Eddy County

Community Wildfire Protection Plan

2025 Update

Original 2008 CWPP, written by

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List of Acronyms and Abbreviations

BLM	Bureau of Land Management
CIFO	Carlsbad Interagency Fire Organization
CFD	County Fire District
CWPP	Community Wildfire Protection Plan
EA	Extended Attack
ECCWPP	Eddy County Community Wildfire Protection Plan
FBFM	Fire Behavior Fuel Model
FD	Fire District/Department
FEMA	Federal Emergency Management Agency
FFT1	Advanced Wildland Firefighter/Squad Boss
FFT2	Wildland Firefighter
FRCC	Fire Regime Condition Class
ENGB	Engine Boss (Single Resource)
GIS	Geographical Information System
GPS	Geographic Positioning System
HFRA	Healthy Forests Restoration Act
IA	Initial Attack
IJPA	Interagency Joint Powers Agreement
IRP	Ignition Risk Potential
IWUIC	International Wildland-Urban Interface Code
LANDFIRE	Landscape Fire and Resources Management Tools Project
MFD	Municipal Fire District
NEPA	National Environmental Policy Act
NFDRS	National Fire Danger Rating System
NFPA	National Fire Protection Association
NMSFD	New Mexico State Forestry Division
NPS	National Park Service
NRCS	National Resource Conservation Service
NWCG	National Wildfire Coordination Group
PPE	personal protective equipment
SWCD	Soil Water Conservation District
USFS	U.S. Forest Service
WIPP	Waste Isolation Pilot Project
WUI	Wildland-Urban Interface

List of Fire Behavior Terms

Aerial Fuels- All live and dead vegetation in the forest canopy or above surface fuels, including tree branches, twigs, cones, snags, moss, and high brush.

Aspect- Direction a slope faces.

Direct Attack- A method of fire suppression where actions are taken directly along the fire's edge. In a direct attack, burning fuel is treated directly, such as by wetting, smothering, or chemically quenching the fire or by physically separating burning from unburned fuel.

Chain- A unit of linear measurement equal to 66 feet.

Crown Fire- The movement of fire through the crowns of trees or shrubs more or less independently of the surface fire.

Dead Fuels- Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature, and solar radiation.

Defensible Space- An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, "defensible space" is defined as an area a minimum of 30 feet around a structure that is cleared of flammable brush or vegetation by building and maintaining fire-safe communities compatible with the natural surroundings.

Firewise- Firewise is a national program to serve as a resource for agencies, tribes, organizations, communities, fire departments, and private landowners who are working on the goal to reduce the loss of lives, property, and resources to wildfire.

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

Fire Danger- The broad-scale condition of fuels as influenced by environmental factors.

Fire Front- The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

Fire Hazard-The presence of ignitable fuel coupled with the influences of terrain and weather.

Fire Intensity- A general term relating to the heat energy released by a fire.

Fire Return Interval- The historic frequency that fire burns in a particular area or fuel type without human intervention.

Fire Regime- The characterization of fire's role in a particular ecosystem, usually characteristic of a particular vegetation and climatic regime, and typically a combination of fire return interval and fire intensity (i.e., high frequency low intensity/low frequency high intensity).

Fire Weather- Weather conditions that influence fire ignition, behavior, and suppression.

Flame Length- The distance from the base to the tip of the flaming front. Flame length is directly correlated with fire intensity.

Flaming Front- The zone of a moving fire where combustion is primarily flaming. Behind this flaming zone combustion is primarily glowing. Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front.

Fuels- Combustible material; includes vegetation such as grass, leaves, ground litter, plants, shrubs, and trees that feed a fire. Not all vegetation is necessarily considered fuels; deciduous vegetation such as aspen actually serve more as a barrier to fire spread, and many shrubs are only available as fuels when they are drought-stressed.

Fuel Break- An area of land where fuel continuity and load is reduced to reduce wildfire rate of spread and severity and to improve control opportunities.

Fuel Loading- The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area.

Fuel Model- Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

Fuel Type- An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

Ground Fuel- All combustible materials below the surface litter, including duff, tree or shrub roots, punchy wood, peat, and sawdust that normally support a glowing combustion without flame.

Hazard- Vegetation-fuel attributes that may be conducive to propagate and carry a fire.

Indirect Attack- A method of fire suppression where actions are taken some distance from the active edge of the fire due to intensity, terrain, or other factors that make direct attack difficult or undesirable.

Intensity- The level of heat radiated from the active flaming front of a fire, measured in British thermal units (BTUs) per foot.

Ladder Fuels- Fuels that provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. Ladder fuels help initiate and ensure the continuation of crowning.

Live Fuels- Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms, rather than by external weather influences.

National Fire Danger Rating System (NFDRS)- A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

Prescribed Fire- Any fire ignited by management actions under certain predetermined conditions to meet specific objectives related to hazardous fuels or habitat improvement. A written, approved prescribed fire plan must exist, and National Environmental Policy Act (NEPA) requirements must be met prior to ignition.

Rate of Spread- The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, rate of forward spread of the fire front, or rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains or acres per hour for a specific period in the fire's history. Sometimes it is expressed as feet per minute; one chain per hour is equal to 1.1 feet per minute.

Risk- The probability that a fire will start from natural or human-caused ignition.

Surface Fuels- Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branch wood, owned logs, and stumps interspersed with or partially replacing the litter.

Topography- Referred to as "terrain." The term also refers to parameters of the "lay of the land" that influence fire behavior and spread. Key elements are slope (in percent), aspect (the direction a slope faces), elevation, and specific terrain features such as canyons, saddles, chimneys," and chutes.

Wildfire- A wildland fire that is unwanted and unplanned.

Wildland Fire- Any fire burning in wildland fuels, including prescribed fire, fire use, and wildfire.

Wildland Fire Use- The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

Forward

This document, the 2025 Eddy County Community Wildfire Protection Plan (CWPP), updates the 2008 Eddy County CWPP (2008 ECCWPP) and refreshes the data where needed. Most of the 2008 ECCWPP is still relevant and will be this update's base document.

Background

Some changes have occurred since 2008, primarily the realignment of Eddy County's fire services in April 2021. This realignment consolidated the 11 county fire districts, Loving Volunteer Fire District, and the Eddy County Fire Service Administration into a single department, Eddy County Fire and Rescue (ECFR).

In 2023, the Fire Chief recognized that the 2008 ECCWPP needed an update and began the process of hiring a consultant and gathering stakeholders to form a core team to begin discussions on future edits. In early December 2023, the first collaborative in-person meeting was held with core team members to identify areas of the 2008 ECCWPP that required updates. A total of 14 individuals were at the kick-off meeting. The update progressed through 2024, and in January 2025, the document was brought back to the Core Team for concurrence on the changes to the 2008 document.

The core team felt there was no need to rewrite the 2008 ECCWPP entirely and opted to do this preface plan per New Mexico State Forestry CWPP requirements and capture any new or changed information since 2008. All information in the 2008 ECCWPP is relevant unless otherwise noted in this document, where it has been updated.

One of the primary elements of a CWPP is the list of wildfire risk reduction priorities to reduce wildfire threats and hazards to the communities within Eddy County. The Core Team reviewed the list produced for the 2008 ECCWPP and concluded that the list is still valid, and, unfortunately, many of the projects identified never came to fruition or are projects that need yearly attention, such as mowing along highways and roads to create fuel breaks, which remains a priority. Herbaceous weedy vegetation, native and non-native grasses, and forbs form the primary fuel model in much of Eddy County and require continued attention year after year, depending on the amount of moisture received to produce and grow these flashy fuels.

A new priority was added at the request of ECFR, and the core team gained concurrence to add a wildland coordinator position with ECFR. This position could help coordinate with the core team on yearly updates to the CWPP, work on pursuing funding for wildland fuels mitigation projects, assist with training ECFR personnel with National Wildfire Coordinating Group (NWCG) training, and work on wildfire education and

prevention activities across the county in conjunction with other stakeholders. Further changes to the priority list will be found later in this document, aligning with the 2008 ECCWPP.

Some changes were identified by the Core Team to several at-risk Eddy County communities from the risk identified in the 2008 ECCWPP. The 2008 list has been carried forth in the State Communities at Risk Assessment Plan https://www.emnrd.nm.gov/sfd/wp-content/uploads/sites/4/2023-CAR-Plan-Update_FINAL.pdf since 2008 and will need to be updated. These changes were made based on current conditions around these communities based on recent oil and gas developments, changes in the demographics within the communities, loss of specific herbaceous plant communities due to lack of growth or loss of plant materials altogether, and/or change in fuel loading due to mitigations or disturbances such as fire. These changes are noted in Table F-1 below.

Table F-1- Communities At Risk Changes from 2008

Wildland Urban Interface Community	2008 Wildfire Risk Rating	2024 Wildfire Risk Rating
Whites City	High	Moderate
Loco Hills	Moderate	Low
Malaga	Moderate	Low

How to Use This Document

This document will follow the 2008 ECCWPP and reference any changes to each section. Sections without changes will be noted, and the 2008 plan information will be duplicated for reference. Page numbers will reference the location of the information in the 2008 document if a reference is needed.

Updates to the 2008 Eddy County Community Wildfire Protection Plan

Executive Summary- page ix-x in 2008 ECCWPP

All the information in the executive summary remains valid, with the following additions:

Community Wildfire Protection Plans (CWPPs) have regained importance over the last few years, with many local, state, and federal officials advancing their concerns about wildfires. Many high-profile wildland fire situations are driving these concerns. A few examples of these fires are the 2018 Camp Fire in California, which decimated the community of Paradise and killed 85 people. The 2023 Lahaina Fire in Maui killed 102 people, proving to be one of the deadliest wildfires in recent US History. In February 2024, Texas saw its largest wildfire on record, burning over a million acres in a matter of a few days and decimating several communities. During the writing of this document, wildfires devastated several communities in the Los Angeles area. These fires and many more have strengthened interest in funding wildfire mitigation projects nationwide, with an influx of federal, state, and local money being utilized. Most of these projects are guided by CWPPs and point to the need for communities to be prepared for wildfire disasters.

In the face of this challenge, Congress formed a Wildland Fire Mitigation and Management Commission to bring back recommendations for dealing with every facet of the wildfire crisis. The 50-member commission released its report in the fall of 2023 with 148 recommendations. This link will take you to all the information and recommendations of the commission and the report. Wildland Fire Mitigation and Management Commission | USDA

With this update of the 2008 ECCWPP, the county is poised to take advantage of some of the Wildland Fire Mitigation and Management Commission's recommendations and be prepared for wildfire disasters at a local level.

Below is the updated ES-1 Table located on page X of the 2008 ECCWPP

Updated Table ES-1 Assessment Area Summary Information

Wildland Urban Interface Area	NFPA 1144 Hazard Rating Updated	Contributing Factors to Rating	Changes from 2008
Artesia	• Low for the city proper • Moderate for perimeter	• Light fuels (weeds and grasses) • Defensible space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• No changes in rating
Atoka	• Low	• Light fuels (weeds and grasses) • Defensible space less than 100 feet • Utilities above ground	• No changes in rating
Carlsbad	• Low for City Proper • Moderate for perimeter	• Light fuels (weeds and grasses) • Defensible space less than 70 feet • Combustible structures- siding, decks or porches	• No changes in rating

		• Utilities above ground	
Carlsbad Caverns	• Low • Moderate around Rattlesnake Springs	• Moderate fuels (small trees and shrubs) at Rattlesnake Springs, Light elsewhere. • Defensible space less than 70 feet • Terrain slope • Some structures with flammable roofs • Utilities above ground	• Staff housing was removed after treatments occurred. • Rattlesnake Springs was added and needs fuel treatments
Cottonwood	• Low	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• No Changes • BLM has completed treatments to the West since the 2008 plan.
Happy Valley	• Low	• Moderate fuels and shrubs • Defensible space less than 100 feet • Utilities above ground	• No changes in rating
Hope	• Low	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• No changes in rating
Joel	• Moderate within the community • Low for the perimeter	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• No changes in rating
La Huerta	• Low	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• No changes in rating
Loco Hills	• Low	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Mix of non-class A roofs • Combustible structures- siding, decks or porches • Utilities above ground	• This was lowered from moderate to low • There have been some BLM treatments and changes in the fuels in this area
Loving	• Low	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• No changes in rating
Malaga	• Low	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• This was lowered from Moderate to low • There have been fuel modifications in this area
Otis	• Low	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Combustible structures- siding, decks or porches • Utilities above ground	• No changes in rating
Queen	• High	• Heavy Fuels (trees and Shrubs • Defensible space less than 25 feet • Terrain • Combustible structures- siding, decks or porches	• No changes to the rating. • However, some mitigation work has been accomplished

		• Utilities above ground	around the community.
Riverside	• Moderate within the community • Low for the perimeter	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Mix of non-Class A roofing • Combustible structures- siding, decks or porches • Utilities above ground	• No changes to the ratings. • However, Salt-Cedar treatments should be added to this area.
Waste Isolation Pilot Plant	• Low	• Non-Flammable Structures	• Changed from None to Low • Continue defensible space and fuel breaks and monitor with growth.
White's City	• Moderate within the community • Low for the perimeter	• Light Fuels (weeds and grasses) • Defensible Space less than 70 feet • Terrain Slope • Combustible structures- siding, decks, or porches • Utilities above ground	• Change from High to Moderate within the community. • This is due to treatments and the 2011 Loop Fire

The 2008 ECCWPP contains the following language and is being repeated due to its importance and as the primary recommendations of both documents. The core team reviewed and validated these. Where noted, the core team added new recommendations to the list, and all others were carried forward from the previous 2008 document.

The following actions are proposed to reduce wildfire risks and hazards. Project recommendations are based on interviews with county fire chiefs, municipal fire chiefs, federal fire management officers, field observations, and questionnaire responses from the 2008 ECCWPP. Proposed mitigation projects were also presented and discussed at three public meetings in 2008 and again in March 2025. Public input is incorporated into the recommendations.

- Encourage the development of defensible space around structures, utility stations, communication towers, oil and gas infrastructure, and other structures at risk from wildfire.
- Grass and weed abatement needs to occur throughout the county. A common fuel hazard is herbaceous weedy vegetation. Native and non-native weedy grasses and forbs become flashy fuels as they dry in the late summer and fall. These fine fuels ignite easily and burn rapidly. Herbaceous fuels are common and widespread in all the WUIs. Herbaceous fuels occur among structures, along roads, driveways, fallowed fields, and abandoned lots.
- Mowing along highways and roads will create fuel breaks. Highways and roads are linear features that provide a break to fuel continuity. Mowing a minimum distance of 6 feet along each side of highways and roads will enhance their

usefulness as fuel breaks and reduce the chances of fire ignition from vehicles or discarded smoking materials. This bullet is updated to include that the federal agencies (BLM, USFS, NPS) have established Potential Operational Delineations (POD's), which could be a focus of these fuel breaks.

- Fuel breaks are recommended for State Highway 7 leading to Carlsbad Caverns National Park and the road leading into the church-sponsored camp in the Queen WUI. This bullet has been updated to correct the road to Carlsbad Caverns as Highway 7, and the recommendation is now to monitor new vegetative growth along the route. Much of this area burned in the 2011 Loop Fire, greatly diminishing the concerns from 2008. However, fuel treatments should be done as needed, and vegetation growth occurs. The Queen WUI is still a priority for fuel treatments along roads.
- Salt cedar abatement along the Pecos River and other drainages is warranted because of its fuel load, high water use, and limited value as wildlife habitat. A significant number of human-caused fires occur in this vegetation-fuel type. Priority treatment areas would be designated as those with moderate-to-heavy fuel loads close to urban areas, structures, and other values. This bullet is updated to include close coordination with the Natural Resource Conservation Service (NRCS), the Carlsbad Soil and Water Conservation District (SWCD), and the Carlsbad Irrigation District (CID).
- Fire regime condition class (FRCC) measures forest and rangeland health. Forests and rangelands classified as FRCC 2 or 3 are considered unhealthy because there have been changes in plant community attributes and/or the fire regime compared to conditions before European settlement. Sixty percent of the county is classified as FRCC 2 or 3. Vegetation-fuel management plans should consider improving forest and rangeland health, thus reducing fire danger. This bullet is still valid; however, further dialog can be found in the update to section 4.5 in this document.
- Community education and public outreach are effective means of initiating local action to reduce wildfire risks and hazards. Community outreach should occur through each WUI to improve awareness of wildfire issues, such as creating defensible space around structures.
- A recommendation is for the county and incorporated communities to consider adopting the International Wildland-Urban Interface Code (IWUIC). The IWUIC provides a set of codes that, if implemented, may reduce wildfire risks and hazards. Improving the fire-resistant characteristics of structures in the assessment area goes hand-in-hand with developing defensible space.
- A recommendation is to develop, map, and maintain strategically located water sources throughout each WUI. Dry hydrants, permanent surface water, stock

ponds, or irrigation systems may be suitable water sources. Agreements with private landowners need to be negotiated annually for property and water access.

- This bullet is updated with current information. Training of Eddy County Fire and Rescue and municipal FDs is an ongoing need. National Wildfire Coordination Group (NWCG) annual training needs to occur. Nearly all fire departments have wildland firefighters trained at the Firefighter Type 2 (FFT) level. Still, there is a need for training at the Firefighter Type 1 (FFT1) and Single Resource Engine Boss (ENGB) level. The county is fortunate to have the Permian Basin Regional Training Center to provide the needed training.
- This is a new recommendation added to this update. Eddy County Fire and Rescue spoke to the need for a new position, either a Wildland Coordinator or Wildfire Risk Reduction Specialist, to focus on wildfire, such as training, education, outreach, prevention, and coordination with other cooperators.
- This bullet is updated with current information. The fire protection authorities include Eddy County Fire and Rescue, Artesia Fire, Hope Fire, Carlsbad Fire, Bureau of Land Management (BLM), National Park Service (NPS), United States Forest Service (USFS), New Mexico Forestry Division (NMFD), and Waste Isolation Pilot Project (WIPP). All agencies must collaborate to maintain and, in some cases, improve wildfire firefighting equipment, Personal Protective Equipment, fire suppression engines, fire shelters, and firefighter training throughout the county.
- This is a new recommendation based on concerns from the City of Carlsbad. Fuel reduction work needs to occur in the south-central portion of town in the area referred to as Dark Canyon, on the west side of town around C-Hill, and along the Pecos River to the north of town where new subdivision development is planned.
- This is a new recommendation. Fuels management treatments should be conducted at Brantly Lake State Park to protect the park's infrastructure and reduce hazardous fuels accumulations around the lake.
- This is a new recommendation. Fuel reduction work needs to occur in the Town of White's City around existing structures to provide adequate defensible space.
- This is a new recommendation from the town of Artesia. Funding should be pursued to establish a water source in the form of a water reservoir in JC Park that could provide water for firefighting resources. This pond should be constructed with dry hydrants for quick and easy emergency vehicle access to this water resource.

Implementing and sustaining the CWPP is key to success. This is the responsibility of the Eddy County Fire and Rescue, Eddy County Office of Emergency Management, and the Core Team. It should be noted that this document should be used in coordination with the Eddy County Multi-Jurisdictional Hazard Mitigation Plan and the various county ordinances that pertain to it, such as Vegetation Nuisance, Subdivision Building, and land use policies and procedures.

Partnerships among community-based organizations, fire protection authorities, local governments, public land management agencies, and private landowners are necessary in identifying and prioritizing measures to reduce wildfire risk. Maintaining this cooperation is a long-term effort that requires the commitment of all partners involved. The CWPP encourages citizens to actively identify needs, develop strategies, and implement solutions to address wildfire risk by assisting with developing local community wildfire plans and participating in countywide fire prevention activities.

SECTION 1 INTRODUCTION **(Pages 1-6 in 2008 ECCWPP)**

1.1 CWPP Purpose – No changes from the 2008 ECCWPP; previous information is below for reference.

A Community Wildfire Protection Plan (CWPP) is a strategic plan that identifies specific wildland fire risks and hazards facing communities. The CWPP also provides prioritized mitigation recommendations to reduce wildfire risks and hazards. Once the CWPP is approved, it is the Core Team's responsibility to move forward and implement the recommended action items. This may require working with federal, state, county, and community fire authorities and private landowners for project-specific planning and implementation, acquisition of funds, or motivation of individual homeowners.

Decades of aggressive wildfire suppression practices in fire-adapted ecosystems have removed a critical natural disturbance mechanism from plant community dynamics. Such management tactics have also led to an alteration of plant composition and structure through the invasion of aggressive and highly flammable weeds and grasses. Fire exclusion has reduced forest and rangeland health through an unprecedented buildup of wildland flammable fuels. Fires prior to European settlement would reduce the buildup of fuels that facilitate forest and rangeland health.

At the same time, demographic trends have shifted as families move into forest and rangeland settings away from traditional urban and suburban communities. Areas where structures and communities intermix with forest and rangeland ecosystems are known as the wildland-urban interface (WUI). Because of the accumulation of flammable fuels

in many forests and rangelands, the potential for catastrophic wildfire and loss of human values is great. Appropriate action is needed to reduce wildfire risks and hazards in WUIs through fuels management and improved community awareness. Recent large-scale WUI wildfires that have resulted in devastating losses of structures, businesses, communities, and human life have received U.S. Congressional attention in the pursuit of effective solutions.

The federal government developed the National Fire Plan in 2000 in response to increasing WUI wildfires, human welfare losses, and spiraling suppression costs. The Healthy Forests Restoration Act (HFRA) of 2003 implements the core components of the National Fire Plan. HFRA provides the impetus for wildfire risk, hazard assessments, and strategic mitigation planning at the county and community levels. HFRA refers to this level of planning as the CWPP process. A CWPP empowers a community to take advantage of wildland fire and hazardous fuel management opportunities offered under HFRA, including a framework for hazard and risk evaluations and mitigation planning. A CWPP provides prioritized access to federal grant funding to support identified risk and hazard reduction projects and a basis for collaboration with local, state, and federal land management agencies.

1.2 Need for a CWPP

– There are no changes from the 2008 ECCWPP; previous information is below for reference.

The Eddy County CWPP is countywide, emphasizing the protection of communities and other economic and ecological values. Historic fire occurrence was a significant ecological influence in shaping the natural vegetation. The threat of wildfire continues today. However, wildfire risk to human welfare and economic and ecological values is more serious today than in the past because of the buildup of hazardous fuels, communities, and other infrastructure near forests and rangelands and a lack of public appreciation of wildfire. Lightning-caused fires are few. Human-caused ignitions are the leading cause of wildfires in Eddy County, and their frequency will likely become more numerous as the county's population grows and outdoor recreation increases.

Natural resource management policy and changing ecological conditions have interacted in ways that resulted in hazardous fuel situations throughout the county. These forces include historic fire suppression policy, juniper and shrub invasion into grasslands, invasive weeds, overgrazing, and changing climatic patterns.

The accumulation of vegetation fuels may set the stage for catastrophic wildfire occurrence, resulting in the loss of economic and ecological values. Various vegetation fuels around communities, ranches, structures, and on public lands create problems for fire protection. Fuels include grasslands, shrublands, desert scrub, pinion juniper woodlands, and weedy fields. Many of these fuels, such as dried grass and weeds, are

highly flammable, burn rapidly, and resist control. The buildup of salt cedar on the Pecos and other rivers is a hazardous fuel situation. A coordinated effort among all fire authorities and private landowners is needed to manage hazardous fuels and reduce wildfire risk.

The CWPP provides the means to identify wildfire risks and hazards and prioritize mitigation projects. The CWPP provides a coordinated assessment of wildfire risks and hazards and recommends specific mitigation treatments designed to make the assessment area a safer place to live, work, and play. Collaboration among federal, state, and county agencies and private landowners is essential to reduce wildfire risks and hazards. This CWPP provides the framework for collaboration. All information was gathered, analyzed, and prepared by Walsh Environmental Scientists and Engineers, LLC in 2008 and updated by Fire Edge Solutions, LLC in 2025.

1.3 Policy Framework- There have been no changes from the 2008 ECCWPP; except for an update to the New Mexico Forestry Division website, https://www.emnrd.nm.gov/sfd/; previous information is below for reference.

This Eddy County CWPP is not a legal document. There are no legal requirements to implement the recommendations presented herein. Actions on public lands will be subject to federal, state, and county policies and procedures, such as adherence to the HFRA, NEPA, and New Mexico's smoke management and open burn policies. Actions on private land may require compliance with county land-use and open-burning codes. Federal legislative acts that set policy and provide guidance to the development of the CWPP include:

- HFRA (2003)- Federal legislation promoting healthy forest and open space management, reducing vegetation fuels on federal land, community wildfire protection planning, and producing biomass energy.
- National Fire Plan and 10-Year Comprehensive Strategy (2001)- This interagency plan focuses on firefighting coordination, firefighter safety, post-fire rehabilitation, hazardous fuels reduction, community assistance, and accountability.
- Federal Emergency Management Agency (FEMA) Disaster Mitigation Act (2000)- Provides criteria for state and local multiple-hazard and mitigation planning.

The New Mexico State Forestry Division (NMSFD) is a valuable resource that provides education and guidance to communities and individual landowners concerned with the threat of wildfire and forest resource management in the WUI (~~http://www.emnrd.state.nm.us/fd/index.htm~~).

1.4 CWPP Process and Core Team- The only change in this section is an updated Table 2 with the names of the new core team members; previous information is below for reference.

The HFRA designed the CWPP to be a flexible process that can accommodate a wide variety of community needs. The Eddy County CWPP follows the standardized steps outlined in Preparing a Community Wildfire Protection Plan: A Handbook for Wildland Urban Interface Communities (Table 1).

Table 1. CWPP Development Process

Step	Task	Explanation
One	Convene Decision Makers	Form a Core Team made up of representatives from local governments, fire authorities, NMSFD, and interested stakeholders.
Two	Involve Federal Agencies	Engage local representatives of the U.S. Forest Service (USFS) and other land management agencies as appropriate.
Three	Engage Interested Parties	Contact and encourage participation from a broad range of interested organizations and stakeholders.
Four	Establish a Community Base Map	Develop a base map of the district that provides a better understanding of communities, critical infrastructure, and forest/open space.
Five	Develop a Community Risk Assessment	Develop risk assessment that considers fuel hazards, community and commercial infrastructure, resources, and preparedness capability. Rate the level of risk and incorporate it into the base map as appropriate.
Six	Establish Community Priorities and Recommendations	Use the risk assessment and base map to facilitate a collaborative public discussion that prioritizes fuel treatments and non-fuel mitigation practices to reduce fire risk and structural ignitability.
Seven	Develop an Action Plan and Assessment Strategy	Develop a detailed implementation strategy and a monitoring plan to ensure long-term success.
Eight	Finalize CWPP	Finalize the district CWPP and communicate results to interested parties and stakeholders.

Source: Society of American Foresters (2004)

The initial step in developing the Eddy County CWPP is to organize an operating group that serves as the core decision-making team. The Core Team was formed by WALSH Environmental with input from the Eddy County Office of Emergency Management in 2008 and reconvened with new partners in 2023 under the lead of Eddy County Fire and Rescue.

The Core Team consists of representatives from local government, local fire authorities, and the NMSFD (Table 2). In addition, the Core Team includes relevant land management agencies and community stakeholders. Collaboration among agencies and communities is an important CWPP component because it promotes the sharing of perspectives, plans, priorities, and other useful information in the planning process. Together, these entities guide the development of the CWPP and must mutually agree on the plan's final content. All Core Team members should keep Eddy County Fire updated if they change jobs and leave the area so that a replacement can be found to continue the work of the CWPP.

Table 2. Eddy County CWPP Core Team Members (updated)

Name	Organization	Email	Telephone
Zachary Schafer	WIPP Fire	Zachary.schaefer@wipp.ws	(575)631-4789
Kevin Willard	Eddy County Fire Rescue	kwillard@eddycofire.org	(575)988-0163
Jarred Stock	Eddy County Fire Rescue	jstock@eddycofire.org	(505)801-1943
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As a strategic plan, the CWPP's success hinges on the effective and long-term implementation of the identified objectives. The CWPP planning and development process must include efforts to build a stakeholder group that serves as an implementation team, oversees the execution of prioritized recommendations, and maintains the plan as the characteristics of the WUI change over time. Specific projects may be undertaken by individual communities, while large-scale fuel treatments will require collaboration among local government and public land management agencies. The Core Team representatives may assist in implementing the CWPP action plan in cooperating with communities and private landowners. Continued public meetings are recommended to generate additional support and maintain momentum.

CWPP fuel treatment recommendations derived from this analysis are prioritized through an open and collaborative effort with the Core Team and stakeholders. Prioritized treatments target wildfire hazard reduction in the WUI communities, including structural ignitability and critical supporting infrastructure. An action plan guides treatment implementation for high-priority projects over the span of several years.

This Eddy County CWPP represents a strategic plan with Core Team consensus that provides prioritized vegetation-fuels treatment projects, non-fuels mitigation recommendations, maps of the assessment area, defensible space recommendations, and other information relevant to the project's scope.

1.5 Eddy County CWPP Goals and Objectives - No changes from the 2008 ECCWPP; previous information is below for reference. Table 3 provides the goals and objectives for the Eddy County CWPP.

Table 3. Eddy County CWPP Goals and Objectives

Goal	Objective
Facilitate and develop a CWPP	▪ Provide oversight for all activities related to the CWPP. ▪ Ensure representation and coordination among agencies and interest groups. ▪ Develop a long-term framework for sustaining CWPP efforts.
Conduct wildfire risk and hazard assessments	▪ Identify communities at wildfire risk and contributing factors. ▪ Identify hazardous fuel loads and locations. ▪ Determine the level of risk to communities that wildfires and contributing factors pose. ▪ Identify areas at risk to large-scale fire.
Develop a mitigation plan	▪ Identify and prioritize vegetation-fuel treatment projects. ▪ Identify and prioritize non-fuel mitigation needs.
Manage hazardous fuels	▪ Identify community hazards and prioritize hazard reduction treatments. ▪ Develop sustainable initiatives for communities. ▪ Secure funding and assist project implementation.
Facilitate emergency planning	▪ Develop strategies to strengthen emergency management, response, and evacuation capabilities for wildfire. ▪ Build relationships among federal, state, and county government; fire authorities; and communities.
Facilitate public outreach	▪ Develop strategies to increase citizen awareness and action for Firewise landscaping and construction practices. ▪ Promote public outreach and cooperation for fuel reduction projects to solicit community involvement and private landowner cooperation.

SECTION 2 WILDLAND FIRE MANAGEMENT PRIMER (Pages 7-10 in 2008 ECCWPP)

The text below will serve as an update to the 2008 ECCWPP.

Wildland fire is defined as any non-structure fire that occurs in vegetative or natural fuels, and it includes prescribed fire, wildfire managed for resource benefit and unplanned wildfire. Prescribed fires are planned fires ignited by land managers to accomplish specific natural resource improvement objectives. Fires that occur from natural causes, such as lightning, that are then used to achieve management purposes under carefully controlled conditions with minimal suppression costs are known as wildfires managed for resource benefit. Wildfires are unwanted and unplanned fires that result from natural ignition, unauthorized human-caused fire, escaped resource benefit fire, or escaped prescribed fire. The ECFR, municipal FDs, Waste Isolation Pilot Project

(WIPP), Bureau of Land Management (BLM), United States Forest Service (USFS), National Park Service (NPS), and the New Mexico Forestry Division (NMFD) suppress wildfires in the assessment area in accordance with the Interagency Joint Powers Agreement (IJPA) and operational procedures.

The approach to wildfire suppression depends on landownership policy. Wildland fires on New Mexico State and private lands are oftentimes suppressed immediately; however, not all are. Management on Bureau of Land Management (BLM) and U.S. Forest Service (USFS) lands is sometimes a modified fire suppression policy. This means fires may be allowed to burn under careful observation to a strategic point to improve the likelihood of suppression and minimize costs. Wildfire suppression on private lands is at the discretion of the landowner.

Wildland fires may be classified as ground, surface, or crown fires. Ground fire refers to burning or smoldering materials, including duff, tree or shrub roots, punchy wood, peat, and sawdust that normally support glowing combustion without flame. Surface fire refers to loose fuels burning on the surface of the ground, such as leaves, needles, small branches, grasses, forbs, low and medium shrubs, tree seedlings, fallen branches, downed timber, and slash. A crown fire is a wildfire that moves rapidly through the crowns of trees or shrubs independently of a surface fire.

2.1 Wildland Fire Behavior- No changes from the 2008 ECCWPP; previous information is below for reference.

Fire behavior is a description of the manner in which a fire reacts to the influences of fuel, weather, and topography. Fire behavior is observed and assessed at the flaming front of the fire and described most simply in terms of fire intensity (in feet of flame length) and in the rate of forward spread (Table 4). The implications of observed or expected fire behavior are important components of suppression strategies and tactics, particularly in terms of the difficulty of control and effectiveness of various suppression resources. Fire risk is the probability that wildfire will start from natural or human-caused ignitions. Fire hazard is the presence of ignitable fuel coupled with the influences of topography and weather and is directly related to fire behavior. On the other hand, fire severity refers to the immediate effect a fire has on vegetation and soils.

The nature of fuels, topography, and weather conditions combine to dictate fire behavior, rate of spread, and intensity. Wildland fuel attributes refer to both dead and live vegetation and include factors such as density, bed depth, continuity, vertical arrangement, and moisture content. Structures with flammable materials are also considered fuel sources.

Table 4. Fire Behavior Ratings

Rating	Flame Length (feet)	Implication
Low	0 - 1	Fire will burn and spread; however, it presents very little resistance to control and direct attack by firefighters is possible.
Moderate	1 - 3	Fire spreads rapidly presenting moderate resistance to control but can be countered with direct attack by firefighters.
Active	3 - 7	Fire spreads very rapidly presenting substantial resistance to control. Direct attack by firefighters must be supplemented with equipment and/or air support.
Very Active	7 - 15	Fire spreads very rapidly presenting extreme resistance to control. Indirect attack may be effective. Safety of firefighters in the area becomes a concern.
Extreme	> 15	Fire spreads very rapidly presenting extreme resistance to control. Any form of attack will probably not be effective. Safety of firefighters in the area is of critical concern.

Source: Stubbs (2005)

When fire burns in the forest understory or through grass, it is a surface fire. When fire burns through the canopy of shrubs and trees, it is considered a crown fire. Ladder fuel is the vegetation that spans the gap between the forest floor and tree crowns, and it can conduct a surface fire to become a crown fire.

For a fire to spread, potential fuels such as trees, shrubs, or structures in the flame front must meet the conditions of ignitability. The conditions needed are the presence of oxygen, flammable fuel, and heat. Oxygen and heat are implicitly available in a wildland fire. However, if the potential fuel does not meet the conditions of combustion, it will not ignite. This explains why some trees, patches of vegetation, or structures may survive a wildfire and others in the near vicinity are completely burned.

Weather conditions such as high ambient temperatures, low relative humidity, and windy conditions favor fire ignition and high-intensity fire behavior. Under no-wind conditions, fire burns more rapidly and intensely upslope than on level terrain. However, wind tends to be the driving force in fire behavior in the WUI.

2.2 History of Wildfire- No changes from the 2008 ECCWPP; previous information is below for reference.

Lightning-induced fire is a natural component of fire-prone ecosystems, and its occurrence is important to maintaining healthy forest and rangeland ecosystems. Native Americans used fire to hunt, improve wildlife habitat, and clear land. As such, many plant species and communities are adapted to recurring fire through phenological, physiological, or anatomical attributes. Some plants, such as pinion pine and western wheatgrass, are fire-adapted and may require reoccurring fire to maintain viable populations.

European settlers, land use policy, and changing ecosystems have altered fire behavior and fuels accumulation from their historic setting. Euro-American settlers in Eddy County changed the natural fire regime in several interrelated ways. The nature of vegetation (fuel) changed because of land-use practices such as homesteading, livestock grazing, agriculture, water development, and road construction. Livestock grazing reduced the amount of fine fuels, such as grasses and forbs, which carried low-intensity fire across the landscape. Continuous stretches of forest and open-space fuels were broken up by land-clearing activities. The removal of the natural vegetation facilitated the invasion of non-native grasses and forbs, some of which create more flammable fuel beds than their native predecessors.

2.3 Prescribed Fire- The first two paragraphs have no changes from the 2008 ECCWPP, except the NM Environment Department Air Quality Bureau link: https://www.env.nm.gov/air-quality/smp/; previous information is below for reference. The Third paragraph includes new information.

Prescribed fires occur throughout the county, such as field burns, burn barrels, ditch fires, rangeland improvement, weed abatement, wildlife habitat improvement, and fuels management. Prescribed fire may be a resource management tool under carefully controlled conditions. This includes pre-treatment of the fuel load and closely monitoring weather and other factors. Prescribed fire ultimately improves wildlife habitat, helps abate invasive vegetation, reduces excess fuel loads, and lowers the risk of future severe wildfires. These and other fuel management techniques are employed to protect human life and economic and ecological values. The use of prescribed fire in the WUI is carefully planned, enacted only under favorable weather conditions, and must meet smoke management requirements of the New Mexico Environment Department, Air Quality Bureau (~~www.nmenv.state.nm.us/aqb/Wildfire-PM.html~~).

Prescribed fire may be conducted either in a defined area, as a broadcast burn, or in localized burn piles. Broadcast burns mimic naturally occurring wildfires but are used only under specific weather conditions and fuel loads and with expert supervision. Burn

piles are utilized to dispose of excess woody material after thinning if other means of disposal are not available or cost prohibitive. Prescribed fire must be conducted per Eddy County policy, which consists of a burn permit issued by the County Fire Marshal and adherence to New Mexico smoke management policy.

Private Landowners in New Mexico can now become certified to conduct pile and/or broadcast prescribed burns on their property. Each certification requires different certifications. This helps reduce liability for these landowners to perform these much-needed treatments on their property. More Information can be found at the following link. https://www.emnrd.nm.gov/sfd/prescribed-burning/

2.4 Wildland-Urban Interface (WUI) – No changes from the 2008 ECCWPP; previous information is below for reference.

A WUI involves areas where communities and a wildland fuel intermix. Every fire season, catastrophic losses occur due to wildfires in WUI areas throughout the western United States. Homes are lost, businesses are destroyed, community infrastructure is damaged, and most tragically, lives are lost. Precautionary action taken before a wildfire strikes often makes the difference between saving and losing a home. Creating a defensible space around homes, businesses, and other structures is an important component in wildfire hazard reduction. Providing an adequate defensible space can be as basic as pruning trees, planting low-flammability vegetation, and cleaning up surface fuels and other hazards near a home. These efforts are typically concentrated within 30 feet of a home to increase the chance of structural survival and create an area for firefighters to work.

WUI studies suggest that the intense radiant heat of a wildfire is unlikely to ignite a structure that is more than 30 feet away as long as there is no direct flame impingement. Studies of home survivability indicate that homes with noncombustible roofs (Class A roofing material) and a minimum of 30 feet of defensible space had an 85-percent survival rate (Cohen 2000). Conversely, homes with wood shake roofs and less than 30 feet of defensible space had a 15-percent survival rate.

2.5 Hazardous Fuels Mitigation – The only addition here is a reference link to New Mexico's completed ongoing and historical vegetation treatments produced by the NM Forest and Watershed Restoration Institute. http://www.vegetationtreatments.org/ This site serves as a clearinghouse for finding vegetation treatments and replaces map 10 from the 2008 plan, which was not included in this update since the information is included in the website referenced above and contains outdated information.

There are no other changes from the 2008 ECCWPP; previous information is below for reference.

Wildfire behavior and severity are dictated by fuel type, weather conditions, and topography. Because fuel is the only variable of these three that can be practically managed, it is the focus of many mitigation efforts. The objectives of fuels management may include reducing surface fire intensity, reducing the likelihood of crown fire initiation, reducing the likelihood of crown fire propagation, and improving forest and rangeland health. These objectives may be accomplished by reducing surface fuels, limbing branches to raise canopy base height, thinning trees to decrease crown density, and/or retaining larger, fire-resistant trees.

By breaking up vertical and horizontal fuel continuity in a strategic manner, fire suppression resources are afforded better opportunities to control fire rate of spread and contain wildfires before they become catastrophic. In addition to the creation of defensible space, fuel breaks may be utilized to this end. Fuel breaks are strategically located areas where fuels have been reduced in a prescribed manner, often along roads. Fuel breaks may be strategically placed with other fuel breaks or larger-area treatments. When defensible space, fuel breaks, and area treatments are coordinated, a community and the adjacent natural resources are afforded an enhanced level of protection from wildfire.

SECTION 3 EDDY COUNTY CWPP ASSESSMENT AREA PROFILE **(Pages 11-18 in 2008 ECCWPP)**

3.1 County and District Setting The only updates from the 2008 ECCWPP are the US Census Data from the 2020 Decennial Census, which showed a population of 62,314, up from 51,658 in the 2000 census.
https://data.census.gov/profile/Eddy_County,_New_Mexico?g=050XX00US35015

Also, the last paragraph has been replaced in its entirety; all other previous information is below for reference.

Eddy County is located in southeastern New Mexico, with Texas on its southern border. Lea, Chaves, and Otero Counties are located to the east, west, and north, respectively. Eddy County has a land area of 4,198 square miles and a 2000 census population of 51,658 (62,314 in 2020). The City of Carlsbad is the County Seat. The City of Artesia, Village of Hope, and Village of Loving are incorporated communities. Homes and ranches throughout the unincorporated county are widespread and dispersed. There are a few small communities, such as Loco Hills, Malaga, Queen, Riverside, and White's City. Eddy County is home to Carlsbad Caverns National Park. The Pecos River flows southward through approximately the middle of the county.

The Eddy County CWPP assessment area Is countywide (Map 1). Land ownership within the assessment area is divided among federal, state, and private at 1,426,250 acres, 541,148 acres, and 599,881 acres, respectively. The assessment area is characterized by small rural communities surrounded by agricultural lands and grasslands. Pinion-juniper woodlands and the Guadalupe Mountains surround the community of Queen in the southwest corner of the county. The vegetation of Eddy County is predominantly grasslands and shrublands (Map 2).

Major economic and ecological values in the assessment area at risk of wildfire include communities; agricultural fields; U.S. Highways 180, 285, and 62; oil and gas infrastructure; Brantley Lake Wildlife Refuge; Carlsbad Caverns National Park; Living Desert State Park; Lincoln National Forest; and community infrastructure (Map 3).

Wildland fire protection occurs from Eddy County Fire and Rescue, three municipal FDs, BLM, USFS, and NMFD. The FDs are responsible for structure and wildfire suppression within their respective areas. WIPP is responsible for structure and wildfire suppression on their property. Federal and State agencies have authority for wildfire suppression and wildland fuels management on Federal, State, and private lands. The NPS has wildfire and wildland fuels management responsibility on their property; however, they rely on ECFR to provide resources for wildfire response as they have no firefighting resources dedicated to the park. The IJPA specifies initial attack (IA) zones and mutual aid as needed.

3.2 Wildland-Urban Interface – See Attached Map 4 and replace 2008 ECCWPP with the paragraph below.

The Core team chose to continue to utilize the WUI map produced in the 2008 ECCWPP for consistency; they wanted to note that the entire polygons don't necessarily have WUI across the entire polygon; there's a combination to interface and intermix in all of them. The wildland-urban interface involves areas where communities are adjacent to wildland fuels. The wildland-urban intermix is an area where lower-density structures are scattered among wildland fuels. CWPP WUI boundaries were determined by the Core Team in 2008 and reconfirmed in 2024.

The WUIs were assessed for their wildfire risks and hazards. Queen was the only community that remained high, and the core team felt the risk to Whites City could be dropped to Moderate and with some defensible space work could be brought to low. The Carlsbad Caverns staff housing received a high-risk classification in 2008 because of the proximity of vegetative fuel load and lack of defensible space; however, this area has since been mitigated and is no longer a concern. The Joel, Whites City, Carlsbad, and Riverside WUI's received a moderate ranking mainly because of limited defensible space. Loco Hills and Malaga were changed from Moderate to Low, along with all the

other WUI areas in the county. Much of this reduction in rating is due to oil and gas development, previous vegetative fuels treatments, fire history, and an overall decrease in fuels readily available to burn in a wildfire.

3.3 Climate- The following are changes from the 2008 ECCWPP.

Eddy County's climate is hot and dry. Summertime high temperatures can range well over 100 degrees, and winter lows have been known to drop below zero. The area has over 300 days of sunshine per year. Average annual precipitation is around 12 inches, with the majority received during the summer monsoon months. Snowfall is minimal.

The climate data (See Updated Table 5 below) is updated with more years of data (see dates below) than the 2008 plan (1/1914-6/06). There are minimal changes, but the updated data is from the same source as the 2008 ECCWPP www.wrcc.dri.edu for comparative purposes.

Table 5. Climate Summary for the Cities of Carlsbad and Artesia

Carlsbad Climate Summary (2/1900-6/2016)

Average Climate Attribute	Month											
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
High Temp. (°F)	59.1	64.2	71.5	80.2	87.8	95.4	95.6	94.6	88.3	79.5	67.5	59.1
Low Temp. (°F)	27.8	31.6	37.8	46.5	55.2	63.8	67.1	66	59.2	47.6	35.5	28.6
Precipitation (inches)	0.40	0.44	0.47	0.65	1.21	1.47	1.87	1.78	2.13	1.33	0.58	0.51
Total Snowfall (inches)	1.2	1	0.2	0.2	0	0	0	0	0	0	0.6	1.2

Source: www.wrcc.dri.edu

Atresia Climate Summary (06/1905-06/2016)

Average Climate Attribute	Month											
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
High Temp. (°F)	57.3	62.3	69.7	78.4	86.5	94.2	94.5	93.3	86.9	77.7	65.9	57.4
Low Temp. (°F)	23.6	27.7	34.3	42.5	52.3	61.2	65.0	63.5	55.9	44.0	31.9	24.0
Precipitation (inches)	0.39	0.42	0.43	0.62	1.20	1.40	1.76	1.67	1.81	1.16	0.53	0.51
Total Snowfall (inches)	1.6	1.0	0.4	0.3	0	0	0	0	0	0	1.0	1.9

Source: www.wrcc.dri.edu

3.4 Topography- No changes from the 2008 ECCWPP; previous information is below for reference.

Topography and elevation play an important role in determining vegetation fuels and wildland fire behavior. Topography also dictates community infrastructure design, which influences overall wildfire hazards and risks. The terrain in Eddy County is relatively flat to rolling hills. The Pecos River flows southerly and drains the dominant watershed. Elevations generally vary from 3,000 to 4,600 feet above mean sea level. The Guadeloupe Mountains occur in the southwest corner of the County and reach an elevation of 5,850 feet.

3.5 Wildland Vegetation and Fuels- No changes from the 2008 ECCWPP, except for one addition of the third paragraph; otherwise, previous information is below for reference.

The plant species composition of Eddy County is diverse because there is a mixing of vegetation from the Chihuahuan Desert, the Rocky Mountains, the Western Great Plains, and the Madrean vegetation provenances (Map 2). Thus, it is important to protect natural vegetation from wildfire and other disturbances. Wildland vegetation fuels include grass, leaves, twigs, ground litter, weeds, shrubs, and trees. Structures in the WUI are also a fuel source. Vegetation fuels in the assessment area are diverse and vary from grasslands and shrublands at lower elevations to pinion-juniper woodlands at higher elevations. Grass vegetation types dominate the county except in Queen WUI, where pinion-juniper woodlands prevail. Short- to mid-height grasses, along with stool, agave, ocotillo, catclaw, and juniper, occur in the western part of the county. This area is mainly grazed. West of the Pecos River and north of the Black River, the vegetation is short- and mid-height grasses, tarbush, creosote, mesquite, yucca, and irrigated crops. The centrally located vegetation includes short- and mid-height grasses, tarbush, mesquite, yucca, and coldenia. This area is grazed and supports irrigated crops. In the northeast, the vegetation is short- to mid-height grasses, creosote, mesquite, cactus, and catclaw. Grazing occurs throughout the area. In the eastern part of the county, vegetation is found in mid to tall grasses, sand sage, Harvard oak, and mesquite, which support livestock grazing and wildlife habitat. The flood plains of the Pecos River support salt-tolerant plants, which include alkali sacaton, inland saltgrass, salt cedar, salt sedge, and seepweed.

Understanding the fire behavior characteristics of different vegetation-fuel types facilitates effective fuel management and wildfire suppression strategies. Classifications of vegetation-fuel types are known as fire behavior fuel model (FBFM). The value of FBFMs is that fire behavior within grasses, shrubs, and timber vegetation groups can be predicted. Map 5 illustrates the different FBFMs and their spatial orientation within the

county. The grass FBFM 1 and FBFM 2 account for 75 percent of vegetation fuels in the county (Table 6).

Table 6. Eddy County Fire Behavior Fuel Models

Fire Behavior Fuel Model	Percent of County	Description
FBFM 1	61	**Grass Group** – Fire spread is determined by the fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. These surface fires move rapidly through the cured grass and associated material. Very little shrub or timber is present, generally less than one-third of the cover of the area. Annual and perennial grasses occur in this model. Fire rate of spread is fast at 78 chains per hour (5,148 ft per hour) with flame lengths greater than 4 feet.
FBFM 2	14	**Grass Group** – Fire spread occurs through cured dead herbaceous fuels. These are surface fires where downed woody debris from the shrub and tree component adds to fire intensity. Open shrublands, pine stands, or oak brush stands that cover from one-third to two-thirds of the area generally fit this model. Fire rate of spread is rapid at 35 chains per hour (3,210 feet per hour) with flame lengths of 6 feet.
FBFM 4	< 1	**Shrub Group** – Fire intensity and fast-spreading fires involve the foliage and live and dead fine woody material in the crowns of a nearly continuous secondary overstory. Stands of mature shrubs, 6 or more feet tall, such as mesquite, catclaw, and oak. Besides flammable foliage, dead woody
FBFM 5	5	**Shrub Group** – Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area. Young, green stands with no dead wood would qualify: Young mesquite, catclaw oak and creosote would qualify. Fire rate of spread is 18 chains per hour (1,188 ft per hour) and flame length is 4 feet.
FBFM 6	< 1	**Shrub Group** – Fire spreads though the shrub layer with flammable foliage but requires moderate winds to maintain the foliage fire. Fire will drop to the ground in low-wind situations. Shrubs are mature with heights less than 6 feet. These stands include creosote and mesquite less than 6 feet tall. Fire rate of spread is fairly fast at 32 feet per hour (2,110 ft per hours) with flame lengths of 6 feet.
FBFM 8	16	**Timber Group** – These are slow-burning ground fires with low flame lengths, although the fire may encounter an occasional "jackpot" of heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperature, low humidity, and high winds do the fuels pose fire hazards. Closed canopy stands of short-needle conifers or hardwoods that have leafed out support fire in the compact litter layer. This layer is mainly needles, leaves, and occasionally twigs because little undergrowth is present in the stand. Representative conifer types are pinion pine and juniper. Fire rate of spread is slow at 2 chains per hour (132 ft per hour) with a flame length of 1 foot.

Source: Anderson (1982)

Core team members wanted to mention the strong correlation between the amount of moisture received and the wildland vegetation and fuels that grow with this moisture. The 2011 fire season was very active in Southeast NM and Eddy County. This was due to a very dense crop of grasses and herbaceous vegetation that grew after the heavy rains leading up to the spring of 2011. One number that is being explored and worth mentioning is that if the area receives over 59 inches of rain three years prior, there is a high probability that the grass and herbaceous fuels will be very continuous, possibly leading to higher instances of escaped wildfires the next wildfire season. This is important in wildfire planning to increase public outreach and focus on treating these herbaceous fuels during times of above-average moisture.

Grass fuels are especially dangerous when they dry out in the fall and winter because they ignite easily, resist suppression, and burn rapidly. A wind-driven fire will move rapidly through dry grasslands. Vegetation fuels management, such as mowing along roads, livestock grazing, and judicial use of herbicides, is warranted. A rapid response to grass fires is needed in the WUI to protect structures and other values. Homeowners must create defensible spaces to protect structures and be prepared for rapid evacuation.

3.6 Water Resources- No changes from the 2008 ECCWPP; previous information is below for reference.

Surface water includes the Pecos River, Black River, Penasco River, Seven River, Brantley Lake, Avalon Reservoir, and Salt Lake (Map 3). Tender access for water drafting and helicopter dipping is available at the Pecos River, Brantley Lake, and Avalon Reservoir. Nearly all county FDs and all municipal FDs have hydrant systems. Ranches and oil and gas rigs can also be water sources when tankers are away from hydrants and surface water.

3.7 Wildfire Protection Authorities- The following are changes to the 2008 ECCWPP.

Table 7 lists the wildland fire resources and trained wildland firefighters by protection authority. Note that aerial firefighting resources are not included in this list but are often utilized by state, tribal, and federal agencies. These resources vary yearly based on contracts and fire season severity. Carlsbad BLM has historically set up a mobile retardant fixed-wing air tanker base that is an excellent asset for the county. Retardant is an effective tool to utilize in the fuel types found across the county, but especially in lighter grasses and herbaceous fuels.

Table 7. Wildfire Protection Authorities' Suppression Capacities

Protection Authority	Station Name and Address	Apparatus and Staffing
Eddy County Fire and Rescue	**Administration** 1400 Commerce Dr, Carlsbad, NM 88220	**2- 1000 Gal. Engines** **1- UTV's** **Staffed- Monday-Friday**
Eddy County Fire and Rescue	**Station- 11** 2713 S. 13th St. Artesia, NM 88210	**1- 1250 Gal. Engine** **1- 750 Gal. Brush** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 12** 7170 Roswell Hwy. Artesia, NM 88210	**1- 1000 Gal. Engine** **1- 750 Gal. Engine** **1- 4000 Gal. Tanker** **1- 400 Gal. Brush** **1- Utility** **Staffed 24/7**
Eddy County Fire and Rescue	**Station- 13** 5 Acoma Way Carlsbad, NM 88220	**1- 3000 Gal. Engine** **1- 1000 Gal. Engine** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 14** 2751 Pecos Hwy. Carlsbad, NM 88220	**1- 3000 Gal. Engine** **1- 400 Gal. Brush** **1- 500 Gal. Initial Attack** **1- Rescue- No water** **Staffed 24/7**
Eddy County Fire and Rescue	**Station- 15** 56 S. 4th Loving, NM 88256	**1- 1000 Gal. Engine** **1- 400 Gal. Brush** **1-Utility** **Staffed 24/7**
Eddy County Fire and Rescue	**Station- 16** 4130 W. Texas Carlsbad, NM 88220	**1- 3000 Gal. Engine** **1- 1000 Gal. Engine** **1- 3000 Gal. Tanker** **1- 400 Gal. Brush** **Staffed 24/7**
Eddy County Fire and Rescue	**Station- 17** #37 Wagon Wheel Rd. Artesia, NM 88210	**1- 2000 Gal. Engine** **2- 400 Gal. Brush's** **1- 1000 Gal. Brush** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 18** 11420 Lovington Hwy. Artesia, NM 88210	**2- 1000 Gal. Engine's** **1- 3000 Gal. Tanker** **1- 4000 Gal. Tanker** **2- 500 Gal. Brush's** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 19** 132766 Lovington, Hwy. Loco Hills, NM 88255	**1- 2000 Gal. Engine** **2- 3000 Gal. Tankers** **1- 400 Gal. Brush** **Volunteer Staffed**

Eddy County Fire and Rescue	**Station- 20** 26 E. Atoka Rd. Artesia, NM 88210	**1- 2000 Gal. Engine** **1- 2600 Gal. Engine** **2- 4000 Gal. Tankers** **1- 500 Gal. Brush** **1- 400 Gal. Brush** **1- Rescue- No water** **2- UTV's** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 21** 3664 Queen Hwy. Carlsbad, NM 88220	**1- 1900 Gal. Engine** **1- 2000 Gal. Engine** **1- 3000 Gal. Tanker** **1- 4000 Gal. Tanker** **1- 400 Gal. Brush** **1- 500 Gal Brush** **1- UTV** **Volunteer Staff**
Eddy County Fire and Rescue	**Station- 22** 222 Washington Ranch Rd. White City, NM 88268	**1- 2000 Gal. Engine** **1- 4000 Gal. Engine** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 23** R1572 National Parks Hwy. White City, NM 88268	**1- 750 Gal. Engine** **1- 2000 Gal. Tanker** **1- 2100 Gal. Tanker** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 24** 1022 Haston Rd. Carlsbad, NM 88220	**1- 750 Gal. Engine** **1- 4000 Gal. Tanker** **1- 500 Gal. Brush** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 25** 4 Black River Village Rd. Malaga, NM 88263	**1- 500 Gal. Engine** **1- 1250 Gal. Engine** **1- 3000 Gal. Tanker** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 26** 102 S. 41st St. Artesia, NM 88210	**1- 2000 Gal. Engine** **1- 400 Gal. Brush** **Volunteer Staffed**
Eddy County Fire and Rescue	**Station- 27** 1724 Muscatel Carlsbad, NM 88220	**1- 3000 Gal. Engine** **1- 400 Gal. Brush** **1- Rescue- No Water**
Artesia Municipal Fire	**Station- 1** 3300 W. Main St. Artesia, NM 88210	**1- 750 Gal. Engine** **1- 500 Gal. Aerial** **1- 750 Gal. Brush** **Staffed 24/7**
Artesia Municipal Fire	**Station- 2** 309 N. 7th St. Artesia, NM 88210	**1- 750 Gal. Engine** **1- 500 Gal. Aerial** **Staffed 24/7**
Carlsbad Municipal Fire	**Station- 1** 409 S. Halagueno Dr. Carlsbad, NM 88220	**1- 750 Gal. Engine** **1- 300 Gal. Engine** **Staffed 24/7**
Carlsbad Municipal Fire	**Station- 2** 2416 W. Church St.	**1- 750 Gal. Engine** **Staffed 24/7**

Carlsbad Municipal Fire	**Station- 3** 1028 N. Halagueno St. Carlsbad, NM 88220	**1- 1000 Gal. Engine** **Staffed 24/7**
Carlsbad Municipal Fire	**Station- 6** 1300 Terminal Dr. Carlsbad, NM 88220	**1- 750 Gal. Engine** **1- 350 Gal. Brush** **Staffed 24/7**
Carlsbad Municipal Fire	**Station- 7** 304 W. Wood Ave. Carlsbad, NM 88220	**1- 750 Gal. Engine** **1- 350 Gal. Brush** **1- 500 Gal Aerial**
Hope Volunteer Fire Dept.	**Main Station** 609 Main Street Hope, NM 88250	* unable to get a return phone call from Chief to confirm information.
Waste Isolation Pilot Plant Emergency Services	**WIPP** 34 Louis Whitlock Road Carlsbad, NM 88220	**2- 1000 Gallon Engines** **1- 1000 Gallon reserve** ***Staffed 24/7**
Carlsbad Caverns (NPS)	The park has no dedicated wildland fire resources and depends on ECFR for wildfire response.	**During severe wildfire years, the park may have firefighting resources pre-positioned.**
BLM	**Carlsbad Field Office** 620 E. Greene Street Carlsbad, NM 88220	**2- Type 6 Engine** **1- Type 4 Engine** **Staffed year-round**
USFS	**Queen Work Center** 3366 Queen Highway Carlsbad, NM 88220	**No dedicated resources, but during times of high fire danger, resources will be stationed in the area.**

*Note: WIPP Emergency Services relies on the BLM, Eddy County Fire and Rescue, and NMSF for wildland fire protection around the site. WIPP personnel focus on defensive facility protection tactics and stay on paved roads within the WIPP site.

3.8 Values at Risk- No Changes from the 2008 ECCWPP; previous information is below for reference.

Human welfare receives priority protection in the event of a wildfire. Economic and ecological values are secondary to human welfare but can also receive proper protection through collaborative planning. Economic values include oil and gas fields, agriculture, communities, homes, and businesses. Ecological values include wildlife and aquatic resources, recreation and tourism, and watersheds for municipal water supplies. Examples of values at risk in the assessment area include:

- Human welfare
- Homes
- Businesses
- Local economies
- Oil and gas infrastructure
- Carlsbad Caverns National Park
- Agricultural lands
- Wildlife and aquatic habitats
- Watersheds
- Water Quality

The list continues on the next page:

- Municipal water supply
- Community infrastructure
- Communication towers
- Major highways and railroads
- County and state parks
- Air Quality
- Natural Vegetation
- Viewsheds
- Recreation and Tourism

Wildfires could occur throughout the county and could have a severe and long-term impact on economic and ecological values. The actions recommended in this CWPP aim to lower wildfire risks and hazards to economic and ecological resources.

SECTION 4 WILDFIRE RISK AND HAZARD ASSESSMENTS

(Pages 19-28 in 2008 ECCWPP)

Wildfire risk is the probability that a wildfire will ignite from lightning or human causes. Wildfire hazards are vegetation-fuel attributes conducive to propagating and carrying a fire.

4.1 Approach to Wildfire Risk and Hazard Assessments

Minor changes from the 2008 ECCWPP; previous information is below for reference.

It should be noted that the Core Team reanalyzed the data and came to the same conclusion on the wildfire risk around the county except for the changes noted in table ES-1 in the Executive Summary section. This consensus was drawn from the Core Team's experience and looking at data from various sources referenced in the 2008 plan, along with new data found in the NWCG's Risk Management Assistance (RMA) Dashboard and Analytics (https://wfmrda.nwcg.gov/rma) and the Wildfire Risk to Communities website (http://www.wildfirerisk.org).

Several sources of information were gathered and synthesized to understand wildfire risk and hazards. Sources for information included WUI/community and vegetation-fuel surveys, various maps, interviews with county fire chiefs and federal fire management officers, and public meetings.

A standardized survey process defined by the National Fire Protection Association (NFPA) was utilized to assess the relative level of wildfire risk and hazard for communities. Appendix B contains the NFPA Form 1144, Standard for Protection of Life and Property from Wildfire. Surveys assess predominant characteristics within individual communities and subdivisions relating to structural ignitability, fuels, topography, expected fire behavior, emergency response, and ultimately human safety and welfare. Scores are assigned to each element and then totaled to determine the community's

relative level of risk. Low, moderate, high, and extreme hazard ratings may be assigned based on the total score.

The CWPP assessment used two primary sources of information to generate various maps that provide crucial information on wildfire risks and hazards. These data sources were NMSFD, BLM, and the Landscape Fire and Resource Management Planning Tools Project (LANDFIRE). NMSFD provided data on wildfire starts throughout the assessment area and updated fire numbers, and Maps 7 and 8 were generated from the NMSFD data then reproduced with new data in 2025 to add Updated Map 7 and Map 8. Eddy County and BLM provided information on land ownership and infrastructure illustrated in Maps 1, 3, and 4.

Wildfire hazards and risks data were obtained from a national database known as LANDFIRE (www.landfire.gov). LANDFIRE produces consistent and comprehensive maps and data describing vegetation, fuels, and fire regimes across the United States. Maps for the assessment area illustrating existing vegetation (Map 2), fire behavior fuel model (Map 5), historic reference fire regime (Map 6), and fire regime condition class (Map 7) were obtained from LANDFIRE.

County fire chiefs, municipal fire chiefs, and federal fire management officers were interviewed to obtain information on firefighting engines available for their respective authority, number of trained wildland firefighters, vegetation-fuels management needs, equipment and resource needs, and training needs. This information is important to determine and prioritize non-fuels mitigation needs to improve wildfire fighting capability and capacity.

As part of the assessment, a concerted effort was made to solicit feedback from the public and local experts on fire and natural resource issues. Core team meetings were held to discuss CWPP procedures, developments, findings, and recommendations. Community meetings were held in 2008 and again in 2025. The purposes of the community meetings were to introduce CWPP goals and objectives, discuss wildfire risks and hazards, provide an opportunity for the public to participate in the process, and review proposed mitigation possibilities. The draft CWPP was made available in 2008 on Eddy County's website (www.co.eddy.nm.us) for public review. Review comments were sent to Eddy County Office of Emergency Management or WALSH in 2008.

In 2008, questionnaires were available on Eddy County's website and distributed at public meetings to obtain public opinion information concerning the perceived level of wildfire risk in the assessment area and assess tolerance for mitigation practices that may be recommended to reduce risk (see Appendix C). Homeowners were asked to return their responses to the Eddy County Office of Emergency Management or mail

them to WALSH. See Appendix D for a summary of the questionnaire. This information was shared with the public in three different public meetings (Carlsbad, Artesia, and Queen) in March of 2025 to confirm if the public still felt the same as they did in 2008. After the January 2025 Los Angeles wildfires, many people had a heightened sense of the danger wildfires can pose due to the media coverage the fires received.

4.2 Historic Wildfire Regime- No changes from the 2008 ECCWPP; previous information is below for reference.

Historic reference wildfire regimes are the kind of fires that occurred in the assessment area before European settlement. Lightning and Native Americans were ignition sources for historic wildfires. The historical fire regime is composed of the average return interval for wildfire and its severity. The average return interval is the number of years between wildfires. Fire severity is the amount of vegetation top-kill. Low-severity, mixed-severity, and stand-replacement fires result in less than 25, 25–75, and greater than 75 percent top-kill, respectively. Understanding the historic fire regime is important to understanding the present risk of wildfire. There are two different historic reference fire regimes within the assessment area (Map 6 and Table 8). The average historic fire regime for the county was less than 35 years with stand replacement severity.

Table 8. Historic Fire Regime

Fire Regime	Percent of Assessment Area
0-35 yrs; Low and mixed severity	1
0-35 yrs; stand replacement severity	99

4.3 Recent Wildfire History- Minor changes from the 2008 ECCWPP; previous information is below for reference. The last two paragraphs update the recent wildfire history since the 2008 plan.

Grasslands, shrublands, desert scrub, and pinion-juniper woodlands occur in the assessment area. These are fire-adapted ecosystems where wildfire is a natural occurrence, but variation has occurred in its return interval and severity. The

characteristics of wildfire and wildfire ignitions have changed drastically since pre-European settlement. Today, most wildfire ignitions can be traced to human causes. To protect values at risk, suppression is the guiding fire management policy.

From 2003 through 2007, an average of 25 fires per year were responded to by volunteer fire departments and/or CIFO. Lightning caused 2 percent of wildfires, and 98 percent were caused by humans (Map 7 and Table 9). Human-caused wildfires resulted mainly from escaped fire (e.g., trash burning, field burning, campfires, land clearing, or slash burning). Fires along highways and the railroad corridor are evident.

From 2008 through 2024, an average of 32 fires per year were responded to and reported to State Forestry in Eddy County. Lightning caused 13 percent of wildfires, and humans caused 87 percent. Note the acreages reported in Table 9 are significantly skewed by the historic 2011 fire year. There were 10 significant fires, all over 3,200 acres (i.e., Last Chance, Loop, and Lookout Complex Fires), in 2011, which account for 142,954 out of the 246,149 total acres burned over 17 years. According to the data below, human-caused wildfires are still a big problem for Eddy County. For a more detailed breakdown of fire statistics and up-to-date fire locations, see the following link that the New Mexico Forestry Division maintains based on data they receive from all cooperators: https://nm-emnrd.maps.arcgis.com/apps/dashboards/234adddf361b4b8e85afb5bd72f7d1e3.

Table 9. Wildfire History for the Years 2003-2024

Year's Period	Number of Fires	Acres Burned	Fire Ignition Source (%)	
			Lightning	Human
2003-2007	127	6,546	2	98
2008-2024	550	246,149	13	87

4.4 Wildfire Ignition Risk Potential- Minor changes from the 2008 ECCWPP; previous information is below for reference.

Wildfire ignition risk potential (IRP) is a measure of the probability of fire occurrence. The IRP is a landscape spatial analysis of the 2003–2007 wildfire data presented in Map 8 and the updated Map 8. IRP illustrates the patterns of fires in the various WUIs. IRP is defined as the number of fires per 1000 acres for the years 2003–2007, and it was updated from 2008-2025. Low-risk areas had no fires. Moderate-risk areas had one fire. High-risk areas had more than one fire. The low-risk areas occupied 94 percent of the assessment area, and the fire generally occurred in areas away from communities and roads (Map 8). Two percent of the county was classified as high risk, and fires

occurred near communities, roads, agricultural lands, and the railroad corridor. The moderate-risk lands were located between the low-risk and high-risk areas. IRP was used to determine the level of wildfire risk to the WUIs and communities.

4.5 Vegetation-Fuel Hazards- Minor changes from the 2008 ECCWPP; previous information is below for reference.

The Core Team noted that most of the Fire Regime Condition Class (FRCC) 3 lands in Eddy County are not due to the exclusion of natural fire but are caused by other disturbances. For this reason, FRCC is not a good measure when looking at Vegetation-Fuel Hazards in Eddy County. A better measure of the Fuel Hazard is assessing the overall amount of grass and herbaceous weeds produced after adequate moisture is received in the growing season. In years after ample moisture, the following year showed a significant increase in wildland fire occurrence, ability to control, and the size of the wildland fires. (see section 3.5) In years of drought, there has been minimal grass and herbaceous weed growth, which causes fewer concerns about wildland fires.

A vegetation attribute important to fuels characterization is fire regime condition class (FRCC). FRCC is composed of three classes. All three classes occur in the assessment area (Map 9 and Table 10). FRCC 1 is the most common, occupying approximately 40 percent of the county. FRCC 2 and 3 occupy 27 and 33 percent, respectively. FRCC 1 vegetation occurs mainly in the south-central to western parts of the county, encompassing numerous vegetation types. FRCC 3 vegetation is mainly located in the eastern sections of the county associated with grasslands. FRCC 2 vegetation is associated with the pinion-juniper woodlands of the Guadalupe Mountains and desert scrub, shrublands, and grasslands of the north-central part of the county. FRCC information was used to help determine vegetation-fuel hazards in the WUIs and possible fuels management projects.

FRCC measures the degree of departure from a reference condition, which is determined by comparing the existing fire regime and fuels situation with the historic fire regime and natural vegetation, respectively (Table 10). The degree of departure may result from differences in vegetation composition or the historical fire regime (i.e., fire return frequency and severity). According to HFRA, FRCC is the accepted tool for assessing forest or rangeland health. FRCC classification is necessary to support federal vegetation-fuel management in the WUI. Because frequent changes in natural vegetation composition and structure (i.e., invasive weeds or overstocked forest stands) include changes in vegetation-fuel attributes (i.e., fuel continuity and load), FRCC may be a surrogate to judge the degree of fuels hazard. FRCC 1, FRCC 2, and FRCC 3 may be viewed as low-, moderate-, and high-hazard fuel conditions, respectively.

Table 10. Fire Regime Condition Class

Fire Regime Condition Class	Percent in County	Description
1	40	Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics. Composition and structure of vegetation and fuels are similar to the natural (historical) regime. Risk of loss of key ecosystem components (e.g., native species, large trees, and soil) is low.
2	27	Fire behavior, effects, and other associated disturbances show moderate departure from the natural or historical conditions (more or less severe). Composition and structure of vegetation and fuel are moderately altered. Uncharacteristic conditions range from low to moderate. Risk of loss of key ecosystem components is moderate.
3	33	Fire behavior, effects, and other associated disturbances show a high departure from natural or historic conditions (more or less severe). Composition and structure of vegetation and fuel are highly altered. Uncharacteristic conditions range from moderate to high. Risk of loss of key ecosystem components is high.

Source: http://www.frcc.gov

4.6 Wildfire Risk to Wildland-Urban Interface

Much of the 2008 ECCWPP is still valid for this section; however, discussions were held with the Core Team that the actual WUI areas represented in Map 4 are not the entire polygons, and these areas are only to reference the higher inhabited portions of the polygons. The actual WUI is much smaller and concentrated around the communities noted on the map. After core team review and on-the-ground validation, updates to Table 11 are below and stand to replace Table 11 in the 2008 plan using the same methodologies used in 2008.

Updated Table 11. Assessment Area Summary Information

WUI Area	Values at Risk	Wildfire Risk of Occurrence	NFPA 1144 Hazard Rating	Contributing Factors to NFPA Rating	Firefighting Capacity
Artesia	• Homes • Aesthetics • Air Quality • Businesses • Industry • Agriculture	• Low	• Low for City • Moderate for Perimeter	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible construction • Utilities above ground	• Artesia Municipal Fire Department • Mutual Aid

Atoka	• Homes • Ag Land • Businesses • Industry • Recreation • Rangeland • Wildlife Habitat • Aesthetics • Air Quality • Watershed Health • Soil Stability	• Low	• Low	• Light Fuels (weeds and grasses) • Defensible space < 100 ft. • Utilities above ground	• Eddy Co. Fire & Rescue-Station 11 • Mutual Aid
Carlsbad	• Homes • Aesthetics • Air Quality • Businesses • Industry	• Low	• Low for City • Moderate for perimeter, Dark Canyon, C-Hill, and The Pecos River corridor North of Town	• Light Fuels (weed and grasses) • Defensible Space < 70 Ft. • Combustible construction • Utilities above ground	• Carlsbad Fire Department • Mutual Aid
Carlsbad Caverns (NPS)	• Staff Housing • Visitor Center • Recreation • Wildlife Habitat • Woodlands • Watershed health • Aesthetics • Air Quality • Soil Stability • Raws • Repeater Sites • Rattlesnake Springs	• Low	• Low around Visitor center facilities • Moderate around Rattlesnake Springs	• Moderate Fuels (small trees and shrubs) • Defensible Space < 25 ft. (Rattlesnake Springs) • Terrain Slope • Utilities above ground • Some structures with flammable roofs • Lack of Firefighting resources in Park	• Eddy Co. Fire & Rescue-Station 22 & 23 • Mutual Aid
Cottonwood	• Homes • Businesses • Industry • Ag lands • Rangeland • Recreation • Wildlife habitat	• Low	• Low	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible construction • Utilities above ground	• Eddy Co. Fire & Rescue-Station 12 • Mutual Aid

	• Watershed health • Aesthetics • Air Quality • Soil Stability				
Happy Valley	• Homes • Businesses • Ag Land • Rangeland • Recreation • Wildlife Habitat • Watershed Health • Aesthetics • Air Quality • Soil Stability	• Low	• Low	• Moderate Fuels (shrubs) • Defensible Space < 100 ft. • Utilities above aground	• Eddy Co. Fire & Rescue-Station 16 • Mutual Aid
Hope	• Homes • Ag Land • Rangeland • Aesthetics • Air Quality • Watershed Health • Soil Stability • Businesses	• High	• Low	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible Construction • Utilities above ground	• Hope Municipal Fire Department • Mutual Aid
Joel	• Homes • Ag Land • Businesses • Oil and Gas • Recreation • Wildlife Habitat • Rangeland • Watershed Health • Aesthetics • Air Quality • Soil Stability	• Low	• Moderate	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible Construction • Utilities above ground	• Eddy Co. Fire & Rescue-Stations 22,23 and 24 • Mutual Aid
La Huerta	• Homes • Businesses • Oil and Gas • Industry • Recreation • Wildlife Habitat • Rangeland • Watershed health • Aesthetics • Air Quality • Soil Stability	• High	• Low	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible Construction • Utilities above ground	• Eddy Co. Fire & Rescue-Station 27 • Mutual Aid

Loco Hills	• Homes • Businesses • Aesthetics • Water Quality • Oil and Gas • Industry • Rangeland	• Moderate	• Low	• Light Fuels (weeds and grasses) • Defensible space < 70 ft. • Combustible Construction • Utilities above ground	• Eddy Co. Fire & Rescue- Station 19 • Mutual Aid
Malaga	• Homes • Businesses • Oil and Gas • Aesthetics • Air Quality • Watershed Health • Rangeland • Ag land	• Moderate	• Low	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible construction • Utilities above ground	• Eddy Co. Fire & Rescue- Station 25 • Mutual Aid
Otis	• Homes • Businesses • Oil and Gas • Industry • Recreation • Wildlife habitat • Watershed Health • Aesthetics • Air Quality • Soil Stability	• High	• Low	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible Construction • Utilities above ground	• Eddy Co. Fire & Rescue- Station 14 • Mutual Aid
Queen	• Homes • Recreation • Wildlife Habitat • Woodlands • Watershed Health • Aesthetics • Air Quality • Soil Stability	• Moderate	• High	• Heavy Fuels (trees and shrubs) • Defensible Space < 25 ft. • Terrain • Combustible Construction • Utilities above ground	• Eddy Co. Fire & Rescue- Station 21 • Mutual Aid
Riverside	• Homes • Businesses • Aesthetics • Air quality • Watershed Health • Industry • Rangeland	• Low	• Moderate for Community • Low for WUI	• Light Fuels (weeds and grasses) • Defensible Space < 70 ft. • Combustible Construction • Utilities above ground	• Eddy Co. Fire & Rescue- Station 18 • Mutual Aid
Waste Isolation Pilot Plant (WIPP)	• Staff Safety • Industry • Rangeland			• Non-flammable Structures	• WIPP Fire Department • Mutual Aid

	• Recreation • Wildlife habitat • Watershed Health • Air Quality	• Low	• None		
White's City	• Homes • Businesses • Recreation • Wildlife habitat • Watershed Quality • Watershed Health • Rangeland • Aesthetics • Air Quality • Soil Stability	• Moderate	• Moderate for Community • Low for WUI	• Light Fuels (weed and grasses) • Defensible Space < 25 ft. • Terrain/slope • Combustible Construction • Utilities above ground	• Eddy Co. Fire & Rescue-Stations 22 and 23 • Mutual Aid

Queen is the only area that received a high hazard rating, mainly because of the proximity of moderate to heavy fuels, the lack of defensible space, and the construction materials of private residences in this WUI. White's City and Carlsbad Caverns Staff housing were previously rated as high, and the Core Team all agreed that these areas no longer represented a high hazard, partly due to fuel treatment work that has been accomplished in both areas and the reduction of fine fuels. The Joel WUI and communities of White's City, Riverside, and the NPS's Rattlesnake Springs area were ranked moderate hazards because of limited defensible space around structures. There were also other areas outside of communities but within the WUI polygon with moderate hazard ratings, such as Carlsbad and Artesia, which were out of the community proper but still within the overall WUI. These ratings were again tied to the denser wildland fuels in certain areas with nearby structures lacking defensible space. The most essential and immediate practice these communities could do to reduce their hazard level is developing defensible space around structures.

SECTION 5 WILDFIRE MITIGATION PLAN **(Pages 29-48 in 2008 ECCWPP)**

No changes from the 2008 ECCWPP; previous information is below for reference.

Wildfire mitigation involves actions taken to reduce the likelihood of wildfire loss. Effective mitigation can be accomplished through various methods, including managing wildland vegetation fuels, creating strategic fuel breaks, utilizing fire-resistant building

materials and defensible space landscaping, improving emergency preparedness and response capabilities, upgrading current infrastructure, and developing programs that foster community awareness and action. Unincorporated communities may petition Eddy County to consider the implementation of the International Wildland-Urban Interface Code (IWUIC). Incorporated cities and villages should also consider adopting the IWUIC. The IWUIC is a set of building and landscaping codes that, if implemented, may reduce wildfire risk to individual structures and communities. Training on IWUIC can be found on the website www.iccsafe.org/training/WUI/. Specific mitigation treatment recommendations for the 18 WUIs were identified through community surveys and interviews with CFD and MFD fire chiefs and federal fire management officers.

5.1 Priority Vegetation-Fuels Mitigation

This section has minor changes, and the following paragraph serves as the replacement language for the 2008 ECCWPP.

Most of the 2008 priority vegetation and fuels mitigation remains the same. The first and highest priority in all the WUI areas is still implementing defensible space and improvements around homes and weed abatement in and around communities. Mowing along highways and roads and controlling Salt Cedar are priorities for mitigating hazardous wildland fuels when they could impact these WUI areas. The BLM has set up an MOU with EDDY County and the City of Carlsbad to facilitate the cooperation of the parties in the use of prescribed fire and other fuels management practices to reduce the hazardous fuels in WUI. The MOU provides for limited interchange of personnel, equipment, and information to obtain this goal.

Table 12 presents priority fuel treatments and responsible organizations for implementing the various projects. Under the identified WUI area is a note indicating if there are changes to the 2008 recommendations. Recommended action items are divided into fuel mitigation and non-fuels-related categories. Priority fuel treatments were identified through the 2008 ECCWPP and reverified through community observations and discussions with the core team.

Table 12. Proposed Fuel Treatments for Eddy County WUI Areas

Wildland Urban Interface	Priority Fuels Treatments[1]	Responsible Agency
Artesia (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M)	-Homeowners/NMSFD -Landowners/county/city -Utility Providers -State/county

Atoka (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Railroad right-of-way (L) -Salt Cedar abatement (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -County -Railroad Company -Penasco & Central Valley SWCD -BLM/NRCS/SWCD/private landowners
Carlsbad (No Change)	-Defensible Space (H) -Utility Corridor Maintenance (H) -Weed Abatement (M) -Mow along roads (M) -Railroad Right-of-way (L) -Salt Cedar abatement (L)	-Homeowners/NMSFD -Utility Providers -Landowners/County/City -County/City -Railroad Company -Carlsbad SWCD
Carlsbad Caverns (NPS) (Minor changes)	-Defensible space & fuels mitigation at Rattle Snake Springs (H) -Utility Corridor Maintenance (H) -Maintain defensible space around staff housing (M) -Fuel Breaks along access roads as needed (L) -Reduce Fuels on West slope leading to parking lot (L)	-NPS -Utility Providers -NPS -NPS -NPS
Cottonwood (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Railroad Right-of-way (L) -Salt Cedar abatement (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -County -Railroad Company -Carlsbad SWCD -BLM/NRCS/SWCD/private landowners
Happy Valley (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Railroad Right-of-way (L) -Salt Cedar abatement (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -County -Railroad Company -Carlsbad SWCD -BLM/NRCS/SWCD/private landowners
Hope (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Fuel Beak in Riparian Area (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -State/County -Municipality/County -BLM/SWCD/private landowners

Joel (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -BLM fuel treatments (M) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -County -BLM -BLM/NRCS/SWCD/private landowners
Loco Hills (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Railroad Right-of-way (L) -BLM fuel treatments (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -County -BLM -BLM/NRCS/SWCD/private landowners
La Huerta (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Salt Cedar abatement (L) -BLM Fuels treatments (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -County Carlsbad SWCD -BLM -BLM/NRCS/SWCD/private landowners
Loving (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Railroad Right-of-way (L) -Salt Cedar abatement (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county/village -Utility Providers -State/County -Railroad Company -Carlsbad SWCD -BLM/NRCS/SWCD/private landowners
Malaga (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Railroad Right-of-way (L) -Salt Cedar abatement (L) -BLM fuel treatments (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -State/County -Railroad Company -Carlsbad SWCD -BLM -BLM/NRCS/SWCD/private landowners
Otis (No Change)	-Defensible Space (H) -Utility Corridor Maintenance (H) -Weed Abatement (L) -Mowing along roads (M) -Railroad Right-of-way (L) -Salt Cedar abatement (L)	-Homeowners/NMSFD -Utility Providers -Landowners/county -County -Railroad Company -Carlsbad SWCD

	-BLM fuel treatments (L) -Manage FRCC 2/3 vegetation (L)	-BLM -BLM/NRCS/SWCD/private landowners
Queen (Minor Changes)	-Defensible Space (H) -Weed abatement (H) -Utility Corridor Maintenance (H) -Church Camp road (M) -Fuel load on roads (M) -Mow along roads (M) -Fuel Breaks around community (M) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -Sponsoring Church -County/Homeowners/USFS -State/county -USFS/landowners -USFS/NRCS/SWCD/private landowners
Riverside (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Railroad Right-of-way (L) -Salt Cedar abatement (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -County -Railroad Company -Carlsbad SWCD -BLM/NRCS/SWCD/private landowners
Sun Country (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -State/county -BLM/NRCS/SWCD/private landowners
Waste Isolation Plant (WIPP) (Minor Changes)	-Mow along roads (M) -Weed abatement (H) -Maintain Fuel Breaks (H) -Utility Corridor Maintenance (H) -Manage FRCC 2/3 vegetation (L)	-WIPP -WIPP -WIPP -Utility Providers -BLM/WIPP
White's City (No Change)	-Defensible Space (H) -Weed Abatement (H) -Utility Corridor Maintenance (H) -Mowing along roads (M) -Salt Cedar abatement (L) -BLM fuel treatments (L) -Manage FRCC 2/3 vegetation (L)	-Homeowners/NMSFD -Landowners/county -Utility Providers -State/County -Carlsbad SWCD -BLM -BLM/NRCS/SWCD/private landowners

1- (H)=High Priority; (M)=Moderate Priority; (L)=Low Priority

5.1.1 Defensible Space- The only change from the 2008 ECCWPP is the link to the NM State Forestry link for homeowner guidance on defensible space; all other previous information is below for reference.

An action that can immediately improve community wildfire hazards is the implementation of defensible space around individual homes. It is recommended that defensible space be created for homes in all WUIs following the NMSFD guidelines (https://www.emnrd.nm.gov/sfd/fire-prevention-programs/). Homeowners need to evaluate their situations to determine needed actions. NMSFD is available to help homeowners determine the best actions to protect structures. Also, considerable information is available through the Firewise program (ww.firewise.org). Firewise is an interagency effort to supply information and training to communities and homeowners on reducing wildfire risks and hazards.

The defensible space concept can also be applied to utility stations, communication towers, recreation facilities, oil and gas infrastructure, and other vital structures. Defensible space is essential for reducing wildfire risks and hazards to structures. Defensible space is part of the IWUIC, and NMSFD recommends it. Also, the use of low-flammable construction practices for roofs, siding, decks, and porches is recommended in accordance with IWUIC.

When defensible space is combined with fire-resistant construction, the risk of structure loss is significantly reduced. When these principles are consistently applied across a neighborhood, everybody benefits. Additionally, in a wildfire, homes and neighborhoods with defensible space are much more likely to be assigned structure defense crews than those without. Defensible space provides room for firefighters to protect structures. There are normally three components to a defensible space:

- Zone 1 is the area of maximum modification and treatment (Figure 1). It consists of a 15-30 feet area around the structure in which all flammable vegetation is removed. The remaining vegetation is pruned, mowed, and watered. The width of Zone 1 depends on the flammability of the structure.
- Zone 2 is an area of fuel reduction extending from Zone 1 up to 125 feet depending on slope (Figure 1). Stressed, diseased, dead, or dying trees and shrubs are removed. The remaining large trees and shrubs are trimmed and pruned to eliminate horizontal and vertical fuel continuity while enhancing home site safety and aesthetics.
- Zone 3 is an area of management for landowner objectives and is of no particular size. It extends from the edge of Zone 2 to the property boundary (Figure 1).

Figure 1. NMSFD Defensible Space Guidelines and Standards

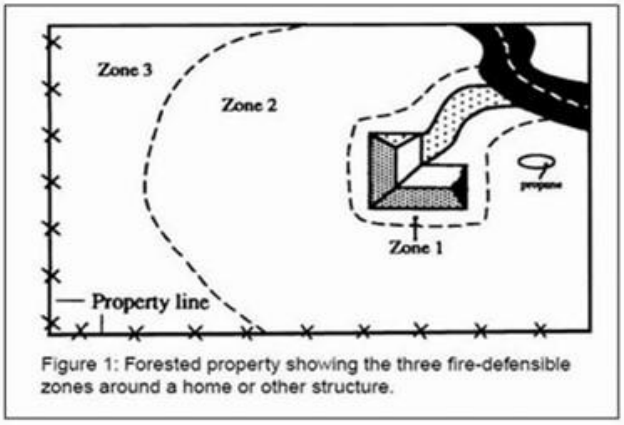


Figure 1: Forested property showing the three fire-defensible zones around a home or other structure.

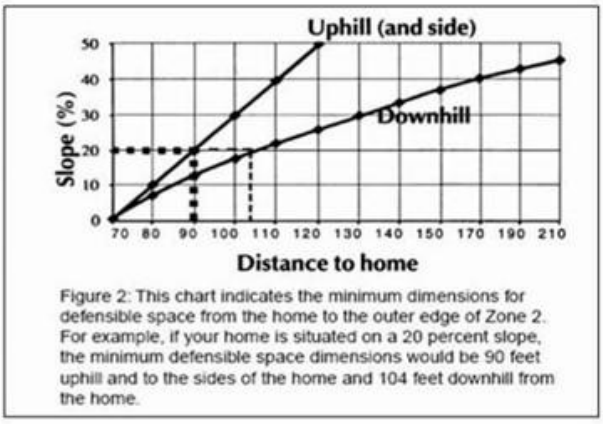


Figure 2: This chart indicates the minimum dimensions for defensible space from the home to the outer edge of Zone 2. For example, if your home is situated on a 20 percent slope, the minimum defensible space dimensions would be 90 feet uphill and to the sides of the home and 104 feet downhill from the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

Defensible space efforts can be encouraged and coordinated annually through community meetings, planned spring cleanups, and organized disposal efforts. Although most of the work can be accomplished by individual homeowners in a phased approach over time, neighborhood cooperation and support is essential to help those who are unable, and to provide access to critical hazardous areas. Table 13 outlines a manageable phased implementation schedule.

Table 13. Proposed Defensible Space Schedule for Homeowners and Communities

Year	Project	Actions
1	Annual spring outreach	▪ Contact and/or organize homeowners
	Annual spring mitigation (defensible space)	▪ Clean roofs and gutters ▪ Trim and thin trees and bushes in Zone 1 ▪ Rake and remove fine fuels from Zones 1 and 2 ▪ Relocate firewood from Zone 1 to Zone 2 ▪ Help a neighbor ▪ Organize debris disposal
2	Annual spring outreach	▪ Contact and/or organize homeowners
	Annual spring mitigation (defensible space)	▪ Trim and thin trees and bushes in Zone 2 ▪ Repeat basic yard cleanup in Zones 1 and 2 ▪ Help a neighbor ▪ Organize woody debris disposal
3	Annual spring outreach	▪ Contact and/or organize homeowners ▪ Advise individual homeowners on needed improvements to construction features
	Annual spring mitigation (defensible space)	▪ If necessary, coordinate defensible space efforts between homeowner groups who have created defensible space and adjacent open space land managers

Year	Project	Actions
		▪ Work with NMSFD to improve forest or rangeland health in Zone 3 ▪ Repeat basic yard cleanup in Zones 1 and 2
4	Annual spring outreach	▪ Contact and/or organize homeowners ▪ Follow-up on construction feature recommendations
	Annual spring mitigation (defensible space)	▪ Complete any outstanding projects from previous years ▪ Continue maintenance phase ▪ Initiate construction feature improvements

5.1.2 Grass and Weed Abatement- No changes from the 2008 ECCWPP; previous information is below for reference.

A common fuel hazard is herbaceous weedy vegetation. Native and non-native weedy grasses and forbs become flashy fuels as they dry in the late summer and fall. These fine fuels ignite easily and burn rapidly. Herbaceous fuels are common and widespread in the WUIs. Herbaceous fuels occur among structures, along roads and driveways, and in fallowed fields and abandoned lots.

Grass and weedy fuel abatement is important, and it must occur annually to be effective. Mechanical methods, manual methods, herbicides, prescribed fire, and livestock grazing can all be used to control grasses and weeds. The approach for grass and weed abatement depends on locations and land area. Sometimes, a combination of methods is best. The key to successful herbaceous vegetation-fuel control is persistence, as it may take several years to achieve the desired abatement. Mowing around structures and along roads and driveways is one way to reduce fuel load. Abatement can also occur with the limited use of herbicides by trained and certified applicators. Prescribed fire can be effectively and safely used in appropriate locations away from structures. Prescribed fire must adhere to Eddy County policy and New Mexico smoke management and air quality regulations. Livestock grazing can be effective in reducing herbaceous fuel loads. Eddy County does not have a weed abatement office. The IWUIC provides guidance on a weed abatement ordinance. Communities and private landowners should work with the county extension office to determine methods for weed abatement.

5.1.3 Mowing Along Roads- Minor changes from the 2008 ECCWPP; previous information is below for reference.

Vegetation-fuel load throughout the assessment area is generally continuous. Highways and roads are features that provide a break to fuel continuity. Natural features such as the Pecos and Black Rivers provide limited fuel breaks to communities. Mowing to a

minimum distance of 6 feet along highways and roads will enhance their usefulness as fuel breaks and reduce the chances of fire ignitions from vehicles or discarded smoking materials. The mowing along highways and roads should occur once in early summer and again in the fall, depending on precipitation and subsequent herbaceous plant growth. The New Mexico State Department of Transportation is responsible for mowing along state highways. Eddy County is responsible for mowing along county roads. The BLM and USFS are responsible for their road systems. Private landowners should survey their roads and driveways to determine the need for mowing.

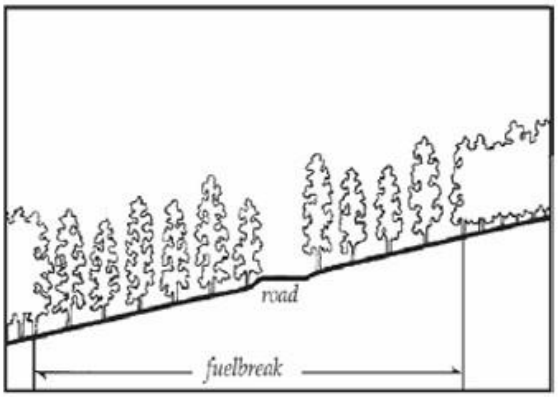
5.1.4 Fuel Breaks- Minor changes from the 2008 ECCWPP are noted below, otherwise previous information is below for reference.

Paragraphs four and five were rewritten into new paragraphs, referencing Highway 7 instead of 6 leading into Carlsbad Caverns National Park.

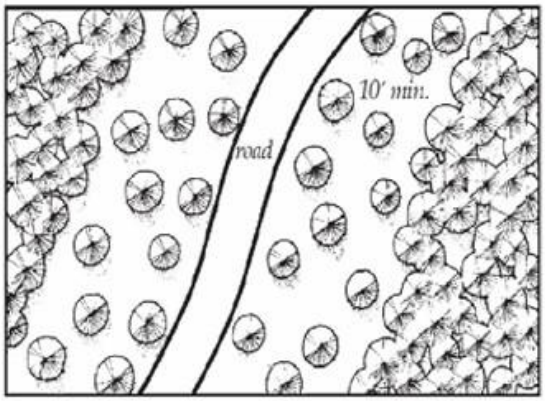
A fuel break is an area of land where fuel continuity and load are reduced to improve wildfire control opportunities (Dennis, not dated). Fuel breaks provide areas where firefighters may have opportunities to suppress fires. The width and length of the fuel break depend on terrain, wind patterns, and the values to be protected. Strategically placed fuel breaks reduce horizontal and vertical fuel continuity.

Fuel breaks do not require that all vegetation be removed to bare soil or rock (Figure 2). They can be aesthetically pleasing and improve wildfire habitat. Typically, trees are thinned to a spacing of 10-15 feet among tree canopies. Dead and diseased trees are removed. Depending on tree size, the lower tree limbs are pruned 6-10 feet from the ground. Ladder fuels are removed. Ladder fuels are many small trees and large shrubs

Figure 2. Example of Fuel Break along a Road



Cross-section of a typical fuelbreak built in conjunction with a road.



Plan view of fuelbreak showing minimum distance between tree crowns.

Source: Dennis, not dated

that may conduct fire in tree canopies. When thinning trees, it is important to leave trees of various sizes to create diversity in the forest canopy. Herbaceous vegetation may be mowed or grazed to reduce its fuel load. Mechanical equipment and/or prescribed fire are used to create fuel breaks. Prescribed fire may be useful in reducing shrub and herbaceous fuel loads in these areas. Areas with extensive vegetation removal because of dense tree and shrub growth may have to be reseeded with native grasses and forbs to reduce soil erosion and enhance wildfire habitat.

The woody debris harvested from the treated area must be disposed of. Ideally, the woody debris will be utilized in a post-harvest economic manner. The New Mexico Forest Industry Association (www.nmfia.org) provides information for post-harvest economic development opportunities. The harvested limbs and trees can be made available to individuals for free firewood. The last option is to burn the woody debris according to Eddy County burning guidelines and New Mexico State air quality and smoke management policy.

Fuel breaks are recommended for the road leading into the church-sponsored camp in the Queen WUI. Mowing and fuel breaks should occur on State Highway 137 and county roads with residential structures within the Queen WUI. Wildfires along these roads could impede the egress of vehicles evacuating a fire and the ingress of emergency vehicles from Eddy County Fire and Rescue and the USFS. Fuel breaks would help limit the severity of smoke and fire and improve emergency access.

The entirety of Highway 7 was burned in the 2011 Loop Fire, significantly reducing the wildland fuels. However, the National Park Service should evaluate the maintenance of these fuels yearly to determine areas that could be conducive to severe fire behavior and treat them appropriately. Actions should follow the Park's fire and fuels management plan. A fire occurring along Highway 7 could impede the egress of vehicles evacuating the park and the ingress of emergency vehicles. Fire management with law enforcement rangers could block traffic at the entrance and shelter in place visitors at the visitor's center until safe passage was ensured.

5.1.5 Salt Cedar Abatement- The only addition to the 2008 ECCWPP is the addition of two more resources that discuss Salt Cedar abatement, replacing the link from NM State University that is not functioning.

Salt cedar is a noxious, invasive shrub that grows in the riparian vegetation of the Pecos River, Delaware River, Black River, Rocky Arroyo, Dark Canyon Arroyo, and perhaps other areas. Salt Cedar is ranked by New Mexico State as a Class C noxious weed. Class C weeds are widespread species with management decisions determined by local authorities based on the feasibility of control and level of infestation (http://weeds.nmsu.edu/). Pertinent information on salt cedar ecology and reclamation

methods has been compiled by New Mexico State University weed management specialists and can be found on their websites at https://weeds.nmsu.edu/pdfs/Mgmt_of_Exotic_Trees.pdf or the USDA's at

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5180537.pdf.

Salt cedar abatement is warranted because of its fuel load, high water use, and limited value as wildlife habitat. A significant number of human-caused fires occur in this vegetation-fuel type (Map 8). Priority treatment areas would be those with moderate-to-heavy fuel loads near urban areas, structures, and other values. Salt cedar is a flashing fuel that burns rapidly because of its fine foliage and essential oils. Salt cedar abatement can occur through mechanical harvest, herbicide, or prescribed fire. Usually, a combination of treatments is necessary for eradication because the shrub will readily root sprout. Mechanical harvest, followed by painting the stumps with herbicide, is an effective treatment, and treated areas should be re-planted with desirable vegetation such as willows or cottonwood trees. The Carlsbad Soil and Water Conservation District has succeeded with whole plant extraction and pile burning of the woody debris. The district then follows up with natural rehabilitation, cottonwood pole plantings, or seeding the disturbed areas as appropriate.

5.1.6 FRCC Vegetation Management- Most of the 2008 ECCWPP previous information is correct, with the following changes. Paragraphs two and three were combined into a new Paragraph 2 below. Also, the Core Team wanted to note that although the 2008 plan notes that sixty percent of the county is classified as FRCC 2 and 3, this number can be deceiving regarding the actual wildfire threat in many areas. A large portion of this FRCC 2 and 3 area is caused by other disturbances besides fire. Since the 2008 ECCWPP, FRCC has declined in federal agencies' use as a tool to measure wildfire threat.

FRCC is a measure of forest and rangeland health. Forests and rangelands classified as FRCC 2 or 3 are considered unhealthy because there have been changes in plant community attributes and/or the fire regime compared to conditions before European settlement. Sixty percent of the county is classified as FRCC 2 or 3. Vegetation-fuels management plans should consider ways to improve forest and rangeland health. Prescribed fire, mechanical, and herbicide treatments can be used to remove unwanted plants and decrease woody plant density to improve plant community composition and structure in accordance with historic vegetation characteristics. Federal, state, and private landowners need to collaborate to improve FRCC.

Federal Land Management Agencies (BLM, NPS, USFS) continue implementing land management projects to improve these FRCC 2 and 3 classified lands. These projects

include but are not limited to prescribed fire, thinning projects, and herbicide treatments to reduce woody plants such as mesquite, catclaw, and creosote bush.

5.1.7 Oil and Gas Infrastructure- No changes from the 2008 ECCWPP; previous information is below for reference.

The oil and gas industry is important economically to Eddy County. Oil and gas infrastructure occurs throughout the county but is more prevalent on eastern lands. Following the principles presented in Section 5.1.1, Defensible space should be developed for infrastructure at risk of wildfire. Trucks should carry shovels, rakes, and fire extinguishers to suppress small fires that may ignite around oil and gas rigs. In the event of a large fire, 911 should be called to report the fire location, and the site should be evacuated.

The wildfire risks and hazards posed by the miles of surface polyurethane piping are unknown because of a paucity of experience. Different colored piping carries different fluids on BLM lands. The risks and hazards of black piping, which carries water, are non-existent. However, the risks and hazards to green and yellow piping, which carry oil and gas, respectively, are high in the event of leakage. Removing vegetation along green and yellow piping routes is undesirable because it would leave areas susceptible to weed colonization.

5.1.8 Treatment Options and Costs- Minor Changes to the 2008 ECCWPP and a note on costs in Table 14.

Reducing vegetation-fuel continuity and load will require a combination of treatment methods, as described in Section 5. Each of the recommended fuel mitigation projects can be achieved by various methods (Table 14). Selecting the most appropriate, cost-effective option is an important planning step. This brief synopsis of treatment options and cost estimates is provided to assist in this process. Treatment cost estimates should be considered as only general guidelines for comparative purposes. Fuel treatment costs vary tremendously based on vegetation-fuel attributes, project acreage, terrain, proximity to structures, access, and transportation costs. For more accurate cost information, the Fire Research and Management Exchange System (FRAMES) has an online link to a Fuel Reduction Cost Simulator that can help to determine the cost of treatment options (https://www.frames.gov/catalog/7784). It should be noted that the costs in Table 14 are estimated based on the 2008 information and increased based on inflation since 2008.

Implementers must plan for the long-term monitoring and maintenance of all treatments. Costs should also consider post-treatment rehabilitation needs, including seeding with native plants, weed abatement, and erosion control.

Table 14. Treatment Methods

Treatment	Estimated Cost	Comments
Machine Mowing	-$130-$300 per acre	-Appropriate for large, flat grassy areas on relatively flat topography.
Prescribed Fire	-$150-$300 per acre	-Can be cost-effective. -Ecologically beneficial. -Can be used to train firefighters. -Cost varies with complexity. -Carries liability with escape, especially in WUI areas. -Scheduling difficulties due to weather and smoke constraints.
Brush Mastication	-$400-$650 per acre	-Some species tend to resprout vigorously with mechanical treatment. -Follow-up treatments with herbicides, fire, grazing, or further mechanical treatments are typically necessary. -Mastication seems to be less expensive than manual treatment and eliminates disposal issues.
Timber Mastication	-$400-$2000 per acre	-Materials up to 10 inches in diameter and slopes up to 30 percent can be treated. -Eliminates disposal issues. -Environmental impacts of residue being left onsite may inhibit seed germination.
Manual Treatment with Chipping or Pile Burning	-$400-$2000 per acre	-Allows for removal of merchantable materials or firewood in timber. -Requires chipping, hauling, or pile burning of slash.
Feller Buncher	-$900-$1500 per acre	-Mechanical treatment of materials over 10 inches in diameter may require a feller buncher rather than a masticator. -Costs tend to be considerably higher than mastication. -May allow for removal of merchantable material.
Herbicide Treatment	-$20-$100 per gallon	-Application can be species or area specific -Cost per acre will vary depending on application rates and target species. -Easy to apply on steep slopes and other rough terrain.

		-Costs may be lower than mechanical methods. -Dead woody material may need to be removed to reduce fire concerns. -Applicator license required.

5.2 Recommended Non-Fuels Mitigation

5.2.1 Public Outreach and Education- No changes from the 2008 ECCWPP; previous information is below for reference; however, the Ready, Set, Go! link is added as another resource to share with property owners.
https://www.wildlandfirersg.org/s/are-you-wildfire-ready?language=en_US

An effective means to initiate local action is through community education and public outreach. Respondents to the 2008 questionnaire considered public outreach a critical component of reducing wildfire risk (Appendix D in 2008 plan). Community outreach could occur in each WUI. Examples of the purposes of public outreach include:

- Initiate the creation of a WUI or community oversight group to support CWPP implementation and seek grant funding.
- Introduce and discuss the benefits of IWUIC defensible space and construction principles.
- Promote and collaborate on developing defensible spaces around structures.
- Increase awareness of the need to improve forest and rangeland health to reduce wildfire risk.
- Identify and map evacuation routes.

An annual WUI or community meeting in the spring can spur action for neighborhoods and individuals. This can be a forum for presentations by Firewise experts and allow for the coordination of cleanup efforts within the community. Firewise materials and postings should be made available to the fire stations, post offices, and schools regularly. The scheduling of an annual “Defensible Space Week” would remind residents of the need to maintain their property. A WUI or community would hire a contractor to remove harvested plant materials along roads in front of residences. Each landowner would pay for the provided service.

5.2.2 Reducing Structure Flammability- No changes from the 2008 ECCWPP; previous information is below for reference. Another resource for reference is the link from the Institute for Business and Home Safety (IBHS) on the wildfire-prepared home: https://wildfireprepared.org/.

Improving the fire-resistant characteristics of structures in the assessment area goes hand in hand with developing defensible space. A significant improvement that can be made to many structures is replacing roofs with Class A roofing material. The screening of gutters, roof vents, and deck or porch openings is recommended. Embers from a wildfire can become windborne and travel long distances before settling on structure roofs and crevices, which could result in fire. Common structural fuel hazards associated with homes in the assessment area include:

- Combustible roofs and siding materials;
- Decks or porches with exposed undersides;
- Open attic vents;
- Propane tanks adjacent or downhill from home; and
- Combustible fences attached to structures.

A recommendation is for Eddy County and the incorporated cities and villages to consider the adoption of the IWUIC, which will ensure that new construction and remodels will be fire-resistant. The objective of the IWUIC is to establish minimum regulations consistent with nationally recognized good practices for safeguarding life and property. Regulations in the code are intended to mitigate wildfire risks and hazards and to prevent fire from spreading from structure to structure in the WUI. The codes also help ensure that there is access and water supply for fire suppression. The following items are examples of issues covered by the code:

- Ignition-resistant building materials on new construction, additions, and remodels;
- Ignition-resistant building techniques (such as covering eaves, no openings under houses, decks or porches) on new construction, additions, and remodels;
- Driveway access for fire apparatus;
- Vegetation plans for new structures and subdivisions that meet defensible space requirements;
- Vegetation and weed control codes;
- Water supply requirements to ensure continuous water supply during a fire; and
- Structure address marking and road marking.

Information on IWUIC fee-based training and the purchase of the code manual may be found at http://www.iccsafe.org. The interagency Firewise program (www.firewise.org) is a source of free information on reducing structure flammability and community hazards. WUIs and/or communities may want to consider becoming Firewise-certified communities.

5.2.3 Strengthen Fire Protection Authorities- This section includes new information incorporated with the 2008 ECCWPP. Table 15 has been removed since most of the fire districts in Eddy County were consolidated into Eddy County Fire and Rescue (ECFR) in April 2021.

The fire protection authorities make tremendous efforts to suppress small fires before they grow into large fires. Even so, all authorities need to collaborate to maintain and, in some cases, improve wildfire-fighting equipment, engines, personal protective equipment (PPE), and firefighter training. During the CWPP rewrite, the needs of ECFR and federal fire management officers were ascertained, and their current level of wildfire fighting preparedness and anticipated needs were assessed.

A common need among all fire authorities is strategically located water sources throughout their extended response areas. Many areas in the county and all municipal FDs have hydrant systems. However, some portions of the county, such as Happy Valley, Joel, Otis, and Sun Country, do not have reliable or extensive hydrant systems. Queen stores several thousand gallons of water at the station but has no water sources elsewhere in its response area.

A recommendation is that all response agencies review their water needs and current water sources. Identify areas where water is not readily available in their districts. Strategically located water sources should be identified throughout a response area and mapped. These sites might include dry hydrant developments serviced by a well or surface water suitable for drafting. Ranches and farms may be a source of water along with oil and gas industry infrastructure. Water sources need to be checked annually to ensure that dry hydrants are functioning properly, assess the need for access maintenance at surface drafting sites, and verify accessibility onto private land.

Wildfire training is a continual need for all agencies to keep their firefighters trained to the current requirements of the National Wildfire Coordinating Group (NWCG) standards. All response agencies have firefighters trained in basic wildfire skills. However, a higher level of training at the NWCG Firefighter 1 and engine boss levels is needed. One issue is the physical fitness test required for red card certification. However, the NM Resource Mobilization Plan does allow for higher levels of pay based on certification levels. Red card certification is not mandatory except for firefighters who want to be certified. Another issue is that volunteer firefighters have difficulty attending training classes and exercises during the week because of work obligations. New Mexico State Forestry provides training programs to fulfill these needs. Weekend training is more convenient than training held on weekdays. The county is fortunate to have the Permian Basin Regional Training Center to provide the necessary training.

Further collaboration amongst the various agencies is encouraged to coordinate NWCG training and assist one another in bringing in needed training.

State Forestry does offer grant programs through the Volunteer Fire Assistance (VFA) grant program for wildland PPE, radios, and equipment. However, these grants are geared toward primarily volunteer fire departments, and many of the departments in Eddy County don't qualify. All entities should stay current on various grant programs to look for opportunities to keep their equipment and programs up to standards for wildland fire response.

Other needs identified during this rewrite were personnel-related. ECFR identified the need for a Wildland Coordinator position to help coordinate training, wildfire education, and prevention, wildland fuels mitigation projects, and interagency work with cooperators. Carlsbad Caverns National Park indicated a need for wildland resources as there are no dedicated fire resources within the park.

5.3 Implementation of Mitigation Recommendations

5.3.1 Project Support - Minor changes from the 2008 ECCWPP see below:

Many new and various grants have been implemented over the last several years and will continue to be added to support reducing hazardous fuels. To list these grants, which are continually updated, is not feasible in a plan such as this. The Community Wildfire Defense Grant (CWDG) is the most well-funded grant for wildland mitigation work and should be explored for future funding. Conversations should be had with partners such as the New Mexico Forestry Division, New Mexico Counties 33 Strong, the BLM, USFS, NPS, NRCS, Carlsbad SWCD, International Association of Fire Chiefs (IAFC) wildland programs, and various private organizations on the types of funding they may have available for hazardous fuels reduction and community wildfire protection.

The CWPP development process facilitates collaboration with federal and state agencies on public and private wildfire and fuels management strategies. As the CWPP strategic plan is implemented, dialogue and collaboration need to be maintained with these agencies to coordinate strategies and treatments and adjust if necessary. Annual meetings are necessary to discuss completed projects, the status of multi-year projects, and future projects. The CWPP should be adjusted according to accomplishments and future needs.

One of the significant issues confronting defensible space and vegetation-fuels mitigation is the need for continual maintenance. Defensible spaces around structures require annual maintenance to remove fine fuels that accumulate during the year. Herbaceous fuels along roads and in fields need annual mowing or grazing as

appropriate. Fuel breaks and prescribed fire may have an effective life span of 10 to 15 years before trees and shrubs once again become hazardous fuels. Federal, state, and private landowners will need to evaluate fuel treatments on their lands to determine maintenance needs. Also, as areas are developed with new housing and communities, vegetation-fuels management will need to occur on an individual basis. However, with the adoption of the IWUIC, existing and new communities will have guidance on landscaping and construction standards.

5.3.2 Vegetation-Fuels Mitigation Schedule- No changes to the 2008 ECCWPP; however, table 16 is updated below.

Table 16 recommends a general schedule for vegetation-fuels mitigation projects throughout the assessment area. A five-year timeframe is proposed to accomplish all vegetation-fuels projects. A schedule for defensible space installment is presented in Table 14. Projects, such as mowing along roads, need to occur on an annual basis or perhaps more often depending on herbaceous plant growth in response to precipitation. Fuel break development along roads, wildlife areas, and federal lands will depend on resources available, including money and availability of fuel-management crews. National Environmental Protecting Act (NEPA) requirements and other agency-specific necessities must be satisfied before fuel treatments occur on federal lands.

Table 16. Recommend Vegetation-Fuels Management Schedule

WUI Area	Proposed Fuels Treatment	Schedule
Artesia	• Defensible Space • Weed Abatement • Mow along roads	• As needed/ongoing • Annually • Annually
Atoka	• Defensible Space • Weed abatement • Mow along roads • Railroad track right-of-way • Salt Cedar abatement • Manage FRCC 2/3 land	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing • As needed/ongoing
Carlsbad	• Defensible Space • Weed abatement • Mow along roads • Railroad rights-of-way • Salt Cedar abatement	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing
Carlsbad Caverns	• Defensible Space around facilities • Fuel breaks along roads • Reduce Fuels at Rattlesnake Springs	• As needed/ongoing • As needed/ongoing • This should be a priority project in the next 3 yrs.
Cottonwood	• Defensible Space	• As needed/ongoing

	• Weed abatement • Mow along roads • Railroad rights-of-way • Salt Cedar abatement • Manage FRCC 2/3 lands	• Annually • Annually • As needed/ongoing • As needed/ongoing • As needed/ongoing
Happy Valley	• Defensible Space • Weed abatement • Mow along roads • Railroad rights-of-ways • Salt Cedar abatement • Mange FRCC 2/3 lands	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing • As/needed/ongoing
Hope	• Defensible Space • Weed abatement • Mow along roads • Fuel Break along the riparian area • Mange FRCC 2/3 lands	• As needed/ongoing • Annually • Annually • Funding should be pursued in the next 3-5 yrs. • As needed/ongoing
Joel	• Defensible Space • Weed abatement • Mow along roads • Manage FRCC 2/3 lands • BLM treatments	• As needed/ongoing • Annually • Annually • As needed/ongoing • Ongoing
Loco Hills	• Defensible Space • Weed abatement • Mow along roads • Railroad rights-of-way • Manage FRCC 2/3 lands • BLM treatments	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing • ongoing
La Huerta	• Defensible Space • Weed abatement • Mow along roads • Salt Cedar abatement • Manage FRCC 2/3 lands • BLM treatments	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing • Ongoing
Loving	• Defensible Space • Weed abatement • Mow along roads • Railroad rights-of-way • Salt Cedar abatement • Manage FRCC 2/3 lands	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing • As needed/ongoing
Malaga	• Defensible Space • Weed abatement • Mow along roads • Railroad rights-of-way • Salt Cedar abatement • Manage FRCC 2/3 lands • BLM treatments	• As needed/ongoing • Annually • Annually • As needed/ongoing • Salt Cedar abatement • As needed/ongoing • ongoing

Otis	• Defensible Space • Weed abatement • Mow along roads • Railroad rights-of-way • Salt Cedar abatement • Manage FRCC 2/3 lands • BLM treatments	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing • As needed/ongoing • Ongoing
Queen	• Defensible Space • Weed abatement • Church Camp road • Fuel breaks on roads • Mow along roads • Fuel breaks around the community • Manage FRCC 2/3 lands	• As needed/ongoing • Annually • Funding should be pursued now. • In conjunction w/USFS by 2027 • Annually • In conjunction w/ USFS by 2028 • As needed/ongoing
Riverside	• Defensible space • Weed abatement • Railroad right-of-way • Salt Cedar abatement • Manage FRCC 2/3 lands	• As needed/ongoing • Annually • As needed/ongoing • As needed/ongoing • As needed/ongoing
Sun Country	• Defensible space • Weed abatement • Mow along roads • Manage FRCC 2/3 lands	• As needed/ongoing • Annually • Annually • As needed/ongoing
Waste Isolation Pilot Plant	• Mow along roads • Maintain fuel breaks • Weed abatement • Manage FRCC 2/3 lands	• Annually • As needed/ongoing • Annually • As needed/ongoing
White's City	• Defensible Space • Weed abatement • Mowing along roads • Salt Cedar abatement • Manage FRCC 2/3 lands • BLM treatments	• As needed/ongoing • Annually • Annually • As needed/ongoing • As needed/ongoing • Ongoing

SECTION 6 EMERGENCY OPERATIONS **(Pages 49-51 in 2008 ECCWPP)**

6.1 Fire Authority Response- See below for updated information from the 2008 ECCWPP

Wildfire suppression in Eddy County is provided by ECFR, municipal FDs, BLM, NMSF, and the USFS. Each fire authority has its primary area of response. Several agreements between the State, Federal, and Local agencies dictate the county's initial attack and extended attack response to wildfires. These include the New Mexico Master

Cooperative Wildland Fire Management Response Agreement, the New Mexico Resource Mobilization Plan for Wildland Fire Incidents, and Joint Powers Agreements. These documents set out the specifics of initial attack responsibilities, extended attack, and mutual aid as appropriate. Coordination among the fire authorities occurs regularly.

IA on a wildfire is the first responding force after a wildfire is reported to dispatch by calling 911. An extended attack (EA) occurs when fire escapes IA, and additional forces are needed for suppression, or the fire threatens important values such as structures. The jurisdiction responsible for IA on a wildfire depends on the fire location. New Mexico Forestry Division maintains the IA map for the state, which can be found on their website. (https://www.emnrd.nm.gov/sfd/wildfire/fire-forms-for-local-cooperators/rate-sheets-initial-attack-maps/) ECFR provides structure and wildfire protection services for unincorporated communities and on private lands, respectively, as well as for Carlsbad Caverns National Park. The municipal FDs provide structure and wildfire protection for incorporated lands within their boundaries and have automatic aid agreements between the county and the municipalities allowing cross-boundary response. BLM, Carlsbad Field Office has wildfire responsibility on federal and state lands and some private lands. WIPP is responsible for IA on their property. NPS is responsible for fires on their lands but currently utilizes ECFR because they have no dedicated wildfire personnel. The USFS Lincoln National Forest is responsible for the Initial attack on all properties within the Forest Service boundary in the county's Southwest corner.

The risk of large-scale wildfires exists throughout the county, but they are more prevalent in the Queen WUI because of fuel continuity and load, the potential for wildfire rate of spread and severity to exceed the IA suppression capability is great (Map 4). This is especially true where the surrounding terrain is difficult to access, such as Queen WUI and Carlsbad Caverns. The maintenance of apparatus and equipment is essential for rapid response. Extended wildfire incidents in the assessment area could become very complex management challenges.

6.2 Family Emergency Preparedness- Only minor changes from the 2008 ECCWPP. They include updated Eddy County Emergency Management links and the Ready, Set Go Program. The last paragraph is updated as well.

The time to plan for an emergency evacuation is before the incident occurs. Family members should understand what actions are needed in a wildfire incident. Information for preparing for an evacuation is presented on:

Eddy County Office of Emergency Management's website
https://www.co.eddy.nm.us/160/Emergency-Management

Ready, Set, Go! Program- https://www.wildlandfirersg.org/s/are-you-wildfire-ready?language=en_US

Firewise www.firewise.org.

Families can take several steps to prepare for a wildfire event to improve safety and county FD response. A defensible space should be developed around homes and other structures. Families should have emergency numbers readily available. Private roads and driveways should be at least 12 feet wide with a 15-foot vertical clearance for family egress and emergency vehicle ingress. House numbers and street signs should be readily visible. Hand tools like rakes and shovels should be available to fight spot fires and debris cleanup. A fully charged hose that reaches around the house should also be available for firefighter use. Families should have known meeting locations and phone numbers to call in case family members are separated.

In the event that New Mexico State Police or Eddy County Sheriff orders a community to evacuate because of a threatening wildfire, residents should leave in an orderly manner. The State Police or Sheriff would proclaim the preferred evacuation routes and evacuation centers. However, the need for evacuation can occur without notice when conditions for wildfire are favorable. Homeowners should be prepared to evacuate without formal notice. Wildfires can occur unexpectedly, even in the low-risk WUIs.

Before residents leave, they should take every precaution to reduce the chance of structure loss as time allows. Human safety is the number one concern in an evacuation. Actions could include removing all debris from rain gutters and the roof, ensuring all flammable materials such as woodpiles, leaves, debris, and patio furniture are at least 30 feet from the house, and cleaning leaves, herbaceous fuels, and twigs from underneath decks and porches. Windows and doors should be closed but not locked. Other openings, such as vents, should be covered. A ladder should be placed for roof access by firefighters, and porch lights should be left on to allow firefighters to find homes at night. Families should take important papers, documents, medicines, pets, food, water, and other essential items (see checklist in the Ready, Set, Go! Action guide).

The exterior of structures should be monitored for smoke for several days after return, as embers may lodge in small cracks and crevices and smolder before flaming. Evacuation routes vary according to WUI (Table 17). The appropriate jurisdictions should ensure that residents have the opportunity to become familiar with these procedures. Evacuation plans should outline routes and available evacuation centers. These procedures should be addressed in community meetings, newspaper releases, or distributed door-to-door.

The main evacuation routes for all communities are paved and maintained on U.S. or state roads. Several county roads in all WUIs are suitable for secondary evacuation routes. However, Queen and Carlsbad Caverns need to identify suitable secondary evacuation routes. Both areas have access to unimproved, unnamed roads. A recommendation is to survey these roads and judge their suitability for evacuation. Selected roads must then be upgraded to enable rapid evacuation during a wildfire. Because many small, unincorporated communities and isolated residents throughout the county, evacuation routes suitable for various groups should be identified. All county residents should have information on primary and secondary evacuation routes.

In some cases, sheltering in place may be the best option for keeping the public safe in a wildfire event. Areas such as the Carlsbad Caverns parking lot or the parking lot at the Queen Fire Station may be a better option for holding the public when the primary evacuation routes are cut off. This may be true for other parts of the County, and emergency responders should pre-plan where these areas are and utilize them when a wildfire cuts off evacuation routes. In light grassy or flashy fuels that are common in this area, moving the public into the burned area may be another option to avoid them being burned over by the flaming front of a fire.

Table 17. Evacuation Routes for Eddy County Wildland-Urban Interface

Wildland-Urban Interface	Primary Evacuation Route	Secondary Evacuation Route
Artesia	US Highways 285, 82	Several country roads
Atoka		Several country roads
Carlsbad	US Highways 285, 62, 180	Several country roads
Carlsbad Caverns	State Road 7	Several country roads
Cottonwood	US Highway 285	Several country roads
Happy Valley	State Highway 137 County Road 401	Several country roads
Hope	US Highway 82	County Road 5 and others
Joel	US Highway 180 State Highway 137	Several country roads
La Huerta	US Highway 180 Several county roads	Several country roads
Loco Hills	US Highway 82	Several county roads
Loving	US Highway 285	Several county roads
Malaga	US Highway 285	Several county roads
Otis	US Highway 285	Several county roads
Queen	State Highway 137	Unnamed unimproved jeep trail
Riverside	US Highway 82	Several county roads
Waste Isolation Pilot Plant	Jal Highway Louis Whitlock	Several county roads
White's City	US Highway 180	Several unnamed dirt roads

SECTION 7 EDDY COUNTY CWPP MONITORING AND EVALUATION (Pages 52 in 2008 ECCWPP)

7.1 CWPP Plan Adoption- No changes from the 2008 ECCWPP; previous information is below for reference.

Interagency collaboration, public meetings, and public comment opportunities were incorporated into the CWPP process to provide widespread participation and input. Comments and input were solicited from federal, state, and local agencies and stakeholders. The CWPP was formally adopted by the Core Team, which comprises representatives from federal, state, and local agencies.

The HFRA authority for CWPP requires adopting this plan, as does the FEMA Disaster Mitigation Act of 2000. With formal adoption by the Core Team, participating agencies and WUI communities will be competitive for available hazardous fuels and non-fuels mitigation funding that may assist with plan implementation. Furthermore, adopting this plan highlights a collaborative planning and development process among federal, state, and county agencies, WUI communities, and private landowners.

7.2 Sustaining CWPP Efforts- No changes from the 2008 ECCWPP; previous information is below for reference.

A CWPP can serve as the foundation for a safer and healthier WUI through strategic planning focusing on the threat of wildfire. The mitigation strategies outlined in this report will significantly reduce risk, but only if implemented. Converting strategy into action is the key to achieving the goals and objectives of the planning process.

The CWPP process encourages private landowners to take an active role as fuel treatment strategies are developed and prioritized. Ownership of CWPP implementation at the WUI level is the most effective means to achieving effective results and sustaining the effort from year to year.

Proactive WUI communities can seek support and guidance through various local, state, and federal resources identified in this report, including the NMSFD, CFDs, MFDs, and federal agencies. The Firewise program is an excellent source of information on ways to help WUI communities reduce wildfire risks and hazards (www.firewise.org).

7.3 CWPP Oversight, Monitoring, and Evaluation- No changes from the 2008 ECCWPP; previous information is below for reference.

As wildfire hazard reduction efforts are implemented over time and the characteristics of the WUI change, communities may wish to reassess areas and update the CWPP. A

WUI may want to develop a CWPP specific to their vegetation-fuels management needs.

Monitoring project implementation progress and evaluating treatments' effectiveness is an important component of CWPP oversight and maintenance. The assessment methodology utilized in this report is a standardized, well-documented hazard and risk survey approach that is designed to provide a benchmark against which future assessments may be compared. Successes, challenges, and new concerns should be noted and guide any modifications to the CWPP that better accommodate changing WUI communities.

SECTION 8 BIBLIOGRAPHY **(This is a duplicate of the Bibliography in the 2008 ECCWPP found on pages 53-54)**

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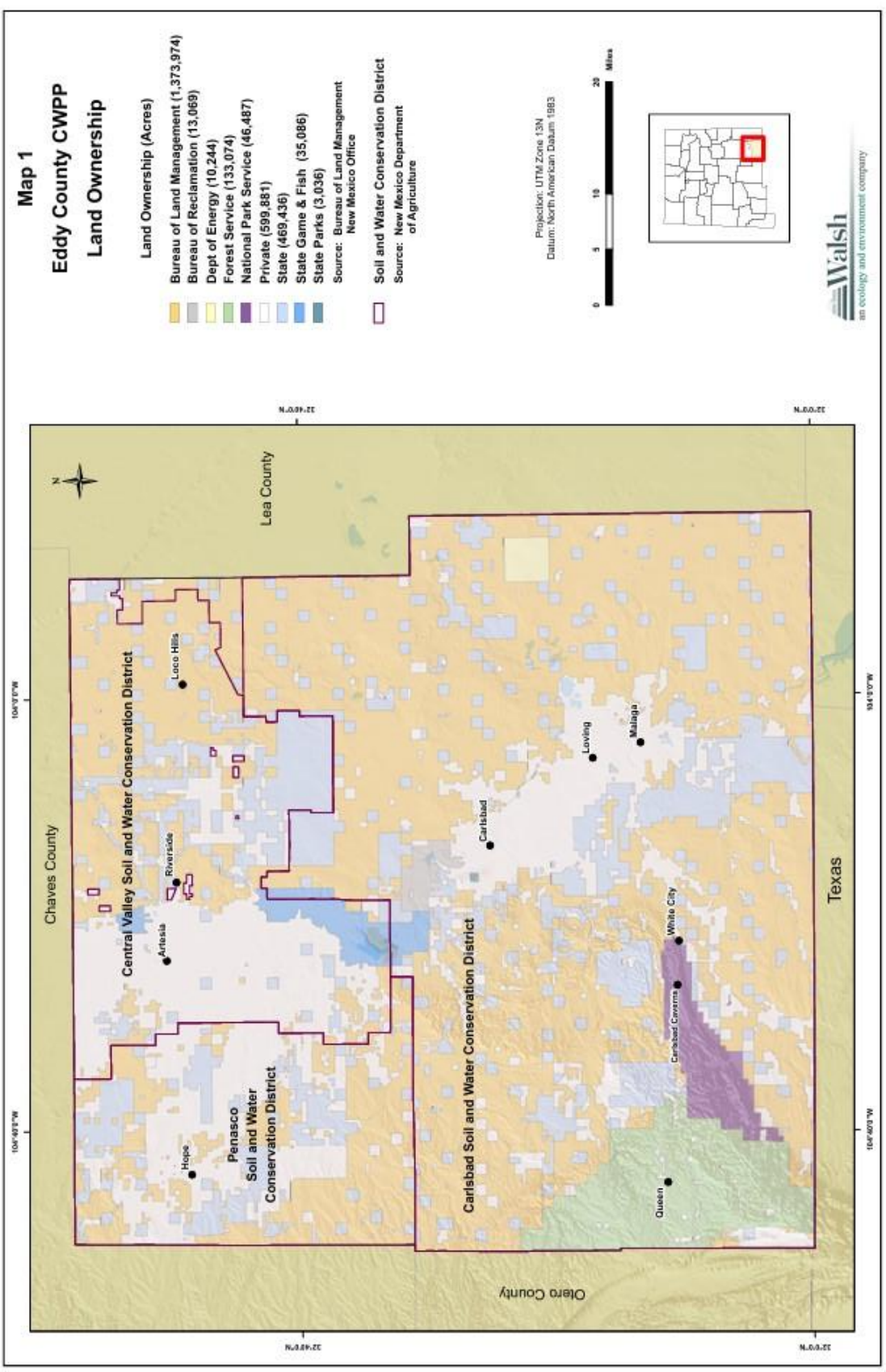
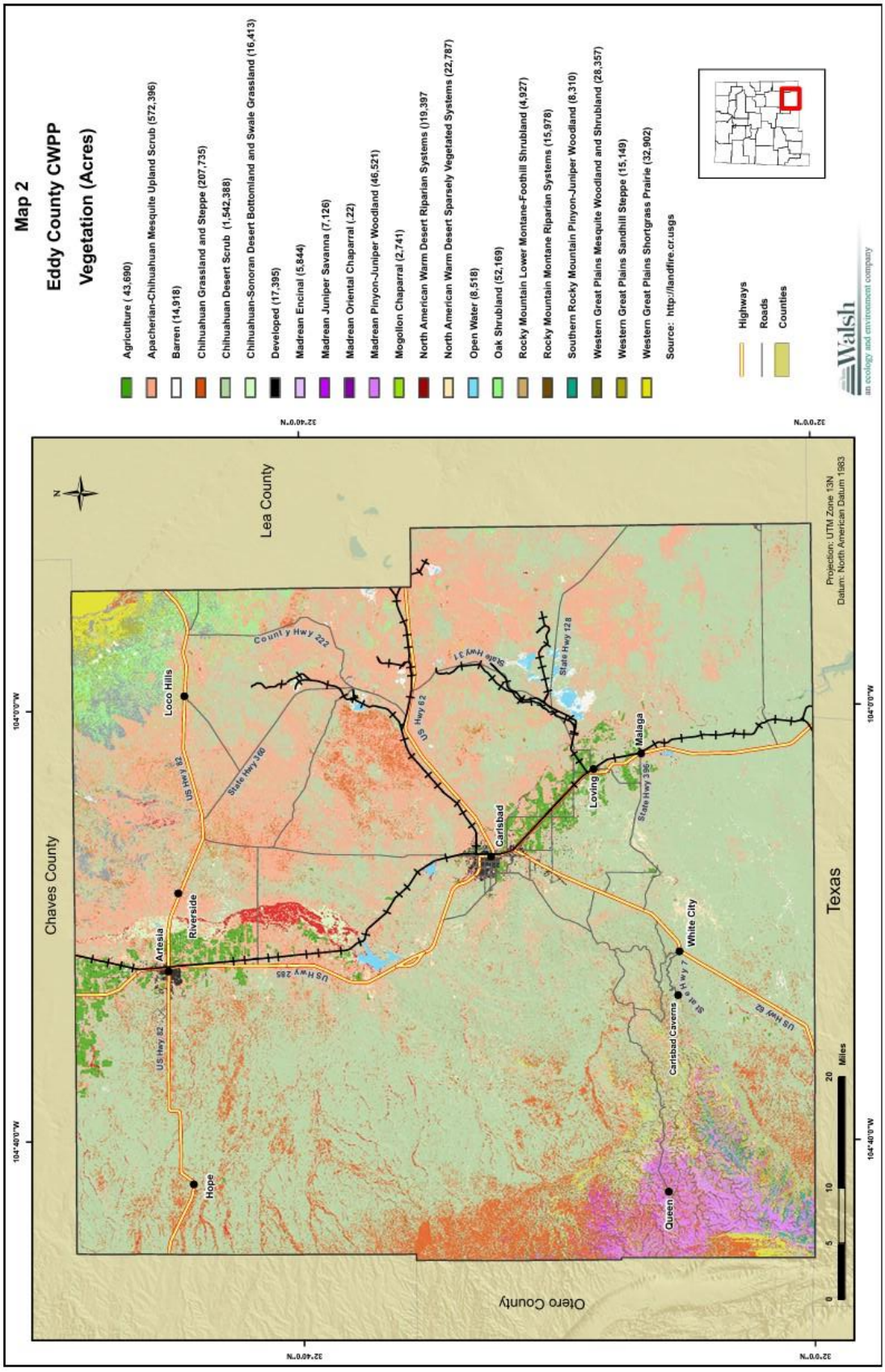
Appendix A (Maps)


Map 1
Eddy County CWPP
Land Ownership
Land Ownership (Acres)
Bureau of Land Management (1,373,974)
Bureau of Reclamation (13,069)
Dept of Energy (10,244)
Forest Service (133,074)
National Park Service (46,487)
Private (599,881)
State (469,436)
State Game & Fish (35,086)
State Parks (3,036)
Source: Bureau of Land Management New Mexico Office
Soil and Water Conservation District
Source: New Mexico Department of Agriculture
Projection: UTM Zone 13N
Datum: North American Datum 1983
0
5
10
20
Miles
Walsh
an ecology and environment company
N
Lea County
Chaves County
Otero County
Texas
Central Valley Soil and Water Conservation District
Penasco Soil and Water Conservation District
Carlsbad Soil and Water Conservation District
Loco Hills
Riverside
Artesia
Hope
Carlsbad
Loving
Malaga
White City
Carlsbad Caverns
Queen


Map 2
Eddy County CWPP
Vegetation (Acres)
Agriculture (43,690)
Apacherian-Chihuahuan Mesquite Upland Scrub (572,396)
Barren (14,918)
Chihuahuan Grassland and Steppe (207,735)
Chihuahuan Desert Scrub (1,542,388)
Chihuahuan-Sonoran Desert Bottomland and Swale Grassland (16,413)
Developed (17,395)
Madrean Encinal (5,844)
Madrean Juniper Savanna (7,126)
Madrean Oriental Chaparral (.22)
Madrean Pinyon-Juniper Woodland (46,521)
Mogollon Chaparral (2,741)
North American Warm Desert Riparian Systems ()19,397
North American Warm Desert Sparsely Vegetated Systems (22,787)
Open Water (8,518)
Oak Shrubland (52,169)
Rocky Mountain Lower Montane-Foothill Shrubland (4,927)
Rocky Mountain Montane Riparian Systems (15,978)
Southern Rocky Mountain Pinyon-Juniper Woodland (8,310)
Western Great Plains Mesquite Woodland and Shrubland (28,357)
Western Great Plains Sandhill Steppe (15,149)
Western Great Plains Shortgrass Prairie (32,902)
Source: http://landfire.cr.usgs
Highways
Roads
Counties
Walsh
an ecology and environment company
Lea County
Chaves County
Otero County
Texas
Loco Hills
Artesia
Riverside
Hope
Carlsbad
Loving
Malaga
White City
Queen
Carlsbad Caverns
County Hwy 222
State Hwy 128
State Hwy 31
US Hwy 62
US Hwy 82
US Hwy 285
State Hwy 396
State Hwy 7
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Miles
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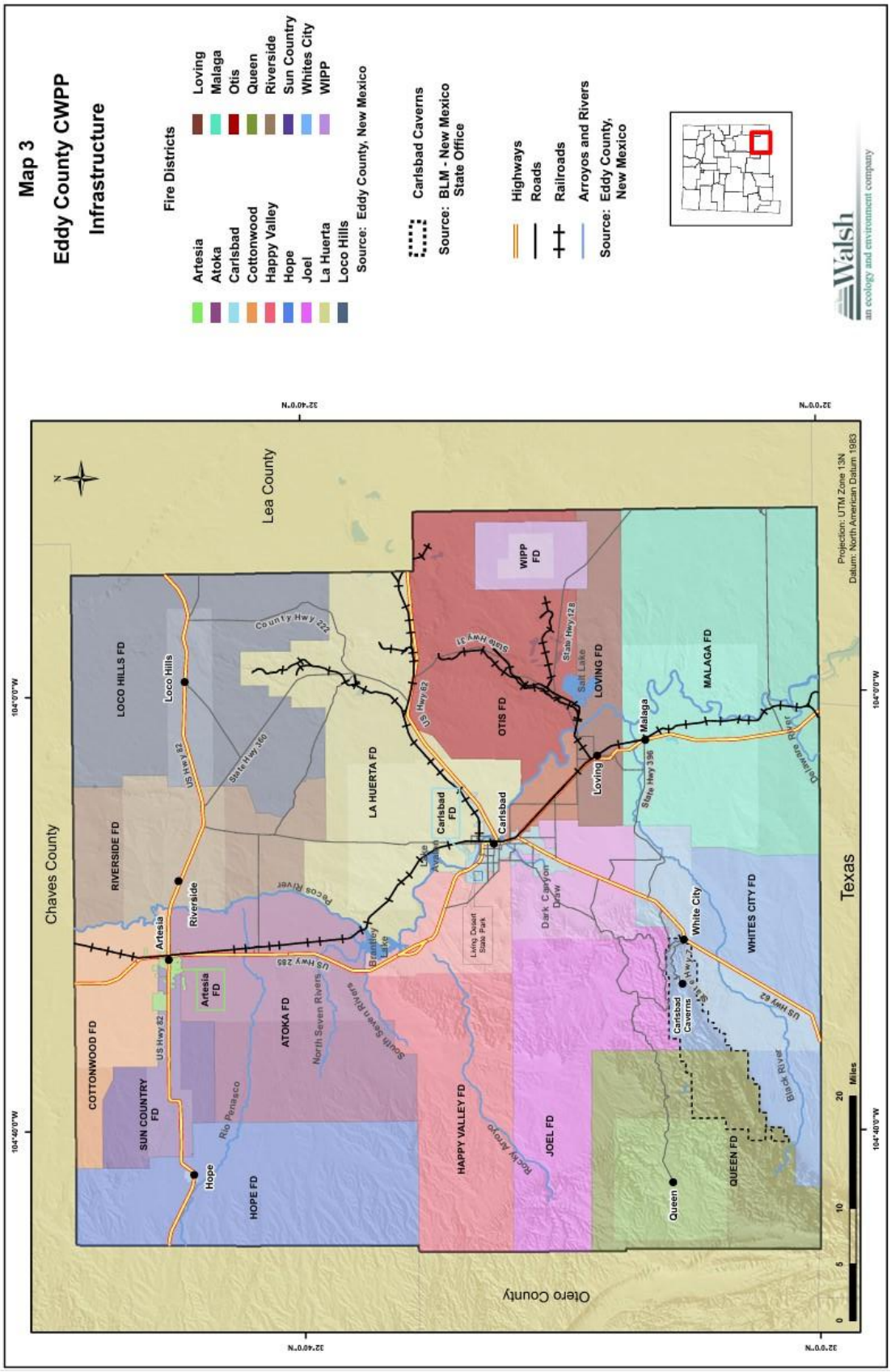
104°0'0"W
104°40'0"W


Map 3
Eddy County CWPP
Infrastructure
Fire Districts
Artesia
Atoka
Carlsbad
Cottonwood
Happy Valley
Hope
Joel
La Huerta
Loco Hills
Loving
Malaga
Otis
Queen
Riverside
Sun Country
Whites City
WIPP
Source: Eddy County, New Mexico
Carlsbad Caverns
Source: BLM - New Mexico State Office
Highways
Roads
Railroads
Arroyos and Rivers
Source: Eddy County, New Mexico
Walsh
an ecology and environment company
Projection: UTM Zone 13N
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Lea County
Chaves County
Otero County
Texas
LOCO HILLS FD
RIVERSIDE FD
LA HUERTA FD
WIPP FD
OTIS FD
LOVING FD
MALAGA FD
Carlsbad FD
COTTONWOOD FD
SUN COUNTRY FD
Artesia FD
ATOKA FD
HOPE FD
HAPPY VALLEY FD
JOEL FD
WHITES CITY FD
QUEEN FD
Loco Hills
Riverside
Artesia
Hope
Carlsbad
Loving
Malaga
White City
Queen
Carlsbad Caverns
Pecos River
Rio Penasco
North Seven Rivers
South Seven Rivers
Rocky Arroyo
Dark Canyon Draw
Salt Lake
Bradley Lake
Living Desert State Park
Black River
County Hwy 222
State Hwy 360
State Hwy 31
State Hwy 128
State Hwy 396
US Hwy 82
US Hwy 62
US Hwy 285
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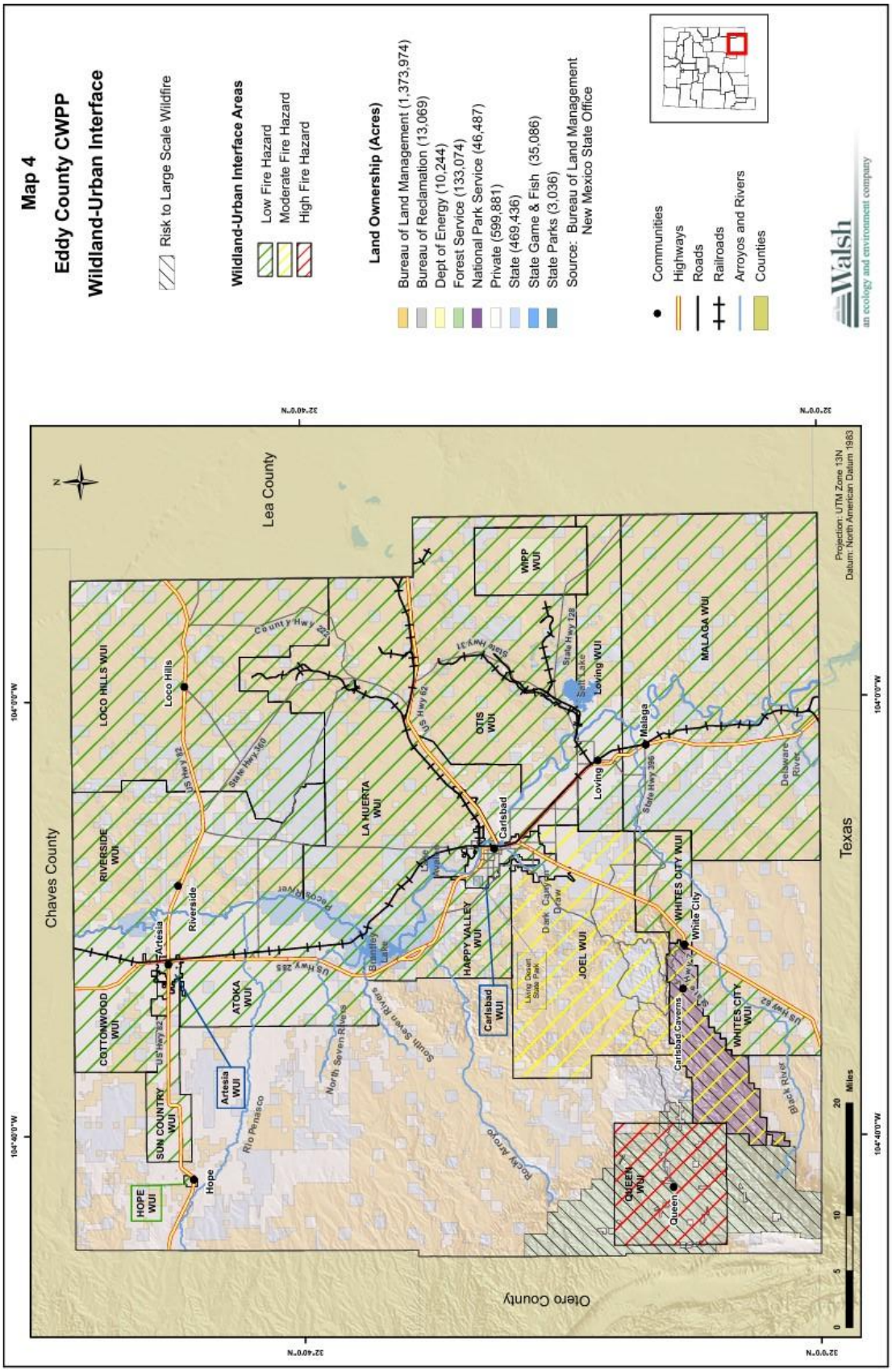
Miles


Map 4
Eddy County CWPP
Wildland-Urban Interface
Risk to Large Scale Wildfire
Wildland-Urban Interface Areas
Low Fire Hazard
Moderate Fire Hazard
High Fire Hazard
Land Ownership (Acres)
Bureau of Land Management (1,373,974)
Bureau of Reclamation (13,069)
Dept of Energy (10,244)
Forest Service (133,074)
National Park Service (46,487)
Private (599,881)
State (469,436)
State Game & Fish (35,086)
State Parks (3,036)
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Lea County
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LOCO HILLS WUI
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WHITES CITY WUI
QUEEN WUI
Loco Hills
Artesia
Riverside
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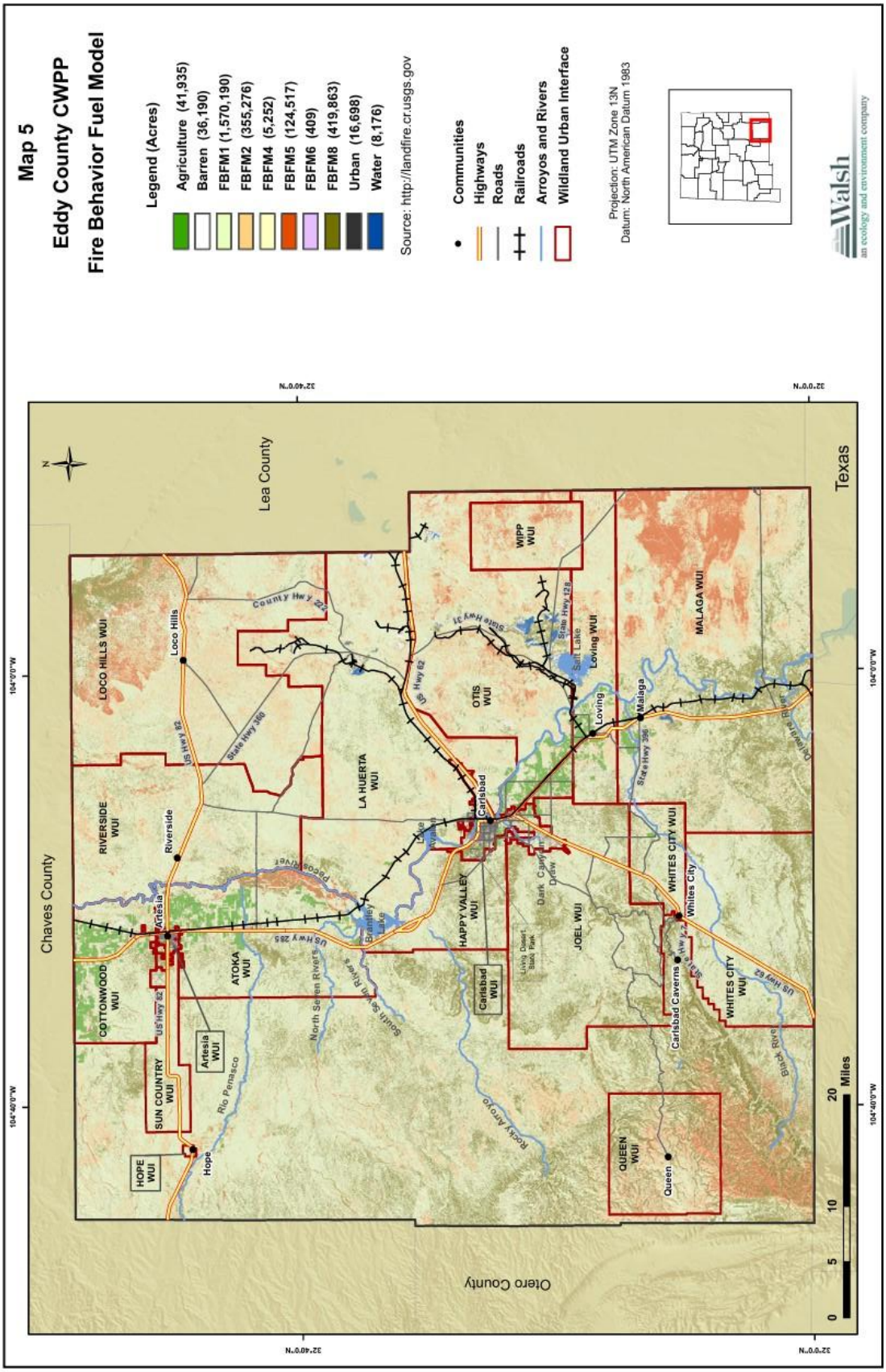
Pecos River
Rio Penasco
South Seven Rivers
North Seven Rivers
Rocky Arroyo
Dark Canyon Draw
Delaware River
Black River
Miles


Map 5
Eddy County CWPP
Fire Behavior Fuel Model
Legend (Acres)
Agriculture (41,935)
Barren (36,190)
FBFM1 (1,570,190)
FBFM2 (355,276)
FBFM4 (5,252)
FBFM5 (124,517)
FBFM6 (409)
FBFM8 (419,863)
Urban (16,698)
Water (8,176)
Source: http://landfire.cr.usgs.gov
Communities
Highways
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Arroyos and Rivers
Wildland Urban Interface
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North Seven Rivers
South Seven Rivers
Rocky Arroyo
Black River
Brantley Lake
Salt Lake
Dark Canyon
Living Desert State Park
County Hwy 222
State Hwy 360
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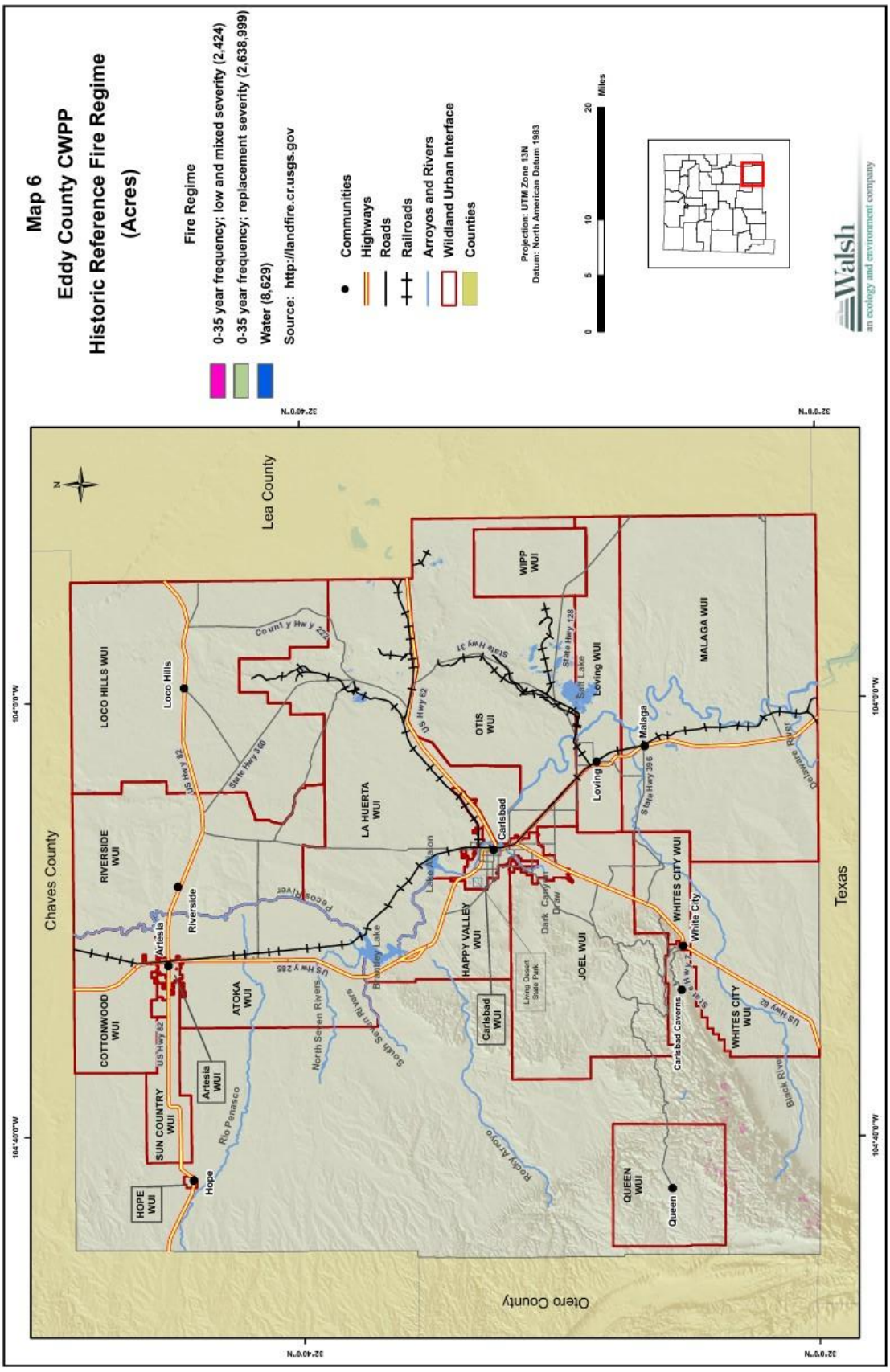
Map 6
Eddy County CWPP
Historic Reference Fire Regime
(Acres)
Fire Regime
0-35 year frequency; low and mixed severity (2,424)
0-35 year frequency; replacement severity (2,638,999)
Water (8,629)
Source: http://landfire.cr.usgs.gov
Communities
Highways
Roads
Railroads
Arroyos and Rivers
Wildland Urban Interface
Counties
Projection: UTM Zone 13N
Datum: North American Datum 1983
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SUN COUNTRY WUI
HOPE WUI
ATOKA WUI
Artesia WUI
LA HUERTA WUI
OTIS WUI
WIPP WUI
HAPPY VALLEY WUI
Carlsbad WUI
JOEL WUI
Loving WUI
MALAGA WUI
WHITES CITY WUI
WHITES CITY WUI
QUEEN WUI
Loco Hills
Riverside
Artesia
Hope
Carlsbad
Loving
Malaga
White City
Queen
Carlsbad Caverns
Salt Lake
Brantley Lake
Living Desert State Park
Dark Canyon Draw
Rocky Arroyo
Black River
Pecos River
North Seven Rivers
South Seven Rivers
Rio Penasco
Delaware River
Lake Avalon
State Hwy 128
State Hwy 31
US Hwy 82
US Hwy 285
State Hwy 360
State Hwy 396
State Hwy 7
County Hwy 222
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104°9'0"W
104°6'0"W
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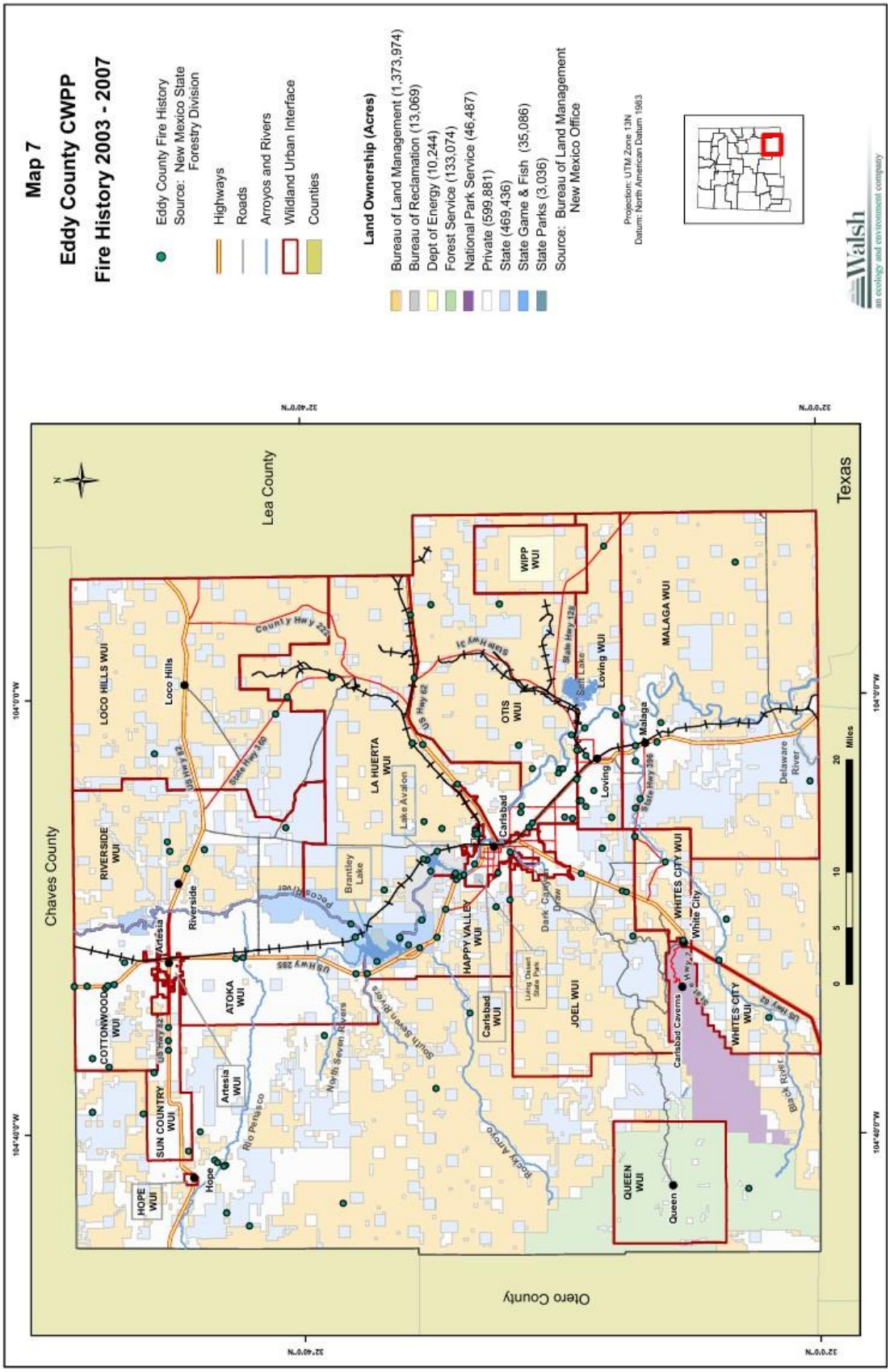
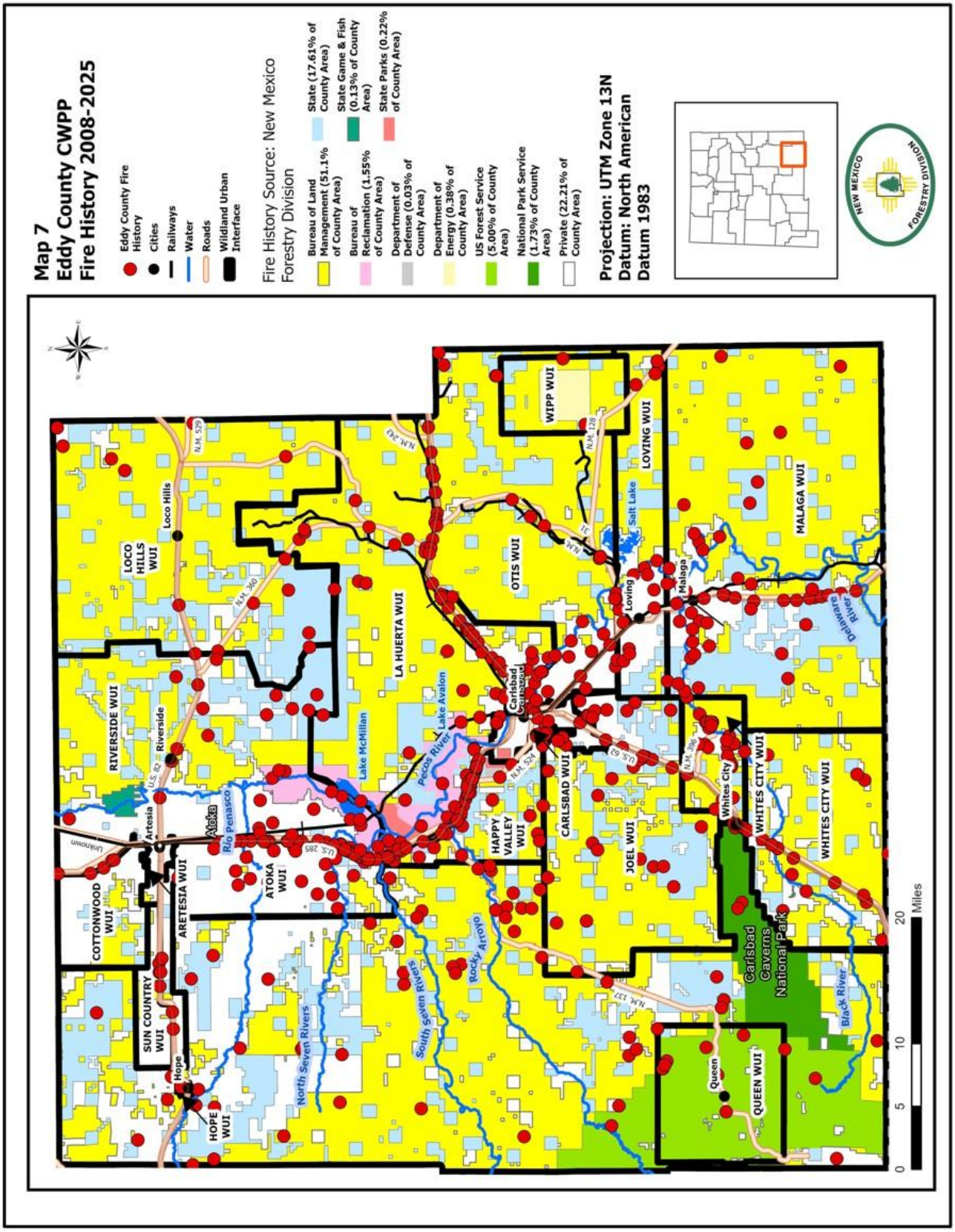
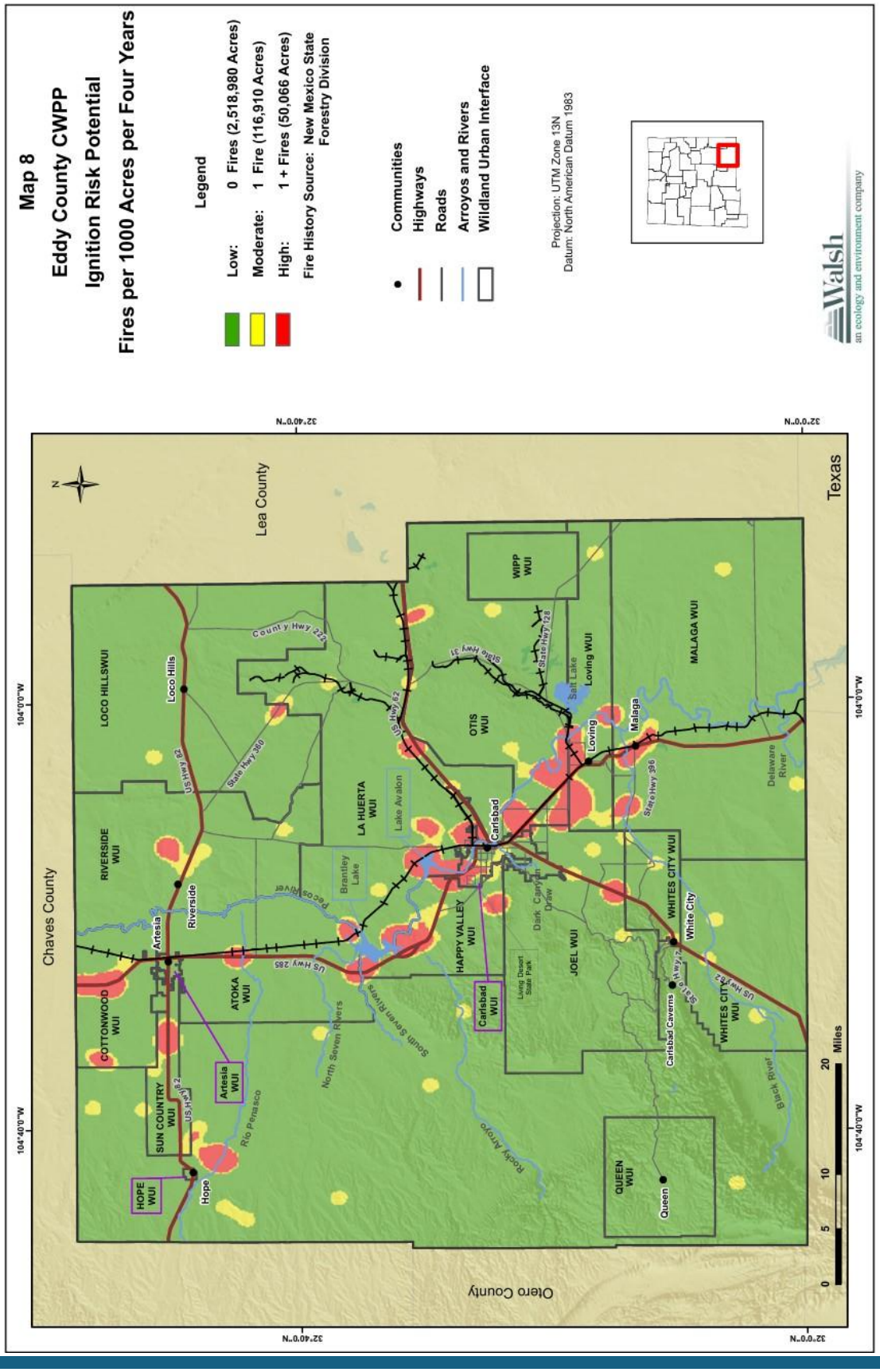

Map 7
Eddy County CWPP
Fire History 2003 - 2007
Eddy County Fire History
Source: New Mexico State Forestry Division
Highways
Roads
Arroyos and Rivers
Wildland Urban Interface
Counties
Land Ownership (Acres)
Bureau of Land Management (1,373,974)
Bureau of Reclamation (13,069)
Dept of Energy (10,244)
Forest Service (133,074)
National Park Service (46,487)
Private (599,881)
State (469,436)
State Game & Fish (35,086)
State Parks (3,036)
Source: Bureau of Land Management New Mexico Office
Projection: UTM Zone 13N
Datum: North American Datum 1983
Walsh
an ecology and environment company
Lea County
Chaves County
Otero County
Texas
LOCO HILLS WUI
RIVERSIDE WUI
COTTONWOOD WUI
SUN COUNTRY WUI
HOPE WUI
ATOKA WUI
Artesia WUI
LA HUERTA WUI
Carlsbad WUI
HAPPY VALLEY WUI
JOEL WUI
OTIS WUI
WIPP WUI
MALAGA WUI
Loving WUI
WHITES CITY WUI
QUEEN WUI
Loco Hills
Riverside
Artesia
Hope
Carlsbad
Malaga
Loving
White City
Queen
Salt Lake
Brantley Lake
Lake Avalon
Pecos River
Delaware River
Black River
Rio Penasco
North Seven Rivers
South Seven Rivers
Rocky Arroyo
Dark Canyon Draw
Carlsbad Caverns
Living Desert State Park
County Hwy 222
State Hwy 249
State Hwy 128
State Hwy 396
US Hwy 62
US Hwy 285
US Hwy 82
State Hwy 31
104°0'0"W
104°20'0"W
32°40'0"N
32°0'0"N
Miles
0
5
10
20


Map 7
Eddy County CWPP
Fire History 2008-2025
Eddy County Fire History
Cities
Railways
Water
Roads
Wildland Urban Interface
Fire History Source: New Mexico Forestry Division
Bureau of Land Management (51.1% of County Area)
State (17.61% of County Area)
State Game & Fish (0.13% of County Area)
Bureau of Reclamation (1.55% of County Area)
State Parks (0.22% of County Area)
Department of Defense (0.03% of County Area)
Department of Energy (0.38% of County Area)
US Forest Service (5.00% of County Area)
National Park Service (1.73% of County Area)
Private (22.21% of County Area)
Projection: UTM Zone 13N
Datum: North American Datum 1983
NEW MEXICO FORESTRY DIVISION
LOCO HILLS WUI
RIVERSIDE WUI
COTTONWOOD WUI
ARTESIA WUI
SUN COUNTRY WUI
HOPE WUI
ATOKA WUI
LA HUERTA WUI
HAPPY VALLEY WUI
CARLSBAD WUI
JOEL WUI
OTIS WUI
WIPP WUI
LOVING WUI
MALAGA WUI
WHITES CITY WUI
QUEEN WUI
Loco Hills
Riverside
Artesia
Lakeview
Hope
Atoka
Lake McMillan
Lake Avalon
Pecos River
Carlsbad
Salt Lake
Loving
Malaga
Whites City
Queen
Delaware River
Black River
Carlsbad Caverns National Park
North Seven Rivers
South Seven Rivers
Rocky Arroyo
Río Penasco
N.M. 529
N.M. 243
N.M. 360
N.M. 128
N.M. 31
N.M. 524
N.M. 396
N.M. 137
U.S. 62
U.S. 285
U.S. 82
0
5
10
20
Miles


Map 8
Eddy County CWPP
Ignition Risk Potential
Fires per 1000 Acres per Four Years
Legend
Low: 0 Fires (2,518,980 Acres)
Moderate: 1 Fire (116,910 Acres)
High: 1 + Fires (50,066 Acres)
Fire History Source: New Mexico State Forestry Division
Communities
Highways
Roads
Arroyos and Rivers
Wildland Urban Interface
Projection: UTM Zone 13N
Datum: North American Datum 1983
Walsh
an ecology and environment company
Chaves County
Lea County
Otero County
Texas
LOCO HILLS WUI
RIVERSIDE WUI
COTTONWOOD WUI
SUN COUNTRY WUI
HOPE WUI
ATOKA WUI
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LA HUERTA WUI
HAPPY VALLEY WUI
Carlsbad WUI
OTIS WUI
WIPP WUI
JOEL WUI
WHITES CITY WUI
WHITES CITY WUI
MALAGA WUI
QUEEN WUI
Loving WUI
Artesia
Riverside
Loco Hills
Hope
Carlsbad
Loving
Malaga
White City
Queen
Lake Avalon
Brantley Lake
Salt Lake
Carlsbad Caverns
Living Desert State Park
Dark Canyon Draw
Pecos River
South Seven Rivers
North Seven Rivers
Rio Penasco
Rocky Arroyo
Delaware River
Black River
US Hwy 82
US Hwy 285
State Hwy 360
State Hwy 31
State Hwy 128
State Hwy 396
US Hwy 62
US Hwy 180
County Hwy 222
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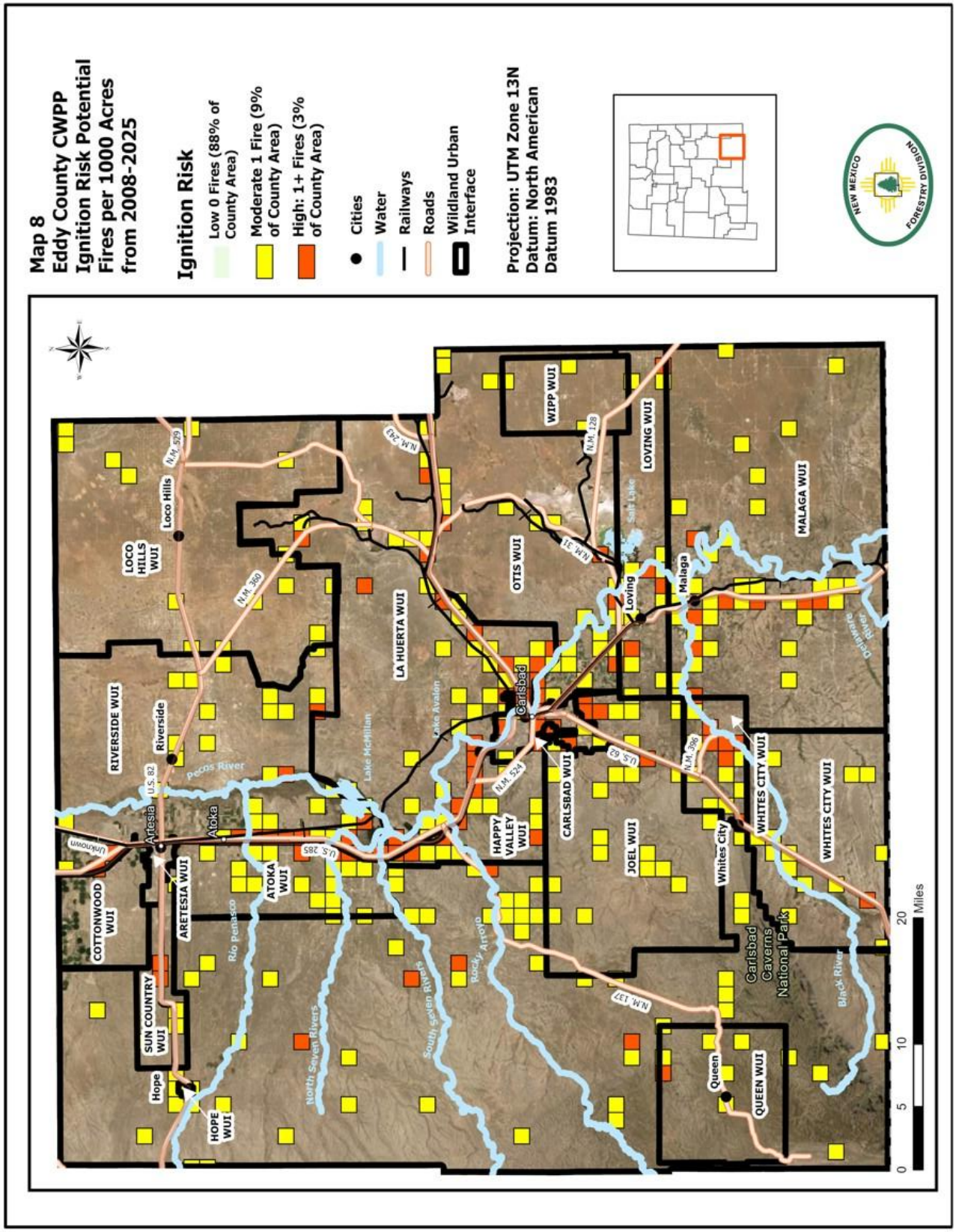
104°40'0"W
32°40'0"N
32°0'0"N
0 5 10 20 Miles


Map 8
Eddy County CWPP
Ignition Risk Potential
Fires per 1000 Acres
from 2008-2025
Ignition Risk
Low 0 Fires (88% of County Area)
Moderate 1 Fire (9% of County Area)
High: 1+ Fires (3% of County Area)
Cities
Water
Railways
Roads
Wildland Urban Interface
Projection: UTM Zone 13N
Datum: North American Datum 1983
NEW MEXICO FORESTRY DIVISION
RIVERSIDE WUI
LOCO HILLS WUI
COTTONWOOD WUI
ARETESIA WUI
SUN COUNTRY WUI
HOPE WUI
ATOKA WUI
LA HUERTA WUI
OTIS WUI
WIPP WUI
LOVING WUI
MALAGA WUI
HAPPY VALLEY WUI
CARLSBAD WUI
JOEL WUI
WHITES CITY WUI
QUEEN WUI
Riverside
Loco Hills
Artesia
Atoka
Carlsbad
Loving
Malaga
Whites City
Queen
Hope
Unknown
Pecos River
Lake McMillan
Lake Avalon
Salt Lake
Rio Penasco
North Seven Rivers
South Seven Rivers
Rocky Arroyo
Black River
Carlsbad Caverns National Park
Delaware River
N.M. 529
N.M. 360
N.M. 243
N.M. 128
N.M. 31
U.S. 82
U.S. 285
U.S. 62
N.M. 524
N.M. 396
N.M. 137
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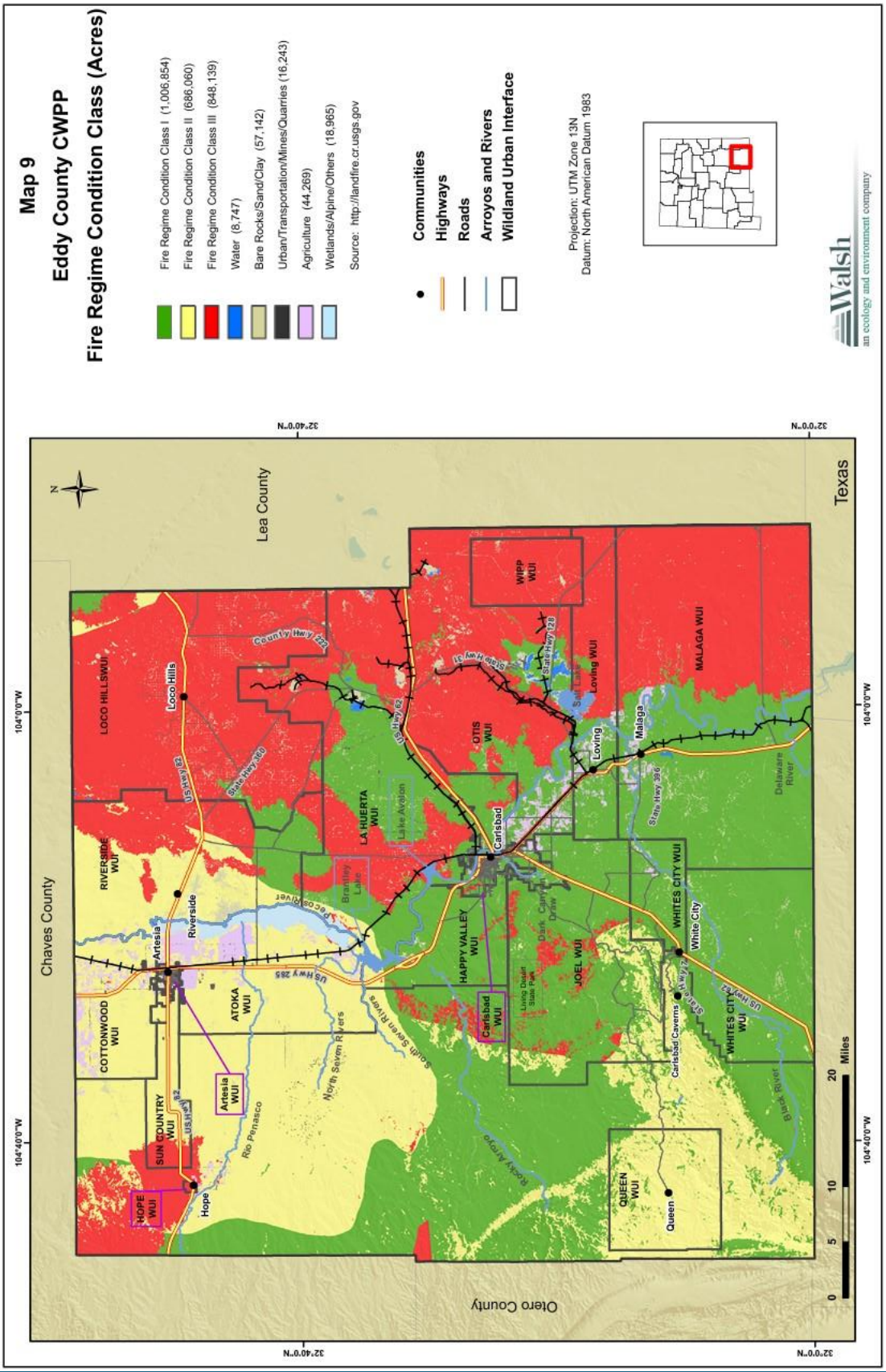
Miles


Map 9
Eddy County CWPP
Fire Regime Condition Class (Acres)
Fire Regime Condition Class I (1,006,854)
Fire Regime Condition Class II (686,060)
Fire Regime Condition Class III (848,139)
Water (8,747)
Bare Rocks/Sand/Clay (57,142)
Urban/Transportation/Mines/Quarries (16,243)
Agriculture (44,269)
Wetlands/Alpine/Others (18,965)
Source: http://landfire.cr.usgs.gov
Communities
Highways
Roads
Arroyos and Rivers
Wildland Urban Interface
Projection: UTM Zone 13N
Datum: North American Datum 1983
Walsh
an ecology and environment company
Chaves County
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Carlsbad Caverns
LOCO HILLS WUI
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LA HUERTA WUI
HAPPY VALLEY WUI
Carlsbad WUI
OTIS WUI
JOEL WUI
WHITES CITY WUI
WHITES CITY WUI
QUEEN WUI
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MALAGA WUI
Pecos River
South Seven Rivers
North Seven Rivers
Rio Penasco
Rocky Arroyo
Black River
Delaware River
Brantley Lake
Lake Avalon
Salt Lake
Dark Canyon Draw
Living Desert State Park
US Hwy 82
US Hwy 285
State Hwy 128
State Hwy 31
State Hwy 62
State Hwy 180
State Hwy 396
County Hwy 222
104°0'0"W
104°40'0"W
32°40'0"N
32°0'0"N
0
5
10
20
Miles

Appendix B

NFPA Wildland Fire Risk and Hazard Severity Assessment Form 1144

WILDLAND FIRE RISK AND HAZARD SEVERITY ASSESSMENT FORM

Assign a value to the most appropriate element in each category and place the number of points in the column on the right.

Element	Points	
A. Means of Access		
1. Ingress and egress		
a. Two or more roads in/out	0	
b. One road in/out	7	
2. Road width		
a. ≥7.3 m (24 ft)	0	
b. ≥6.1 m (20 ft) and <7.3 m (24 ft)	2	
c. <6.1 m (20 ft)	4	
3. All-season road condition		
a. Surfaced road, grade <5%	0	
b. Surfaced road, grade >5%	2	
c. Non-surfaced road, grade <5%	2	
d. Non-surfaced road, grade >5%	5	
e. Other than all-season	7	
4. Fire Service Access		
a. ≤91.4 m (300 ft) with turnaround	0	
b. >91.4 m (300 ft) with turnaround	2	
c. <91.4 m (300 ft) with no turnaround	4	
d. ≥91.4 m (300 ft) with no turnaround	5	
5. Street signs		
a. Present [10.2 cm (4 in.) in size and reflectorized]	0	
b. Not present	5	
B. Vegetation (Fuel Models)		
1. Characteristics of predominate vegetation within 91.4 m (300 ft)		
a. Light (e.g., grasses, forbs, sawgrasses, and tundra) NFDRS Fuel Models A, C, L, N, S, and T	5	
b. Medium (e.g., light brush and small trees) NFDRS Fuel Models D, E, F, H, P, Q, and U	10	
c. Heavy (e.g., dense brush, timber, and hardwoods) NFDRS Fuel Models B, G, and O	20	
d. Slash (e.g., timber harvesting residue) NFDRS Fuel Models J, K, and L	25	
2. Defensible space		
a. More than 30.48 m (100 ft) of vegetation treatment from the structure(s)	1	
b. 21.6 m to 30.48 m (71 ft to 100 ft) of vegetation treatment from the structure(s)	3	
c. 9.14 m to 21.3 m (30 ft to 70 ft) of vegetation treatment from the structure(s)	10	
d. <9.14 m (30 ft) of vegetation treatment from the structure(s)	25	
C. Topography Within 91.4 m (300 ft) of Structure(s)		
1. Slope <9%	1	
2. Slope 10% to 20%	4	
3. Slope 21% to 30%	7	
4. Slope 31% to 40%	8	
5. Slope >41%	10	

(NFPA 1144, 1 of 2)

Element	Points	
D. Additional Rating Factors (rate all that apply)		
1. Topographical features that adversely affect wildland fire behavior	0–5	_____
2. Areas with a history of higher fire occurrence than surrounding areas due to special situations (e.g., heavy lightning, railroads, escaped debris burning, and arson)	0–5	_____
3. Areas that are periodically exposed to unusually severe fire weather and strong dry winds	0–5	_____
4. Separation of adjacent structures that can contribute to fire spread	0–5	_____
E. Roofing Assembly		
1. Class A roof	0	_____
2. Class B roof	3	_____
3. Class C roof	15	_____
4. Nonrated	25	_____
F. Building Construction		
1. Materials (predominate)		
a. Noncombustible/fire-resistive siding, eaves, and deck (*see Chapter 8*)	0	_____
b. Noncombustible/fire-resistive siding and combustible deck	5	_____
c. Combustible siding and deck	10	_____
2. Building setback relative to slopes of 30% or more		
a. ≥9.14 m (30 ft) to slope	1	_____
b. <9.14 m (30 ft) to slope	5	_____
G. Available Fire Protection		
1. Water source availability		
a. Pressurized water source availability		
1892.7 L/min (500 gpm) hydrants ≤304.8 m (1000 ft) apart	0	_____
946.4 L/min (250 gpm) hydrants ≤304.8 m (1000 ft) apart	1	_____
b. Nonpressurized water source availability (off site)		
≥946.4 L/min (250 gpm) continuous for 2 hours	3	_____
<946.4 L/min (250 gpm) continuous for 2 hours	5	_____
c. Water unavailable	10	_____
2. Organized response resources		
a. Station ≤8 km (5 mi.) from structure	1	_____
b. Station >8 km (5 mi.) from structure	3	_____
3. Fixed fire protection		
a. NFPA 13, 13R, 13D sprinkler system	0	_____
b. None	5	_____
H. Placement of Gas and Electric Utilities		
1. Both underground	0	_____
2. One underground, one aboveground	3	_____
3. Both aboveground	5	_____
I. Totals for Home or Subdivision (Total of all points)		

Hazard Assessment	Total Points
Low hazard	<40
Moderate hazard	40–69
High hazard	70–112
Extreme hazard	>112

(NFPA 1144, 2 of 2)

Appendix C

2008 Questionnaire for Eddy County CWPP

February 2008

Eddy County Office of Emergency Management contracted with Walsh Environmental Scientists and Engineers LLC to develop the Eddy County Community Wildfire Protection Plan (CWPP). The CWPP is a collaborative effort among federal, state, county, community, and private landowners to determine ways to reduce the risks of wildfire. The results of this questionnaire will be used to help identify and prioritize appropriate mitigation actions. You can help by responding to this questionnaire. Please mail, fax, or e-mail this questionnaire to one of the addresses on the back by March 15.

1. What **community** do you live in or are you closest to? (please write in)	
2. How great of **risk** does wildfire pose to your community?	☐ Extreme Risk ☐ Moderate Risk ☐ Low Risk ☐ No Risk
3. What areas are at **extreme fire hazard** and pose a risk to homes or property?	☐ Forestlands ☐ Grasslands ☐ Shrublands ☐ Juniper Stands ☐ Other Areas: _____ **Location:**
4. What is the best way to mitigate or reduce wildfire hazards?	☐ Increase number of fire department personnel ☐ Reduce vegetation (grasses, trees, etc.) on public lands by controlled burns ☐ Reduce vegetation (grasses, trees, etc.) on public lands by mechanical treatments ☐ Increase firefighting equipment (more trucks, water tenders, etc.) ☐ Increase water availability ☐ Encourage private landowners to reduce fuels and develop defensible spaces around structures

5. What **recent actions** have been taken to reduce the risk of wildfire to your community?	☐ None that I am aware of. ☐ If you know of actions that have been taken, please explain:
6. What **fire education programs** have occurred in your community?	☐ None that I am aware of. ☐ If you know of programs that have occurred, please explain:
7. Is the community **prepared** to combat wildfire?	☐ No, if not, why: ☐ Yes, if so, why: ☐ I do not know
8. What **actions** do you think need to be taken to reduce the risk of wildland fire?	
Additional Comments:	

Please provide **contact information** in case we have further questions:

Name	
Address	
Phone	

Please fill out this survey and mail, fax, or email your response to:

Eddy County Emergency Management 324 S. Canyon St., Ste. B Carlsbad, NM 88220 575-628-3973 (fax) E-mail: MVilla@eddyoem.com	Walsh Environmental 4888 Pearl E. Circle, Suite 108 Boulder, CO 80301-2475 303-443-0367 (fax) E-mail: jbarker@walshenv.com

Appendix D

2008 Questionnaire Feedback Summary

Questionnaire Summary

Questionnaires were provided to the public at public meetings convened on February 6, 2008 and on Eddy County's website. Eight questionnaires were received as of April 16, 2008. The following tables summarize the responses of the 8 questionnaires

Questionnaire Summary

Question		Number of Response
2. How great of risk do wildfires pose to your property and community?	Extreme	5
	Moderate	2
	Low	1
	None	
3. What areas do you think are at extreme fire hazard and pose a risk to homes or property?	Forestlands	5
	Grasslands	4
	Shrublands	2
	Woodlands	2
	Other	
4. What do you think would be the best way to mitigate or reduce these hazardous?	Prescribed fire	3
	Mechanical control	6
	Fuel breaks	2
	Increase Equipment	3
	Increase Volunteers	3
	Increase available water	3
	Develop Defensible Space	7
	Firewise Education	3
	Evacuation Routes	2
5. Do you know of recent actions taken to reduce the risk of wildfires or to protect residents from wildfire spreading from public lands onto private lands or visa versa? See Table A.	No	2
	Yes	6
6. Have there been recent fire education programs in your community? See Table B	No	7
	Yes	1
7. Do you think that the community in which you live is prepared to combat wildfire? See Table C	No	2
	Yes	4
	I do not know	2
8. What actions do you think need to be taken to reduce wildfire risk? See Table 2.	See Table D for responses.	

Table A. Summary of Responses to Question Number 5

Comment	Number Received	Comment
1	1	Roadways were cleaned
2	3	Letters were sent out explaining fire danger
3	1	Carlsbad SWCD salt cedar and weed abatement program on Pecos River
4		
5		

Table B. Summary of Responses to Question Number 6

Comment	Number Received	Comment
1	1	VFD monthly meetings and training sessions
2		
3		
4		
5		
6		

Table C. Summary of Responses to Question Number 7

Comment	Number Received	Comment
1	1	No, Firefighters are too old
2	1	Yes, a large number of Queen is involved with FD.
3	1	Yes, BLM is helpful with grass fires
4	1	Yes, the VFDs and mutual aid agreements are helpful
5		

Table D. Summary of Responses to Question Number 8

Comment	Number Received	Comment
1	1	Mowing along roads
2	1	Queen needs a 911 system
3	1	Mowing along roads
4	1	Fire danger signs along roads
5	1	BNSF railroad needs to clear fuels on right-of-way
6	1	County code enforcement department needs to work with private landowners to reduce fuels
7	1	The county needs to be proactive in using prescribed fire to reduce fuel loads with careful planning

Appendix E

Declaration of Agreement and Concurrence:

The following Partners in the Development of this Eddy County Community Wildfire Protection Plan Update have reviewed and mutually agree and concur with its contents:

_____	_____	_____
Signature	Printed name	Date
_____	_____	
Title	Organization	

_____	_____	_____
Signature	Printed name	Date
_____	_____	
Title	Organization	

_____	_____	_____
Signature	Printed name	Date
_____	_____	
Title	Organization	

_____	_____	_____
Signature	Printed name	Date
_____	_____	
Title	Organization	

_____	_____	_____
Signature	Printed name	Date
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Title	Organization	

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Signature	Printed name	Date
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Title	Organization	

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Signature	Printed name	Date
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Title	Organization	

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Signature	Printed name	Date
_____	_____	
Title	Organization	

_____	_____	_____
Signature	Printed name	Date
_____	_____	
Title	Organization	