic impacts that have degraded natural fire regimes, climate change has played an extensive role in altering fire occurrence and severity. Climate change has influenced the vegetative cover and available burnable fuel across the western landscape. Fires in the past few years have grown to record sizes, are burning earlier and longer, and are burning hotter and more intensively than they have in the past (Westerling et al. 2006; Roos and Swetnam 2012). Westerling et al. (2006) consider climate change to be a dominant factor in increasing fire severity particularly in the northern Rockies; in the Southwest the authors claim that the concentrations of heavy fuels are also responsible for the increasing severities (Fleck 2012).

According to the National Interagency Fire Center (NIFC), occurrence of catastrophic wildfires has greatly increased over the last 20 years. Within just the last 10 years, a record number of acreage has burned, and this number is continually growing (NIFC 2018). In 2016, the southwest region experienced record acres burned (Evans 2017) with more burning in 2016 than in the previous 2 years.

Climate change, along with all of the other mentioned land management impacts, is likely to make the restoration of natural systems to their historical conditions difficult, if not impossible, and should be taken into account when planning fuels treatments and other general fire management practices.

Due to scattered human developments throughout the WUI and intermix, suppression will always have to be a priority in those areas. Although fire suppression is still aggressively practiced, fire management techniques are continually adapting and improving. Using prescribed fire and wildland fire use combined with effective fuels management techniques will help re-establish natural fire regimes and reduce the potential for catastrophic wildfires.

Information on fire regime is provided in Appendix B.

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CHAPTER 3. RISK ASSESSMENT

OVERVIEW AND PURPOSE OF THE RISK ASSESSMENT PROCESS

The purpose of a WUI risk assessment is to determine the relative degree of hazard for each community and identify the specific hazards and elements of risk. Mitigation efforts can then be prioritized and more detailed planning can take place as needed. This risk assessment process evaluates the threat of fire that local hazards pose to values at risk within the County's WUI.

In the wildland fire vernacular, "hazard" generally refers to wildland fuel in terms of its contribution to problem fire behavior and its resistance to control when combined with terrain and weather features. Fire "risk" refers to the chance of a wildfire starting, as determined by the presence and activity of causative agents (NWCG 1998) and other variables that may impact people living in these areas such as dead-end roads and proximity to fire response facilities. Currently, no uniform methodology is available for synthesizing elements of hazard and risk into a comprehensive analysis, though very general guidelines have been published in the National Association of State Foresters' *Field Guidance for Identifying and Prioritizing Communities at Risk* and the NWCG's *WUI Fire Hazard Assessment Methodology.* Each jurisdiction must evaluate hazard and risk according to the environment and values unique to the area.

1) **Community Hazard/Risk Assessment:** Field assessments were performed for each WUI community in the County. Road access, fuels, topography, and community characteristics were evaluated using a National Fire Protection Association (NFPA) form (Appendix E), and a numeric rating was assigned.

2) **Fire Behavior Analysis:** Inputs such as fuel characteristics and weather conditions were processed in the GIS-based FlamMap 3.0 model to generate fire behavior predictions such as flame length and rate of spread over the geographic area (see Appendix D).

3) **Composite Risk Assessment:** Fire behavior outputs (hazard) were combined with geographic fire occurrence data (risk) in a weighted overlay to produce a Composite Risk Assessment. This illustrates the relative degree of wildfire risk throughout the County.

4) **Risk Assessment Comparison:** A side-by-side comparison of the Composite Risk Assessment and the Community Hazard/Risk Assessment was conducted to determine the WUI areas of highest priority. Please see Table 3-1 to see how the Community Assessment Rating (field component) and the Composite Risk Rating (modeling component) compare. The Core Team for the 2018 update reviewed and revised the hazard analysis in the table, based on changes to observed conditions encountered by them since 2012.

Many methods can be used to perform wildfire risk assessments. Different methods will highlight different factors, and it should be emphasized that these assessments illustrate relative risk for the purpose of prioritizing mitigation and planning efforts. Subjectivity plays a role in any WUI risk assessment, and the significance of risk ratings must be kept in perspective. Once relative risk has been determined, components of the assessment can be used to guide mitigation efforts.

COMMUNITY HAZARD/RISK ASSESSMENTS

During July 2012, field assessments were conducted to determine wildfire hazard and risk for WUI communities in the County. The NFPA Wildland Fire Risk and Hazard Severity Assessment Form 1144 was used to rate communities based on access, adjacent fuels, defensible space, topography, roof and building characteristics, available fire protection, and utilities placement. Where several clearly disparate and divisible sets of conditions were found, the community was divided into more than one assessment. Where a variety of conditions was less easily parsed out, a range of values was assigned on a single assessment form. Each score was given a corresponding adjective rating of low, moderate, high, or extreme. The Core Team discussed updates to the risk ratings of communities during the 2017–2018 CWPP Update. Only minor changes were made to the 2012 assessments.

A detailed methodology and complete community assessment are provided in Section 4.3. Please see Appendix E for a copy of the NFPA Form 1144.

The community risk assessments along with input from the public and the Core Team were used to compile a table of CARs as required by the NM-FPTF. A copy of this list can be found in Appendix E. The list does not discriminate between communities based on the value of homes or land.

In addition to these community assessments, potential fire behavior was evaluated for the entire County (see Section 4.4). This composite risk rating is used in conjunction with the community assessments to help prioritize mitigation priorities.

Table 3-1. Valencia County Community Hazard/Risk Severity Ratings Summary

Community	Community Assessment Rating	Factors Summarized from NFPA Form 1144	Composite Risk Rating
Los Lunas	Moderate (60/112)	(+/–) Generally light fuels with some pockets of brush close to homes (+/–) Combustible building materials, but generally non-combustible roofs (+) Flat terrain (+) New green-waste facility to open in 2019. (+) Standalone fire resources. (–) Many outlying homes lack adequate defensible space (–) Poor ingress/egress to some homes on east side of railroad (–) Many homes abut river and thick bosque (–) Increased bosque recreation poses potential ignitions	Moderate
Los Lunas Bosque	High (99/112)	(+) Flat terrain (+) Close to fire department (–) Heavy fuels in bosque (–) Limited bosque access (–) Limited defensible space (–) Agricultural burning—potential for spread	High–Extreme
Belen	Moderate (63/112)	(+/–) Mix of light fuels and brush fuels (+) Urban developed land (+) Generally flat terrain (+) Fire hydrants and fire station present (–) Narrow, dead-end roads are prevalent (–) Poor access to bosque (–) High fire occurrence (–) Mobile home park close to bosque	Moderate
Bosque Farms	High (82/112)	(+) Primarily light fuels and agricultural lands (+) Generally flat terrain (+) Hydrant system and good water supply infrastructure (+) Close to fire department (–) Lack of defensible space (–) Heavy fuels within bosque and ditch areas (–) Agricultural burning—potential for spread (–) Narrow, windy roads, lack of turnarounds	Moderate–High
Peralta	High (107/112)	(+) Primarily light fuels and agricultural lands (+) Generally flat terrain (–) Lack of defensible space (–) Heavy fuels within bosque and ditch areas (–) Poor access along windy roads (–) Limited water supply (–) Agricultural burning—potential for spread	Moderate–High
Valencia	High (107/112)	(+) Primarily light fuels and agricultural lands (+) Generally flat terrain (–) Lack of defensible space (–) Heavy fuels within bosque and ditch areas (–) Poor access along windy roads (–) Limited water supply	Moderate–High
Meadow Lake	High (80/112)	(+) Primarily light fuels (+) Close to fire department (+) Hydrants (–) Vacant lots—weeds and trash (–) Manufactured homes/high combustibility (–) Flashy fuels- potential for rapid fire spread (–) Susceptible to high winds (–) Poor ingress/egress	Moderate–High

Community	Community Assessment Rating	Factors Summarized from NFPA Form 1144	Composite Risk Rating
El Cerro Mission	High (79/112)	(+) Primarily light fuels (+) Close to fire department (+) Hydrants (–) Vacant lots—weeds and trash (–) Manufactured homes/high combustibility (–) Flashy fuels—potential for rapid fire spread (–) Susceptible to high winds	Moderate–High
Las Maravillas	Moderate (56/112)	(+) Hydrants (+) Newer construction (+) Good defensible space (+) Close to fire department (–) Flashy fuels—potential for rapid fire spread (–) Susceptible to high winds (–) Potential for growth	Moderate–High
Tomé	High (84/112)	(+) Primarily light fuels and agricultural lands (+) Generally flat terrain (+) Close to fire department (–) Lack of defensible space (–) No hydrants (–) Heavy fuels within bosque and ditch areas (–) Agricultural burning—potential for spread (–) Narrow, windy roads, lack of turnarounds	Moderate–High
Los Chavez	High (109/112)	(+) Primarily light fuels and agricultural lands (+) Generally flat terrain (+) Close to fire department (–) Lack of defensible space (–) Heavy fuels within bosque and ditch areas (–) Poor access along to bosque (–) Agricultural burning—potential for spread (–) Mid Valley Air Park—large homes right next to bosque, poor access, no water	Moderate–High
City of Rio Communities	Moderate (66/112)	(+) Hydrant system (private water service) (+) Generally flat terrain (+) Close to fire department (–) Lack of defensible space (–) Heavy fuels within bosque and ditch areas (–) Interface with flashy grass fuels	High
Jarales	High (94/112)	(+) Primarily light fuels and agricultural lands (+) Generally flat terrain (+) Close to fire department (–) Lack of defensible space, homes right up to bosque (–) Heavy fuels within bosque and ditch areas (–) No hydrants	Moderate
Tierra Grande	High (76/112)	(+) Low population density (+) Primarily light fuels (–) No hydrants (–) Flashy fuels—potential for rapid fire spread (–) Ignition points from highway and railroad	Moderate–High
Casa Colorada	High (77/112)	(+) Primarily light fuels (+) Close to fire department (–) High densities of weeds (–) Insufficient defensible space (–) Narrow roads and insufficient turnarounds	High
Salomon Estates	High (77/112)	(+) Primarily light fuels (+) Close to fire department (–) High densities of weeds (–) Insufficient defensible space (–) Flammable construction	Moderate–High

Community	Community Assessment Rating	Factors Summarized from NFPA Form 1144	Composite Risk Rating
Highland Meadows	Moderate (68/112)	(+) Low population density (+) Close to fire department (+) Primarily light fuels (–) No hydrants (–) Flashy fuels—potential for rapid fire spread (–) Ignition points from highway and railroad	Moderate
Southwest Mesa	High (73/112)	(+) Close to fire department (+) Primarily light fuels (+) Low population density (–) Few hydrants (–) Flashy fuels—potential for rapid fire spread (–) Number of homes have limited setback to slope	Moderate

DETAILED COMMUNITY ASSESSMENTS

The communities of the County were evaluated using the NFPA Wildland Fire Risk and Hazard Severity Assessment Form 1144 during the development of the 2012 CWPP. The Core Team reviewed and revised these detailed community assessments during the development of the 2018 Update. These assessments rated WUI areas based on conditions within the communities and immediately surrounding structures, including access, adjacent vegetation (fuels), defensible space, adjacent topography, roof and building characteristics, available fire protection, and placement of utilities.

Where several clearly disparate and divisible sets of conditions were found, the community was divided into more than one assessment. Where a range of conditions was less easily parsed out, a range of values was assigned on a single assessment form. Each score was given a corresponding adjective rating of low, moderate, high, or extreme.

Using visual inspection alone to determine whether a roof is Class A, B, or C is difficult and impractical for this assessment. As such, roofs were given a Class A rating if they were metal or asphalt and labeled "unrated" if they were made of wood shake.

Note: The scope of the VCCWPP is landscape level. The field assessments were completed for most of the communities in the WUI, but it is beyond the scope of the planning process to complete field observations for every community in the County. Specific recommendations pertaining to each community are provided below each community description. More general, all-encompassing recommendations for fuels reduction, reducing structural ignitability, public education and outreach, and firefighting capabilities are provided in Chapter 5.

VILLAGE OF LOS LUNAS

Los Lunas is the County seat and the largest and fastest growing municipality in the County (Valencia County 2005). The majority of Los Lunas lies on the west bank of the Rio Grande. The village is becoming a significant business center, with much of the commercial development along New Mexico Highway (NM) 6 and NM 314. The population of Los Lunas according to 2016 Census estimates is 15,271.

The Los Lunas bosque is assessed separately in this document because of unique hazards.

A green-waste facility is being developed and will open in 2019. The site will provide compost to the local community and will provide a means for communities throughout the County to dispose of green-waste following fuel treatments.

Community Hazard/Risk Assessment: 60/112 - Moderate

Composite Risk Assessment for Surrounding Area: Moderate

Terrain: The village of Los Lunas is located along a broad valley floor with generally flat terrain.

Fuels: Fuels are typically grass and light brush with some thicker brush along irrigation ditches. The community is in an urban setting with some agricultural lots on the outskirts.

Access: Most roads in the community are wide, surfaced and with good turnarounds. The community is easily accessible from I-25, NM 6, and NM 314. Many homes are located on the east side of the railroad, which impedes ingress and egress. There are also many homes down dead-end roads with insufficient turn around space for emergency vehicles.

Defensibility: Defensible space is lacking for many homes in the village particularly those that abut the bosque. Construction materials are generally flammable. A system of fire hydrants are available and water distribution infrastructure is generally good. The area is served by the Los Lunas municipal fire department.

Special Concerns: Agricultural burning is common in the bosque areas and surrounding agricultural lands. The bosque is thick with invasive species that increase the fire hazard, often close to homes.

Recommendations:

1) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Increase distribution of the Valencia County Living and Working with Fire brochure to improve education regarding fire prevention and outreach regarding the County burn ordinance.
4) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles and transport to the new green waste facility.
5) Mitigate the large brush pile in the Valencia County Public Works Yard. Chip or move brush pile to the green waste facility, when established.

CITY OF BELEN

The city of Belen is located in south-central Valencia County, 10 miles south of Los Lunas on the west bank of the Rio Grande. There are a number of large unincorporated areas that border Belen, including the City of Rio Communities, Jarales, and the Southwest Mesa. The population of the city according to 2016 Census estimates is 7,184.

Community Hazard/Risk Assessment: 63/112 - Moderate

Composite Risk Assessment for Surrounding Area: Moderate

Terrain: Belen is located on generally flat grassland terrain and broad valley.

Fuels: Fuels are typically grass and light brush extending into thick bosque fuels along the river corridor.

Access: Most roads in the community are wide, surfaced, and with good turnarounds. The community is easily accessible from I-25, NM 47, and NM 314. Many homes are located against the bosque down dead-end roads with insufficient turn around space for emergency vehicles.

Defensibility: Defensible space is lacking for many homes in the city particularly those that abut the bosque. Construction materials are generally flammable. A system of fire hydrants is available and water distribution infrastructure is generally good. The area is served by the Belen fire department—two manned stations and one volunteer station.

Special Concerns: The area is vulnerable to bosque fires and agricultural burning that may spread to bosque fuels and adjacent homes and neighborhoods. There are a number of abandoned properties with significant weed build up and unimproved fields.

Recommendations:

1) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.

2) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
3) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
4) Increase distribution of the Valencia County Living and Working with Fire brochure to improve education regarding fire prevention and outreach regarding the County burn ordinance.
5) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
6) Help focus safe recreational use in the bosque, possibly through the reopening of Willie Chavez Park.

VILLAGE OF BOSQUE FARMS

Bosque Farms is located on the east bank of the Rio Grande, 18 miles south of Albuquerque. The village is bordered by Isleta Pueblo to the north, east, and west. Bosque Farms is a dairy and farming community. The population according to 2016 Census estimates is 3,863. Most of the population and infrastructure is centered on the commercial strip of NM 47. If estimates are correct, the population has been decreasing since 2012. Low-density residential neighborhoods and agricultural properties extend out from the highway. Most land in the community is improved, maintained agriculture. The community has a strong water infrastructure, with high pressure hydrants.

Community Hazard/Risk Assessment: 82/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: The village of Bosque Farms is located along a broad valley floor with generally flat terrain.

Fuels: Fuels are typically grass and light brush that encroach well within the town limits, as well as thick bosque fuels along the river and irrigation ditches. The community is in an agricultural/urban setting with some large lots.

Access: Most roads in the community are windy, narrow, lack turnarounds and have dead ends. Access is good along NM 47.

Defensibility: Defensible space is lacking for many homes in the village. Construction materials are generally flammable. A system of fire hydrants is available, but water supply is sometimes unreliable and water distribution infrastructure is lacking. The area is served by the Bosque Farms municipal fire department.

Special Concerns: Agricultural burning is common in the area. The bosque is thick with invasive species that increase the fire hazard, often close to homes. Most fire escapes are on the west side of the bosque, due to prevailing winds. Many fires have been seen to jump to the east side due to wind transport.

Recommendations:

1) Increase defensible space with accompanying public education/outreach. Develop the educational aspects of Firewise to draw in more members.
2) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
3) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
4) Encourage safe agricultural burning to enhance agricultural productivity and support a cultural and historic practice.
5) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
6) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
7) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
8) Increase distribution of the Valencia County Living and Working with Fire brochure to improve education regarding fire prevention and outreach regarding the County burn ordinance.

PERALTA

Peralta is located directly south of Bosque Farms in northern Valencia County. Bordered by Isleta Pueblo to the north and east, and the Rio Grande to the west. The communities have a large proportion of agricultural lands and a high percentage of mobile homes. The population in 2010 was 3,660. Fire protection is provided by the Peralta fire department.

Community Hazard/Risk Assessment: 107/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Peralta is located on generally flat grassland terrain and broad river valley.

Fuels: Fuels are typically grass and light brush extending into thick bosque fuels along the river corridor and irrigation ditches.

Access: Most roads in the community are narrow and windy with a number of dead-ends with insufficient turnaround space for emergency vehicles. The community is easily accessible from I-25, NM 47, and NM 314.

Defensibility: Defensible space is lacking for many homes in the community, particularly those that abut the bosque and ditch areas. Many homes in this community are of older construction, and construction materials are generally flammable. Only one to two hydrants are available for the community, so the fire department has to be prepared to carry out tanker shuttles in the event of a fire. Most homes are within a mile of the Peralta or Valencia/El Cerro fire departments.

Special Concerns: The area is prone to fire spread from agricultural burning and escapes of trash fires. This bosque fuels pose an increased fire hazard and potential to generate fire spread to homes that abut the bosque or ditches. Poor turnarounds and low overhanging trees.

Recommendations:

1) Increase defensible space with accompanying public education/outreach. Develop the educational aspects of Firewise to draw in more members.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
4) Encourage safe agricultural burning to enhance agricultural productivity and support a cultural and historic practice.
5) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
6) Organize community chipper days to facilitate disposal of slash from defensible space projects.
7) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
8) Create areas to facilitate emergency vehicle turnaround.
9) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.

MEADOW LAKE

Meadow Lake is located in the far northeast corner of the County, bordered to the north by Isleta Pueblo, Peralta/Valencia to the west, and the Manzano Mountains to the east. Meadow Lake Road is the main access road to the community and the only access to NM 47. The community has a high percentage of mobile homes. Fire protection is provided by the Meadow Lake fire district. The population in 2010 was 4,577.

Community Hazard/Risk Assessment: 80/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Meadow Lake is located on generally flat grassland terrain.

Fuels: Fuels are typically grass and light brush and sagebrush fuels. Grasslands in the area are generally grazed.

Access: Most roads in the community are wide, surfaced, and with good turnarounds. The community is at considerable distance from other municipalities in the County and response times from Los Lunas or Belen would be slow. There is only one main road into and out of Meadow Lake, posing a concern for emergency response as well as evacuation.

Defensibility: Defensible space is lacking for many homes in the community; however, fuels are sparse around most homes. Weed infestations are a problem for the fire department and pose a hazard when not maintained. There are a number of vacant lots in the community where fuels have been allowed to build up. Many yards have trash and household refuge in the yards. There are many mobile homes in the community that are highly combustible. A system of fire hydrants are available and water distribution infrastructure is generally good. The area is served by the Meadow Lake volunteer fire department. Because many volunteers work outside the community, response times during the work week are likely to be slow.

Special Concerns: The area is exposed to fast winds and fire spread from adjacent grasslands. Poor access from other municipalities is another concern. Evacuation is restricted by one road in-one road out. There are topography and aspect issues with high numbers of fast moving grass fires.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Identify safety zones in case of fire cutting off Meadow Lake Road. Work with the County government and tribes to build another road to improve ingress/egress.
3) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
4) Implement community clean-up day to assist elderly and infirm neighbors with clean-up of yards.
5) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
6) Implement education and enforcement of the County burn ordinance with a multimedia approach.
7) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
8) Ensure protection of the Meadow Lake Open Space area.
9) Install at least 30,000-gallon tank at any public property with at least 200 gpm fill capacity for filling trucks to improve ISO rating.
10) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.

EL CERRO MISSION

El Cerro Mission is located south of the Meadow Lake community and north of the Las Maravillas/Pasitos del Cielo community. The majority of the community is located east of the Manzano Expressway. El Cerro Mission Boulevard and Van Camp Boulevard are the main access roads. Fire protection is provided by the Manzano Vista fire department at El Cerro Mission. The population in 2010 was 6,649.

Community Hazard/Risk Assessment: 79/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: El Cerro Mission is located on generally flat grassland terrain.

Fuels: Fuels are typically grass and light brush.

Access: Most roads in the community are wide, surfaced, and with good turnarounds. The community is easily accessible from the Manzano Expressway.

Defensibility: Defensible space is lacking for many homes in the community; however, fuels are sparse around most homes. Weed infestations are a problem for the fire department and pose a hazard when not maintained. There are a number of vacant lots in the community where fuels have been allowed to build up. Many yards have trash and household refuge in the yards. There are many mobile homes in the community that are highly combustible. A system of fire hydrants is available and water distribution infrastructure is generally good but greater water storage is still needed.

Special Concerns: The area is exposed to fast winds and fire spread from adjacent grasslands.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
3) Implement education and enforcement of the burn ordinance with a multimedia approach.
4) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
5) Implement community clean-up day to assist elderly and infirm neighbors with clean-up of yards.
6) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
7) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
8) Install at least 30,000-gallon tank at any public property with at least 200 gpm fill capacity for filling trucks to improve ISO rating.

LAS MARAVILLAS/PASITOS DEL CIELO

Las Maravillas and Pasitos del Cielo are located just east of the Tomé/Adelino communities on the east mesa and adjacent to the Manzano Expressway. These are recently developed subdivisions (less than20 years old), developed with land reserved for parks, open space, and pedestrian and bicycle paths, and are administered by the Valley Improvement Association. There is considerable potential for growth with road and lot layouts already in place. The community is made up of City of Rio Communities North, which has newer housing with a low percentage mobile homes. The population in 2010 was 1,803.

Community Hazard/Risk Assessment: 56/112 - Moderate

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Las Maravillas is located in slightly undulating terrain surrounded by open grassland.

Fuels: Fuels are typically grass and light brush.

Access: Most roads in the community are wide, surfaced, and with good turnarounds. The community is easily accessible from the Manzano Expressway.

Defensibility: Defensible space is sufficient around most homes due to the urban development and lack of wildland fuels. Construction materials are generally good, but with some combustible decks and fences. A system of fire hydrants is available and water distribution infrastructure is generally good. The community is served by the Tome/Adelino main fire station.

Special Concerns: The area is prone to considerable expansion and increased emergency response infrastructure is needed.

Recommendations:

1) Implement education and enforcement of the weed ordinance.
2) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
3) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
4) Implement education and enforcement of the burn ordinance with a multimedia approach.
5) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
6) Revisit risk assessment in 5 years if area has been developed.

TOM É /ADELINO

Located in central Valencia County just east of the Rio Grande, across the river from Los Chavez. The community contains large areas of irrigated agricultural land. The main access road is via NM 47.The community has several cultural and historic properties throughout including El Cerro/Tomé and Tomé Jail. Tomé Hill is a prominent feature in the community. The population in 2010 was 1,867.

Community Hazard/Risk Assessment: 84/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Tomé is located in a broad river valley.

Fuels: Fuels are typically agricultural abutting thick bosque.

Access: Most roads in the community are narrow and windy with some roads having insufficient turnaround space for emergency vehicles.

Defensibility: Defensible space is lacking for many homes in the village, particularly those that abut the bosque. Construction materials are generally flammable. There are no fire hydrants within the

community, so the fire department is dependent on tanker shuttle operations in the event of a wildfire. The area is served by the Tomé volunteer fire department.

Special Concerns: Thick bosque fuels pose a wildfire threat to the community and agricultural lands, however clearing of the clear ditch in Tome helps lower the fire danger.

Recommendations:

1) Increase defensible space with accompanying public education/outreach. Develop the educational aspects of Firewise to draw in more members.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
4) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
5) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
6) Continue to evaluate and improve County weed ordinance so as to reduce structural ignitability.
7) Create areas to facilitate emergency vehicle turnaround.
8) Strategically locate mobile water tanks during fire season.
9) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
10) Inventory CVARs to be protected from wildfire, e.g., historic buildings.
11) Implement thinning mitigation projects on canal ditch ROW next to private properties. Seek grant funding to hire YCC crews. Work with MRGCD.

LOS CHAVEZ

Los Chavez is located in central Valencia County, between Los Lunas and Belen along the west side of the Rio Grande. The community is characterized by rural agricultural activities and a number of commercial businesses along NM 314. The population in 2010 was 5,446.

Community Hazard/Risk Assessment: 109/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Los Chavez is located along a broad valley floor with generally flat terrain.

Fuels: Fuels are typically grass and light brush with some thicker brush along irrigation ditches. The community is in an urban setting with some agricultural lots on the outskirts. There are some interface areas along the bosque.

Access: The community is easily accessible from I-25, NM 6, and NM 314. Access to homes off of the main routes is more difficult with some narrow sections and dead ends. Some homes are located on the east side of the railroad, which may impede ingress and egress. Access to the bosque is poor with limited access points. The bosque access is gated by the MRGCD. Jetty jacks in the bosque can pose an access issue for emergency vehicles.

Defensibility: Defensible space is lacking for many homes in the community, and construction materials are generally flammable. A system of fire hydrants is available and water distribution infrastructure is generally good. The area is served by the Los Chavez fire department.

Special Concerns: Agricultural burning is common in the bosque areas and surrounding agricultural lands. The bosque is thick with invasive species that increase the fire hazard, often close to homes. There is poor access to the bosque.

Mid Valley Airpark is located in Los Chavez along the bosque. Some homes are located extremely close to bosque fuels with insufficient defensible space. Access to the airpark is also slowed by limited access points. There are no hydrants in the airpark area, so the fire department would have to use tanker shuttles in the event of a fire. House numbers are also difficult to follow and are often obscured.

Recommendations:

1) Increase defensible space with accompanying public education/outreach. Focus on homes next to the bosque. Develop the educational aspects of Firewise to draw in more members.
2) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
3) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
4) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
5) Consider creating more access points to the bosque.
6) Create areas to facilitate emergency vehicle turnaround, especially in the bosque.
7) Improve visibility of house numbering, especially throughout the airpark.
8) Develop a shaded fuel break, 2-3 chains wide in the area behind Mid-Valley Airport where fire danger is extremely high. This would help reduce the threat of wildfire while keeping some of the wildlife habitat intact.
9) Install at least 30,000-gallon tank at any public property with at least 200 gpm fill capacity for filling trucks to improve ISO rating.

CITY OF RIO COMMUNITIES

City of Rio Communities is located on the east side of the Rio Grande, directly across from the city of Belen. The community is bordered to the north by the Manzano Expressway and is accessed via NM 47 and NM 304. The community has industrial and commercial services. The population in 2010 was 4,013.

Community Hazard/Risk Assessment: 66/112 - Moderate

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: City of Rio Communities is located on generally flat grassland terrain.

Fuels: Fuels are typically grass and light brush. There are thick bosque fuels from NM 309/NM 47.

Access: Most roads in the community are wide, surfaced, and with good turnarounds. The community is easily accessible from the Manzano Expressway and via NM 304 from Belen.

Defensibility: Defensible space is generally sufficient throughout the community because of the urban and developed infrastructure. Homes on the edge of the community should maintain good clearance around homes to protect from fire spread from adjacent grasslands. Some homes that abut the bosque have insufficient defensible space. Construction materials are generally good. A system of fire hydrants is available and water distribution infrastructure is generally good. The area is served by the Rio Grande Estates fire department that is fully staffed during the day and staffed by volunteers at night.

Special Concerns: The area is prone to fire spread from the bosque.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
4) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
5) Encourage safe agricultural burning practices to support this cultural and historic practice.
6) Create areas to facilitate emergency vehicle turnaround.
7) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
8) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
9) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.

JARALES/BOSQUE

Jarales/Bosque is located south of Belen and on the west side of the Rio Grande. The community is agricultural in character, with large irrigated lots. Many of the homes in the community are of older construction and one-third are mobile homes. The community is close to the Bernardo Waterfowl Area, a popular bird watching area. The community has a number of historic and cultural properties including the Old Jarales Schoolhouse. The population in 2010was 2,475.

Community Hazard/Risk Assessment: 94/112 - High

Composite Risk Assessment for Surrounding Area: Moderate

Terrain: Jarales is located on generally flat grassland terrain within a broad river valley.

Fuels: Fuels are typically grass and light brush extending into thick bosque areas along the river valley and ditches. The community has a large amount of irrigated agricultural lands that break up the wildland fuels.

Access: Most roads in the community are narrow and windy with a number of homes that abut the bosque situated along dead-end roads with insufficient turnaround space. The community is accessed via NM 116.

Defensibility: Defensible space is lacking for many homes in the village, particularly those that abut the bosque. Most homes have older construction and construction materials are generally flammable. There are no fire hydrants in the community, so the fire department has to depend on tanker shuttles in the event of a fire. The area is served by the Jarales volunteer fire department.

Special Concerns: The area is prone to fire spread from agricultural burning. The bosque areas have thick fuels that pose a fire hazard.

Recommendations:

1) Increase defensible space with accompanying public education/outreach. Develop the educational aspects of Firewise to draw in more members.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
4) Establish a green waste collection site for transport of waste to the Los Lunas green waste facility.
5) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
6) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
7) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities. Consider municipal weed ordinance.

8) Create areas to facilitate emergency vehicle turnaround.
9) Install at least 30,000-gallon tank at any public property with at least 200 gpm fill capacity for filling trucks to improve ISO rating.
10) Implement thinning mitigation projects on canal ditch ROW next to private properties. Seek grant funding to hire YCC crews. Work with MRGCD.

TIERRA GRANDE

Tierra Grande is a large, mostly undeveloped area southeast of Belen and City of Rio Communities. The community is bordered by the Cibola National Forest to the east and Socorro County to the south. Residences are on large parcels with low housing density. The Burlington Northern Santa Fe Railroad passes by the southwestern portion of the community.

Community Hazard/Risk Assessment: 76/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Tierra Grande is located on generally flat grassland terrain that rises into the Manzano Mountains to the east.

Fuels: Fuels are typically grass and light brush.

Access: Most roads in the community are reasonably wide and unsurfaced, and most homes have good turnarounds. The community is accessed via NM 47 and is some distance from the nearest fire station. Many homes are located up long driveways, which may further slow response times.

Defensibility: Defensible space is lacking for many homes, but fuel loads tend to be low throughout the community. Grass fuel loads may pose a concern particularly during productive years or in areas that lack grazing. Most homes have new construction with non-combustible siding but combustible decks and fence lines. There are no fire hydrants in the community, but there is water storage at the fire station; the fire department has to rely on tanker shuttles in the event of a fire.

Special Concerns: The area is prone to fires from the highway and the railroad and is susceptible to strong winds.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Implement education and enforcement of the County burn ordinance with a multimedia approach.
3) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
4) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
5) Install at least 30,000-gallon tank at any public property with at least 200 gpm fill capacity for filling trucks to improve ISO rating.

6) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
7) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
8) Emphasize protection of Tierra Grande open space.

CASA COLORADA

Casa Colorada is located southwest of the Jarales/Bosque community and south of Belen on the east side of the river. The majority of land use is irrigated agriculture. The area has been growing with the development of the Salomon Estates to the north. The community is home to Pueblo Casa Colorado, one of the largest and most intact pueblos in the region. The population in 2010 was 56.

Community Hazard/Risk Assessment: 77/112 - High

Composite Risk Assessment for Surrounding Area: High

Terrain: Casa Colorada is located on generally flat grassland terrain.

Fuels: Fuels are typically grass and light brush.

Access: Most roads in the community are narrow, unpaved, and have insufficient turn around space for emergency vehicles. The community is easily accessible from NM 304.

Defensibility: Defensible space is lacking for many homes. Construction materials are generally flammable. There are no fire hydrants within the community, so the fire departments are dependent on tanker shuttle operations in the event of a wildfire. The area is served by the Belen fire departments: two manned stations and one volunteer station.

Special Concerns: The area is prone to fires from the highway and from illegal burning of trash.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
4) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
5) Create areas to facilitate emergency vehicle turnaround.
6) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.

7) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
8) Inventory CVARs to be protected from wildfire, e.g., historic buildings.

SALOMON ESTATES

Salomon estates is located north of the Casa Colorado community and south of the city of Belen on NM 304. The majority of the homes in the community are of older construction and one-half are mobile homes.

Community Hazard/Risk Assessment: 77/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Salomon Estates is located on generally flat grassland terrain.

Fuels: Fuels are typically grass and light brush. There is a high density of weeds.

Access: Most roads in the community are narrow, unpaved, and have insufficient turn around space for emergency vehicles. The community is easily accessible from NM 304.

Defensibility: Defensible space is lacking for many homes. Construction materials are generally flammable. There are no fire hydrants within the community, so the fire department is dependent on tanker shuttle operations in the event of a wildfire. The area is served by the Rio Grande Estates fire department.

Special Concerns: The area is prone to fires from the highway and from illegal burning. The community has high densities of weeds.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
4) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
5) Create areas to facilitate emergency vehicle turnaround.
6) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
7) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.
8) Inventory CVARs to be protected from wildfire, e.g., historic buildings.

HIGHLAND MEADOWS

Highland Meadows is located 38 miles west of the village of Los Lunas along NM 6. The community is a sparsely populated planned development from the 1960s of mixed residential and light commercial units. There is a high percentage of mobile homes and limited services. The area is served by the Highland Meadows fire district. The population in 2010 was 624.

Community Hazard/Risk Assessment: 68/112 - Moderate

Composite Risk Assessment for Surrounding Area: Moderate

Terrain: Highland Meadows is located on generally flat grassland terrain but surrounded by a series of mesa and drainages.

Fuels: Fuels are typically grass and light brush.

Access: The community is accessed via NM 6. Most roads in the community are unsurfaced and homes are situated down long driveways. Most have good turnarounds.

Defensibility: Defensible space is generally good due to the sparse vegetation throughout the community. There is significant separation between structures. Construction materials are generally flammable. The area is served by the Highland Meadows fire department. There are no hydrants in the community, so the fire department has to carry out tanker shuttles in the event of a fire.

Special Concerns: The area is prone to fires from the highway and the railroad.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
4) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
5) Implement community clean-up day to assist elderly and infirm neighbors with clean-up of yards.
6) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
7) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.

SAN CLEMENTE

San Clemente is located just south of NM 6 and west of the village of Los Lunas. Much of the community is rural residential. The community encompasses nearly 40,000 acres, and nearly 2,000 individuals own property, most living on 10-acre parcels. Property owners in the community are part of the San Clemente Community Association.

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: San Clemente is located on generally flat grassland terrain and grazing lands.

Fuels: Fuels are typically grass and light brush. There are few wildfires in the area.

Access: Poor road markings and limited access points.

Defensibility: The area is served by the Los Chavez fire department.

Special Concerns: There is no water supply for fire suppression.

Recommendations:

1) Increase defensible space with accompanying public education/outreach.
2) Implement education and enforcement of the County and Municipal burn ordinance with a multimedia approach.
3) Purchase County brushhog to remove brush and weeds. Provide dump trucks to community to haul away brush/weed piles.
4) Revisit the County weed ordinance so as to address the effect of weeds on fire risk to communities.
5) Implement community clean-up day to assist elderly and infirm neighbors with clean-up of yards.
6) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
7) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County
8) Seek grant money for increased water storage facilities.

SOUTHWEST MESA

This community is located directly west of the city of Belen. The community is characterized by undeveloped land bordering the escarpment of the West Mesa. There is potential for growth in this area. The area is home to the Alexander Municipal Airport. The population in 2010 was 1,703.

Community Hazard/Risk Assessment: 73/112 - High

Composite Risk Assessment for Surrounding Area: Moderate

Terrain: The Southwest Mesa community is located atop a flat mesa.

Fuels: Fuels are typically grass and sagebrush. There are few wildfires in the area.

Access: Most roads in the community are wide, with a mixture of surfaced and unsurfaced pavement and generally good turnarounds. The community is accessed via Camino del Llano west of Belen. There is only one main paved road in and out of the community, which may impede emergency response or evacuation.

Defensibility: Defensible space is sufficient around most homes due to the sparsity of fuels. There is considerable separation between structures. Construction materials are generally good but with combustible decks and fences. The area is served by the fire department located at the airpark. There are no hydrants in the community; however, there are hydrants up to the airpark, so the fire department would have to carry out tanker shuttles in the event of a fire.

Special Concerns: The lack of water supply west of the airpark is a concern.

Recommendations:

1) Implement education and enforcement of the weed ordinance.
2) Implement education and enforcement of the burn ordinance with a multimedia approach.
3) Extend water supply infrastructure, or at times of high fire danger place mobile tanks in strategic locations.
4) Seek grant funding for increased water storage facilities.
5) Continue county led home hazard assessments to provide fire department pre-planning opportunities and improve public outreach to reduce home hazards and structural ignitability.
6) Increase distribution of the Living and Working with Fire Brochure developed for the County. The back cover of that brochure discusses the open burning rules for the County.

PUEBLO OF ISLETA

The Pueblo of Isleta is located at the northern end of the County and extends north into Bernalillo County and east into Torrance County. Isleta Pueblo lands are a mix of traditional cultural and modern business infrastructure, with agricultural lands along the river valley. The population of the pueblo in 2010 was 3,400.

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: The Pueblo is located on generally flat grassland terrain and broad river valley extending up to higher elevations in the Manzano Mountains.

Fuels: Fuels are typically grass and light brush on the open plains and thick bosque fuels along the river.

Recommendations:

1) Increase defensible space with accompanying public education/outreach. Develop the educational aspects of Firewise to draw in more members.
2) Develop community evacuation plans.
3) Implement community clean-up day to assist elderly and infirm neighbors with clean-up of yards.
4) Carry out community home assessments to determine methods to reduce structural ignitability.
5) Formulate Mutual Aid Agreements for fire suppression.

6) Develop a Pueblo of Isleta community level CWPP to address specific concerns on Isleta lands.

LAGUNA PUEBLO

Laguna Pueblo is located in the northwestern portion of the County. Much of the Laguna Pueblo lands are rural grazing lands with minimal structures or population. These grazing lands are considered CVARs to be protected from wildfire. The area is served by the Laguna Fire Department which is a career department of 20 full-time firefighters and three to four volunteers and four stations/substations. About 50% of the firefighters have received wildland fire training. The fire department recently received an ISO rating of 6.

Community Hazard/Risk Assessment:

Composite Risk Assessment for Surrounding Area: Moderate–High

Terrain: Varied terrain from flat plains to steep mesas.

Fuels: Fuels are typically grass and light brush with bosque areas along the Rio Puerco.

Access: At great distance from fire stations and therefore often long response times.

Defensibility: There are very few structures that fall within the planning area. There is a decent gravity fed hydrant system throughout the fire departments jurisdiction.

Special Concerns: Protection of grazing lands is the primary concern of the Laguna Pueblo. Response times are often slow due to the distance from the fire stations to the Laguna lands in Valencia County. Many off-highway brush fires or structure fires that spread to the brush.

Recommendations:

1) Improve coordination between fire departments and formulate mutual aid agreements.
2) Develop a Laguna Pueblo community level CWPP to address specific concerns on Laguna lands.
3) Seek funding to purchase additional wildland tools.
4) Seek funding to purchase additional brush trucks for new sub/stations.

VALENCIA COUNTY BOSQUE

Due to its relatively uniform wildfire hazards and risks, the County's bosque is assessed as one continuous entity throughout the planning area.

The Rio Grande flows through the center of the County and is surrounded by numerous communities along its length. The riparian woodland, or bosque, is a principal feature of the river corridor and is managed by a variety of entities, but primarily the MRGCD. In 2007, the MRGCD in partnership with a large number of Middle Rio Grande stakeholders,

including the County and associated municipalities and fire departments, created the Middle Rio Grande Bosque CWPP to seek to protect the many natural and human values that make up this bosque ecosystem and adjacent lands within the MRGCD (SWCA Environmental Consultants [SWCA] 2007).

Until recent times the Middle Rio Grande Bosque did not pose a wildfire threat. However, since the early 1900s, the bosque has undergone dramatic environmental changes resulting from human activities. The bosque, once dominated by native Rio Grande cottonwood and willows, is now dominated in many areas by non-native trees, including saltcedar (*Tamarix* spp.) and Russian olive (*Elaeagnus angustifolia*), along with understory vegetation dominated by non-native kochia (*Kochia scoparia*) and Russian thistle (*Salsola tragus*). Saltcedar and Russian olive in particular are highly flammable, and saltcedar stumps sprout aggressively following fires. Dead leaf litter, along with dead standing kochia and Russian thistle, provide fine fuels for the ignition of wildfires, especially during the dry and windy spring months.

Several large and catastrophic wildfires have consumed portions of the bosque and destroyed natural resources and infrastructure over the last decade. These and other recent fires in neighboring counties demonstrate the severity and potential danger of Middle Rio Grande Bosque wildfires to human communities and residences.

Community Hazard/Risk Assessment: 99/112 - High

Composite Risk Assessment for Surrounding Area: Moderate–Extreme

Fuels: The bosque is predominantly classified as a "timber litter" fuel type with very high broadleaf litter fuel loading, a moderate fire spread rate, and moderate flame length. Because of the fire behavior they generate, these fuels are likely to produce high risk areas in the risk assessment because of the difficulty associated with suppressing crown fire.

Access: Access to the bosque tends to be limited throughout the County. Many access areas are gated to prevent public access; however, fire departments have access through agreements with the MRGCD. Because there are only a few access points through which emergency vehicles can navigate, depending on the location of a fire relative to the access point, response times can sometimes be slowed considerably. Many homes are located within or adjacent to the bosque and in general access roads to these bosque homes within communities tend to be narrow and windy and often lack sufficient turnaround space for emergency vehicles.

Defensibility: Defensible space is lacking for most homes located within or adjacent to the bosque. Because of the potential extreme fire behavior predicted for bosque fuels, particularly in areas where saltcedar and Russian olive are prevalent, defensible space should be considerable in order to allow firefighters to safely defend structures. In most cases, defensible space requires treatment of bosque fuels and treatments around private homes that provide 30 to 100 feet of minimal to reduced vegetation in

order to reduce fire behavior and slow its spread. Construction materials of bosque structures will vary widely throughout the County. Homes with flammable siding and roofs are at the greatest risk from wildfire, particularly those with wood shingle roofs or wooden decks that overhang or make contact with thick vegetation. Most bosque areas are served by either a municipal or volunteer department. In communities with limited hydrants, departments would have to depend on tanker shuttle operations in the event of a fire.

Special Concerns: Infestations of saltcedar and Russian olive have the potential to generate extreme fire behavior. Limited access slows fire response, and recreational use of the bosque increases fire ignition potential. Agricultural burning has the potential to spread to the bosque. Bosque fire has potential to spot into agricultural land causing a fast-moving fire threatening haystacks/hay barns, structures, farm equipment, etc. The MRGCD is required to maintain levees without trees which helps to mitigate fire risk.

Recommendations:

1) Increase defensible space for all structures adjacent to the bosque, with accompanying public education/outreach. Develop the educational aspects of Firewise to draw in more members.
2) Emphasize importance of implementing defensible space around agricultural lands to prevent wildfire spread to structures. Ensure continued maintenance to prevent spread of weeds.
3) Implement education and enforcement of the burn ordinance with a multimedia approach Emphasize adjacent agricultural lands and fireworks at public access points.
4) Carry out fuel treatments to reduce invasive saltcedar, Russian olive, and Siberian elm (refer to Section 5.1.1) with follow up restoration of native species.
5) Secure funding and agreements with local fire department crews for treatment of resprouts and weeds in treated areas.
6) Increase emergency access points into the bosque. Coordinate bosque access issues with MRGCD.
7) Coordinate with MRGCD regarding fire risk and first responders. Improve communication between MRGCD and fire departments.
8) Ensure maintenance of roads and thin back overhanging branches that prevent emergency vehicle access.
9) Map existing fire breaks and develop additional fire breaks and make a comprehensive map to include in a fire suppression plan.
10) Implement public outreach campaign regarding safe use of fireworks to reduce fire ignition risk and reduce public health and safety impacts.
11) Implement thinning mitigation projects on canal ditch ROW next to private properties. Seek grant funding to hire YCC crews. Work with MRGCD.

COMPOSITE RISK ASSESSMENT MODEL

MODELING FIRE BEHAVIOR

Fire behavior is defined as the manner in which a fire reacts to the influences of fuel, weather, and topography. Fire behavior is often described in terms of its rate of spread and flame length. Wildland fire may also be defined by the strata of the fuel bed through which it burns. Ground fires smolder below surface litter in decomposing wood and roots. Surface fires consume grass, low shrubs, small branches, and forest litter. Crown fires move into or through the forest canopy.

The primary fire behavior modeling tool used for the VCCWPP Update is FlamMap 3.0, which analyzes fuel and terrain characteristics in a raster format under specific weather and fuel moisture scenarios. Surface

fire behavior is modeled based on Rothermel's (1972) surface fire behavior model, while the more difficult to evaluate crown fire behavior is predicted using Van Wagner's (1977) crown fire initiation model and Rothermel's (1991) crown fire spread model. A variety of geographically displayed outputs are then available, including rate of spread, flame length, fire line intensity, and crown fire behavior. These outputs are used to help direct mitigation recommendations and as inputs to the Composite Risk Assessment. For details on the Fire Behavior Modelling process please see Appendix C, Section 3.0.

COMPOSITE RISK HAZARD ASSESSMENT

The approach for the Composite Risk Hazard Assessment was revised for the CWPP Update. In order to address the increased risk and hazard associated with the wildland-urban interface, the WUI layer was incorporated into the assessment. The assessment is a synthesis of the wildland urban interface, fire occurrence and the four outputs from the FlamMap fire behavior model discussed in Appendix C, Section 3.0 (Figure 3-1). Each of these elements has been selected based on its relevance to fire suppression and WUI mitigation. The results of this process can be used to guide fire response levels and can then be compared to the Community Hazard/Risk Assessment to prioritize mitigation efforts.

All data used in the risk assessment have been processed using ESRI ArcGIS Desktop and the ESRI Spatial Analyst Extension. Information on these programs can be found at http://www.esri.com. Data have been gathered from all relevant agencies, and the most current data have been used.

All fire parameter datasets were converted to a raster format (a common GIS data format comprising a grid of cells or pixels, with each pixel containing a single value). The cell size for the data is 30 × 30 meters (98 × 98 feet). For Flame Length, Fire line Intensity, Rate of Spread, and Crown Fire Activity, the original cell values were reclassified with a new value between 1 and 4, based on the significance of the data (1 = lowest, 4 = highest). Prior to running the model on the reclassified datasets, each of the input parameters was weighted; that is, assigned a percentage value reflecting that parameter's importance in the model.

The parameters were then placed into a Weighted Sum Model, which "stacks" each geographically aligned dataset and evaluates an output value derived from each cell value of the overlaid dataset in combination with the weighted assessment. In a Weighted Sum Model, the weighted values of each pixel from each parameter dataset are added together so that the resulting dataset contains pixels with summed values of all the parameters. This method ensures that the model resolution is maintained in the results and thus provides finer detail and range of values for denoting fire risk.

This ranking shows the relative fire risk of each cell based on the input parameters. Figure 3-1 illustrates the individual datasets and the relative weights assigned within the modeling framework.

Figure 3-2 is the risk/hazard assessment for the planning area; it combines all the fire behavior parameters described above. The risk/hazard assessment classifies the planning area into low, moderate, high, and extreme risk categories. The risk/hazard assessment is designed to be used to prioritize fuel treatments and other wildfire mitigation actions.

As can be expected across most of the fire-adapted western United States, much of the County is at moderate or high risk of wildfire. The areas of most extreme risk are concentrated in the steep higher elevation woodlands and forests of the Manzano Mountains and western mesas, as well as the thick bosque areas along the Rio Grande. High risk areas are predicted surrounding Meadow Lake and El Cerro Mission. The fuels on the western half of the County are classified as heavily grazed short-grass fuels and

low-load shrub/brush fuels capable of only low spread rates and flame lengths, hence the more moderate and low risk rating.

This CWPP update acknowledges the increased risk and hazard intrinsic to communities that fall within or adjacent to the Rio Grande Bosque. Unlike the 2012 CWPP, this 2018 update includes the delineated WUI area as part of the composite assessment model (see Figure 3-2). This risk/hazard assessment shows the risk and hazards of wildfire for bosque communities in the County is high. In order to show this risk in greater detail, zoomed in versions of the risk assessment, focused on the bosque corridor, are provided in Appendix D, Maps 7-20. Conceptual areas for fuel treatments are also identified on these maps, with priority placed on areas that fall within or adjacent to the WUI and in areas identified as being at moderate to extreme risk for wildfire.

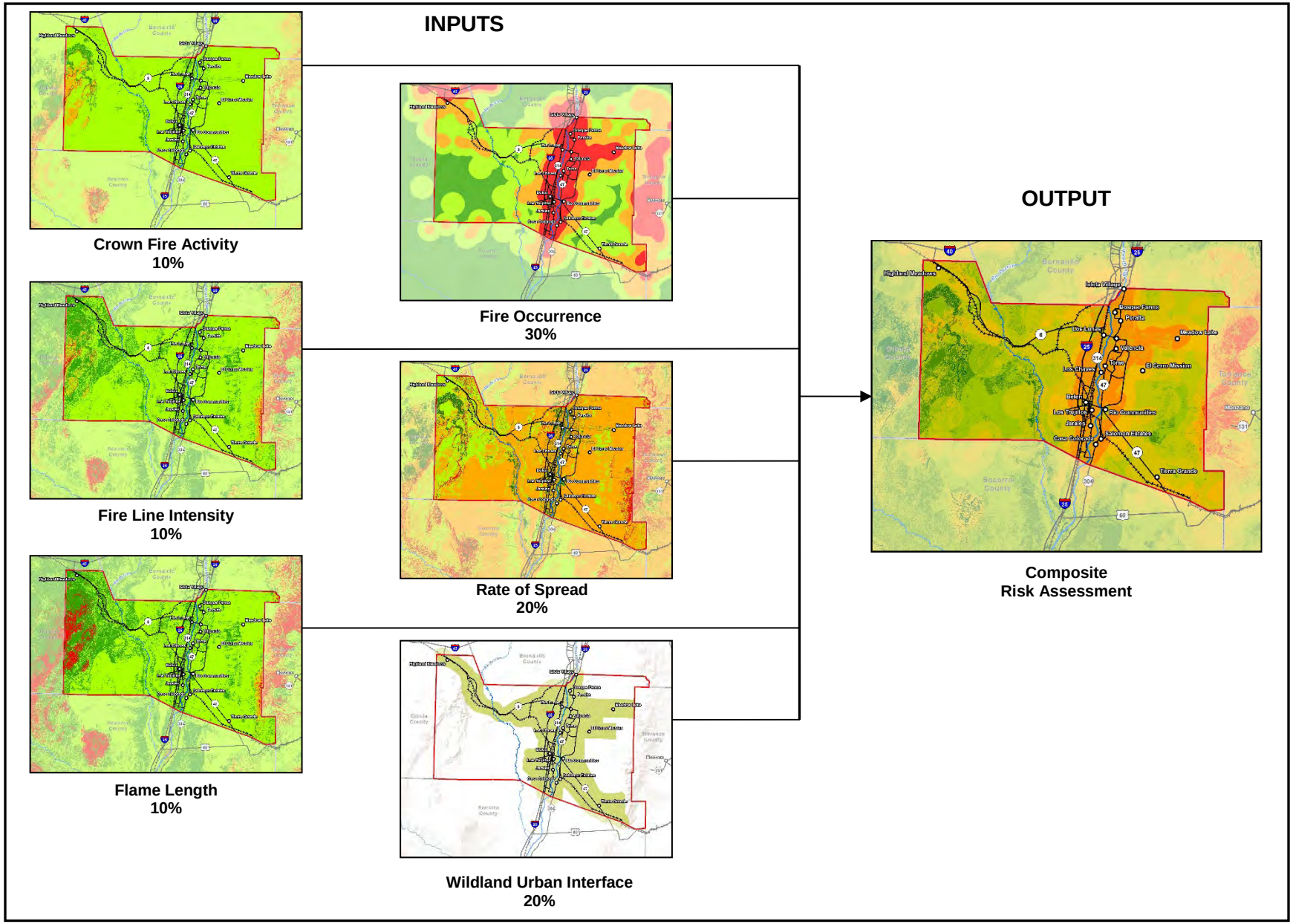

Figure 3-1. Composite risk assessment process.

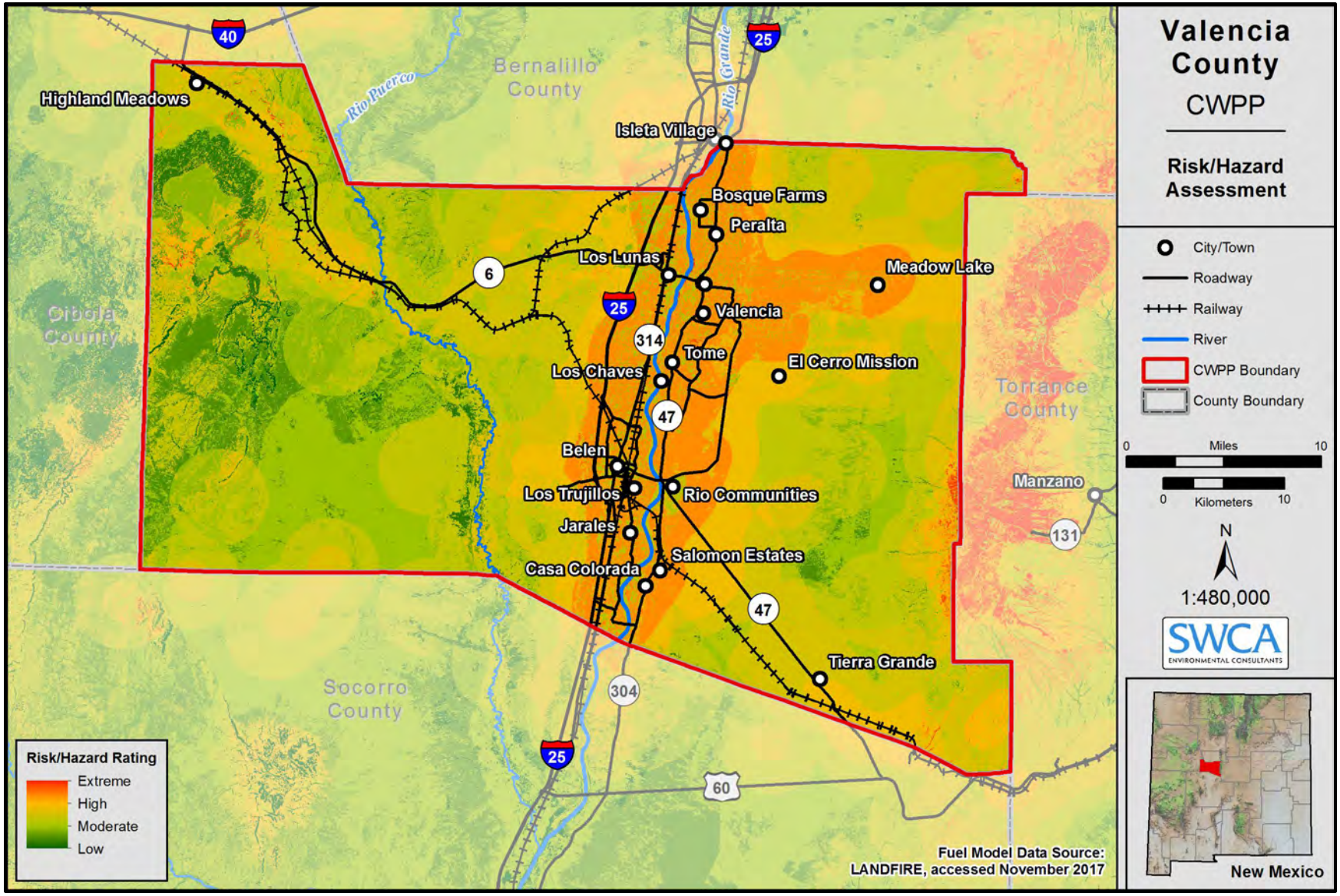

Figure 3-2. Composite risk assessment.

PUBLIC OUTREACH

A variety of public outreach activities were carried out during the development of the 2012 plan, including dissemination of a community survey. Results of the community survey are provided in Appendix A, Section 3.0.

COMMUNITY VALUES AT RISK

A thorough list of community values at risk (CVAR) was compiled in 2012 and revised during the 2018 update. The CWPP WUI boundary was developed to encompass the majority of these CVARs. CVARs are split into natural, social, and cultural classes. It is important to note that although an identification of CVARs can inform treatment recommendations, a number of factors must be considered in order to fully prioritize areas for treatment; these factors include appropriateness of treatment, landownership constraints, locations of ongoing projects, available resources, and other physical, social, or ecological barriers to treatment.

The scope of this CWPP does not allow determination of the absolute natural, socioeconomic, and cultural values that could be impacted by wildfire in the planning area. In terms of socioeconomic values, the impact due to wildfire would cross many scales and sectors of the economy and call upon resources locally, regionally, and nationally. To understand the breadth of such an impact, land agencies and local communities may guide efforts towards completing a comprehensive economic and demographic analysis in relation to wildfire impacts. This CWPP may be used to identify priority areas and communities that could experience the greatest economic strain. It is suggested that communities included in the VCCWPP achieve a finer-grained analysis of the smaller jurisdictional and community wildfire concerns by pursuing further funding to complete a community-level CWPP.

NATURAL COMMUNITY VALUES AT RISK

For residents and visitors alike, ecological values are central to the interests and aesthetics of the County. While wildland fire is a natural and necessary part of the local ecology, high-severity fire poses a hazard to many of the natural resources. Under a normally occurring fire regime within fire adapted vegetation types, for example the grassland and woodland portions of the County, most ecological values will recover within a few years of a fire. Within the bosque vegetation, which did not evolve with frequent fire, ecological values may take many years to recover from uncharacteristically severe wildfire. Wildlife habitat in these non-fire adapted vegetation communities may take years. Uncharacteristically severe or unseasonable wildfire may compromise ecosystem health for all vegetation communities, producing conditions conducive to the spread of noxious and invasive weeds.

Ecological values at risk to wildfire in this area include the following:

- Wildlife and aquatic habitat
- Bosque/Cottonwood galleries
- Watersheds
- State parks
- Viewsheds
- Soil stability
- Natural vegetation communities
- Air quality
- Native species
- Threatened and endangered species
- Threatened and endangered species critical habitat
- Water resources
- Riparian
- Wetlands
- Whitfield Wildlife Conservation Area
- Fishing and bird watching sites
- Meadow Lake Open Space
- Tierra Grande Open Space
- Los Lunas River Park

SOCIOECONOMIC COMMUNITY VALUES AT RISK

Social values include population, recreation, infrastructure, agriculture, and the built environment. Much of the built environment associated with the bosque falls within the WUI. The bosque itself can be considered a socioeconomic and cultural resource since tribal and non-tribal members have strong connections to the bosque and traditional uses, including recreation, firewood, plants, religion etc.

Examples of socioeconomic CVAR in the County include the following:

- Communities
- Homes
- Utilities (e.g., power and communication)
- Community buildings
- Water supply and treatment sites
- Tourism
- Hiking trails
- Agricultural land
- Livestock
- Farming and water delivery infrastructure
- Dairies
- Horse ranches
- Solar panels and windmills
- Community facilities (e.g., hospitals, schools, churches, senior and community centers, local halls)

CULTURAL COMMUNITY VALUES AT RISK

A large number of historic resources are in this planning area, including cultural sites, historic pueblos and villages, adobe churches, plaza structures and adjoining houses, and many historic civic and private buildings along the river corridor. Many of these historic cultural resources maintain their use and purpose within the neighborhoods that surround them; they also may be recognized as critical social infrastructure.

The following cultural resources were identified by members of the public and the Core Team:

- Historic churches
- Old homes and homesteads
- Historic plaza buildings
- Historic municipal buildings
- Historic buildings and houses (non-municipal) recognized on the National Register of Historic Places and State Register of Cultural Properties
- Traditional irrigated agricultural lands in the bosque corridor and their corresponding acequia systems and acequia components and structures
- Prehistoric and historic pueblo sites along the Rio Grande
- Petroglyphs
- Archaeological sites

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CHAPTER 4. MITIGATION PRIORITIES, RECOMMENDATIONS, IMPLEMENTATION, AND MONITORING

Numerous values throughout Valencia County are exposed to potential loss from wildfire. The VCCWPP focuses on the protection of lives, structures, and infrastructure of the WUI communities. The 2012 CWPP identified numerous projects to reduce wildfire risk and hazard throughout the County. Prioritization was based on the Community Hazard/Risk Assessments and the Composite Risk Assessment. The Core Team reviewed these projects during the 2018 CWPP update process and suggested multiple revisions to the recommendation matrixes.

Wildfire mitigation is defined as reduction of the probability and negative impacts of wildfire. This can be accomplished through wildland fuels management, non-fuels mitigation measures, and public outreach. Results are often most effective when all three approaches are pursued by governmental entities, citizen groups, and individuals working in concert. The key to success and the primary value of this document are with the implementation of action items and the maintenance thereof. Maintenance must be anticipated and planned, whether for fuels treatment maintenance or the continuation of an educational program.

The prioritized recommendations are aimed at reducing loss of life, property, and community values in the WUI within the County and are drawn from Core Team involvement, public input, Community Hazard/Risk Assessments, the Composite Risk Assessment, and input from resource professionals.

ALIGNMENT WITH THE NATIONAL COHESIVE STRATEGY

As part of the 2018 update to the CWPP, the plan has been aligned with the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) and its Phase III Western Regional Action Plan by adhering

to the nation-wide goal "*To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire.*" (National Strategy, 2014; page 3).

In order to do this, the CWPP recommendations have been structured around the three main goals of the Cohesive Strategy: Restoring and Maintaining Landscapes, Fire-adapted Communities, and Wildfire Response.

This chapter provides guidance for implementing recommendations under each Cohesive Strategy goal. Many of these community-specific recommendations can be implemented at the homeowner or community level. Projects requiring large-scale support can be prioritized based on the Community Hazard/Risk Assessments and Composite Risk Assessments.

COHESIVE STRATEGY GOAL 1: RESTORE AND MAINTAIN LANDSCAPES

Goal 1 of the Cohesive Strategy and the Western Regional Action Plan is: Restore and Maintain Landscapes: Landscapes across all jurisdictions are resilient to fire and other disturbances in accordance with management objectives.

> *"Sustaining landscape resiliency and the role of wildland fire as a critical ecological process requires a mix of actions that are consistent with management objectives. The West will use all available methods and tools for active management of the landscape to consider and conserve a diversity of ecological, social, and economic values. The West will coordinate with all partners and seek continued stakeholder engagement in developing market-based, flexible and proactive solutions that can take advantage of economies of scale. All aspects of wildland fire will be used to restore and maintain resilient landscapes. Emphasis will be placed on protecting the middle lands near communities." Western Regional Action Plan (2013), page 14.*

Fuels management of public and private land in the WUI is key to the survival of homes during a wildfire event as well as the means to meet the criteria of Goal 1. The importance of fuels management is reflected in forest policy at the federal level, with the HFRA requiring that federal land management agencies spend at least 50% of their fuels reduction funds on projects in the WUI.

Fuels should be modified with a strategic approach across the project area to reduce the threat that high-intensity wildfires pose to lives, property, and other values. Most fuel treatments discussed here relate to the bosque area, since other parts of the County do not have large amounts of timber or woodland fuels. Pursuant to these objectives, recommendations have been developed in the context of existing and planned fuels management projects. These recommendations initially focus adjacent to structures (defensible space), then near community boundaries (fuel breaks, cleanup of adjacent open spaces). A common focus of fuels treatment is to reduce non-native vegetation, diseased trees, dead fuels, in favor of healthy, more mature trees.

Each land management agency has a different set of policies governing the planning and implementation of fuels reduction projects; for example, treatments on federal land require intensive National Environmental Policy Act (NEPA) analysis, and many treatments may be carried out with wildlife habitat objectives as a primary goal. Because of the complex nature of large treatments on public land, it is the responsibility of local governments, with input from affected stakeholders, to determine which method(s) will safely accomplish the fuels management objectives for a given area. A thorough assessment of current fuel loading is an important prerequisite for any fuels prescription, and all treatment recommendations should be based on the best possible science. A number of documents are recommended for review by bosque land managers before planning a prescription (McDaniel and Taylor 2003; Najmi et al. 2005; Najmi

and Grogan 2006; Najmi and Wicklund 2000). When possible, simultaneously planning for the management of multiple resources while reducing fuels will ensure that the land remains viable for multiple uses in the long term. The effectiveness of any fuels reduction treatment depends on the degree of maintenance and monitoring that is employed. Monitoring will also ensure that objectives are being met in a cost-effective manner.

Defensible Space: Defensible space is perhaps the fastest, most cost-effective, and most efficacious means of reducing the risk of loss of life and property. Although fire agencies can be valuable in providing guidance and assistance, creating defensible space is the responsibility of the individual homeowner.

Effective defensible space consists of an essentially fuel-free zone adjacent to the home, a treated secondary zone that is thinned and cleaned of surface fuels, and (if the parcel is large enough) a transitional third zone that is basically a vegetation management area. These components work together in a proven and predictable manner. Zone 1 keeps fire from burning directly to the home; Zone 2 reduces the adjacent fire intensity and the likelihood of torching, crown fire, and ember production; and Zone 3 does the same at a broader scale, keeping the fire intensity lower by maintaining an open condition with reduced fuels (Figure 4-1).

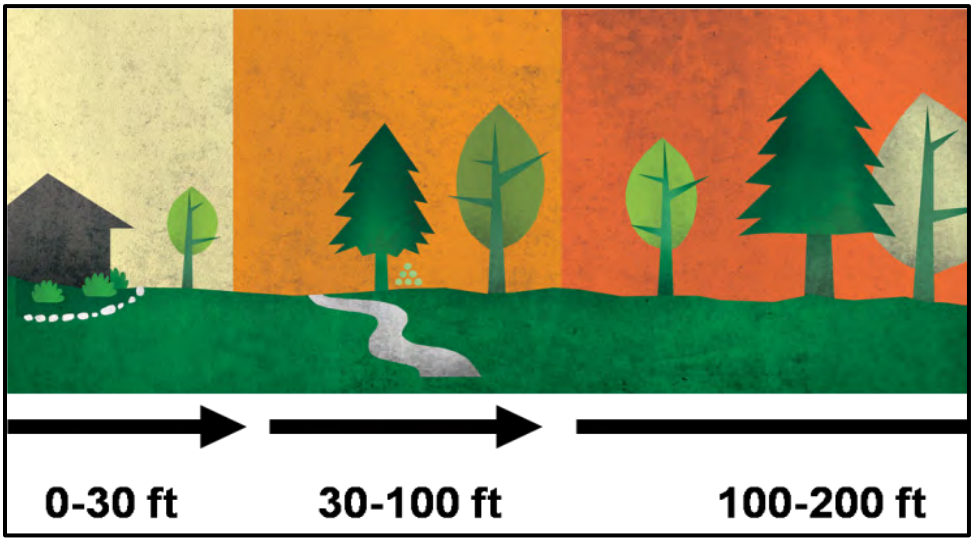

Figure 4-1. Defensible space zones. Source: www.firewise.org.

It should be emphasized that defensible space is just that—an area that allows firefighters to work effectively and with some degree of safety to defend structures. While defensible space may increase a home's chance of surviving a fire on its own, a structure's survival is not guaranteed, with or without firefighter protection. Nevertheless, when these principles are consistently applied across a neighborhood, everybody benefits.

Specific recommendations should be based on the particular hazards adjacent to a structure such as fuel type. Local fire authorities or a state forester should be contacted if a professional assessment seems warranted. Firewise Communities guidelines and the Valencia County Living and Working with Fire Brochure (Appendix F) are excellent resources but creating defensible space does not have to be an overwhelming process. Assisting neighbors may be essential in many cases. Homeowners should consider assisting the elderly, sharing ladders for gutter cleaning, and assisting neighbors with large thinning needs.

Adopting a phased approach can make the process more manageable and encourage maintenance (Table 4-1). Recommended actions are also illustrated in Figure 4-2.

Table 4-1. Example of a Phased Approach to Mitigating Home Ignitability

Year	Project	Actions
1	Basic yard cleanup (annual)	Dispose of clutter in the yard and under porches. Remove dead branches from yard. Mow and rake. Clean off roofs and gutters. Remove combustible vegetation near structures. Coordinate disposal as a neighborhood or community. Post 4-inch reflective address numbers visible from road.
2	Understory thinning near structures	Repeat basic yard cleanup. Limb trees up to 6–10 feet. Trim branches back 15 feet from chimneys. Trim or cut down brush. Remove young trees that can carry fire into canopies. Coordinate disposal as a neighborhood or community.
3	Understory thinning on private property along roads and drainages	Limb trees up to 6–10 feet. Trim or cut down brush. Remove young trees that can carry fire into canopies. Coordinate disposal as a neighborhood or community.
4	Overstory treatments on private property	Evaluate the need to thin mature or diseased trees. Prioritize and coordinate tree removal within neighborhoods to increase cost effectiveness.
5	Restart defensible space treatment cycle	Continue the annual basic yard cleanup. Evaluate need to revisit past efforts or catch those that were bypassed.

Fuel Breaks and Open Space Cleanup: The next location priority for fuels treatments should be where the community meets the wildland. This may be the outer margins of a town or an area adjacent to occluded open spaces such as a park or river corridor. Shaded fuel breaks may be created to provide options for suppression resources in timbered areas such as the bosque. In grassland areas, blading or mowing along the margins of roads, railroads, or along fence lines may help to reduce the spread of wildfire. Reducing fire spread along roads and community margins provides access for mitigation resources and firefighters and enhances the safety of evacuation routes.

Some areas adjacent to communities require fuel reduction to mitigate a hazardous condition, although they may not be not suitable for fuel breaks. The most prevalent example of this in Valencia County is the bosque that runs through the center of many towns. In the case of the bosque, removal of understory ladder fuels and weed abatement to reduce the potential for fire spread may be the best approach (Figure 4-2).

Weed Abatement: Many improvements have been made related to weed abatement and enforcement since this topic was raised as a concern in the 2012 CWPP. Ongoing weed abatement is still needed however, especially along the bosque drains.

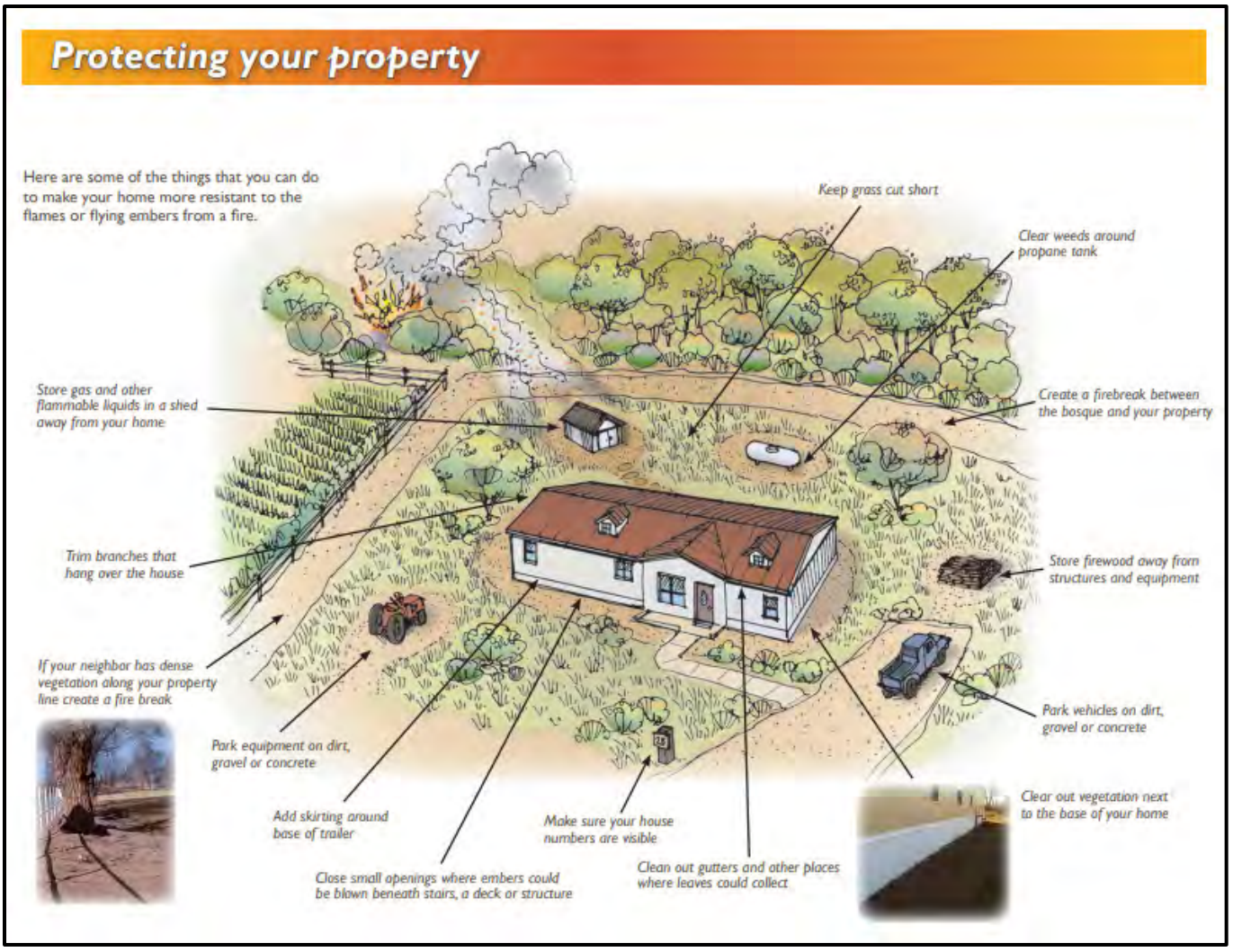

Figure 4-2. Recommended actions for homeowners to implement to protect their property.

METHODS OF FUELS REDUCTION IN BOSQUE FUELS

Several treatment methods are commonly used in treating bosque fuels, including manual treatments and mechanized treatments (Table 4-2). This brief synopsis of treatment options and cost estimates is provided for general knowledge; specific projects will require further planning. Cost estimates for treatments range from $500 to $2,000 but should be considered as very general guidelines. The appropriate treatment method and cost will vary depending on factors such as the following:

- Diameter of materials
- Acreage of project
- Fuel costs
- Area accessibility
- Density of fuels
- Project objectives

It is imperative that long-term monitoring and maintenance of all treatments is implemented. Post-treatment rehabilitation s with native plants is critical depending on recovery of native plants and site conditions.

Table 4-2. Summary of Fuels Treatment Methods

Treatment	Estimated Cost	Comments
Machine mowing	$90–$200 per acre	Appropriate for large, flat, grassy areas on relatively flat terrain.
Brush mastication	$300–$500 per acre	Brush species (saltcedar and Russian olive) tend to resprout vigorously after mechanical treatment. Follow-up treatment with herbicides, grazing, or further mechanical treatments are typically necessary. Mastication tends to be less expensive than manual (chainsaw) treatment and eliminates disposal issues.
Timber mastication	$300–$1,200 per acre	Materials up to 10 inches in diameter and slopes up to 30 percent can be treated. Eliminates disposal issues. Environmental impact of residue being left on-site is still being studied.
Manual treatment with chipping or pile burning	$300–$1,200 per acre	Allows for removal of merchantable materials or firewood in timber. Requires chipping, hauling, pile burning of slash in cases where lop and scatter is inappropriate. Pile burning must comply with smoke management policy.

Manual Treatment

Manual treatment refers to crew-implemented cutting with chainsaws. Although it can be more expensive than mechanized treatment, crews can access many areas that are otherwise inaccessible with machines. Treatments can often be implemented with more precision than mechanized methods. Merchantable materials and firewood can be removed while non-merchantable materials are often lopped and scattered and then piled and burned on-site or removed from site. Since 2012 land managers have begun to change manual treatment protocols, avoiding treatments that produce mulch or chips, because overly deep mulch depths can suppress groundcover and vegetation recovery and alter future fire behavior. Thick mulch around the base of native trees in a subsequent fire can produce enough heat to kill or damage them and increases the time fire suppression resources must be on site to mop up smoldering mulch layers (Yasmeen Najmi, personal communication, 2018).

Mechanized Treatments

Mechanized treatments include mowing, mastication, and whole tree felling. These treatments are often more cost effective than manual treatment.

Mowing, including all-terrain vehicle (ATV) and tractor-pulled mower decks, can effectively reduce grass fuels adjacent to structures. For heavier fuels, a number of different masticating machines can be used, including drum- or blade-type masticating heads mounted on machines and ranging in size from a small skid-steer to large front-end loaders. Some masticators are capable of grinding standing timber up to 10 inches in diameter. Other masticators are more effective for use in brush or surface fuels. Mowing and mastication do not actually reduce the amount of on-site biomass but alter the fuel arrangement to a less combustible profile.

Mechanical shears mounted on feller-bunchers are used for whole tree removal. The stems are typically hauled off-site for utilization while the limbs are discarded. The discarded material may be masticated, chipped, or burned in order to reduce the wildfire hazard and to speed the recycling of nutrients.

Herbicides

Brush fuels such as saltcedar and Russian olive will often vigorously resprout after treatment and fires. Herbicides often prove to be the most practical and cost-effective method for treating non-native trees and noxious weeds, especially when combined with mechanized treatments. The type and amount of herbicide applied will depend on a number of variables such as species, runoff and exposure concerns, stand age and density, and type of initial treatment. Herbicide treatments add to the cost of a project, but this must be weighed against the efficacy of the initial mechanized treatment without the herbicide. Herbicide treatments should be conducted by a certified contractor and may require additional environmental studies and permits.

Treatments for Saltcedar Infestation

Many riparian areas throughout the County have become overrun by saltcedar. The eradication and control of saltcedar is challenging. Long-term commitment and multiple techniques are required to reduce its extent and minimize its spread. Techniques that are used for the management of saltcedar include mechanical, chemical, and biological methods. Pre and post bosque treatment pictures are shown below Figure 4-3 to Figure 4-5).

Mechanical treatments, such as hand-pulling and cutting, can be used for smaller monotypic stands of young saltcedar saplings, but these treatments become expensive and ineffective within large stands of shrub-sized individuals and are not appropriate for mixed stands and cottonwood gallery forests, typical of the bosque throughout Valencia County. Root cutting and bulldozing can be effective, but the benefits may not outweigh the problems resulting from soil damage and the expense of this method. Fire has been used with some success, but because saltcedar is fire-adapted, the species readily resprouts. Resprouting is likely to occur after using any of these methods, so it is highly recommended to combine methods and follow-up treatments to continue control of this species.

Chemical control is typically the most effective method used for saltcedar; however, application of herbicides should be site specific. Aerial applications of imazapyr or an imazapyr and glyphosphate mixture should occur from late August through September. This method is slow-acting, and treated trees should not be removed for up to 3 years after the treatment to ensure root kill. It is important to only use herbicides that are approved for application near water. Biological control methods have also shown some success. The saltcedar leaf beetle (*Diorhabda elongata)* has had proven success in Colorado at selectively attacking saltcedar infestations through asserting physiological stress on the tree through defoliation. Creating large numbers of dead trees, however, adds to the fuel load in the bosque, increasing fire hazard, and subsequent thinning is required to reduce this hazard once the tree has been killed. Beetle defoliation coupled with burning in the summer months under intense prescribed fire prescription has been found to be successful in some saltcedar stands. Significant damage to the root crown is required for high mortality; this may require supplementing fuel loading, particularly around the root crown. The NMSF has been working with local agencies to develop a plan for the beetle-infested areas and funding is available for thinning saltcedar and Russian olive in the bosque. The combination of cutting and/or chemical application to cut stumps or small-diameter whips is one of the most common management techniques used for saltcedar. The methods used will depend on the size of the saltcedar stand, the characteristics of the riparian area, and the distance to a community.

Figure 4-3. Bosque vegetation, pre-treatment.

Figure 4-4. Bosque vegetation, post treatment.

Figure 4-5. Bosque vegetation, post treatment

It is important to note that Salt cedar is a component of critical habitat for the SW willow flycatcher and Yellow-billed cuckoo so the beetle has had unintended consequences that have to be mitigated throughout the Rio Grande Bosque (Yasmeen Najmi, personal communication, 2018).

RECOMMENDATIONS TO REDUCE HAZARDOUS FUELS

Fuels treatment priorities were determined based on the Community Hazard/Risk Assessment, the Composite Risk Assessment, and existing fuels management projects. Specific treatment recommendations for each community are included in Section 4.3, Detailed Community Assessments.

Despite considerable efforts on the part of some homeowners, defensible space improvements are needed throughout the County, particularly for bosque communities. This coupled with weed abatement should be considered the highest priority in terms of fuels treatments, public education, and the reduction of structure ignitions. As such, a holistic approach should be adopted, including:

- Increased public education targeted toward defensible space in bosque fuel types, including the ability for homeowners to get assistance with on-site recommendations.
- Increased assistance for slash and weed disposal to prevent illegal burning.
- Increased assistance in obtaining funding.
- Increased enforcement of the weed ordinance to consistently mandate yard clean-up and maintenance.

The imperative for improved defensible space in bosque communities should be considered a universal priority throughout the County. As such, it will be assumed rather than listed as a treatment for each community in the fuels treatment project table (Table 4-3).

Appendix D, Maps 7-20 focus on the Rio Grande bosque portion of the County and include proposed fuel treatment projects that are needed to reduce wildfire risk and hazard to communities located within the bosque environment. The proposed treatments are delineated based on an assessment of current vegetation density and areas that were predicted to be at high and extreme risk in the risk assessment model. In addition, many of these areas were identified for priority treatment in the Middle Rio Grande Bosque Community Wildfire Protection Plan (SWCA 2007). Before any implementation, each fuel reduction project would require specific planning and any necessary environmental compliance.

Table 4-3. Recommended Fuel Treatment Projects

Location	Project	Goals and Objectives	Implementation Schedule	Priority Level	Potential Agencies or Groups
Entire CWPP planning area	Fuels management in bosque drains	Continue with ongoing work carried out by MRGCD to reduce hazardous fuel loading and weed densities in riverside drains for fire mitigation and access, as well as drain function and maintenance.	Annual maintenance	High	MRGCD
CWPP-wide mid-channel treatments	Island and mid-channel bar thinning	Thin fuels (typically invasives) on established islands and mid-channel bars that propagate the spread of fire laterally and perpendicularly on the river.	Fall 2020 and annual maintenance	Moderate	MRGCD, New Mexico Interstate Stream Commission, USACE
Bosque communities throughout the planning area	Green waste pick-up locations/ community slash pile	Identify green waste pickup areas and appropriate vestibule for gathering green waste, where the County can collect green waste and transfer to the Los Lunas Compost Station.	Spring 2020	High	County Public Works, VCFD
Bosque communities throughout the planning area	Community chipper days	Valencia County purchased a chipper in 2015 that could be used to chip slash from fuel treatments. Los Lunas also owns a chipper. Equipment operators/YCC crews could be hired temporarily twice a year to staff chipper days. Community fire grants could be pursued to fund hiring.	Annual (twice a year).	High	County
Bosque communities throughout the planning area	Private land thinning assistance	Increase funding to assist homeowners with thinning on private land. Focus on areas next to clear ditch with high volumes of Russian olive, Siberian elm and salt cedar.	Spring 2020 with annual maintenance	High	VSWCD, NMSF
Entire CWPP planning area	Post-treatment evaluations	Continue to promote regular thinning and upkeep of treated areas to ensure that regrowth does not create further fire threat.	Annual monitoring	High	All bosque landowners/managers and resource advisors. The Bosque Ecosystem Restoration Project (Corps of Engineers) and Socorro Save our Bosque Task Force are funding pre and post treatment monitoring.

Location	Project	Goals and Objectives	Implementation Schedule	Priority Level	Potential Agencies or Groups
Entire CWPP planning area	Evaluation and mapping of burned areas	Need monitoring and mapping of post-burn areas in terms of ecology, soil erosion, invasive species recruitment, and wildlife. Evaluate efficacy of treatment types.	Immediate and annual post-fire burn monitoring	Moderate	MRGCD, NMSF, VSWCD
Entire CWPP planning area	Long-term fuel reduction strategy (~20-year plan)	Need for a long-range fuels strategy throughout this planning area, as well as collaboration with adjacent County's to treat the broader landscape.	Initiate collaborative group meetings – Spring 2020	Moderate	NMSF, MRGCD, County, VSWCD
Bosque areas Countywide	Remove Kellner jetty jacks as needed and as approved by MRGCD, COE.	Reduce fuel loads and debris accumulation near jetty jacks; reduce threat of injury to firefighters.	Fall 2013	High	MRGCD, USACE
Whitfield Wildlife Conservation Area	Fuel breaks and landscape fuel treatments	Identified by the public as a community value at risk. Create shaded fuel breaks around structures and sensitive habitat. Ongoing pile burning is already underway. Annual pile burning should continue to reduce slash. Develop a strategic fire management plan/fire response plan in conjunction with the Whitfield staff. Consider YCC crew to assist with projects.	Spring 2020	High	Whitfield Wildlife Conservation Area, VSWCD, USFWS
Rio Grande bosque (see Appendix D, Maps 7-20 for maps of proposed treatment locations)	Bosque fuels reduction, thin from below, non-native species removal and treatments, followed by restoration with native species appropriate to the site and management goals.	Reduce fire intensity, lower flame lengths, improve ability for safe suppression by firefighters. Phased approach, treat areas closest to public access points first and work north and south. Continue with follow-up treatment and maintenance. Treat smaller areas that could serve as fuel breaks, for example 2-acre areas strategically located throughout high-priority areas.	Target date for treatment to begin Fall 2019; annual maintenance and treatment of resprouts	High	MRGCD, Valencia County, NMSF, VSWCD
Countywide	Develop a YCC crew to assist with fuel treatment projects and community clean-up projects	Seek grant funding to support hiring a YCC crew. The crew would receive training in order to carry out the following activities: -fire crew -bucking, stacking dead wood -prepare for fuel wood collection -chipping -assist with vegetation management at Whitfield Wildlife Conservation Area -multi-agency cooperation	Spring 2020	High	VCFD, MRGCD, VSWCD, Whitfield Wildlife Conservation Area

COHESIVE STRATEGY GOAL 2: FIRE-ADAPTED COMMUNITIES

Goal 2 of the Cohesive Strategy/Western Regional Action Plan is: Fire-Adapted Communities: Human populations and infrastructure can withstand a wildfire without loss of life and property. The basic premise of this goal is:

> *"Preventing or minimizing the loss of life and property due to wildfire requires a combination of thorough pre-fire planning and action, followed by prudent and immediate response during a wildfire event. Post-fire activities can also speed community recovery efforts and help limit the long-term effects and costs of wildfire. CWPPs should identify high-risk areas and actions residents can take to reduce their risk. Fuels treatments in and near communities can provide buffer zones to protect structures, important community values and evacuation routes. Collaboration, self-sufficiency, acceptance of the risks and consequences of actions (or non-action), assisting those who need assistance (such as the elderly), and encouraging cultural and behavioral changes regarding fire and fire protection are important concepts. Attention will be paid to values to be protected in the middle ground (lands between the community and the forest) including: watersheds, viewsheds, utility and transportation corridors, cultural and historic values, etc.". Western Regional Action Plan (2013), page 15.*

In this CWPP update, recommendations for fire-adapted communities include public education and outreach actions and actions to reduce structural ignitability.

RECOMMENDATIONS FOR PUBLIC EDUCATION AND OUTREACH

Just as environmental hazards need to be mitigated to reduce the risk of fire loss, so do the human hazards. Lack of knowledge, lack of positive actions, and negative actions all contribute to increased risk of loss in the WUI. Since 2012, the County has been actively communicating with WUI communities to increase the awareness of wildfire risk. These actions are summarized in Chapter 1, Section 1.8.

In order to continue the momentum already started by entities throughout the County, Table 4-4 lists additional public education and outreach projects recommended for implementation in the County.

Table 4-4. Recommendations for Public Education and Outreach

Project	Description	Presented By	Target Date	Priority	Resources Needed	Serves To
Home Hazard Assessments	Continue work initiated in the County to implement home hazard assessments to provide more fine scale assessment of structural ignitability and educate homeowners. Train additional firefighters to provide these assessment and outreach and advertise the service the public.	County fire departments	Ongoing	High	The Fire Adapted Communities website (http://www.fireadapted.org/en/Role/Residents%20and%20Homeowners.aspx) Future NMAC Wildfire Risk Reduction Grants. The County was awarded this grant in 2015 to initiate this project. Future grant funding could support proliferation of this service countywide.	Better inform the public so that homeowners can make safe decisions regarding defensibility for their homes.
Implement Ready, Set, Go Program to support evacuation in event of wildfire.	Work with County Emergency Management to develop and enhance pre-fire evacuation planning. Raise awareness of the need to pre-plan through mailings, fire department open houses, or workshops. Encourage residents to prepare a bag of important documents and valuables during the fire season in the event of an urgent evacuation. Develop a grab-and-go list of important articles that you should take if evacuated. Take regular photographic inventories of home possessions. Be prepared to evacuate early.	County fire departments	Fall 2020	High	-Ready, Set, Go! (www.wildlandfirersg.org). -Post pre-evacuation planning documents on the County or fire department website(s) to increase transparency and facilitate information transfer to the public. - New Mexico Department of Homeland Security and Emergency Management (NMDHSEM) resources (http://www.nmdhsem.org/uploads/FileLinks/161d000bfefa42f98eb4953daa59e9aa/18%20Wildfire.pdf). -The Inciweb Incident Information System (http://www.inciweb.org). -New Mexico Fire Information provides specific New Mexico fire-related information (http://nmfireinfo.com). -Southwest Coordination Center provides interagency information for wildfire in the Southwest (http://gacc.nifc.gov/swcc).	Facilitate early evacuations in order to preserve life safety. Inform the public what they should do in the event of a fire to reduce stress and anxiety should a fire occur.
Emergency preparedness meetings	Use American Red Cross volunteers and other preparedness experts. Attend community functions and hold special meetings to provide guidance for creating household emergency plans. County are considering adoption of the 'Ready, Set, Go' program.	American Red Cross, County personnel	Ongoing	High	Written materials. FEMA information (http://www.ready.gov/new-mexico).	Improve preparedness by facilitating the communication between family members and neighbors about what procedures to follow in the event of a wildfire.
Volunteer Fire Department Open Invitation Days	Raise awareness of the fire districts through open houses and tours of Equipment. Consider implementing an Annual Pancake Breakfast. Use as an opportunity to share wildfire prevention outreach materials and recruit firefighter volunteers.	Volunteer Fire Departments	Annually before fire season.	High	Advertising, refreshments, volunteers, handouts and outreach materials.	Protect communities and infrastructure by potentially increasing recruitment and financial support for the fire service.

Project	Description	Presented By	Target Date	Priority	Resources Needed	Serves To
Implement and enforce weed abatement policy	Organize a community group made up of residents and agency personnel to communicate weed abatement message in order to clean up neighborhoods. Work with County code enforcement to spread message about County weed abatement policy. Utilize Living With Fire brochure to provide information on the weed abatement policy.	County Code Enforcement, soil and water conservation districts, BLM, local residents	Fall 2019	High	Funding to help cover costs of materials and participation.	Engage diverse stakeholders in reaching out to community members and encourage neighborhood clean-up.
Increase signage detailing fire danger and burn and no-burn days.	Increase fire prevention signage along highways to reduce human-caused ignitions. Should highlight burn and no burn days.	New Mexico Department of Transportation, County roads department	Fall 2020	Moderate	Funding to purchase electronic signs that can be used to share a diverse range of public notices.	Protect communities and infrastructure by raising awareness of local citizens and visitors.
School fire prevention curriculum	Include fire prevention in school curriculum. Fire department staff could talk to middle and high school students. Utilize existing curriculum developed by Firewise, Ready Set Go, Fire Adapted Communities etc.	All county school districts. County Fire.	Fall 2020	Moderate	Written materials to provide targeted education to middle and high school students. The Fire Adapted Communities website http://www.fireadapted.org/en/Role/Residents%20and%20Homeowners.aspx). *"Firewise Generation"* is a targeted curriculum for young adults- *Firewise Communities* USA website: https://www.nfpa.org/Public-Education/By-topic/Wildfire/Firewise-USA Firewise Fire camps: middle school day camps focused in fire prevention education.	
Online Pre- plan for pet and livestock evacuations and shelter	Expand on information in Living with Fire Pamphlet and Animal Welfare Plan to have a plan for the evacuation and shelter of large animals that would be available online. Residents need to plan how they will evacuate livestock in event of wildfire evacuations. Consider transport, feed, water, and boarding options while evacuated. Include a contingency plan for if you are not at home. Practice loading horses and livestock in trailers to reduce stress in the event of rushed evacuation. Evacuate early.	County Fire and Emergency Management, Animal control, livestock boars, Animal Services, Animal Protection of New Mexico (APNM), and NMDHSEM	Fall 2019	Moderate	-Valencia County Living with Fire -Valencia County Animal Welfare Plan -Household Pet Emergency Resource Manual—APNM/NMDHSEM is developing a plan -APNM fire fund moneys have been available following wildfire to shelters that have assisted animals impacted by wildfire. -The Equine Protection Fund Volunteer Network provides assistance, including shelter and transportation in the event of fire related horse evacuation. -APNM and NMDHSEM are working to develop a comprehensive list of resources for emergency managers to address emergency shelter of displaced animals, including companion animals during wildfire.	Provide for the safe evacuation and care of animals and alleviate bottlenecks caused by livestock handling during wildfire response by firefighters. May encourage residents to evacuate who would otherwise refuse so as to not leave animals and livestock.

Project	Description	Presented By	Target Date	Priority	Resources Needed	Serves To
Defensible space workshops	Attend all possible community meetings and hold additional workshops to educate homeowners about why and how to create effective defensible space.	Community fire representative or agency outreach personnel	Summer 2020 ongoing	Moderate	Written materials and trained personnel. Consider applying for Title III Secure Rural Schools funding for Firewise Communities work.	Empower homeowners to make affordable and effective changes to reduce the vulnerability of individual homes.
Neighbors helping neighbors	Neighborhood assistance to members of the public who cannot maintain their yards and dispose of yard waste. Use community service youth to carry out yard maintenance and defensible space practices to reduce fire hazards in the community.	Neighborhood associations, municipal leaders, church groups	Spring 2022	Low	Website and community meeting forum.	Assist elderly or disabled residents who are unable to clean up yard waste and weeds or create defensible space. Reduces fire hazard and fire spread potential between structures.
Develop online content CWPP (Story Map CWPP)	Develop interactive capability for the CWPP in an online web platform. Would house all pertinent pieces of the CWPP as well as links to publicly available education and outreach information, as well as spatial map products from CWPP. CWPP updates would be made to the online version, facilitating a “live” document format.	VCFD	Spring 2020	Moderate	Grant funding to hire contractor.	Facilitate regular updates to the CWPP, increases outreach capacity and enables more residents to access CWPP content. Provides interactive content so residents can determine their risk and hazard to wildfire. Could be linked to ongoing home hazard assessments.
Implement a public outreach campaign focused on the safe use of fireworks.	In response to input received from the public, the County recognizes the danger of fireworks to fire hazard and risk as well as public safety. A public outreach campaign would focus on signage, development of a brochure, and other outreach material on safe use of fireworks to reduce fire risk.	VCFD	Spring 2020	Moderate	Grant funding for development of outreach materials and distribution and promotion.	Reduce the potential ignition risk of fireworks, especially during periods of drought.

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Creating Fire-Adapted Communities

The Fire-adapted Communities Coalition is a group of national partners "committed to helping people and communities in the wildland urban interface adapt to living with wildfire and reduce their risk for damage, without compromising firefighter or civilian safety." [2]

Recognition has grown among communities in the arid West that resources will never be adequate to eliminate fire risk. Residents and homeowners must actively participate in reducing fire risk, and Fire-adapted Communities (FAC) offers a framework for facilitating that participation.

A FAC takes responsibility for its wildfire risk.[1] Actions proposed through the FAC program address resident safety, homes, neighborhoods, businesses and infrastructure, forests, parks, open spaces, and other community assets. Becoming a FAC is a process, not a recognition program. Ultimately, a fire-adapted community:

- is in or near a fire-adapted ecosystem;
- has adequate local fire suppression capacity to meet most community protection needs;
- has structures and landscaping that are designed, constructed, retrofitted, and maintained in a manner that is ignition resistant;
- has local codes (building, planning, zoning, and fire prevention) that require ignition-resistant home design and building materials;
- has fuels on land near and inside the community that are treated and maintained for safety;
- has and follows a CWPP; and
- has built other safety features, such as buffers, between fuels and the community, safe designated evacuation routes, and safe zones in the community when evacuation is not advisable.[3]

Firewise USA Programs

Firewise Communities is a national interagency program that plays a critical role in areas outside the jurisdiction of government entities, i.e., private land in the WUI. [4]The program focuses on personal responsibility by encouraging communities to adopt a long-term, proactive approach to protection of homes from wildfire. It provides a flexible template for residents of neighborhoods and home owners' associations to improve their wildfire readiness and works as an organizing mechanism for initiating wildfire mitigation actions.[5]

Becoming a Firewise Community can provide the following benefits:

- Access to funding and assistance
- Citizen pride
- Community-building
- Framework for action
- Wildfire education

[2] Fire Adapted Communities Coalition: (http://www.fireadapted.org/resources/meet-the-coalition.aspx)
[3] Fire Adapted Communities: http://www.fireadapted.org/resources/what-is-a-fire-adapted-community.aspx).
[4] Firewise Communities- A Model of Local Initiative and Cooperation: www.firewise.org
[5] Firewise Recognition Program: http://firewise.org/usa-recognition-program.aspx?sso=0

Once established, many Firewise Communities are self-sustaining and grow organically as Firewise personnel provide direction and residents begin to observe the benefits of becoming Firewise from their neighbors.

The Firewise USA program provides extensive free resources for public education and outreach regarding fire prevention. Firewise concepts that could help to move the County towards becoming more fire adapted are listed below. Some of these concepts have already been initiated throughout the County as part of the home hazard assessments and the ongoing outreach efforts that were initiated in response to the 2012 CWPP.

INCREASE WILDFIRE AWARENESS

- Notify property owners that they live in a wildfire hazard zone.
- Explain how wildfire behaves.
- Explain how wildfire can affect the home and neighborhood.

PROVIDE EDUCATION

- Improve understanding of the Home Ignition Zone concept.
- Perform individual home assessments to identify mitigation needs.
- Provide tailored information for homeowners through literature, workshops, and pilot projects.

MAKE IMPROVEMENTS TO STRUCTURES AND LANDSCAPE

- Encourage modifications to home, landscape, and neighborhood to lessen the risk of wildfire damage to life and property.
- Provide measures property owners can take to lower risks including retrofits to property, access improvements, installation of signs, and defensible space pilot projects.
- Provide a list of fire-resistance, climate appropriate plants for home landscaping.
- Provide funding opportunities for implementing fuels reduction projects on private and communal lands.

BUILD OWNERSHIP

- Encourage residents to take responsibility to maintain their home and neighborhood in a fire-resistant manner.
- Establish a permanent Firewise Committee to perpetuate actions throughout a community.[6]

RECOMMENDATIONS TO REDUCE STRUCTURAL IGNITABILITY

Preventing the loss of structures is the centerpiece of WUI protection planning, secondary in emphasis only to life safety. Fuels treatments (especially defensible space), public education, and fire department response all play crucial roles in protecting structures from fire loss. Another essential factor in structure survival is the structure itself. Design features and construction materials are critical to determining if a home survives the passage of a wildfire. Vulnerable homes can be destroyed by low-intensity fires, smoldering debris, or the smallest embers.

Structure ignition may occur from direct flame impingement, radiant heat, or an ember becoming lodged in a receptive spot. Most structures can withstand a substantial amount of radiant heat, and several

[6] Firewise Local Action Plan: http://www.firewise.org/usa-recognition-program/program-criteria/more-about-your-local-action-plan.aspx?sso=0.

studies indicate that a minimum defensible space of 30 to 45 feet can often be enough to prevent ignition from this source. Direct flame impingement can occur even with low-intensity fires if a lack of defensible space allows an avenue for fire to spread to a vulnerable design feature such as a wood deck, cedar siding, or a fence; such features can cause the loss of a structure even after the main body of fire has passed. Similarly, firebrands can burn a home to the ground long after it appears to have survived. Attic vents without screens, leaf debris on roofs or in gutters, or small gaps in a home can help facilitate this type of ignition. Key items that can facilitate fire-related damage are flammable roofing materials (e.g., cedar shingles, tar-based shingles, etc.), wood decks and siding, the presence of burnable vegetation (e.g., ornamental trees, shrubs, etc.), and the presence of other fuel (e.g., propane tanks, wood piles, etc.) immediately adjacent to homes. Additional information can be found at www.firewise.org.

Table 4-5 provides a list of community-based recommendations to reduce structural ignitability that should be implemented throughout the VCCWPP planning area. Reduction of structural ignitability depends largely on public education that provides homeowners the information they need to take responsibility for protecting their own properties. Below is a list of action items that individual homeowners can follow (see Section 5.4.1). Carrying out fuels reduction treatments on public lands may only be effective in reducing fire risk to some communities; however, if homeowners have failed to provide mitigation efforts on their own land, the risk of home ignition remains high and firefighter lives are put at risk when they carry out structural defense. Many committed members of the County serve their neighbors as volunteer firefighters, but these firefighting resources are continually stretched, particularly during a widespread wildfire.

It is important to note that no two properties are the same. Homeowners and communities are encouraged to research which treatments would have the most effect for their properties. Owners of properties on steep slopes, for example, should be aware that when constructing defensible space they have to factor in slope and topography, which would require extensions to the conventional 30-foot recommendations. A number of educational programs are now available to homeowners through local fire districts or the NMSF; Firewise Communities is one example of such a scheme (www.firewise.org). More detailed information on structural ignitability can also be found in the Valencia County Living and Working with Fire brochure (Appendix F).

Some structural ignitability hazards are related to homes being in disrepair, vacant or abandoned lots, and minimal yard maintenance. In order to influence change in homeowner behavior, County ordinances may be needed.

Weed and junk accumulation is a problem in the County that is recognized in the VCCWPP community assessments and has been a focus area for the County Fire Department and County Code Enforcement. Enforcement is difficult for the County, due to its size and the lack of enforcement officers, and many homeowners do not agree on what is junk and whether it is a bad thing. Often homeowners feel that the County is infringing on property rights if they enforce clean-up, plus most people do not have the equipment or the money to clean up their properties.

Abandoned buildings are recognized as a hazard to health, safety, and the welfare of a community. There are many abandoned properties throughout the County. Some owners do not have the resources to keep their properties clean and in good repair either because they are elderly, in ill health, or do not have the funds.

Affecting change with regard to structural ignitability at the community, homeowner association, municipality, or County levels requires varying degrees of public support and political will. Jurisdictions

throughout the fire-prone West are now adopting a regulatory approach. Whether or not regulation is adopted, the key components to decreasing structure ignition are public education and action by individual homeowners.

Table 4-5. Recommendations for Reducing Structural Ignitability

Project	Private Lands/ Homeowner	Description	Possible Contacts for More Information	Date	Priority
Home Hazard Assessments	County - All residents would be encouraged to participate	As outlined in Table 4-4 above, continue work initiated in the County to implement home hazard assessments to provide more fine scale assessment of structural ignitability and educate homeowners. Train additional firefighters to provide these assessments and outreach and advertise the service to the public.	The Fire Adapted Communities website (http://www.fireadapted.org/en/Role/Residents%20and%20Homeowners.aspx). Future NMAC Wildfire Risk Reduction Grants. The County was awarded this grant in 2015 to initiate this project. Future grant funding could support proliferation of this service countywide.	Ongoing	High
Implement individual and community-scale defensible space projects	All residents would be encouraged to participate; target specifically at bosque communities	Educate homeowners about defensible space practices. Remove all but scattered trees within 30 feet of structures. Keep grass mown and green within 100 feet of structures. Keep flammable materials at least 30 feet from structures. Surround foundations with rocks or gravel to a width of 1 foot. Utilize volunteers in the community to assist on a community-wide project.	www.firewise.org or local NMSF Firewise Communities-trained personnel; possible landownership assistance program through NMSF-sponsored program; requires preparation of a Wildfire Mitigation Cost Share Assistance Application		High
Participate in defensible space cost-sharing programs	All private land within the VCCWPP area would be eligible	This project would provide additional funding to Soil and water conservation districts to expand existing program and target new participants.	Soil and water conservation district managers		High
Implement community clean-up days with use of dumpster and pick-up.	All residents would be encouraged to participate	This program is under consideration in the County currently. Slash removal would be facilitated by designating centralized dumpster locations to serve a group of communities. Residents could dispose of green slash and the contents would be transferred to the Los Lunas Green Waste center. Tentative initiation March 2019.	County	Spring 2019	High
Assess and improve accessibility to property through collaboration with rural addressing department	All residents would be encouraged to participate	Inform homeowners about the importance of keeping driveways accessible to fire trucks and emergency responders.	Local fire districts	Ongoing	Moderate
Provide an online list of mitigation measures to homeowners with different scales of actions	Targeted to homeowners	Utilize Living with Fire Brochure. See list of action items below (see Section 4.4.2).	County Fire, soil and water conservation districts, NMSF, fire districts	Spring 2019	High

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International Code Council Wildland Urban Interface Code

While individual actions are necessary to reduce structural ignitability, actions taken at a countywide level affect change on a larger scale. The International Code Council (ICC) published the International Wildland Urban Interface Code, which provides minimum regulations for land use and the built environment in the designated WUI areas. The standards for the codes are based on data collected from tests and incidents, technical reports, and mitigation strategies from various countries around the world. These codes address the mitigation of fire in the WUI (ICC 2006). A number of concerns were raised at public outreach that could be resolved through greater code enforcement. Comments included the following: County roads need base materials, roads are narrow and overgrown, there are a large number of unmaintained vacant lots, large trucks cannot turn around, many communities have only one way in-out, firefighting infrastructure in many rural communities is inadequate, and water resources and hydrant systems are inadequate.

The VCCWPP recommends adopting the Wildland Urban Interface Code so that similar concerns are addressed in future construction. When approaching this task, the County will determine if the ICC code will be adopted in its entirety or in certain portions that most appropriately address the County's needs. This code can be used to develop standards for improved public safety and community driven protection and prevention measures. Since the ICC would not resolve any present issues in existing subdivisions (since it grandfathers in current structure conditions), it is recommended that the County review current fire ordinances to acknowledge fire safety concerns in these areas.

"Hardening the Home"—Firewise Construction Guidelines

Homeowners can make significant improvements to their wildfire risk through careful consideration of non-flammable construction measures.

> *"When considering improvements to reduce wildfire vulnerability, the key is to consider the home in relation to its immediate surroundings. The home's vulnerability is determined by the exposure of its external materials to flames and firebrands during extreme wildfires. The higher the fire intensities near the home, the greater the need for nonflammable construction materials and a resistant building design." – Jack Cohen, USDA Forest Service.*[7]

- Roofing material with a Class A, B, or C rating is fire resistant and will help keep the flame from spreading. Examples include:
  - Composition shingle
  - Metal
  - Clay
  - Cement tile
- Fire- resistant building materials on exterior walls will reduce flammability. Examples include:
  - Cement
  - Plaster
  - Stucco
  - Masonry (concrete, brick, or stone)
- Windows with double-paned or tempered glass can reduce the risk of fracture or collapse during a wildfire. Skylights with glass can be more fire resistant than plastic or fiberglass.

[7] Firewise Guide to Landscape and Construction: download at: http://www.firewise.org/wildfire-preparedness/be-firewise/home-and-landscape/defensible-space.aspx?sso=0

- Enclosed eaves, fascias, soffits, and vents with 1/8-inch metal screen can prevent embers entering the building.
- Overhangs and other attachments (for example decks and porches) should be boxed in and protected with noncombustible or fire- resistant materials. Combustible materials should be removed from under decks and porches. Fences constructed of flammable materials like wood should not be attached directly to the house, if necessary metal or masonry barriers should be used.

Information on Firewise approaches to construction and "hardening the home" are available from numerous outlets.[8]

Action Items for Homeowners

LOW OR NO COST INVESTMENT (<$50)

- Regularly check fire extinguishers and have a 100-foot hose available to wet perimeter.
- Maintain defensible space for 30 feet around home (see Table 4-5). Work with neighbors to provide adequate fuels mitigation in the event of overlapping property boundaries.
- Make every effort to keep lawn mowed and green during fire season.
- Screen vents with non-combustible meshing with mesh opening not to exceed nominal ¼-inch size.
- Ensure that house numbers are easily viewed from the street in order to assist with emergency response including EMS.
- Remove weeds and maintain weed-free yard (Figure 4-6).
- Keep wooden fence perimeters free of dry leaves and combustible materials. If possible, non-combustible material should link the house and the fence.
- Keep gutters free of vegetative litter. Gutters can act as collecting points for fire brands and ashes.
- Store combustible materials (firewood, propane tanks, grills) away from the house; in shed, if available.
- Clear out materials from under decks and/or stacked against the structure. Stack firewood at least 30 feet from the home, if possible.
- Reduce your workload by considering local weather patterns. Since the prevailing winds in the area are often from the southwest, consider mitigating hazards on the southwest corner of your property first, then work around to cover the entire area.
- Seal up any gaps in roofing material and enclose gaps that could allow fire brands to enter under the roof tiles or shingles.
- Remove flammable materials from around propane tanks.

MINIMAL INVESTMENT (<$250)

- When landscaping in the Home Ignition Zone (HIZ) (approximately 30 feet around the property), select non-combustible plants, lawn furniture, and landscaping material. Combustible plant material like junipers and ornamental conifers should be pruned and kept away from siding. If possible, trees should be planted in islands and no closer than 10 feet to the house. Tree crowns should have a spacing of at least 18 feet when within the HIZ. Vegetation at the greatest distance from the structure and closest to wildland fuels should be carefully trimmed and pruned to reduce density and continuity.
- Box in eaves, attic ventilation, and crawl spaces with non-combustible material.

[8] Hardening your Home: http://www.readyforwildfire.org/Hardening-Your-Home/

- Work on mitigating hazards on adjoining structures. Sheds, garages, barns, etc., can act as ignition points to your home.
- Enclose open space underneath permanently located manufactured homes using non-combustible skirting.
- Clear and thin vegetation along driveways and access roads so they can act as a safe evacuation route and allow emergency responders to access the home.
- Purchase or use a National Oceanic and Atmospheric Administration weather alert radio to hear fire weather announcements.

Figure 4-6. Structure requiring defensible space and weed abatement.

MODERATE TO HIGH INVESTMENT (>$250)

- Construct a non-combustible wall or barrier between your property and wildland fuels. This could be particularly effective at mitigating the effect of radiant heat and fire spread where 30 feet of defensible space is not available around the structure.
- Construct or retrofit overhanging projections with heavy timber that is less combustible.
- Replace exterior windows and skylights with tempered glass or multilayered glazed panels.
- Invest in updating your roof to non-combustible construction such as pro panel. Look for materials that have been treated and given a fire-resistant roof classification of Class A. Wood materials are highly combustible unless they have gone through a pressure-impregnation fire-retardant process.
- Construct a gravel turnaround in your driveway to improve access and mobilization of fire responders.
- Treat construction materials with fire-retardant chemicals.
- Replace wood or vinyl siding with non-flammable materials.

COHESIVE STRATEGY GOAL 3: WILDFIRE RESPONSE

Goal 3 of the Cohesive Strategy/Western Regional Action Plan is: Wildfire Response: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions:

> *"A balanced wildfire response requires integrated pre-fire planning with effective, efficient, and coordinated emergency response. Pre-fire planning helps tailor responses to wildfires across jurisdictions and landscape units that have different uses and management objectives. Improved prediction and understanding of weather, burning conditions, and various contingencies during wildfire events can improve firefighting effectiveness, thereby reducing losses and minimizing risks to firefighter and public health and safety. Wildfire response capability will consider the responsibilities identified in the Federal Response Framework. Local fire districts and municipalities with statutory responsibility for wildland fire response are not fully represented throughout the existing wildland fire governance structure, particularly at the NWCG, NMAC, and GACC levels." Western Regional Action Plan (2013), page 15.*

This chapter describes fire response capabilities throughout the County and provides recommended actions that jurisdictions could undertake to improve wildfire response.

RECOMMENDATIONS FOR IMPROVING FIRE RESPONSE CAPABILITIES

The County is served by the Valencia County Fire Administration, eight County fire districts, and four municipal fire districts (Los Lunas, Belen, Bosque Farms, and Peralta). Despite the fact that the majority of these stations are served by volunteers, each of these districts has been proactive in seeking funds to support their services. Educating members of the public so they can reduce their dependence on fire districts is essential because these resources are often stretched thin during fire season. Greater emergency planning for communities is necessary, particularly those communities in areas where response times for emergency services may be greater than in municipal zones.

Table 4-6 provides recommendations for improving firefighting capabilities. These recommendations are general in nature; given the variety of fire agencies within the County, it is unrealistic to apply one set of specific recommendations for all agencies.

Table 4-6. Recommendations to Improve Fire Response Capability

Project	Fire District	Possible Solution	Timeline	Contact	Priority
Increase fire district recruitment and retention (diversify age classes)	All fire districts	A wildland fire science class is currently taught at Belen High School. Target additional fire education in schools to encourage younger generations to become interested in firefighting. Continue the provision of a volunteer stipend program to help wtith volunteer recruitment, retention and participation.	Ongoing	VC Wildland Captain, Belen High School VC Fire Chief, Wildland Captain	High
Increase funds for fire districts	All fire districts	Maintain contact with state fire marshals and continue to seek NM State Fire Marshal Fire Protection Grants on an annual basis. Implement regular evaluations of resource needs for each volunteer fire department. Continue "Firehouse Chat" monthly column in local newspaper to increase public awareness of fire department programs and activities. Continue to apply for VFA grants on every grant cycle. Continue to improve International Standards Organization (ISO) ratings. Continue to see AFG grant awards.	Monthly review of grant opportunities	Fire district chiefs, County emergency managers, Fire Services staff, and County managers to approach County commissioners to raise the issue in commissioner meetings	High
Training	All fire districts	Continue to pre-plan training schedules and have a calendar on the County website to edit and update training opportunities. Continue to provide nominal fee program for volunteers. Continue to support training of Wildland Team of red-carded firefighters. Continue to pursue training opportunities in prescribed fire with other state and federal agencies (VCFD Wildland Team has an agreement with USFS Mountainair Ranger District to assist with prescribed fire projects on their districts. In turn, the Department receive valuable experience. Continue to officer/require training for MRGCD equipment operators requested for a bosque fire.	Ongoing	Fire Services staff, fire district chiefs, NMSF	High
Update dated apparatuses	All fire districts	Regular communication with the BLM and other federal agencies who may be decommissioning old trucks/tankers that could be acquired by volunteer fire departments. Pursue FEMA AFG grant opportunities and state auctions.	Ongoing, quarterly	Fire Services Administrator	High
Provide adequate water supplies at fire stations	All fire districts	Continue to seek funding opportunities to increase fire suppression water supply.	Ongoing	Fire district chiefs, County commissioners	High
Carry out quarterly audit of department equipment	All fire districts	Outfit all tenders and structural engine fire apparatus with at least one wildland hosepack and wildland tools. Continue pursuing procurement of chainsaws for wildland fire suppression.	Quarterly	Fire district chiefs, County	High

Project	Fire District	Possible Solution	Timeline	Contact	Priority
Review mutual aid agreements	All fire districts	Mutual aid agreements should be reviewed, updated, and enhanced as deemed necessary. Mutual Aid agreements with: Laguna FD, Los Lunas FD, Socorro County, and Bosque Farms FD will be updated. New mutual aid agreements are planned for Bernalillo County FD, Torrance County, Isleta Pueblo, and Kirtland Air Force Base FD.	Review quarterly	Municipal, County, state, federal	Moderate
Coordinate pre-incident planning	All fire districts and agencies	The VCCWPP can serve as a catalyst for more detailed pre-incident planning. The VCCWPP verifies areas of high risk and hazard, allowing engine companies to target specific areas for tactical planning. The plan and associated GIS data can be used as a whole to assist planning at the strategic level. Issues of access and water supply are also addressed in the VCCWPP, highlighting areas in need of infrastructure improvement. Ongoing goals include developing a pre-incident plan for the following: Whitfield Wildlife Conservation Area Los Lunas River Park Tierra Grande Open Space. Develop Valencia County Fire Suppression Ops plan that will coincide with the Middle Rio Grande Ops plan.	Ongoing	Municipal, County, state, federal	Moderate
Develop strategic dispatch and communication plan	County Fire Admin	Update communications equipment and planning, coordinate agency communications through collaborative meetings with key agency staff. Programming needed for all responders' handheld radios so they have the frequency group. A plan for response zones and new tones for response are being developed. A new regional dispatch center is being built and will be in use by mid 2018.	Ongoing	County, State	Moderate
Develop pre-plan Map using Avenza	VCFD	Seek grant funding to support development of Avenza compatible mapping to include the following layers: Bosque gates Fire breaks Home assessments County boundaries Pre-plans- staging areas and incident command posts	Grant submitted Spring 2018	VCFD	High

Project	Fire District	Possible Solution	Timeline	Contact	Priority
Retain volunteer firefighters	All fire districts	Retaining experienced firefighters, training new firefighters, and continued training and development of veterans is an issue for all departments that have a volunteer component. Methods that may be considered for addressing this and other training issues include the following: Establish County, fire district, or shared mitigation crews that perform grant-funded mitigation work during the summer and are available to respond to fires as well- i.e., bosque thinning crew Pursue a YCC grant. Recruit young people locally and from major population centers who are interested in a fire service career for a summer residency program. In exchange for staffing the station several shifts a week, they will receive basic wildland fire and other training that can launch their careers. Determine qualification needs and provide training to accomplish these needs. For example, in 3 years the department would like to have 10 Type II firefighters, four squad leaders, three driver/operators, three engine bosses, and one strike team leader/Type IV incident commander. Defining specific goals would aid in recruiting strategies, resource allocations, mutual aid, and automatic aid. Continue to develop a training detail program between volunteer and paid departments. Allow aspiring driver/operators and officers a chance to attend training and then perform in an acting capacity under the direct supervision of fully-qualified personnel. This will provide familiarity with the personnel, equipment, and procedures of a cooperating agency and allow volunteers to gain experience in a more active system. Is currently in place to allow county volunteers to do “ride alongs” and respond to incidents with career crews. Create a countywide interagency training cadre to establish a routine class rotation. Planned to start with the biannual volunteer training academy, starting July 2018. Educate fire-fighters in WUI and Firewise procedures so that they can in turn educate residents during their daily interactions.	Ongoing	County Fire Admin	Moderate
Prepare signed agreement for pre-designated helicopter dip sites	VCFD	Seek a signed agreement between VIA, TGIA, USFS for VCFD and RGEFD to set up helicopter dip sites at pre-designated sites. Dip sites for water source for helicopter bucket drops for fire suppression on wildfires in Manzano mountains and East Mesa on West aspect of Manzano Mountains	Spring 2019	VCFD	High

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POST-FIRE RESPONSE AND REHABILITATION

An often-overlooked component of wildfire response is the response needed following a wildfire. Having a plan that outlines steps for agencies, municipalities, and the counties to follow would streamline post-fire recovery efforts and reduce the inherent stress to the community.

There are many facets to post-fire recovery, including but not limited to:

- Ensuring public health and safety—prompt removal of downed and hazard trees, addressing watershed damage, mitigating potential flooding.
- Rebuilding communities and assessing economic needs—securing the financial resources necessary for communities to rebuild homes, business, and infrastructure.
- Restoring the damaged landscape—restoration of watersheds, soil stabilization, and tree planting.
- Reducing fire risk in the future—identifying hazard areas and implementing mitigation.

Recovery of the vegetated landscape is often more straightforward then recovery of the human environment. Assessments of the burned landscape are often well coordinated through the use of inter-agency crews who are mobilized immediately after a fire to assess the post- fire environment and make recommendations for rehabilitation efforts.

For the community impacted by fire, however, there is often very little planning at the local level to guide their return after the fire. Residents impacted by the fire need assistance making insurance claims; finding temporary accommodation for themselves, pets, and livestock; rebuilding or repairing damaged property; removing debris and burned trees; stabilizing the land for construction; mitigating potential flood damage; repairing infrastructure; reconnecting to utilities; and mitigating impacts to health. Often the physical impacts can be mitigated over time but the emotional impacts of the loss and change to their surroundings are more long lasting and require support and compassion from the community.

AFTER THE FIRE

The following outlines actions for homeowners to follow after a fire.

Returning Home

First and foremost, follow the advice and recommendations of emergency management agencies, fire departments, utility companies, and local aid organizations regarding activities following the wildfire. Do not attempt to return to your home until fire personnel have deemed it safe to do so.

Even if the fire did not damage your house, do not expect to return to business as usual immediately. Expect that utility infrastructure may have been damaged and repairs may be necessary. When you return to your home, check for hazards, such as gas or water leaks and electrical shorts. Turn off damaged utilities if you did not do so previously. Have the fire department or utility companies turn the utilities back on once the area is secured.

Insurance Claims

Your insurance agent is your best source of information as to the actions you must take in order to submit a claim. Here are some things to keep in mind. Your insurance claim process will be much easier if you

photographed your home and valuable possessions before the fire and kept the photographs in a safe place away from your home. Most if not all of the expenses incurred during the time you are forced to live outside your home could be reimbursable. These could include, for instance, mileage driven, lodging, and meals. Keep all records and receipts. Do not start any repairs or rebuilding without the approval of your claims adjuster. Beware of predatory contractors looking to take advantage of anxious homeowners wanting to rebuild as quickly as possible. Consider all contracts very carefully, take your time to decide, and contact your insurance agent with any questions.

Post-fire Rehabilitation

Homes that may have been saved in the fire may still be at risk from flooding and debris flows. Burned Area Emergency Rehabilitation (BAER) teams are inter-disciplinary teams of professionals who work to mitigate the effects of post-fire flooding and erosion. Volunteers can assist BAER team members by planting seeds or trees, hand mulching, or helping to construct straw-bale check dams in small drainages. Volunteers can help protect roads and culverts by conducting storm patrols during storm events. These efforts dramatically reduce the costs of such work as installing trash racks, removing culverts, and rerouting roads.

There are many resources available to residents to help navigate the post-fire environment. NM Fire Information provides links to relevant websites.[9] [10]

[9] https://nmfireinfo.com/information/after-a-wildfire/

[10] http://www.afterwildfirenm.org/

CHAPTER 5. MONITORING AND EVALUATION

Monitoring is a difficult component of the CWPP process to maintain. It is crucial in determining which methods and initiatives are successful. Individual projects should be monitored, as well as the progress of the VCCWPP as a whole. It is important to evaluate whether fuel treatments have accomplished the defined objectives, whether any unexpected outcomes have occurred, and whether the goals of the VCCWPP remain valid and are being fulfilled.

Adaptive management refers to adjusting future management based on the effects of past management. Monitoring is required to gather the information necessary to inform future management decisions. Economic and legal questions may also be addressed through monitoring. In addition, monitoring activities can provide valuable educational opportunities for students.

The most important consideration when choosing a monitoring program is the selection of a method appropriate to the people, place, and available time. The following list outlines several levels of monitoring activities that meet different objectives, have different levels of time intensity, and are appropriate for different groups of people.

Minimum–Level 1: Pre- and post-treatment photographs of a project are appropriate for many individual homeowners who conduct fuel reduction projects on their property. Aerial photographs may also be used for this purpose in some situations.

Moderate–Level 2: Multiple permanent photograph locations are established (e.g., with rebar or wood posts), and photographs are taken on a regular basis. Ideally, this process would continue over several years. This approach might be appropriate for more enthusiastic homeowners or for agencies conducting small-scale, general treatments.

High–Level 3: A series of basic vegetation plots can allow monitors to evaluate vegetation characteristics such as species composition, percent cover, and frequency and record site characteristics such as slope, aspect, and elevations. Parameters would be assessed pre- and post-treatment. Plot protocols should be established by the monitoring agency based on the types of vegetation and level of detail needed to analyze the management objectives.

Intense–Level 4: Basic vegetation plus dead and downed fuels inventory protocol would include the vegetation plots described above but would also add more details regarding fuel loading. Crown height or canopy closure might be included for live fuels. Dead and downed fuels could be assessed using Brown's transects (Brown 1974) or an appropriate photograph series (Ottmar et al. 2000).

IDENTIFY TIMELINE AND PROCESS FOR UPDATING THE CWPP

The VCCWPP should be reviewed and updated on a fire year frequency. At this time, changes to the plan should be made to reflect changing environmental conditions and community concerns. Also, site assessments that were not executed during this planning period should be implemented and incorporated into the plan during the review.

IMPLEMENTATION

The VCCWPP makes recommendations for prioritized fuels reduction projects. However, each fuels reduction project will be unique and will require distinct steps to complete the identified tasks. The tasks will be further identified as the projects begin to take place. On the ground implementation of the recommendations in the VCCWPP planning area will require development of an action plan and assessment strategy for completing each project. This step will identify the roles and responsibilities of the people and agencies involved, as well as funding needs and timetables for completing the highest priority projects (SAF 2004). Information pertaining to funding can be found in Appendix G.

CHAPTER 6. CONCLUSIONS

Wildfires will continue to impact WUI communities in Valencia County and across the U.S., however multiple studies have shown that there are measures that can be taken to improve the resiliency of WUI communities to wildfire impacts. Although a lot of progress has been made since the development of the 2012 CWPP- there is still work to be done.

It is clear that the existing conditions throughout the county, make the community susceptible to catastrophic wildfire. Dense bosque fuels, non-native combustible vegetation, climate change, complicated patterns of land ownership, high numbers of human-caused wildland fires and an extensive and growing wildland urban interface are all contributing to the volatile fire environment. However, this community has a head start on many others when it comes to fire planning, having been actively engaged in wildfire prevention and preparedness for many years. Land managers have already implemented many actions that help to mitigate the wildfire threat.

Through the development of this CWPP update, decision makers at the County level will be able to keep pace with policy decisions at the State and Federal levels, aligning planning and management with concepts of fire adaptation and forest resiliency as outlined in the National Cohesive Strategy. This will place the county in a beneficial position when it comes to applying for grants for implementing projects outlined in this CWPP. The County and land managers understand that federal and state funding is dwindling and in order to keep pace with growing fuel loading, particularly throughout the bosque, other active fuels and restoration management actions are needed. Having lived amongst the rural bosque and grassland fuels and having an awareness of wildfire risk, most communities support fuels reduction and bosque restoration efforts that are well planned and balanced with protection of natural resources and other community values.

The ultimate goal of wildfire planning in the County is the creation of a fire adapted community where the human population can live in combination with inevitable wildfire, but where negative impacts to the community (such as loss of life and property, health impacts from prolonged smoke, economic losses and negative impacts to natural and cultural resources) can be minimized. The end goal is to enhance the resiliency of communities living throughout the County, so that residents can live and work with wildfire.

Although much work still needs to be done, the support of land managers and decision makers to develop a fire adapted community for Valencia County, makes for a brighter future for this at-risk population.

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CHAPTER 8. GLOSSARY

Active Crown Fire – A crown fire in which the entire fuel complex is involved in flame, but the crowning phase remains dependent on heat released from surface fuel for continued spread. An active crown fire presents a solid wall of flame from the surface through the canopy fuel layers. Flames appear to emanate from the canopy as a whole rather than from individual trees within the canopy. Active crown fire is one of several types of crown fire and is contrasted with **passive crown fires**, which are less vigorous types of crown fire that do not emit continuous, solid flames from the canopy.

Aspect – The direction in which any piece of land faces.

Basal Area – Cross-sectional area of a tree determined from the diameter at breast height.

BEHAVE – A system of interactive computer programs for modeling fuel and fire behavior.

British Thermal Unit (BTU) – Amount of heat required to raise 1 pound of water 1-degree Fahrenheit (from 59.50°F to 60.50°F), measured at standard atmospheric pressure.

Burn – An area burned over by wildland fire.

Burn Severity – A qualitative assessment of the heat pulse directed toward the ground during a fire. Burn severity relates to soil heating, large fuel and duff consumption, consumption of the litter and organic layer beneath trees and isolated shrubs, and mortality of buried plant parts.

Canopy – The more or less continuous cover of branches and foliage formed collectively by adjacent trees and other woody species in a forest stand. Where significant height differences occur between trees within a stand, formation of a multiple canopy (multi-layered) condition can result.

Combustible – Any material that, in the form in which it is used and under the conditions anticipated, will ignite and burn.

Community Assessment – An analysis designed to identify factors that increase the potential and/or severity of undesirable fire outcomes in wildland urban interface communities.

Community Wildfire Protection Plan – A planning document that seeks to reduce the threat to life and property from wildfire. Developed from the Healthy Forest Restoration Act of 2003. Addresses issues such as wildfire response, hazard mitigation, community preparedness, or structure protection.

Community Values at Risk – People, property, environmental, and cultural features within the project area that are susceptible to damage from undesirable fire outcomes.

Crowning Potential – A probability that a crown fire may start, calculated from inputs of foliage moisture content and height of the lowest part of the tree crowns above the surface.

Dry Hydrant – Permanent devices with fire engine threads attached to expedite drafting operations in locations where there are water sources suitable for use in fire suppression (e.g., piers, wharves, bridges over streams, highways adjacent to ponds). Permanently installed supply private fire pumps that depend upon suction sources. Also called suction pipe.

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 a 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.

Duff – The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil.

Ecosystem – An interacting natural system including all the component organisms together with the abiotic environment and processes affecting them.

Escape Route – A preplanned and understood route firefighters take to move to a safety zone or other low-risk area. When escape routes deviate from a defined physical path, they should be clearly marked (flagged).

Evacuation – The temporary movement of people and their possessions from locations threatened by wildfire.

Fire Behavior – The manner in which a fire reacts to the influences of fuel, weather, and topography.

Fire Brand-

Fire Department – Any regularly organized fire department, fire protection district or fire company regularly charged with the responsibility of providing fire protection to the jurisdiction.

Fire Frequency – A broad measure of the rate of fire occurrence in a particular area. For historical analyses, fire frequency is often expressed using the fire return interval calculation. For modern-era analyses, where data on timing and size of fires are recorded, fire frequency is often best expressed using fire rotation

Fire Hazard – A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.

Fire History – The chronological record of the occurrence of fire in an ecosystem or at a specific site. The fire history of an area may inform planners and residents about the level of wildfire hazard in that area.

Fire Prevention – Activities, including education, engineering, enforcement and administration, which are directed at reducing the number of wildfires, the costs of suppression, and fire-caused damage to resources and property.

Fire Intensity – A general term relating to the heat energy released in a fire

Fireline Intensity – Amount of heat release per unit time per unit length of fire front. Numerically, the product of the heat of combustion, quantity of fuel consumed per unit area in the fire front, and the rate of spread of a fire, expressed in kilowatts per minute.

Fire Protection/Prevention – The actions taken to limit the adverse environmental, social, political, and economical effects of fire.

Fire Regime – A measure of the general pattern of fire frequency and severity typical to a particular area or type of landscape: The regime can include other metrics of the fire, including seasonality and typical fire size, as well as a measure of the pattern of variability in characteristics

Fire Regime Condition Class (FRCC) - Measure of the degree of departure from reference conditions.

Fire Return Interval – Number of years between two successive fires in a designated area (i.e., the interval between two successive fires).

Firewise Construction – The use of materials and systems in the design and construction of a building or structure to safeguard against the spread of fire within a building or structure and the spread of fire to or from buildings or structures to the wildland urban interface area.

Firewise Landscaping – Vegetative management that removes flammable fuels from around a structure to reduce exposure to radiant heat. The flammable fuels may be replaced with green lawn, gardens, certain individually spaced green, ornamental shrubs, individually spaced and pruned trees, decorative stone or other non-flammable or flame-resistant materials.

Flammability – The relative ease with which fuels ignite and burn regardless of the quantity of the fuels.

Fuel(s) – Fuel is composed of living and dead vegetation that can be ignited. It is often classified as dead or alive and as natural fuels or activity fuels (resulting from human actions, usually from logging operations). Fuel components refer to such items as downed dead woody material by various size classes, litter, duff, herbaceous vegetation, live foliage, etc.

Fuel Break – A natural or constructed discontinuity in a fuel profile utilized to isolate, stop, or reduce the spread of fire. Fuel breaks may also make retardant lines more effective and serve as control lines for fire suppression actions. Fuel breaks in the wildland urban interface are designed to limit the spread and intensity of crown fire activity.

Fuel Condition – Relative flammability of fuel as determined by fuel type and environmental conditions.

Fuel Loading – The volume of fuel in a given area generally expressed in tons per acre.

Fuel Management/Fuel Reduction – Manipulation or removal of fuels to reduce the likelihood of ignition and to reduce potential damage in case of a wildfire. Fuel reduction methods include prescribed fire, mechanical treatments (mowing, chopping), herbicides, biomass removal (thinning or harvesting or trees, harvesting of pine straw), and grazing. Fuel management techniques may sometimes be combined for greater effect.

Geographic Information Systems (GIS) – The combination of skilled persons, spatial and descriptive data, analytic methods, and computer software and hardware—all organized to automate, manage, and deliver information though geographic presentation.

Hazard – The degree of flammability of the fuels once a fire starts. This includes the fuel (type, arrangement, volume, and condition), topography and weather.

Hazardous Areas – Those wildland areas where the combination of vegetation, topography, weather, and the threat of fire to life and property create difficult and dangerous problems.

Hazard Reduction – Any treatment of living and dead fuels that reduces the threat of ignition and spread of fire.

Healthy Forests Restoration Act (HFRA) of 2003 – Gives incentives for communities to engage in comprehensive forest planning and prioritization. This legislation includes statutory incentives for the U.S. Forest Service and the Bureau of Land Management to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction priorities. 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 Community Wildfire Protection Plan.

Home Ignition Zone (HIZ) – Area approximately 30 feet around a property.

Human-caused Fire – Any fire caused directly or indirectly by person(s).

Initial Attack – The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

Ladder Fuels – Fuels that provide vertical continuity allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease.

Litter – Recently fallen plant material that is only partially decomposed and is still discernible.

Mechanical Treatment(s) – Ways to reduce hazardous fuels for the purpose of wildfire prevention.

Mitigation – Action that moderates the severity of a fire hazard or risk.

NFPA-1144 Standard for Protection of life and Property from Wildfire – Standard developed by the National Fire Protection Association to be used to provide minimum planning, construction, maintenance, education, and management elements for the protection of life, property, and other values that could be threatened by wildland fire. The standard shall be used to provide minimum requirements to parties responsible for fire protection, land use planning, property development, property maintenance, and

others responsible for or interested in improving fire and life safety in areas where wildland fire could threaten lives, property, and other values.

Noncombustible – A material that, in the form in which it is used and under the conditions anticipated, will not aid combustion or add appreciable heat to an ambient fire.

Overstory – That portion of the trees in a forest which forms the upper or uppermost layer.

Passive Crown Fire – A type of crown fire in which the crowns of individual trees or small groups of trees burn, but solid flaming in the canopy cannot be maintained except for short periods. Passive crown fire encompasses a wide range of crown fire behavior, from occasional torching of isolated trees to nearly active crown fire. Passive crown fire is also called torching or candling. A fire in the crowns of the trees in which trees or groups of trees torch, ignited by the passing front of the fire. The torching trees reinforce the spread rate, but these fires are not basically different from surface.

Peak Fire Season – That period of the fire season during which fires are expected to ignite most readily, to burn with greater than average intensity, and to create damages at an unacceptable level.

Prescribed Burning – Controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions, which allows the fire to be confined to a predetermined area, and to produce the fire behavior and fire characteristics required to attain planned fire treatment and resource management objectives.

Prescribed Fire – A fire burning within prescription. This fire may result from either planned or unplanned ignitions.

Remote Automated Weather Station (RAWS) – Portable weather station that can be placed within burned areas to monitor post-fire precipitation and other weather-related conditions.

Response – Movement of an individual firefighting resource from its assigned standby location to another location or to an incident in reaction to dispatch orders or to a reported alarm.

Risk – The chance of a fire starting from any cause.

Slash – Debris left after logging, pruning, thinning, or brush cutting. Slash includes logs, chips, bark, branches, stumps, and broken trees or brush that may be fuel for a wildfire.

Structural Ignitability – The ability for a home or other building to catch fire and burn.

Suppression – The most aggressive fire protection strategy, it leads to the total extinguishment of a fire.

Surface Fire – A fire that burns leaf litter, fallen branches, and other surface fuels on the forest floor, as opposed to ground fire and crown fire.

Surface Fuel – Fuels lying on or near the surface of the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low stature living plants.

Tree Crown – The primary and secondary branches growing out from the main stem, together with twigs and foliage.

Understory – Low-growing vegetation (herbaceous, brush or reproduction) growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory.

Vegetation Condition Class (VCC) – Data layer that categorizes departure between current vegetation conditions and reference vegetation conditions according to the methods outlined in the Interagency Fire Regime Condition Class Guidebook (Hann et.al. 2004).

Volunteer Fire Department – A fire department of which some or all members are unpaid.

Wildland – An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.

Wildland Urban Interface (WUI) – Commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. In the absence of a Community Wildfire Protection Plan, Section 101 (16) of the Healthy Foresters Restoration Act defines the wildland urban interface as " (I) an area extending ½ mile from the boundary of an at-risk community; (II) an area within 1 ½ miles of the boundary of an at-risk community, including any land that (1) has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community; (2) has a geographic feature that aids in creating an effective fire break, such as a road or ridge top; or (3) is in condition class 3, as documented by the Secretary in the project-specific environmental analysis; (III) an area that is adjacent to an evacuation route for an at-risk community that the Secretary determines, in cooperation with the at-risk community, requires hazardous fuels reduction to provide safer evacuation from the at-risk community." A Community Wildfire Protection Plan offers the opportunity to establish a localized definition and boundary for the wildland urban interface.

APPENDIX A- CWPP BACKGROUND

The following information provides background on the development of the VCCWPP, baseline data and supporting methodologies.

OVERVIEW OF COMMUNITY WILDFIRE PROTECTION PLANS

The year 2000 was a landmark fire season throughout the United States and was a catalyst for development of the National Fire Plan (NFP). The NFP was intended to develop a collaborative approach among various governmental agencies to actively respond to severe wildland fires and ensure sufficient firefighting capacity for the future. The NFP addressed five key areas: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. The NFP was followed by a 2001 report: A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-year Comprehensive Strategy. This latter report was updated in 2006, with a similar focus on using a collaborative framework for restoring fire-adapted ecosystems, reducing hazardous fuels, mitigating risks to communities, providing economic benefits, and improving fire prevention and suppression strategies.

In 2003, the U.S. Congress addressed widespread declining forest health by passing the Healthy Forests Restoration Act, and then President George W. Bush signed the act into law (Public Law 108–148, 2003). The HFRA was revised in 2009 to address changes to funding and to provide a renewed focus on wildfire mitigation (H.R. 4233: Healthy Forest Restoration Amendments Act of 2009).

The intent of HFRA is to expedite development and implementation of hazardous fuels reduction projects on federal land through streamlining the required environmental analysis and administrative review process under NEPA. HFRA also emphasizes the need for federal agencies to work collaboratively with communities, with the CWPP planning process providing the forum for federal agencies and communities to jointly develop hazardous fuels reduction projects and determine treatment prioritization. A CWPP also allows communities to establish their own definition of the Wildland Urban Interface (WUI), which is used to delineate priority areas for treatment. In addition, priority is placed on municipal watersheds, critical wildlife habitat, and areas affected by wind throw, insects, and disease. Communities with an established CWPP are given priority for grant funding of hazardous fuels reduction projects carried out in accordance with the HFRA.

Language in the HFRA provides flexibility for communities to determine the substance and detail in their plan. While the HFRA provides guidance to assist communities with wildfire protection, it does not mandate that a community develop a CWPP. All recommended actions contained in the CWPP are suggested, not mandated. The recommendations for fuels reduction projects are general in nature, meaning site-specific planning that addresses location, access, landownership, topography, soils, and fuels would need to be employed upon implementation. Also, it is important to note that the recommendations are specific to WUI areas and are expected to reduce the loss of life and property. Recommendations for the restoration of ecosystems and the role that fire plays in ecosystems are distinct from recommendations for WUI areas and are not addressed in detail in this plan. The recommendations for public lands adjacent to communities have been collaboratively planned with land management agencies.

Under the HFRA, CWPPs are composed of three minimum requirements intended to foster communication among the public, government entities, and private organizations as they work toward a common vision of wildfire risk mitigation. These requirements are:

Collaboration: Local and state government representatives, in consultation with federal agencies or other interested groups, must collaboratively develop a CWPP.

Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuels reduction and treatments; furthermore, the plan must recommend the types and methods of treatment that will protect at-risk communities and their essential infrastructure.

Treatments of Structural Ignitability: A CWPP must recommend measures that communities and property owners can take to reduce the ignitability of structures throughout the area addressed by the plan.

In 2014, The National Strategy: The Final Phase in the Development of the National Cohesive Wildland Fire Management Strategy was produced (Forests and Rangelands 2014). The National Strategy takes a holistic approach to the future of wildfire management, stating:

"To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire" (National Strategy, 2014:3).

To achieve this vision, the National Strategy goals are:

Restore and maintain landscapes: Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.

Fire-adapted communities: Human populations and infrastructure can withstand a wildfire without loss of life and property.

Wildfire response: All jurisdictions participate in making and implementing safe, effective, and efficient risk-based wildfire management decisions (Forests and Rangelands 2014:3).

Similar to the 2014 National Strategy, the NFP, state fire plans, the 10-year comprehensive strategy, and the Federal Emergency Management Agency (FEMA) Disaster Mitigation Act of 2000 all mandate community-based planning efforts with full stakeholder participation, coordination, project identification, prioritization, funding review, and multi-agency cooperation. In compliance with Title 1 of the HFRA, a CWPP must be mutually agreed upon by the local government, local fire departments, and the state agency responsible for forest management.

The New Mexico State Forestry Division (NMSF) has statutory responsibilities for cooperation with federal, state, and local agencies in the development of systems and methods for the prevention, control, suppression, and use of prescribed fires on rural lands and within rural communities on all non-federal and non-municipal lands in the state (New Mexico Statutes Annotated 1978, Section 68-2-8). As a result, the NMSF is involved in the CWPP planning process. The New Mexico Fire Planning Task Force (NM-FPTF) was created in 2003 by the New Mexico legislature to identify the WUI areas (Communities at Risk [CARs]) in the state that were most vulnerable to wildland fire danger. The NM-FPTF updates its CARs list annually, reviews completed CWPPs, and approves CWPPs that are compliant with the HFRA. New Mexico CWPPs are a mix of county- and community-level plans, with some CARs being represented in more than one plan (Council of Western State Foresters 2006). The NM-FPTF has adopted the International Code Council (ICC) WUI Code (NMSF 2007).

Documents Contributing to the CWPP Update Process

The Valencia County CWPP

This update builds upon information and analysis completed as part of the 2012 CWPP planning effort. Some content in the update originated in the 2012 document.

The Middle Rio Grande Bosque CWPP (2007)

The Middle Rio Grande Bosque CWPP was developed for Middle Rio Grande communities extending from Valencia to Socorro County and including the entire Valencia County bosque. The plan was developed through a collaboration of various stakeholders, including local, state, and federal agencies; soil and water conservation districts; environmental advocacy groups; homeowner associations; and private landowners. The CWPP involved considerable public input through organized meetings throughout all counties where representatives of the local and county fire departments answered questions relating to wildfire prevention. The risk assessments were developed using geographic information system (GIS) fire behavior modeling. Recommendations were made for reducing hazardous fuels on both private and public lands, reducing structural ignitability using proven Firewise Communities techniques, improving public education and outreach through organized events with volunteer fire departments and local agencies, and improving fire response capabilities by identifying needed resources to assist volunteer and career fire districts in better serving the public.

Bosque Landscape Alteration Strategy (2005)

This strategy was developed in 2005 by Yasmeen Najmi and Sterling Grogan of the Middle Rio Grande Conservancy District (MRGCD) in collaboration with Cliff Crawford of the University of New Mexico Department of Biology (Najmi et al. 2005). The strategy is driven by three main objectives: 1) to *reorganize* the Rio Grande bosque's landscape to retain within current constraints, including institutional and water supply constraints, and its historical processes and wildlife communities; 2) to *recreate* the landscape's former patchy mosaic of native trees and open spaces along the present day river's narrow floodplain, while containing the distribution of invasive species; and 3) to *reduce* the intensity of bosque wildfires both at the WUI and within the rest of the bosque, and to reduce water depletion by the bosque landscape. The strategy includes basic requirements and guidelines for meeting these objectives.

Other Research Sites or Areas of Scientific or Biological Importance

Treatment of fuels in the Middle Rio Grande Bosque may be limited or prevented by the presence of bosque scientific research sites and areas of special scientific, ecological, or cultural importance. Information providing locations of all research sites and significant areas throughout the planning area are limited, so any fuel treatment projects will require site-specific planning.

Public Involvement

A key element in the CWPP process is the meaningful discussion it generates among community members regarding their priorities for local fire protection and forest management (SAF 2004). The 2012 CWPP was developed collaboratively with the local community through a number of outreach events (Table A- 1), a community survey, social media page and a posted public review period.

Table A- 1. CWPP Public Outreach Events

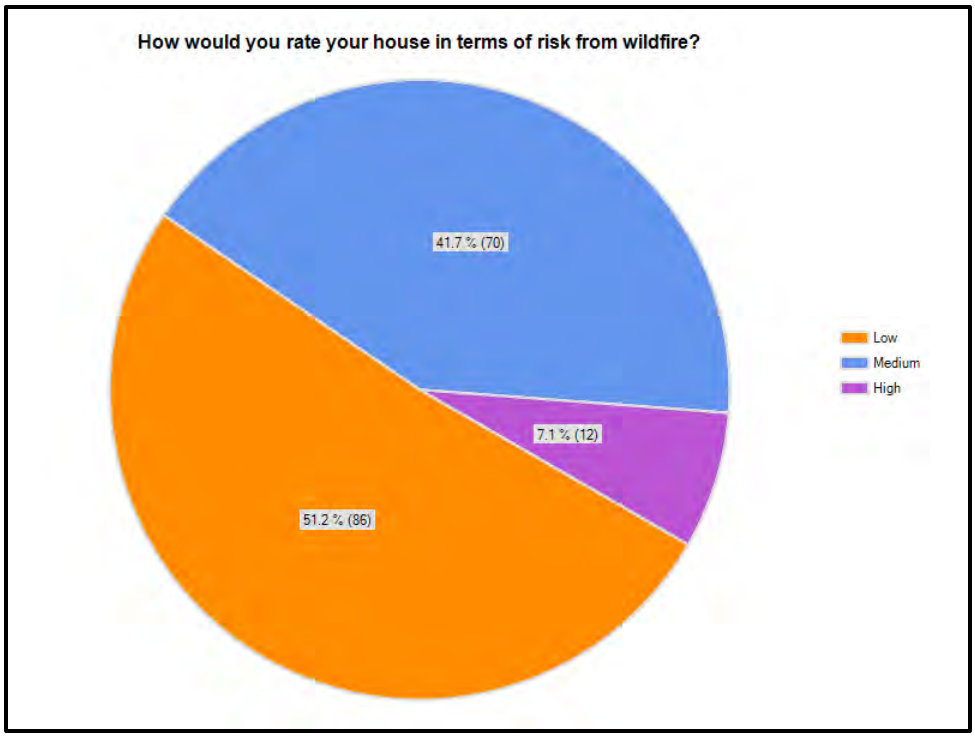
Date	Event	Meeting location	Attendees
7/21/12	Tierra Grande Improvement Association, Annual Meeting	Tierra Del Sol Country Club	Rob Barr (Valencia County Wildland Coordinator)
8/4/12	Ditch Bank Bandits	Los Lunas River Park	Rob Barr
	Bosque Farms Fair	Bosque Farms Fairgrounds	Rob Barr
8/7/12	National Night Out	District Court House, Los Lunas	Rob Barr, Monica Gonzales (Valencia County Fire Department), administrative assistant, Chief Davis, fire departments
8/17/12	Valencia County Expo, Educational Day	Los Lunas	Cody Stropki (SWCA)
8/18/12	Meadow Lake Association	Meadow Lake Community Center	Rob Barr
8/18/12	Valencia County News Bulletin Announcement for CWPP	Countywide	Rob Barr
8/20/12	Meeting with MRGCD and Infinity High School concerning community projects	Willie Chavez State Park	Rob Barr
8/21/12	Rio Communities Association Meeting	Rio Communities Senior Center	Rob Barr
8/22/12	Interview with News Bulletin	Countywide	Rob Barr, Chief Gonzales, Victoria Amato - Press Release (SWCA)
8/25/12	Valencia County Fair	Belen	Rob Barr, Victoria Amato, Cody Stropki
9/8/12	Los Lunas Chile Festival	Los Lunas	Rob Barr/Firefighters

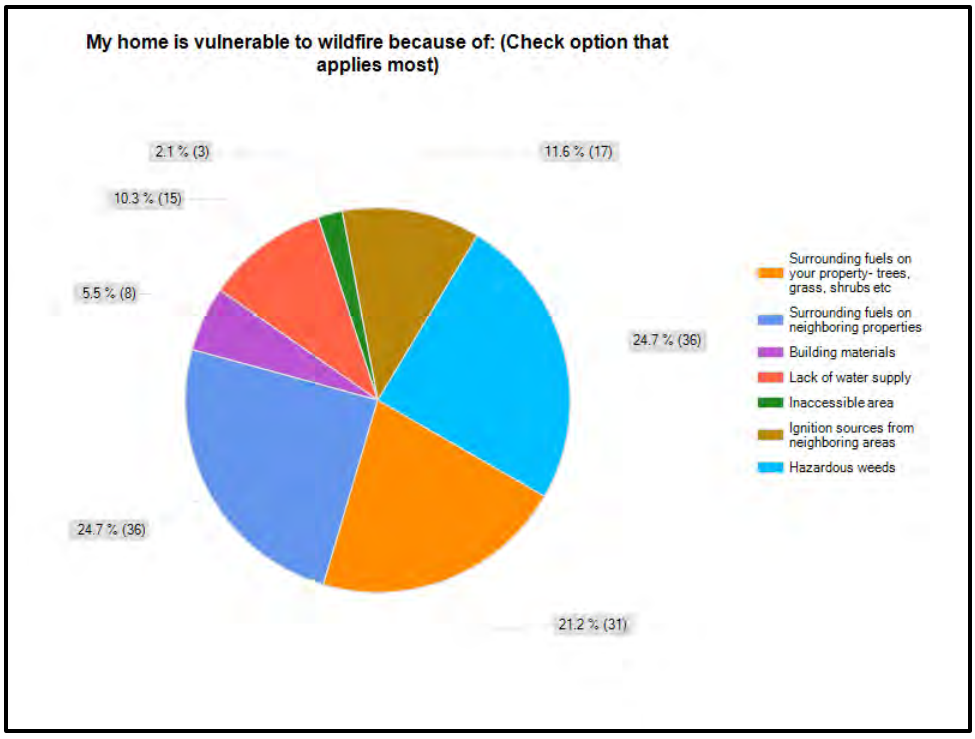
SWCA = SWCA Environmental Consultants.

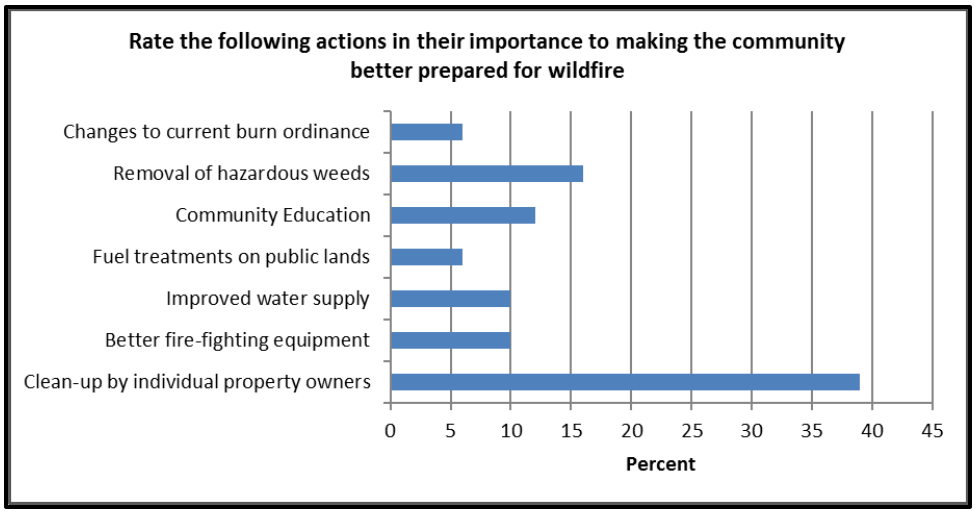
Community Survey Results

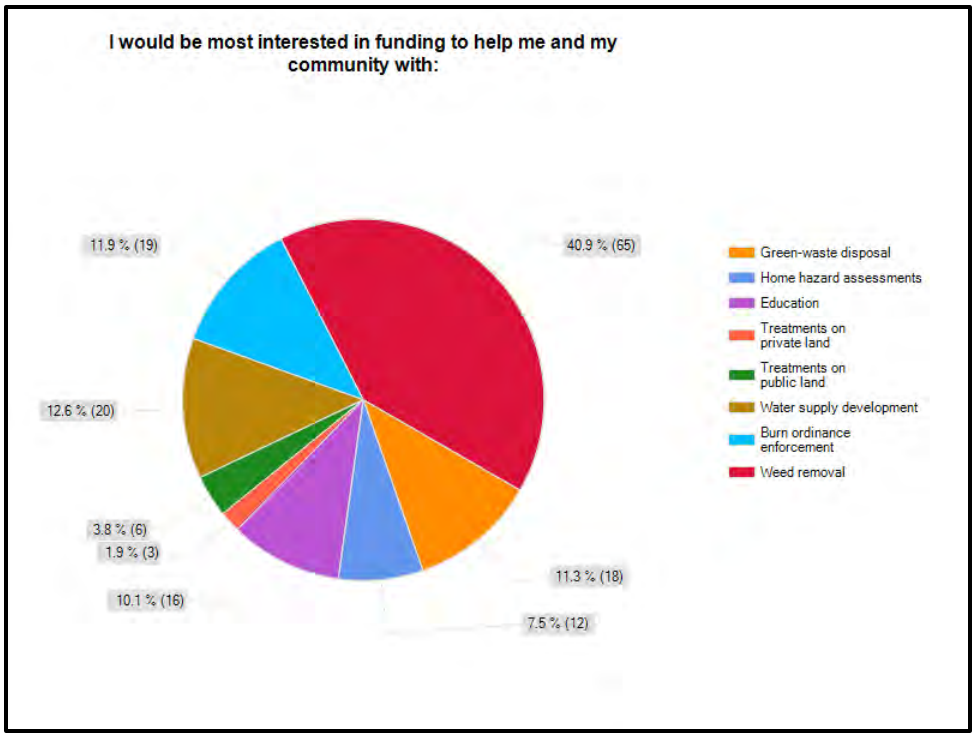
The following is a summary of the results of the community survey that was completed in 2012. No surveys were carried out during the 2018 update.

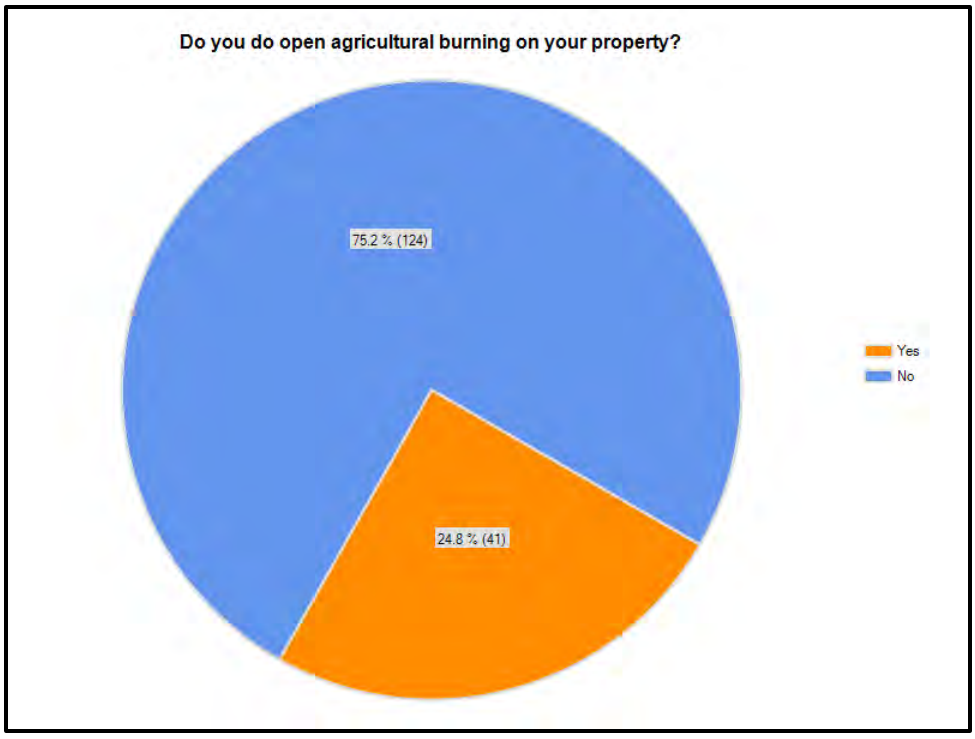
In total, 160 residents responded to the survey, from a diverse geographic area. Based on other similar studies, this is a very high response rate for a CWPP survey. The survey asked the following questions presented in the graphics below; charts display the percentage of the total responses.

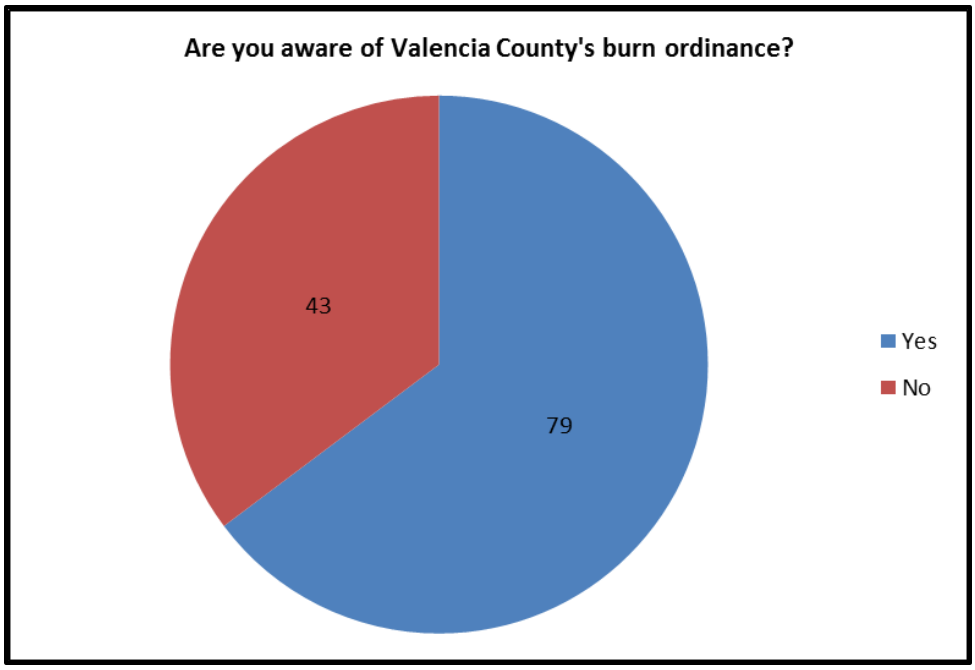
- 
How would you rate your house in terms of risk from wildfire?
41.7 % (70)
7.1 % (12)
51.2 % (86)
Low
Medium
High

- 
My home is vulnerable to wildfire because of: (Check option that applies most)
2.1 % (3)
11.6 % (17)
10.3 % (15)
5.5 % (8)
24.7 % (36)
24.7 % (36)
21.2 % (31)
Surrounding fuels on your property- trees, grass, shrubs etc
Surrounding fuels on neighboring properties
Building materials
Lack of water supply
Inaccessible area
Ignition sources from neighboring areas
Hazardous weeds

- 
Rate the following actions in their importance to making the community better prepared for wildfire
Changes to current burn ordinance
Removal of hazardous weeds
Community Education
Fuel treatments on public lands
Improved water supply
Better fire-fighting equipment
Clean-up by individual property owners
0
5
10
15
20
25
30
35
40
45
Percent

- 
I would be most interested in funding to help me and my community with:
11.9 % (19)
40.9 % (65)
12.6 % (20)
3.8 % (6)
1.9 % (3)
10.1 % (16)
11.3 % (18)
7.5 % (12)
Green-waste disposal
Home hazard assessments
Education
Treatments on private land
Treatments on public land
Water supply development
Burn ordinance enforcement
Weed removal

- 
Do you do open agricultural burning on your property?
75.2 % (124)
24.8 % (41)
Yes
No



Respondents were asked if they had ideas for an open burn policy for the County to foster safe and effective burning practices. The following is a list of responses (note that responses are directly taken from responders):

Start restrictions earlier.

Better enforcement.

Teach common sense.

Limit fireworks.

Allow to burn early in the morning and later at night.

It would be nice if the County could send warning alerts of high winds on the internet.

Increase the hours for legal burning.

Need to enforce illegal trash barrel burning.

Education would be most helpful.

People could gather what they wish to burn in a central location to be burned safely to maintain control.

Fines should be used to enforce ordinance.

A sign of sorts to alert people to dangers and current status of burning.

Stop household trash burning.

Continue what is in place but monitor more carefully.

The County should create ordinance for all municipalities.

Current ordinance is too lenient [sic], needs to be re-written and enforced.

Fire department could use large scale burns as a practice or exercise.

More public awareness needed.

More reporting by neighbors when people are not burning safely or are burning illegally.

Need places to dump green waste, would reduce illegal burning.

Problem where people are not prepared for a change of conditions during a burn day.

Everyone should have to call before they burn.

Punishment needed when people burn without permission.

Be able to burn before 10am and have longer burning days.

Make the burn policy more prominent on the County website.

Enlist other local agencies/jurisdictions (i.e., Belen) to highlight policy on their website.

Aggressively [sic] educate public about policy and dangers of open burning.

Aggressively [sic] ticket violators of open burn policy, at least hand out warnings for first offence.

Need community education.

Allow burning over a wider range of hours to take advantage of lower dew point in morning and evening.

Prohibit open burning in dry weather.

Regularly drive through communities to enforce illegal burning.

Install signs along the highways.

No, I feel that if we were in as bad of fire danger as we are told, we would have burned down already.

Respondents were asked to list community resources that they would most like to see protected from wildfire. The following is a list of responses:

Homes, parks, rest homes

Casa Colorada school building

Hiking trails (listed by 5 people)

All open space areas (listed by 3 people)

Bosque (listed by 18 people)

Historic buildings (listed by 5 people)

Manzano Mountains

Wooded areas along the irrigation ditches

Whitfield wildlife conservation area (listed by 3 people)

Water and plants

The old Harvey house (listed by 4 people)

Schools (listed by 3 people)

Ditch banks

All buildings and all homes should be considered

The Belen Marsh-Don Felipe Swamp

Historic Sites- Luna Mansion, Old Churches

Tomé Historical Areas; Tomé Hill

Just my neighborhood

Wish we could have more developed (paved)bike trails

Any of our farmlands are precious

Wittwer House—Teofilio's--historic building

Pete's cafe/harvey house

Village of Los Lunas waste water treatment plant

Los Lunas River Park, Willie Chavez Park

Sand Canyon

Tierra Grande Open Space (listed by 3 people)

Manzano Wilderness

Mobile Home Park

Additional comments recorded in the surveys included the following:

VCFD [Valencia County fire department] *do fine work.*

Our pathways are weed infested.

This is a very helpful and good thing you folks are doing.

If you could encourage community composting efforts of green weeds everyone could have great organic fertilizer and not burn their weeds because thats [sic] *how a lot of these wildfires start. Also sadly I think 4th of July and New Years fireworks should be banned. Laser light shows should be encouraged.*

I would like the county to advise neighbors about dead vegetation and fallen trees to prevent spread of fire. Write them up in some formal way. Not financial penalty but a community concern. Many neighbors have an acre or more and have left fence lines with weeds and dead trees which would make a fire spread.

Fireworks should be more strictly controlled. Too close to 4th of July when it is very dry.

Obviously the bosque is the biggest threat to our entire community if it were to catch fire. It needs to be properly maintained to remove the hazardous underbrush that is prone to fires. I just want to say thank you for willingly risking your lives for my safety and the wellbeing of the community. The service you give to the county is invaluable and greatly appreciated. I do feel that many urban fires could be prevented by regular yard/property maintenance. So much could be prevented by property owners taking personal responsibility.

Everyone should cut their weeds and clean up the neighborhood.

There are a lot [sic] *of weeds in the vicinity of Belen, I'm sorry i* [sic] *do not see any ordinance being followed by homeowners, especially out of state ones. Someone needs to follow thru & maintain with those property owners.*

The middle Rio Grand [sic] *Water District has done a very poor weed removal along it's* [sic] *irrigation ditches this year. You're going to have a continuous north-south line of high weeds this fall along the ditches.*

I think the bosque should be cleared of brush and thick undergrowth and monitored as a recreational area similar to the bike trail in Albuquerque.

The bosque could be cleaned up and developed for recreational use. The fuel load in the bosque at this time could lead to a catastrophe [sic] *in our village if the wind speed and direction are right.*

Main focus should be on getting people to clean up their dangerous, trashy places that are havens for combustible fires. There are some really dangerous properties both in and out of town. Clear out everyone's junk, weeds and old cars/trailers/tractors/mobile homes.

Protect the entire community through eliminating the open burn policy and education.

Increased fire departments and resources.

Wildfire bill boards needed.

It concerns me that there is not a green waste disposal facility in the Los Lunas area. How difficult would it be to include a green waste disposal area at the Transfer Station off El Cerro Loop?

All people in this area need to be educated and fined if they break the law. Also, there should be patrols after dark, because they think they can burn then and not be seen.

These results (from 168 respondents) suggest that over half of those questioned perceive their homes to be at low risk from wildfire. Only 7.1% of residents felt their homes were at high risk of fire. Approximately a quarter of those questioned felt that their homes were at risk from wildfire because of fuels on surrounding neighbors' properties (including public lands). An equal number felt that hazardous weeds were causing the greatest wildfire hazard for their property. Just over 20% of people felt that vegetation and fuels on their own properties were making their home vulnerable to wildfire. Most people felt that access, water supply, ignition sources from neighboring properties, and building materials ranked low in terms of creating wildfire risk.

Just under half of people questioned perceived their community to be moderately prepared for wildfire, while 20% thought their community was poorly prepared and 3% thought their community was well prepared; this suggests community members would like to see improved fire preparedness in the County. Almost 40% of people thought clean-up by individual property owners would contribute to improving community preparedness the most. The second most important factor was the removal of hazardous weeds then community education. When asked what residents would most like to see funding focused on, over 40% cited weed removal; green waste removal, education, and burn ordinance enforcement all scored around 10% in terms of need for funding. The County has a weed ordinance to reduce infestations of hazardous weeds; however, only 32% of those questioned were familiar with the ordinance. Better education regarding control of weeds, coupled with increased enforcement of weed infestations on private property, is suggested by the public as a way to reduce this fire hazard.

Agricultural burning is a common practice in the County, with just under a quarter of those questioned carrying out some type of open burning. According to an interview by County Fire Chief Steven Gonzales with the *News Bulletin*, "Fire admin officials for the County want to educate the public on the importance of burning trash and weeds safely. Officials don't want to stop farmers burning off their crops." Because of its importance to agriculture, safe open burning is allowed and encouraged by the County Fire Administration. Many homeowners did, however, voice concern about the risk of fires spreading from illegal burning of weeds and trash. Many point to stricter enforcement of burn restrictions as a solution. Education to better inform the public of burn restrictions, as well as educating the broader public about their responsibility to prevent wildfire ignitions through illegal burning, is a preventative approach that may serve as more effective then the reactive approach currently employed. Burn restrictions were also a source of confusion for many residents because of the differences in restrictions imposed by differing jurisdictions. A single source for burn restrictions was suggested as a means to overcome this confusion.

Since the 2012 plan was adopted, the County Fire Department have been engaging fully with WUI communities in implementing home assessments. This has increased the exposure of the 2012 CWPP and introduced residents in the County to wildfire prevention planning. The CWPP update will build on previous collaboration efforts and will be posted for public review before being finalized.

CWPP Core Team List

The following individuals participated in this CWPP Update as members of the Core Team.

Agency or Organization	Name	Position
Valencia County Fire Department	Rob Barr	Valencia County Fire Department Wildland Captain
Valencia County Fire Department	Brian Culp	Valencia County Fire Department Fire Chief
Valencia County Emergency Management	Seth Muller	Valencia County Director of Emergency Management
Los Lunas County	Jason Gonzales	FMO/OEM
Rio Grande Estates Fire Department	Marianne-Rittner-Holmes	Lieutenant
N.M State Forestry Division	Robert Brown	Fire Management Officer
U.S. Forest Service	Adrian Padilla	Assistant Fire Management Officer
Bureau of Land Management	Lino Baca	Assistant District Fire and Fuels
Middle Rio Grande Conservancy District	Yasmeen Najmi	Planner
Middle Rio Grande Conservancy District	John Romero	Ranger/FMO
Valencia Soil and Water Conservation District	Madeline Miller	District Manager
Whitfield Wildlife Conservation Area	Ted Hodoba	Manager
SWCA Environmental Consultants	Victoria Amato	Fire Planning Specialist
SWCA Environmental Consultants	Cody Stropki	Natural Resource Program Director

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APPENDIX B- VALENCIA COUNTY BACKGROUND

VALENCIA COUNTY BACKGROUND

Location and Geography

Located in central New Mexico, the County boundary delineates the VCCWPP planning area. The County is 1,068 square miles and is bordered by Bernalillo, Torrance, Socorro and Cibola Counties.

The main transportation corridors that travel through the planning area include Interstate 25 (I-25) that cuts through the center of the County from north to south, New Mexico Highway (NM) 6 from Los Lunas to the northwest corner of the County, and NM 47Appendix A- CWPP Background

NM 304, and NM 314, which connect the various communities along the Rio Grande corridor. Secondary paved, dirt, and gravel roads lead off of the main transportation corridors to various locations throughout the region.

The County is made up of a variety of lands defined by jurisdiction and management, including tribal (Isleta and Laguna Pueblos), state, and federal government. The western portion of the County is a checkerboard of state-owned, BLM, and private land. The northeast section of the County also has a large portion of state lands. Much of the eastern side is private, with a small area of USFS land in the far eastern portion. Isleta and Laguna Pueblo lands are located in the northern portion of the County.

Climate

Differences in topographical characteristics throughout New Mexico and the County contribute to the divergent climatic regimes within the planning area. The state generally has a mild, arid to semiarid, continental climate characterized by abundant sunshine, light total precipitation, low relative humidity, and relatively large annual and diurnal temperature ranges. Relative humidity across the state is lower in the valleys but higher in the mountains due to the lower temperatures at higher elevations. Average relative humidity at all elevations during the warmer months is commonly less than 20% and occasionally may drop as low as 4%. During the cooler months, relative humidity is higher and ranges from approximately 65% at sunrise to about 30% during midday. Across the state, average hours of annual sunshine range from nearly 3,700 hours in the southwestern portions of the state to 2,800 hours in the north-central portions (New Mexico Climate Center [NMCC] 2012).

July is generally the warmest month of the year for New Mexico, with average monthly maximum temperatures ranging from 90 degrees Fahrenheit (°F) at lower elevations to 75°F to 80°F at higher elevations. Mean annual temperatures for Valencia County range from approximately 17°F to 93°F (Western Regional Climate Center [WRCC] 2012). Generally, January is the coldest month, with average temperatures ranging from 17°F to 51°F. The highest temperatures are observed in July with average temperatures ranging from 60°F to 93°F

The mean annual precipitation within the County is relatively low (Figure B-1); average annual precipitation ranges from 0.36 inches in January to 1.7 inch in August (WRCC 2012). July and August mark the onset of the region's monsoonal weather patterns and are typically the hottest and wettest months of the year, accounting for 30% to 40% of the state's annual precipitation (NMCC 2012). These seasonal rains take place almost entirely as frequent and brief intense thunderstorms. The moisture associated with these storms originates in the Gulf of Mexico. These storms also generate intense lightning activity, which may result in multiple fire ignitions from one storm across a fire management district.

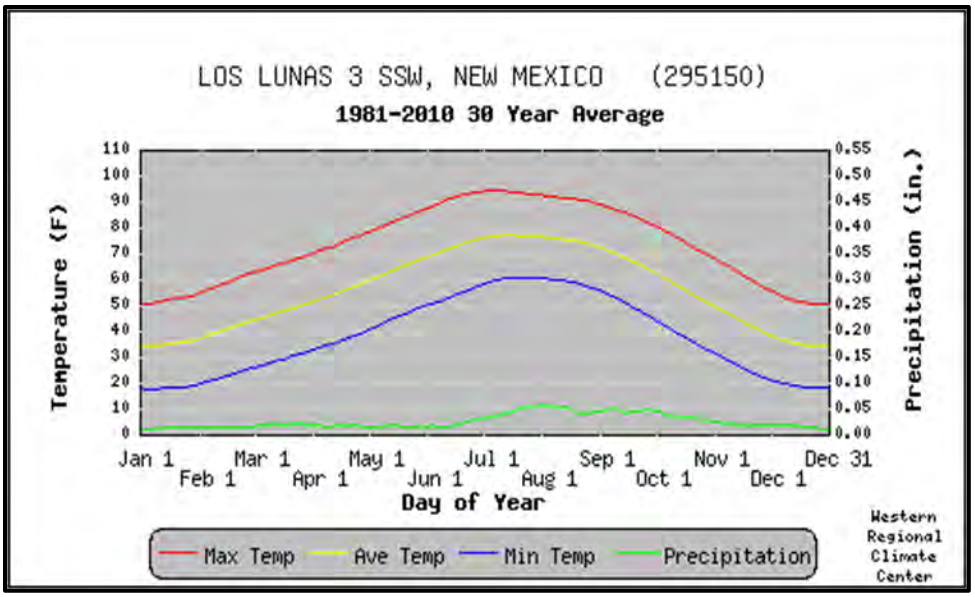

Figure B-1. Average temperatures and precipitation totals for Los Lunas from 1981–2010 (WRCC 2012).

Winter is the driest season in New Mexico, when precipitation is primarily a result of frontal activity associated with Pacific Ocean storms that move across the country from west to east. Much of this precipitation falls as snow in mountain areas. Wind speeds across New Mexico are usually moderate. However, relatively strong and unpredictable winds can accompany frontal activity during the late winter and spring. Wind direction is typically from the southwest (NMCC 2012).

Overall climate regimes in the state typically consist of cyclical drought/wet-year patterns that are driven by El Niño-Southern Oscillation. Landscape-scale drought and above-average precipitation have historically occurred at irregular intervals in the past, as documented by tree-ring and other data with varying degrees of intensity (Swetnam and Betancourt 1998). Severe and prolonged droughts on record have occurred once every century on average (Gray et al. 2003).

Vegetation and Land Cover

The CWPP planning area encompasses a number of vegetation types. Vegetation zones are primarily a function of elevation, slope, aspect, substrate, and associated climatic regimes. Although there is some overlap, the biophysical habitat types are best described by topography and location within the planning area. Vegetative characteristics change over time; thus, historic vegetation conditions are discussed in a later section because they play a large role in historic fire regimes. Vegetation within and surrounding the planning area can be described by habitat type.

Shrubland Habitats

Shrubland habitat types make up 68% of the County's total land cover, or 468,420 acres. The vegetative structure of these ecosystems is more complex and varies from relatively sparse, to continuous ground cover.

CHIHUAHUAN AND APACHERIAN-CHIHUAHUAN GRASSLAND AND SHRUB-STEPPE

The most common vegetation type in the County is the Apacherian-Chihuahuan or Chihuahuan semi-desert grassland and steppe ecosystem, making up over 40% of the land cover. Elevational ranges of these ecosystems within and around the planning area are approximately 4,600 to 6,000 feet. Vegetation within these grassland and shrub-steppe ecosystems is characteristic of the Chihuahuan Desert. Graminoid species may vary slightly depending on substrate but typically include grama (*Bouteloua* spp.), muhly grass (*Muhlenbergia* spp.), plains lovegrass (*Eragrostis intermedia*), James' galleta (*Pleuraphis jamesii*), and dropseed (*Sporobolus* spp.). Shrub species that occur within this habitat type include yucca (*Yucca* spp.), fourwing saltbush (*Atriplex canescens*), Torrey's jointfir (*Ephedra torreyana*), and Mexican tea (*E. trifurca*). Tall-shrub/short-tree species include mesquite (*Prosopis* spp.) and various oaks (*Quercus* spp.). Many of these desert grassland areas have been converted to shrub habitat types due to extensive encroachment of mesquite as a result of intensive grazing and other land uses.

INTER-MOUNTAIN BASINS MIXED SALT DESERT SCRUB

Mixed salt desert scrub accounts for approximately 8% of the CWPP planning area. This vegetative community exists within an elevation range of approximately 4,700 to 6,000 feet within the planning corridor. Vegetation within the mixed salt desert scrub community is characterized by open to moderately dense shrub cover composed of one or more saltbush species (*Atriplex* spp.). Other shrub species that may be present include sagebrush species (*Artemisia* spp.), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), rubber rabbitbrush, (*Ericameria nauseosa*), winterfat (*Krascheninnikovia lanata*), and broom snakeweed (*Gutierrezia sarothrae*).

Arid Grassland and Steppe Habitats

Arid grassland and steppe ecosystems comprise 12.8% of the total land cover, or 87,667 acres. The vegetative structure of these communities is characteristic of most shortgrass prairie ecosystems.

INTER-MOUNTAIN BASINS GRASSLAND AND SHRUB-STEPPE

As the elevation rises from the bosque ecosystem, the land cover transitions into a grassland-dominated ecosystem, which primarily occurs on dry plains, mesas, and alluvial flats. This vegetation type covers an elevational range from approximately 4,700 up to 7,600 feet in the surrounding foothills. Although commonly overgrazed, these areas still display relatively rich vegetative species diversity, dominated or co-dominated by very drought-resistant perennial bunch grasses, such as Indian ricegrass (*Achnatherum hymenoides*), threeawn (*Aristida* spp.), blue grama (*Bouteloua gracilis*), needle and thread (*Hesperostipa comata*), muhly grass, and James' galleta.

The shrub-steppe ecosystem is similar to the semi-desert grassland ecosystem in its vegetative composition, and it typically occurs on alluvial fans and flats within lower elevations. The shrub-steppe ecosystem is dominated by grasses (>25% cover) but has an open shrub layer. Grasses are similar to those observed in the semi-desert grassland areas but are also commonly associated with scattered shrubs and dwarf shrubs of sagebrush species, rubber rabbitbrush, fourwing saltbush, Mormon tea (*Ephedra viridis*), skunkbrush sumac (*Rhus trilobata*), winterfat, and broom snakeweed.

Forested Communities

Forested communities make up 4.8% of the total land cover. Colorado Plateau piñon-juniper forests are most common in the County (making up 3% of the total land cover) and contain mostly piñon pine (*Pinus edulis*) and oneseed juniper (*Juniperus monosperma*). This ecological system occurs on the dry mountains, plateaus, and foothills of north-central New Mexico and the Colorado Plateau, and is represented in the elevational region between ponderosa pine (*Pinus ponderosa*) and grassland communities. Understory layers are variable and may be dominated by shrubs and/or graminoids or be absent. Associated species include big sagebrush (*Artemisia tridentata*), mahogany (*Cercocarpus* spp.), antelope bitterbrush (*Purshia tridentata*), Gambel oak (*Quercus gambelii*), blue grama, James' galleta, and muttongrass (*Poa fendleriana*).

Only a marginal area of the County (0.154% of the total land cover) is made up of ponderosa pine forest. These forests exist at the highest elevations ranging from 7,000 to 9000 feet, where the transition from piñon-juniper woodlands to ponderosa pine communities typically takes place.

Riparian Woodland Communities

The bosque riparian habitat type stretches throughout the County along the Rio Grande corridor. The bosque and lowland regions are also where most of the developed and agricultural land occurs, with the highest densities of human population occurring within and around the city of Los Lunas.

Riparian vegetation makes up 4.4% of the total land cover in the County. Dominant native woody vegetation includes Rio Grande cottonwood (*Populus deltoides* var. *wislizeni*), coyote willow (*Salix exigua*), and Goodding's willow (*S. gooddingii*). Invasive species such as saltcedar (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), and Siberian elm (*Ulmus pumila*) also exist within large stands along the bosque ecosystem. Herbaceous plant species commonly associated with the bosque understory include a variety of wheatgrass (*Pascopyrum* spp.), ryegrass (*Elymus* spp.), dropseed and sacaton, and inland saltgrass (*Distichlis stricta*). Near the river or floodplain, the dominant native shrub species are coyote willow, arrowweed (*Pluchea sericea*), willow baccharis (*Baccharis salicina*), three-leaf sumac (*Rhus trilobata*), Torrey's wolfberry (*Lycium torreyi*), and screwbean mesquite (*Prosopis pubescens*) (Sivinski 2007).

Other Land Cover Types

AGRICULTURAL

Agricultural land accounts for 5.3% of the total land cover in the County, or 36,648 acres. Agricultural areas are typically areas that have vegetation planted for livestock grazing and/or are used for hay or seed crops, areas being used for cropland production, or land that is actively tilled.

DEVELOPED

Developed land makes up 2.66% of the total land cover in the County, or 18,194 acres. Developed areas include all locales that contain human developments

Historic Conditions and Present Changes in Fire-adapted Ecosystems

During the past few centuries, humans have altered the fire-adapted ecosystem in the Southwest. Prior to 1900, periodic, low-intensity surface fires burned through much of the forested landscape. This process reduced fuel loads by removing small-diameter understory trees and creating park-like ponderosa stands. Thus, in the past, these fire-adapted ecosystems were routinely renewed, which supported healthy ecosystems.

Prior to European settlement, fire ignited by various Native American groups and lightning-caused fires were common and removed encroaching shrubs, forbs, and trees and promoted vigorous grassland vegetation (Pyne 2002). Juniper savannas and woodlands have also changed over time and have expanded above their historic range and densities as a result of livestock grazing, fire suppression, and climatic variation (Allen and Breshears 1998; Swetnam et al. 1999).

Non-native and Invasive Species

Fire-tolerant, flammable, non-native species now exist within cottonwood (*Populus* spp.) and willow (*Salix* spp.) stands along the Rio Grande corridor. One species that deserves special mention with regard to wildfire is the non-native phreatophyte saltcedar. This species, also referred to as tamarisk, is common along the Rio Grande and occurs within the VCCWPP planning area. Programs to reduce saltcedar are already active in the County, and these efforts should continue in the future to ensure the control of this highly flammable invasive species (Figure B-2).

Native cottonwood trees and willows are not fire adapted and thus are less capable of recovering from the effects of fire than non-native saltcedar and Russian olive (Stromberg et al. 2002). Extensive bosque fires could result in further shifts away from diverse mesic native plant communities to more xeric non-native woodlands and shrublands.

Figure B-2. Fire burning in saltcedar along the Rio Grande corridor.

Once established, saltcedar can obtain water at deeper groundwater levels and has higher water-use efficiency than native riparian trees in both mature and post-fire communities (Busch and Smith 1993; Busch 1995). One of the major competitive advantages of saltcedar is its ability to sprout from the root crown following fire or other disturbances (e.g., flood, herbicides) that kill or severely injure aboveground portions of the plant (Brotherson and Winkel 1986; Brotherson and Field 1987; Smith et al. 1998). Saltcedar flammability increases with the buildup of dead and senescent woody material within the dense bases of the plant (Busch 1995). Saltcedar can also contribute to increased canopy density, which creates volatile fuel ladders and increases the likelihood of wildfire (Stuever et al. 1995). Other non-native species, such as Russian olive and Siberian elm, also exist along the Rio Grande and have created similar problems, although not as extensive, to those created by saltcedar.

Biocontrol of salt cedar has been experimented with since 2001. The introduction of the saltcedar leaf beetle (Diorhabda elongata) has been shown to have great success in defoliation and mortality of salt cedar, particularly in Nevada and Colorado (NMSU 2012, Dudley and DeLoach 2004). The saltcedar leaf beetle is thought to have been less successful in NM, as few populations of the beetle have been fully established. There are concerns that defoliated trees would contribute temporarily to fuel loading and therefore fire risk; research on this topic however is lacking.

Saltcedar and Russian olive are on the state list of noxious weeds for New Mexico (USDA 2012). For more information on noxious weeds, refer to USDA noxious species lists by state, which can be found at http://plants.usda.gov.

Topography

The County contains a diverse topographical landscape that includes the Manzano Mountains to the east and the fertile Rio Grande valley and bosque that transects the County and the Rio Puerco valley to the west. The County is considered part of the Rio Abajo (lower river valley).

The Rio Grande watershed, which the County is part of, is the fifth largest in North America, and for much of its course, the river follows the Rio Grande Rift, which extends from central Colorado to southern New Mexico. The Rio Grande Rift is bordered by three major physiographic provinces: the Colorado Plateau to the northwest, and the southern Rocky Mountains and Great Plains to the east (New Mexico Bureau of Geology and Mineral Resources 2007).

Population

In 2010, the population within the County was 76,569, which represents 3.7% of the entire population of New Mexico. Population estimates from the U.S. Census Bureau in July 2017 are 75,940 (U.S. Census Bureau, 2018), a slight decrease on 2010 numbers. The population density is 71.8 people per square mile (U.S. Census Bureau, 2010).

The census data indicate that as of 2010, approximately 26,835 households were located within the County. In 2010, the housing density in the County was approximately 28.21 housing units per square mile, an increase from 23 housing units per square mile in 2000. Housing units and population densities are not equally distributed throughout the County and are concentrated around communities and metropolitan areas. The most densely populated portion is within the Rio Grande Corridor and the communities of Los Lunas and Belen.

Within the entire range of the planning area, economic and employment statistics are quite variable depending on the community and available employment opportunities. The state of New Mexico had an overall median household income in 2016 of $45,674, while the County had a median household income of $41,788 (U.S. Census Bureau 2018).

History and Land Use

Human occupation in New Mexico is believed to date from the Late Pleistocene (about 10,000 years ago) during the Paleoindian period (10,000–5,500 B.C.). During this time, prehistoric Sandia peoples lived and hunted throughout this region (Mid-Region Council of Governments 2008). Following that time, by the early to mid-1300s, the major historic pueblo villages along the Rio Grande and its tributaries were founded, with the County being home to a number of these ancient communities. Pueblo communities relied on persistent surface water resources in order to practice agriculture and construct elaborate dwelling structures (Scurlock 1998). Populations traditionally lived and travelled along the Rio Grande from present day Isleta Pueblo to Casa Colorado in the south.

The County was one of the seven partidos (districts) established during Mexican rule. New Mexico territory was first subdivided in two in 1837 and then further divided into three districts in 1844. Eventually these districts were further subdivided into areas that include similar boundaries to New Mexico's first counties. The County was named for the village of Valencia, its first county seat. The county seat was later moved to Tomé, and then in 1876, moved to Los Lunas (Bowden 2012). The County was a large agrarian and heavily settled partido (Valencia County 2005).

At the time New Mexico gained statehood in 1912, Valencia County stretched from the Manzano Mountains to the Arizona border (encompassing present day Cibola County). In 1981 Cibola County was created by the New Mexico legislature out of the western portion of Valencia County (Valencia County 2005). Four municipalities have been incorporated to date: the Village of Los Lunas, City of Belen, Village of Bosque Farms and Village of Peralta. These municipalities are the major commercial centers in the County.

Residential and Commercial Uses

The majority of the County's land use is residential (28%) or agricultural (34%). The municipalities of Belen, Los Lunas, and Bosque Farms also contain a significant amount of commercial and industrial lands. It is anticipated that these land use sectors will continue to grow as the County develops. Agricultural lands are expected to decline (Valencia County 2005).

Wildlife Uses

The Rio Grande bosque and outlying agricultural and wetland areas throughout the County provide essential habitat components to numerous wildlife species in the MRG valley. The bosque is particularly rich in bird species; as part of the Rio Grande Flyway, for example, the MRG valley is used by more than 200 species of birds every year as an important migration route from Canada and South America (MRGCD 2007). Large populations of Sandhill Cranes winter in the County. Dove, pheasants and ducks are prevalent in the bosque, with duck hunting common in the County. Southern portions of the MRG valley are also known to encompass critical habitat for the endangered southwestern willow flycatcher (*Empidonax traillii extimus*), and these areas are critical to protect against fire and ecosystem degradation by

non-natives. The MRG is also critical habitat for the endemic and endangered Rio Grande silvery minnow (*Hybognathus amarus*).

New Mexico Game and Fish introduced big horn sheep into the Tierra Grande Open Space.

Agricultural Uses

Agricultural land use is the dominant land use along the populated areas of the County. Dominant crops are alfalfa hay, pasture grasses, fruits, and vegetables. Agriculture is an important part of the economy for the MRG valley, bringing revenue to the local communities along the bosque. Because many of these communities depend on agriculture, protecting the land and the many support structures related to agricultural production is an important component of the VCCWPP. Prescribed burning is an integral part of the farming heritage in the County and needs to continue in order for the County to retain its agriculture, green belt and rural lifestyle.

Recreational Uses

The bosque area is also an important site for leisure and recreation. Ditch roads developed by the MRGCD are also used as trails for pedestrians, equestrians, bicyclists, bird-watchers, fishermen, and other outdoor enthusiasts (MRGCD 2007). Recreation could be considered to have dual roles in this plan. It is often considered a priority for community values and defines the use of the planning area by the public; however, the number of users of the bosque can also be considered an ignition risk that could increase the threat of bosque wildfire, particularly in the municipal areas where the bosque is easily accessed. These conflicting facets of bosque recreation are considered in more detail later in the plan.

A number of other open space areas exist in the County for recreational purposes, including Willie Chavez State Park in Belen, Los Lunas River Park in Los Lunas, Meadow Lake Open Space and the Tierra Grande Open Space. Tomé Hill is another prominent landmark in the County that provides recreational opportunities for residents.

Cultural Uses

Arising out of the long-standing and rich history of land use and occupation, the MRG Basin contains numerous prehistoric and historic cultural resources that hold great significance for the communities in this planning area. Tribal lands and their assets represent a large percentage of land ownership in the planning area, as sovereign nations, and their governance and political participation is a critical component of land use and land management decision making.

The planning area is also home to an extensive array of historic cultural resources dating back to the Spanish arrival in New Mexico in the 1540s, with continuous occupation to the present day. In relation to the bosque and river, the historic cultural landscape of this region was shaped in direct relation to the acequia (or irrigation) systems in which agricultural lands lay perpendicular as “long-lots” to the river corridor, designed in a way that allowed all residents to have equal access to the river for irrigation. These historic acequias still flow through many of the bosque communities. As an entire engineered system, several of these acequias and their component features are listed for their historic significance with New Mexico State Historic Preservation Office (SHPO), as well as on the National Register of Historic Places. A number of properties are also listed on the State Register of Cultural Properties (Table B-1.) All these cultural sites are considered CVARs for the County under this CWPP (see Section 4.6).

Table B-1. Valencia County Properties on the State and National Historic Registers

Property	Location
Miguel E. Baca House	Adelino
Belen Harvey House	Belen
Belen Hotel	Belen
Felipe Chaves House	Belen
Old Jarales Schoolhouse	Belen
Bosque Cooperative Building	Bosque Farms
Dust Bowl Home	Bosque Farms
Woodall House	Bosque Farms
Isleta Pueblo	Isleta
Atchison, Topeka & Santa Fe Railroad Depot	Los Lunas
Be-jui Tu-ay (Rainbow Village)	Los Lunas
Huning Mercantile and House	Los Lunas
La Capilla de San Antonio del Los Lentes	Los Lunas
Los Lentes Pueblo	Los Lunas
Luna-Otero Tranquilino House	Los Lunas
Otero's 66 Service Station	Los Lunas
Pottery Mound	Los Lunas
Romero, Paia, Café	Los Lunas
Dr. William Fredrick Wittwer House	Los Lunas
Pueblo Los Trujillos	Los Trujillos
Old Peralta School	Peralta
Our Lady of Guadalupe, Catholic Church	Peralta
Valencia Pueblo	Peralta
Comanche Springs Archaeological District	Tomé
El Cerro Tomé Site	Tomé
Our Lady of the Immaculate Conception Church	Tomé
Tomé Jail	Tomé
Casa Colorada del Sur	Turn
Pueblo Casa Colorado	Turn
Valencia Church	Valencia

Source: SHPO (Valencia County 2005).

The County is also intersected by three designated Scenic Byways. El Camino Real (meaning Royal Road or King's Highway) served as the main road for the Spanish caravans for more than 300 years and originally extended 1,150 miles from Mexico City to Santa Fe. Historic Route 66 was, at one time, located along present-day NM 6. The Abo Pass Trail connects the Salt Missions Trail of Torrance County and El Camino Real in the southeastern portion of Valencia County (Valencia County 2005).

APPENIDIX C-FIRE ENVIRONMENT AND MODELING

FIRE HISTORY

Past Fire Management Policies and Land Management Actions

Native Americans modified the landscape in the United States before the arrival of European settlers by tilling land for crops (such as maize and squash); constructing houses of mud bricks or tree bark; building mounds and terraces; harvesting and gathering wild rice, nuts, and roots; hunting deer, rabbits, and other animals; and igniting fires in prairies, fields, and forests (Wuerthner 2006). In the past, tribes have used fire to open land for agricultural use, hunting, or travel; to drive game for hunting; to promote desirable post-fire herbaceous vegetation; or to manage the land for habitat protection and resource use (Scurlock 1998). Although the specific influence that Native Americans had on historic fire regimes remains uncertain, human-caused fires can also be attributed to playing a role in influencing historical fire occurrences.

Prior to European settlement throughout the West in the 1800s, lightning- and human-ignited fires burned more frequently and less intensively. Following European settlement, a dramatic increase in livestock grazing, fire suppression, and other human-related activities have altered the landscape and the fire regimes associated with them (Covington and Moore 1994). Some species of non-native vegetation have also been introduced over time and have invaded many native landscapes across the West, which has also altered natural fire disturbance processes (Brooks et al. 2004).

Beginning in the early 1900s, the policy for handling wildland fire was initiated by the USFS and leaned heavily toward suppression. Over the years, other agencies such as the BLM, the Bureau of Indian Affairs, and the National Park Service followed the USFS lead and adopted fire suppression as the proper means for protecting the nation from wildfire. As a result, many areas currently have excessive fuel build-ups, dense and continuous vegetative cover, and tree and shrub encroachment into open grasslands.

Historical Fire Regimes and Present Changes

Historical fire regimes represent the frequency and severity of fires that took place prior to Euro-American settlement.

Decreases in Fire Frequency

Fire occurrence and behavior in the West has changed dramatically within the past century. Historically, frequent low-intensity surface fires burned throughout many areas within the County, creating a mosaic of different stages of vegetative structure across the landscape. For the most part, these fires helped preserve an open vegetative community structure by consuming fuels on the ground surface, which maintained open meadows and cleared the forest understory of encroaching vegetation.

Historic mean fire intervals (MFIs) for grasslands are thought to have occurred every couple years; however, over the past few decades, encroachment of shrubs and trees has been taking place within this community type. In general, grassland communities have been heavily impacted by livestock grazing, because many types of grassland have converted to shrublands due to sparse vegetative cover, which has limited fire spread. Piñon-juniper and juniper have also been expanding their ranges into grasslands as a

result of past livestock grazing practices, lack of fire occurrence, and climate change (Allen and Breshears 1998; Swetnam et al. 1999).

Mixed Changes in Fire Frequency

As mentioned previously, many grasslands in the Southwest have been colonized by trees as a result of a complex interplay of environmental factors. The issue of woodland encroachment into grasslands goes hand in hand with the assessment of historical conditions of the woodlands. Areas of potential expansion and contraction are those zones wherein the boundaries of the piñon-juniper ecotones have shifted. These shifting boundaries have been widely documented (e.g., Gottfried 2004), but the historical condition of the ecosystem may be relative to the time scale of evaluation. Betancourt (1987) has suggested that the changing distribution patterns seen in the last century may be part of larger trends that have occurred over millennia and not the result of land use changes. Overall, it is believed that greater landscape heterogeneity existed previously in many of these areas that are now uniformly covered with relatively young trees (Romme et al. 2007).

Increases in Fire Frequency

Although most of the County exhibits decreased occurrence of wildland fires compared to historical conditions, some areas within the County are actually experiencing an increase in fire occurrence and severity. Riparian ecosystems along the Rio Grande were historically shaped by natural hydrologic regimes. Native riparian vegetation is not adapted to fire, and fires did not typically occur within this ecological zone. As a result, fire can actually influence the composition and structure of riparian ecosystems (Ellis 2001). The ecology of this habitat type has changed significantly over time, as fire-adapted invasive species such as saltcedar and Russian olive have invaded many areas. Once saltcedar has been established at a location, it increases the likelihood that the riparian area will burn and, as a result, alter the natural disturbance regime. Saltcedar and Russian olive both sprout readily after fire, and although cottonwood will also regenerate after fire, it typically has limited survival of resprouting individuals. Studies have found that the density of saltcedar foliage is higher at burned sites than unburned sites within riparian areas (Smith et al. 2006).

Changes in Fire Severity

Fire severity refers to a fire's impact on an aspect of an ecosystem resulting from a combination of heat produced in the flaming front (intensity) and the duration of an area's exposure to heat. Areas that have experienced reduced fire frequency and a resultant increase in fuel loading are likely to experience more severe fires. Changes in climate are also likely to contribute to increased fire severity throughout the western United States. This may result in significant impacts to soil, runoff, the vegetation community, and the ecosystem at large.

According to personal communication between Rob Barr (County Wildland Fire Coordinator) and past Tome-Adelino Fire Chief Don McConnell, in the 1960's the bosque had less non-native vegetation. Locals would bring their goats, sheep and cows into the bosque to graze. There were fewer fire occurrences and the fires that did occur stayed on the surface and didn't extend into the canopy causing crown fires as there were fewer ladder fuels. Another consideration was the population. The county had a much smaller population. Much of the developed green belt corridor was previously made up of agricultural lands with low housing density. A farmer could ignite his ditch and the fire could extend to his field or even neighbor's

field without threatening structures. Many Fires that are considered hazardous that threaten life and property now would not be considered a problem many years ago.

Fire Regimes and Vegetation Condition Classes

Fuels and Topography within the WUI in Valencia County

In wildland fire management, fuels refer to the live and dead vegetation available to burn in any given area across the landscape. In other words, when live or dead vegetation is dry enough to be available for combustion, it is considered potential fuel for a wildland fire. Grassland fuels are the most common fuel type in the County, while timber fuels make up the majority of the Rio Grande Corridor. Grassland communities are basically sparse and often discontinuous across the landscape; they usually occur on flat to rolling topography in lower elevations as pure stands or as sagebrush/juniper savanna. In years following extensive late summer monsoons, the spring fire season is often more intense due to heavier grass fuel loads. Grassland fires often move quickly under windy and steep conditions and can easily spread into property where the fuels have not been treated. Rates of spread can be very high, often reaching more than 300 feet per minute.

For fire behavior modeling purposes, wildland fuels are divided into specific fuel models. A detailed discussion of fuel model use for this project is included in Section 9.10.1.

Methods to assess the condition of wildland areas have been developed that help classify, prioritize, and plan for fuels treatments across a fire management region.

Fire Regimes

The following five fire regime classifications are based on the frequency, or average number of years between fires (fire frequency, or MFI) combined with the severity (amount of vegetation replacement) of the fire and its effect on the dominant overstory vegetation (Hann et al. 2003).

Class I 0–35 year frequency and low (mostly surface fires—grassland fuels) to mixed severity (fewer than 75% of the dominant overstory vegetation is replaced).

Class II 0–35 year frequency and replacement severity (more than 75% of the dominant overstory vegetation is replaced).

Class III 35–200 or more year fire frequency low (mostly surface fire) and mixed severity (fewer than 75% of the dominant overstory vegetation is replaced).

Class IV 35–200 or more year fire frequency and replacement severity (more than 75% of the dominant overstory vegetation is replaced).

Class V 200 or more year frequency and any severity.

Since grassland fires are thought to have occurred every couple of years historically (Allen and Breshears 1998; Swetnam et al. 1999), grasslands would fall into a fire regime Class I. Evidence suggests that fires historically, were not a primary disturbance factor in riparian forests (bosque) (USFWS 2002). Fremont cottonwood and Rio Grande cottonwood are not considered to be fire-adapted (Adams et al. 1982; Abrams 1986; Busch 1995), indicated by their thin bark (Turner 1974), exhibited high mortality rates

(Stuever 1997), and low probability of resprouting. The fire regime of the bosque is therefore likely to fall into Class IVV.

The vegetation throughout the project area is departed from its natural range of variability because of ongoing actions that have altered the natural fire regime. These departures from historic conditions can create a widespread loss of natural vegetation communities and conversion to fuel types inclined to support more intense and problematic fire behavior.

Fire Behavior Modelling

Model Inputs

The required inputs for FlamMap are fuel model, canopy closure, slope, aspect, weather parameters, and fuel moisture characteristics. Optional inputs are canopy base height, stand height, and canopy bulk density. Fuels are characterized by the fuel models and the canopy features. Topography is modeled through slope and aspect, which are derived from digital elevation models (DEMs). Weather and fuel moisture data are determined using historic weather data for the County. More up to date data was available for the CWPP update and therefore the fire behavior inputs and outputs were different to those generated in the original CWPP. The methodology used to develop the risk hazard assessment was also revisited in order to improve the final product.

FUELS

Fuels is the term given to vegetation that is available for combustion. Fuels are often grouped into the general categories of grass, shrubs, and timber. For modeling fire behavior, fuels are further categorized into fuel models based on characteristics such as fuel bed depth, surface area to volume ratio, and the amount of fuel loading in an area.

Two sets of fuel models are widely used in the United States: Anderson's 13 fuel models (Anderson 1982) and Scott and Burgan's fuel models (Scott and Burgan 2005). GIS coverages for both fuel model sets are available through the LANDFIRE database. This plan uses the more recent Scott and Burgan fuel models that were designed with several intended improvements for use with GIS-based modeling (Figure C-1; Table C-1).

The 2014 LANDFIRE capture was used for the CWPP update analysis. This deviated only slightly from the LANDFIRE fuel data utilized during the development of the original CWPP, but provided a refined product based on LANDFIRE improvements to the classifications.

Timber litter fuels represent the bosque areas and typically have moderate spread rates and low to moderate flame lengths. However, under current drought and bosque conditions, these fuels are known to generate intense crown fire, due to the presence of ladder fuels in the understory, primarily saltcedar and Russian olive. Non-burnable fuels are present throughout the entire length of the planning area, with urban fuels (NB1) dominant throughout the more developed areas of Los Lunas, Belen, and Bosque Farms, and agricultural fuels (cultivated crops and pasture) (NB3) making up much of the rural areas outside communities and adjacent to the bosque. These fuel types are considered non-burnable when input into the fire behavior model; however, when determining risk for rural areas, land managers should consider the combustibility of these fuels during crop curing or haymaking periods. Special attention should also be paid to areas where ditch burning is a common vegetation management practice.

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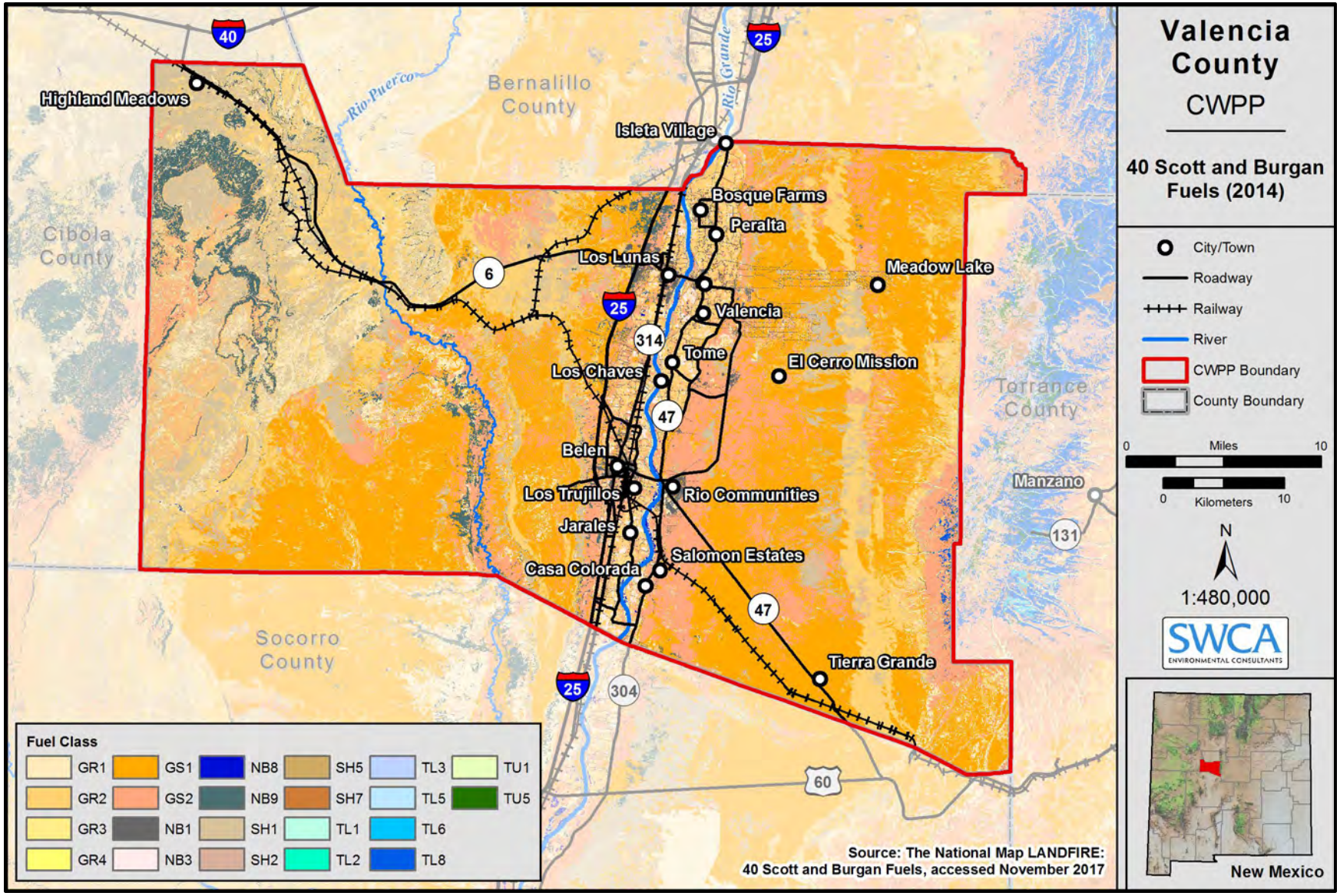

Figure C-1. County fuels map.

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The Composite Risk Assessment presented in Section 3.4 incorporates this risk in agricultural fuels through incorporating fire occurrence density layers.

Beyond agricultural and urban areas, the dominant fuel types are a mix of grass and shrub. These fuels range from areas of short patchy grasses with a low rate of spread and low flame length, to longer grasses and tall shrubs that, during wildfire, would generate more rapid rates of spread and longer flame lengths. The lower flame lengths associated with fires in GR1 fuel types often allow direct suppression and would be considered lower risk fuels. Taller shrubs (1–3 feet) that generate intense fire behavior would be classified as high risk in the risk assessment because the flame lengths often exceed those that allow direct suppression by hand crews. These fuel types tend to concentrate close to the river, along arroyos and tributaries, in vacant lots, and most notably in more rural locations.

Table C-1. Fire Behavior Fuel Models Used for Valencia County Fire Behavior Modeling

Scott and Burgan Fuel Model	Description	Similar Anderson Fuel Model
GR1: Short sparse dry climate grass	Grass is short and/or discontinuous naturally or as a result of grazing.	1, Short grass
GR2: Low load dry climate grass	Short grass with greater loading and continuity than GR1.	1, Short grass 2, Timber grass and understory
GR3: Very coarse grass	Fuel load and fuel bed depth are greater than GR2; fuel bed depth is about 2 feet. Spread rate high, flame length moderate.	3, Tall grass
GS1: Low load dry climate grass-shrub	The grass load is low and shrub height is about 1 foot, producing moderate spread rates and low flame lengths.	2, Timber grass and understory
GS2: Moderate load dry climate grass-shrub	The grass load is moderate and shrub height is 1–3 feet, producing high spread rates and moderate flame lengths.	2, Timber grass and understory
SH1: Low load, dry climate shrub	Fire is carried by scattered woody shrubs and litter. Fuel load is low and fuel bed depth is less than a foot, producing very low spread rates and flame lengths.	5, Brush 6, Dormant brush
SH2: Moderate load dry climate shrub	Woody shrubs and litter are more continuous than SH1. Fuel bed depth is about a foot. Rates of spread and flame lengths are low.	5, Brush 6, Dormant brush
SH5: High load dry climate shrub	A heavy load of continuous shrubs 4–6 feet deep produces very high spread rates and flame lengths.	4, Chaparral
SH7: Very high load dry climate shrub	Very dense and continuous shrub fuels, 4–6 feet deep, very high flame lengths comparable to SH5. Spread rate is high, but slightly lower than SH5.	4, Chaparral 5, Brush
TL3: Moderate load conifer litter	Moderate loads of conifer litter and some coarse woody fuels produce very low spread rates with low flame lengths.	8, Compact timber litter
TL6: Broadleaf litter	Less compact moderate load. Spread rate moderate, flame length low.	9, Hardwood litter
TL8: Long-needle litter	Long-needle pine litter produce moderate spread rates and low flame lengths.	9, Hardwood or long needle litter
TU1: Timber overstory, grass/shrub understory	Low load grass fuel bed, spread rate low, flame length low.	10, Timber understory
TU5: Very high load dry climate timber-shrub	The heavy forest litter and shrub understory is the primary carrier of fire. Spread rates and flame length are moderate.	10, Timber litter and understory

Scott and Burgan Fuel Model	Description	Similar Anderson Fuel Model
NB1: Urban development	Insufficient wildland fuel to carry wildland fire.	N/A
NB3: Agricultural	Agricultural lands maintained in a non-burnable condition.	N/A
NB8: Open water	Lakes and rivers.	N/A
NB9: Bare ground	No burnable vegetation.	N/A

It should be noted that although agricultural lands are considered a non-burnable fuel type, the Core Team emphasizes that fire behavior in the agricultural fuel type is often intense with rapid rates of spread observed. Agricultural lands should therefore be considered part of the fuel complex in the County.

WEATHER

Of the three-major fire behavior input categories (fuel, topography, and weather), weather is the most ephemeral and difficult to model. It influences the FlamMap model primarily through its effects on fuel moisture and through wind speed and direction. These weather inputs are derived through an analysis of past weather and fuel conditions in the County.

The critical weather components used in the FlamMap model are wind and fuel moistures, which in this case are calculated using remote automated weather station (RAWS) data and standardized algorithms. Fuels can be divided into diameter classes based on the amount of time that they take to reach moisture equilibrium with the surrounding environment: 1 hour (<0.25 inch), 10 hour (0.25–1.00 inch), 100 hour (1–3 inches). Live herbaceous and woody fuel moistures are inputs as well (Table C-2). Each of these fuels classes distinctly affects fire behavior.

The Sevilleta RAWS was used for modeling because of its data extent and close proximity to the project area. The RAWS is located at 4,789 feet above mean sea level. Data from 2006-2017 from the Sevilleta RAWS were analyzed using FireFamilyPlus 4.0 per standard practices. Fuel moisture scenarios were developed for low, moderate, and extreme climatic conditions based on the energy release component. The extreme fuel moisture conditions were used in the FlamMap model to illustrate the potential fire behavior that has become increasingly common throughout the western United States. Wind speeds of 20 feet for extreme conditions were set to 35 miles per hour based on input from local experts (Figure Figure C-2).

Table C-2. Fuel Moisture Parameters used in the fire behavior modelling. Derived from the Sevilleta RAWS, 2006-2017

Parameter	Low	Moderate	Extreme
Percentile range	0–15	16–85	95–100
1-hour fuel moisture	7.08	3.11	1.17
10-hour fuel moisture	8.11	3.86	1.73
100-hour fuel moisture	12.24	6.87	3.97
Herbaceous fuel moisture	13.55	4.23	1.24
Woody fuel moisture	91.13	65.86	52.33

Parameter	Low	Moderate	Extreme
1,000-hour fuel moisture	11.46	8.05	5.98
20-foot wind speed	10.83	13.08	14.10

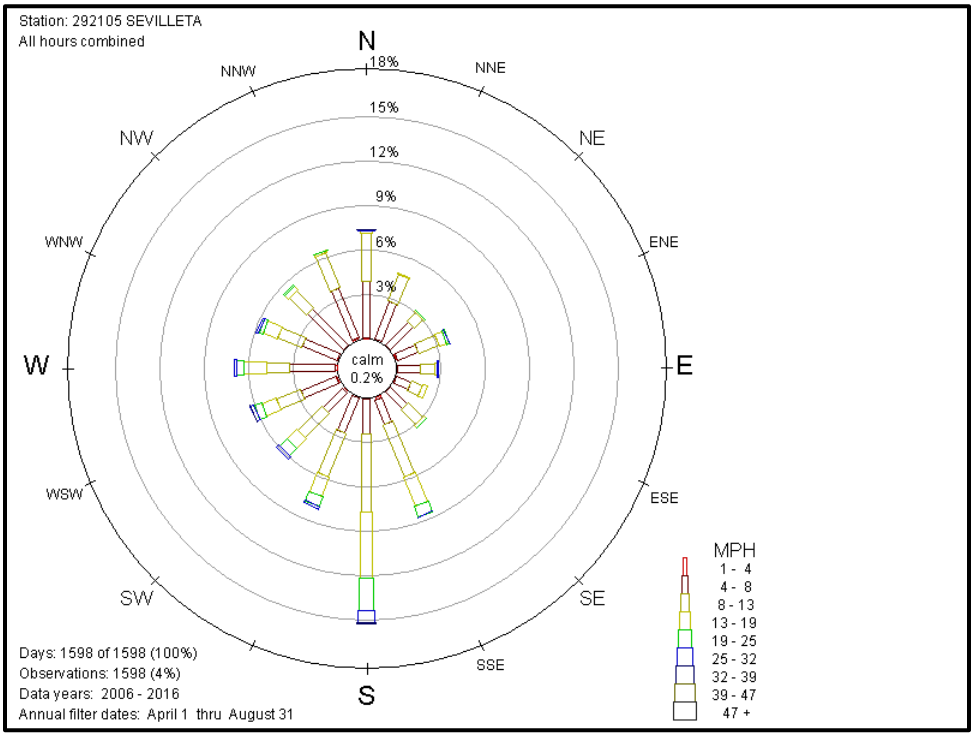

Figure C-2. Wind Rose used in the Fire Behavior modelling, based on data from Sevilletta RAW Station, 2006–2016.

TOPOGRAPHY

Topography is the third input category for modeling fire behavior. Slope steepness, aspect, elevation, and landscape features affect vegetation type, fuel moisture, local weather, and ultimately fire behavior. Topographic characteristics are available in the same 30-meter resolution as the fuels characteristics obtained through LANDFIRE. The FlamMap model requires aspect and slope as inputs, which are derived from DEMs. The east mesa has a southwest aspect, that when combined with the area's predominant southwesterly winds, can cause fast moving fires running in a northeast direction.

Model Outputs

Four FlamMap outputs, plus the fire occurrence data (fire history/density of starts), are used to depict predicted fire behavior under extreme climatic conditions: flame length, fireline intensity, crown fire activity, and rate of spread. These outputs are helpful for illustrating potential fire behavior under severe conditions to highlight areas of concern and serve as the basis for the Composite Risk Assessment.

FLAME LENGTH

Flame length is the distance from the base to the tip of the flaming front. Surface fire flame length is a major factor in determining crown fire initiation. It also provides a visual indication of fireline intensity.

Flame length is used as an indicator of resistance to suppression and a guideline as to what suppression resources are needed. For example, NWCG guidelines indicate that direct attack by hand crews is most effective for flame lengths under 4 feet, whereas engines and heavy equipment may affect direct attack on flame lengths up to 8 feet.

Flame length is greatest in tall grass, dense brush, and heavy timber fuels. In the County, modeled flame lengths are lowest in the sparse grass fuels that are scattered throughout the County. Moderate fuel lengths of 0 to 8 feet are predicted throughout much of the County and surrounding most communities, particularly those areas extending out from the edge of the bosque and agricultural lands (see Map C.2 in Appendix D). Higher flame lengths (8–11 feet) are predicted in the grass/shrub and timber litter fuels on the eastern edge of the County, as elevation increases into the Manzano Mountains. The most extreme flame lengths are found in the timber-litter fuels found at higher elevations on the eastern and western periphery of the County and throughout the bosque. Bosque cottonwood galleries are predicted to burn with extreme flame lengths in excess of 11 feet.

FIRELINE INTENSITY

Fireline intensity is measured in terms of heat released per unit of time from a 1-foot-wide section of the fuel bed along the flaming front, often expressed in British Thermal Units per foot, per second (BTU/ft/sec). As with flame length, to which it is exponentially related, fireline intensity is used as an indicator of resistance to suppression and a guideline for needed suppression resources. Due to the exponential relationship between fireline intensity and flame length, the attributes of this fire behavior index are reflected by flame length (see Map C.3 in Appendix D).

CROWN FIRE ACTIVITY

Crown fire activity describes fire behavior in terms of no fire activity, surface fire activity, passive crown fire (torching), and active crown fire (crown to crown spread). This output can help guide mitigation activities. For example, active crown fire may indicate a need to thin a forest stand to prevent propagation of fire across a contiguous canopy, whereas passive crown fire activity may indicate a need to reduce ladder fuels (high surface fuels and lower branches that allow fire to spread into tree crowns) to reduce the initiation of crown fire from surface fire.

With the exception of the higher elevations of the Manzano Mountains and mesa along the western edge of the County, most of the fuels in the County are brush and grass that cannot support crown fire activity in the conventional sense (see Map C.4 in Appendix D). Passive and active crown fire activity is predicted along the bosque in patches where the fuel loading is at its highest.

RATE OF SPREAD

The rate at which fire travels through the fuel bed is often expressed in chains (66 feet per hour, which is equal to 1.1 feet per minute). Rate of spread can be helpful for planning the number and type of fire suppression resources that may be required to contain fire growing at a given rate.

The predicted rate of spread varies considerably across the County landscape. The lowest rates of spread (0–10 chains per hour [ch/hr]) are predicted in the sparse grass fuels on the western side of the County and through the agricultural lands adjacent to the river. Moderate (10–20 ch/hr) and high (20–40 ch/hr) rates of spread are found throughout the remaining grass and shrub fuels that extend from the edge of agricultural lands. The most extreme rates of spread (>40 ch/hr) are found in the grass and shrub and timber litter fuels at higher elevations and along the bosque (see Map C.5 in Appendix D).

Fire Occurrence (Fire History/Density of Starts)

Geographic data for fire locations was provided by the State of New Mexico, the U.S. Forest Service, the County, and the BLM. This was used to develop a GIS layer displaying the density of ignitions. The map was revised with fires that have occurred since 2012, and the new fires depicted (see Map C.6 in Appendix D). The highest rate of occurrence per unit of area (>1 fire/square mile) was along the Rio Grande valley, incorporating the bosque areas and all bosque communities. Outside the bosque and into the grassland areas, fire occurrence density remained high (0.2–1 fire/square mile), particularly for the communities of Meadow Lake, El Cerro Mission, and Highland Meadows. The more remote areas with low population and infrastructure experienced low (0.0–0.2 fire/square mile) to no fires per unit area. Tierra Grande was in this low fire occurrence density category

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APPENDIX D- MAPS

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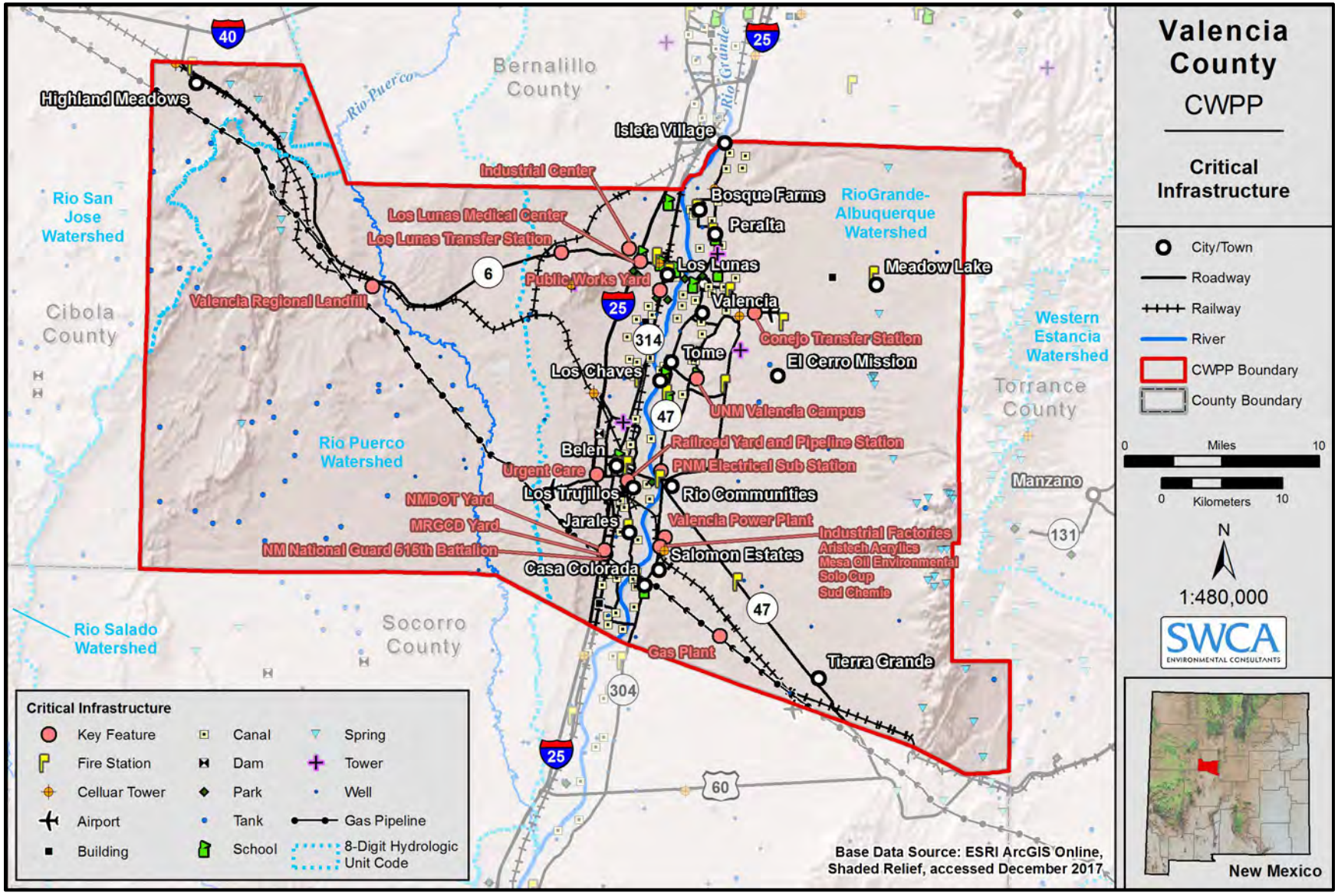
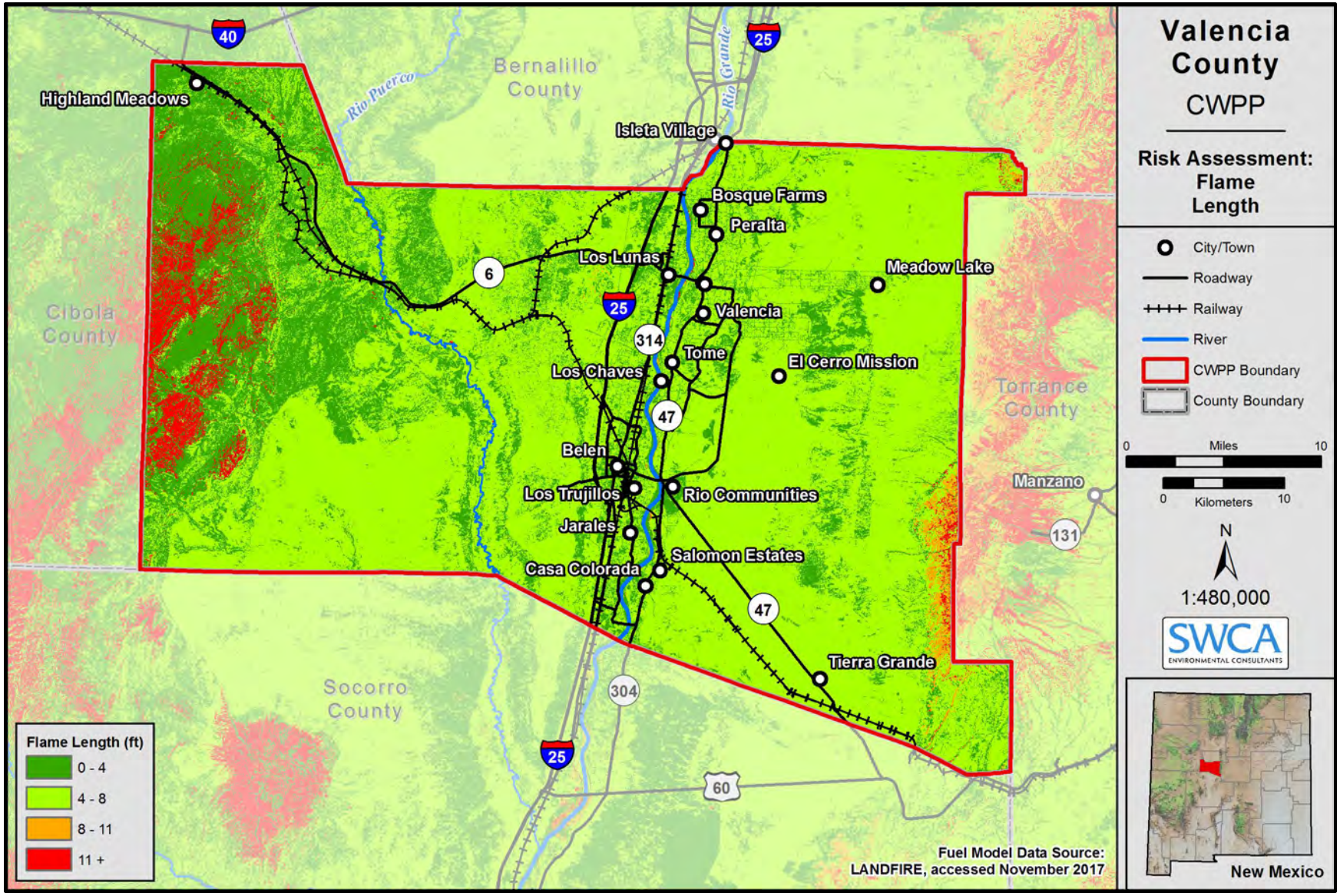
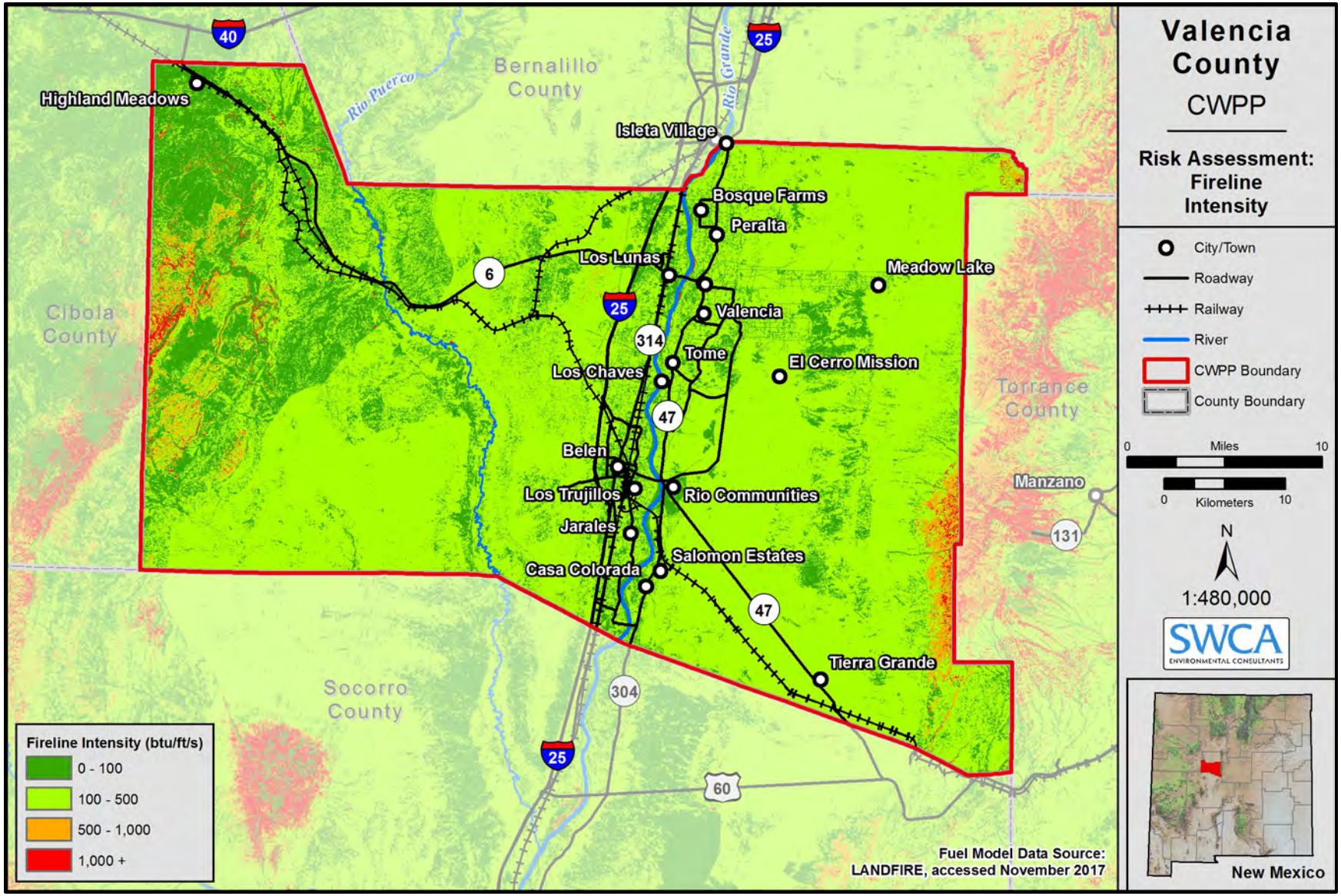


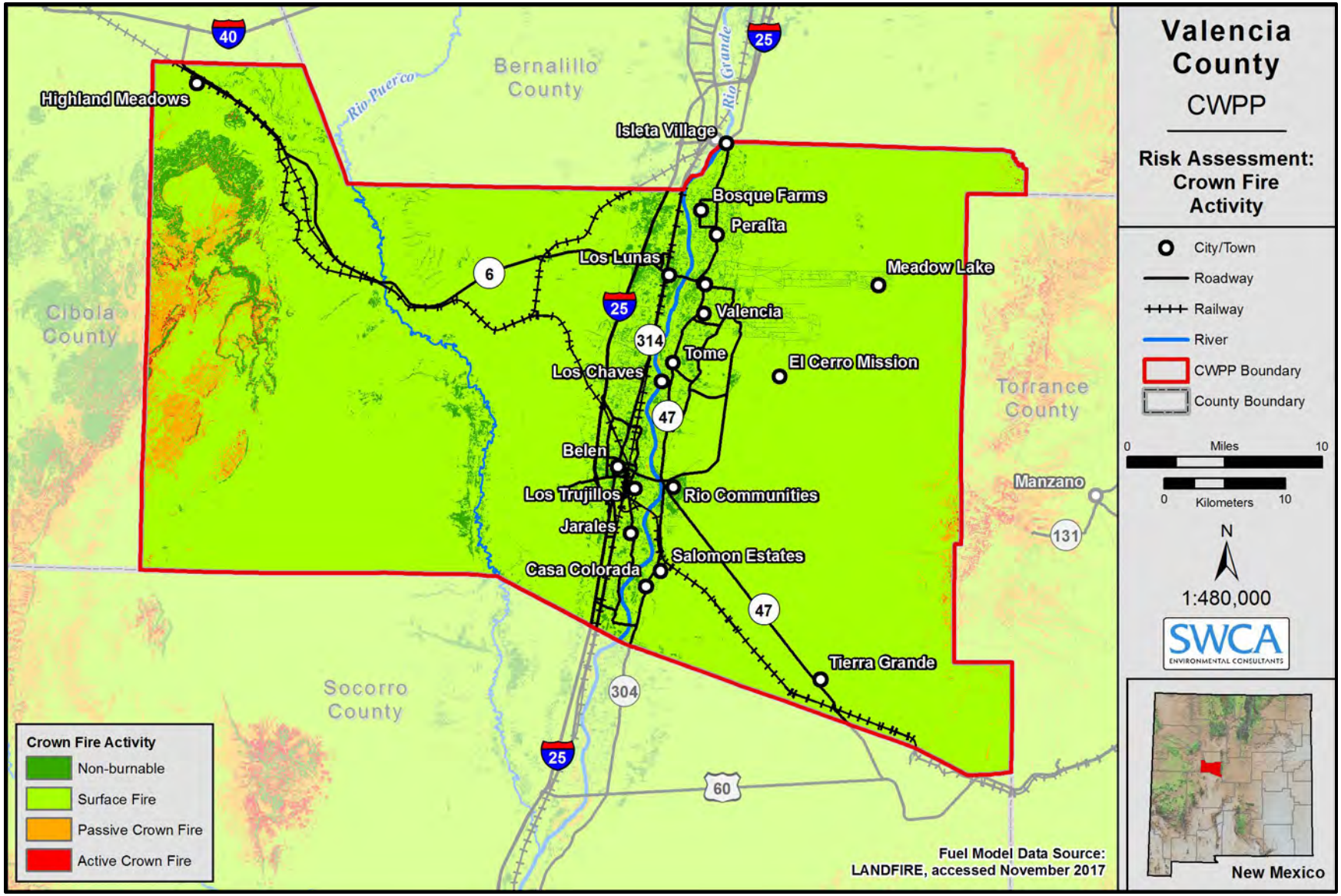
Map D-1. Critical infrastructure.



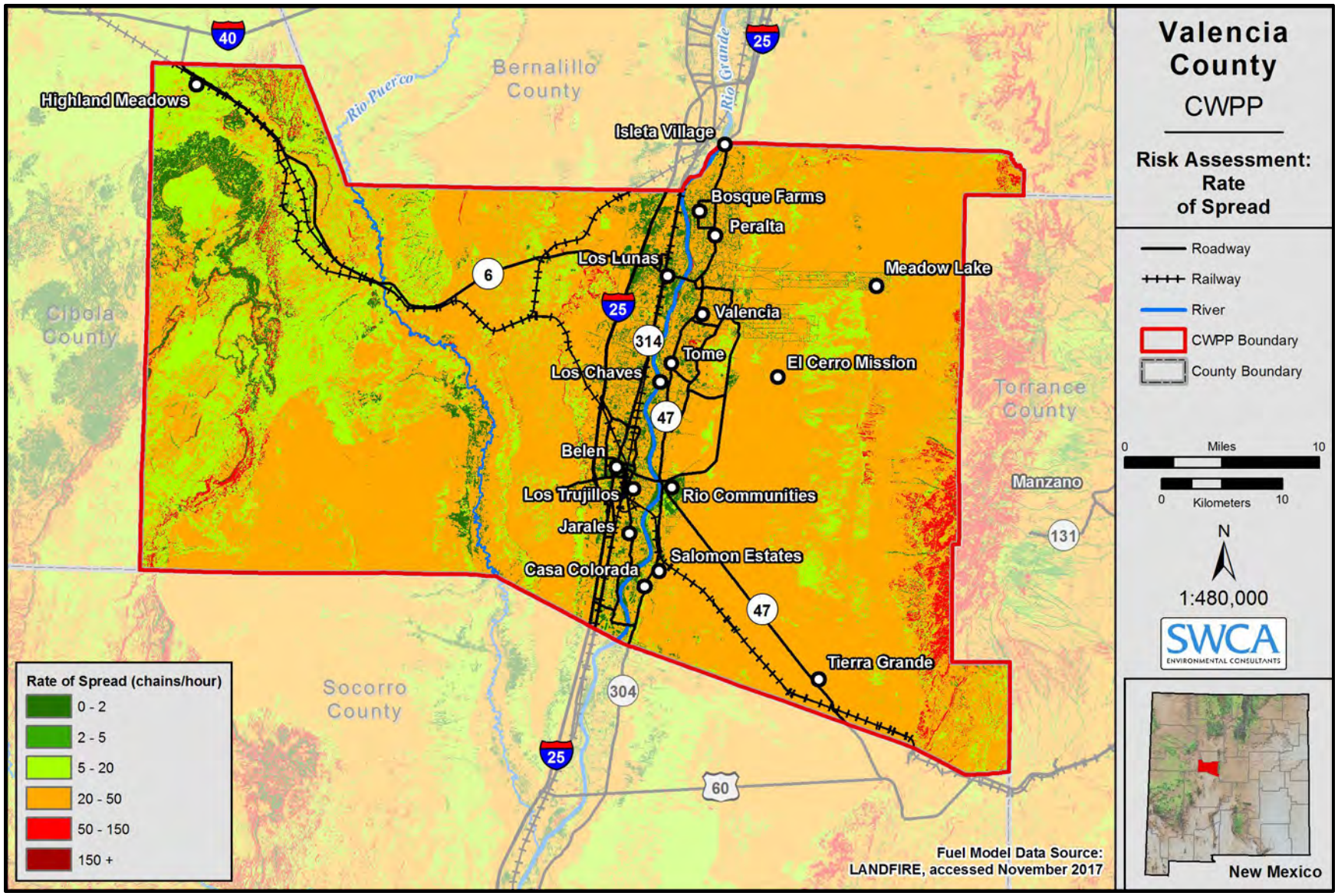
Map D-2. Valencia County flame length.



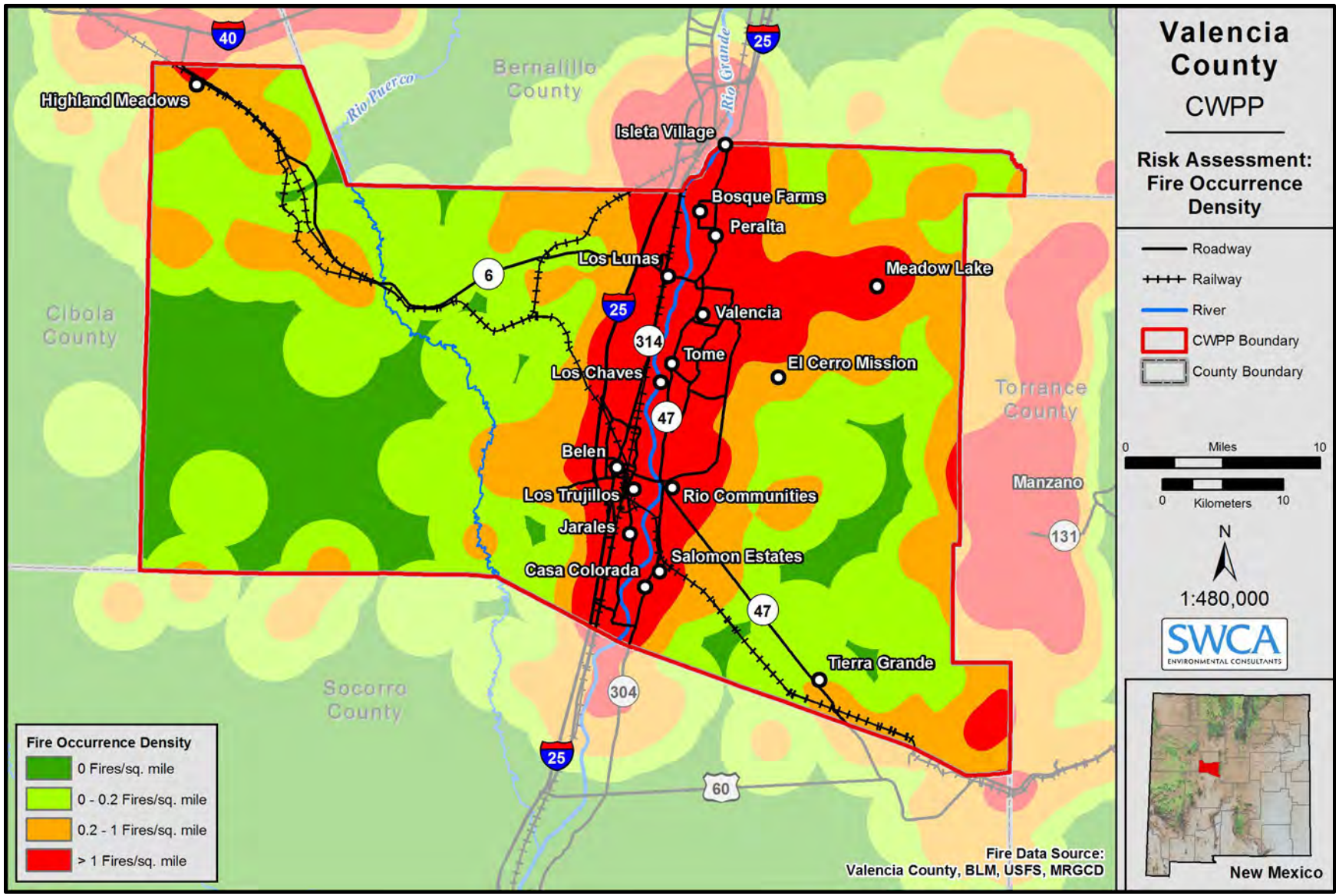
Map D- 3. Valencia County fireline intensity.



Map D-4. Valencia County crown fire activity.



Map D-5. Valencia County rate of spread.



Map D-6. Valencia County fire occurrence density.

The following maps (D7- D14) show the risk assessment zoomed into the Rio Grande bosque area; these maps show the small-scale differentiation between risk ratings due to the presence of combustible fuel types like salt cedar and Russian olive. Overlaid on each map are proposed fuel treatment areas that were delineated by Core Team members to address high and extreme fire risk. The treatments are further classified into treatments to remove salt cedar and Russian olive and treatments within vegetation classified as Hink and Ohmart structures 1 and 3 (Hink and Ohmart 1984). Structure 1 is characterized by the presence of vegetation in all foliage layers, with vegetation reaching 50 or 60 ft. Structure 3 is characterized by intermediate aged cottonwood gallery with a thick understory of willow or Russian olive, where dense vegetation occurs up to 30 ft. Fuel treatment actions within the bosque would be part of ongoing management along the Rio Grande and specific treatment units would need to be delineated based on site characteristics and management objectives. These delineated areas will help land managers prioritize treatment units based on vegetation structure and location of non-native species. The MRGCD and partners have been implementing active management of the bosque for riparian forest restoration and fire risk reduction for many years and have developed fuel treatment methods specifically for restoration of bosque vegetation communities (Najmi and Crawford 2005).

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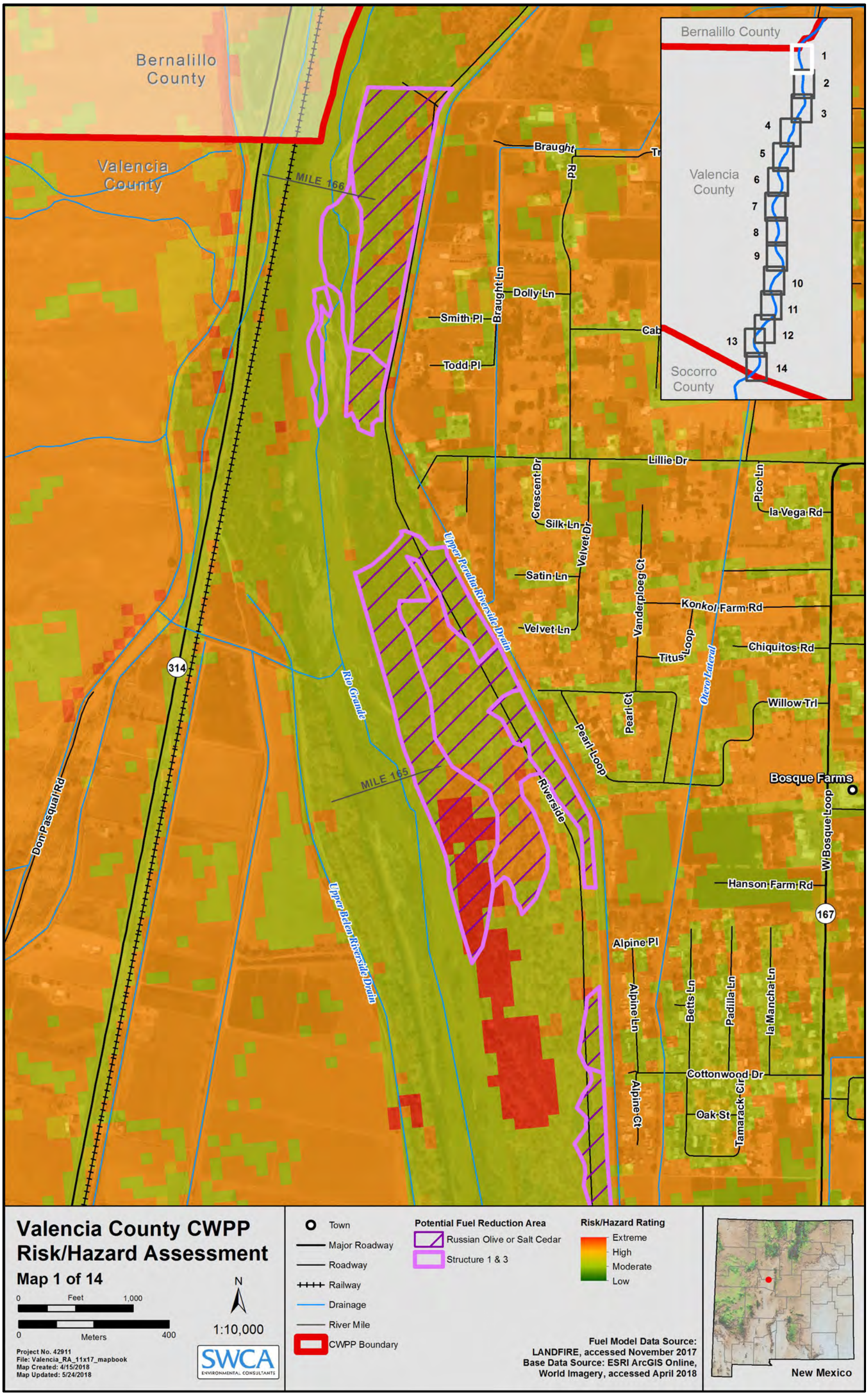
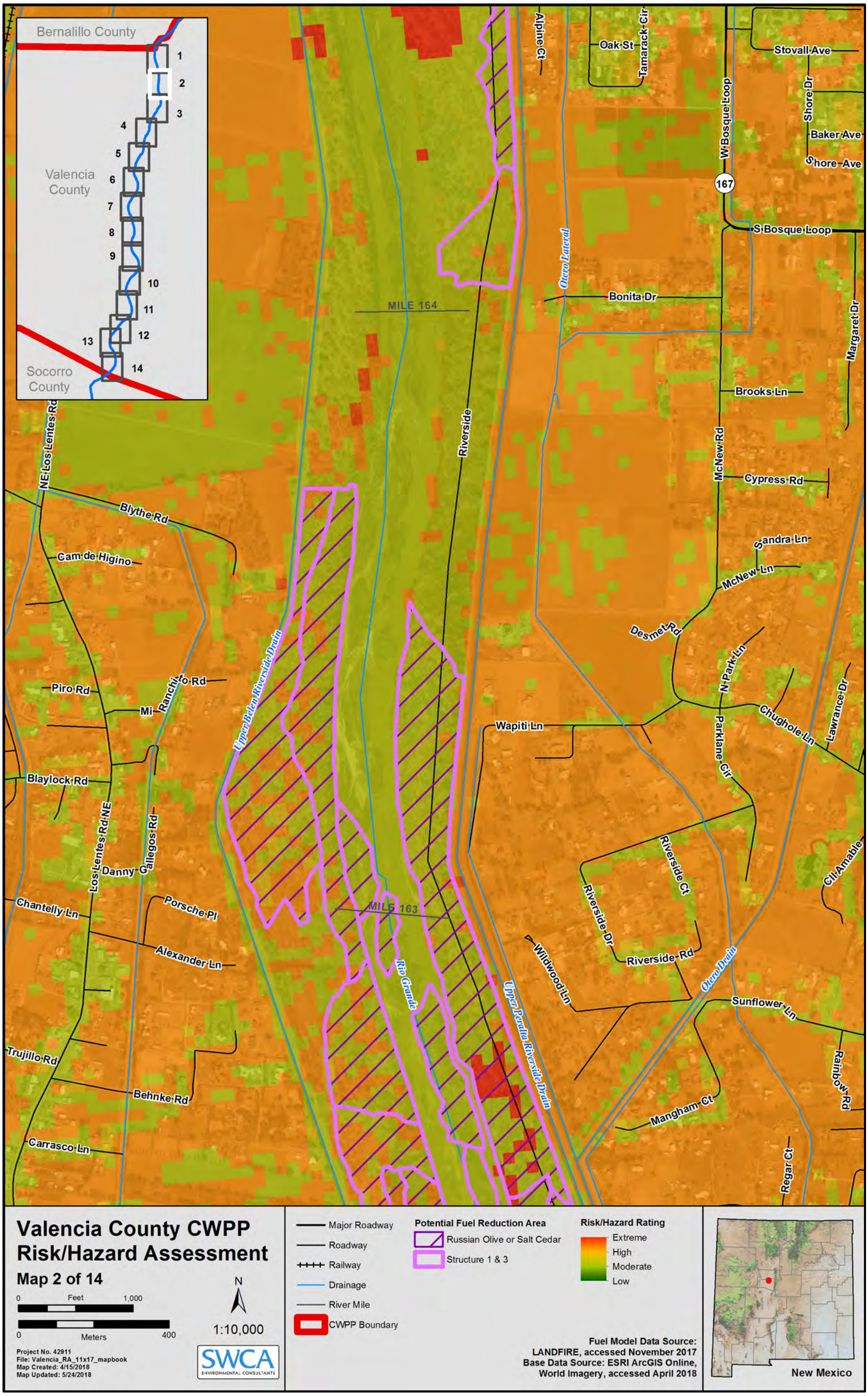
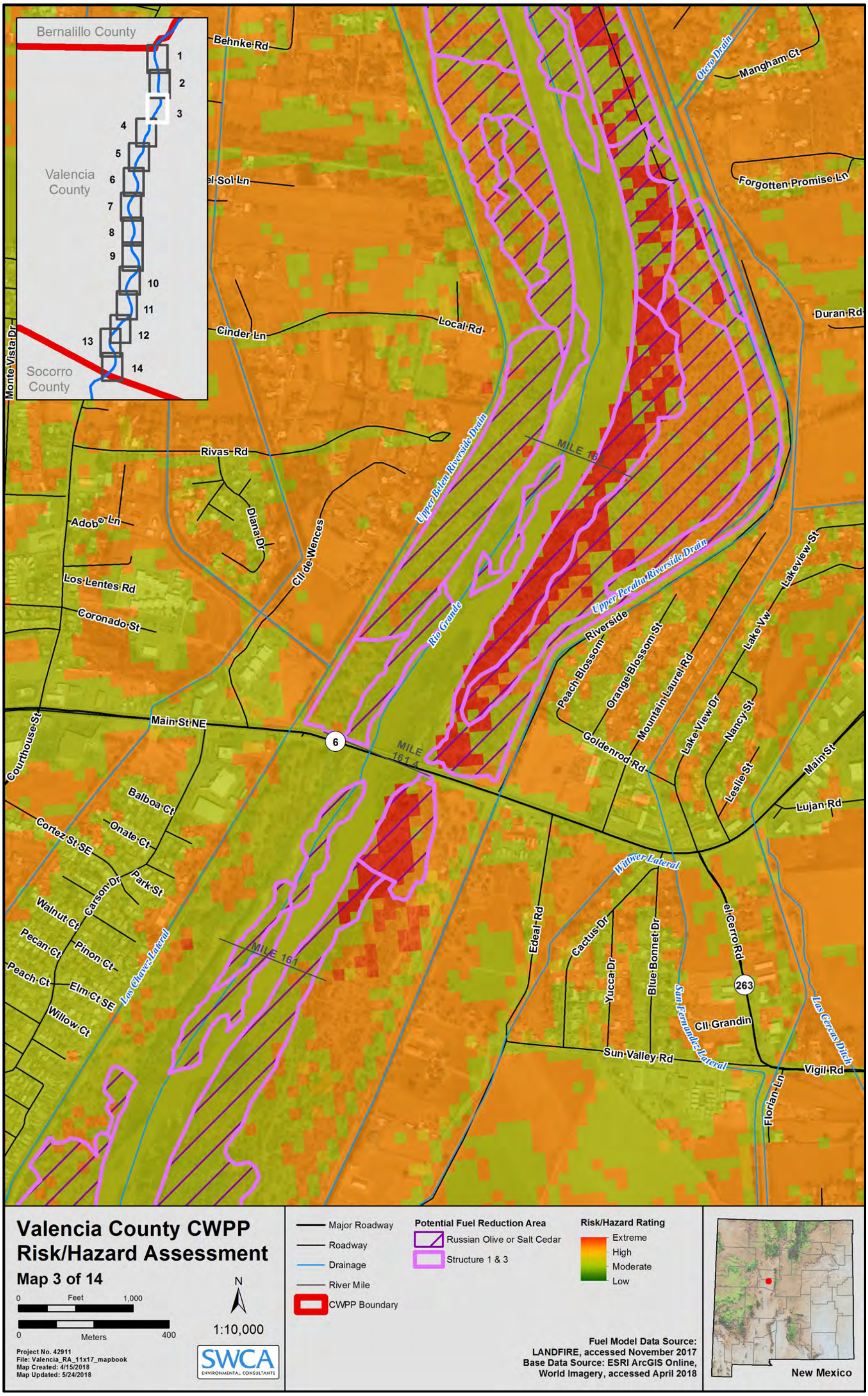


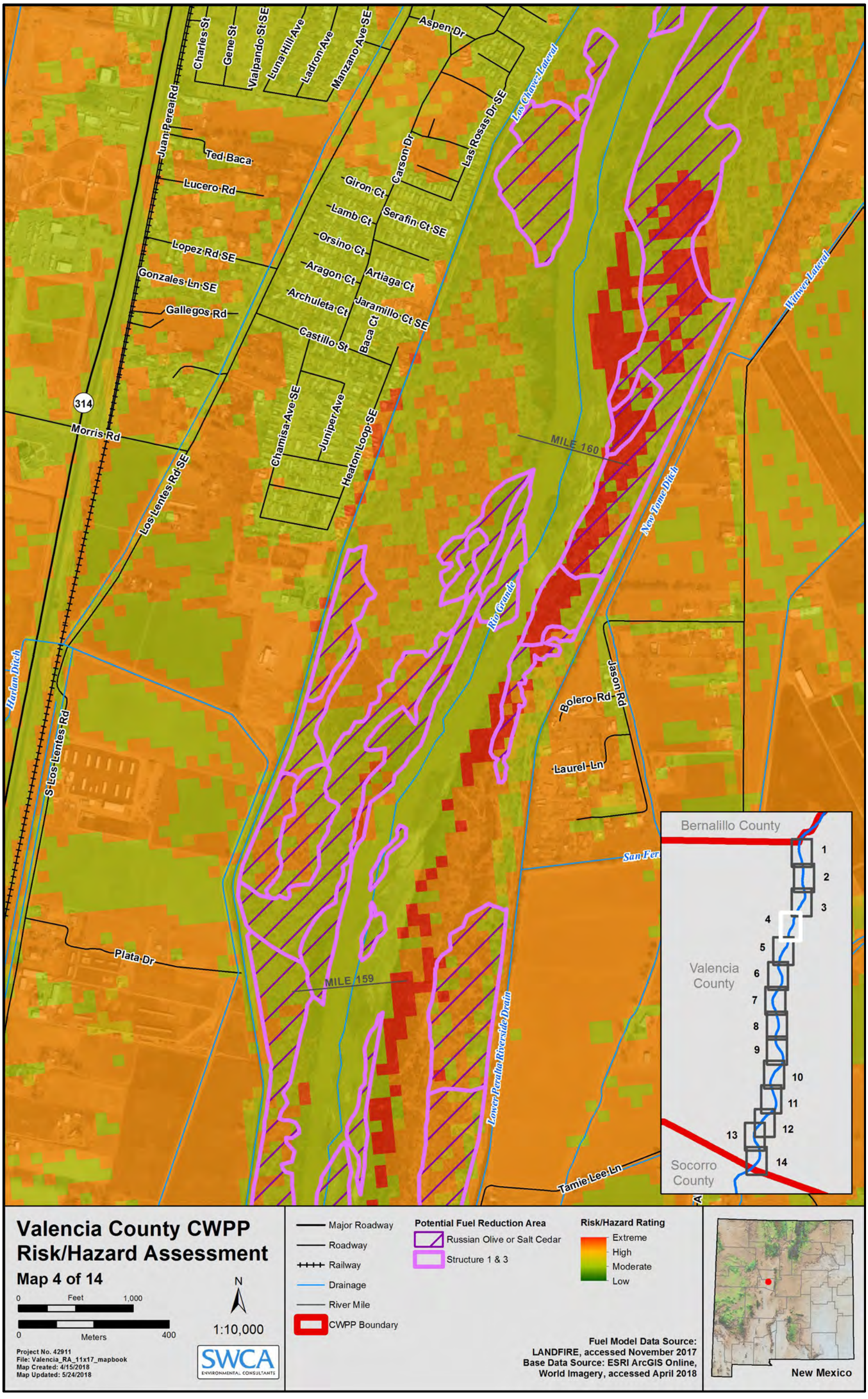
Map D-7. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



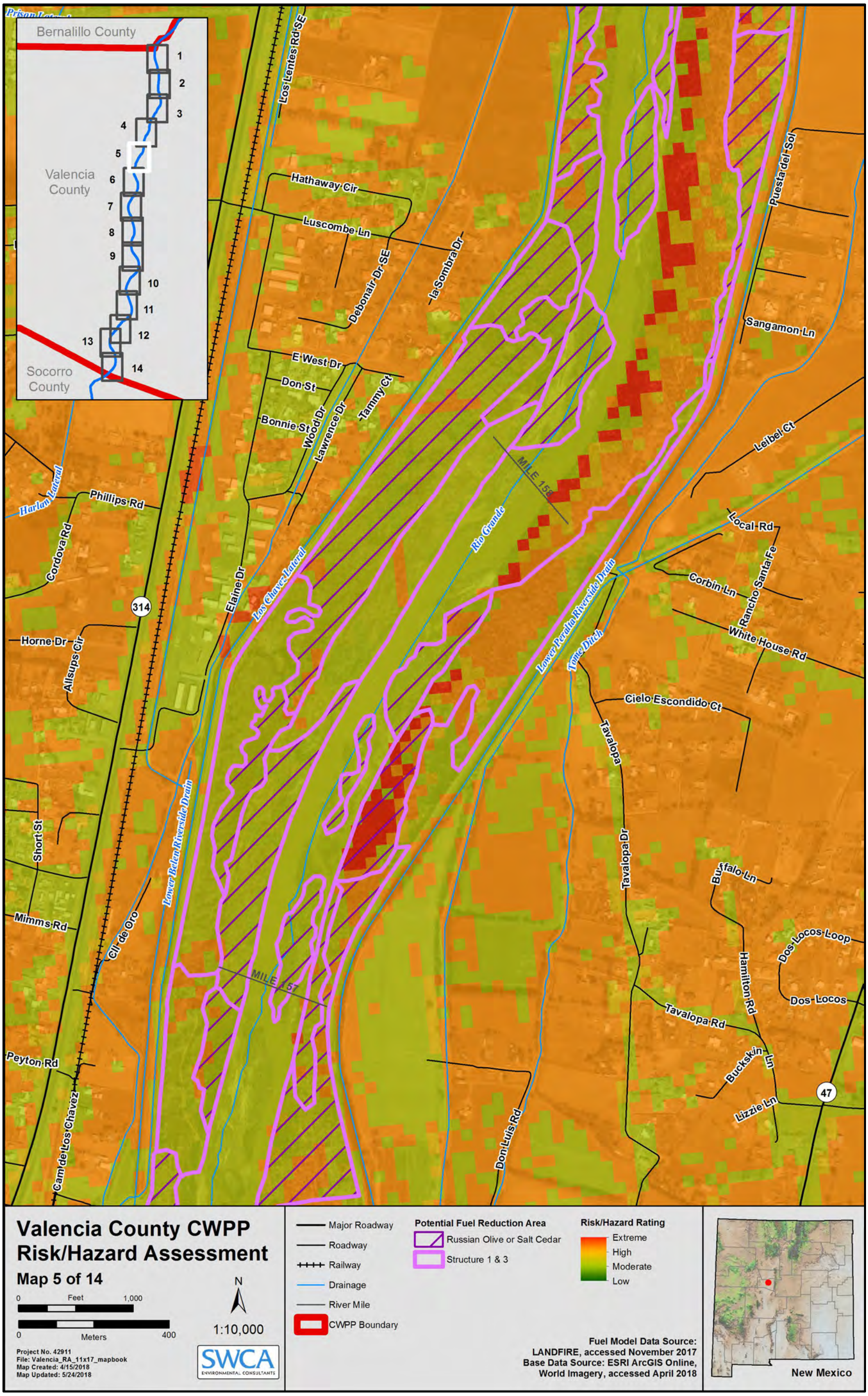
Map D-8. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



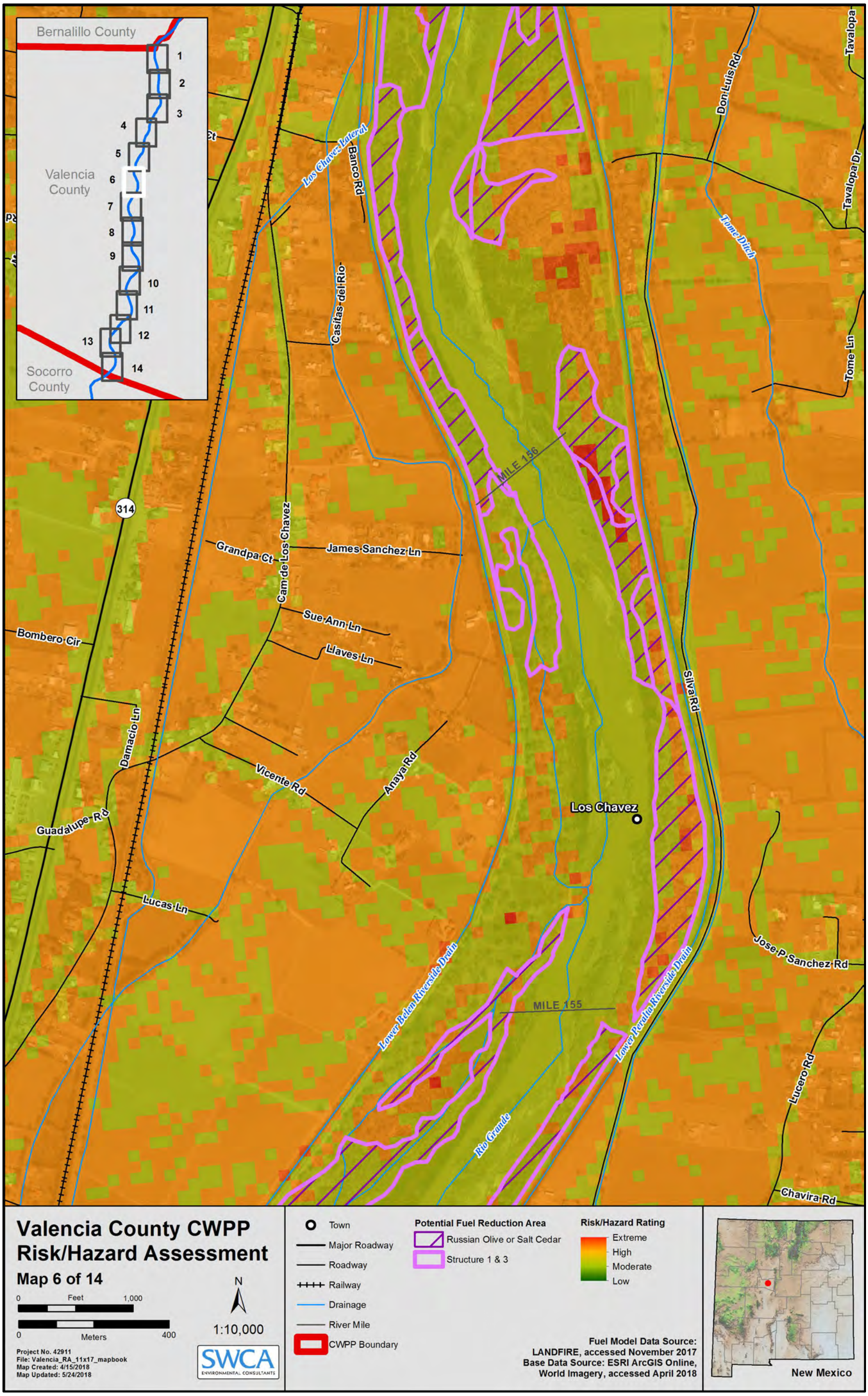
Map D-9. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



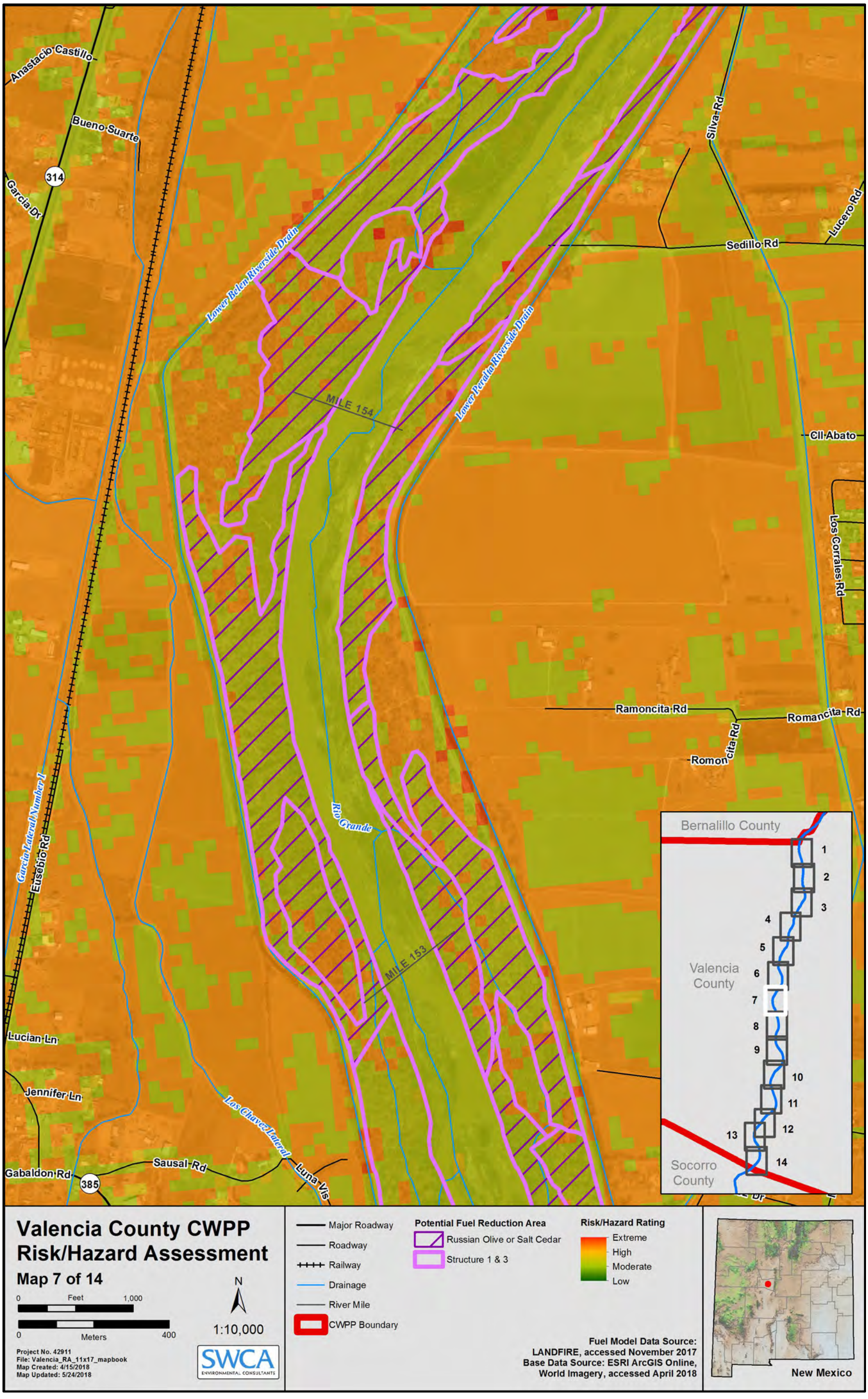
Map D-10. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



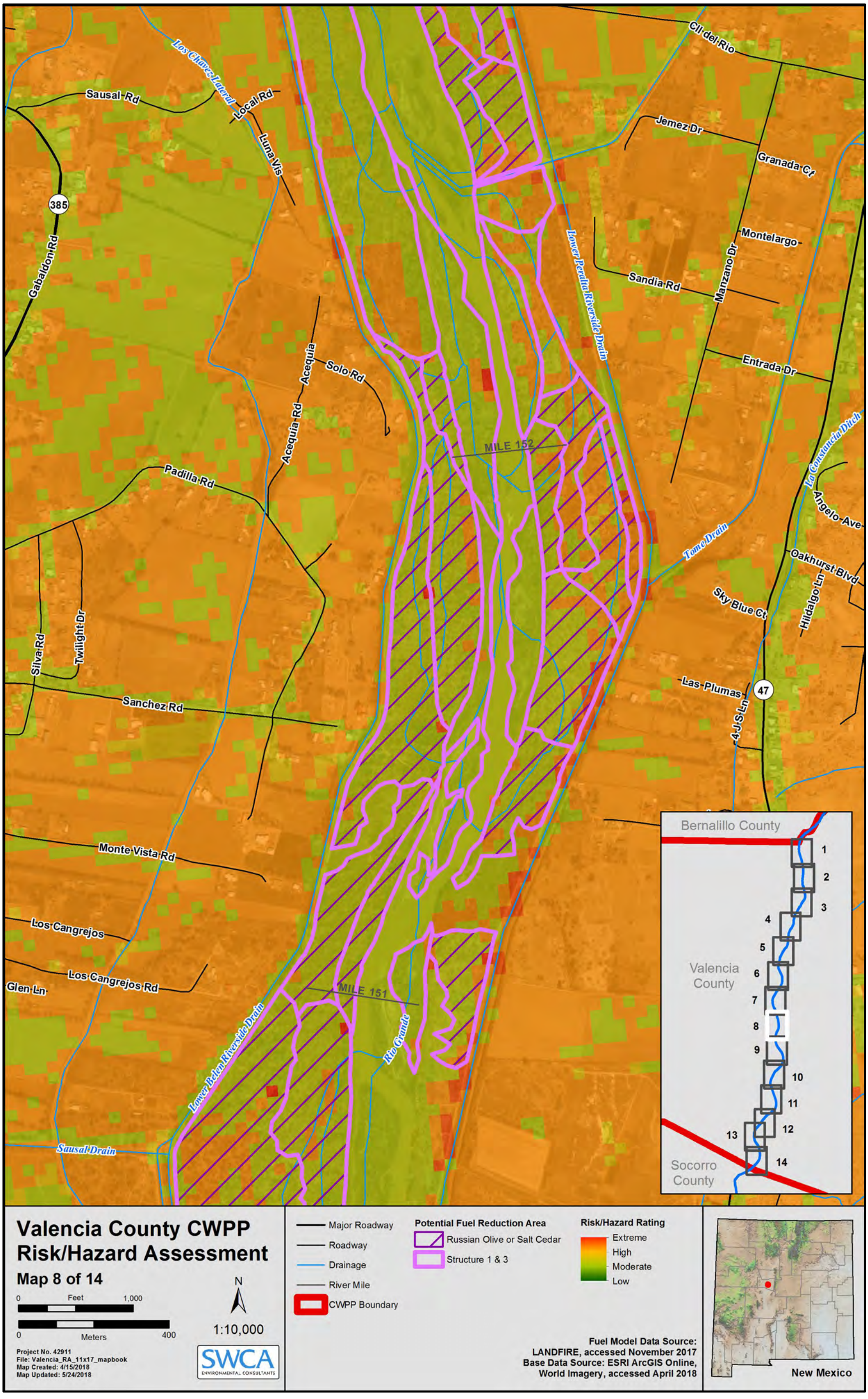
Map D-11. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



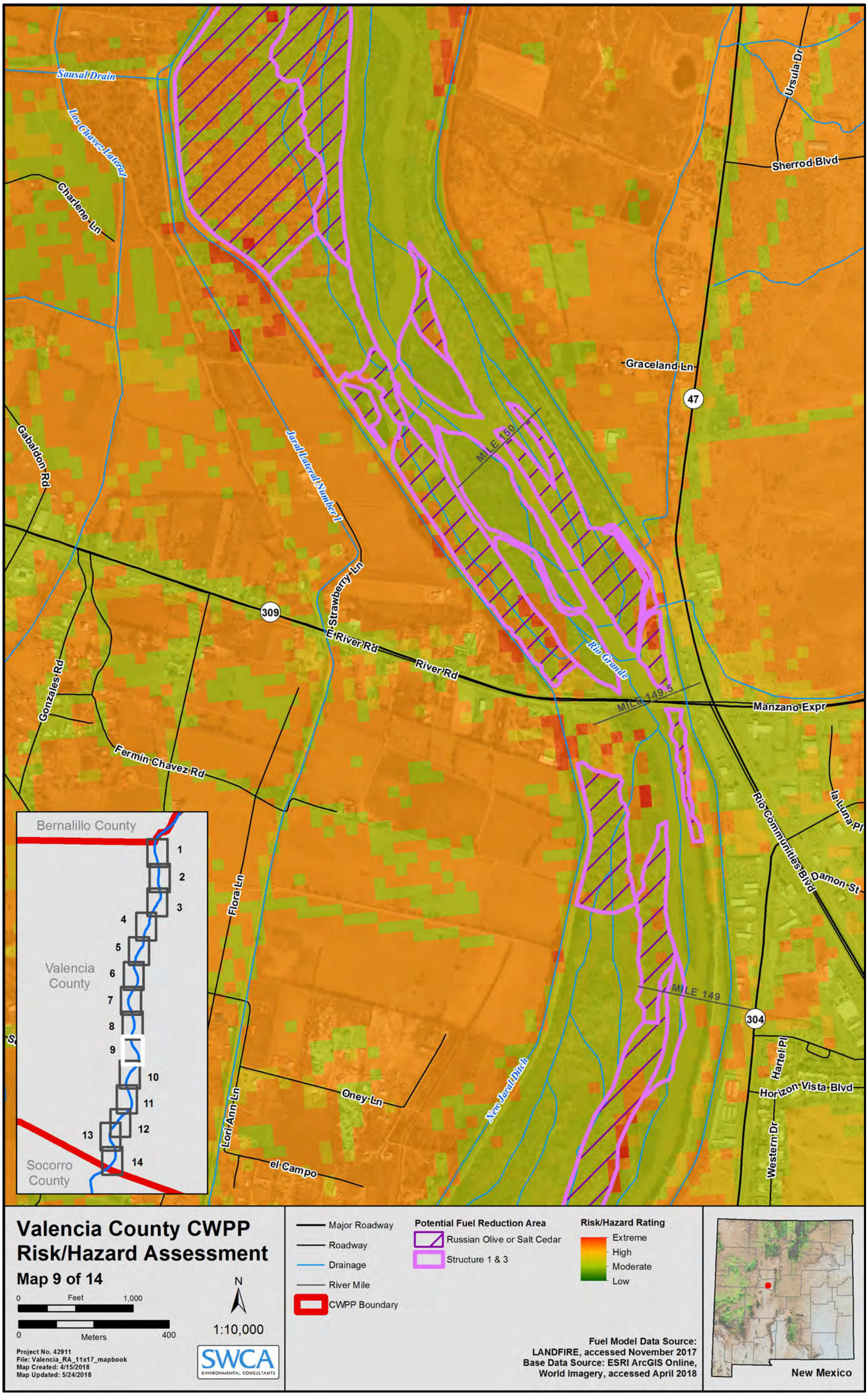
Map D-12. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



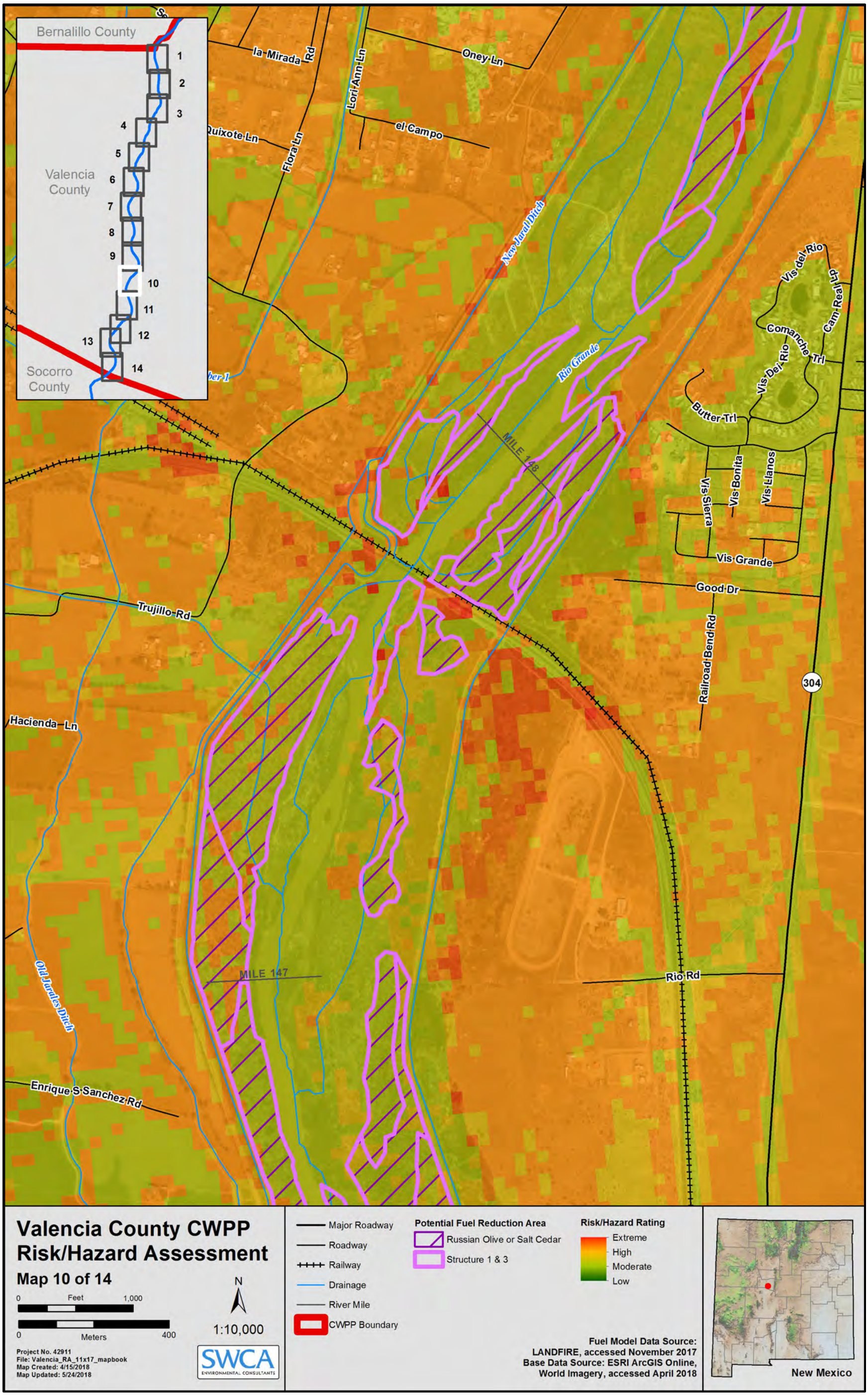
Map D-13. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



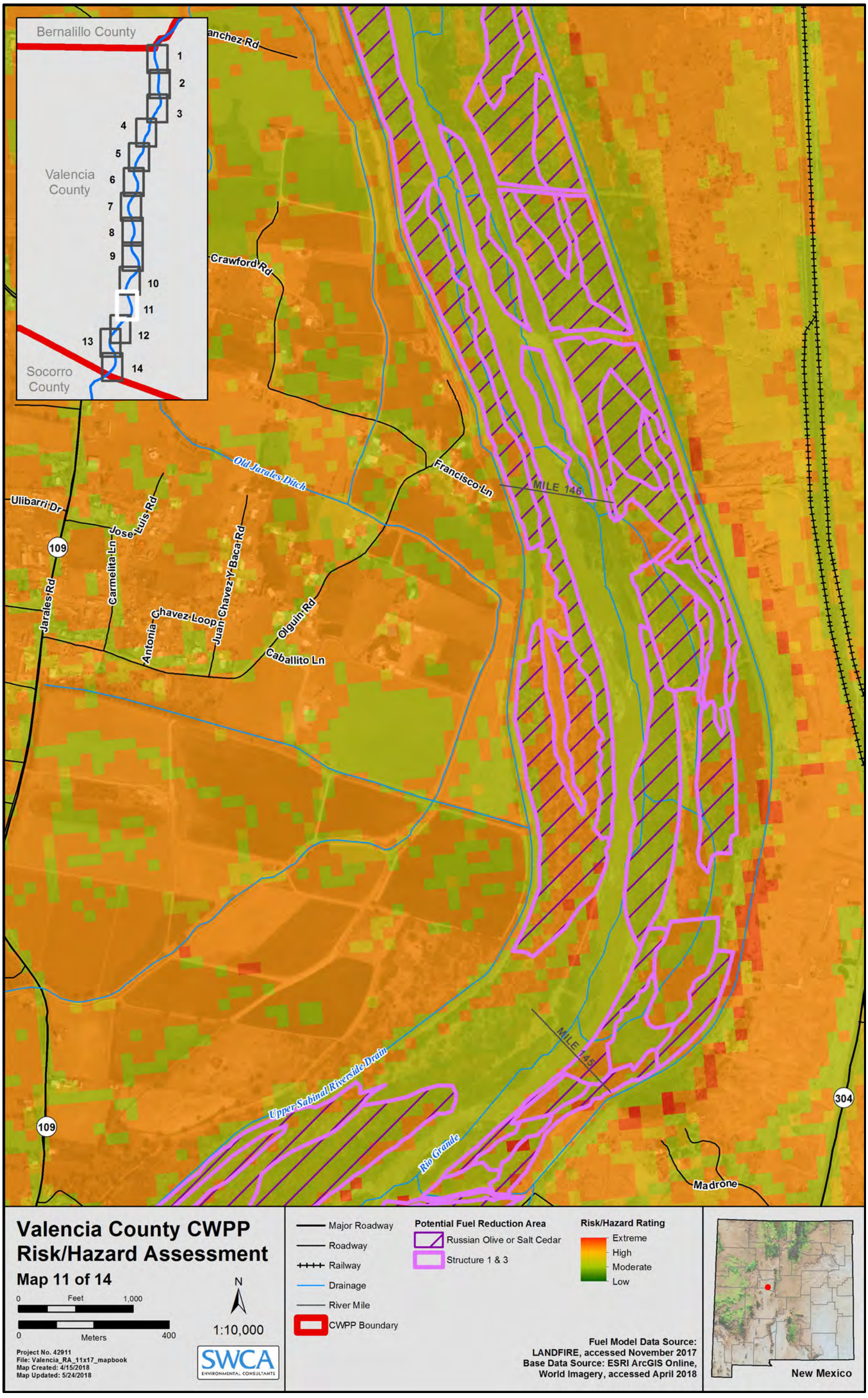
Map D-14. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



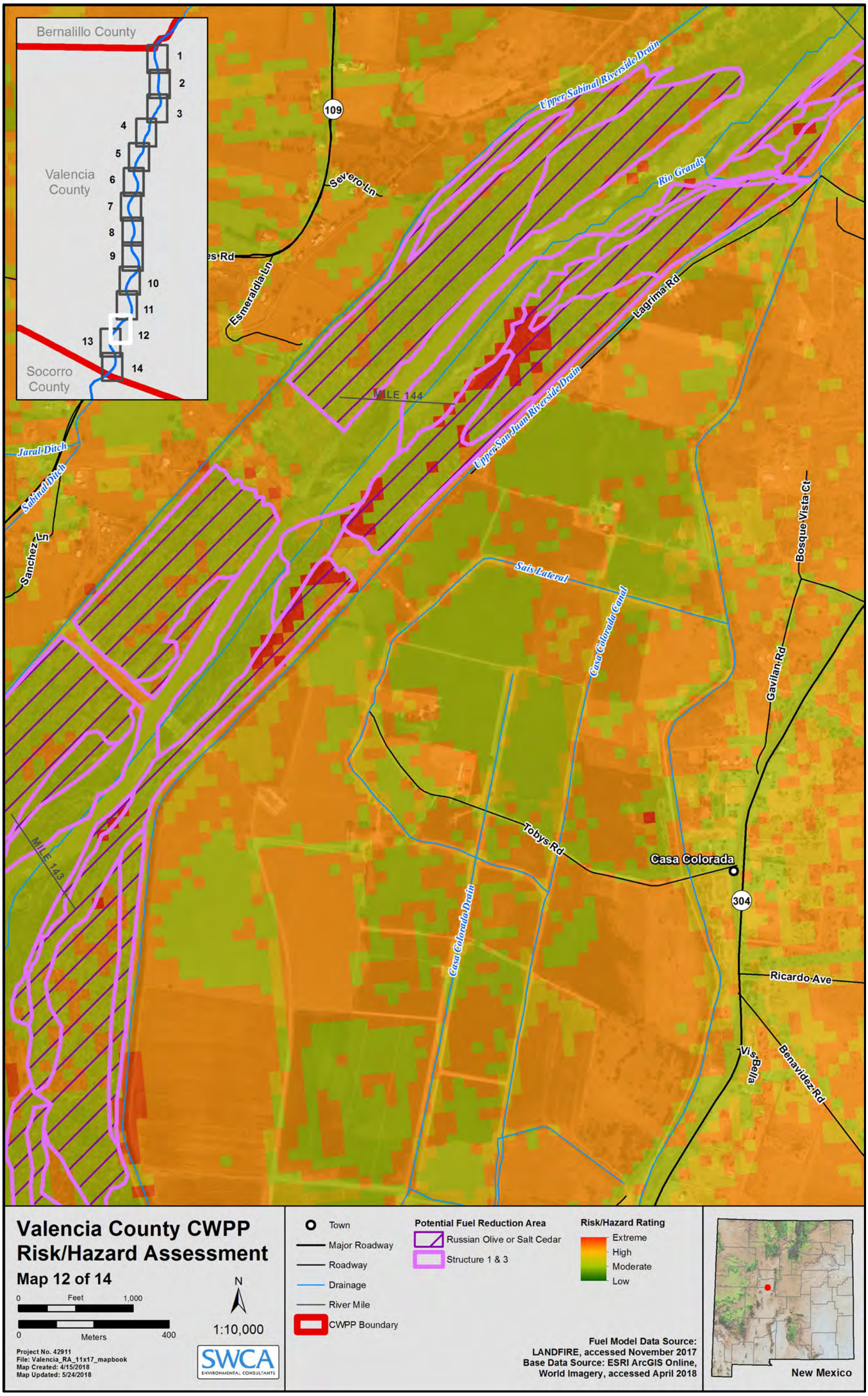
Map D-15. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



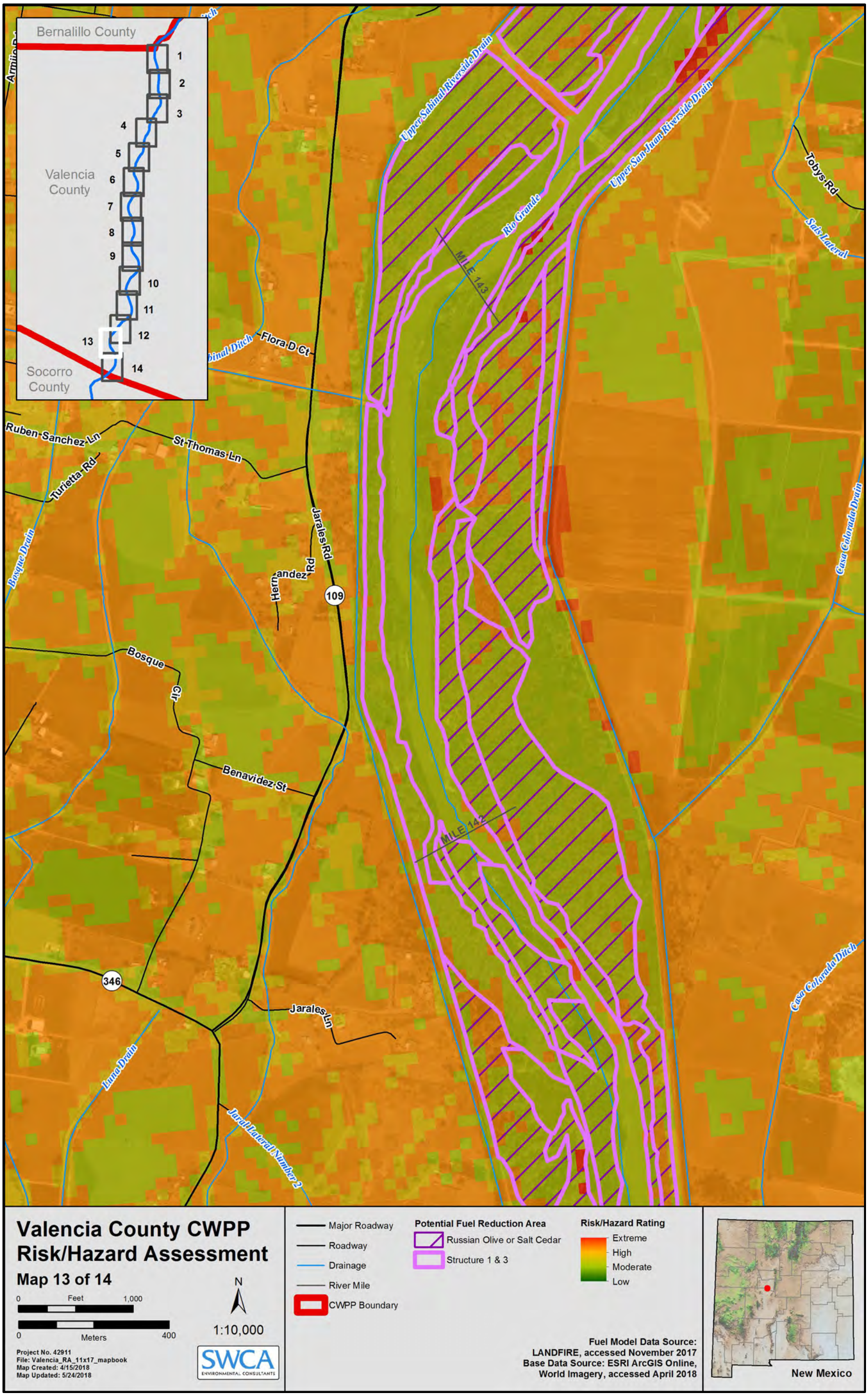
Map D-16. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



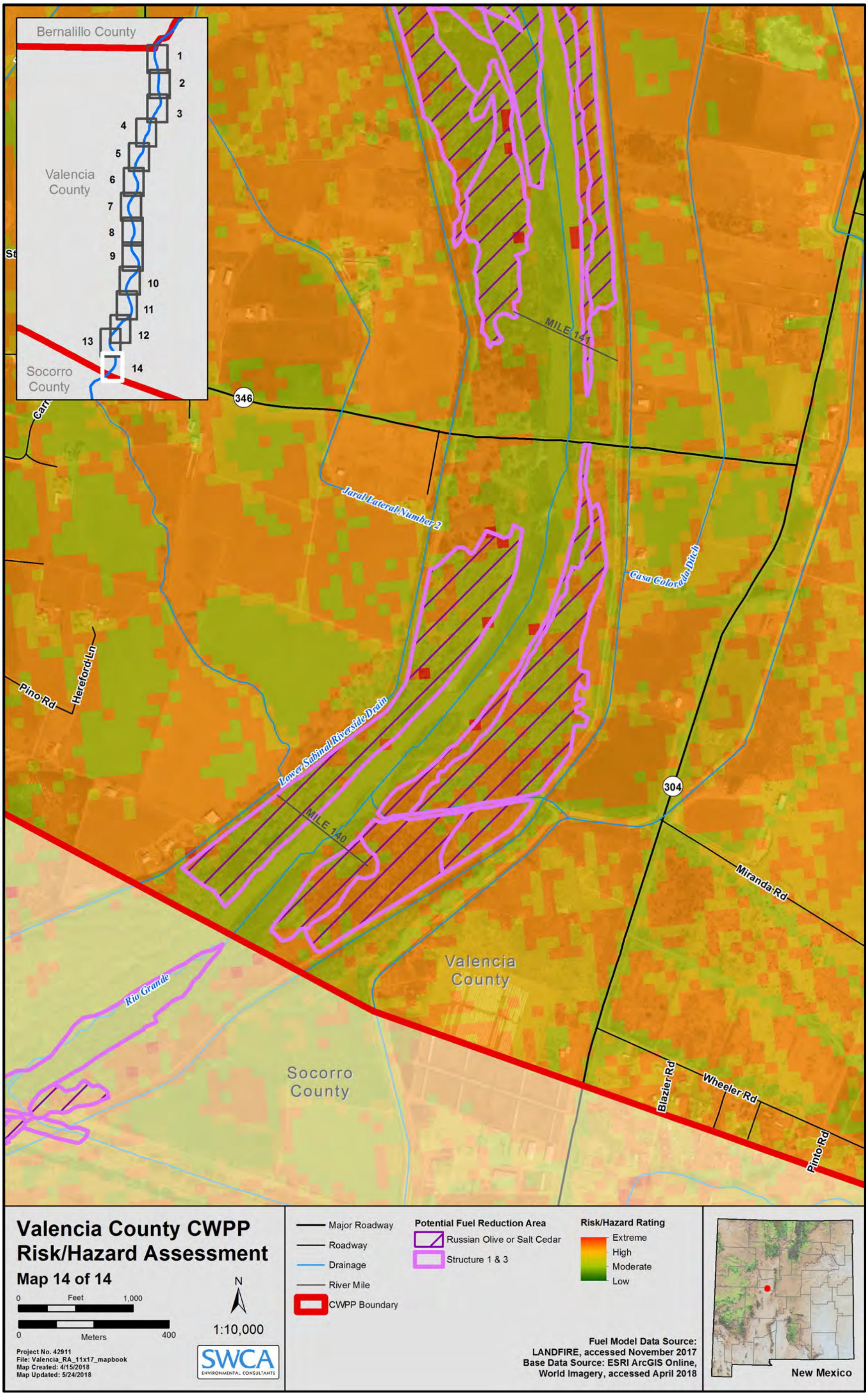
Map D-17. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



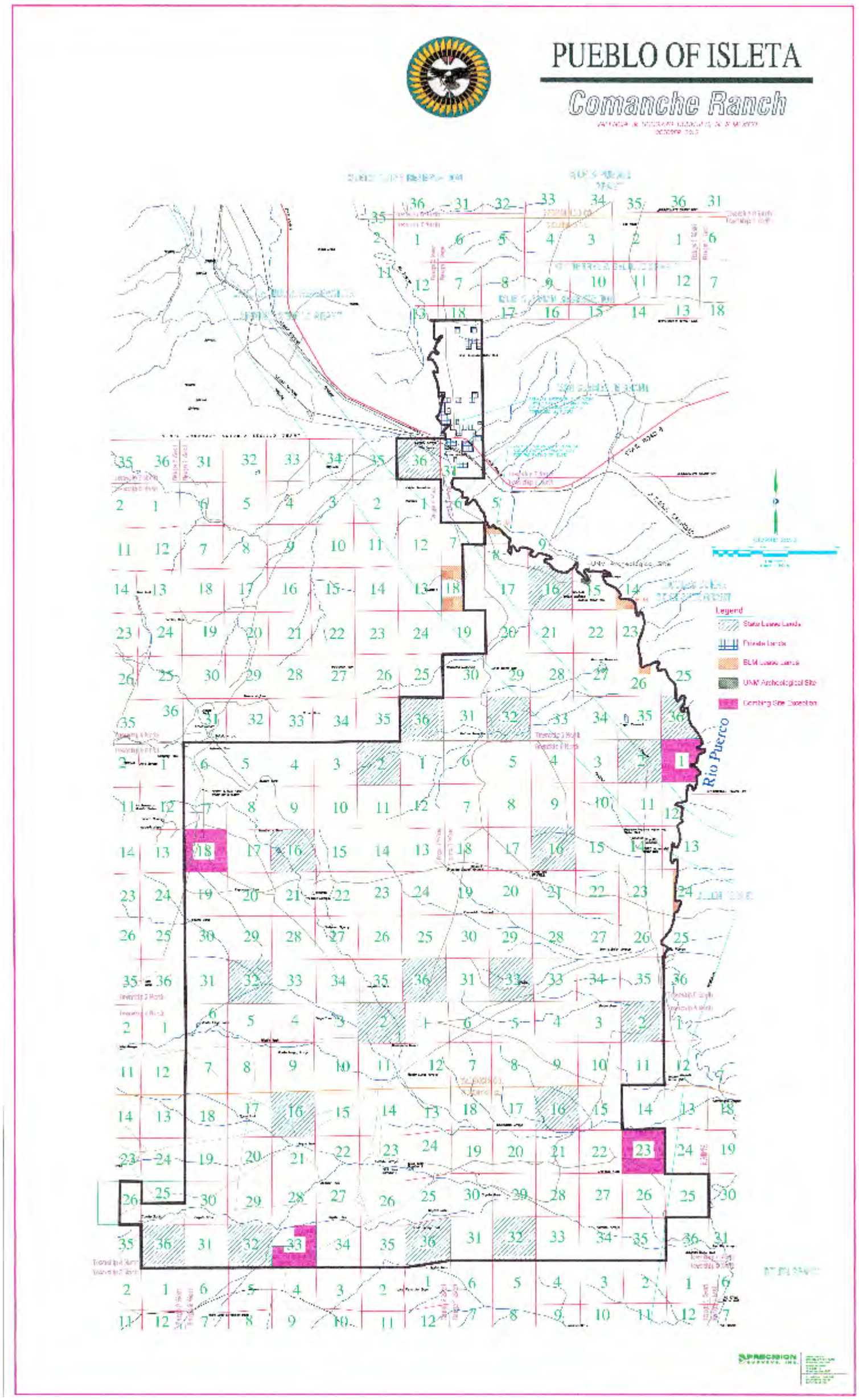
Map D-18. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



Map D-19. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



Map D-20. Map showing CWPP risk assessment overlain with potential fuel treatment areas.



Map D-21. Map showing the delineation of the Pueblo of Isleta Comanche Ranch. The ranch was signed into Pueblo trust in 2016 and expanded the Pueblo of Isleta boundary by 90,000 acres. The ranch encompasses a large portion of Valencia County and adjacent Socorro County.

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APPENDIX E- COMMUNITY HAZARD RISK ASSESSMENTS

Table E-1. NFPA Form 1144 Wildland Fire Risk and Hazard Severity Form used during the 2012 CWPP Assessments.

Means of Access	
Ingress and Egress	**Points**
Two or more roads in and out	0
One road in and out	7
Road Width	
> 24 ft	0
> 20 ft < 24 ft	2
< 20 ft	4
Road Conditions	
Surfaced road, grade < 5%	0
Surfaced road, grade > 5%	2
Non-surfaced road, grade < 5%	2
Non-surfaced road, grade > 5%	5
Other than all season	7
Fire Access	
< 300 ft with turnaround	0
> 300 ft with turnaround	2
< 300 ft with no turnaround	4
> 300 ft with no turnaround	5
Street Signs	
Present – reflective	0
Present – non-reflective	2
Not present	5
Vegetation (fuel models)	
Predominant veg	
Light – 1,2,3	5
Medium – 5,6,7,8,9	10
Heavy – 4,10	20
Slash – 11,12,13	25
Defensible Space	
> 100 ft around structure	1
> 70 ft < 100 ft around structure	3
> 30 ft < 70 ft around structure	10

Means of Access	
< 30 ft around structure	25
Topography Within 300 ft of Structures	
Slope	
< 9%	1
10% to 20%	4
21% to 30%	7
31% to 40%	8
>41%	10
Additional Rating Factors (rate all that apply)	
Additional Factors	
Topographic features	0–5
History of high fire occurrence	0–5
Severe fire weather potential	0–5
Separation of adjacent structures	0–5
Building Construction	
Materials (predominant)	
Non-combustible siding, eaves, deck	0
Non-combustible siding/combustible desk	5
Combustible siding and deck	10
Building Set-back	
> 30 ft to slope	1
< 30 ft to slope	5
Available Fire Protection	
Water Sources	
Hydrants 500 gpm < 1000 ft apart	0
Hydrants 250 gpm < 1000 ft apart	1
Non-pressurized > 250 gpm/2 hrs	3
Non-pressurized < 250 gpm/2hrs	5
Water unavailable	10
Organized Response	
Station < 5 miles from structure	1
Station > 5 miles from structure	3
Fixed Fire Protection	
NFPA sprinkler system	0
None	5

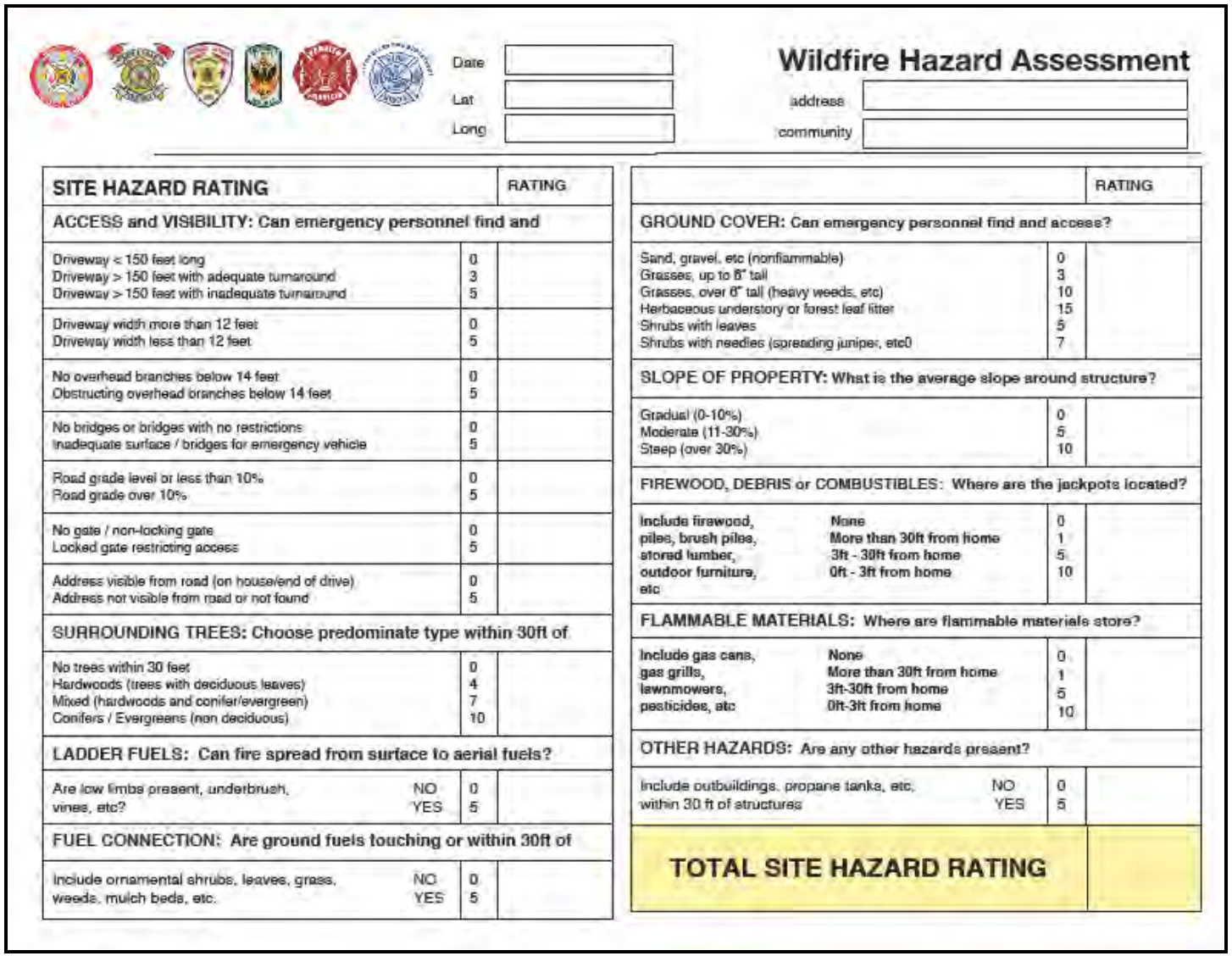
Means of Access	
Placement of Gas and Electric Utilities	
Utilities	
Both underground	0
One above, one below	3
Both above ground	5

Totals for Home or Subdivision	

Hazard Rating Scale:
< 40 = Low
> 40 = Moderate
> 70 = High
> 112 = Extreme

Table E-2. Communities at Risk Ratings developed using NFPA 1144 assessment form outlined in E.1. Reported to New Mexico Fire Planning Task Force

Community	Risk/Hazard Rating
Rio Grande Bosque	High
Bosque Farms	High
Peralta	High
Valencia	High
Meadow Lake	High
El Cerro Mission	High
Tomé	High
Los Chavez	High
Jarales	High
Tierra Grande	High
Casa Colorada	High
Salomon Estates	High
Southwest Mesa	High
Los Lunas	Moderate
Belen	Moderate
Las Maravillas	Moderate
Rio Communities	Moderate
Highland Meadows	Moderate



Date
Lat
Long

Wildfire Hazard Assessment

address
community

SITE HAZARD RATING		RATING
ACCESS and VISIBILITY: Can emergency personnel find and		
Driveway < 150 feet long Driveway > 150 feet with adequate turnaround Driveway > 150 feet with inadequate turnaround	0 3 5	
Driveway width more than 12 feet Driveway width less than 12 feet	0 5	
No overhead branches below 14 feet Obstructing overhead branches below 14 feet	0 5	
No bridges or bridges with no restrictions Inadequate surface / bridges for emergency vehicle	0 5	
Road grade level or less than 10% Road grade over 10%	0 5	
No gate / non-locking gate Locked gate restricting access	0 5	
Address visible from road (on house/end of drive) Address not visible from road or not found	0 5	
SURROUNDING TREES: Choose predominate type within 30ft of		
No trees within 30 feet Hardwoods (trees with deciduous leaves) Mixed (hardwoods and conifer/evergreen) Conifers / Evergreens (non deciduous)	0 4 7 10	
LADDER FUELS: Can fire spread from surface to aerial fuels?		
Are low limbs present, underbrush, vines, etc? NO / YES	0 5	
FUEL CONNECTION: Are ground fuels touching or within 30ft of		
Include ornamental shrubs, leaves, grass, weeds, mulch beds, etc. NO / YES	0 5	

		RATING
GROUND COVER: Can emergency personnel find and access?		
Sand, gravel, etc (nonflammable) Grasses, up to 6" tall Grasses, over 6" tall (heavy weeds, etc) Herbaceous understory or forest leaf litter Shrubs with leaves Shrubs with needles (spreading juniper, etc0	0 3 10 15 5 7	
SLOPE OF PROPERTY: What is the average slope around structure?		
Gradual (0-10%) Moderate (11-30%) Steep (over 30%)	0 5 10	
FIREWOOD, DEBRIS or COMBUSTIBLES: Where are the jackpots located?		
Include firewood, piles, brush piles, stored lumber, outdoor furniture, etc	None More than 30ft from home 3ft - 30ft from home 0ft - 3ft from home	0 1 5 10
FLAMMABLE MATERIALS: Where are flammable materials store?		
Include gas cans, gas grills, lawnmowers, pesticides, etc	None More than 30ft from home 3ft-30ft from home 0ft-3ft from home	0 1 5 10
OTHER HAZARDS: Are any other hazards present?		
Include outbuildings, propane tanks, etc. within 30 ft of structures NO / YES	0 5	
TOTAL SITE HAZARD RATING		

Figure E- 1. Valencia County Home Hazard Assessment Form used to carry-out home hazard assessments throughout the County starting from 2016.

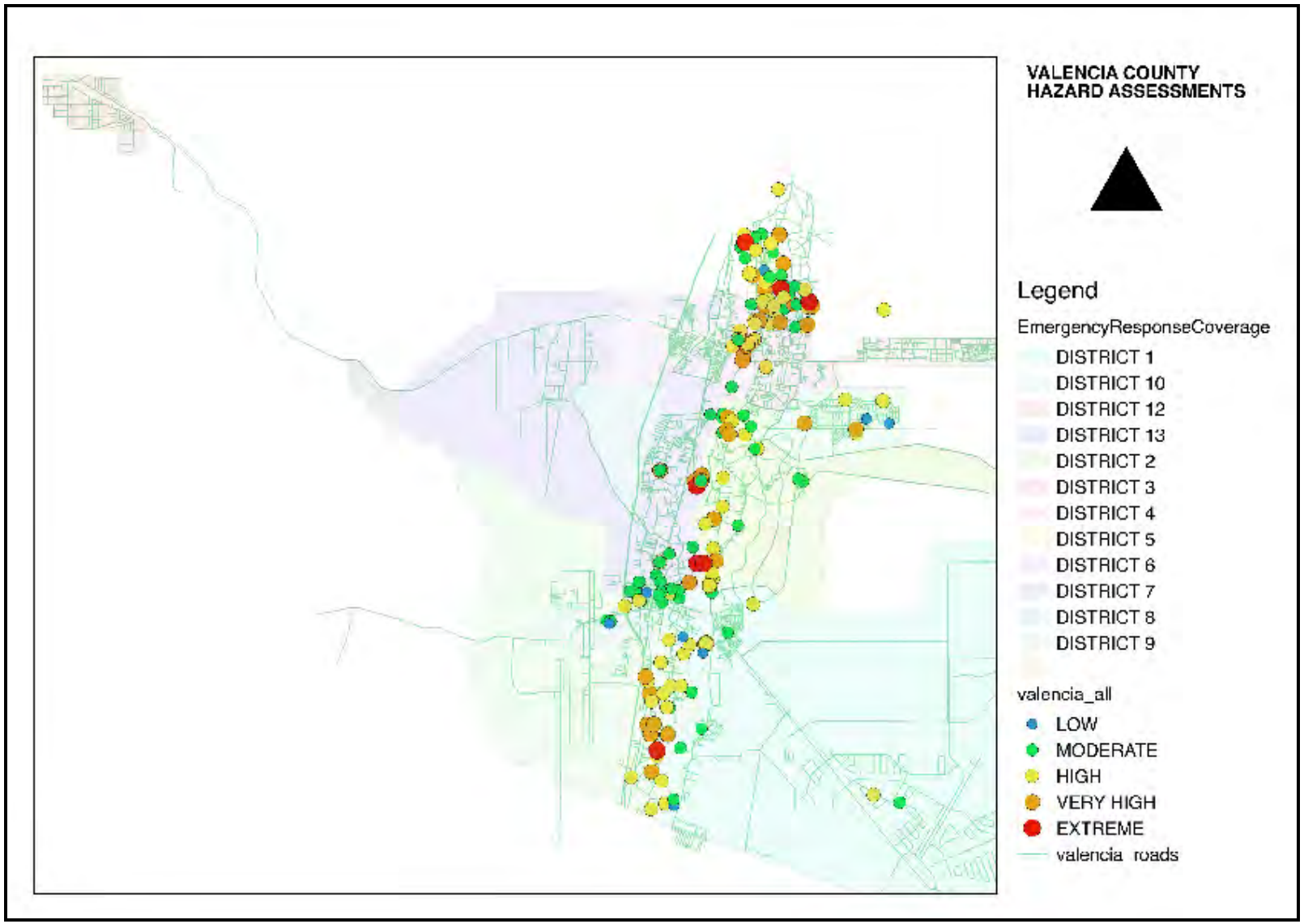


Figure E- 2. Valencia County Home Hazard Assessment Results mapped to date.

APPENDIX F - OTHER SUPPORTING DOCUMENTS

Valencia County Fire Department

Fire Administration

Fire Chief: Brian Culp
Assistant Chief/Fire Marshal: Casey Davis
Assistant Chief/EMS Coordinator: Nicholas Moya
Operations Captain: Jaime Gonzales
Wildland Captain (part-time): Rob Barr
Administrative Assistant: Norma Tarry

444 Luna Ave.
Los Lunas, NM 87031
505-866-2040

PO Box 1119
Los Lunas, NM 87031

https://www.co.valencia.nm.us/151/Fire-Administration-Office
5 – Command Staff
1 – Administrative Staff
Career FFs/EMTs
8 – Full Time
3 – Part Time

Valencia County Tomé-Adelino District 2

District Chief: Matthew Duran

Valley Station
2755 Hwy 47
Tomé, NM 87060
505-864-2590

Mesa Station
280 Manzano Expressway
Tomé, NM 87060
505-865-9701

19 Members

Valencia County Valencia El-Cerro District 3

District Chief (Interim): Jaime Gonzales – Captain, VCFD

Valencia- El Cerro
160 N. El Cerro Loop
Los Lunas, NM 87031
Phone: 505-865-7201

Mailing Address
PO Box 116
Los Lunas, NM 87031
FAX: 505-865-0016

12 Members

Valencia County Meadow Lake District 4

Chief (Interim): Casey Davis – Assistant Chief, VCFD
Assistant Chief: Kristopher Ricketts

755 Meadow Lake Rd
Los Lunas, NM 87031
505-865-9091
16 Members

Valencia County Los Chavez District 7

District Chief: Ed Hobbs
District Assistant Chief: Eddie Hobbs

Los Chavez Station
02 Bombero Cir
Los Lunas, NM 87031
505-864-2000

Highland Meadows Station
22 San Pedro
Laguna, NM 87026

PO Box 775
Los Lunas, NM 87031

23 Members

Valencia County Jarales District 9

District Chief: Scott Shrider
District Assistant Chief: John Cherry

424 Jarales Rd
Jarales, NM 87023
505-864-2853
9 Members

Valencia County Manzano Vista District 10

District Chief: Isaac Abeyta
311 El Cerro Mission Rd
Los Lunas, NM 87031
505-565-1042
9 Members

Valencia County Fire Department

Career Firefighters – 16, 1 Administrative Assistant. Volunteer Firefighters - 88

Municipal Fire Departments

Village of Bosque Farms Fire Department

Chief: Spencer Wood
Assistant Chief : Lee Shoemaker
Assistant Chief: Natalie Barger

1455 West Bosque Loop
Bosque Farms, NM 87068

PO Box 660
Bosque Farms, NM 87042

505-869-2357
http://www.bosquefarmsnm.gov/fire.html
25 Members

Village of Los Lunas Fire Department

Chief: John Gabaldon
Assistant Chief: Tommy Madrid
Fire Marshal/Emergency Manager: Jason Gonzales

Station 1
465 Main St. SE
Los Lunas NM 87031

Sub Station
1000 Main St. Bldg 777
Los Lunas, NM 87031

Station 2
465 Sand Sage St.
Los Lunas, NM 87031

505-866-2116
https://www.loslunasnm.gov/98/Fire-Department
22 Career FFs/EMTs
1 Administrative Assistant
12 Volunteer Members

City of Belen Fire Department

Chief: Manny Garcia
Assistant Chief: Nathan Godfrey
Fire Marshal: Charles Cox

Main Station
116 S. 6th St
Belen, New Mexico 87002

Sub Station
Coronado St.
Belen, New Mexico 87002

505-966-2714
http://www.belen-nm.gov/about-fire-rescue.aspx
11 Career FFs/EMTs
15 Volunteer Members

Town of Peralta Fire Department

Chief: John Dear
Assistant Chief: Mike Rouckus

05 Mcgee Rd
Peralta, NM 87042
505-869-9083
http://www.townofperalta.org/fire-department.aspx
9 Members

City of Rio Communities Rio Grande EstatesFire Department

Chief: LE Rubin
Assistant Chief: Jason Gonzales

Rio Communities Station
108 Rio Communities Blvd
Belen, NM 87002
505-864-6161

Tierra Grande Station
1651 Rio Communities Blvd
Belen, NM 87002
505-861-1347

25 Members

Municipal

34 – Career FF/EMT
Including Administrative
86– Volunteers

Valencia County Fire Department Apparatus

Unit	Make	Year	Model	Type	Gallons
Tome-Adelino District 2 Valley Station					
Pumper 2-1	HME	2005	1871-P2	Pumper	1100
Tanker 2-5	Inter	1997	4900	Tender	2500
Rescue 2	Ford	2008	F350	Rescue	-
Squad 2-3	Ford	2004	F550	Squad	300
Engine 2-7	Ford	2006	F550	Type 6 Engine	300
Command 2	Ford	2006	Expedition	Command	-
TomeAdelino District 2 Mesa Station					
Pumper 2-2	HME	2011	1871-SFO	Pumper	850
Tanker 2-6	Inter	1994	4900 DT	Tender	2200
Med 2	Ford	2008	E350	Rescue	-
FC-1	Chevy	2004	Impala	Chaplain Car	-
Valencia-El Cerro District 3					
Pumper 3-1	Inter	1990	Grumman 2574	Pumper	100
Tanker 3-4	Inter	2001	4900	Tender	2500
Engine 3	Inter 4400	2005	HME	Pumper	1000
Brush 3-6	Ford	2007	F550	Brush Truck	300
Rescue 3	Ford	1999	E350	Rescue	-
Tanker 3-7	Inter	2012	7600	Tender	3000
Meadowlake District 4					
Rescue 4-1	Chevy	1996	Silverado 3500	Rescue	-
Engine 4-1	Inter	1997	4900	Pumper	1000
Squad 4-1	Ford	1995	F350	Brush Truck	300
Brush 4	Ford	2006	F550	Brush Truck	500
Rescue 4-2	Chevy	1991	3500	Rescue	-
Tanker 4-1	GMC	1987	Brigadier	Tender	1800
Pumper 4	HME	2009	1871	Pumper	800
Command 4	Chevrolet	1998	3500	Command	-
Los Chavez District 7 Los Chavez Station					
Brush 7	Ford	1996	F350	Brush Truck	300
Tanker 7-6	Inter	1997	4900	Tender	2800
Rescue 7	Chevy	1996	2500	Rescue	-
Tanker 7-2	Inter	1999	4900	Tender	2800
Engine 7	HME	2006	Silver Fox 62109-2	Pumper	1100
Med 7	Ford	2004	F350	Rescue	-

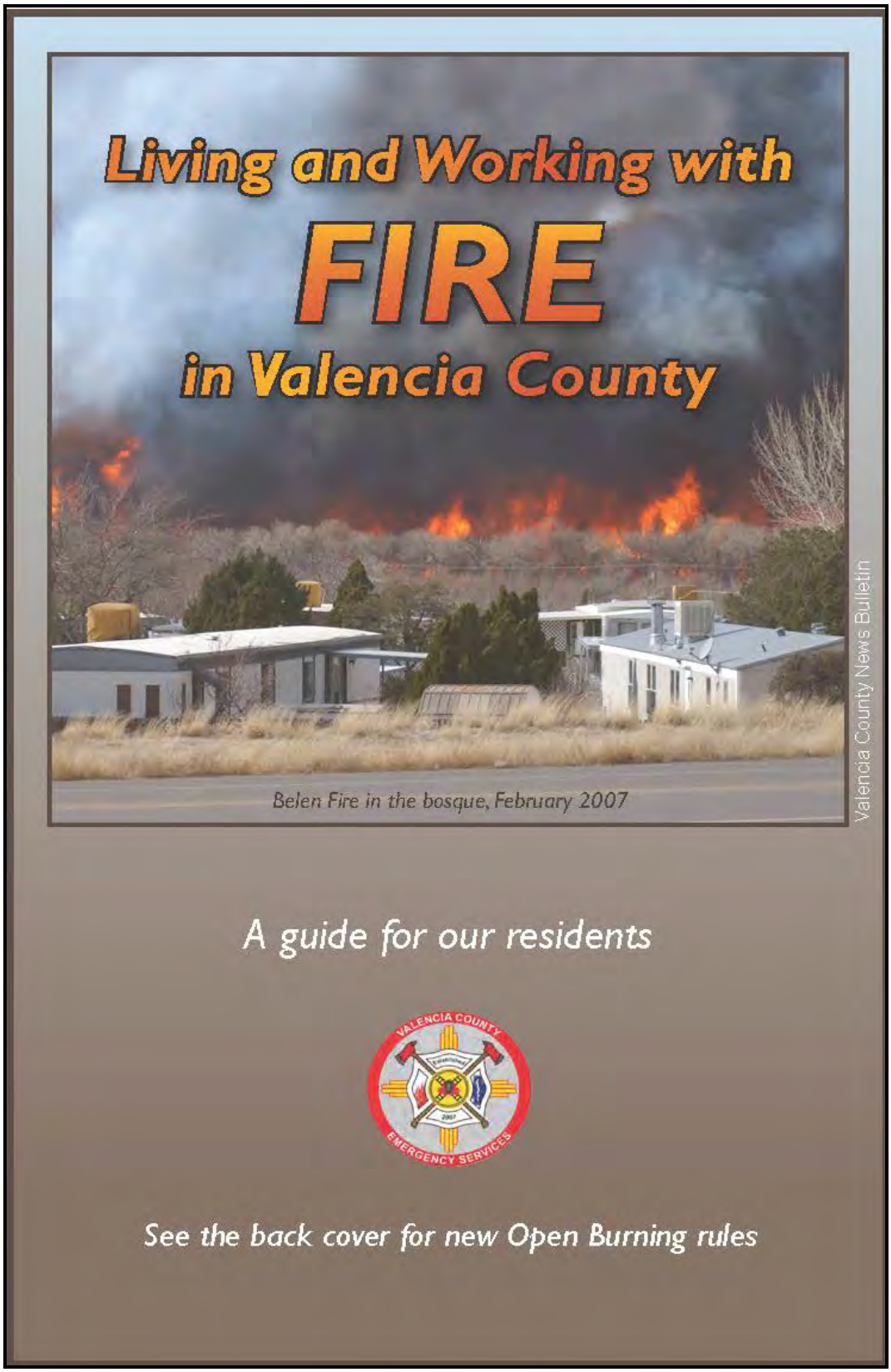
Unit	Make	Year	Model	Type	Gallons
Squad 7	Ford	2004	F550	Squad	300
Pumper 7	HME	2009	1871	Pumper	800
Command 7	Ford	1995	Bronco	Command	-
Los Chavez District 7 Highland Meadows Station					
P-12-2	Inter	1987	Grumman S2500	Pumper	1000
Tanker 12-1	Chevy	1989	Kodiak	Tender	2500
Tanker 12-2	Freightliner	2007		Tender	200
Brush 12	Ford	2008	F550	Brush Truck	500
Jarales District 9					
Engine 9-1	Ford	2000	F550	CAF - Squad	300
Brush 9-6	Dodge	2012	5500	Brush Truck	300
Engine 9-2	Quality	1996	Spartan	Pumper	1000
Brush 9-5	Ford	1996	F350	Brush Truck	300
Tanker 9-3	Inter	1997	4900	Tender	2500
Rescue 9	Chevy	2005	3500	Rescue	-
Tanker 9-4	Inter	2008	Workstar 7400	Tender	2500
Command 9	Dodge	2005	Durango	Command	-
Chief 9	Ford	2008	F250	Command	-
Manzano Vista District 10					
Tanker 10	Inter	2012	Durastar 4400	Tender	2000
Squad 10	Ford	2005	F550	Squad	300
Engine 10	Inter	2006	KME	Pumper	1000
Tanker 10-1	Inter	2016	Rosenbauer	Tender	1500
Fire Administration					
County 1	Dodge	2015	2500	Command	-
County 2	Dodge	2015	2500	Command	-
County 3	Dodge	2015	2500	Command	-
County 4	Dodge	2015	1500	Command	-
VF-1	Dodge	2010	5500	Squad	300
VF-2	Dodge	2010	5500	Squad	300
VF-3	Dodge	2010	4500	Squad	300
Trailer	Wells Cargo	-	-	Training Trailer	-
Training	Dodge	2015	Journey	Car - training	-
Command Trailer	Fabrique Par	-	-	Command Trailer	-
Airtruck	Chevy	1995	1500	Mobile cascade truck	-
MC1-1	Cargo Mate	-	Mass casualty	Equipment Trailer	-

Unit	Make	Year	Model	Type	Gallons
Fire Administration - Wildland					
County 5	Dodge	1997	1500	Command	-
BC - 1	Ford	2008	2500	Command	-
BC – 2	Chevy	2002	Tahoe	Command	-
Chipper	Vermeer	2015	BC100XL	Chipper	-
Trailer	Pace	2008	8’	Equipment trailer	-

Municipal Fire Department Apparatus

Unit	Make	Year	Model	Type	Gallons
City of Rio Communities Rio Grande Estates Fire Department- Tierra GrandeSouth Station					
Rescue-1 - 3522	Ford	2004	F350	Rescue	
Rescue 3520	Ford	2017	Transit	Rescue	
Brush 1-10	Ford	1999	F550	Brush Truck	300
Engine 1-9	Spartan	1995	Quality	Pumper	1000
City of Rio Communities Rio Grande EstatesFire Department- Rio Communities North Station					
Brush 1-8	Ford	1999	F550	Brush Truck	300
Command 1	Chevrolet	2017	2500	Command	
Tanker-1-6	Inter	2004	4400	Tender	1800
Engine 1-4	Inter	2008	4400	Pumper	1350
Med 1 3520	Ford	2017	Transit	Rescue	
Aerial 1-5	Ford	1986	8000	Aerial/Pumper	800
Mobile Support 1	Pace	2009	WS612	Utility Trailer	
DC-1	Dodge	2004	Dakota	Command	
Pump Trailer	Hale	2014		Mobile pump trailer	750gpm
Village of Los Lunas Fire Department					
Med 6 2158	Ford	2003	E350 Wheeled Coach	Rescue	-
Med 6 2160	Ford	2000	E350 McCoy Miller	Rescue	-
Med 6 2157	Ford	2009	E350 Med Tec	Rescue	-
Med 6 2156	Ford	2015	Transit	Rescue	-
Med 6 2159	Ford	2016	Transit	Rescue	-
FasTac 1	GMC	1998	3500	Brush Truck	280
FasTac 2	Ford	2007	F550	Brush Truck	250
Engine 6-2	Pierce	2002	Contender	Pumper	1000
Engine 6-4	Pierce	2002	Contender	Pumper	1000
Engine 1	KME	2011		Pumper	1000

Unit	Make	Year	Model	Type	Gallons
Town of Peralta Fire Department					
Brush 13	Ford	2000	F550	Brush Truck	350
Squad 13	Ford	2012	F550	Squad	350
Engine 13-8	Spartan	1996		Pumper	1000
Engine 13	Rosenbauer	2017		Pumper	1000
Tanker 13-5	Inter	2005		Tender/pumper	2000
Tanker 13-4	Inter	2009		Tender/Pumper	2000
Village of Bosque Farms Fire Department					
Rescue 5	Chevy	2007	Kodiak	Rescue	-
Tanker 5-4	Freightliner	2012	Pierce	Tender/Pumper	1200
Engine 5-2	Freightliner	2000	Central States	Pumper	750
Brush 5	Ford	2005	F550	Brush Truck	350
Engine 5-1	Freightliner	2017	Pierce	Pumper	750
Service 5-3	Ford	2005	F550	Utility	-
Chief 5	Ford	1997	F250	Command	-
City of Belen Fire Department					
Rescue 2925	Ford	2001	E350	Rescue	-
Rescue 2924	Ford	2013	E350	Rescue	-
Brush 8-4	Dodge	2003	3500	Brush Truck	250
Brush 8-5	Ford	2014	F550	Brush Truck	500
Engine 8-1	Inter	2008		Pumper	1000
Engine 8-2	HME	2012		Pumper	3000
Engine 8-6	Grumman	1989		Pumper/Tender	3000
Ladder 8-7	Spartan	2000	Aerial	Aerial	-
Squad 8	Chevy	1999	Suburban	Squad	-
Chief 8	Chevy	2016	Suburban	Command	-
Command 802	Chevy	2014	2500	Command	-
FM-8	Ford	2001	F250	Command	-


Living and Working with
FIRE
in Valencia County
Belen Fire in the bosque, February 2007
Valencia County News Bulletin
A guide for our residents
VALENCIA COUNTY
EMERGENCY SERVICES
See the back cover for new Open Burning rules

Understanding wildfire

Fires in Valencia County

When a big plume of smoke climbs into the sky one of two things is probably on fire: the dense cottonwood forests in the bosque, or grass and brush in more open terrain. Each has its own special dangers, especially when warm weather and spring winds arrive.

Stable Fire in the bosque, June 2010

Bosque fires

In the dense vegetation of the bosque fire can quickly climb from burning leaves on the ground to the tops of the highest trees. The leaves ignite shrubs, which then ignite leaves on the lower branches of the big trees. Soon there is a wall of flames fifty feet tall that can't be put out with water. Strong winds can push the flames from the canopy of one tree to those downwind.

The embers from bosque fires pose a threat to houses and other valuable property. Stopping a big bosque fire often requires cutting down trees in the path of the fire. Once the fire is contained, it can take many days put out all of the big, slow-burning timber left behind.

Grass and brush fires

A wind-driven fire in thick grass can spread faster than you can run. Because of this, grass fires are the most dangerous type of wildfire. A slight change in the direction of the wind will immediately affect which direction the fire spreads. An unpredictable fire like this is very dangerous for firefighters, residents and livestock. The thick smoke from a big grass fire can reduce visibility so much that you can't drive safely or even know where the fire is located.

Homestead Fire, December 2013

Grass and brush fires on our East and West Mesas are fast moving. They will often stop spreading when they reach a road, a plowed field or grass that has been sprayed with water. Escaped field fires in the valley that get out of control threaten many values and can extend into bosque.

Dangerous weather conditions can cause fire whirls to form. Like tornadoes, fire whirls vary in size – from less than one foot in diameter to several dozen feet wide.

Red Flag Warnings

You may hear on a radio or television that a Red Flag Warning has been issued. This occurs when the National Weather Service believes that there is a dangerous combination of high temperatures, low humidity and windy conditions that could cause fires to spread rapidly. On these days avoid burning and any outdoor activities that could create sparks. Remember to call before you burn to see if it is OK to burn.

What the fire danger colors mean

Low

Wildfires are not likely. Fires that do start will probably spread slowly and be easy to extinguish.

Moderate

Some wildfires may be expected. Flame heights and rate of spread will be moderate. With sufficient personnel and equipment putting out the fire should not be difficult.

High

Wildfires are likely. Fires in dense brush or the bosque will be difficult to control under windy conditions. Fires can start easily from all causes and may spread quickly. Do not burn outdoors.

Extreme

Fires will start and spread rapidly. Every fire has the potential to become large.

Working safely

Sparks and hot materials are natural byproducts of welding, cutting, grinding and operating equipment. There is nothing wrong with these things unless they give birth to a brush fire. Here are some tips to keep that from happening.

Welding ~ Hot pieces of metal are easy to see when they are glowing, but stay hot enough to start a fire after they darken. Be sure that sparks can't get lodged in brush, hay, wood piles or soil that might be moist with fuel or oil.

Driving ~ When tires look like this they can become a fire hazard. Each year fires are started when very hot pieces of a disintegrating tire land in dry grass next to a road.

Parking ~ Where is the best place to park your cars and equipment? The answer is on concrete, dirt or gravel. This way any hot engine parts can't ignite tall grasses. Plus, your vehicles will be safe from a fast moving grass fire.

Cutting ~ If you are cutting material that might contain nails make sure that the sparks will hit open ground away from brush or piles of sawdust.

Burning safely

Burning brush ~ What are the two biggest mistakes you can make when burning brush?

1) Burning on a windy day
2) Walking away from the pile

Be smart. Always call before you burn. Stay with your burn and make sure it is out and cold before you leave it.

Wood stove ashes ~ Here is a recipe for the safe disposal of ashes:

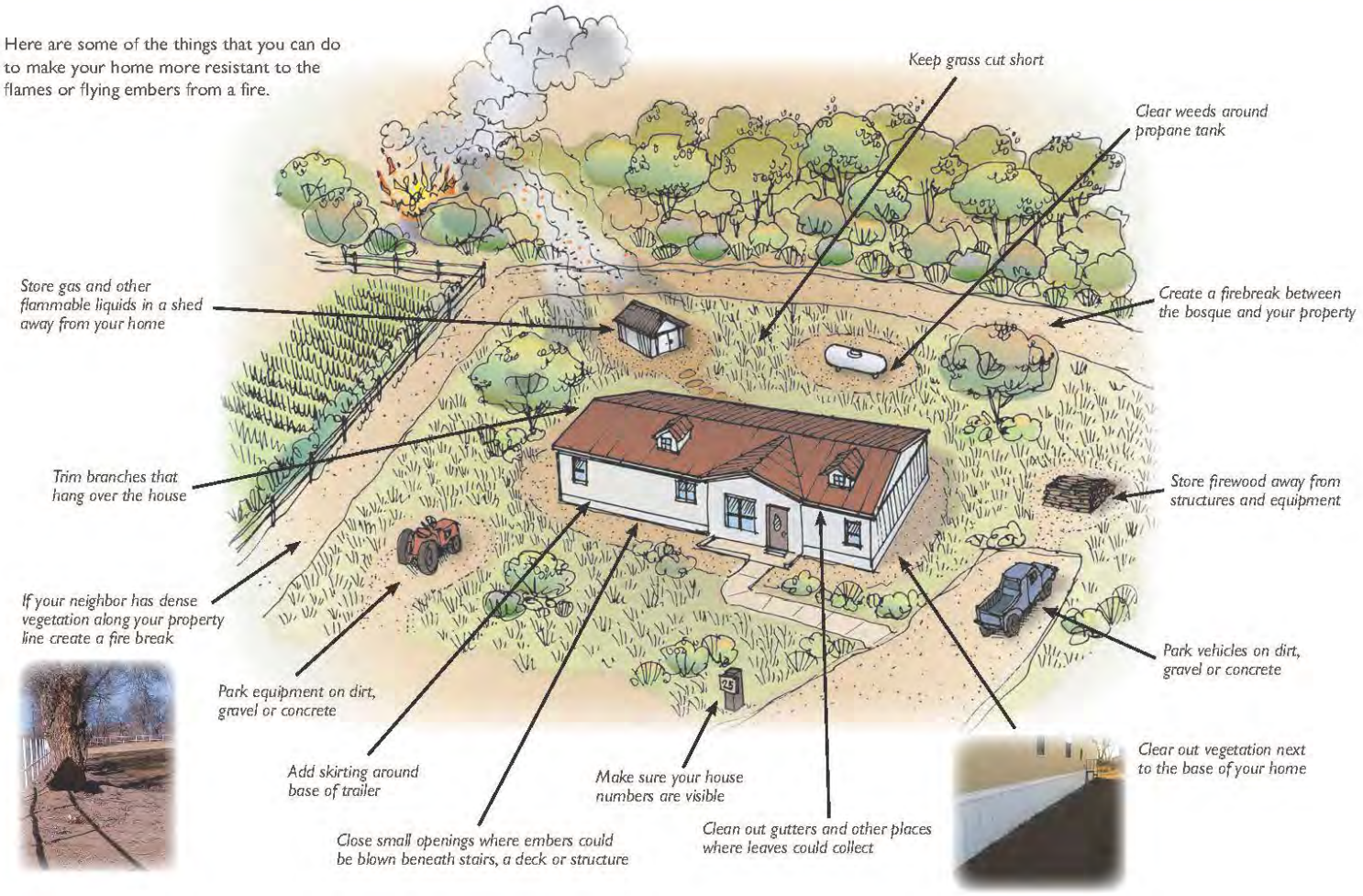
1) Put ashes in a metal container
2) Add water and stir
3) Wait 2 days
4) Make sure the ashes are cool before you dump them in your yard

Controlled burns ~ When burning fields, ditch banks or fence lines, it is always safest to ignite the fire so that it can only burn against the direction of a very light breeze. Most fires escape because they are left unattended or the winds increase in speed or change direction.

Be sure you have enough people, equipment and water to put out the fire quickly if you need to.

Protecting your property

Here are some of the things that you can do to make your home more resistant to the flames or flying embers from a fire.



Evacuating safely

The evacuation route you use should be away from the fire and away from the direction that the fire is moving. Identify several different routes so that you can choose the safest one. Try to avoid narrow roads that could easily become blocked.

What to take ~ Here is an important thing that you can do before the wildfire season arrives: Make a list of things you want to take and know where they are located. Consider gathering some of these items now and keeping them in a box that is ready to go.

Remember the five P's:

PILLS, eyeglasses and other medical supplies

PICTURES, small artwork, jewelry and other important momentos

PETS, pet food, leashes and pet carriers

PAPERS, like birth certificates and tax records

PHONE, charger and phone numbers of people you will want to call

More information about caring for pets is at www.apnm.org/disasterplanning

Leaving the house ~ Put on cotton clothing with long sleeves, plus boots and gloves. Before you leave, close all windows and all doors into garages, barns and sheds. Close the windows of any vehicles that you will leave behind. Turn off ventilation fans in the house. Close the valve on the propane tank. Turn on all outdoor lights. If you have time to set up a sprinkler, have it spray vegetation next to your home.

Leave gates open so that firefighters can access your property. Follow instructions from police and fire personnel, because they have the most current information about the location and path of the fire. Do not return home until emergency personnel have determined that it is safe.

Caring for horses ~ Get your horses used to being loaded in a trailer. If fire is approaching your property, remove fly masks and tack made from plastic or nylon. Leather and cotton are more fire-safe. Since neighbors or firefighters may turn your horses loose, so that they won't be trapped by a fire, be sure that each animal has some form of identification ~ a brand, microchip or your name on their tack. Having a picture of each animal with you can help others find them.

Driving in smoke ~ If you must drive into smoke, turn on your lights and flashers. Roll up the windows and unlock the doors. Turn off fans that would bring smoke into the vehicle. Then go very slowly. This will help you stay on the road and avoid colliding with other vehicles. Do not stop over flaming debris.

If you get trapped ~ If you are trapped in your car, park in an area that is clear of vegetation, close all windows and vents, cover yourself with a blanket or jacket and lie on the floor. Be aware that the tires may burst. Stay in your car until the fire passes.

How to know where to go

Listen to the radio to learn what facility has been designated as a public shelter. The Valencia County Department of Emergency Services will select a location that is easy to get to and is away from the fire danger.

Fire prevention in the Bosque

The Rio Grande Bosque is a rare and important habitat and one of the few cottonwood forests of its size in the world. The Bosque has given life to those along its banks for centuries, and struggles to endure the impacts of changes from human development and invasion by non-native plant species that have made wildfires much more severe.

Fires have always been present in the Rio Grande Valley. However, today's drier conditions and heavier fuels, have resulted in fires that have caused irreparable damage. They have destroyed large stands of native bosque and critical wildlife habitat, and endangered people and property close to the bosque.

In recent times, inter-agency restoration projects have helped restore large sections of the bosque in Valencia County to a more natural state. However, with prolonged drought and the lack of seasonal flooding, the bosque remains at risk. Smoking, fires and fireworks are prohibited in the bosque for this reason. Visitors should be very cautious with vehicles and anything that could produce sparks.

The Middle Rio Grande Conservancy District asks you to help prevent devastating wildfires, to protect our precious bosque and neighbors, and "Keep the Valley Green."

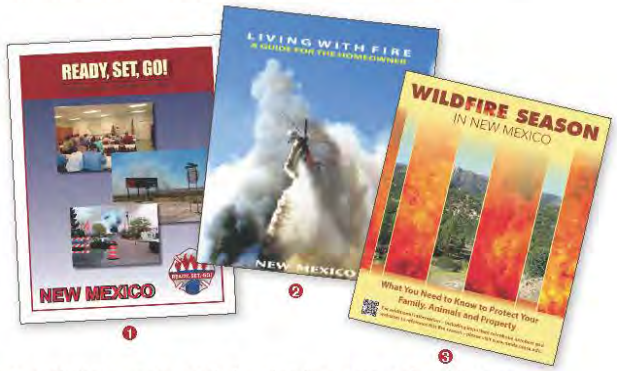
MIDDLE RIO GRANDE CONSERVANCY DISTRICT

The Wildland Team of the Valencia County Fire Department is working with NM State Forestry and MRGCD in the Jarales bosque to remove non-native trees and brush such as Salt Cedar and Russian Olive trees. The Fire Department is taking a proactive approach to lessening the severity of catastrophic wildfires in the bosque.

Almost all of the communities in Valencia County directly benefit from the bosque that lines the shores of the Rio Grande.

Where to get information

These three publications contain a great deal of information to help you prepare your family, property and animals for a wildfire.



At these websites you can read, download or print each publication.

1. http://www.emnrd.state.nm.us/SFD/documents/RSGActionGuideNM.pdf
2. http://nmfireinfo.files.wordpress.com/2009/06/60589_jes.pdf
3. http://apnm.org/news/2013/Wildfire_Tab_2013.pdf

Valencia County News Bulletin

Information about current wildfires and prescribed burns in New Mexico can be found at this website: http://nmfireinfo.com

Partners in Protection

Open burning rules

New in 2014:

All locations in Valencia County have new burn hours

What you can burn

Brush
Leaves
Weeds
Crop waste
Grass clippings
Untreated wood

NO BURN BARRELS

NO TRASH BURNING

You must stay with your burn and make sure it is completely out before you leave.

If you are having trouble controlling your burn, call 911.

When you can burn

From 1 hour after sunrise to 1 hour before sunset

This pamphlet was produced with a Wildfire Risk Reduction Grant from the New Mexico Association of Counties.

What you need to do

You must call on the day you want to burn to find out if burning is allowed that day. Who you call depends on where you live.

If you live in **Valencia County**, but not in one of the communities listed below, you must call the Valencia County Fire Administration Office at 505-866-2040 each day you want to burn. Outside of business hours and on weekends, call Dispatch at 505-865-9130. If it is a Burn Day, tell them your name, phone number and address where you will be burning.

If you live in **Belen** or **Los Lunas**:
You must get a written burn permit from your Fire Department. It is good for 30 days. Each day you want to burn you must call Dispatch at 505-865-9130 to find out if it is a Burn Day.

If you live in **Bosque Farms**:
You must get a written burn permit from the Village Office. It is good for 2 weeks. Each weekday you want to burn you must call the Village Office at 505-869-2357 to find out if it is a Burn Day. Outside of business hours and on weekends, call Dispatch at 505-865-9130.

If you live in **Peralta**
Each weekday you want to burn, you must call Dispatch at 505-865-9130. If it is a Burn Day, tell them your name, phone number and address where you will be burning.

Remember to call before you burn

APPENDIX G- FUNDING OPPORTUNITIES

VALENCIA COUNTY CWPP FUNDING OPPORTUNITIES

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

I. **Federal Funding Information**

Source: Predisaster Mitigation Grant Program
Agency: Department of Homeland Security (DHS) Federal Emergency Management Agency (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 predisaster 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 predisaster 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 multihazard mitigation plans and to implement projects identified in those plans.

Source: Section 319 Base Grant to State Entities and Indian Tribes
Agency: Environmental Protection Agency (EPA)
New Mexico State 319 Coordinator
David Hogge
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502
Phone: (505) 827-2981
Fax: (505) 827-0160
david_hogge@nmenv.state.nm.us
Website: http://www.epa.gov
Description: Funding under this program is often used for reduction of nonpoint-source pollution; however, one community successfully used the grant to obtain funding to reduce hazardous fuels to protect the municipal watershed. For additional information on this success story, visit http://www.santafewatershed.com. To learn about obtaining this type of funding for your community, contact New Mexico's 319 Grant Coordinator, Dave Hogge, New Mexico Environmental Department at (505) 827-2981.

This funding opportunity is a Request for Proposals from state entities and Indian tribes for competitive grants under section 319 of the Clean Water Act (CWA). The purpose of this grant program is to provide funding to implement nonpoint-source management programs developed pursuant to CWA section 319(b). The primary goal of this management program is to control nonpoint-source pollution. This is done through implementation of management measures and practices to reduce pollutant loadings resulting from each category or subcategory of nonpoint-source identified in the grant recipient's nonpoint-source assessment report, which should be developed pursuant to CWA section 319(a). The EPA has set aside a portion of Ssection 319 funds appropriated by Congress for competitive grant awards to tribes for the purpose of funding the

development and implementation of watershed-based plans and other on-the-ground watershed projects that result in a significant step toward solving nonpoint-source impairments on a watershed-wide basis. Please note that the funding opportunity described here is found in Section B of the full announcement. (Section A includes the EPA's national guidelines, which govern the process for awarding noncompetitive base grants to all eligible tribes.)

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, 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: U.S. Forest Service
Website: http://www.fs.fed.us/fire/partners/vfa/
Description: U.S. 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, contact your state representative; contact information can be found on the National Association of State Foresters website.

Source: Economic Action Programs
Agency: U.S. Forest Service
Website: http://www.fs.fed.us/spf/coop/programs/eap/index.html
Description: U.S. Forest Service funding will provide for Economic Action Programs that work with local communities to identify, develop, and expand economic opportunities related to traditionally under-utilized 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: Collaborative Forest Restoration Program (CFRP)
Agency: U.S. Forest Service
Website: http://www.fs.fed.us/r3/spf/cfrp/index.shtml
Description: The Community Forest Restoration Act of 2000 (Title VI, Public Law 106–393) established a cooperative forest restoration program in New Mexico to provide cost-share grants to stakeholders for forest restoration projects on public land to be designed through a collaborative process (the CFRP). Projects must include a diversity of stakeholders in their design and implementation and should address specified objectives including: wildfire threat reduction; ecosystem restoration, including non-native tree species reduction; reestablishment of historic fire regimes; reforestation; preservation of old and large trees; increased utilization of small-diameter trees; and the creation of forest-related local employment. The act limits projects to four years and sets forth cost limits and provisions respecting collaborative project review and selection, joint monitoring and evaluation, and reporting. The act authorizes appropriations of up to $5 million annually and directs the Secretary to convene a technical advisory panel to evaluate proposals that may receive funding through the CFRP.

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/
- Predisaster Mitigation Program, http://www.fema.gov/government/grant/pdm/index.shtm
- Environmental Education Grants, http://www.epa.gov/enviroed/grants_contacts.html
  Source: Firewise Communities
  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 U.S. Forest Service, Bureau of Indian Affairs, BLM, U.S. Fish and Wildlife Service, 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. Many different Firewise Communities activities are available 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 non-combustible 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 (NFP)
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 offers 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.

Source: Rural Fire Assistance (RFA)
Agency: USDI – U.S. Fish and Wildlife Service
Website: http://www.nifc.gov/rfa.
Description: The RFA program provides funds for RFDs that Protect rural, wildland-urban interface communities; play a substantial cooperative role in the protection of federal lands; are cooperators with the Department of the Interior (USDI) managed lands through cooperative agreements with the USDI, or their respective state, tribe or equivalent; are less than 10,000 in population. The required cost share amount for the recipient RFD will not exceed 10 percent of the amount awarded. The RFD must demonstrate the capability to meet cost share requirements Cooperator contribution may be contributed as in-kind services. Cooperator contribution may exceed, but not amount to less than 10 percent. Examples of in-kind services may include but are not limited to: facility use incurred by and RFD for hosting training courses, travel and per diem costs incurred by an RFD when personnel attend training courses, and administration costs related to purchasing RFA equipment and supplies. Finding or in-kind resources may not be derived from other federal finding programs.

II. **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.

Source: New Mexico Association of Counties: 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 (CWPPs), 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.

III. **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.

Source: StEPP Foundation
Website: http://www.steppfoundation.org/default.htm
Description: StEPP is a 501(c)(3) organization dedicated to helping organizations realize their vision of a clean and safe environment by matching projects with funders nationwide. The StEPP Foundation provides project oversight to enhance the success of projects, increasing the number of energy efficiency, clean energy, and pollution prevention projects implemented at the local, state, and national levels for the benefit of the public. The website includes an online project submittal system and a Request for Proposals page.

Source: The Public Entity Risk Institute (PERI)
Website: http://www.riskinstitute.org
Description: PERI is a not for profit, tax-exempt organization. Its mission is to serve public, private, and nonprofit organizations as a dynamic, forward-thinking resource for the practical enhancement of risk management. With its growing array of programs and projects, along with its grant funding, PERI's focus includes supporting the development and delivery of education and training on all aspects of risk management for public, nonprofit, and small business entities, and serving as a resource center and clearinghouse for all areas of risk management.

IV. **Other Funding Information**

The following resources may also provide helpful information for funding opportunities:

- National Agricultural Library Rural Information Center: http://www.nal.usda.gov/ric/ricpubs/fire_department_resources.htm
- Forest Service Fire Management website: http://www.fs.fed.us/fire/
- Insurance Services Office Mitigation Online (town fire ratings): http://www.isomitigation.com/

- National Fire Protection Association: http://www.nfpa.org
- National Interagency Fire Center, Wildland Fire Prevention/Education: http://www.nifc.gov/preved/rams.htm
- Department of Homeland Security U.S. Fire Administration: http://www.usfa.dhs.gov/fireservice/grants/rfff/