



Lea County Hazard Mitigation Plan

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With Professional Planning Assistance from
AECOM



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SECTION 1: INTRODUCTION

This section provides a general introduction to the Lea County Hazard Mitigation Plan. It consists of the following five subsections:

- ◆ 1.1 Background
- ◆ 1.2 Purpose
- ◆ 1.3 Scope
- ◆ 1.4 Authority
- ◆ 1.5 Summary of Plan Contents

1.1 Background

Natural hazards, such as winter storms, floods, and tornadoes, are a part of the world around us. Their occurrence is natural and inevitable, and there is little we can do to control their force and intensity. We must consider these hazards to be legitimate and significant threats to human life, safety, and property.

While the threat from hazardous events may never be fully eliminated, there is much we can do to lessen their potential impact upon our communities and our citizens. By minimizing the impact of hazards upon our built environment, we can prevent such events from resulting in disasters. The concept and practice of reducing risks to people and property from known hazards is referred to as *hazard mitigation*.

	<p style="text-align: center;">FEMA Definition of Hazard Mitigation:</p> <p>“Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.”</p>
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Hazard mitigation techniques include both structural measures (such as strengthening or protecting buildings and infrastructure from the destructive forces of potential hazards) and non-structural measures (such as the adoption of sound land use policies and the creation of public awareness programs). It is widely accepted that the most effective mitigation measures are implemented at the local government level, where decisions on the regulation and control of development are ultimately made. A comprehensive mitigation approach addresses hazard vulnerabilities that exist today and soon. Therefore, it is essential that projected patterns of future development are evaluated and considered in terms of how that growth will increase or decrease a community’s overall hazard vulnerability.

A key component in the formulation of a comprehensive approach to hazard mitigation is to develop, adopt, and update a local hazard mitigation plan. A hazard mitigation plan establishes broad community vision and guiding principles for reducing hazard risk, and further proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

The Lea County Hazard Mitigation Plan plans to document the region’s sustained efforts to incorporate hazard mitigation principles and practices into routine government activities and functions. At its core, the Plan recommends specific actions to minimize hazard vulnerability and protect residents from losses to those hazards that pose the greatest risk. These mitigation actions go beyond simply recommending structural solutions to reduce existing vulnerability, such as elevation, retrofitting, and acquisition projects. Local policies on community growth and development, incentives for natural resource protection, and public awareness and outreach activities are examples of other actions considered to

reduce the region’s vulnerability to identified hazards. The Plan remains a living document, with implementation and evaluation procedures established to help achieve meaningful objectives and successful outcomes over time.

1.1.1 The Disaster Mitigation Act and the Flood Insurance Reform Act

To reduce the Nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (Disaster Mitigation Act 2000) to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Section 322 of DMA 2000 emphasizes the need for state, local and Tribal government entities to closely coordinate on mitigation planning activities and makes the development of a hazard mitigation plan a specific eligibility requirement for any local or Tribal government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP) and the Building Resilient Infrastructure and Communities (BRIC) program, both of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

Additionally, the Flood Insurance Reform Act of 2004 (P.L. 108-264) created two new grant programs, Severe Repetitive Loss (SRL) and Repetitive Flood Claim (RFC), and modified the existing Flood Mitigation Assistance (FMA) program. One of the requirements of this Act is that a FEMA-approved Hazard Mitigation Plan is now required if communities wish to be eligible for these FEMA mitigation programs. However, as of early 2014, these programs have been folded into a single Flood Mitigation Assistance (FMA) program.

This change was brought on by new, major federal flood insurance legislation that was passed in 2012 under the Biggert-Waters Flood Insurance Reform Act (P.L. 112-141). This act made several changes to the way the National Flood Insurance Program is to be run, including raises in rates to reflect true flood risk and changes in how Flood Insurance Rate Map (FIRM) updates impact policyholders. The Biggert-Waters Act further emphasizes Congress’ focus on mitigating vulnerable structures.

The Lea County Hazard Mitigation Plan has been prepared in coordination with FEMA Region VI and the New Mexico Department of Homeland Security and Emergency Management (NMDHSEM) to ensure that the Plan meets all applicable FEMA and state requirements for hazard mitigation plans. A *Local Mitigation Plan Review Tool*, found in Appendix B provides a summary of federal and state minimum standards and notes the location where each requirement is met within the Plan.

1.2 Purpose

The purpose of the Lea County Hazard Mitigation Plan is to:

- Complete update of existing Plan to demonstrate progress and reflect current conditions
- Increase public awareness and education
- Maintain grant eligibility for participating jurisdictions
- Maintain compliance with state and federal legislative requirements for local hazard mitigation plans

1.3 Scope

The focus of the Lea County Hazard Mitigation Plan is on those hazards determined to be “high” or “moderate” risks to the Lea County Region, as determined through a detailed hazard risk assessment. Other hazards that pose a “low” or “negligible” risk will continue to be evaluated during future updates to the Plan, but they may not be fully addressed until they are determined to be of high or moderate

risk. This enables the participating counties and municipalities to prioritize mitigation actions based on those hazards which are understood to present the greatest risk to lives and property.

The geographic scope (i.e., the planning area) for the Plan update includes Lea County as well as the incorporated jurisdictions. **Table 1-1** indicates the participating jurisdictions.

Table 1-1: Participating Jurisdictions in the Lea County Hazard Mitigation Plan

Lea County	
City of Eunice	City of Lovington
City of Hobbs	Town of Tatum
City of Jal	

1.4 Authority

The Lea County Hazard Mitigation Plan update has been developed in accordance with current state and federal rules and regulations governing local mitigation plans and has been adopted by the county and local jurisdiction in accordance with standard local procedures. Copies of the adoption resolutions for each participating jurisdiction are provided in Appendix A. The Plan shall be routinely monitored and revised to maintain compliance with the following provisions, rules, and legislation:

- Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390)
- FEMA's Final Rule published in the Federal Register, at 44 CFR (Code of Federal Regulations) Part 201 (201.6 for local mitigation planning requirements)
- Flood Insurance Reform Act of 2004 (P.L. 108-264) and Biggert-Waters Flood Insurance Reform Act of 2012 (P.L. 112-141)

1.5 Summary of Plan Contents

The contents of this Plan are designed and organized to be as reader-friendly and functional as possible. While significant background information is included on the processes used and studies completed (i.e., risk assessment, capability assessment), this information is separated from the more meaningful planning outcomes or actions (i.e., mitigation strategy, mitigation action plan).

Section 2, **Planning Process** provides a complete narrative description of the process used to prepare the Plan. This includes the identification of participants on the planning team and describes how the public and other stakeholders were involved. It also includes a detailed summary of each of the key meetings held, along with any associated outcomes.

The **Community Profile**, located in Section 3, provides a general overview of the Lea County region, including prevalent geographic, demographic, and economic characteristics. In addition, building characteristics and land use patterns are discussed. This baseline information provides a snapshot of the planning area and helps local officials recognize those social, environmental, and economic factors that play a role in determining the region's vulnerability to hazards.

The Risk Assessment is presented in two sections: Section 4, **Hazard Identification**; Section 5, **Hazard Profiles**. Together, these sections serve to identify, analyze, and assess hazards that pose a threat to the Lea County Region. The risk assessment also attempts to define any hazard risks that may uniquely or exclusively affect specific areas of the Lea County Region.

The Risk Assessment begins by identifying hazards that threaten the region. Next, detailed profiles are established for each hazard, building on available historical data from past hazard occurrences, spatial extent, and probability of future occurrence. This section culminates in a hazard risk ranking based on conclusions regarding the frequency of occurrence, spatial extent, and potential impact highlighted in each of the hazard profiles. In essence, the information generated through the risk assessment serves a critical function as the participating jurisdictions in the Lea County Region seek to determine the most appropriate mitigation actions to pursue and implement—enabling them to prioritize and focus their efforts on those hazards of greatest concern and those structures or planning areas facing the greatest risk(s).

The **Capability Assessment**, found in Section 6, provides a comprehensive examination of the Lea County Region’s capacity to implement meaningful mitigation strategies and identifies opportunities to increase and enhance that capacity. Specific capabilities addressed in this section include planning and regulatory capability, staff and organizational (administrative) capability, technical capability, fiscal capability, and political capability. Information was obtained using a detailed survey questionnaire and an inventory and analysis of existing plans, ordinances, and relevant documents. The purpose of this assessment is to identify any existing gaps, weaknesses, or conflicts in programs or activities that may hinder mitigation efforts and to identify those activities that should be built upon in establishing a successful and sustainable local hazard mitigation program.

The **Community Profile, Risk Assessment, and Capability Assessment** collectively serve as a basis for determining the goals for the Lea County Hazard Mitigation Plan, each contributing to the development, adoption, and implementation of a meaningful and manageable **Mitigation Strategy** that is based on accurate background information.

The **Mitigation Strategy**, found in Section 7, consists of broad goal statements as well as an analysis of hazard mitigation techniques for the jurisdictions participating in the Lea County Hazard Mitigation Plan to consider in reducing hazard vulnerabilities. The strategy provides the foundation for a detailed **Mitigation Action Plan**, found in Section 8, which links specific mitigation actions for each county and municipal department or agency to locally assigned implementation mechanisms and target completion dates. Together, these sections are designed to make the Plan both strategic, through the identification of long-term goals, and functional, through the identification of immediate and short-term actions that will guide day-to-day decision-making and project implementation.

In addition to the identification and prioritization of mitigation projects, emphasis is placed on the use of program and policy alternatives to help make the Lea County Region less vulnerable to the damaging forces of hazards while improving the economic, social, and environmental health of the community. The concept of multi-objective planning was emphasized throughout the planning process, particularly in identifying ways to link, where possible, hazard mitigation policies and programs with complimentary community goals related to disaster recovery, housing, economic development, recreational opportunities, transportation improvements, environmental quality, land development, and public health and safety.

Plan Maintenance, found in Section 9, includes the measures that the jurisdiction participating in the Lea County plan will take to ensure the Plan’s continuous long-term implementation. The procedures also include the way the Plan will be regularly evaluated and updated to remain a current and meaningful planning document.

SECTION 2: PLANNING PROCESS

This section of the Plan describes the mitigation planning process undertaken by the County in preparing the Hazard Mitigation Plan. It consists of the following seven subsections:

- ◆ 2.1 Overview of Hazard Mitigation Planning
- ◆ 2.2 Preparing the Plan
- ◆ 2.3 The Lea County Hazard Mitigation Planning Team
- ◆ 2.4 Community Meetings and Workshops
- ◆ 2.5 Involving the Public
- ◆ 2.6 Involving the Stakeholders
- ◆ 2.7 Documentation of Plan Progress

44 CFR Requirement
44 CFR Part 201.6(c)(1): The plan shall include documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process and how the public was involved.

2.1 Overview of Hazard Mitigation Planning

Local hazard mitigation planning is the process of organizing community resources, identifying and assessing hazard risks, and determining how to best minimize or manage those risks. This process results in a hazard mitigation plan that identifies specific mitigation actions, each designed to achieve short-term planning objectives as well as a long-term community vision. To ensure the functionality of each mitigation action, responsibility is assigned to a specific individual, department, or agency along with a schedule for its implementation. Plan maintenance procedures are established for the routine monitoring of implementation progress, as well as the evaluation and enhancement of the mitigation plan itself. These plan maintenance procedures ensure that the Plan remains a current, dynamic, and effective planning document over time.

Mitigation planning offers many benefits, including:

- Saving lives and property.
- Saving money.
- Speeding recovery following disasters.
- Reducing future vulnerability through wise development and post-disaster recovery and reconstruction.
- Expediting the receipt of pre-disaster and post-disaster grant funding; and
- Demonstrating a firm commitment to improving community health and safety.

Typically, mitigation planning is described as having the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. A core assumption of hazard mitigation is that pre-disaster investments will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery, and reconstruction. Furthermore, mitigation practices will enable residents, businesses, and industries to re-establish themselves in the wake of a disaster, getting the community economy back on track more quickly and with less interruption.

The benefits of mitigation planning go beyond solely reducing hazard vulnerability. Measures such as the acquisition or regulation of land in known hazard areas can help achieve multiple community goals,

such as preserving open space, maintaining environmental health, and enhancing recreational opportunities. Thus, it is vitally important that any local mitigation planning process be integrated with other concurrent local planning efforts, and any proposed mitigation strategies must consider other existing community goals or initiatives that will help complement or hinder their future implementation.

2.2 Preparing the Plan

Hazard mitigation plans are required by FEMA (Federal Emergency Management Agency) to be updated every five years for the jurisdictions covered under them to remain eligible for federal mitigation and public assistance funding. To help prepare the Lea County Hazard Mitigation Plan, AECOM was hired as a consultant to provide professional mitigation planning services. Per the contractual scope of work, the consultant team followed the mitigation planning process recommended by FEMA. The Local Hazard Mitigation Plan Review Tool, found in Appendix B, provides a detailed summary of FEMA's current minimum standards of acceptability for compliance with DMA 2000 and notes the location where each requirement is met within this Plan. These standards are based upon FEMA's Interim Final Rule as published in the Federal Register on February 26, 2002, in Part 201 of the Code of Federal Regulations (CFR). The planning team used FEMA's Local Mitigation Planning Handbook (released 2016) for reference as they completed the Plan.

The process used to prepare this Plan included six major steps that were completed over the course of eighteen months beginning in June 2021. These steps include public outreach, risk assessment, capability assessment, mitigation strategy, plan maintenance and plan adoption. The kick-off meeting was held virtually on 6/22/2021. The second planning meeting was held virtually on 9/1/2021. The third planning meeting was held in-person and virtually on 8/10/2022. The first public meeting was held in-person and virtually on 8/10/2022. The second public meeting will occur at the plan adoption meeting along with a final planning meeting. Each of these planning steps -resulted in critical work products and outcomes that collectively make up the Plan.

2.3 The Lea County Hazard Mitigation Planning Team

To guide the development of this Plan update, Lea County created the Lea County Hazard Mitigation Planning Committee (HMPC). This committee represented a community-based planning team made up of representatives from various county departments and municipalities and other key stakeholders identified to serve as critical partners in the planning process.

Beginning in June 2021, the planning team members engaged in regular discussions as well as local meetings and planning workshops to discuss and complete tasks associated with preparing the Plan. This working group coordinated all aspects of plan preparation and provided valuable input to the process. In addition to regular meetings, team members routinely communicated and were kept informed through an email distribution list.

Specifically, the tasks assigned to the Lea County Hazard Mitigation Planning Committee included:

- Participate in hazard mitigation planning committee meetings and workshops.
- Provide the best available data as required for the Risk Assessment portion of the Plan.
- Complete the Local Capability Assessment Survey and provide copies of any mitigation or hazard-related documents for review and incorporation into the Plan.
- Support the development of the Mitigation Strategy portion of the Plan, including the design and adoption of a regional vision statement, regional mitigation goal statements, and regional mitigation actions.

- Review the existing mitigation actions from the previous plan, provide an update on those previously adopted mitigation actions, and propose new mitigation actions for their department/agency for incorporation into the updated Plan.
- Review and provide timely comments on all study findings and draft plan deliverables; and
- Support the adoption of the Lea County Hazard Mitigation Plan.

Table 2.1 lists the members of the HMPC who were responsible for participating in the development of the Plan. Stakeholders representing local and regional agencies involved in hazard mitigation activities and agencies that have the authority to regulate development are identified with an asterisk (*). Committee members are listed by jurisdiction in **Table 2.1** for ease of organizing and presenting the information, but it should be noted that the committee worked extremely well as one regional unit thinking beyond traditional jurisdictional boundaries to focus on the mitigation planning issues and tasks at hand.

Table 2.1: Members of the Lea County Hazard Mitigation Planning Committee

Jurisdiction or Agency	Representative	Department, Title, or Role
Lea County		
Lea County	Cassie Corley	Environmental Supervisor
	Lorenzo Velasquez*	Environmental Director
Eunice	Casey Arcidez	Police Chief
	Eddy Fabela	Fire Chief
Hobbs	Manny Gomez*	City Manager
	John Ortolano	Police Chief
	August Fons	Deputy Police Chief
	Barry Young	Deputy Fire Chief
Jal	Van Myrick	Public Works Director
	Pat Walter	Fire Chief
	Whitney Moody	EMS (Emergency Medical Services) Coordinator
Lovington	Crystal Ball	Planning & Zoning Coordinator
	Terrance Lizardo	Fire Chief
Tatum	Marilyn Burns*	Mayor
	Cheryl LeCrone	Assistant Clerk
Other Stakeholders		
State	Sarah Gerlitz	NMDHSEM Mitigation Specialist
FEMA	Lisa Hecker	Emergency Management Specialist
Project Consultants		
AECOM	David Turk	Project Director
	Eric Nemeth	Project Manager

Jurisdiction or Agency	Representative	Department, Title, or Role
	Brent Edwards	Mitigation Planner

Multi-jurisdictional Participation

The Lea County Hazard Mitigation Plan includes Lea County and 5 incorporated municipalities (Eunice, Hobbs, Jal, Lovington, Tatum). To satisfy multi-jurisdictional participation requirements, the county and its participating jurisdictions were required to perform the following tasks:

- Participate in mitigation planning meetings and workshops.
- Complete the Local Capability Assessment Survey.
- Provide an update on previously adopted mitigation actions.
- Review drafts of the Lea County Hazard Mitigation Plan.
- Adopt their updated local Mitigation Action Plan.

The jurisdictions of Tatum and Eunice were also involved in the planning process through verbal and electronic email communications when unable to participate in-person due to a world-wide pandemic. Each jurisdiction participated in the planning process and each jurisdiction has developed and adopted a local Mitigation Action Plan unique to that jurisdiction which will be updated over time per the Plan Maintenance Procedures described in Section 9.

2.4 Community Meetings and Workshops

The preparation of this Plan required a series of meetings and workshops for facilitating discussion, gaining consensus, and initiating data collection efforts with local government staff, community officials, and other identified stakeholders. More importantly, the meetings and workshops prompted continuous input and feedback from relevant participants throughout the drafting stages of the Plan.

The following is a summary of the key meetings and workshops held by the HMPC during the development of the Plan. In many cases, routine discussions and additional meetings were held by local staff to accomplish planning tasks specific to their department or agency. For example, completing the Local Capability Assessment Survey or seeking approval of specific mitigation actions for their department or agency to undertake and include in their Mitigation Action Plan. Public meetings are summarized in subsection 2.5.

All meeting notes, agendas, sign-in sheets, and presentation slides can be found in Appendix F.

2.5 Involving the Public

44 CFR Requirement

44 CFR Part 201.6(b)(1): The planning process shall include an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.

A key component of any mitigation planning process is public participation. Individual citizen and community-based input provides the entire planning team with a greater understanding of local concerns and increases the likelihood of successfully implementing mitigation actions by developing community “buy-in” from those directly affected by the decisions of public officials. As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the hazards present in their community and take the steps necessary to reduce their impact. Public

awareness is a key component of any community’s overall mitigation strategy aimed at making a home, neighborhood, school, business, or entire planning area safer from the potential effects of hazards.

Public involvement in the update of the Lea County Hazard Mitigation Plan was/will be sought using various methods including open public meetings, a project information fact sheet with contact information, a public participation survey, and by making copies of draft Plan documents available for public review on county websites and at government offices. The public meeting will be held at a distinct period during the planning process: upon completion of a final draft Plan, but prior to official plan approval and adoption. This public meeting was held at a central location to the planning area to ensure that citizens from each participating jurisdiction had reasonable access to the opportunity to participate in-person in the planning process. The public participation survey was made available online, through web links forwarded via email and Facebook.

Public Meeting

The first public meeting was held in-person and virtually on August 10, 2022. The second public meeting will be held after the draft plan is completed. When the plan is approved by FEMA, the County will open the floor to any comments or concerns at the County Commission meeting for adoption. This allows the public to provide any input on the plan before the plan is formally adopted by the County. Along with the County, the public will be allowed to make any comments at the participating jurisdictions city and town council meetings when they formally adopt the plan as well.

2.5.1 Public Participation Survey

The Lea County Hazard Mitigation Public Participation Survey was made available in March 2022 and will remain available until December 2022. During this time, 10 surveys were completed. The complete results of the survey can be found in a summary report including charts and figures in Appendix E.

The results of the survey were presented to members of the HMPC at HMPC Meeting #2 so that public opinion could be factored into final changes and additions to each jurisdiction’s Mitigation Action Plan.

2.6 Involving the Stakeholders

44 CFR Requirement
44 CFR Part 201.6(b)(2): The planning process shall include an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other non-profit interests to be involved in the planning process.

The Lea County Hazard Mitigation Planning Committee included a variety of stakeholders beyond the representatives from each participating jurisdiction. These included representatives from the Department of Health and New Mexico Department of Homeland Security & Emergency Management. Input from additional stakeholders, including neighboring communities such as Chaves County, was welcomed through the open public meetings and online survey. If any additional stakeholders representing other agencies and organizations participated in the Public Participation Survey, that information is unknown due to the anonymous nature of the survey.

The Lea County Hazard Mitigation Planning Committee included a variety of stakeholders beyond the representatives from each participating jurisdiction. These included representatives from the Department of Health and New Mexico Department of Homeland Security and Emergency Management. Input from additional stakeholders, including neighboring communities who were invited

via social media advertisements, word of mouth at LEPC (Local Emergency Planning Committee) meetings, and emails, was welcomed through the open public meeting and online survey. Local and regional agencies that were provided an opportunity to be involved included: New Mexico Department of Health- Emergency Preparedness Specialist, New Mexico Department of Homeland Security and Emergency Management- Local Preparedness Coordinator and Mitigation Officer, Chaves County- Emergency Manager, Eddy County- Emergency Manager, FEMA- Emergency Management Specialist.

2.7 Documentation of Plan Progress

Progress in hazard mitigation planning for the participating jurisdictions in Lea County is documented in this plan update. In addition, community capability continues to improve with the implementation of new plans, policies, and programs that help to promote hazard mitigation at the local level. The current state of local capabilities for the participating jurisdictions is captured in Section 6: Capability Assessment. The participating jurisdictions continue to demonstrate their commitment to hazard mitigation and hazard mitigation planning and have proven this by reconvening the HMPC to update the plan and by continuing to involve the public in the hazard mitigation planning process.

SECTION 3: PLANNING AREA PROFILE

This section of the Plan provides a general overview of the County. It consists of the following three subsections:

- ◆ 3.1 Geography and the Environment
- ◆ 3.2 Population and Demographics
- ◆ 3.3 Housing, Infrastructure, and Land Use

3.1 Geography and the Environment

Lea County is in the southeastern corner of New Mexico along the Texas border. The County is bordered on the East and South by Texas, to the west by Eddy and Chaves Counties, and the North by Roosevelt County.

The geography of the area is classified as slopes that are mostly flat to flat. Hobbs is located near an area called caprock by residents. This caprock is one of the largest unfractured geologic plates in the continental United States. The area makes up part of a larger geological feature known as the Permian Basin. The land around Hobbs slopes to the southeast. Relief in the form of parallel ridges occurring at 1-mile intervals is characteristic of the area. These ridges form the basin divides that, in turn, define the streams or draws. There are no well-defined flow paths, but low-lying areas show soil and vegetation changes.

Lea County is home to several manufacturing sectors including food production, a National Enrichment Facility, and energy-related projects that take advantage of the county's business-friendly climate that offers incentives and solutions.

Manufacturing also includes much of the oil and gas industry such as refining practices, nonmetal mineral manufacturing, metal production, and machinery production.

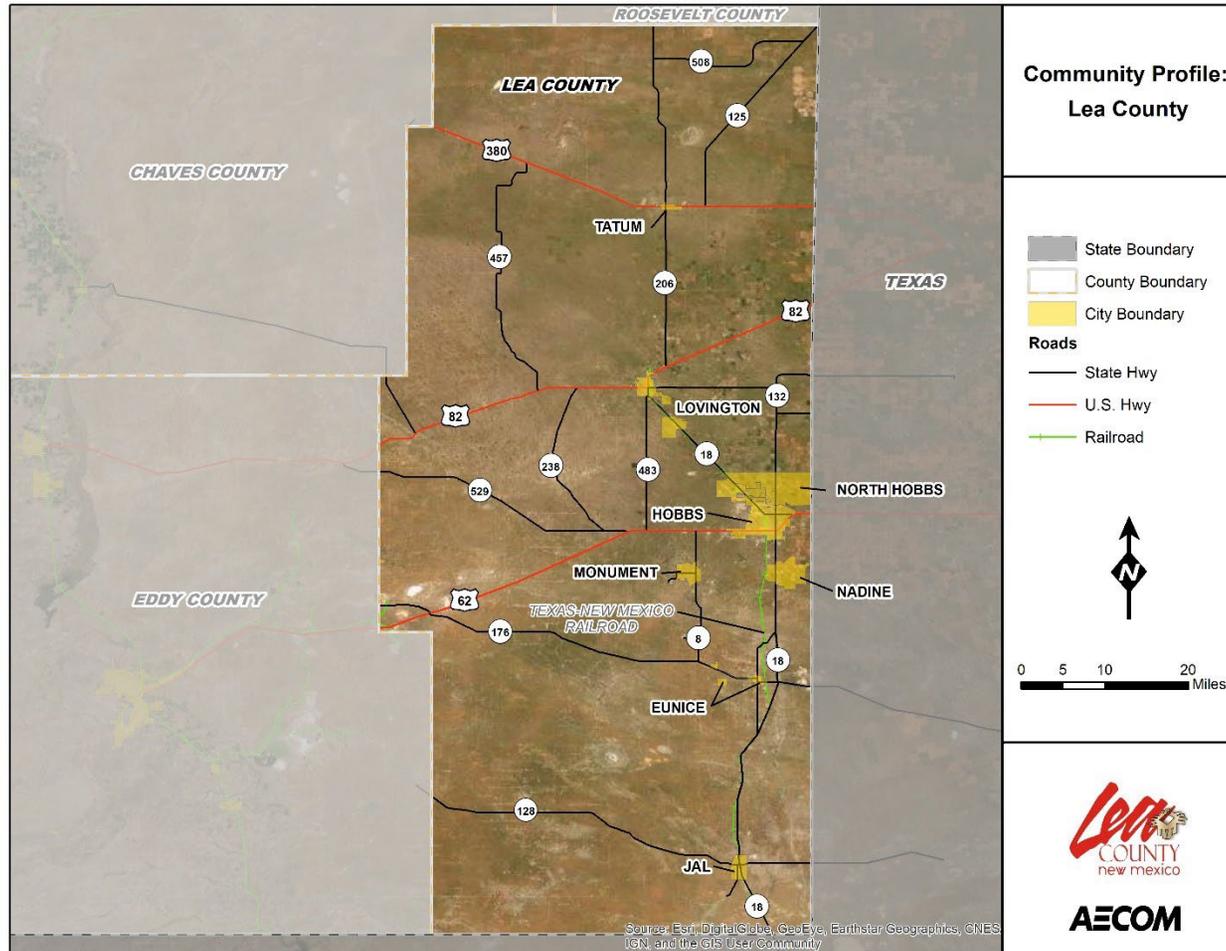
With the continued growth in Lea County, both in the oil and gas industry as well as the diversification of new and other industries, increased demand for transportation services have spurred the influx and expansion of transportation and warehousing companies within the region.

There are many opportunities for transportation companies, from water and sand hauling to local and national delivery to a myriad of oil and gas-related transportation needs.

Since the founding of the first few towns in Lea County, agriculture has been a focus and has endured through the many years. Lea County is home to several dairies, ranches, and farms dedicated to raising crops for both local and national distribution. As agriculture sees a renaissance in the US (United States), Lea County is dedicated to growing and expanding its offerings to new and existing businesses.

Some of the crops grown in Lea County include cotton, alfalfa, hay, peanuts, and corn, among others.

Figure 3-1: Lea County Community Profile



3.2 Population and Demographics

The U.S (United States). The Census Bureau estimates as of 2020, Lea County has a total of 74,455 people (about the seating capacity of the Los Angeles Memorial Coliseum) residing within its boundaries. The table below details the participating jurisdictions’ demographic information. Population counts from the U.S. Census Bureau for 2020 for each of the participating jurisdiction are presented in **Table 3-2**.

Table 3-1: Population Counts for Participating Jurisdictions

Jurisdiction	2020 Census Population
Lea County	74,455
City of Eunice	3,082
City of Hobbs	41,786
City of Jal	2,234
City of Lovington	12,050
Town of Tatum	697

Based on the 2020 Census estimates, the median age of residents in the county is 33.6 years. The racial characteristics of the county are presented in **Table 3-3**. Whites make up much of the population in the region accounting for over two-thirds of the population.

Table 3-2: Demographics of Participating Jurisdictions

Jurisdiction	White, Percent (2020)	Black or African American, Percent (2020)	American Indian or Alaska Native, Percent (2020)	Asian, Percent (2020)	Native Hawaiian or Other Pacific Islander, Percent (2020)	Two or More Races, percent (2020)	Persons of Hispanic Origin, Percent (2020)*
Lea County	88.0%	4.1%	1.0%	0.0%	0.0%	2.2%	58.5%
City of Eunice	99.6%	0.0%	0.0%	0.0%	0.0%	0.0%	54.4%
City of Hobbs	84.9%	5.9%	1.2%	1.0%	0.1%	2.4%	60.1%
City of Jal	97.8%	1.5%	0.6%	0.0%	0.0%	0.0%	57.6%
City of Lovington	87.1%	2.8%	0.0%	0.0%	0.0%	1.2%	72.2%
Town of Tatum	93.7%	2.9%	0.3%	0.0%	0.0%	0.4%	41.3%

*Hispanics may be of any race, so also are included in applicable race categories
 Source: United States Census Bureau

Eunice is home to URENCO USA’s National Enrichment Facility, Eunice’s business friendly environment is creating a resurgence of new business development with the addition of Outlaw Grill, H&R Block, JP Stone

Bank, Palenteria Azteca, a pharmacy and Parker Energy to the Community. The largest employers in Eunice: URENCO USA (United States of America), B&H Construction, Chaparral Service Inc, Chevron USA INC, Eunice Well Servicing Company, Family Dollar Store, Transwestern Pipeline Company, and Eunice Municipal Schools. Recreation opportunities in Eunice: city parks, youth center, Senior Center, Golf Courses, City Pool and Waterslides, community events, and many more.

Hobbs is the largest city in southeastern NM and serves as the retail center for an area encompassing some 125,000 residents within a 55-mile radius. Companies located in Hobbs include International Isotopes Inc, Joule Unlimited, Bloom Retail Center, United Airlines, Lowes, Hibbet Sports, Intercontinental Potash Corporation, Nova Mud, and a host of retail and accommodation facilities. The largest employers in Hobbs are Hobbs Municipal Schools, Lea Regional Medical Center, Halliburton, Walmart, RWI Construction, Zia Racetrack and Blackgold Casino, Geo Group and New Mexico Junior College. Recreational opportunities in Hobbs: gaming, horse racing, drag racing, sky diving, parks, pools with waterslides, dog park, golf courses, walking trails, fishing, Western Heritage Museum, community theater, teen center, community events, concerts, rodeo, etc.

Jal sits in the southeast corner of Lea County. Jal continues to grow and has attracted several businesses to the area including SunEdison, Eldorado Biofuels, fuel station, Family Dollar Store, and a new restaurant. The largest employers in Jal are Jal Public Schools, Merryman Construction Co, Quatro Trucking, Panther Energy, Southern Union Gas Services, Lake Quality Trucking, Fulco Trucking, and Family Dollar. Recreational opportunities in Jal: Woolworth Library, Jal Lake, Cowboy Days Festival, Jalorama, golf courses, and other community celebrations.

Lovington is the county seat. The largest employers in Lovington are Lovington Public Schools, Nor Lea Hospital, Ferguson Construction Company, Lea County Electric Cooperative, Gandy Oilfield Services, Gilbert Lease Services, Caprock Pipe and Supply, LEACO, and Navajo Refinery. Recreational opportunities in Lovington: Chaparral Park, Lea County Fair, pool and waterslides, fishing, skate-park, Lea County Museum, historic Lea Theater, teen center, rodeo, "World's Greatest Lizard Race," electric light parade and other community events.

Tatum is conveniently located at the crossroads of New Mexico highways 380 and 206. The largest employers in Tatum are Tatum Public Schools, Gourmet Seed International, Cogburn Pipe and Supply Inc., Conoco Phillips Pipeline Company, and Gandy Corporation. Recreational opportunities in Tatum include community library, camping, hiking, parks, community events and it is near many national parks.

3.3 Housing, Infrastructure, and Land Use

3.3.1 Housing

According to the 2020 U.S. Census, there are 27,950 housing units in the County, the majority of which are single family homes or mobile homes. Housing information for Lea County and the participating jurisdictions is presented in **Table 3-4**. As shown in the table, the City of Hobs has a slightly higher percentage of seasonal housing units compared to the other communities.

Table 3-3: Housing Characteristics of Participating Jurisdictions

Jurisdiction	Housing Units
Lea County	27,950

City of Eunice	1,268
City of Hobbs	23,405
City of Jal	1,009
City of Lovington	3,488
Town of Tatum	391

3.3.2 Infrastructure

Utilities

Electrical power in the County is provided by one public utility, several electricity cooperatives, and several municipalities. Central Valley Electric Cooperative serves major portions in the region. There are 10 power plants in Lea County, New Mexico, serving a population of 69,505 people in an area of 4,390 square miles (about the area of Connecticut). There is 1 power plant per 6,950 people, and 1 power plant per 438 square miles (about the area of San Antonio, Texas).

In New Mexico, Lea County is ranked 8th of 33 counties in Power Plants per capita, and 5th of 33 counties in power plants per square mile.

Water and sewer service is provided by many of the municipalities as well in the region. Although some areas do require the use of wells and septic systems, much of the region is covered by either municipal or county providers.

Community Facilities

There are several public buildings and community facilities located throughout the region. According to the data collected for the vulnerability assessment, there are 25 fire stations, 9 police stations, and 38 schools located within the study area. There are 3 medical care facilities located in the region. There are also numerous parks and recreational areas in the region.

Land Use

As shown in **Figure 3-1** Above, there are five incorporated municipalities located throughout the study area which make up most of the area's population. The incorporated areas are also where many businesses, commercial uses, and institutional uses are located. Land uses in the balance of the study area consist of residential and commercial development in the municipal areas with agricultural and recreational uses in the more rural unincorporated areas. Agriculture remains one of the largest land uses in the region and comprises a mix of cropland and pastureland dispersed across the region.

SECTION 4: HAZARD IDENTIFICATION

This section describes how the planning team identified the hazards to be included this plan. It consists of the following four subsections:

- ◆ 4.1 Overview
- ◆ 4.2 Description of Full Range of Hazards
- ◆ 4.3 Disaster Declarations
- ◆ 4.4 Hazard Evaluation

44 CFR Requirement
44 CFR Part 201.6(c)(2)(i): The risk assessment shall include a description of the type, location and extent of all-natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

4.1 Overview

Lea County is vulnerable to a wide range of natural and human-caused hazards that threaten life and property. Current FEMA regulations and guidance under the Disaster Mitigation Act of 2000 (DMA 2000) require, at a minimum, an evaluation of a full range of natural hazards. An evaluation of human-caused hazards (i.e., technological hazards, terrorism, etc.) is encouraged, though not required, for plan approval. The County has included a comprehensive assessment of both types of hazards.

Upon a review of the full range of natural hazards suggested under FEMA planning guidance, the participating counties in the Lea County have identified several hazards that are to be addressed in its Hazard Mitigation Plan. These hazards were identified through an extensive process that utilized input from the Lea County Hazard Mitigation Planning Team members, research of past disaster declarations in the participating counties, and review of the New Mexico State Hazard Mitigation Plan. Readily available information from reputable sources (such as federal and state agencies) was also evaluated to supplement information from these key sources.

Table 4-1 lists the full range of natural hazards initially identified for inclusion in the Plan and provides a brief description for each. This table includes 24 individual hazards. Some of these hazards are interrelated or cascading, but for preliminary hazard identification purposes these individual hazards are broken out separately.

Next, **Table 4-2** lists the presidential disaster declarations in Lea County.

Next, **Table 4-3** documents the evaluation process used for determining which of the initially identified hazards are considered significant enough to warrant further evaluation in the risk assessment. For each hazard considered, the table indicates whether the hazard was identified as a significant hazard to be further assessed, how this determination was made, and why this determination was made. The table works to summarize not only those hazards that *were* identified (and why) but also those that *were not* identified (and why not). Hazard events not identified for inclusion at this time may be addressed during future evaluations and updates of the risk assessment if deemed necessary by the Lea County Hazard Mitigation Planning Team during the plan update process.

Lastly, **Table 4-4** provides a summary of the hazard identification and evaluation process noting that 10 of the 24 initially identified hazards are considered significant enough for further evaluation through this Plan’s risk assessment.

4.2 Description of Full Range of Hazards

Table 4-1: Descriptions of the Full Range of Initially Identified Hazards

Hazard	Description
ATMOSPHERIC HAZARDS	
Avalanche	A rapid fall or slide of a large mass of snow down a mountainside.
Drought	A prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. Common effects of drought include crop failure, water supply shortages, and fish and wildlife mortality. Elevated temperatures, high winds, and low humidity can worsen drought conditions and make areas more susceptible to wildfire. Human demands and actions could hasten or mitigate drought-related impacts on local communities.
Hailstorm	Any storm that produces hailstones that fall to the ground; usually used when the amount or size of the hail is considered significant. Hail is formed when updrafts in thunderstorms carry raindrops into parts of the atmosphere where the temperatures are below freezing.
Extreme Heat	A heat wave may occur when temperatures hover 10 degrees or more above the average elevated temperature for the region and last for several weeks. Humid or muggy conditions, which add to the discomfort of elevated temperatures, occur when a “dome” of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms and low visibility. A heat wave combined with a drought can be dangerous and have severe economic consequences on a community.
Hurricane and Tropical Storm	Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counterclockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and with a diameter averaging 10 to 30 miles across. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes. Coastal areas are also vulnerable to the additional forces of storm surge, wind-driven waves and tidal flooding which can be more destructive than cyclone wind. Most hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico during the official Atlantic hurricane season, which extends from June through November.
Lightning	Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a “bolt” when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes, but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes thunder. On average, 73 people are killed each year by lightning strikes in the United States.
Nor’easter	Like hurricanes, nor’easters are ocean storms capable of causing substantial damage to coastal areas in the Eastern United States due to their associated high winds and heavy surf. Nor’easters are named for the winds that blow in from the northeast and drive the storm up the East Coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast. They are caused by the interaction of the jet stream with horizontal temperature gradients and occur during the fall and winter months when moisture and

Hazard Identification

Hazard	Description
	chilly air are plentiful. Nor'easters are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surf that causes severe beach erosion and coastal flooding.
Tornado	A tornado is a violently rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. Tornadoes are most often generated by thunderstorm activity when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The destruction caused by tornadoes ranges from light to catastrophic depending on the intensity, size, and duration of the storm.
Severe Thunderstorm	Thunderstorms are caused by air masses of varying temperatures meeting in the atmosphere. Rapidly rising warm moist air fuels the formation of thunderstorms. Thunderstorms may occur singularly, in lines, or in clusters. They can move through an area very quickly or linger for several hours. Thunderstorms may result in hail, tornadoes, or straight-line winds. Windstorms pose a threat to lives, property, and vital utilities primarily because of flying debris and can down trees and power lines.
Winter Storm	Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Blizzards, the most dangerous of all winter storms, combine low temperatures, heavy snowfall, and winds of at least 35 miles per hour, reducing visibility to only a few yards. Ice storms occur when moisture falls and freezes immediately upon impact on trees, power lines, communication towers, structures, roads, and other hard surfaces. Winter storms and ice storms can down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life.
GEOLOGIC HAZARDS	
Earthquake	A sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the surface. This movement forces the gradual building and accumulation of energy. Eventually, strain becomes so great that the energy is abruptly released, causing the shaking at the earth's surface which we know as an earthquake. 90 percent of all earthquakes occur at the boundaries where plates meet, although it is possible for earthquakes to occur entirely within plates. Earthquakes can affect hundreds of thousands of square miles; cause damage to property measured in the tens of billions of dollars; result in loss of life and injury to hundreds of thousands of persons; and disrupt the social and economic functioning of the affected area.
Expansive Soils	Soils that will exhibit some degree of volume change with variations in moisture conditions. The most important properties affecting degree of volume change in a soil are clay mineralogy and the aqueous environment. Expansive soils will exhibit expansion caused by the intake of water and, conversely, will exhibit contraction when moisture is removed by drying. They often appear sticky when wet and are characterized by surface cracks when dry. Expansive soil becomes a problem when structures are built upon them without taking proper design precautions into account regarding soil type. Cracking in walls and floors can be minor or can be severe enough for the home to be structurally unsafe.
Landslide	The movements of a mass of rock, debris, or earth down a slope when the force of gravity pulling down the slope exceeds the strength of the earth materials that comprise to hold it in place. Slopes greater than 10 degrees are more likely to slide, as are slopes where the height from the top of the slope to its toe is greater than 40 feet. Slopes are also more likely to fail if vegetative cover is low and/or soil water content is high.

Hazard Identification

Hazard	Description
Land Subsidence	The gradual settling or sudden sinking of the Earth’s surface due to the subsurface movement of earth materials. Causes of land subsidence include groundwater pumpage, aquifer system compaction, drainage of organic soils, underground mining, hydro compaction, natural compaction, sinkholes, and thawing permafrost.
Tsunami	A series of waves generated by an undersea disturbance such as an earthquake. The speed of a tsunami traveling away from its source can range from up to 500 miles per hour in deep water to 20 to 30 miles per hour in shallower areas near coastlines. Tsunamis differ from regular ocean waves in that their currents travel from the water surface all the way down to the sea floor. Wave amplitudes in deep water are typically less than one meter; they are often barely detectable to the human eye. However, as they approach shore, they slow in shallower water, causing the waves from behind to effectively “pile up,” and wave heights to increase dramatically. As opposed to typical waves which crash at the shoreline, tsunamis bring with them a continuously flowing ‘wall of water’ with the potential to cause devastating damage in coastal areas located immediately along the shore.
Volcano	A mountain that opens downward to a reservoir of molten rock below the surface of the earth. While most mountains are created by forces pushing up the earth from below, volcanoes are different in that they are built up over time by an accumulation of their own eruptive products: lava, ash flows, and airborne ash and dust. Volcanoes erupt when pressure from gases and the molten rock beneath becomes strong enough to cause an explosion.
HYDROLOGIC HAZARDS	
Dam and Levee Failure	Dam failure is the collapse, breach, or other failure of a dam structure resulting in downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam can cause loss of life and severe property damage if development exists downstream of the dam. Dam failure can result from natural events, human-induced events, or a combination of the two. The most common cause of dam failure is prolonged rainfall that produces flooding. Failures due to other natural events such as hurricanes, earthquakes or landslides are significant because there is little or no advance warning.
Erosion	Erosion is the gradual breakdown and movement of land due to both physical and chemical processes of water, wind, and general meteorological conditions. Natural, or geologic, erosion has occurred since the Earth’s formation and continues at a slow and uniform rate each year.
Flood	The accumulation of water within a water body which results in the overflow of excess water onto adjacent lands, usually floodplains. The floodplain is the land adjoining the channel of a river, stream ocean, lake or other watercourse or water body that is susceptible to flooding. Most floods fall into the following three categories: riverine flooding, coastal flooding, or shallow flooding (where shallow flooding refers to sheet flow, ponding and urban drainage).

Hazard	Description
Storm Surge	A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from four to five feet in a Category 1 hurricane up to more than 30 feet in a Category 5 storm. Storm surge heights and associated waves are also dependent upon the shape of the offshore continental shelf (narrow or wide) and the depth of the ocean bottom (bathymetry). A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. Storm surge arrives ahead of a storm’s actual landfall and the more intense the hurricane is, the sooner the surge arrives. Storm surge can be devastating to coastal regions, causing severe beach erosion and property damage along the immediate coast. Further, water rise caused by storm surge can be very rapid, posing a serious threat to those who have not yet evacuated flood-prone areas.
OTHER HAZARDS	
Hazardous Materials Incident	Hazardous material (HAZMAT) incidents can apply to fixed facilities as well as mobile, transportation-related accidents in the air, by rail, on the nation’s highways and on the water. HAZMAT incidents consist of solid, liquid and/or gaseous contaminants that are released from fixed or mobile containers, whether by accident or by design as with an intentional terrorist attack. A HAZMAT incident can last hours to days, while some chemicals can be corrosive or otherwise damaging over longer periods of time. In addition to the primary release, explosions and/or fires can result from a release, and contaminants can be extended beyond the initial area by persons, vehicles, water, wind, and wildlife as well.
Terror Threat	Terrorism is defined by FEMA as, “the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom.” Terrorist acts may include assassinations, kidnappings, hijackings, bomb scares and bombings, cyberattacks (computer- based), and the use of chemical, biological, nuclear, and radiological weapons.
Wildfire	An uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavier fuels with high continuity, steep slopes, elevated temperatures, low humidity, low rainfall, and high winds all work to increase risk for people and property located within wildfire hazard areas or along the urban/wildland interface. Wildfires are part of the natural management of forest ecosystems, but most are caused by human factors. Over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause for wildfire is lightning.
Nuclear Accident	The International Atomic Energy Agency (IAEA) classifies a nuclear incident or accident as an event that leads to significant consequences for people, the environment, or the facility. Typically, the effects of an incident are the release of radioactive substances that can cause damaging impacts. The IAEA uses a scale known as the International Nuclear and Radiological Event Scale (INES) to classify the level of impact that an event has on people and the environment.

4.3 Disaster Declarations

Disaster declarations provide initial insight into the hazards that may impact the Lea County planning area. Since 1998, three presidential disaster declarations have been reported in the County.

Table 4-2: Presidential Disaster Declarations for Lea County

Year	Disaster Number	Description
1998	1202	Severe Winter Storm
2013	4152	Flooding, Severe Storms
2019	4529	COVID-19 Pandemic

4.4 Hazard Evaluation

The table at the bottom of this page lists the hazards profiled in the State of New Mexico Hazard Mitigation Plan. Based on the research described above, 9 of these hazards pose a risk to at least one jurisdiction in Lea County. These are: dam failure, droughts, expansive soils, extreme heat, floods, severe storms, tornadoes, wildfires, and winter storms. Hail, high winds, and lightning are included under the severe storms profile.

Details for each hazard and their potential impact on Lea County are in Section 5. The following tables compare the identified and profiled hazards as they relate to their previous plan and to the state’s plan. Any hazards which affect the State of New Mexico or were profiled in the previous plan, but do not affect any of Lea County’s jurisdictions are listed as ‘excluded.’

Table 4-3: State of New Mexico Hazards

State of New Mexico Hazards		
Hazard	Identification Process	Risk Identified
Dam Failure	Local input, dam location, and topography	Potential risk of dam failure.
Drought	Local input, past hazard events	Reoccurring droughts.
Earthquake	Excluded	Not at risk of seismic activity.
Expansive Soils	Soil Analysis	Limited risk.
Extreme Heat	Local input, past hazard events	History of fatalities.
Flood	Local input, past hazard events, FEMA NFHL	Extensive 100- and 500-year floodplains throughout the county.
Hail	Local input, past hazard events	History of county wide hail damage.
High Wind	Local input, past hazard events	History of region wide storm damage.
Lightning	Local input, past hazard events	Limited historical incidents.
Land Subsidence	Excluded	No risk to Lea County.
Landslides	Excluded	No risk to Lea County.
Severe Storms	Local input, past hazard events	History of region wide storm damage.
Tornado	Local input, past hazard events	Limited past tornado activity.
Volcano	Excluded	No reasonable or predicted risk.

Hazard Identification

State of New Mexico Hazards		
Hazard	Identification Process	Risk Identified
Wildfire	Local input, WUI analysis, New Mexico State Forestry Division	Extensive vegetation and historical wildfire activity.
Winter Storm	Local input, past hazard events	The region is not prepared for long term exposure. Causes service infrastructure damage.

Table 4-4: Lea County Hazards

Lea County Hazards		
Hazard	Identification Process	Risk Identified
Drought	Local input, past hazard events	Reoccurring droughts.
Extreme Heat	Local input, past hazard events	History of fatalities.
Flood	Local input, past hazard events, FEMA NFHL	Extensive 100- and 500-year floodplains throughout the county.
Severe Storms (including Hail, High Winds and Lightning)	Local input, past hazard events	History of region wide storm damage.
Tornado	Local input, past hazard events	Limited past tornado activity.
Wildfire	Local input, WUI analysis, New Mexico State Forestry Division	Extensive vegetation and historical wildfire activity.
Winter Storm	Local input, past hazard events	The region is not prepared for long term exposure. Causes service infrastructure damage.

SECTION 5: HAZARD PROFILES

This section includes detailed hazard profiles for each of the hazards identified in the previous section (*Hazard Identification*) as significant enough for further evaluation in the Lea County Hazard Mitigation Plan. It contains the following subsections:

- ◆ 5.1 Overview
- ◆ 5.2 Study Area
- ◆ 5.3 Drought
- ◆ 5.4 Extreme Heat
- ◆ 5.5 Severe Storms
- ◆ 5.6 Tornado
- ◆ 5.7 Winter Storm
- ◆ 5.8 Flood
- ◆ 5.9 Wildfire
- ◆ 5.10 Conclusions on Hazard Risk
- ◆ 5.11 Final Determinations

44 CFR Requirement

44 CFR Part 201.6(c)(2)(i): The risk assessment shall include a description of the type, location and extent of all-natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events

5.1 Overview

This section includes detailed hazard profiles for each of the hazards identified in the previous section (*Hazard Identification*) as significant enough for further evaluation in Lea County hazard risk assessment by creating a hazard profile. Each hazard profile includes a general description of the hazard, its location and extent, notable historical occurrences, and the probability of future occurrences. Each profile also includes specific items noted by members of the Hazard Mitigation Planning Team (Planning Team) as it relates to unique historical or anecdotal hazard information for Lea County, or a participating municipality within them.

The following hazards were identified:

- **Atmospheric**
 - Drought
 - Extreme Heat
 - Severe Storms
 - Tornado
 - Winter Storm
- **Hydrologic**
 - Flood
- **Other**
 - Wildfire

5.2 Study Area

Table 5-1 provides a summary table of the participating jurisdictions within the county. In addition, **Figure 5-1** provides a base map, for reference, of Lea County.

Table 5-1: Participating Jurisdictions in the Lea County Hazard Mitigation Plan

Lea County	
City of Eunice	Town of Lovington
Town of Hobbs	City of Tatum
Town of Jal	

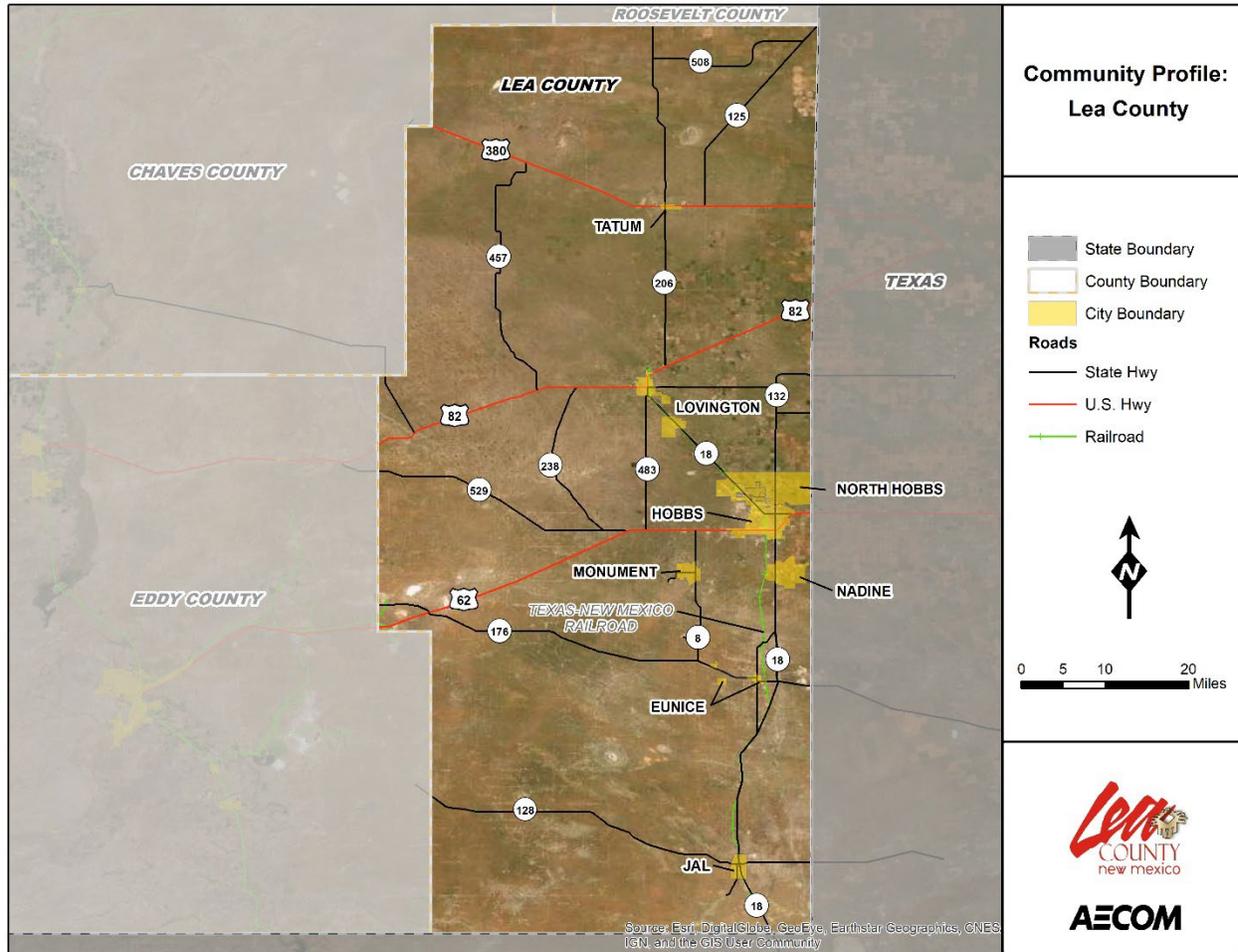


Figure 5-1: Lea County Base Map

ATMOSPHERIC HAZARDS

5.3 Drought

5.3.1 Background

Drought is a normal part of all climatic regions, including areas with high and low average rainfall. Drought is the consequence of a natural reduction in the amount of precipitation expected over an extended period, usually a season or more in length. Elevated temperatures, high winds, and low humidity can exacerbate drought conditions. In addition, human actions and demands for water resources can hasten drought-related impacts. Drought may also lead to more severe wildfires.

Droughts are typically classified into one of four types: 1) meteorological, 2) hydrologic, 3) agricultural, or 4) socioeconomic. **Table 5-2** presents definitions for these types of droughts.

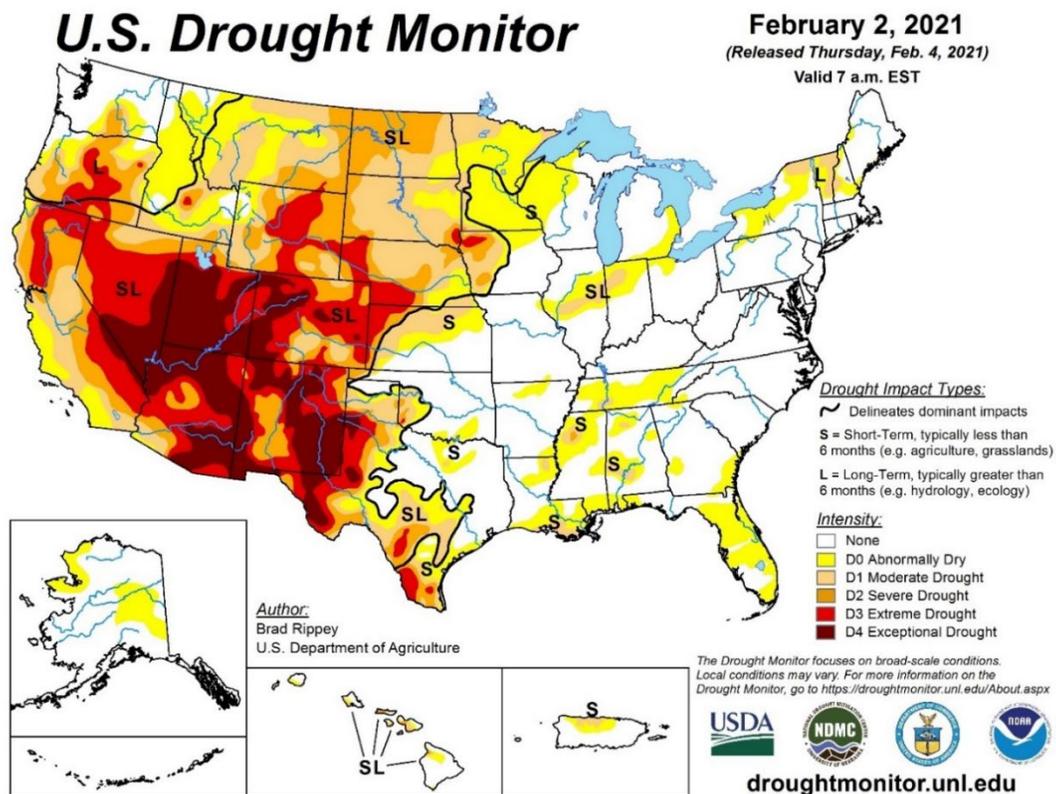
Table 5-2: Drought Classification Definitions

Meteorological Drought	The degree of dryness or departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
Hydrologic Drought	The effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
Agricultural Drought	Soil moisture deficiencies relative to water demands of plant life, usually crops.
Socioeconomic Drought	The effect of demands for water exceeding the supply because of a weather-related supply shortfall.

Source: Multi-Hazard Identification and Risk Assessment: A Cornerstone of the National Mitigation Strategy, FEMA

Droughts are slow-onset hazards, but, over time, can have very damaging effects to crops, municipal water supplies, recreational uses, and wildlife. If drought conditions extend over several years, the direct and indirect economic impact can be significant.

The Palmer Drought Severity Index (PDSI) is based on observed drought conditions and ranges from -0.5 (incipient dry spell) to -4.0 (extreme drought). Evident in **Figure 5-2**, the Palmer Drought Severity Index Summary Map for the United States, drought affects most areas of the United States, but is more severe in the Western United States.



Source: National Drought Mitigation Center

Figure 5-2: Palmer Drought Severity Index Summary Map for the United States

5.3.2 Location and Spatial Extent

Drought typically covers a large area and cannot be confined to any geographic or political boundaries. According to the Palmer Drought Severity Index (**Figure 5-2**), Central to Southwestern New Mexico has an elevated risk drought hazard. However, local areas may experience much more severe and/or frequent drought events than what is represented on the Palmer Drought Severity Index map. Furthermore, it is assumed that Lea County would be uniformly exposed to drought of varying severities, making the spatial extent potentially widespread. It is also notable that drought conditions typically do not cause severe damage to the built environment.

The United States Drought Monitor reports data on drought conditions from 2000 to 2021. It classifies drought by County on a scale of D0 to D4 where:

D0: Abnormally Dry.	
D1: Moderate Drought.	
D2: Severe Drought.	
D3: Extreme Drought.	
D4: Exceptional Drought.	
Category	Impact
D0	Pastures are dry; mild crop stress is noted; irrigation increases
	Lawns are brown
D1	Crop stress increases
	Hay production is reduced, producers feed hay to cattle early
	Wildfire danger is higher than the seasonal normal
	Increased signs of wildlife; trees and landscape are drought stressed
	Streamflow is reduced; lake and reservoir levels decline
	Voluntary water conservation begins
D2	Dryland crop yields are low
	Wildfires are difficult to extinguish
	Swimming areas and boat ramps begin to close
	Voluntary and mandatory water use restrictions are implemented; people are asked to refrain from nonessential water use

Category	Impact
D3	Hay is scarce, producers are purchasing outside of state; nitrate levels in forage are high
	Outdoor burn bans are implemented; wildfires are widespread
	Landscaping and greenhouse businesses lose revenue
	Aquatic wildlife is dying; fewer trout are stored
	Hydropower generation decreases
	Voluntary conservation is requested even in sufficient water level areas; mandatory restrictions become more severe, and fines are given to violators; stream levels are extremely low
D4	Producers sell cattle; hay shortages and crop loss occur; farmers are stressed
	Daily life is affected for all citizens; people pray for rain; drought education seminars increase
	Epizootic hemorrhagic disease is widespread in deer
	Reservoirs are low; officials are counting the days of remaining water supply; well water is low; residents are hauling water

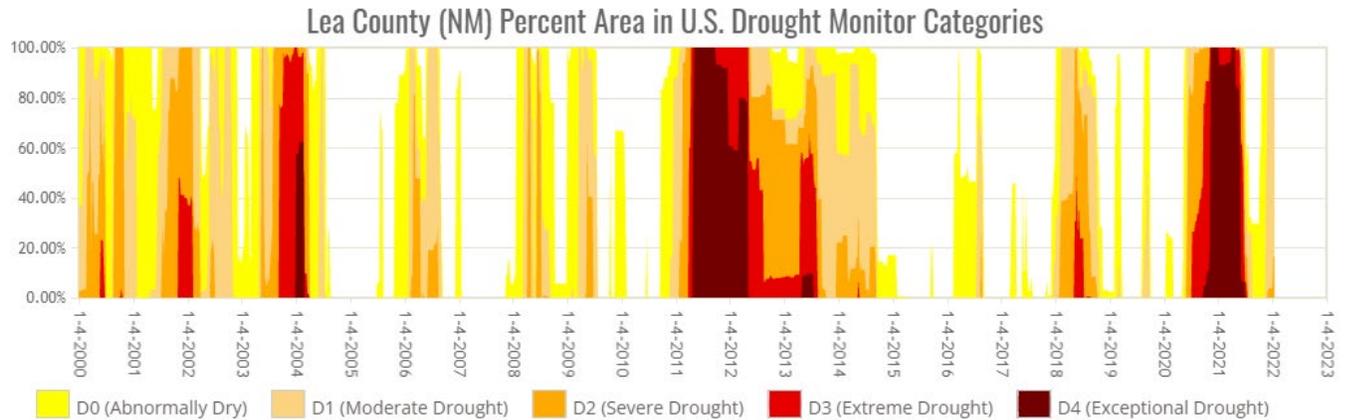
5.3.3 Extent

According to Drought Monitor, all of Lea County experienced 21 years’ worth of drought occurrences (including exceptional drought) during the last 21 years (2000-2021). Since the last plan update, four exceptional droughts have been recorded (**Table 5-3**).

Table 5-3: Drought Extent

Location	Number of Years with Drought Occurrences	Number of Years with Exceptional Drought Occurrences
Lea County	21	4

It should be noted that the Drought Monitor also estimates what percentage of the county is in each classification of drought severity. For example, the most severe classification reported may be exceptional, but most of the county may be in a less severe condition. The values in the following chart are for places represented as areas. Data breaking down drought at the jurisdictional level is not accessible. The participating jurisdictions do not anticipate future conditions that would fall outside these presently established extents and anticipate seeing the entire range of the Palmer drought scale countywide.



5.3.4 Historical Occurrences

Data from Drought Management Advisory Council and National Climatic Data Center (NCDC) were used to ascertain historical drought events in the County. While the values in the Drought Monitor chart above are for places represented as areas based on percent, the NCDC data below is per occurrence.

According to NCDC (National Climatic Data Center) 14 drought events were reported between 10/01/1989 and 10/31/2021. It should be noted that there may have been more events that are not represented through NCDC. **Table 5-4** gives a summary of drought experiences in the County as reported through NCDC.

Table 5-4: Summary of Drought Occurrences

Location	Date	Type	Death	Injuries	Property Damage	Crop Damage
NORTHERN LEA COUNTY	05/01/1996	Drought	0	0	0.00K	0.00K
Lea County	04/01/1998	Drought	0	0	0.00K	0.00K
Lea County	05/01/1998	Drought	0	0	0.00K	0.00K
Lea County	06/01/1998	Drought	0	0	0.00K	0.00K
Lea County	07/01/1998	Drought	0	0	0.00K	0.00K
Lea County	08/01/1998	Drought	0	0	0.00K	0.00K
Lea County	09/01/1998	Drought	0	0	0.00K	0.00K
Lea County	10/01/1998	Drought	0	0	0.00K	0.00K
Lea County	11/01/1998	Drought	0	0	0.00K	0.00K
Lea County	12/01/1998	Drought	0	0	0.00K	12.00M
Lea County	01/01/1999	Drought	0	0	0.00K	0.00K
Lea County	02/01/1999	Drought	0	0	0.00K	0.00K
Lea County	03/01/1999	Drought	0	0	0.00K	0.00K

Location	Date	Type	Death	Injuries	Property Damage	Crop Damage
Lea County	04/01/1999	Drought	0	0	0.00K	0.00K
Totals:			0	0	0.00K	12.00M

5.3.5 Probability of Future Occurrences

The probability of future Drought is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Unlikely: Less than 1% annual probability
- Possible: Between 1% and 10% annual probability
- Likely: Between 10% and 99% annual probability
- Highly Likely: 100% probability

Jurisdiction	Self-Assessment
Lea County (Unincorporated Area)	Highly Likely
Eunice	Highly Likely
Hobbs	Highly Likely
Jal	Highly Likely
Lovington	Highly Likely
Tatum	Highly Likely

5.3.6 Vulnerability and Impact

People

Drought can affect people’s health and safety. Examples of drought impacts on society include anxiety or depression about economic losses, conflicts when there is not enough water, reduced incomes, fewer recreational activities, higher incidents of heat stroke, and even loss of human life. All the jurisdictions are vulnerable in this respect.

First Responders

The overall effect on first responders would be limited when compared to other hazards. Exceptional drought conditions may impact the amount of water immediately available to respond to wildfires.

Continuity of Operations

Drought would have minimal impacts on continuity of operations due to the long warning time that would allow for plans to be made to maintain continuity of operations.

Built Environment

Drought has the potential to affect water supply for residential, commercial, institutional, industrial, and government-owned areas. Drought can reduce water supply in wells and reservoirs. When drought conditions persist with no relief, local or State governments must often institute water restrictions.

Economy

Examples of economic impacts include farmers who lose money because drought destroyed their crops or who may have to spend more money to feed and water their animals. Businesses that depend on farming, like companies that make tractors and food, may lose business when drought damages crops or livestock. Extreme drought also has the potential to impact local businesses such as landscaping, recreation and tourism, and public utilities. Businesses that sell boats and fishing equipment may not be able to sell some of their goods because drought has dried up lakes and other water sources.

Natural Environment

Plants and animals depend on water, just as people do. Drought can shrink their food supplies and damage their habitats. Sometimes this damage is only temporary, and other times it is irreversible.

Drought conditions can also provide a substantial increase in wildfire risk. As plants and trees wither and die from a lack of precipitation, increased insect infestations, and diseases—all of which are associated with drought—they become fuel for wildfires. Prolonged periods of drought can equate to more wildfires and more intense wildfires, which affect the economy, the environment, and society in many ways such as by destroying neighborhoods, crops, and habitats.

Infrastructure & Critical Facilities

Drought does not pose significant risk to Lea County or its participating jurisdictions' infrastructure and critical facilities. During times of drought, water and wastewater services may experience disruptions that would necessitate pump stations be operated by generator especially if some of the original power was supplied by hydropower that has been affected by the drought.

Land Use & Development Trends

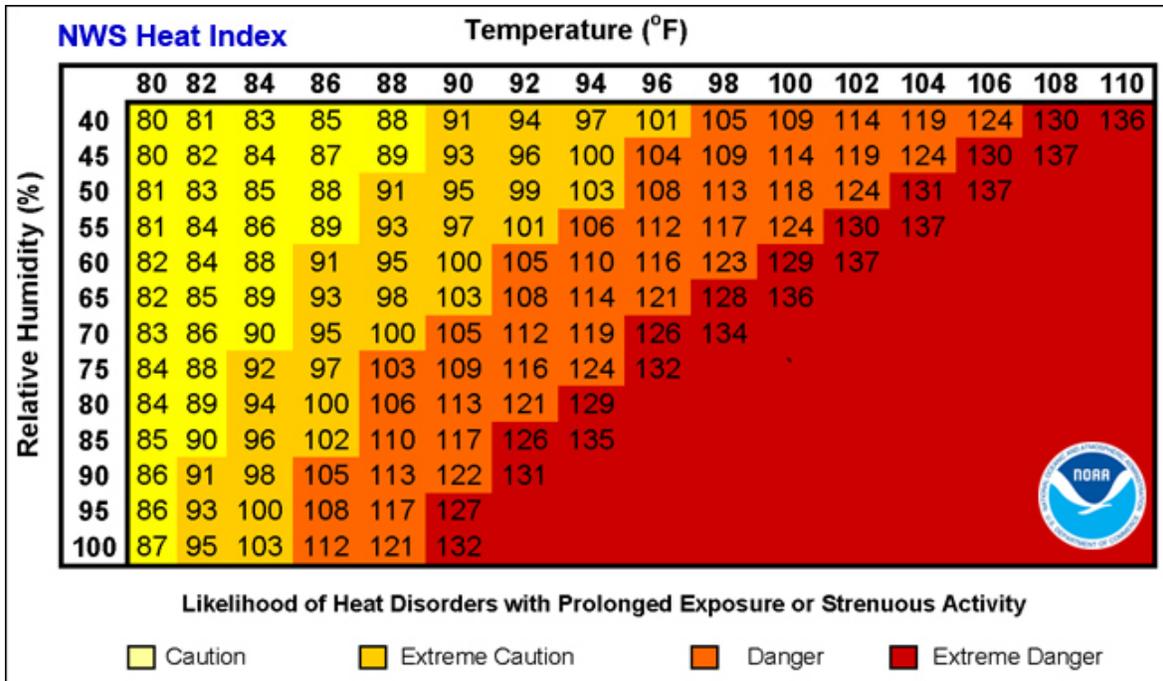
Lea County and its participating jurisdictions' predominant growth area is residential housing.

5.4 Extreme Heat

5.4.1 Background

Extreme heat, like drought, poses a minor risk to property. However, extreme heat can have devastating effects on health. Extreme heat is often referred to as a "heat wave." According to the National Weather Service, there is no universal definition for a heat wave, but the standard U.S. definition is any event lasting at least three days where temperatures reach ninety degrees Fahrenheit or higher. However, it may also be defined as an event at least three days long where temperatures are ten degrees greater than the normal temperature for the affected area. Heat waves are typically accompanied by humidity but may also be very dry. These conditions can pose serious health threats causing an average of over 600 deaths each summer in the United States.

According to the National Oceanic and Atmospheric Administration, heat is the number one weather-related killer among natural hazards, followed by frigid winter temperatures.¹ The National Weather Service devised the Heat Index as a mechanism to better inform the public of heat dangers. The Heat Index Chart, shown in **Figure 5-3**, uses air temperature and humidity to determine the heat index or apparent temperature. **Table 5-5** shows the dangers associated with different heat index temperatures. Some populations, such as the elderly and young, are more susceptible to heat danger than other segments of the population.



Source: National Oceanic and Atmospheric Administration

Figure 5-3: Heat Index Chart

Table 5-5: Heat Disorders Associated with Heat Index Temperature

Heat Index Temperature (Fahrenheit)	Description of Risks
80° - 90°	Fatigue possible with prolonged exposure and/or physical activity
90° - 105°	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105° - 130°	Sunstroke, heat cramps, heat exhaustion and heatstroke possible with prolonged exposure and/or physical activity
130° or higher	Heatstroke or sunstroke is highly likely with continued exposure

Source: National Weather Service; National Oceanic and Atmospheric Administration

In addition, NOAA (National Oceanic and Atmospheric) has seventeen metropolitan areas participating in the Heat HealthWatch/Warning System to better inform and warn the public of heat dangers. A Heat HealthWatch is issued when conditions are favorable for an excessive heat event in the next 12 to 48 hours (about 2 days). A Heat Warning is issued when an excessive heat event is expected in the next 36 hours (about 1 and a half days). Furthermore, a warning is issued when the conditions are occurring, imminent, or have a high likelihood of occurrence. Urban areas participate in the Heat Health Watch/Warning System because urban areas are at greater risk of heat effects. Stagnant atmospheric conditions trap pollutants, thus adding unhealthy air to excessively hot temperatures. In addition, the “urban heat island effect” can produce significantly higher nighttime temperatures because asphalt and concrete (which store heat longer) gradually release heat at night.

5.4.2 Location and Spatial Extent

Excessive heat typically impacts a large area and cannot be confined to any geographic or political boundaries. The entire County is susceptible to extreme heat conditions.

5.4.3 Extent

The extent of extreme heat can be defined by the maximum temperature reached. The highest temperature recorded in the County since 1950 is 110 degrees Fahrenheit. The only event narrative captured in the NCDC database is from August 26, 2019. A ridge of high pressure accompanied by very dry air moved into west Texas and southeast New Mexico resulting in record breaking triple digit temperatures. The elevated temperature for the day reached 110 degrees at the Paducah RAWS (Remote Automatic Weather Stations). It should be noted that the National Weather Service did have elevated temperatures for the County listed between 111 and 113 degrees.

Data breaking down temperatures for extreme heat at the jurisdictional level is not accessible. The participating jurisdictions do not anticipate future conditions that would fall outside these presently established extents and temperature exceeding the maximum temperature recorded countywide.

5.4.4 Historical Occurrences

Data from the National Weather Service was used to determine historical extreme heat and heat wave events in the County. Temperature information has been reported since 1950. The recorded maximum and average elevated temperatures for each month can be found below in **Table 5-6**. The number of days each month where the maximum temperature was 100 degrees or higher can be found in **Table 5-7**.

Table 5-6: Highest Recorded Temperature in the County

Temperature	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Record High	83	92	96	104	108	111	111	113	104	101	90	84
Average High	59	63	72	81	88	95	95	95	88	79	67	60

Table 5-7: Monthly Number of Days Max Temperature >= 100 for the County

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual # of Days
1950	0	0	0	0	0	1	0	3	0	0	0	0	4
1951	0	0	0	0	2	10	5	8	3	0	0	0	28
1952	0	0	0	0	1	6	1	10	1	0	0	0	19
1953	0	0	0	0	5	12	7	5	3	0	0	0	32
1954	0	0	0	0	0	0	4	2	1	0	0	0	7
1955	0	0	0	0	0	6	0	1	0	0	0	0	7
1956	0	0	0	0	0	4	1	0	0	0	0	0	5
1957	0	0	0	0	0	5	1	1	0	0	0	0	7
1958	0	0	0	0	3	6	8	1	0	0	0	0	18
1959	0	0	0	0	0	4	0	2	1	0	0	0	7

Hazard Profiles

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual # of Days
1960	0	0	0	0	2	9	3	1	0	0	0	0	15
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	1	0	2	9	0	0	0	0	12
1963	0	0	0	0	0	0	11	2	0	0	0	0	13
1964	0	0	0	0	3	11	18	19	1	0	0	0	52
1965	0	0	0	0	0	0	2	0	1	0	0	0	3
1966	0	0	0	0	0	0	5	1	0	0	0	0	6
1967	0	0	0	0	1	2	1	1	0	0	0	0	5
1968	0	0	0	0	0	2	0	0	0	0	0	0	2
1969	0	0	0	0	1	8	7	10	0	0	0	0	26
1970	0	0	0	0	0	5	7	2	0	0	0	0	14
1971	0	0	0	0	0	0	2	0	0	0	0	0	2
1972	0	0	0	0	0	7	1	0	0	0	0	0	8
1973	0	0	0	0	0	4	0	2	0	0	0	0	6
1974	0	0	0	0	2	4	7	2	0	0	0	0	15
1975	0	0	0	0	0	5	0	0	0	0	0	0	5
1976	0	0	0	0	0	1	0	1	0	0	0	0	2
1977	0	0	0	0	2	9	8	15	9	0	0	0	43
1978	0	0	0	0	1	4	2	3	0	0	0	0	10
1979	0	0	0	0	0	2	3	0	0	1	0	0	6
1980	0	0	0	0	0	13	10	2	0	0	0	0	25
1981	0	0	0	0	1	5	14	5	0	0	0	0	25
1982	0	0	0	0	0	2	2	6	0	0	0	0	10
1983	0	0	0	0	0	6	9	7	3	0	0	0	25
1984	0	0	0	0	1	1	0	2	2	0	0	0	6
1985	0	0	0	0	4	0	3	12	1	0	0	0	20
1986	0	0	0	0	2	0	6	4	0	0	0	0	12
1987	0	0	0	0	0	1	3	10	0	0	0	0	14
1988	0	0	0	0	1	3	0	0	0	0	0	0	4
1989	0	0	0	2	8	5	7	3	2	0	0	0	27
1990	0	0	0	0	3	20	0	0	0	0	0	0	23
1991	0	0	0	0	1	2	0	0	0	0	0	0	3

Hazard Profiles

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual # of Days
1992	0	0	0	0	0	0	4	0	0	0	0	0	4
1993	0	0	0	0	0	1	3	2	0	0	0	0	6
1994	0	0	0	0	2	14	11	4	0	0	0	0	31
1995	0	0	0	0	1	0	7	0	2	0	0	0	10
1996	0	0	0	1	9	6	7	2	0	0	0	0	25
1997	0	0	0	0	0	3	0	4	1	0	0	0	8
1998	0	0	0	0	7	21	18	4	1	0	0	0	51
1999	0	0	0	0	0	4	5	9	0	0	0	0	18
2000	0	0	0	0	9	1	7	0	7	1	0	0	25
2001	0	0	0	0	4	9	16	1	1	0	0	0	31
2002	0	0	0	0	0	3	3	8	0	0	0	0	14
2003	0	0	0	0	6	1	4	10	0	0	0	0	21
2004	0	0	0	0	1	5	3	2	0	0	0	0	11
2005	0	0	0	0	3	3	7	0	2	0	0	0	15
2006	0	0	0	0	5	13	8	1	0	0	0	0	27
2007	0	0	0	0	0	2	0	0	0	0	0	0	2
2008	0	0	0	0	5	13	3	1	0	0	0	0	22
2009	0	0	0	0	4	5	9	2	0	0	0	0	20
2010	0	0	0	0	1	11	0	9	0	0	0	0	21
2011	0	0	0	0	4	21	16	22	2	0	0	0	65
2012	0	0	0	1	4	10	3	12	4	0	0	0	34
2013	0	0	0	0	4	8	4	7	0	0	0	0	23
2014	0	0	0	0	0	7	7	3	3	0	0	0	20
2015	0	0	0	0	0	1	14	14	0	0	0	0	29
2016	0	0	0	0	2	5	19	9	0	0	0	0	35
2017	0	0	0	0	3	14	3	1	3	0	0	0	24
2018	0	0	0	0	12	13	9	2	0	0	0	0	36
2019	0	0	0	0	0	8	9	20	0	0	0	0	37
2020	0	0	0	1	8	7	16	14	1	0	0	0	47
2021	0	0	0	0	0	4	0	1	1	0	0	0	6
2022	M	M	M	M	M	M	M	M	M	M	M	M	M
Mean	0	0	0	0	2	6	5	4	1	0	0	0	18

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual # of Days
Max	0	0	0	2	12	21	19	22	9	1	0	0	65
	2021	2021	2021	1989	2018	2011	2016	2011	1977	2000	2021	2021	2011
Min	0	0	0	0	0	0	0	0	0	0	0	0	0
	2021	2021	2021	2021	2021	1995	2021	2007	2019	2021	2021	2021	1961

5.4.5 Probability of Future Occurrences

The probability of future Extreme Heat is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Unlikely: Less than 1% annual probability
- Possible: Between 1% and 10% annual probability
- Likely: Between 10% and 99% annual probability
- Highly Likely: 100% probability

Jurisdiction	Self-Assessment
Lea County (Unincorporated Area)	Possible
Eunice	Possible
Hobbs	Possible
Jal	Possible
Lovington	Possible
Tatum	Possible

5.4.6 Vulnerability and Impact

People

Extreme heat can affect people’s health and leads to higher incidents of heat stroke, and even loss of human life. Staying hydrated and avoiding strenuous exercise outdoors during extreme heat patterns can prevent adverse health risks. Individuals with underlying health issues or those located in rural areas may be vulnerable due to medical access issues.

Built Environment

Updating building codes and landscape best management practices can increase energy efficiency during extreme heat phases. Local governments could provide public drinking fountains, cooling shelters, and swimming pools to keep individuals cooled off.

Economy

All jurisdictions in the County are vulnerable to extreme heat whereas employees are less likely to be productive during extreme heat events. Lower productivity levels are associated with heat exhaustion.

Agriculture

Livestock are susceptible to heat-related illnesses during bouts of extreme heat. In addition, crop yields may be negatively impacted if extreme heat occurs during key development stages.

Natural Environment

When trees are replaced with impervious surfaces and materials in urban areas it contributes to the heat island effect. Urban forests (street trees and wooded areas) can mitigate heat islands, reducing local air temperatures by up to 9°Fahrenheit.¹

Infrastructure & Critical Facilities

Extreme heat does not pose a significant risk to Lea County or its participating jurisdictions' facilities. Extreme heat hazard could be mitigated by providing generators to minimize disruption to critical facility cooling centers as well as providing back up power to various other critical facilities that may experience brown and black outs due to unprecedented energy consumption during extreme heat events.

Land Use & Development Trends

Lea County and its participating jurisdictions' predominant growth area is residential housing.

5.5 Severe Storms

5.5.1 Background

Severe Storms can produce a variety of accompanying hazards including wind hail, and lightning. Although severe storms affect a small area, it is dangerous and may cause substantial property damage.

Three conditions need to occur for a thunderstorm to form. First, it needs moisture to form clouds and rain. Second, it needs unstable air, such as warm air that can rise rapidly (this often referred to as the "engine" of the storm). Third, thunderstorms need a lift, which comes in the form of cold or warm fronts, sea breezes, mountains, or the sun's heat. When these conditions occur simultaneously, air masses of varying temperatures meet, and a thunderstorm is formed. These storm events can occur singularly, in lines, or in clusters. Furthermore, they can move through an area very quickly or linger for several hours.

According to the National Weather Service, more than 100,000 thunderstorms occur each year, though only about 10 percent of these storms are classified as "severe." A severe thunderstorm occurs when the storm produces at least one of these three elements: 1) hail at least one inch in diameter, 2) a tornado, or 3) winds of at least 58 miles per hour.

Thunderstorm events have the capability of producing straight-line winds that can cause severe destruction to communities and threaten the safety of a population. Such wind events, sometimes separate from a thunderstorm event, are common throughout the County. Therefore, high winds are also reported in this section.

Downbursts are also possible with thunderstorm events. Such events are an excessive burst of wind more than 125 miles per hour. They are often misidentified as tornadoes. Downbursts are caused by down drafts from the base of a convective thunderstorm cloud. It occurs when rain-cooled air within the cloud becomes heavier than its surroundings. Thus, air rushes towards the ground in a destructive yet isolated manner. There are two types of downbursts. Downbursts less than 2.5 miles wide, duration less than 5 minutes, and winds up to 168 miles per hour are called "microbursts." Larger events greater than

¹ U.S. Department of Health and Human Services Centers for Disease Control and Prevention. Extreme Heat Can Impact Our Health in Many Ways. Retrieved from: https://www.cdc.gov/climateandhealth/pubs/EXTREME-HEAT-Final_508.pdf

2.5 miles at the surface and longer than 5 minutes with winds up to 130 miles per hour are referred to as “macrobursts.” Hailstorms are a potentially damaging outgrowth of severe storms. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until they develop to a sufficient weight and fall as precipitation. Hail typically takes the form of spheres or irregularly shaped masses greater than 0.75 inches in diameter. The size of hailstones is a direct function of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth’s surface. Higher temperature gradients relative to elevation above the surface result in increased suspension time and hailstone size. **Table 5-8** shows the TORRO Hailstorm Intensity Scale which is a way of measuring hail severity.

Table 5-8: TORRO Hailstorm Intensity Scale

	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J- m ²	mm to inch conversion (inches)	Typical Damage Impacts
H0	Hard Hail	5	0-20	0 - 0.2	No damage
H1	Potentially Damaging	5-15	>20	0.2 - 0.6	Slight general damage to plants, crops
H2	Significant	10-20	>100	0.4 - 0.8	Severe damage to fruit, crops, vegetation
H3	Severe	20-30	>300	0.8 - 1.2	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	>500	1.0 - 1.6	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	1.2 - 2.0	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		1.6 - 2.4	Bodywork of grounded aircraft dented; brick walls pitted
H7	Destructive	50-75		2.0 - 3.0	Severe roof damage, risk of serious injuries
H8	Destructive	60-90		1.6 - 3.5	(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		3.0 - 3.9	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100			Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

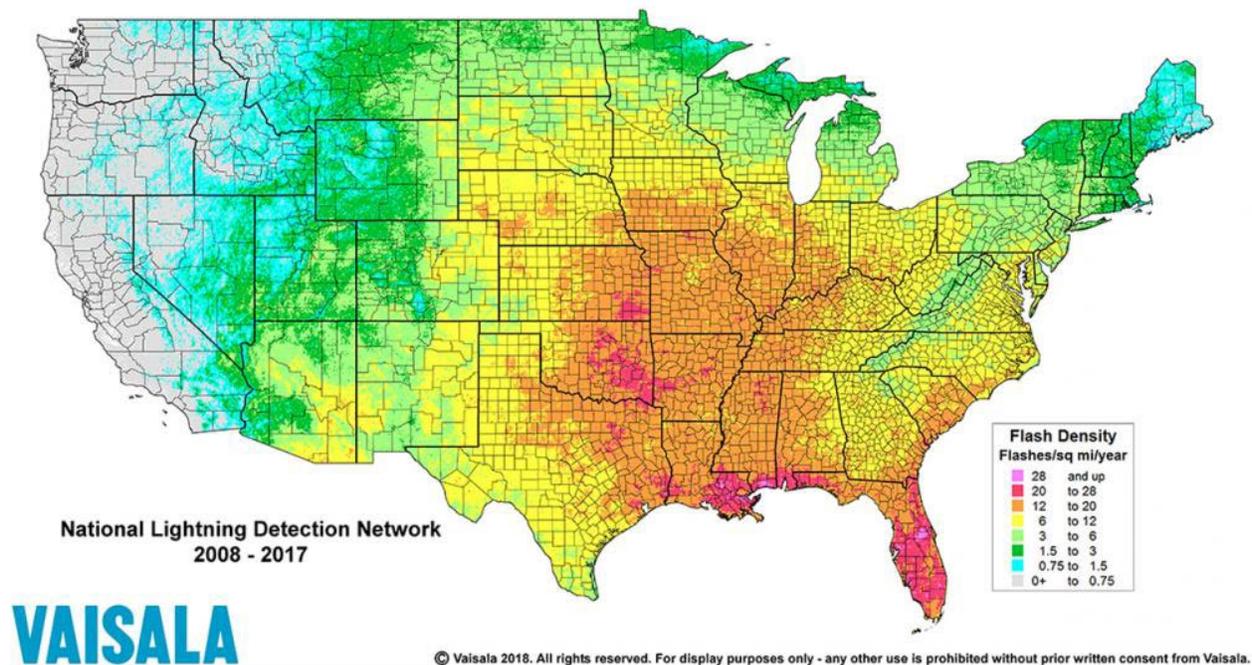
Source: <http://www.torro.org.uk/site/hscale.php>

Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a “bolt” when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes

but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes thunder which often accompanies lightning strikes. While most often affiliated with severe thunderstorms, lightning may also strike outside of heavy rain and might occur as far as 10 miles away from any rainfall.

Lightning strikes occur in small, localized areas. For example, they may strike a building, electrical transformer, or even a person. According to the National Center for Biotechnology Information, lightning injures an average of 400 people and kills 40 people each year in the United States. Direct lightning strikes also can cause severe damage to buildings, critical facilities, and infrastructure by igniting a fire. Lightning is also responsible for igniting wildfires that can result in widespread damage to property.

Figure 5-4 shows a lightning flash density map for the years 2008-2017 based upon data provided by Vaisala’s U.S. National Lightning Detection Network (NLDN®).



Source: Vaisala United States National Lightning Detection Network

Figure 5-4: Lightning Flash Density in the United States

5.5.2 Location and Spatial Extent

Severe storms occur throughout the year in Lea County and its participating jurisdictions. Thunderstorms, high, and high winds can affect any size area from a county, region, or isolated pockets of city or neighborhood. In contrast, lightning will strike a single point. It is not often that multiple strikes will hit and damage people and property in one severe storm event. Hail will occur in small pockets of an accompanying storm. **Figure 5-5** shows locations of reported hail (measurements are 0.75" or greater) and high wind events (measurements of wind speed greater than 50 knots). Currently a map depicting lightning strike locations is not available.

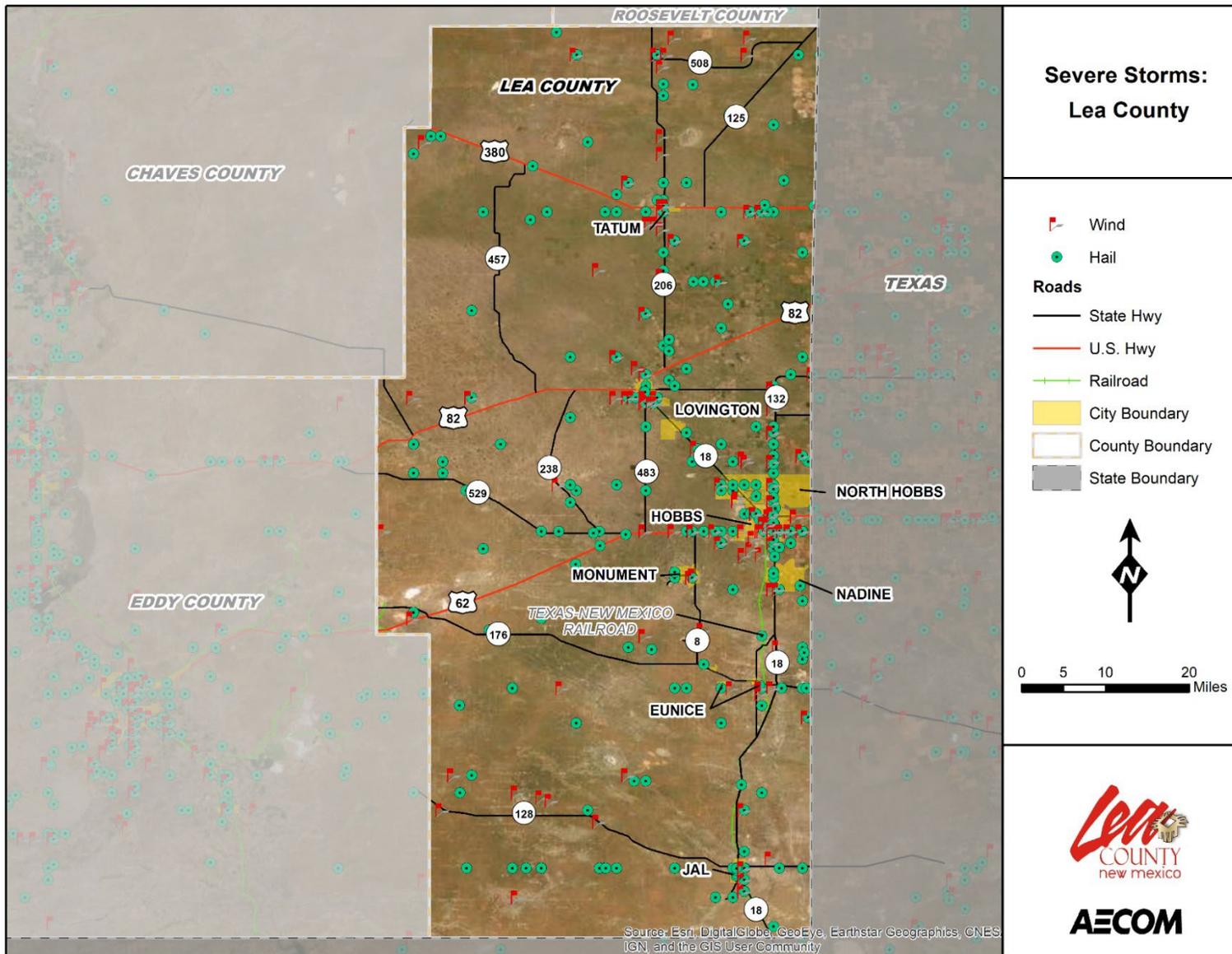


Figure 5-5: Severe Storms – Lea County

5.5.3 Extent

Thunderstorm extent is defined by the number of thunder events and wind speeds reported. Windstorms are defined as sustained wind speeds of 40 mph or greater, lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. According to a 71-year history from the National Climatic Data Center, the strongest recorded wind event in the Region was reported on August 21, 2021, at 83 knots (approximately 95 mph), as shown in **Table 5-9**. It should be noted that future events may exceed these historical occurrences.

Table 5-9: Maximum Recorded Thunderstorm Wind

Location	Date	Type	Mag
Lea County	7/11/1992	Thunderstorm Wind	55 kts. EG
Eunice	6/3/2018	Thunderstorm Wind	62 kts. EG
Hobbs	8/21/2021	Thunderstorm Wind	83 kts. EG
Jal	6/14/2009	Thunderstorm Wind	78 kts. EG
Lovington	6/5/2003	Thunderstorm Wind	65 kts. EG
Tatum	3/23/2007	Thunderstorm Wind	71 kts. EG

Hail can vary in size from less than 1 inch to several inches in diameter and can cause severe damage to crop and property. Damage depends on the size, duration, and intensity of hail precipitation. Individuals who do not seek shelter could face severe injury. Automobiles and aircraft are particularly susceptible to damage. Effects of other hazards associated with thunderstorms (high winds, intense precipitation, and lightning) often occur concurrently because hail precipitation usually occurs during severe storms.

Lea County has experienced hail ranging in size from 0.75 to 4.50 inches in diameter. No deaths and no injuries have been recorded in the County. Lea County’s worst hailstorm occurred on June 6, 2005. Severe thunderstorms brought a round of destructive hailstorms to parts of southeastern New Mexico during the late afternoon of the 6th. Giant baseball to softball size hailstones and winds that gusted up to 70 MPH resulted in approximately two million dollars’ worth of property damage in central Lea County. The City of Lovington was hardest hit, with more than 600 vehicles severely damaged along with almost 2,000 structures. The Lovington Police Department reported giant hail just north of Lovington. Softball size hail combined with severe wind gusts to damage structures and vehicles. The largest hail and the most intense winds occurred over less populated areas just outside of the city’s limits (the largest observed in the County).

This hail would cause widespread damage to property and crops. Hail can be produced during many distinct types of storms. Typically, hail occurs with severe storms. The size of hail is estimated by comparing it with a known object. During most hailstorms, hail is produced in a variety of sizes, and only the very largest hail stones pose serious risk to people who are exposed. The maximum recorded hail size in each jurisdiction is shown in **Table 5-10**.

Table 5-10: Maximum Recorded Hail Size

Location	Date	Type	Mag
Lea County	4/24/1992	Hail	1.75 in.
Eunice	4/11/2009	Hail	3.00 in.

Location	Date	Type	Mag
Hobbs	5/29/1995	Hail	3.50 in.
Jal	6/14/2009	Hail	4.25 in.
Lovington	6/6/2005	Hail	4.50 in.
Tatum	3/23/2007	Hail	2.75 in.

Because lightning damage is often unreported, statistics vary considerably. The insurance industry estimates that 6.5 percent of all property and casualty claims are related to lightning strikes. While it is difficult to quantify lightning losses, it is estimated that \$4 to \$5 billion in damage occurs each year across the United States. Likewise, the cost of lightning protection to safeguard critical equipment and facilities from lightning strikes during severe weather is enormous. Each year, lightning strikes across the United States are responsible for an average of between 55 and 60 fatalities, several hundred injuries, and billions of dollars in property damage. Many case histories show observed heart damage, inflated lungs, and brain damage in lightning-related fatalities. Many individuals who have survived lightning strikes report a loss of consciousness, amnesia, paralysis, and burns. Death and injury to livestock and other animals; thousands of forest and brush fires; and damage to buildings, communications systems, power lines, and electrical systems are also the result of lightning.

Lea County’s worst lightning event occurred on August 8, 1996, when two employees of Lea County Co-op Electric were killed by lightning while attempting to repair lines that had been disabled during a previous storm. Since there were no witnesses of the incident it was first thought the two men had been electrocuted by the lines on which they were working, however, a subsequent investigation ruled out this possibility. People in the area noted a couple of close lightning strikes, and with other evidence, it was surmised that the two were lightning strike victims. The worst-case scenario for lightning strikes would be a strike in a large group of people, such as at an outdoor sporting event or concert. Numerous injuries or deaths could occur. There have been three lightning events reported in Lea County since 1950.

The lightning event is noted in **Table 5-11**. No lightning events have been reported for: Eunice, Jal, Tatum, or other areas in Lea County.

Table 5-11: Lightning Events in Lea County

Location	Date	Type	Mag
Lea County	-	Lightning	-
Eunice	-	Lightning	-
Hobbs	8/12/1997	Lightning	\$3,00 Property Damage
Jal	-	Lightning	-
Lovington	8/8/1996	Lightning	2 deaths
Tatum	-	Lightning	-

5.5.4 Historical Occurrences

According to NCDC, there have been 467 reported thunderstorms, lightning, and hail events since 1996 in Lea County. These events caused over \$36 million in property damage and approximately \$20,000

thousand in crop damage. There were no reports of injuries and 2 fatalities. The following historical occurrences have been identified based on the NCDC Storm Events database **Table 5-12** from 1996-2021. It should be noted that only those historical occurrences listed in the NCDC database are shown here and that other, unrecorded, or unreported events may have occurred within the planning area during this timeframe.

Table 5-12: Historical Occurrences of Thunderstorm, Lightning, Hail (1996-2021)

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crop
Hobbs	5/24/1996	Hail	0.75	0	0	0.00K	0.00K
Maljamar	5/24/1996	Hail	1	0	0	0.00K	0.00K
Tatum	5/24/1996	Hail	1.75	0	0	0.00K	0.00K
Hobbs	5/25/1996	Hail	0.75	0	0	0.00K	0.00K
Lovington	5/25/1996	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/25/1996	Hail	1	0	0	0.00K	0.00K
Hobbs	5/25/1996	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/25/1996	Hail	1.75	0	0	0.00K	0.00K
Hobbs	5/25/1996	Hail	0.75	0	0	0.00K	0.00K
Lovington	5/25/1996	Hail	1.75	0	0	0.00K	0.00K
Lovington	5/25/1996	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/25/1996	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/25/1996	Hail	1	0	0	0.00K	0.00K
Hobbs	5/25/1996	Thunderstorm Wind		0	0	10000	0.00K
Lovington	5/29/1996	Hail	0.88	0	0	0.00K	0.00K
Hobbs	5/29/1996	Hail	1	0	0	0.00K	0.00K
Hobbs	5/29/1996	Hail	1.5	0	0	0.00K	0.00K
Tatum	5/29/1996	Hail	1.75	0	0	0.00K	0.00K
Tatum	5/29/1996	Hail	2	0	0	0.00K	0.00K
Tatum	5/30/1996	Hail	1.75	0	0	0.00K	0.00K
Eunice	6/2/1996	Thunderstorm Wind		0	0	5000	0.00K
Monument	6/2/1996	Thunderstorm Wind		0	0	2000	0.00K
Tatum	6/2/1996	Hail	0.75	0	0	0.00K	0.00K
Maljamar	6/10/1996	Hail	1	0	0	0.00K	0.00K
Hobbs	6/25/1996	Thunderstorm Wind		0	0	20000	0.00K
Tatum	7/31/1996	Hail	1	0	0	0.00K	0.00K
Lovington	8/8/1996	Lightning		2	0	0.00K	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crop
Jal	8/19/1996	Hail	0.88	0	0	0.00K	0.00K
Lovington	9/17/1996	Hail	1	0	0	0.00K	0.00K
Crossroads	4/22/1997	Hail	0.75	0	0	0.00K	0.00K
Tatum	4/24/1997	Hail	1.75	0	0	0.00K	0.00K
Tatum	4/24/1997	Hail	0.88	0	0	0.00K	0.00K
Jal	4/24/1997	Hail	0.88	0	0	0.00K	0.00K
Hobbs	4/24/1997	Hail	0.88	0	0	0.00K	0.00K
Lovington	5/6/1997	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/6/1997	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/28/1997	Hail	2.5	0	0	27000000	0.00K
Eunice	5/28/1997	Thunderstorm Wind		0	0	15000	0.00K
Eunice	5/29/1997	Hail	1.75	0	0	0.00K	0.00K
Jal	5/29/1997	Hail	0.75	0	0	0.00K	0.00K
Eunice	6/11/1997	Hail	1.75	0	0	0.00K	0.00K
Crossroads	6/11/1997	Thunderstorm Wind	52	0	0	0.00K	0.00K
Lovington	6/11/1997	Thunderstorm Wind		0	0	200000	0.00K
Jal	6/11/1997	Hail	1	0	0	0.00K	0.00K
Jal	6/11/1997	Thunderstorm Wind		0	0	3000	0.00K
Hobbs	6/14/1997	Thunderstorm Wind		0	0	1000	0.00K
Tatum	7/5/1997	Hail	1	0	0	0.00K	0.00K
Tatum	7/5/1997	Thunderstorm Wind		0	0	30000	0.00K
McDonald	7/5/1997	Hail	1.75	0	0	0.00K	10000
Jal	7/31/1997	Thunderstorm Wind		0	0	5000	0.00K
Hobbs	8/12/1997	Lightning		0	0	3000	0.00K
Lovington	10/7/1997	Thunderstorm Wind		0	0	3000	0.00K
Lovington	10/7/1997	Thunderstorm Wind		0	0	10000	0.00K
Hobbs	3/17/1998	Hail	0.75	0	0	0.00K	0.00K
Eunice	5/19/1998	Thunderstorm Wind	61	0	0	0.00K	0.00K
Tatum	5/25/1998	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/26/1998	Hail	1.75	0	0	0.00K	0.00K
Tatum	5/26/1998	Hail	1.75	0	0	0.00K	0.00K
Monument	5/26/1998	Hail	0.75	0	0	0.00K	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crop
Hobbs	9/9/1998	Thunderstorm Wind		0	0	1000	0.00K
Hobbs	9/9/1998	Hail	0.88	0	0	0.00K	0.00K
Eunice	10/27/1998	Hail	1	0	0	0.00K	0.00K
McDonald	10/27/1998	Thunderstorm Wind		0	0	5000	0.00K
Bennett	10/30/1998	Hail	1.75	0	0	0.00K	0.00K
Jal	10/30/1998	Thunderstorm Wind		0	0	2000	0.00K
Jal	10/30/1998	Hail	1.75	0	0	0.00K	0.00K
Jal	10/30/1998	Thunderstorm Wind	52	0	0	0.00K	0.00K
Hobbs	10/30/1998	Hail	0.75	0	0	0.00K	0.00K
Nadine	10/30/1998	Hail	0.75	0	0	0.00K	0.00K
Hobbs	3/17/1999	Hail	1	0	0	0.00K	0.00K
Hobbs	3/17/1999	Hail	1	0	0	0.00K	0.00K
Hobbs	3/17/1999	Hail	1	0	0	0.00K	0.00K
Lovington	3/17/1999	Hail	1	0	0	0.00K	0.00K
Eunice	4/30/1999	Hail	1	0	0	0.00K	0.00K
Eunice	4/30/1999	Hail	1.75	0	0	0.00K	0.00K
Nadine	4/30/1999	Hail	1	0	0	0.00K	0.00K
Tatum	5/24/1999	Thunderstorm Wind		0	0	2000	0.00K
Tatum	5/24/1999	Thunderstorm Wind		0	0	2000	0.00K
Eunice	5/24/1999	Hail	0.75	0	0	0.00K	0.00K
Maljamar	6/2/1999	Hail	0.88	0	0	0.00K	0.00K
Maljamar	6/2/1999	Hail	2	0	0	0.00K	0.00K
Maljamar	6/2/1999	Hail	1.75	0	0	0.00K	0.00K
Lovington	6/2/1999	Hail	1	0	0	0.00K	0.00K
Buckeye	6/2/1999	Hail	1.25	0	0	0.00K	0.00K
Maljamar	6/8/1999	Hail	0.75	0	0	0.00K	0.00K
Jal	6/11/1999	Hail	1.75	0	0	0.00K	0.00K
Hobbs	7/14/1999	Thunderstorm Wind		0	0	10000	0.00K
Hobbs	9/7/1999	Thunderstorm Wind		0	0	15000	0.00K
Lovington	4/30/2000	Hail	1	0	0	0.00K	0.00K
Hobbs	6/19/2000	Hail	0.75	0	0	0.00K	0.00K
Hobbs	10/17/2000	Hail	0.75	0	0	0.00K	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crop
Jal	10/21/2000	Hail	0.88	0	0	0.00K	0.00K
Caprock	3/7/2001	Hail	0.75	0	0	0.00K	0.00K
Tatum	5/11/2001	Hail	1.75	0	0	0.00K	0.00K
Tatum	5/11/2001	Hail	1.75	0	0	0.00K	0.00K
Tatum	5/11/2001	Hail	1	0	0	0.00K	0.00K
Hobbs	6/23/2001	Thunderstorm Wind	52	0	0	0.00K	0.00K
Hobbs	6/23/2001	Hail	0.75	0	0	0.00K	0.00K
Hobbs	6/23/2001	Hail	1.75	0	0	0.00K	0.00K
Hobbs	6/23/2001	Thunderstorm Wind		0	0	7000	0.00K
Lovington	9/21/2001	Hail	1	0	0	0.00K	0.00K
Jal	4/26/2002	Hail	2.75	0	0	5000	0.00K
Jal	4/26/2002	Hail	2.75	0	0	10000	0.00K
Jal	4/26/2002	Hail	2	0	0	3000	0.00K
Nadine	5/5/2002	Hail	0.75	0	0	0.00K	0.00K
Hobbs	5/5/2002	Hail	1	0	0	0.00K	0.00K
Jal	5/10/2002	Hail	1.75	0	0	0.00K	0.00K
Jal	5/10/2002	Hail	1.75	0	0	0.00K	0.00K
Jal	5/10/2002	Hail	1.75	0	0	0.00K	0.00K
Jal	5/10/2002	Thunderstorm Wind	52	0	0	0.00K	0.00K
Eunice	6/9/2002	Thunderstorm Wind	52	0	0	0.00K	0.00K
Jal	6/13/2002	Hail	1	0	0	0.00K	0.00K
Jal	6/19/2002	Hail	0.75	0	0	0.00K	0.00K
Jal	6/19/2002	Thunderstorm Wind	52	0	0	0.00K	0.00K
Knowles	7/6/2002	Hail	0.75	0	0	0.00K	0.00K
Eunice	8/1/2002	Thunderstorm Wind	62	0	0	0.00K	0.00K
Tatum	8/29/2002	Hail	0.88	0	0	0.00K	0.00K
Jal	10/1/2002	Hail	1	0	0	0.00K	0.00K
Eunice	10/1/2002	Hail	1	0	0	0.00K	0.00K
Eunice	10/1/2002	Thunderstorm Wind	52	0	0	0.00K	0.00K
Hobbs	10/1/2002	Thunderstorm Wind	52	0	0	0.00K	0.00K
Jal	10/2/2002	Hail	1.75	0	0	0.00K	0.00K
Eunice	10/2/2002	Hail	0.75	0	0	0.00K	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crop
Hobbs	10/2/2002	Hail	0.75	0	0	0.00K	0.00K
Hobbs	10/2/2002	Hail	1	0	0	0.00K	0.00K
Hobbs	10/8/2002	Hail	0.88	0	0	0.00K	0.00K
Eunice	10/28/2002	Hail	0.75	0	0	0.00K	0.00K
Tatum	6/3/2003	Thunderstorm Wind	52	0	0	0.00K	0.00K
Tatum	6/5/2003	Hail	0.75	0	0	0.00K	0.00K
Lovington	6/5/2003	Thunderstorm Wind	65	0	0	0.00K	0.00K
Hobbs	6/5/2003	Thunderstorm Wind	57	0	0	5000	0.00K
Hobbs	6/9/2003	Thunderstorm Wind	57	0	0	0.00K	0.00K
Monument	6/13/2003	Hail	1.75	0	0	0.00K	0.00K
Buckeye	6/20/2003	Hail	1	0	0	0.00K	0.00K
Hobbs	6/20/2003	Thunderstorm Wind	52	0	0	0.00K	0.00K
Hobbs	9/9/2003	Hail	0.75	0	0	0.00K	0.00K
Eunice	4/3/2004	Hail	0.88	0	0	0.00K	0.00K
Eunice	4/3/2004	Hail	0.88	0	0	0.00K	0.00K
Eunice	4/3/2004	Hail	0.75	0	0	0.00K	0.00K
Tatum	4/8/2004	Hail	1.75	0	0	25000	0.00K
Caprock	4/8/2004	Hail	0.75	0	0	0.00K	0.00K
Caprock	4/8/2004	Hail	0.75	0	0	0.00K	0.00K
Lovington	4/19/2004	Hail	0.88	0	0	0.00K	0.00K
Eunice	4/19/2004	Hail	1	0	0	0.00K	0.00K
Crossroads	4/30/2004	Hail	0.88	0	0	0.00K	0.00K
Crossroads	4/30/2004	Thunderstorm Wind	52	0	0	0.00K	0.00K
Lovington	5/9/2004	Hail	1.75	0	0	0.00K	0.00K
Lovington	5/9/2004	Hail	1.75	0	0	0.00K	0.00K
Caprock	5/20/2004	Thunderstorm Wind	52	0	0	0.00K	0.00K
Tatum	6/16/2004	Thunderstorm Wind	61	0	0	20000	0.00K
Tatum	6/16/2004	Hail	2.5	0	0	5000	0.00K
Hobbs	6/18/2004	Hail	1	0	0	0.00K	0.00K
Eunice	6/18/2004	Hail	0.88	0	0	0.00K	0.00K
Tatum	6/18/2004	Thunderstorm Wind	61	0	0	0.00K	0.00K
Lovington	6/24/2004	Hail	1	0	0	0.00K	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crop
Hobbs	6/24/2004	Thunderstorm Wind	50	0	0	0.00K	0.00K
Eunice	6/24/2004	Hail	1	0	0	0.00K	0.00K
Tatum	7/6/2004	Hail	1.75	0	0	0.00K	0.00K
Jal	7/7/2004	Thunderstorm Wind	57	0	0	50000	0.00K
Tatum	7/18/2004	Hail	0.75	0	0	0.00K	0.00K
Tatum	7/18/2004	Thunderstorm Wind	52	0	0	15000	0.00K
Crossroads	8/4/2004	Thunderstorm Wind	61	0	0	200000	0.00K
Jal	8/12/2004	Thunderstorm Wind	50	0	0	0.00K	0.00K
Hobbs	8/21/2004	Hail	1.75	0	0	0.00K	0.00K
Eunice	9/21/2004	Thunderstorm Wind	61	0	0	15000	0.00K
Lovington	9/22/2004	Thunderstorm Wind	50	0	0	0.00K	0.00K
Lovington	10/4/2004	Hail	1	0	0	0.00K	0.00K
Tatum	10/5/2004	Thunderstorm Wind	61	0	0	50000	0.00K
Tatum	10/5/2004	Hail	1.75	0	0	0.00K	0.00K
Lovington	10/5/2004	Hail	0.88	0	0	0.00K	0.00K
Eunice	5/6/2005	Hail	1.25	0	0	0.00K	0.00K

*Preliminary Data

5.5.5 Probability of Future Occurrences

The probability of future Severe Storms is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Unlikely: Less than 1% annual probability
- Possible: Between 1% and 10% annual probability
- Likely: Between 10% and 99% annual probability
- Highly Likely: 100% probability

Jurisdiction	Probability
Lea County (Unincorporated Area)	Likely
Eunice	Likely
Hobbs	Likely
Jal	Likely
Lovington	Likely
Tatum	Likely

5.5.6 Vulnerability and Impact

People

Severe storms are associated with hazards such as high wind, thunderstorms, lightning, and hail. High wind can cause trees to fall and potentially result in injuries or death and lightning can lead to house fires and severe injury. Hail can cause injury as well as severe property damage to homes and automobiles. All jurisdictions in the County are vulnerable to this impact.

First Responders

First responders can be impacted in the same way as the public. Downed trees, power lines and flood waters may prevent access to areas in need which prolongs response time.

Continuity of Operations

Severe storm events can result in a loss of power which may impact operations. Downed trees, power lines and flash flooding may prevent access to critical facilities and/or emergency equipment.

Built Environment

Severe storm events can cause damage to commercial buildings and homes due to high winds, lightning strikes, and hail. Heavy rains associated with thunderstorm events may also lead to flash flooding which can damage roads and bridges.

Economy

Economic damage includes property damage from wind, thunderstorms, lightning, and hail, and includes intangibles such as business interruption and additional living expenses.

Natural Environment

Severe storms have a significant impact on the environment. One of the most dangerous outcomes for the environment is when lightning causes sparks to flare up in surrounding forests or immense shrubs. This is often the cause of bush fires, which then spread quickly due to the fast winds that accompany the storms. High winds can also damage crops and trees. Flooding can kill animals and cause soil erosion.

Infrastructure & Critical Facilities

All infrastructure and critical facilities are equally at risk since severe storms indiscriminately affect the entire planning area.

Land Use & Development Trends

Increased residential growth will not increase Lea County or its participating jurisdictions' vulnerability and risk severe storms if the residential structures continue to be built under currently adopted international and state building codes. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within the planning area.

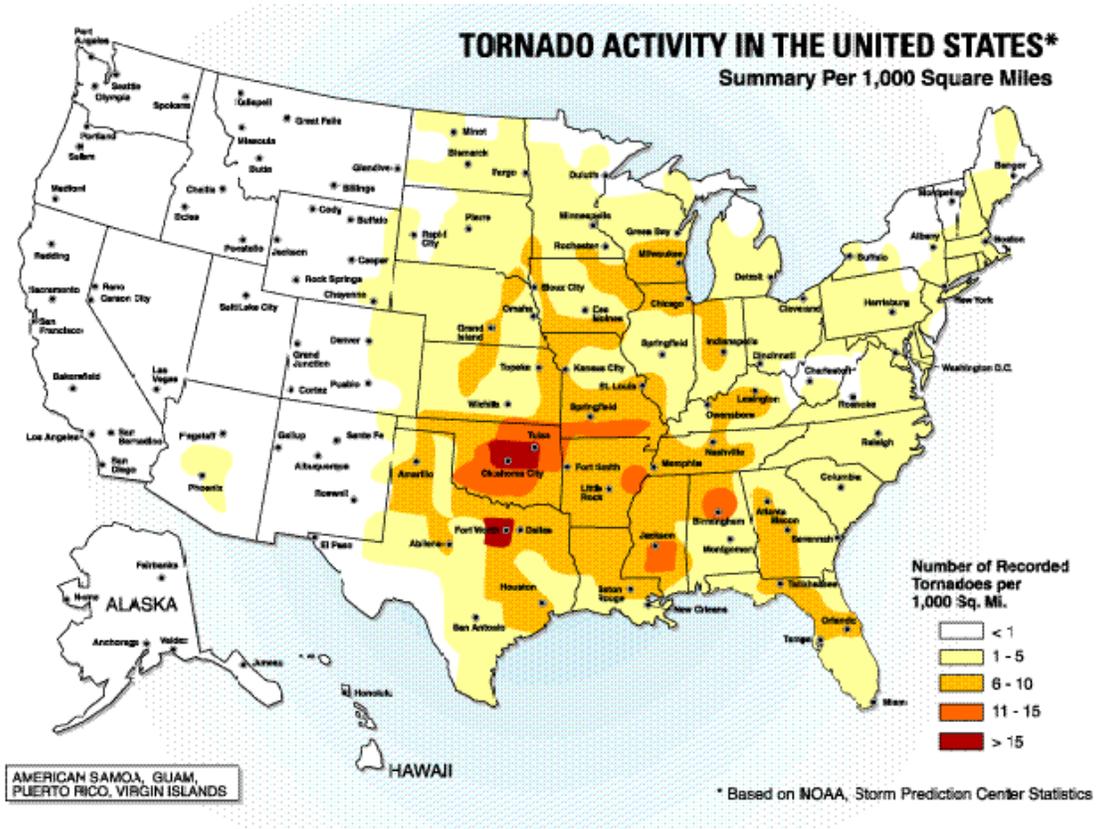
5.6 Tornado

5.6.1 Background

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud extending to the ground. Tornadoes are most often generated by thunderstorm activity (but sometimes result from hurricanes and other tropical storms) when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The damage caused by a tornado is a result of the high wind velocity and wind-blown debris, also accompanied by lightning or large hail. According to the National

Weather Service, tornado wind speeds normally range from 40 miles per hour to more than 300 miles per hour. The most violent tornadoes have rotating winds of 250 miles per hour or more and can cause extreme destruction and turn normally harmless objects into deadly missiles.

Each year, an average of over 1200 tornadoes are reported nationwide, resulting in an average of 80 deaths and 1,500 injuries. **Figure 5-6** shows tornado activity in the United States based on the number of recorded tornadoes per 1,001,000 square miles (about the area of Yosemite National Park)



Source: Federal Emergency Management Agency

Figure 5-6: Tornado Activity in the United States

Tornadoes are more likely to occur during the months of March through May and are most likely to form in the late afternoon and early evening. Most tornadoes are a few dozen yards wide and touch down briefly, but even small short-lived tornadoes can inflict tremendous damage. Highly destructive tornadoes may carve out a path over a mile wide and several miles long.

The destruction caused by tornadoes ranges from light to inconceivable depending on the intensity, size, and duration of the storm. Typically, tornadoes cause the greatest damage to structures of light construction, including residential dwellings (particularly mobile homes). Tornadoic magnitude is reported according to Fujita and Enhanced Fujita Scales. Tornado magnitudes prior to 2005 were determined using the traditional version of the Fujita Scale (**Table 5-13**). Tornado magnitudes were determined in 2005 and later were determined using the Enhanced Fujita Scale (**Table 5-14**).

Table 5-13: The Fujita Scale (Effective Prior to 2005)

F-Scale Number	Intensity	Wind Speed	Type of Damage Done
F0	GALE TORNADO	40–72 MPH	Some damage to chimneys; branches off trees; pushes over shallow-rooted trees; damages to sign boards.
F1	MODERATE TORNADO	73–112 MPH	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	SIGNIFICANT TORNADO	113–157 MPH	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	SEVERE TORNADO	158–206 MPH	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
F4	DEVASTATING TORNADO	207–260 MPH	Well-constructed houses levelled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
F5	INCREDIBLE TORNADO	261–318 MPH	Sturdy frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly more than 100 meters (about the length of a football field); trees debarked; steel re-enforced concrete structures severely damaged.
F6	INCONCEIVABLE TORNADO	319–379 MPH	These winds are very unlikely. The small area of damage they might produce would not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies.

Source: National Weather Service

Table 5-14: The Enhanced Fujita Scale (Effective 2005 and Later)

EF-Scale Number	Intensity Phrase	3 Second Gust (mph)	Type of Damage Done
EF0	GALE	65–85	Some damage to chimneys; branches off trees; pushes over shallow-rooted trees; damages to sign boards.
EF1	MODERATE	86–110	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
EF2	SIGNIFICANT	111–135	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.

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EF-Scale Number	Intensity Phrase	3 Second Gust (mph)	Type of Damage Done
EF3	SEVERE	136–165	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
EF4	DEVASTATING	166–200	Well-constructed houses levelled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
EF5	INCREDIBLE	Over 200	Sturdy frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly more than 100 meters (about the length of a football field); trees debarked; steel re-enforced concrete structures severely damaged.

Source: National Weather Service

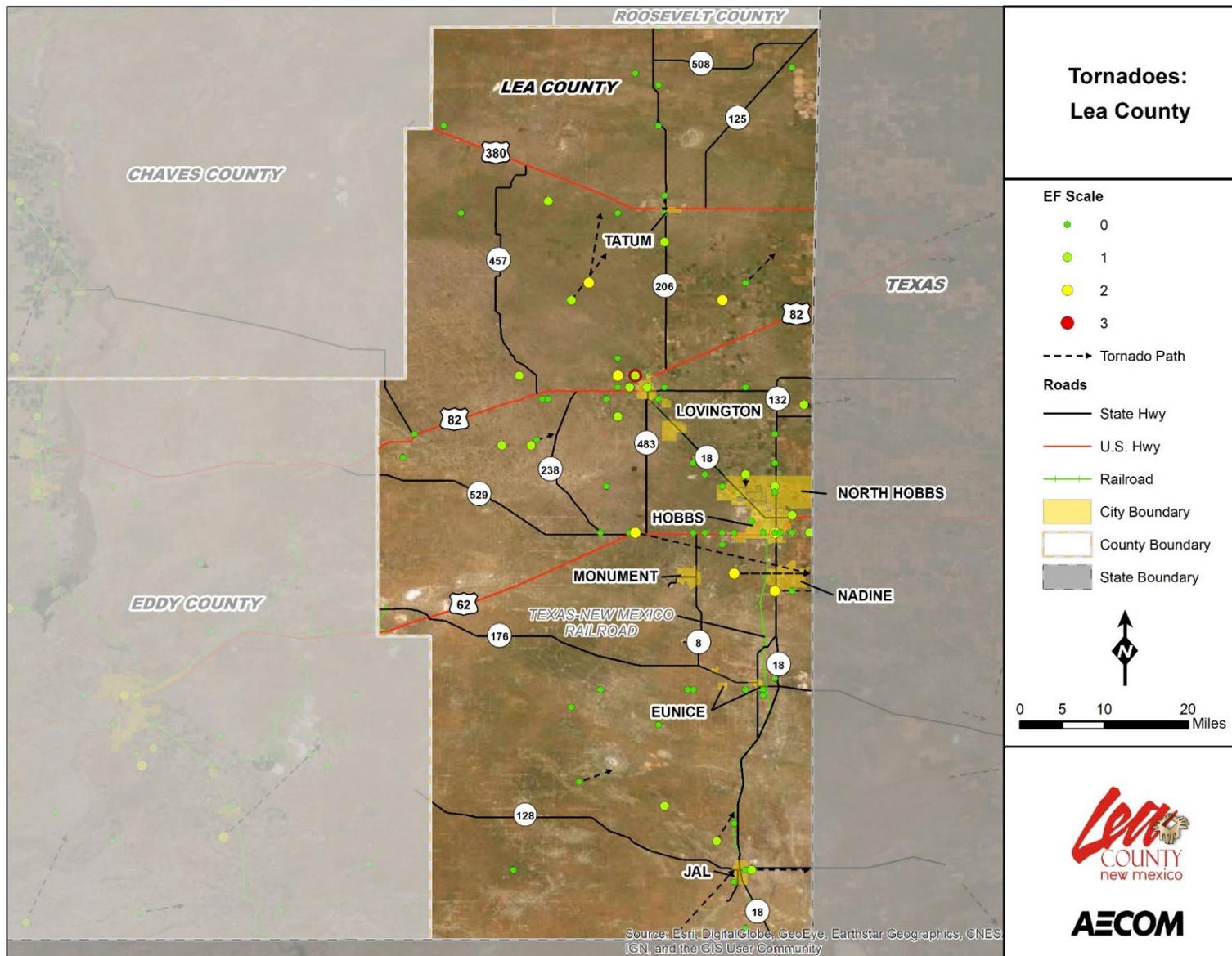


Figure 5-7: Tornado Hazard Areas – Lea County

5.6.2 Location and Spatial Extent

Tornadoes occur throughout the state of New Mexico, and thus in Lea County. Tornadoes typically impact a small area, but damage may be extensive. Event locations are completely random, and it is not possible to predict specific areas that are more susceptible to tornado strikes over time, though due to population density, (especially in Lea County) tornadoes may be reported more frequently in higher populated areas than more rural locations due to lack of observance of the event and/or reported damages. Therefore, it is assumed that the County is uniformly exposed to this hazard.

5.6.3 Extent

The extent of tornadoes can be defined by the maximum tornado magnitude. **Table 5-15** notes the maximum tornado magnitude recorded in each jurisdiction.

Table 5-15: Maximum Recorded Tornado Magnitude

Location	Date	Magnitude
Lea County (Unincorporated Area)	3/12/2019	EF2
Eunice	5/5/2015	EF0
Hobb	4/8/2004	F0
Jal	12/2/1997	F0
Lovington	3/12/2019	EF2
Tatum	3/12/2019	EF2

Source: National Weather Service Storm Prediction Center

5.6.4 Historical Occurrences

The following historical occurrences ranging from 1950 to 2021 have been identified based on the NCDC Storm Events database **Table 5-16**. There were 93 events reported; no deaths and 8 injuries occurred. It should be noted that only those historical occurrences listed in the NCDC database are shown here and that other, unrecorded, or unreported events may have occurred within the planning area during this timeframe.

Table 5-16: Historical Occurrences of Tornado (1950 to 2021)

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crops
Lea County	5/16/1954	Tornado	F1	0	0	250	0.00K
Lea County	5/16/1954	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/17/1954	Tornado	F3	0	0	30	0.00K
Lea County	5/17/1954	Tornado	F1	0	0	0.00K	0.00K
Lea County	5/29/1956	Tornado	F0	0	0	250	0.00K
Lea County	5/30/1957	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/30/1957	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/30/1957	Tornado	F0	0	0	0.00K	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crops
Lea County	4/7/1959	Tornado	F1	0	0	2500	0.00K
Lea County	4/26/1960	Tornado	F0	0	0	0.00K	0.00K
Lea County	7/24/1960	Tornado	F2	0	0	25000	0.00K
Lea County	5/30/1961	Tornado	F1	0	0	25000	0.00K
Lea County	6/7/1961	Tornado	F0	0	0	0.00K	0.00K
Lea County	7/27/1962	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/8/1963	Tornado	F0	0	0	0.00K	0.00K
Lea County	8/31/1963	Tornado	F1	0	0	2500	0.00K
Lea County	5/10/1966	Tornado	F0	0	0	250	0.00K
Lea County	5/26/1966	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/26/1966	Tornado	F0	0	0	0.00K	0.00K
Lea County	8/7/1966	Tornado	F1	0	0	2500	0.00K
Lea County	5/10/1968	Tornado	F0	0	0	0.00K	0.00K
Lea County	4/10/1969	Tornado	F1	0	2	25000	0.00K
Lea County	4/17/1970	Tornado	F1	0	0	2500	0.00K
Lea County	4/17/1970	Tornado	F1	0	0	2500	0.00K
Lea County	4/18/1970	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/25/1970	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/27/1970	Tornado	F1	0	0	0.00K	0.00K
Lea County	6/14/1971	Tornado	F1	0	0	250	0.00K
Lea County	6/14/1972	Tornado	F2	0	0	250	0.00K
Lea County	4/18/1973	Tornado	F1	0	0	250	0.00K
Lea County	7/23/1975	Tornado	F0	0	0	30	0.00K
Lea County	4/19/1977	Tornado	F1	0	0	25000	0.00K
Lea County	9/13/1977	Tornado	F0	0	0	250000	0.00K
Lea County	10/10/1978	Tornado	F1	0	0	25000	0.00K
Lea County	7/24/1979	Tornado	F0	0	0	2500	0.00K
Lea County	8/2/1979	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/27/1982	Tornado	F2	0	0	25000000	0.00K
Lea County	6/10/1982	Tornado	F0	0	0	30	0.00K
Lea County	5/30/1983	Tornado	F0	0	0	25000	0.00K
Lea County	5/19/1985	Tornado	F0	0	0	250000	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crops
Lea County	6/5/1985	Tornado	F0	0	0	25000	0.00K
Lea County	7/24/1985	Tornado	F0	0	0	25000	0.00K
Lea County	7/1/1986	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/23/1987	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/25/1987	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/25/1987	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/25/1987	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/26/1987	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/30/1987	Tornado	F0	0	0	0.00K	0.00K
Lea County	4/16/1988	Tornado	F1	0	0	0.00K	0.00K
Lea County	5/20/1988	Tornado	F0	0	1	250000	0.00K
Lea County	5/20/1988	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/11/1989	Tornado	F1	0	0	2500	0.00K
Lea County	6/10/1989	Tornado	F0	0	0	0.00K	0.00K
Lea County	8/2/1989	Tornado	F1	0	0	25000	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/5/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/6/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/6/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/6/1991	Tornado	F2	0	0	250000	0.00K
Lea County	6/6/1991	Tornado	F2	0	0	250000	0.00K
Lea County	6/6/1991	Tornado	F2	0	5	250000	0.00K
Lea County	6/6/1991	Tornado	F2	0	0	250000	0.00K
Lea County	6/6/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	8/10/1991	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/13/1992	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/22/1992	Tornado	F0	0	0	0.00K	0.00K

Location	Date	Type	Mag	Deaths	Injuries	Damage Property	Damage Crops
Lea County	5/22/1992	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/22/1992	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/24/1992	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/1/1992	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/26/1994	Tornado	F0	0	0	0.00K	0.00K
Jal	9/7/1994	Tornado	F0	0	0	0.00K	0.00K
Lea County	5/26/1995	Tornado	F1	0	0	0.00K	0.00K
Lea County	5/26/1995	Tornado	F1	0	0	0.00K	0.00K
Lea County	6/25/1995	Tornado	F0	0	0	0.00K	0.00K
Lea County	6/29/1995	Tornado	F0	0	0	0.00K	0.00K
Crossroads	6/2/1996	Tornado	F0	0	0	0.00K	0.00K
Hobbs	5/6/1997	Tornado	F1	0	0	60000	0.00K
Tatum	5/8/1997	Tornado	F0	0	0	0.00K	0.00K
Hobbs	5/28/1997	Tornado	F0	0	0	20000	0.00K
Eunice	10/27/1998	Tornado	F0	0	0	0.00K	0.00K
Eunice	4/30/1999	Tornado	F0	0	0	0.00K	0.00K
Lovington	3/23/2007	Tornado	EF0	0	0	0.00K	0.00K
McDonald	3/23/2007	Tornado	EF2	0	0	28000	0.00K
Crossroads	3/23/2007	Tornado	EF0	0	0	0.00K	0.00K
Crossroads	3/23/2007	Tornado	EF0	0	0	2000	0.00K
Teague	5/23/2014	Tornado	EF0	0	0	0.00K	0.00K

5.6.5 Probability of Future Occurrences

The probability of future tornadoes is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Unlikely: Less than 1% annual probability of EF2 event
- Possible: Between 1% and 10% annual probability of EF2 event
- Likely: Between 10% and 99% annual probability of EF2 event
- Highly Likely: 100% probability of EF2 event

Jurisdiction	Probability
Lea County (Unincorporated Area)	Possible
City of Eunice	Possible

Jurisdiction	Probability
Town of Hobbs	Possible
Town of Jal	Possible
Town of Lovington	Possible
City of Tatum	Possible

5.6.6 Vulnerability and Impact

People

The rate of onset of tornado events is rapid, giving those in danger minimal time to seek shelter. The current average lead time according to NOAA is 13 minutes. Injury may result from the direct impact of a tornado, or it may occur afterward when people walk among debris and enter damaged buildings. A study of injuries after a tornado in Marion, Illinois, showed that 50 percent of the tornado-related injuries were suffered during rescue attempts, cleanup, and other post-tornado activities. Common causes of injury included falling objects and heavy, rolling objects. Because tornadoes often damage power lines, gas lines, or electrical systems, there is a risk of fire, electrocution, or an explosion.

First Responders

Due to the rapid onset of tornado events, first responders could be critically affected by tornado events through direct impact of the tornado itself or injury received during response efforts. Response may be hindered as responders may be unable to access those that have been affected if storm conditions persist or if they are unable to safely enter affected areas. As mentioned above, a sizable percentage of tornado-related injuries are suffered during rescue attempts, cleanup, and other post-tornado activities due to walking among debris and entering damaged buildings.

Continuity of Operations

Continuity of operations could be impacted by a tornado. Personnel or families of personnel may be harmed which would limit their response capability. Critical facilities and resources could also be damaged or destroyed during a tornado.

Built Environment

The weakest tornadoes, EF0, can cause minor roof damage and strong tornadoes can destroy frame buildings and even severely damage steel reinforced concrete structures. Most building codes in the United States do not include provisions that provide protection against tornadic winds. Given the strength of the wind impact and construction techniques, buildings are vulnerable to direct impact, including potential destruction, from tornadoes and from wind borne debris that tornadoes turn into missiles. All jurisdictions in the County are vulnerable to building damage. Mobile homes are particularly susceptible to damage and fatalities during tornadoes.

Economy

The largest impact of tornadoes is the economic damage caused by widespread destruction along their paths. More directly, there are many people killed by these storms, and to a lesser extent pets and farm animals. The major damage is the complete destruction of homes, buildings, and farms, the wrecking of cars and trucks, and the loss of power distribution systems. Winds as high as 300 mph blow down walls, tear up trees, and throw debris in every direction at high speeds. Indirect losses include workers who cannot report to jobs and commercial entities that are closest to repairing damage.

Natural Environment

There is no defense for plants and animals from a direct impact from a tornado. Plants and animals in the path of the tornado will receive considerable damage or be killed. Strong tornados can shred trees and lift grass from the ground.

Infrastructure & Critical Facilities

All infrastructure and critical facilities are equally at risk since tornadoes indiscriminately affect the entire planning area.

Land Use & Development Trends

The County and its participating jurisdictions' predominant growth area is residential housing. Increased residential growth will increase the County and its participating jurisdictions' vulnerability and risk to tornadoes. Since tornadoes typically land, move on a path, and then dissipate, there is a high chance in a rural area that a tornado's path may not hit any structures or population. However, as the communities grow, the total area remains the same, and tornado activity remains constant, there is a greater chance structures and population will be exposed to a tornado. As the County and its participating jurisdictions grow, it will need to initiate more programs building tornado safe rooms and encouraging the construction of private safe rooms. Additionally, community and school safe rooms will need to be built based on projections of future population and not the current number. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within the planning area.

5.7 Winter Storm

5.7.1 Background

A winter storm can range from moderate snow over a period of a few hours to blizzard conditions with blinding wind-driven snow that lasts for several days. Events may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Some winter storms might be large enough to affect several states, while others might affect only localized areas. Occasionally, heavy snow might also cause significant property damage, such as roof collapses on older buildings.

All winter storm events have the potential to present dangerous conditions to the affected area. Larger snowfalls pose a greater risk, reducing visibility due to blowing snow and making driving conditions treacherous. A heavy snow event is defined by the National Weather Service as an accumulation of 4 or more inches in 12 hours or less. A blizzard is the most severe form of winter storm. It combines low temperatures, heavy snow, and winds of 35 miles per hour or more, which reduces visibility to a quarter mile or less for at least 3 hours. Winter storms are often accompanied by sleet, freezing rain, or an ice storm. Such freezing events are particularly hazardous as they create treacherous surfaces.

Ice storms are defined as storms with significant amounts of freezing rain and are a result of frigid air damming (CAD (Cold Air Damming)). CAD is a shallow, surface-based layer of cold, stably stratified air entrenched against the southern slopes of the Rocky Mountains. With warmer air above, falling precipitation in the form of snow melts, then becomes either super-cooled (liquid below the melting point of water) or re-freezes. In the former case, super-cooled droplets can freeze on impact (freezing rain), while in the latter case, the re-frozen water particles are ice pellets (or sleet). Sleet is defined as partially frozen raindrops or refrozen snowflakes that form into small ice pellets before reaching the ground. They typically bounce when they hit the ground and do not stick to the surface. However, it does accumulate like snow, posing similar problems and has the potential to accumulate into a layer of ice on surfaces. Conversely, freezing rain usually sticks to the ground, creating a sheet of ice on the

roadways and other surfaces. All the winter storm elements – snow, low temperatures, sleet, ice, etcetera – have the potential to cause significant hazard to a community. Even small accumulations can down power lines and tree limbs and create hazardous driving conditions. Furthermore, communication and power may be disrupted for days.

5.7.2 Location and Spatial Extent

The entire continental United States is susceptible to winter storm events. Some winter storms may be large enough to affect several states, while others might affect limited, localized areas. The degree of exposure typically depends on the normal expected severity of local winter weather. The County is accustomed to severe winter weather conditions and often receives winter weather during the winter months. Given the atmospheric nature of the hazard, the entire region has uniform exposure to a winter storm.

5.7.3 Extent

A deep upper-level trough dug into New Mexico and West Texas late on the 9th and into the 10th of January in 2021. This lifted moist air over frigid air at the surface causing heavy snow to develop in a band from far southeastern New Mexico, across the central and eastern Permian Basin. The maximum reported snowfall amounts are shown in **Table 5-17**. Verifiable data breaking down specific inches of snow at the jurisdictional level is not accessible. The participating jurisdictions do not anticipate future conditions that would fall outside these presently established extents. The maximum is 8 inches and the participating jurisdictions do not anticipate exceeding that amount.

Table 5-17: Maximum Reported Snowfall Amounts

Location	Date	Type	Mag
Lea County	01/09/2012	Winter Storm	4-5 in. of snow*
Eunice	01/09/2012	Winter Storm	4-5 in. of snow*
Hobbs	01/09/2021	Winter Storm	8 in. of snow*
Jal	01/09/2021	Winter Storm	7 in. of snow*
Lovington	01/09/2021	Winter Storm	7 in. of snow*
Tatum	12/23/2011	Winter Storm	8 in. of snow*

*Anecdotal estimates

Table 5-18: Reported Snowfall Amounts

Northern Lea County (zone)	11/2/2004	Local officials reported four to six inches snow accumulations near Tatum. This resulted in hazardous driving conditions as roads became snow packed and slick. Low visibilities also accompanied the heavy snow. Snow drifts reached depths of one foot.
Southern Lea County (zone)	12/23/2004	Accumulating snowfall additionally occurred over southern Lea County. Storm total snow accumulations totaled three inches at Jal.

Hazard Profiles

Central Lea County (zone)	2/1/2005	Accumulating snowfall affected the far southeastern plains of New Mexico on the 1st. This occurred as a significant winter storm racked the adjacent counties of west Texas. Reported snow accumulations from central and southern Lea County included: Hobbs.....1 inch and Jal.....3 inches
Northern Lea County (zone)	3/15/2005	More significant snowfall occurred over northern Lea County on the 15th as a winter storm affected portions of the New Mexico plains. Between four- and five-inch snow accumulations were reported across northern Lea County from Caprock to Crossroads.
Northern Lea County (zone)	1/18/2007	Four inches of snow fell in Tatum.
Central Lea County (zone)	1/18/2007	New Mexico Highway 18 was closed between Lovington and the Texas state line.
Central Lea County (zone)	1/23/2007	Seven inches of snow fell in Nadine.
Central Lea County (zone)	1/23/2007	Five inches of snow fell in Jal.
Northern Lea County (zone)	12/1/2009	Two to four inches of snow fell in and near Tatum from 11/30/09 to 12/01/09 in northern Lea County.
Southern Lea County (zone)	12/3/2009	One half to one inch of snow fell in Jal from 12/03/09 to 12/04/09.
Central Lea County (zone)	12/4/2009	One to one and a half inches fell in Hobbs from 12/03/09 to 12/04/09.
Northern Lea County (zone)	12/4/2009	Two inches of snow fell in and near Tatum from 12/03/09 to 12/04/09.
Northern Lea County (zone)	12/29/2009	Four inches of snow accumulated in Tatum. Roads were snow packed and icy.
Northern Lea County (zone)	2/22/2010	Three to five inches of snow was reported in and around Tatum.
Northern Lea County (zone)	2/22/2010	Four inches of snow was reported in Tatum.
Southern Lea County (zone)	12/23/2011	The total snowfall at Jal was 4 inches.
Northern Lea County (zone)	12/23/2011	Snowfall was only 1-2 inches by early evening on the 23rd, however roads began to be closed over Lea County due to snowfall and subfreezing temperatures. The storm total snowfall reported for Tatum was 8 inches.
Central Lea County (zone)	12/23/2011	Snowfall totals were great enough by 714 PM CST on the 23rd over east central New Mexico for Highway 18 to be closed between Hobbs and Lovington. US Highway 62/180 between Hobbs and Carlsbad was closed by 825 PM CST. Total snowfall at Hobbs was 7 inches.
southern lea county (zone)	1/9/2012	A total of 4-5 inches of snowfall was estimated in southern Lea County.

Hazard Profiles

Central Lea County (zone)	1/9/2012	Estimated 4 inches of snow fell by 1200 CST in Nadine, which is 7.8 miles south of Hobbs. The total snowfall was 15 inches, which was reported at 1900 CST.
Southern Lea County (zone)	1/3/2013	Four inches of snow reported in Jal.
Northern Lea County (zone)	11/22/2013	The public reported 3.8 inches of snowfall and 1/2 inch of ice in Tatum.
Central Lea County (zone)	12/26/2014	Eight inches of snow measured by the public in Queen.
Northern Lea County (zone)	2/26/2015	Five inches of snowfall reported in Tatum.
Southern Lea County (zone)	1/9/2021	Seven inches of snow was estimated to have fallen 21 miles west northwest of Jal.
Central Lea County (zone)	1/9/2021	Seven inches of snow was estimated to have fallen 8 miles southeast of Lovington.
Central Lea County (zone)	1/9/2021	Eight inches of snow was estimated to have fallen in Hobbs.

5.7.4 Historical Occurrences

According to the National Climatic Data Center, there have been a total of 39 recorded winter storm events in the County since 1950 (**Table 5-19**). These events reported no documented monetary losses and no reported deaths or injuries. It should be noted that there may have been more events to occur before 2009 that were not reported on NCDC.

Table 5-19: Historical Occurrences of Winter Weather (1950 to 2021)

Location	Date	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Lea (zone)	1/6/1997	Heavy Snow		0	0	0	0
Lea (zone)	12/20/1997	Heavy Snow		0	0	0	0
Lea (zone)	12/22/1997	Heavy Snow		0	0	0	0
Lea (zone)	12/25/1997	Heavy Snow		0	0	0	0
Lea (zone)	12/11/1998	Heavy Snow		0	0	0	0
Central Lea County (zone)	11/2/2004	Winter Weather		0	0	0	0
Southern Lea County (zone)	11/2/2004	Winter Weather		0	0	0	0
Northern Lea County (zone)	11/2/2004	Winter Weather		0	0	0	0
Northern Lea County (zone)	11/2/2004	Heavy Snow		0	0	0	0

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Northern Lea County (zone)	12/22/2004	Winter Storm		0	0	0	0
Central Lea County (zone)	12/22/2004	Winter Weather		0	0	0	0
Southern Lea County (zone)	12/23/2004	Winter Weather		0	0	0	0
Central Lea County (zone)	2/1/2005	Winter Weather		0	0	0	0
Northern Lea County (zone)	3/15/2005	Winter Storm		0	0	0	0
Southern Lea County (zone)	1/18/2007	Winter Storm		0	0	0	0
Northern Lea County (zone)	1/18/2007	Heavy Snow		0	0	0	0
Central Lea County (zone)	1/18/2007	Winter Storm		0	0	0	0
Central Lea County (zone)	1/23/2007	Heavy Snow		0	0	0	0
Central Lea County (zone)	1/23/2007	Heavy Snow		0	0	0	0
Northern Lea County (zone)	12/1/2009	Winter Storm		0	0	0	0
Southern Lea County (zone)	12/3/2009	Winter Weather		0	0	0	0
Central Lea County (zone)	12/4/2009	Winter Weather		0	0	0	0
Northern Lea County (zone)	12/4/2009	Winter Weather		0	0	0	0
Northern Lea County (zone)	12/29/2009	Heavy Snow		0	0	0	0
Northern Lea County (zone)	2/22/2010	Heavy Snow		0	0	0	0
Northern Lea County (zone)	2/22/2010	Heavy Snow		0	0	0	0
Southern Lea County (zone)	12/23/2011	Heavy Snow		0	0	0	0
Northern Lea County (zone)	12/23/2011	Heavy Snow		0	0	0	0

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Central Lea County (zone)	12/23/2011	Heavy Snow		0	0	0	0
Southern Lea County (zone)	1/9/2012	Heavy Snow		0	0	0	0
Central Lea County (zone)	1/9/2012	Heavy Snow		0	0	0	0
Southern Lea County (zone)	1/3/2013	Heavy Snow		0	0	0	0
Northern Lea County (zone)	11/22/2013	Heavy Snow		0	0	0	0
Central Lea County (zone)	12/26/2014	Heavy Snow		0	0	0	0
Northern Lea County (zone)	2/26/2015	Heavy Snow		0	0	0	0
Central Lea County (zone)	2/4/2020	Heavy Snow		0	0	0	0
Southern Lea County (zone)	1/9/2021	Heavy Snow		0	0	0	0
Central Lea County (zone)	1/9/2021	Heavy Snow		0	0	0	0
Central Lea County (zone)	1/9/2021	Heavy Snow		0	0	0	0
Total							

5.7.5 Probability of Future Occurrences

The probability of future Winter Storms is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Unlikely: Less than 1% annual probability
- Possible: Between 1% and 10% annual probability
- Likely: Between 10% and 99% annual probability
- Highly Likely: 100% probability

Jurisdiction	Probability
Lea County (Unincorporated Area)	Possible
City of Eunice	Possible
Town of Hobbs	Possible
Town of Jal	Possible

Jurisdiction	Probability
Town of Lovington	Possible
City of Tatum	Possible

5.7.6 Vulnerability and Impact

People

Winter storms are deceptive killers because most deaths are indirectly related to the storm event. The leading cause of death during winter storms is from automobile or other transportation accidents. Exhaustion and heart attacks caused by overexertion are the two causes of winter storm-related deaths.

Power outages during very frigid winter storm conditions can result in a potentially dangerous situation. Elderly people account for the largest percentage of hypothermia victims. In addition, if the power is out for an extended period, residents are forced to find alternative means to heat their homes. The danger arises from carbon monoxide released from improperly ventilated heating sources such as space or kerosene heaters, furnaces, and blocked chimneys. House fires also occur more frequently in the winter due to lack of proper safety precautions when using an alternative heating source.

First Responders

Adverse impact expected to be severe for unprotected personnel and moderate to light for trained, equipped, and protected personnel.

Fire suppression during winter storms may present a great danger because water supplies may freeze, and it may be difficult for firefighting equipment to get to the fire.

Clearing ice- or snow-covered roads is also a problem; with limited equipment priority is given to main thoroughfares and secondary roads are untouched during the initial hours after a storm has passed.

Continuity of Operations

Winter storm events can result in a loss of power which may impact operations. All jurisdictions are equally vulnerable to loss of power in a winter event. Downed trees, power lines and icy road conditions may prevent access to critical facilities and/or emergency equipment.

Built Environment

Localized impact to facilities and infrastructure in the areas of the incident. Power lines and roads are most adversely affected.

Economy

Local economy and finances may be adversely affected, depending on damage. Utility companies will strive to restore power as quickly as possible; however, businesses without power may be forced to close for an extended period, resulting in financial losses for the local economy.

Natural Environment

Winter storm events may include ice or snow accumulation on trees which can cause large limbs, or even whole trees, to snap and potentially fall on residential homes, cars, or power lines. This potential for winter debris creates a dangerous environment to be outside in; significant injury may occur if a large limb snaps while a local resident is out driving or walking underneath it.

Infrastructure & Critical Facilities

All infrastructure and critical facilities are equally at risk since winter storms indiscriminately affect the entire planning area.

Land Use & Development Trends

The County and its participating jurisdictions' predominant growth area is residential housing. Increased residential growth will not increase Lea County or its participating jurisdictions' vulnerability and risk to winter storms if the residential structures continue to be built under currently adopted international and state building codes, contemporary heating standards, and an appropriately accommodating power grid. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within the planning area.

HYDROLOGIC HAZARDS

5.8 Flood

5.8.1 Background

According to the Natural Resources Defense Council (NRDC), floods are the most common (and often most deadly) natural disasters in the United States. Floods result from excessive precipitation and can be classified under two categories: general floods, precipitation over a given river basin for an extended period along with storm-induced wave action, and flash floods, the product of heavy localized precipitation in a brief time over a given location. The severity of a flooding event is typically determined by a combination of several major factors, including stream and river basin topography and physiography, precipitation and weather patterns, recent soil moisture conditions, and the degree of vegetative clearing and impervious surface.

General floods are usually long-term events that may last for several days. The primary types of general flooding include riverine, coastal, and urban flooding. Riverine flooding is a function of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. Coastal flooding is typically a result of storm surge, wind-driven waves, and heavy rainfall produced by hurricanes, tropical storms, and other large coastal storms. Urban flooding occurs where manufactured development has obstructed the natural flow of water and decreased the ability of natural groundcover to absorb and retain surface water runoff.

Most flash flooding is caused by slow-moving thunderstorms in a local area or by heavy rains associated with hurricanes and tropical storms. However, flash flooding events may also occur from a dam or levee failure within minutes or hours of heavy amounts of rainfall or from a sudden release of water held by a retention basin or other stormwater control facility. Although flash flooding occurs most often along mountain streams, it is also common in urbanized areas where much of the ground is covered by impervious surfaces.

The periodic flooding of lands adjacent to rivers, streams, and shorelines (land known as a floodplain) is a natural and inevitable occurrence that can be expected to take place based upon established recurrence intervals. The recurrence interval of a flood is defined as the average time interval, in years, expected between a flood event of a particular magnitude and an equal or larger flood. Flood magnitude increases with an increasing recurrence interval.

Floodplains are designated by the frequency of floods that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood and the 100-year floodplain by the 100-year flood. Flood frequencies, such as the 100-year flood, are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. Another way of expressing the flood frequency is the chance of occurrence each year, which is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1 percent chance of occurring in any given year and the 500-year flood has a 0.2 percent chance of occurring in any given year.

5.8.2 Location and Extent

A variety of factors affect the type and severity of flooding within Lea County and its participating jurisdictions including topography, urban development and infrastructure, and geology. Serious flooding in the mountainous or elevated areas is unusual because streams tend to be faster flowing and flood waters drain quickly.

Intense flooding will create havoc in any jurisdiction affected. The predicative magnitude of these floods is indeterminate and can vary. However, based on the variation of impacts, floods can cause minimal damage in the form of just inches of water to houses and critical facilities being completely submerged in over 12 feet of water. The magnitude of these floods is indeterminate and varies; however, some areas have established a base flood elevation (BFE) to use as a determinate for construction and mitigation activities. Intense and widespread flooding can trap people and entire communities without basic goods or services. Any amount of damage can render a structure unusable for as long as recovery operation would take depending on the level of damage.

Table 5-20: Flood Zone Classifications

Zone Class	Description
Zone A	An area inundated by 1% annual chance of flooding, for which no BFEs (Base Flood Elevations) have been determined. (100-Year Floodplain)
Zone AE	An area inundated by 1% annual chance of flooding, for which BFEs have been determined. (100-Year Floodplain)
Zone X (shaded)	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. An area inundated by 0.2% annual chance of flooding.

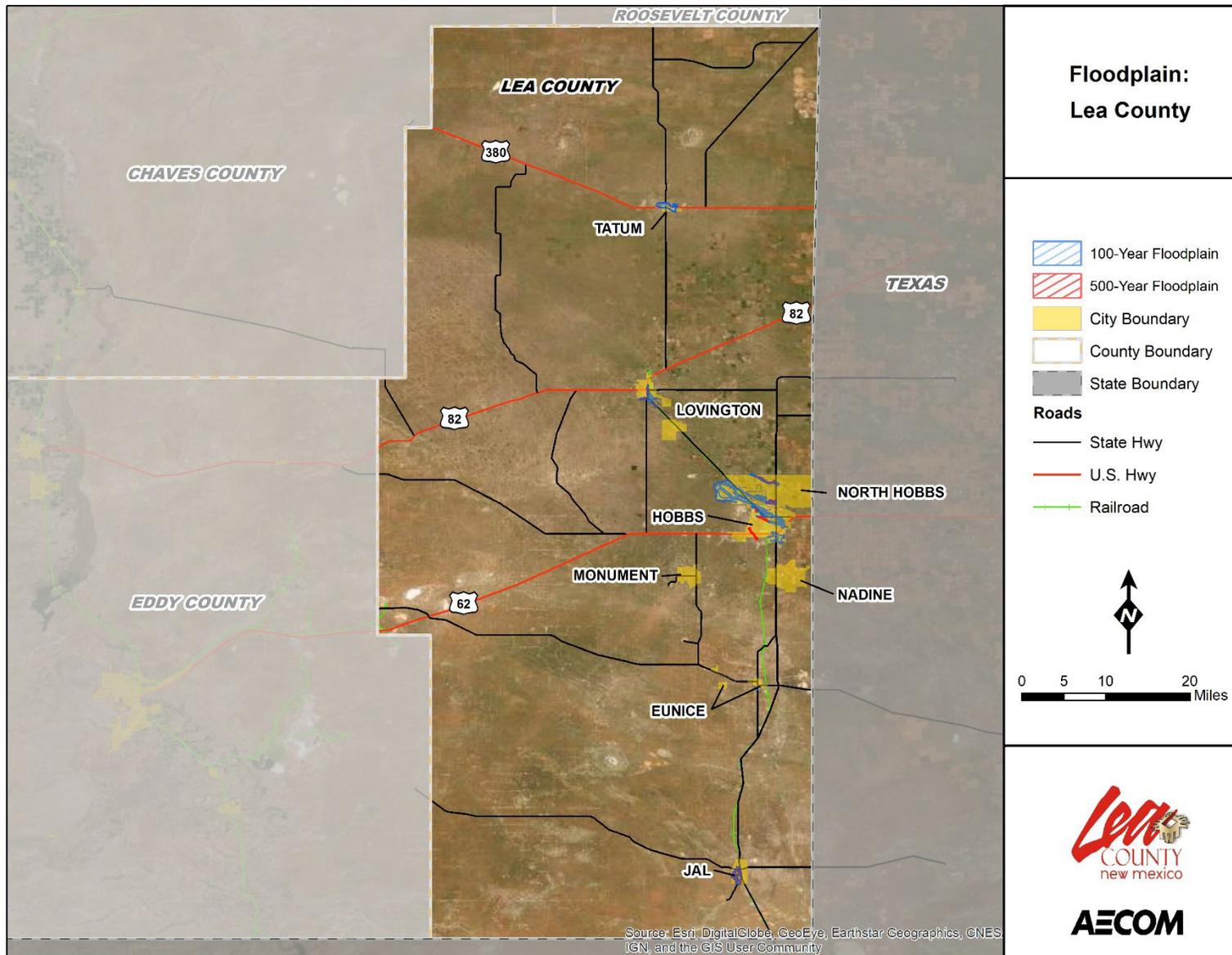


Figure 5-8: Flood Hazard Areas – Lea County

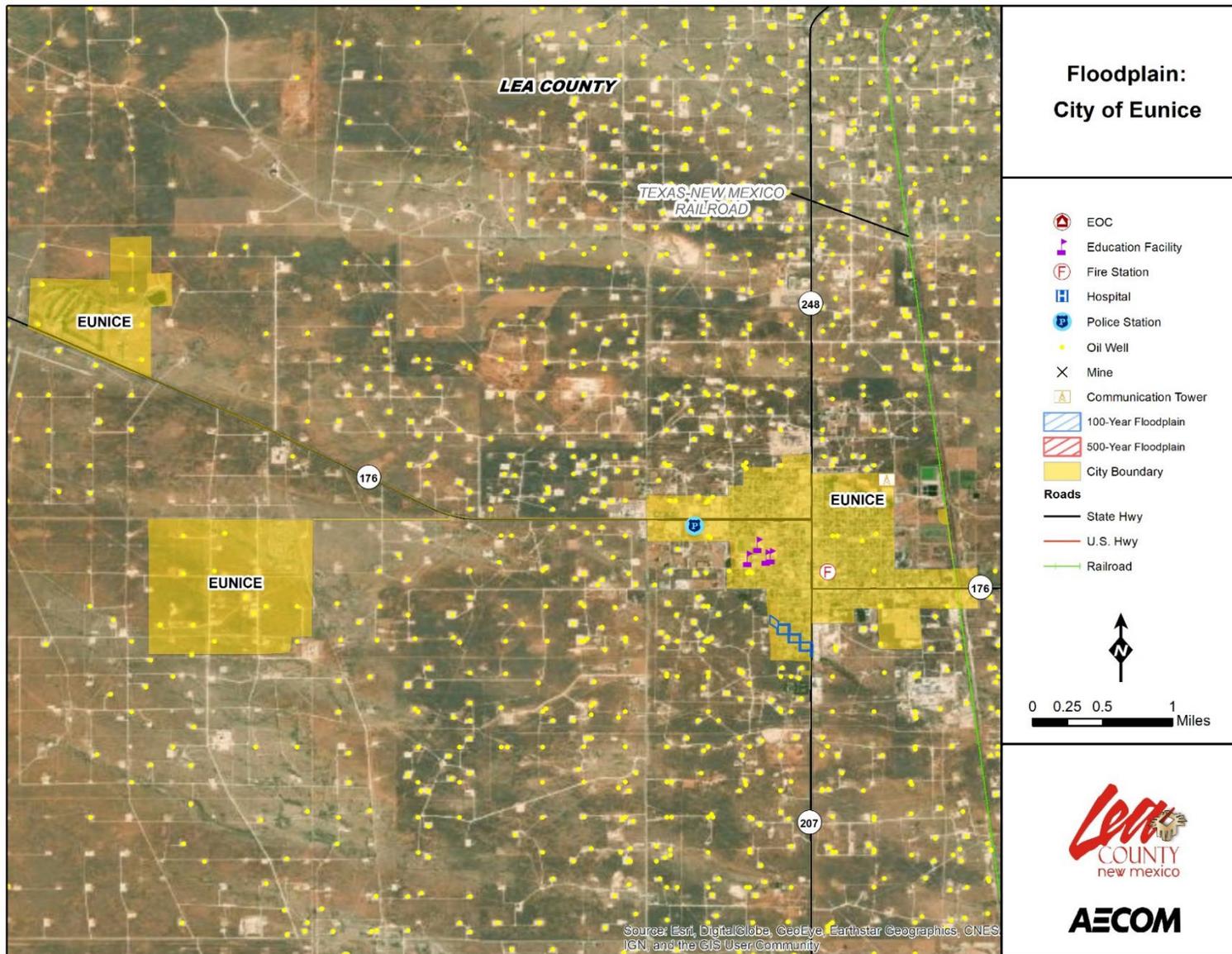


Figure 5-9: Flood Hazard Areas – Eunice

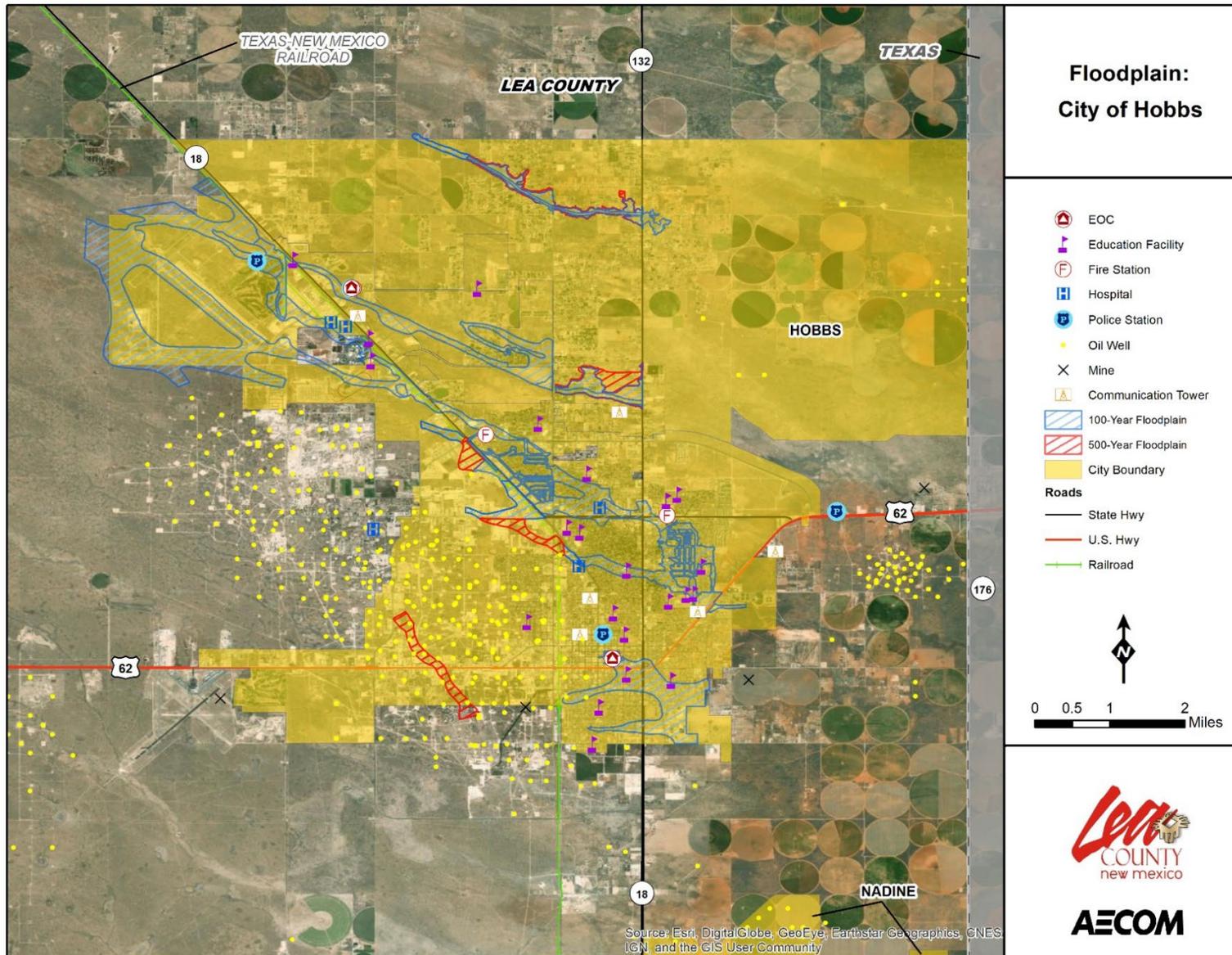


Figure 5-10: Flood Hazard Areas - Hobbs

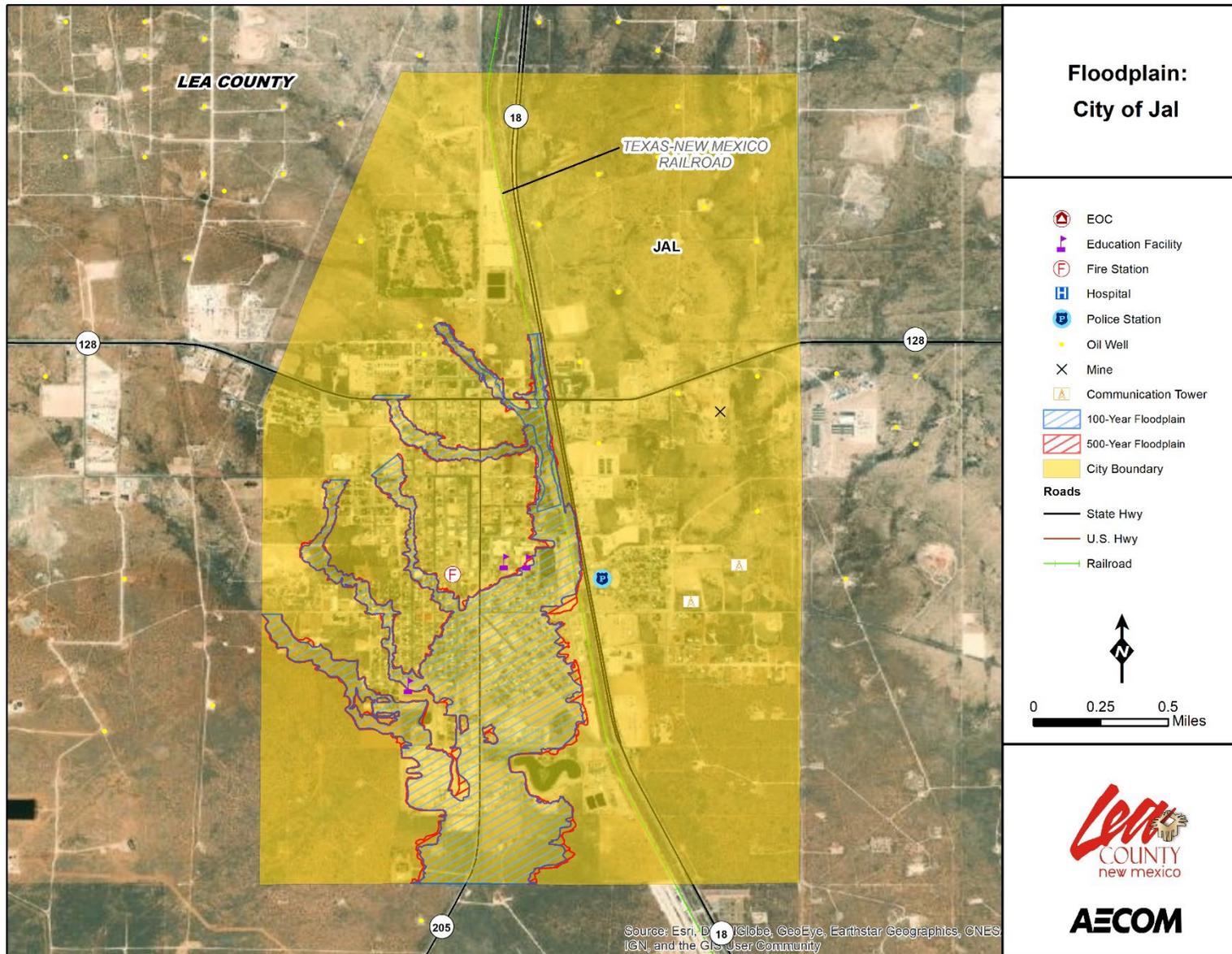


Figure 5-11: Flood Hazard Areas – Jal

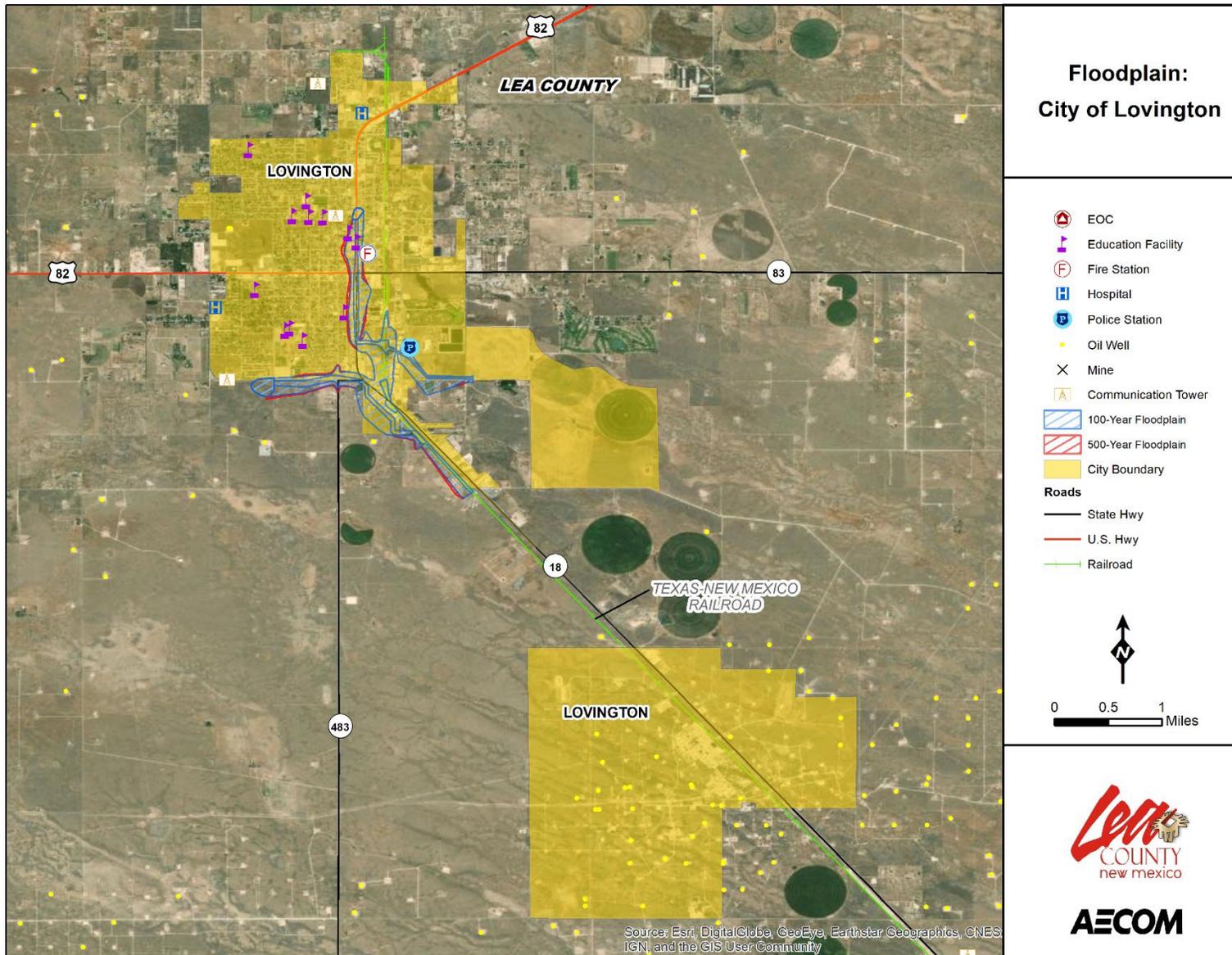


Figure 5-12: Flood Hazard Areas – Lovington

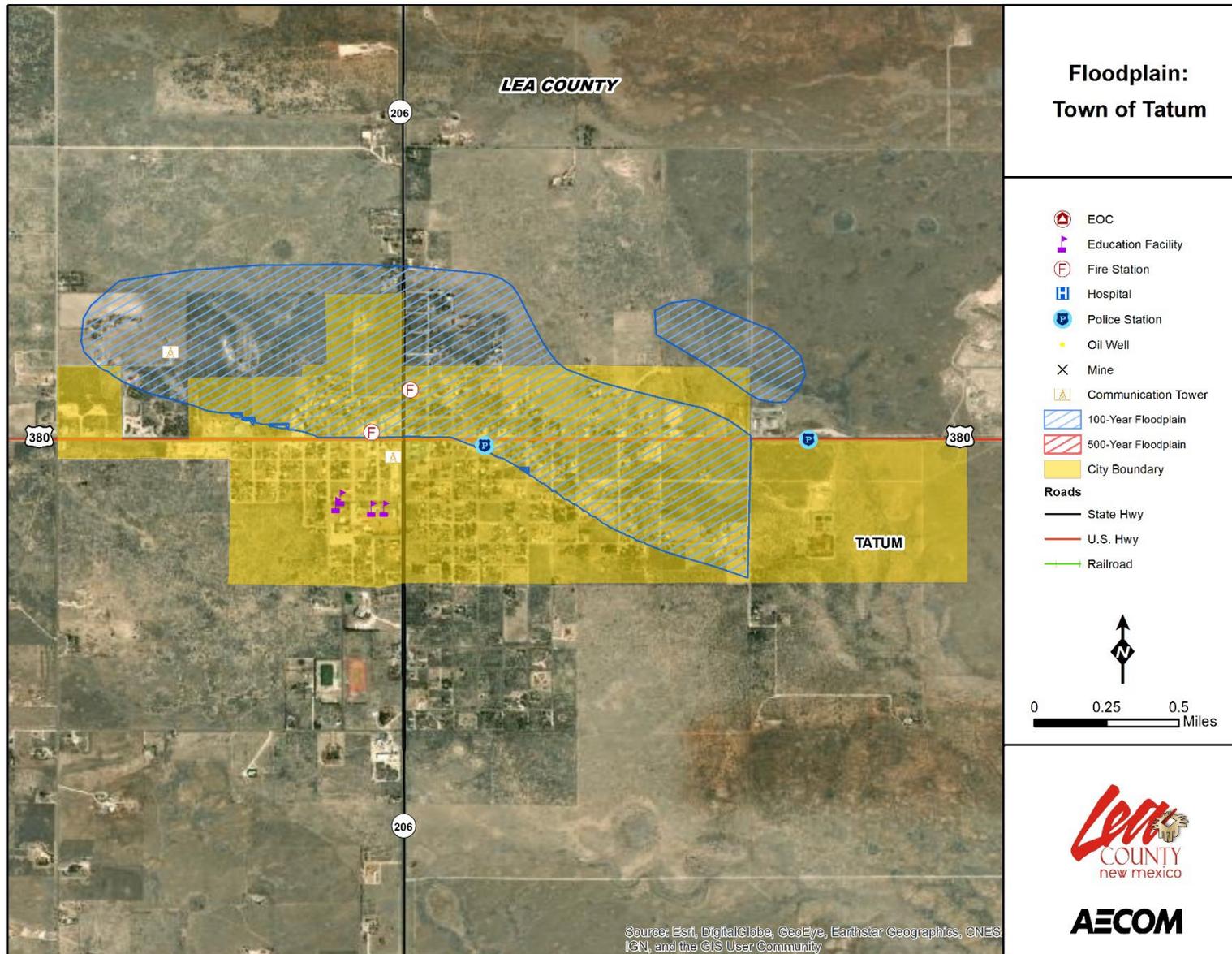


Figure 5-13: Flood Hazard Areas – Tatum

5.8.3 Historical Occurrences

The following historical occurrences ranging from 1996 to 2021 have been identified based on the National Climatic Data Center (NCDC) Storm Events database as shown in Table 5-21. It should be noted that only those historical occurrences listed in the NCDC database are shown here and that other, unrecorded, or unreported events may have occurred within the planning area during this timeframe. Table 5-21: Historical Occurrences of Flooding Events (1996 to 2021)

Location	Date	Type	Mag	Deaths	Injuries	Property Damage
Jal	7/8/1997	Flash Flood		0	0.00K	0.00K
Lovington	8/12/1997	Flash Flood		0	0.00K	0.00K
Jal	8/12/1997	Flash Flood		0	0.00K	0.00K
South Portion	4/30/1999	Flash Flood		0	0.00K	0.00K
Northeast Portion	5/24/1999	Flash Flood		0	0.00K	0.00K
Jal	5/24/1999	Flash Flood		0	0.00K	0.00K
Hobbs	5/24/1999	Flash Flood		0	0.00K	0.00K
South portion	5/28/1999	Flash Flood		0	0.00K	0.00K
Monument	6/19/1999	Flash Flood		0	0.00K	0.00K
East portion	6/1/2000	Flash Flood		0	0.00K	0.00K
Hobbs	6/28/2000	Flash Flood		0	0.00K	0.00K
Hobbs	6/23/2001	Flash Flood		0	0.00K	0.00K
Tatum	8/25/2001	Flash Flood		0	0.00K	0.00K
Eunice	8/1/2002	Flash Flood		0	0.00K	125000
Eunice	8/2/2002	Flood		0	0.00K	0.00K
Lovington	8/2/2002	Flash Flood		0	0.00K	0.00K
Tatum	8/21/2002	Flood		0	0.00K	0.00K
Hobbs	10/8/2002	Flash Flood		0	0.00K	20000
Hobbs	10/18/2002	Flash Flood		0	0.00K	0.00K
Hobbs	8/29/2003	Flash Flood		0	0.00K	30000
Eunice	4/3/2004	Flash Flood		0	0.00K	0.00K
Lovington	5/9/2004	Flash Flood		0	0.00K	10000
Hobbs	6/24/2004	Flash Flood		0	0.00K	20000
Jal	6/29/2004	Flash Flood		0	0.00K	0.00K
Jal	7/24/2004	Flash Flood		0	0.00K	0.00K
Crossroads	8/4/2004	Flash Flood		0	0.00K	0.00K
Jal	8/31/2004	Flash Flood		0	0.00K	0.00K
Hobbs	9/4/2004	Flash Flood		0	0.00K	0.00K
Eunice	9/21/2004	Flash Flood		0	0.00K	25000

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Property Damage
Monument	9/26/2004	Flash Flood		0	0.00K	0.00K
Eunice	9/26/2004	Flash Flood		0	0.00K	75000
Jal	9/27/2004	Flash Flood		0	0.00K	0.00K
Hobbs	9/29/2004	Flash Flood		0	0.00K	0.00K
Tatum	10/5/2004	Flash Flood		0	0.00K	30000
Hobbs	10/5/2004	Flash Flood		0	0.00K	0.00K
Jal	10/5/2004	Flash Flood		0	0.00K	0.00K
Lovington	5/28/2005	Flash Flood		0	0.00K	0.00K
Eunice	7/26/2005	Flash Flood		0	0.00K	0.00K
Lovington	8/13/2005	Flash Flood		0	0.00K	60000
Hobbs	8/13/2005	Flash Flood		0	0.00K	5000
Jal	8/14/2005	Flash Flood		0	0.00K	20000
Hobbs	8/14/2005	Flash Flood		0	0.00K	0.00K
Hobbs	8/20/2005	Flash Flood		0	0.00K	0.00K
Hobbs	8/23/2005	Flash Flood		0	0.00K	0.00K
Hobbs	9/17/2005	Flash Flood		0	0.00K	0.00K
Hobbs	10/5/2005	Flash Flood		0	0.00K	0.00K
Lovington	8/31/2006	Flash Flood		0	0.00K	0.00K
Lovington	3/23/2007	Flash Flood		0	0.00K	0.00K
Lovington	5/2/2007	Flash Flood		0	0.00K	0.00K
Hobbs	5/8/2007	Flash Flood		0	0.00K	0.00K
Hobbs	8/24/2007	Flash Flood		0	0.00K	20000
Jal	8/24/2007	Flash Flood		0	0.00K	0.00K
Hobbs	9/6/2007	Flash Flood		0	0.00K	0.00K
Hobbs	9/7/2007	Flash Flood		0	0.00K	0.00K
Hobbs	9/9/2007	Flash Flood		0	0.00K	0.00K
Hobbs	9/10/2007	Flash Flood		0	0.00K	0.00K
Hobbs	9/2/2008	Flash Flood		0	0.00K	0.00K
Hobbs	9/11/2008	Flash Flood		0	0.00K	0.00K
Jal	7/31/2009	Flash Flood		0	0.00K	0.00K
Hobbs	8/9/2009	Flood		0	0.00K	4000
Hobbs	6/17/2013	Flash Flood		0	0.00K	1000
Hobbs	6/17/2013	Flash Flood		0	0.00K	2000
Hobbs	6/17/2013	Flash Flood		0	0.00K	5000
South Lea Co Arpt	6/17/2013	Flash Flood		0	0.00K	0.00K

Hazard Profiles

Location	Date	Type	Mag	Deaths	Injuries	Property Damage
Hobbs	6/17/2013	Flash Flood		0	0.00K	500
Hobbs Ind Arpt	7/17/2013	Flash Flood		0	0.00K	200
Hobbs	10/13/2013	Flash Flood		0	0.00K	1000
Lea co Hobbs Arpt	6/19/2014	Flash Flood		0	0.00K	0.00K
Eunice	9/11/2014	Flash Flood		0	0.00K	1000
Hobbs	9/18/2014	Flash Flood		0	0.00K	300
Buckeye	9/19/2014	Flash Flood		0	0.00K	120000
Hobbs	9/19/2014	Flash Flood		0	0.00K	1000
Oil center	9/19/2014	Flash Flood		0	0.00K	500
Monument	9/21/2014	Flash Flood		0	0.00K	400
Monument	9/21/2014	Flood		0	0.00K	1000
Hobbs	8/1/2015	Flash Flood		0	0.00K	3000
Jal	10/8/2015	Flash Flood		0	0.00K	1000
Hobbs	10/21/2015	Flash Flood		0	0.00K	3500
Monument	8/28/2016	Flash Flood		0	0.00K	1000
Hobbs Ind Arpt	8/28/2016	Flash Flood		0	0.00K	1000
Hobbs	8/28/2016	Flash Flood		0	0.00K	500
Jal	8/28/2016	Flash Flood		0	0.00K	1000
Maljamar	8/30/2016	Flash Flood		0	0.00K	500
Hobbs Ind Arpt	6/23/2017	Flash Flood		0	0.00K	10000
Hobbs	8/25/2018	Flash Flood		0	0.00K	8000

*Preliminary Data

5.8.4 Repetitive Loss Properties

The State of New Mexico’s Floodplain Coordinator has confirmed that there is not any repetitive loss or severe repetitive loss structures in Lea County, Eunice, Hobbs, Jal, Lovington, or Tatum.

5.8.5 Probability of Future Occurrences

The probability of future Flooding is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Unlikely: Less than 1% annual probability
- Possible: Between 1% and 10% annual probability
- Likely: Between 10% and 99% annual probability
- Highly Likely: 100% probability

Jurisdiction	Probability
Lea County (Unincorporated Area)	Possible
City of Eunice	Possible
Town of Hobbs	Possible
Town of Jal	Possible
Town of Lovington	Possible
City of Tatum	Possible

5.8.6 Vulnerability and Impact

People

Certain health hazards are common to flood events. While such problems are often not reported, three general types of health hazards accompany floods. The first comes from the water itself. Floodwaters carry anything that was on the ground that the upstream runoff picked up, including dirt, oil, animal waste, lawn, farm, and industrial chemicals. Pastures and areas where farm animals are kept, or their wastes are stored, can contribute polluted water to the receiving streams.

Floodwater also saturates the ground, which leads to infiltration into sanitary sewer lines. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying areas and homes. Even when it is diluted by flood waters, raw sewage can be a breeding ground for bacteria such as E. coli and other disease-causing agents. All jurisdictions in the County are susceptible to this type of impact.

The second type of health problem arises after most of the water has gone. Stagnant pools can become breeding grounds for mosquitoes, and wet areas of a building that have not been thoroughly cleaned breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children and the elderly.

Another health hazard occurs when heating ducts in a forced air system are not thoroughly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If the City water system loses pressure, a boil order may be issued to protect people and animals from contaminated water.

The third problem is the long-term psychological impact of having been through a flood and seeing one’s home damaged and personal belongings destroyed. The cost and labor needed to repair a flood-damaged home puts a severe strain on people, especially the unprepared and uninsured. There is also a long-term problem for those who know that their homes could be flooded again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

First Responders

First responders are at risk when attempting to rescue people from their homes. They are subject to the same health hazards as the public mentioned above. Flood waters may prevent access to areas in need of response or the flood may prevent access to the critical facilities themselves which may prolong response time.

Continuity of Operations

Floods can severely disrupt normal operations, especially when there is a loss of power.

Built Environment

Residential, commercial, and public buildings, as well as critical infrastructure such as transportation, water, energy, and communication systems may be damaged or destroyed by flood waters.

Economy

During floods (especially flash floods), roads, bridges, farms, houses, and automobiles are destroyed. Additionally, the local government must deploy firefighters, police and other emergency response personnel and equipment to help the affected area. It may take years for the affected communities to be rebuilt and business to return to normal.

Natural Environment

During a flood event, chemicals and other hazardous substances may end up contaminating local water bodies. Flooding kills animals and in general disrupts the ecosystem. Snakes and insects may also make their way to the flooded areas.

Infrastructure & Critical Facilities

Infrastructure and critical facilities potentially impacted by flood are noted in **Table 5-22**.

Table 5-22: Infrastructure and Critical Facilities with Potential Impact from Flood

Jurisdiction	100-year flood	500-year flood
Lea County (Unincorporated Area)	Oil Well (3), Mine (1), Communication Tower (1)	-
City of Eunice	Hospital (1)	EOC (1), Fire Station (1), Police Station (2), Communication Tower (1)
Town of Hobbs	Communication Tower (1)	-
Town of Jal	-	-
Town of Lovington	-	Fire Station (2), Police Station (1), Hospital (1)
City of Tatum	-	-

Land Use & Development Trends

Lea County and its participating jurisdictions' predominant growth area is residential housing. Increased residential growth can increase or not increase a jurisdiction's risk of flooding. With the proper flood control policies, codes, zoning, and laws in place there is no reason new residential construction should occur within designated floodplains. If a community does undergo growth in a floodplain the local government will need to ensure the structures are properly protected through insurance or other structural mitigation measures. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within or outside of the designated floodplains.

OTHER HAZARDS

5.9 Wildfire

5.9.1 Background

A wildfire is any outdoor fire (i.e., grassland, forest, brush land) that is not under control, supervised, or prescribed.² Wildfires are part of the natural management of forest ecosystems but may also be caused by human factors.

Nationally, most forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause of wildfire is lightning.

There are three classes of wildland fires: surface fire, ground fire, and crown fire. A surface fire is the most common of these three classes and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire (muck fire) is usually started by lightning or human carelessness and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildfires are usually signaled by dense smoke that fills the area for miles around.

Wildfire probability depends on local weather conditions, outdoor activities such as camping, debris burning, and construction, and the degree of public cooperation with fire prevention measures. Drought conditions and other natural hazards (such as tornadoes, hurricanes, etc.) increase the probability of wildfires by producing fuel in both urban and rural settings.

Many individual homes and cabins, subdivisions, resorts, recreational areas, organizational camps, businesses, and industries are located within high wildfire hazard areas. Furthermore, the increasing demand for outdoor recreation places more people in the wildlands during holidays, weekends, and vacation periods. Unfortunately, wildland residents and visitors are rarely educated or prepared for wildfire events that can sweep through the brush and timber and destroy property within minutes.

Wildfires can result in severe economic losses as well. Businesses that depend on timber, such as paper mills and lumber companies, experience losses that are often passed along to consumers through higher prices and sometimes jobs are lost. The excessive cost of responding to and recovering from wildfires can deplete state resources and increase insurance rates. The economic impact of wildfires can also be felt in the tourism industry if roads and tourist attractions are closed due to health and safety concerns.

State and local governments can impose fire safety regulations on home sites and developments to help curb wildfire. Land treatment measures such as fire access roads, water storage, helipads, safety zones, buffers, firebreaks, fuel breaks, and fuel management can be designed as part of an overall fire defense

² Prescription burning, or "controlled burn," undertaken by land management agencies is the process of igniting fires under selected conditions, in accordance with strict parameters.

system to aid in fire control. Fuel management, prescribed burning, and cooperative land management planning can also be encouraged to reduce fire hazards.

5.9.2 Location and Spatial Extent

The expansion of the WUI (Wildland Urban Interface) in recent decades has significant implications for wildfire management and its impact. The Wildland Urban Interface (WUI) creates an environment in which fire can move readily between structural and vegetation fuels. Two types of WUI are mapped: intermixed and interface. Intermix WUI are areas where housing and vegetation intermingle; interface WUI are areas with housing in the vicinity of dense, contiguous wildland vegetation.

The duration of a wildfire depends on the weather conditions, how dry it is, the availability of fuel to spread, and the ability of responders to contain and extinguish the fire. Historically, some wildfires have lasted only hours, while other fires have continued to spread and grow for an entire season. They spread quickly and often go unnoticed until they have grown large enough to signal by dense smoke. If fuel is available, and high wind speeds hit, a wildfire can spread over a large area in a short amount of time. These factors make the difference between small upstart fires easily controlled by local fire services to fires destroying thousands of acres requiring multiple state and federal assets for containment and suppression.

Given the WUI and Intermix depictions on the figures below, every jurisdiction is exposed to wildfire.

Table 5-23 below details the range of wildfire damages. The severity of the wildfire depends on a few quickly changing environmental factors. It is impossible to strategically estimate the severity of wildfire as the quickly changing factors, drought conditions and wind speed, have such a major influence on the wildfire conditions. If exposed to the WUI or Intermix, Lea County or its participating jurisdictions could experience a wildfire ranging from 0 to 4 on the Burn Severity Index.

Table 5-23: Burn Severity Index

Ranking	Burn Severity	Description	Characteristics
0	Unburned	The fire extinguished before reaching the microsite.	<ul style="list-style-type: none"> • Leaf litter from previous years intact and uncharred. • No evidence of char around the base of trees and shrubs. • Pre-burn seedlings and herbaceous vegetation are present.
1	Low Severity Burn	Surface fire which consumes litter yet has negligible effect on trees and understory vegetation.	<ul style="list-style-type: none"> • Burned with partially consumed litter present. • Evidence of low flame heights around base of trees and shrubs (<0.5 m). • No significant decreases in overstory & understory basal area, diversity, or species richness from pre-burn assessments. • Usually burning below 80°C.

Hazard Profiles

Ranking	Burn Severity	Description	Characteristics
2	Medium-Low Severity Burn	No significant differences in overstory density and basal area, and no significant differences in species richness. However, understory density, basal area, and species richness declined.	<ul style="list-style-type: none"> • No litter present and 100% of the area covered by duff. • Flame lengths <2m. • Understory mortality present, little or no overstory mortality.
3	Medium-High Severity Burn	Flames that were slightly taller than those of medium-low intensity fires, but these fires had occasional hot spots that killed large trees, With significant reduction in the understory.	<ul style="list-style-type: none"> • Soil exposure on 0-50% of the area. • Flame lengths <6m. • High understory mortality with some overstory trees affected.
4	High Severity Burn	Crown fires, usually a stand replacing burn with high overstory mortality.	<ul style="list-style-type: none"> • Soil exposure >50%. • Flame lengths >6m. • Higher overstory mortality >20%. • Usually burning above 800°C.

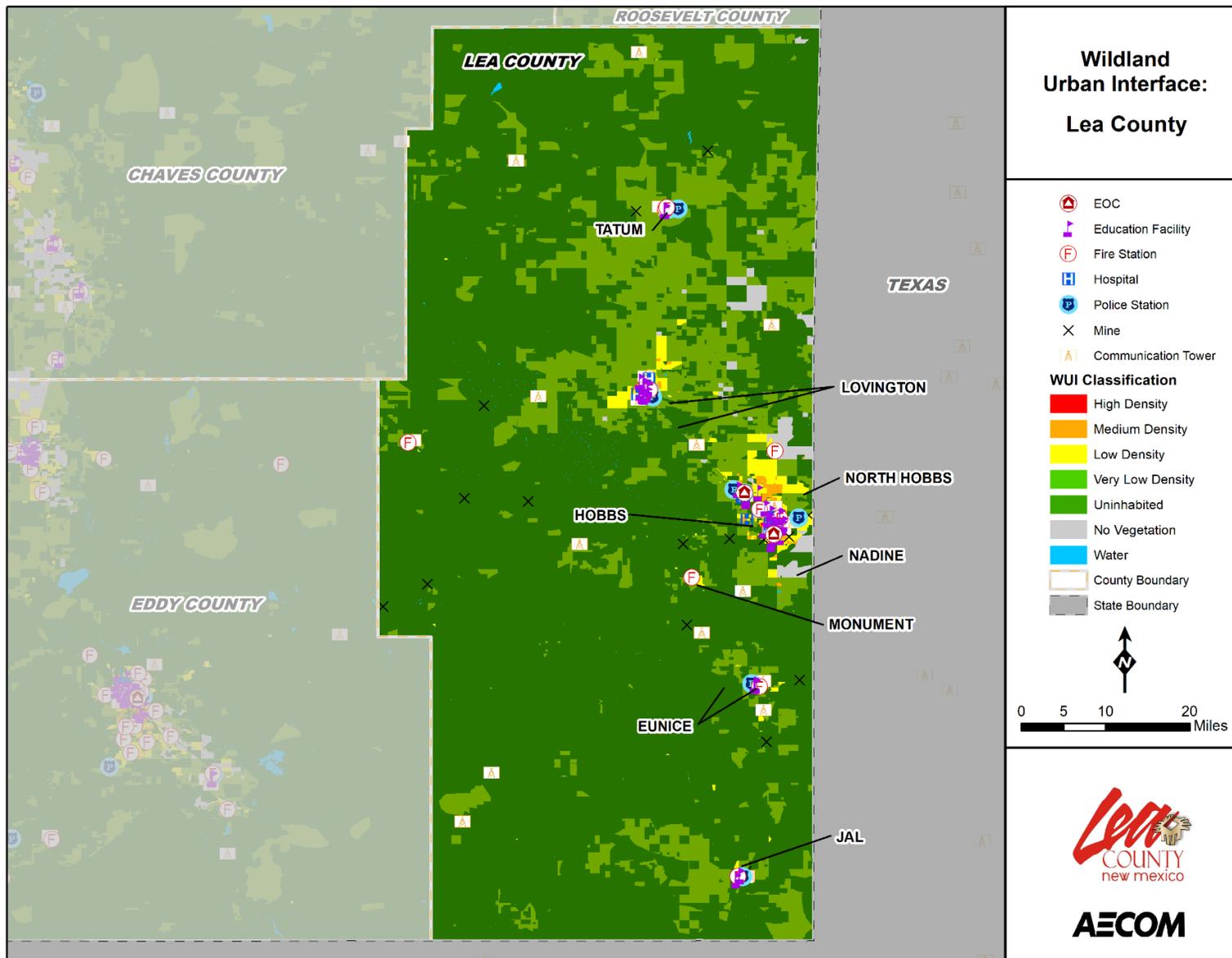


Figure 5-14: Wildland Urban Interface – Lea County

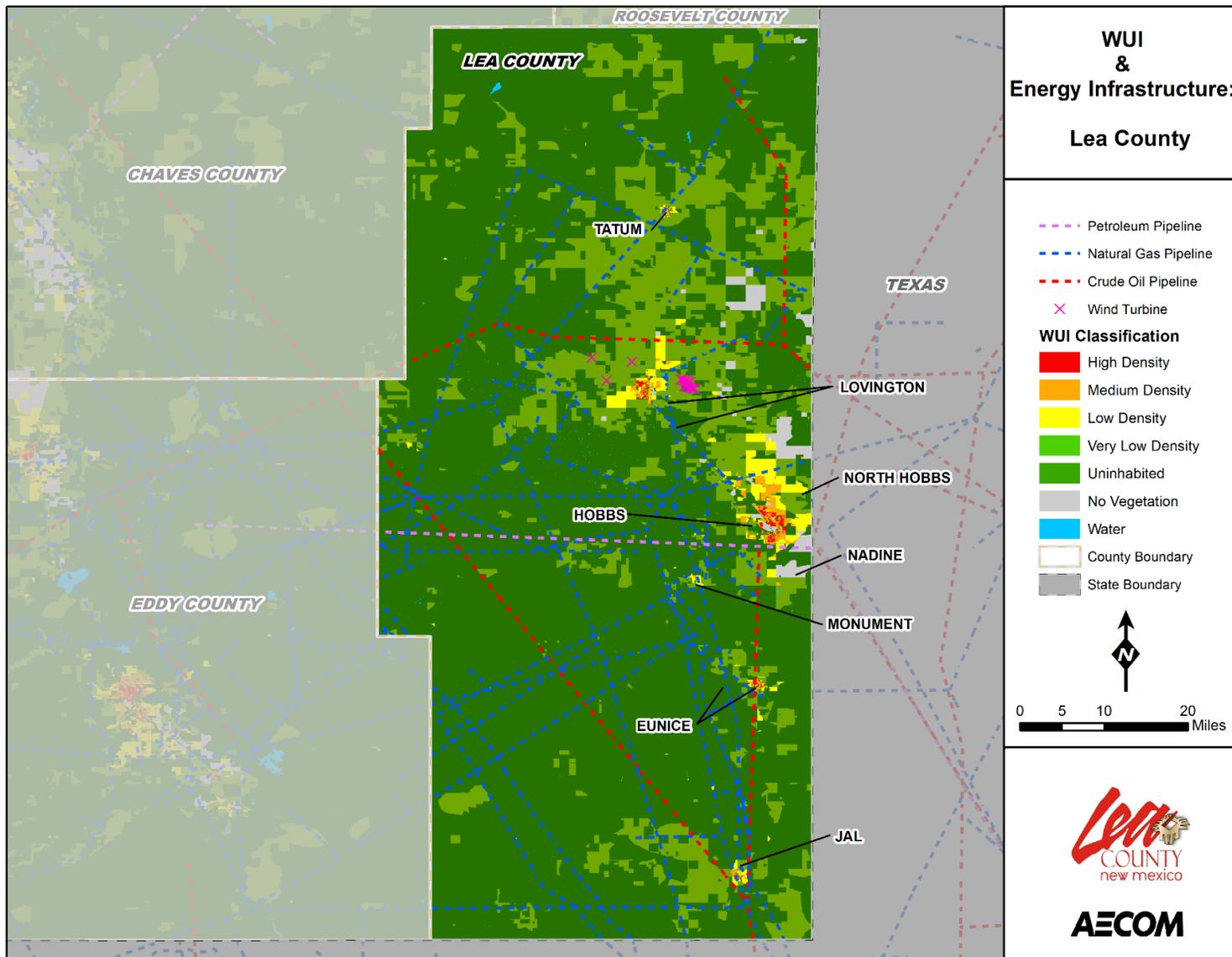


Figure 5-15: INSERT TITLE

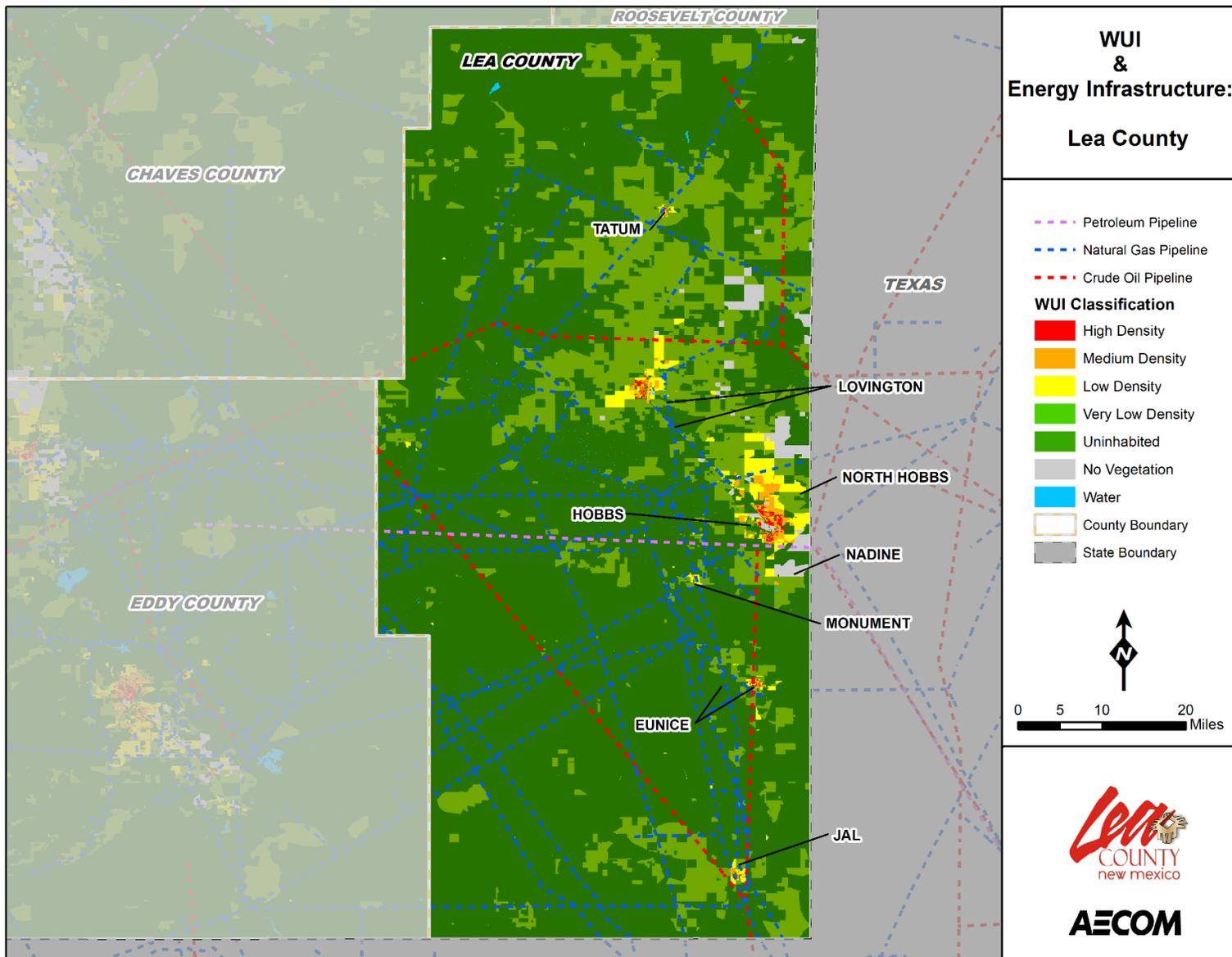


Figure 5-16: WUI & Energy Infrastructure – Lea County

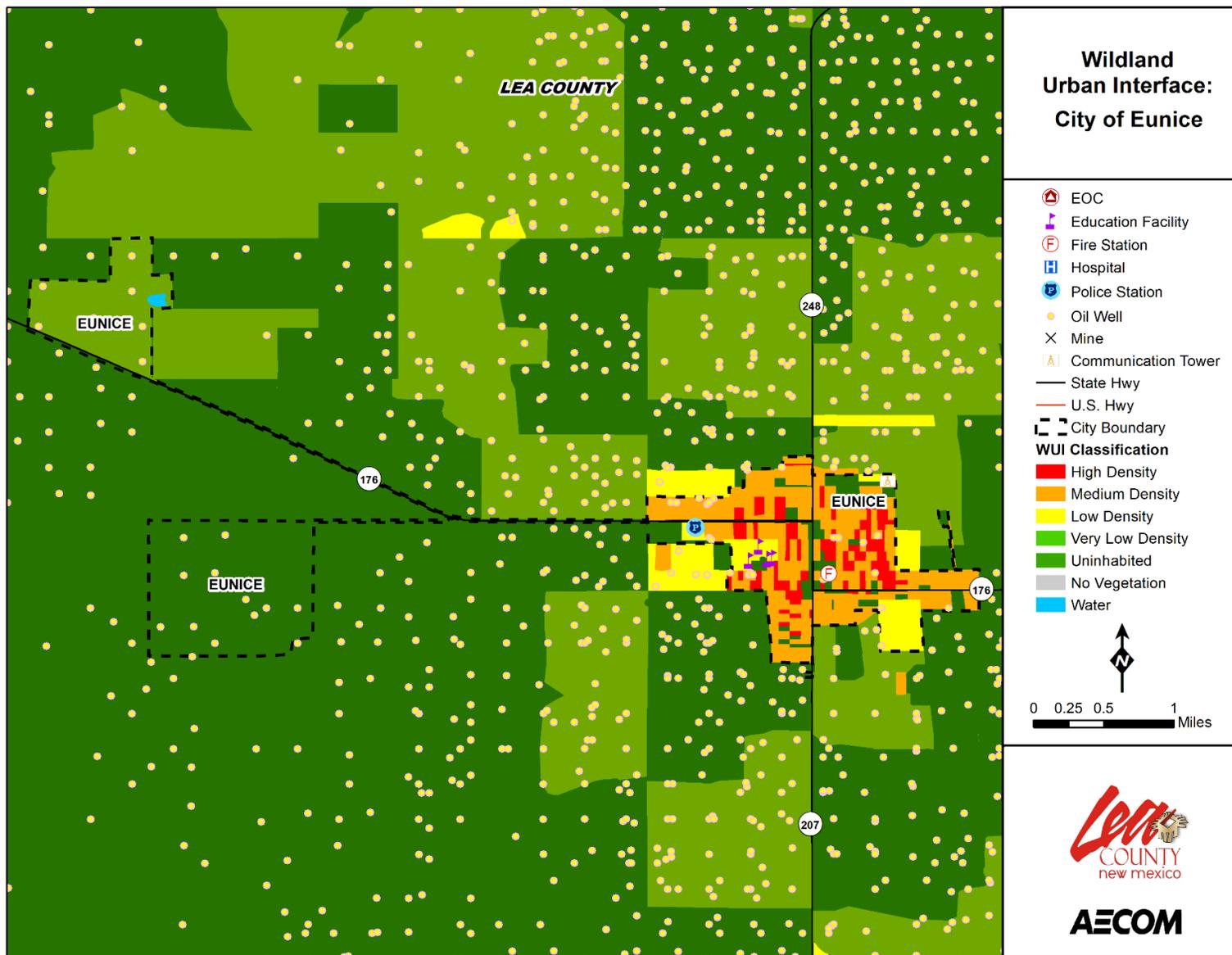


Figure 5-17: Wildland Urban Interface – Eunice

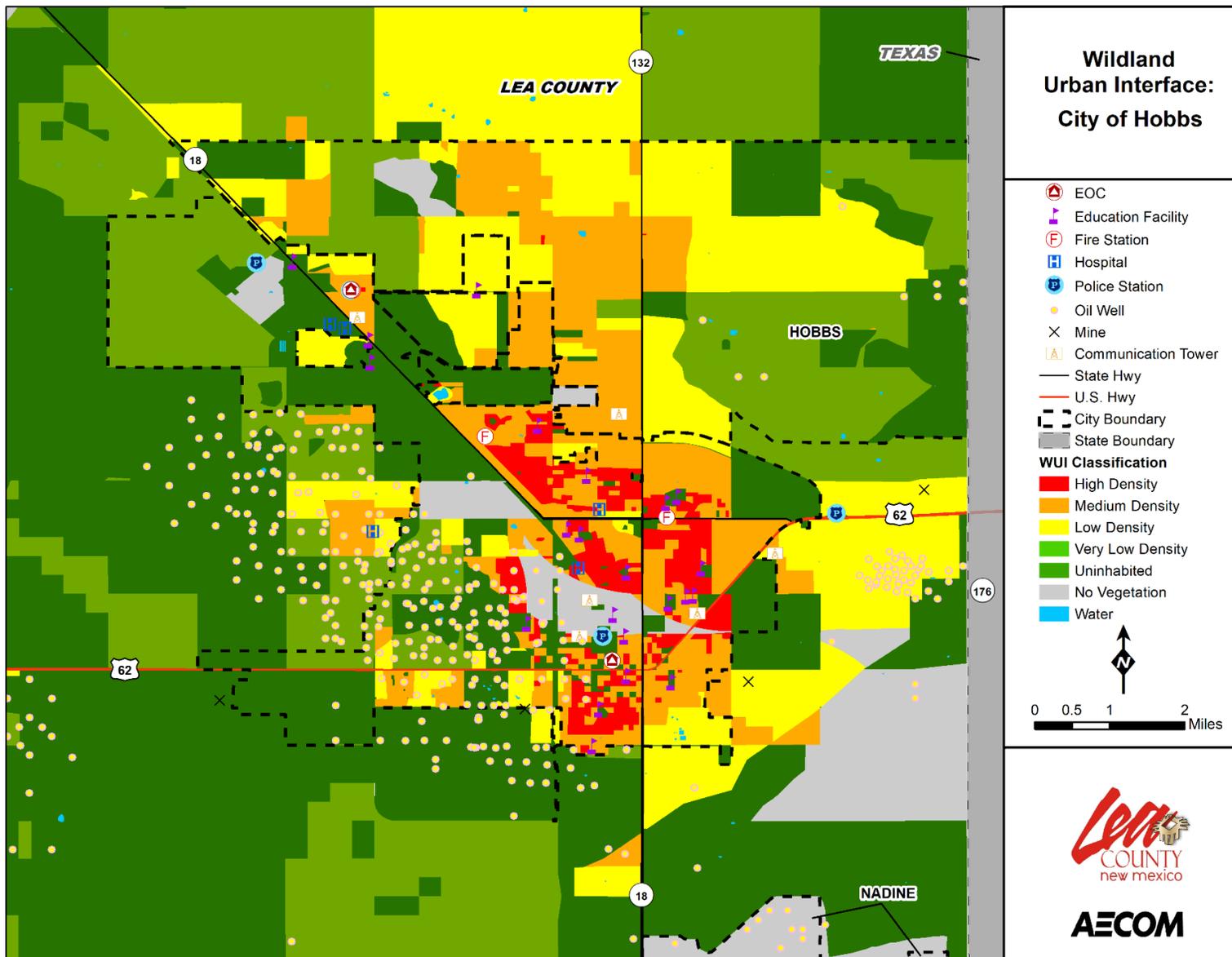


Figure 5-18: Wildland Urban Interface – Hobbs

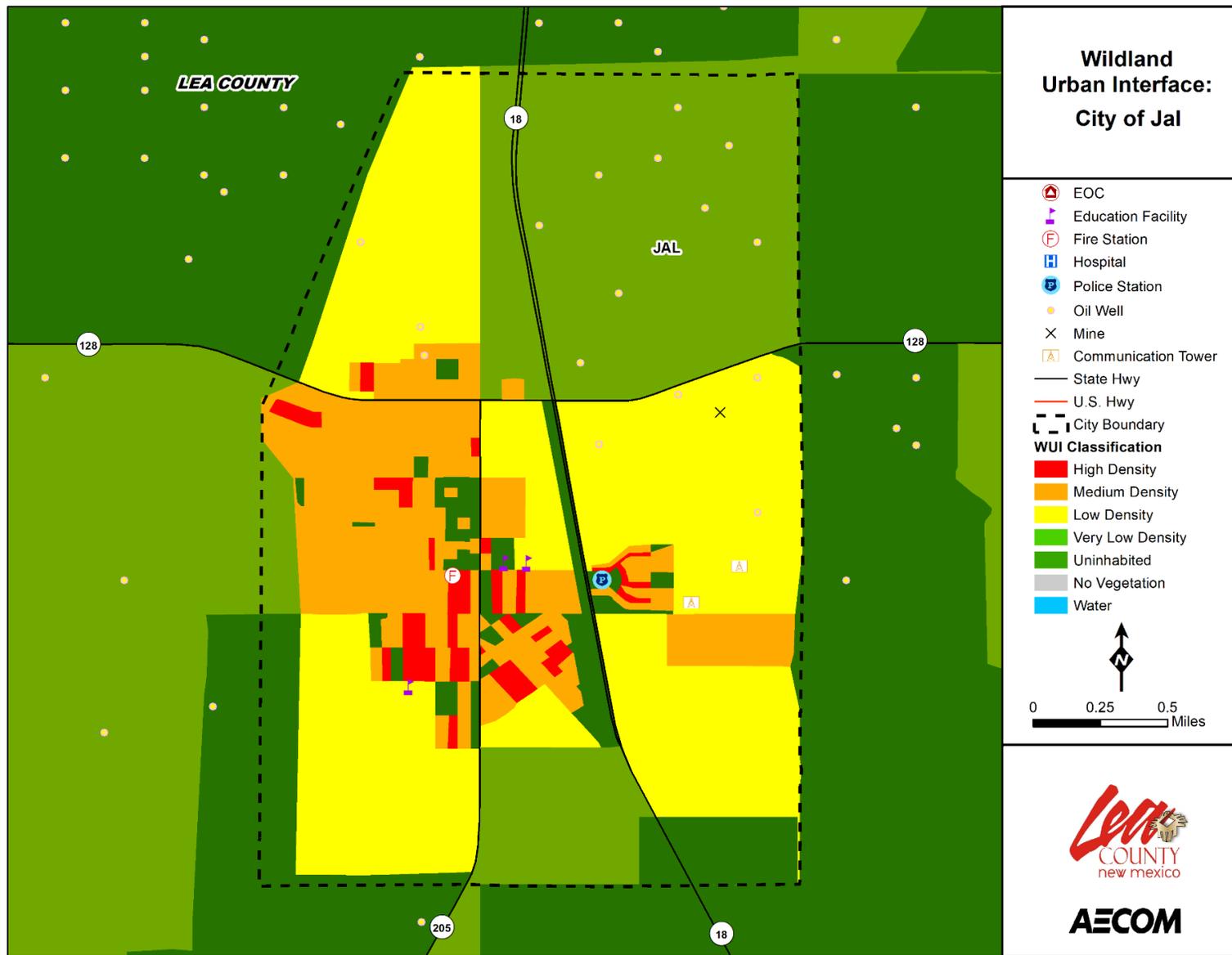


Figure 5-19: Wildland Urban Interface – Jal Arthur

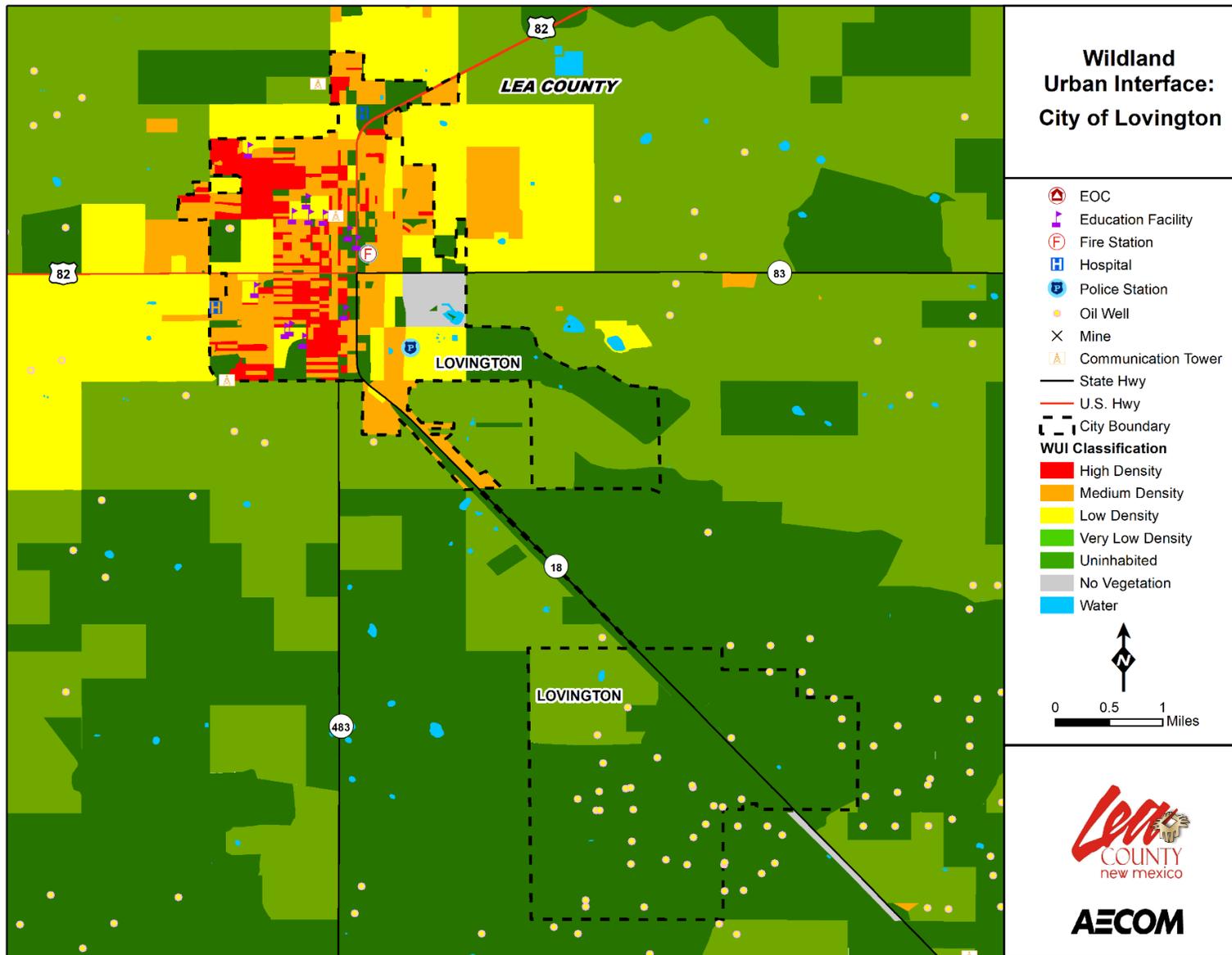


Figure 5-20: Wildland Urban Interface – Lovington

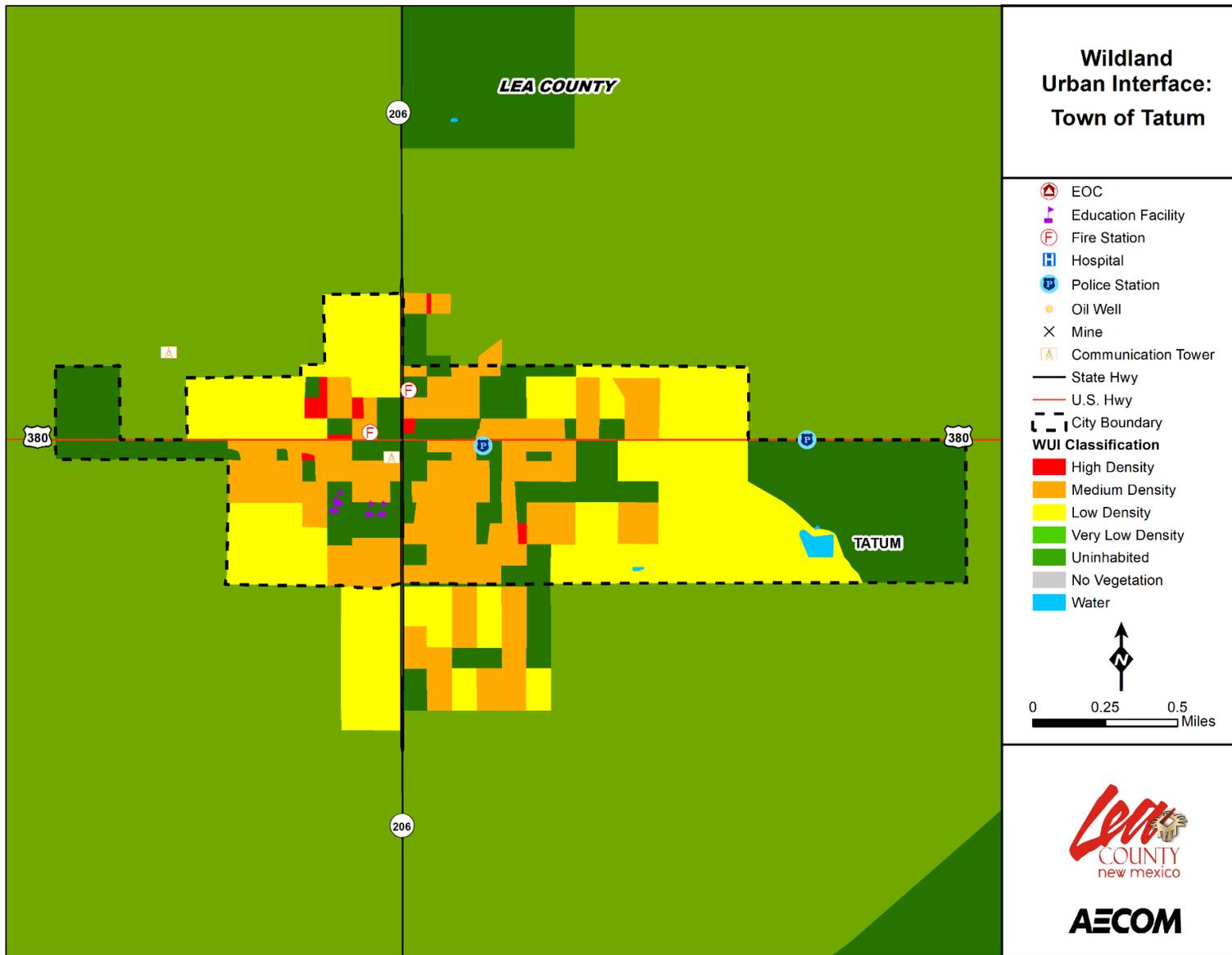


Figure 5-21: Wildland Urban Interface – Tatum

5.9.3 Extent

The 2022 New Mexico wildfire season is an ongoing series of wildfires burning throughout the U.S. state of New Mexico. As of June 21, 2022, 899,453 acres (363,996 ha) had burned across the state, including 31 fires greater than 100 acres. The acres-burned figure for 2022 is far above the 1995-2015 average of approximately 270,000 acres burned annually, with the fire season in the state expected to continue until the advent of the regular North American Monsoon weather pattern throughout the Southwestern United States in the summer. Several factors have contributed to the severe wildfire season. Most of the state is experiencing extreme to exceptional drought conditions as part of a broader severe drought in the North American west, fueled by climate change. A reduced 2021-2022 winter snowpack, long periods of higher-than-normal temperatures, and sustained strong winds have resulted in extreme fire conditions and a number of significant incidents

The average size of wildfires in the region is typically small. Wildfire data was provided by the New Mexico Forestry Division through Community Wildfire Protection Plans and is reported annually by county. **Table 5-24** below shows the number of acres burned for each community in the last five years. It should be noted that there may have been multiple acres burned that are not depicted by this table due to the small size of the fire and/or the unavailability of data at the local level.

Table 5-24: Acres Burned in Each Jurisdiction (2016-2021)

Jurisdiction	Total Acres Burned
Lea County	
City of Eunice	No Data Available
Town of Hobbs	No Data Available
Town of Jal	No Data Available
Town of Lovington	No Data Available
City of Tatum	No Data Available
Unincorporated Area	~5,000

5.9.4 Historical Occurrences

New Mexico had 672 fires and 123,792 acres burned in 2021. Lea County and its participating jurisdictions regularly experience wildfire events. According to Lea County, it had recorded fires burning more than 8,000 acres in 2022 as of June 2022. The New Mexico Forestry Division does not have any recorded deaths or injuries from wildfire in the County or its participating jurisdictions.

Table 5-25: Summary Table of Annual Wildfire Occurrences (2016-2022)

Event Year	Acres Burned	Event Count
2016	210	2
2017	934	4
2018	1,056	7
2019	873	2

Event Year	Acres Burned	Event Count
2020	1,689	1
2021	412.8	3
2022	8,333	2
Total	13,507	21

5.9.5 Probability of Future Occurrences

The probability of future Wildfire is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Unlikely: Less than 1% annual probability
- Possible: Between 1% and 10% annual probability
- Likely: Between 10% and 99% annual probability
- Highly Likely: 100% probability

Jurisdiction	Probability
Lea County (Unincorporated Area)	Likely
City of Eunice	Possible
Town of Hobbs	Possible
Town of Jal	Possible
Town of Lovington	Likely
City of Tatum	Likely

5.9.6 Vulnerability and Impact

People

The potential health risk from wildfire events and the resulting diminished air quality is a concern. Exposure to wildfire smoke can cause serious health problems within a community, including asthma attacks and pneumonia, and can worsen chronic heart and lung diseases. Vulnerable populations include people with respiratory problems or with heart disease. Even healthy citizens may experience minor symptoms, such as sore throats and itchy eyes.

First Responders

Public and firefighter safety is the priority in all wildland fire management activities. Wildfires are a real threat to the health and safety of the emergency services. Most fire-fighters in rural areas are 'retained'. This means that they are part-time and can be called away from their normal work to attend to fires.

Continuity of Operations

Wildfire events can result in a loss of power which may impact operations. Downed trees, power lines and damaged road conditions may prevent access to critical facilities and/or emergency equipment.

Built Environment

Wildfires frequently damage community infrastructure, including roadways, communication networks and facilities, power lines, and water distribution systems. Restoring basic services is critical and a top priority. Efforts to restore roadways include the costs of maintenance and damage assessment teams, field data collection, and replacement or repair costs. Direct impacts to municipal water supply may occur through contamination of ash and debris during the fire, destruction of aboveground distribution lines, and soil erosion or debris deposits into waterways after the fire. Utilities and communications repairs are also necessary for equipment damaged by a fire. This includes power lines, transformers, cell phone towers, and phone lines.

Lovington has good road access, a fire station within the community and draft sites for hydrants. The hazard is found in the large tracts of grazed pastureland around Ranch homes on the outer edges of the community. Hobbs has good road access with three fire stations amid the community, and draft sites. The topography is flat, and the fuels are medium to heavy with some defensible space around the structures. Eunice has more than one primary road into and out of the community that is wide and smooth with street signs. The fuels in the community are light to medium and the topography mild. There are little defensible space treatments around homes, one fire station in the community. Jal has draft sites within the community. The topography is moderate. There are two primary roads into and out of the community. The fuels are medium with no defensible space treatments around residences. All communities are creating fuel breaks around the outer edges of their vulnerable areas.

Economy

Wildfires can have significant short-term and long-term effects on the local economy. Wildfires, and extreme fire danger, may reduce recreation and tourism in and near the fires. If aesthetics are impaired, local property values can decline. Extensive fire damage to trees can significantly alter the timber supply, both through a short-term surplus from timber salvage and a longer-term decline while the trees regrow. Water supplies can be degraded by post-fire erosion and stream sedimentation.

Wildfires can also have positive effects on local economies. Positive effects come from economic activity generated in the community during fire suppression and post-fire rebuilding. These may include forestry support work, such as building fire lines and performing other defenses, or providing firefighting teams with food, ice, and amenities such as temporary shelters and washing machines.

Natural Environment

Wildfires cause damage to the natural environment, killing vegetation and occasionally animals. The risk of floods and debris flows increases due to the exposure of bare ground and the loss of vegetation. In addition, the secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, are often more disastrous than the fire itself.

Tatum has one volunteer fire department within the community and readily available draft sites and hydrants. There are scattered Ranch homes along the district where grazed pasture grass, mesquite and open ranges are found. The Core Team recommended the reduction of fuels along the city boundaries within the community.

Infrastructure & Critical Facilities

Infrastructure and critical facilities that have potential to be impacted by wildfire are listed below.

Table 5-26: Infrastructure and Critical Facilities with Potential Impact from Wildfire

Jurisdiction	Low Density WUI	Medium Density WUI	High Density WUI
Lea County (Unincorporated Area)	Every facility in Lea County is in the WUI or a vegetated area.	Every facility in Lea County is in the WUI or a vegetated area.	Every facility in Lea County is in the WUI or a vegetated area.
City of Eunice	Education Facility (2), Fire Station (1), Police Station (1)	Communication Tower (1), Education Facility (2), Fire Station (1), Hospital (2), Police Station (2)	Education Facility (1)
Town of Hobbs	Fire Station (1)	Education Facility (1), Fire Station (2)	
Town of Jal	Fire Station (1)	Fire Station (1), Police Station (1)	
Town of Lovington	Fire Station (1), Police Station (1)	Education Facility (7), Fire Station (1)	Fire Station (1), Educational Facility (1)
City of Tatum	Fire Station (1)		

Land Use & Development Trends

Lea County and its participating jurisdictions’ predominant growth area is residential housing. Increased residential growth can significantly increase a jurisdiction’s risk of wildfires. If the growth occurs in the WUI or Intermix the total risk increases. Lea County and its participating jurisdictions can mitigate the risk of this growth by introducing structural standards which help prevent the spread of wildfire, creating defensible spaces and buffer zones, or not allowing growth in WUI and Intermix areas. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within the identified hazard areas.

5.10 Conclusions on Hazard Risk

The hazard profiles presented in this section were developed using best available data and result in what may be considered principally a qualitative assessment as recommended by FEMA in its “How-to” guidance document titled *Understanding Your Risks: Identifying Hazards and Estimating Losses* (FEMA Publication 386-2). It relies heavily on historical and anecdotal data, stakeholder input, and professional and experienced judgment regarding observed and/or anticipated hazard impacts. It also carefully considers the findings in other relevant plans, studies, and technical reports.

5.10.1 Priority Risk Index

To draw some meaningful planning conclusions on hazard risk for Lea County, the results of the hazard profiling process were used to generate countywide hazard classifications according to a “Priority Risk Index” (PRI). The purpose of the PRI is to categorize and prioritize all potential hazards for the County as high, moderate, or minimal risk. Combined with the asset inventory and quantitative vulnerability assessment provided in the next section, the summary hazard classifications generated with the PRI allows for the prioritization of those high hazard risks for mitigation planning purposes, and more specifically, the identification of hazard mitigation opportunities for the jurisdictions to consider as part of their proposed mitigation strategy.

The prioritization and categorization of identified hazards for the County is based principally on the PRI, a tool used to measure the degree of risk for identified hazards in a particular planning area. The PRI is

used to assist the Lea County Hazard Mitigation Planning Team in gaining consensus on the determination of those hazards that pose the most significant threat to the County based on a variety of factors. The PRI is not scientifically based but is meant to be utilized as an objective planning tool for classifying and prioritizing hazard risks in the County based on standardized criteria.

The application of the PRI results in numerical values that allow identified hazards to be ranked against one another (the higher the PRI value, the greater the hazard risk). PRI values are obtained by assigning varying degrees of risk to five categories for each hazard (probability, impact, spatial extent, warning time, and duration). Each degree of risk has been assigned a value (1 to 4) and an agreed upon weighting factor³, as summarized in **Table 5-27**. To calculate the PRI value for a given hazard, the assigned risk value for each category is multiplied by the weighting factor. The sum of all five categories equals the final PRI value, as demonstrated in the example equation below:

$$\text{PRI VALUE} = [(\text{PROBABILITY} \times .30) + (\text{IMPACT} \times .30) + (\text{SPATIAL EXTENT} \times .20) + (\text{WARNING TIME} \times .10) + (\text{DURATION} \times .10)]$$

Table 5-27: Priority Risk Index for Lea County

PRI Category	Degree of Risk			Assigned Weighting Factor
	Level	Criteria	Index Value	
Probability	Unlikely	Less than 1% annual probability	1	30%
	Possible	Between 1 and 10% annual probability	2	
	Likely	Between 10 and 100% annual probability	3	
	Highly Likely	100% annual probability	4	
Impact	Minor	Very few injuries, if any. Only minor property damage and minimal disruption to quality of life. Temporary shutdown of critical facilities.	1	30%
	Limited	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one day.	2	
	Critical	Multiple deaths/injuries possible. More than 25% of property in affected areas was damaged or destroyed. Complete shutdown of critical facilities for more than one week.	3	
	Catastrophic	High number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.	4	
	Negligible	Less than 1% of areas affected	1	20%

³ The Planning Team, based upon any unique concerns or factors for the planning area, may adjust the PRI weighting scheme during future plan updates.

PRI Category	Degree of Risk			Assigned Weighting Factor
	Level	Criteria	Index Value	
Spatial Extent	Small	Between 1 and 10% of areas affected	2	
	Moderate	Between 10 and 50% of areas affected	3	
	Large	Between 50 and 100% of areas affected	4	
Warning Time	More than 24 hours	Self-explanatory	1	10%
	12 to 24 hours	Self-explanatory	2	
	6 to 12 hours	Self-explanatory	3	
	Less than 6 hours	Self-explanatory	4	
Duration	Less than 6 hours	Self-explanatory	1	10%
	Less than 24 hours	Self-explanatory	2	
	Less than one week	Self-explanatory	3	
	More than one week	Self-explanatory	4	

5.10.2 Priority Risk Index Results

Table 5-28 – Table 5-33 summarizes, for each jurisdiction, the degree of risk assigned to each category for all initially identified hazards based on the application of the PRI. Assigned risk levels were based on the detailed hazard profiles developed for this section, as well as input from the Planning Team. The results were then used in calculating PRI values and making final determinations for the risk assessment.

Table 5-28: Summary of PRI Results for Lea County

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						
Drought	Highly Likely	Minor	Large	More than 24 hours	More than 1 week	2.8
Extreme Heat	Possible	Minor	Large	More than 24 hours	Less than 1 week	2.4
Severe Storms	Likely	Critical	Large	6 to 12 hours	Less than 6 hours	3.3
Tornado	Possible	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Winter Storm	Possible	Limited	Moderate	More than 24 hours	Less than 1 week	2.5
Hydrologic Hazards						
Flood	Possible	Critical	Moderate	6 to 12 hours	Less than 1 week	3.0
Other Hazards						
Wildfire	Likely	Minor	Small	Less than 6 hours	Less than 1 week	2.3

Table 5-29: PRI Results for Eunice

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						
Drought	Likely	Minor	Large	More than 24 hours	More than 1 week	2.5
Extreme Heat	Possible	Minor	Large	More than 24 hours	Less than 1 week	2.4
Severe Storms	Likely	Critical	Large	6 to 12 hours	Less than 6 hours	3.3
Tornado	Possible	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Winter Storm	Possible	Limited	Moderate	More than 24 hours	Less than 1 week	2.5
Hydrologic Hazards						
Flood	Possible	Critical	Moderate	6 to 12 hours	Less than 1 week	2.4
Other Hazards						
Wildfire	Possible	Minor	Small	Less than 6 hours	Less than 1 week	2.0

Table 5-30: PRI Results for Hobbs

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						
Drought	Highly Likely	Minor	Large	More than 24 hours	More than 1 week	2.5
Extreme Heat	Possible	Minor	Large	More than 24 hours	Less than 1 week	2.4
Severe Storms	Likely	Critical	Large	6 to 12 hours	Less than 6 hours	3.3
Tornado	Possible	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Winter Storm	Possible	Limited	Moderate	More than 24 hours	Less than 1 week	2.5
Hydrologic Hazards						
Flood	Possible	Critical	Moderate	6 to 12 hours	Less than 1 week	3.0
Other Hazards						
Wildfire	Possible	Minor	Small	Less than 6 hours	Less than 1 week	2.0

Table 5-31: PRI Results for Jal

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						

Hazard Profiles

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Drought	Highly Likely	Minor	Large	More than 24 hours	More than 1 week	2.5
Extreme Heat	Possible	Minor	Large	More than 24 hours	Less than 1 week	2.4
Severe Storms	Likely	Critical	Large	6 to 12 hours	Less than 6 hours	3.3
Tornado	Possible	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Winter Storm	Possible	Limited	Moderate	More than 24 hours	Less than 1 week	2.5
Hydrologic Hazards						
Flood	Possible	Critical	Moderate	6 to 12 hours	Less than 1 week	2.4
Other Hazards						
Wildfire	Possible	Minor	Small	Less than 6 hours	Less than 1 week	2.0

Table 5-32: PRI Results for Lovington

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						
Drought	Highly Likely	Minor	Large	More than 24 hours	More than 1 week	2.5
Extreme Heat	Possible	Minor	Large	More than 24 hours	Less than 1 week	2.4
Severe Storms	Likely	Critical	Large	6 to 12 hours	Less than 6 hours	3.3
Tornado	Possible	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Winter Storm	Possible	Limited	Moderate	More than 24 hours	Less than 1 week	2.5
Hydrologic Hazards						
Flood	Possible	Critical	Moderate	6 to 12 hours	Less than 1 week	3.0
Other Hazards						
Wildfire	Likely	Minor	Small	Less than 6 hours	Less than 1 week	2.3

Table 5-33: PRI Results for Tatum

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						
Drought	Highly Likely	Minor	Large	More than 24 hours	More than 1 week	2.5

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Extreme Heat	Possible	Minor	Large	More than 24 hours	Less than 1 week	2.4
Severe Storms	Likely	Critical	Large	6 to 12 hours	Less than 6 hours	3.3
Tornado	Possible	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Winter Storm	Possible	Limited	Moderate	More than 24 hours	Less than 1 week	2.5
Hydrologic Hazards						
Flood	Possible	Critical	Moderate	6 to 12 hours	Less than 1 week	3.0
Other Hazards						
Wildfire	Likely	Minor	Small	Less than 6 hours	Less than 1 week	2.3

5.11 Final Determinations

The conclusions drawn from the hazard profiling process for the County, including the PRI results and input from the Hazard Mitigation Planning Team, resulted in the classification of risk for each identified hazard according to three categories: High Risk, Moderate Risk, and Low Risk (Table 5-34). For the purposes of these classifications, risk is expressed in relative terms according to the estimated impact that a hazard will have on human life and property throughout all the County. It should be noted that although some hazards are classified below as posing minimal risk, their occurrence of varying or unprecedented magnitudes is still possible in some cases and their assigned classification will continue to be evaluated during future updates.

No changes in development impacting the jurisdiction's overall vulnerability have occurred since the last plan was approved for all hazards addressed.

Table 5-34: Conclusions on Hazard Risk for Lea County

HIGH RISK	Severe Storms, Drought, Wildfire
MODERATE RISK	Tornado, Flood, Extreme Heat, Winter Storm
LOW RISK	

SECTION 6: CAPABILITY ASSESSMENT

This section of the Plan discusses the capability of the communities in the County to implement hazard mitigation activities. It consists of the following four subsections:

- ◆ 6.1 What is a Capability Assessment?
- ◆ 6.2 Conducting the Capability Assessment
- ◆ 6.3 Capability Assessment Findings
- ◆ 6.4 Conclusions on Local Capability

6.1 What is a Capability Assessment?

The purpose of conducting a capability assessment is to determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects¹. As in any planning process, it is important to try to establish which goals, objectives, and/or actions are feasible based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capability assessment helps to determine which mitigation actions are practical, and likely to be implemented over time, given a local government’s planning and regulatory framework, level of administrative and technical support, number of fiscal resources, and current political climate.

A capability assessment has two primary components: 1) an inventory of a local jurisdiction’s relevant plans, ordinances, or programs already in place and 2) an analysis of its capacity to carry them out. Careful examination of local capabilities will detect any existing gaps, shortfalls, or weaknesses with ongoing government activities that could hinder proposed mitigation activities and exacerbate community hazard vulnerability. A capability assessment also highlights the positive mitigation measures already in place or being implemented at the local government level, which should continue to be supported and enhanced through future mitigation efforts.

The capability assessment completed for the County serves as a critical planning step and an integral part of the foundation for designing an effective hazard mitigation strategy. Coupled with the Risk Assessment, the Capability Assessment helps identify and target meaningful mitigation actions for incorporation in the Mitigation Strategy portion of the Plan. It not only helps establish the goals and objectives for the region to pursue under this Plan, but it also ensures that those goals and objectives are realistically achievable under given local conditions such as land use and development trends. Changes in development did not affect any of the participating jurisdiction’s overall vulnerability to any hazards identified.

6.2 Conducting the Capability Assessment

To facilitate the inventory and analysis of local government capabilities within the county, a detailed Capability Assessment Survey was completed for each of the participating jurisdictions based on the information found in existing hazard mitigation plans and local government websites. The survey questionnaire compiled information on a variety of “capability indicators” such as existing local plans, policies, programs, or ordinances that contribute to and/or hinder the region’s ability to implement

¹ While the Final Rule for implementing the Disaster Mitigation Act of 2000 does not require a local capability assessment to be completed for local hazard mitigation plans, it is a critical step in developing a mitigation strategy that meets the needs of the region while considering their own unique abilities. The Rule does state that a community’s mitigation strategy should be “based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools” (44 CFR, Part 201.6(c)(3)).

hazard mitigation actions. Other indicators included information related to the communities' fiscal, administrative, and technical capabilities, such as access to local budgetary and personnel resources for mitigation purposes. The current political climate, an important consideration for any local planning or decision-making process, was also evaluated with respect to hazard mitigation.

At a minimum, survey results provide an extensive inventory of existing local plans, ordinances, programs, and resources that are in place or under development in addition to their overall effect on hazard loss reduction. However, the survey instrument can also serve to identify gaps, weaknesses, or conflicts those counties and local jurisdictions can recast as opportunities for specific actions to be proposed as part of the hazard mitigation strategy.

The information collected in the survey questionnaire was incorporated into a database for further analysis. A general scoring methodology was then applied to quantify each jurisdiction's overall capability.² According to the scoring system, each capability indicator was assigned a point value based on its relevance to hazard mitigation.

Using this scoring methodology, a total score, and an overall capability rating of "high," "moderate," or "limited" could be determined according to the total number of points received. These classifications are designed to provide nothing more than a general assessment of local government capability. The results of this capability assessment provide critical information for developing an effective and meaningful mitigation strategy.

6.3 Capability Assessment Findings

The findings of the capability assessment are summarized in this Plan to provide insight into the relevant capacity of the jurisdictions in the County to implement hazard mitigation activities. All information is based upon the review of existing hazard mitigation plans and local government websites through the Capability Assessment Survey and input provided by local government officials during meetings of the Lea County Hazard Mitigation Planning Team.

6.3.1 Planning and Regulatory Capability

Planning and regulatory capability is based on the implementation of plans, ordinances, and programs that demonstrate a local jurisdiction's commitment to guiding and managing growth, development, and redevelopment in a responsible manner while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning, and transportation planning; the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built; as well as protecting environmental, historic, and cultural resources in the community. Although some conflicts can arise, these planning initiatives present significant opportunities to integrate hazard mitigation principles and practices into the local decision-making process.

This assessment is designed to provide a general overview of the key planning and regulatory tools and programs that are in place or under development for the jurisdictions in the County along with their potential effect on loss reduction. This information will help identify opportunities to address existing gaps, weaknesses, or conflicts with other initiatives in addition to integrating the implementation of this Plan with existing planning mechanisms where appropriate.

Table 6-1 provides a summary of the relevant local plans, ordinances, and programs already in place or under development for the jurisdictions in the County. A checkmark (✓) indicates that the given item is

² The scoring methodology used to quantify and rank the region's capability can be found at the end of this section.

currently in place and being implemented. An asterisk (*) indicates that the given item is currently being developed for future implementation a plus sign (+) indicated that it was reviewed, and relevant information was incorporated into the plan. Each of these local plans, ordinances, and programs should be considered available mechanisms for review and incorporating the existing plans, studies, reports, technical information into the Hazard Mitigation Plan to identify existing data and capabilities that will help implement the mitigation strategy.

Table 6-1: Relevant Plans, Ordinances, and Programs

Planning / Regulatory Tool	Lea County	Eunice	Hobbs	Jal	Lovington	Tatum
Hazard Mitigation Plan +	✓	✓	✓	✓	✓	✓
Comprehensive Land Use Plan +	✓	✓	✓	✓	✓	✓
Floodplain Management Plan						
Open Space Management Plan (Parks & Rec/Greenway Plan)						
Stormwater Management Plan/Ordinance	✓				✓	
Emergency Operations Plan	✓				✓	
SARA (Superfund Amendments and Reauthorization Act) Title III Plan	✓					
Radiological Emergency Plan						
Continuity of Operations Plan	✓					
Evacuation Plan	✓				✓	
Disaster Recovery Plan					✓	
Capital Improvements Plan	✓					
Economic Development Plan	✓				✓	
Historic Preservation Plan						
Transportation Plan			✓			
Flood Damage Prevention Ordinance	✓				✓	
Zoning Ordinance	✓				✓	
Subdivision Ordinance	✓				✓	
Site Plan Review Requirements					✓	

Capability Assessment

Planning / Regulatory Tool	Lea County	Eunice	Hobbs	Jal	Lovington	Tatum
Unified Development Ordinance						
Post-Disaster Redevelopment						
Building Code	✓		✓		✓	
Fire Code	✓				✓	
Community Wildfire Protection Plan +	✓				✓	
National Flood Insurance Program (NFIP) +	✓		✓		✓	
NFIP Community Rating System						

A more detailed discussion on the region’s planning and regulatory capability follows.

6.3.2 Emergency Management

Hazard mitigation is widely recognized as one of the four primary phases of emergency management. The three other phases include preparedness, response, and recovery. Each phase is interconnected with hazard mitigation, as **Figure 6-1** suggests. Opportunities to reduce potential losses through mitigation practices are most often implemented before disaster strikes, such as the elevation of flood prone structures or the continuous enforcement of policies that prevent and regulate development that is vulnerable to hazards due to its location, design, or other characteristics. Mitigation opportunities will also be presented during immediate preparedness or response activities, such as installing storm shutters in advance of a hurricane, and certainly during the long-term recovery and redevelopment process following a hazard event.



Figure 6-1: The Four Phases of Emergency Management

Planning for each phase is a critical part of a comprehensive emergency management program and a key to the successful implementation of hazard mitigation actions. As a result, the Capability Assessment Survey asked several questions across a range of emergency management plans to assess the County’s willingness to plan and their level of technical planning proficiency.

Comprehensive Plan

A Comprehensive Plan, in broad terms, is a policy statement to guide the future placement and development of community facilities. It is the basis for a community’s zoning, subdivision and design regulations and a community’s official maps and amendments to the zoning, subdivision, and design ordinances. The Comprehensive Plan identifies a future vision, values, principals, and goals for the community, determines the projected growth for the community and identifies policies to plan, direct and accommodate anticipated growth.

Zoning Ordinance

Zoning typically consists of both a zoning map and a written ordinance that divides the jurisdiction into zoning districts, including various residential, commercial, mixed-use, and industrial districts. The zoning regulations describe what type of land use and specific activities are permitted in each district, and regulate how buildings, signs, parking, and other construction may be placed on a lot. The zoning regulations also provide procedures for rezoning and other planning applications.

Subdivision Ordinance

A subdivision ordinance is intended to regulate the development of residential, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into lots for future

development. Subdivision design that accounts for natural hazards can reduce the exposure of future development to hazards.

Flood Insurance Study/Floodplain Ordinance

A Flood Insurance Study (FIS) provides information on the existence and severity of flood hazards within a community based on the 100-year flood event. The FIS also includes revised digital Flood Insurance Rate Maps (FIRMs) which reflect updated Special Flood Hazard Areas (SFHAs) and flood zones for the community.

A floodplain ordinance is a community's most important flood mitigation tool. For a county or municipality to participate in the NFIP, they must adopt a local flood damage prevention ordinance that requires jurisdictions to follow established minimum building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by a 100-year flood event and that new development in the floodplain will not exacerbate existing flood problems or increase damage to other properties.

Stormwater Management Program/Stormwater Ordinance

Stormwater runoff is increased when natural ground cover is replaced by urban development. Development in the watershed that drains to a river can aggravate downstream flooding, overload the community's drainage system, cause erosion, and impair water quality. A Stormwater Management Program can prevent flooding problems caused by stormwater runoff by 1) Regulating development in the floodplain to ensure that it will be protected from flooding and that it will not divert floodwaters onto other properties; 2) Regulating all development to ensure that the post-development peak runoff will not be greater than it was under pre-development conditions; and 3) Setting construction standards so buildings are protected from shallow water. A stormwater ordinance provides the community with the regulatory authority to implement its stormwater management standards.

Erosion, Sedimentation, and Pollution Control Ordinance

Surface water runoff can erode soil from development sites, sending sediment into downstream waterways. This can clog storm drains, drain tiles, culverts, and ditches, and reduce the water transport and storage capacity of river and stream channels, lakes, and wetlands. The purpose of an erosion, sedimentation and pollution control ordinance is to minimize soil erosion and prevent off-site sedimentation by using soil erosion and sediment control practices designed in accordance with certain standards and specifications.

Site Plan Review

The purpose of the Site Plan Review Process is to review site plans for specific types of development to ensure compliance with all appropriate land development regulations and consistency with the Comprehensive Plan.

Building Code/Elevation Certificates

Building codes provide one of the best methods for addressing natural hazards. When meticulously designed and constructed according to code, the average building can withstand many of the impacts of natural hazards. Hazard protection standards for all new and improved or repaired buildings can be incorporated into the local building code. Building codes can ensure that the first floors of new buildings are constructed to be higher than the elevation of the 100-year flood (the flood that is expected to have a one percent chance of occurring in any given year).

Just as important as having code standards is the enforcement of the code. Adequate inspections are needed during construction to ensure that the builder understands the requirements and is following

them. Making sure a structure is properly elevated and anchored requires site inspections at each step. An Elevation Certificate serves as the official record that shows new buildings and substantial improvements in all identified SFHAs are properly elevated. This elevation information is needed to show compliance with the floodplain ordinance.

Capital Improvement Program

A Capital Improvement Plan (CIP) is a planning document that typically provides a five-year outlook for anticipated capital projects designed to facilitate decision makers in the replacement of capital assets. The projects are primarily related to improvement in public service, parks and recreation, public utilities, and facilities. A community's mitigation strategy may include structural projects that could potentially be included in a CIP and funded through a Capital Improvement Program.

Emergency Operations Plan

An emergency operations plan outlines responsibility and how resources are deployed during and following an emergency or disaster.

Repetitive Loss Plan

Repetitive loss property is defined as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period, since 1978. Two of the claims paid must be more than 10 days apart but within 10 years of each other. A Repetitive Loss Plan examines the cause of repetitive flooding and identifies mitigation measures to reduce or eliminate the flooding to repetitive loss properties.

6.3.3 Floodplain Management

Flooding represents the greatest natural hazard facing the nation. At the same time, the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques. In addition to approaches that cut across hazards such as education, outreach, and the training of local officials, the *National Flood Insurance Program* (NFIP) contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments; however, program participation is strongly encouraged by FEMA as a first step for implementing and sustaining an effective hazard mitigation program. It is therefore used as part of this assessment as a key indicator for measuring local capability.

The National Flood Insurance Program (NFIP) was established by the National Flood Insurance Act of 1968 (NFIA; 42 U.S.C. §4001 et seq.) and was most recently reauthorized to September 30, 2021, through a series of short-term reauthorizations. The general purpose of the NFIP is both to offer primary flood insurance to properties with significant flood risk, and to reduce flood risk through the adoption of floodplain management standards. Communities volunteer to participate in the NFIP to have access to federal flood insurance, and in return are required to adopt minimum standards.

For a county or municipality to participate in the NFIP, they must adopt a local flood damage prevention ordinance that requires jurisdictions to follow established minimum building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by a 100-year flood event and that new development in the floodplain will not exacerbate existing flood problems or increase damage to other properties.

Participating communities must adopt a flood map and enact minimum floodplain standards to regulate development in the SFHA (Special Flood Hazard Area). FEMA encourages communities to enhance their

floodplain standards by offering reduced premium rates through the Community Rating System (CRS). FEMA also manages a Flood Mitigation Assistance (FMA) grant program using NFIP revenues to further reduce comprehensive flood risk. Participating communities that fail to adopt FIRMs or maintain minimum floodplain standards can be put on probation or suspended from the NFIP. In communities that do not participate in the NFIP, or have been suspended, individuals cannot purchase NFIP insurance. Individuals in these communities also face challenges receiving federal disaster assistance in flood hazard areas and have difficulties receiving federally backed mortgages.

A key service provided by the NFIP is the mapping of identified flood hazard areas. A Flood Hazard Boundary Map (FHBM) is an initial map issued by FEMA to identify approximate Special Flood Hazard Areas (SFHA`s) within a community.

Table 6-2 provides NFIP information for each participating jurisdiction in Lea County.

Table 6-2: NFIP Policy and Claim Information

Jurisdiction	Initial FHBM Identified	Current Effective Map Date	CID #
Lea County		12/16/08	#350130
City of Eunice	08/30/74	12/16/08	#350028
City of Hobbs	04/02/76	12/16/08	#350029
City of Jal	07/09/76	12/16/08	#350030
City of Lovington	06/21/74	12/16/08	#350031
Town of Tatum	06/21/74	12/16/08	#350032

Source: FEMA Community Status Book.

Community Rating System: An additional indicator of floodplain management capability is the active participation of local jurisdictions in the Community Rating System (CRS). The CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP by adding extra local measures to provide protection from flooding. All the 18 creditable CRS mitigation activities are assigned a range of point values. As points are accumulated and reach identified thresholds, communities can apply for an improved CRS class rating. Class ratings, which range from 10 to 1, are tied to flood insurance premium reductions as shown in **Table 6-3**. As class rating improves (the lower the number the better), the percent reduction in flood insurance premiums for NFIP policyholders in that community increases. Currently Hobbs is the only CRS community in the county.

Table 6-3: CRS Premium Discounts, By Class

CRS Class	Premium Reduction
1	45%
2	40%
3	35%
4	30%
5	25%
6	20%
7	15%
8	10%
9	5%
10	0

Source: FEMA

Community participation in the CRS is voluntary. Any community that is in full compliance with the rules and regulations of the NFIP may apply to FEMA for a CRS classification better than class 10. The CRS application process has been simplified over the past several years based on community comments. Changes were made with the intent to make the CRS more user-friendly and make extensive technical assistance available for communities who request it.

Flood Damage Prevention Ordinance: A flood damage prevention ordinance establishes minimum building standards in the floodplain with the intent to minimize public and private losses due to flood conditions.

Floodplain Management Plan: A floodplain management plan (or a flood mitigation plan) provides a framework for action regarding corrective and preventative measures to reduce flood-related impacts.

Open Space Management Plan: An open space management plan is designed to preserve, protect, and restore undeveloped lands in their natural state and to expand or connect areas in the public domain such as parks, greenways, and other outdoor recreation areas. In many instances, open space management practices are consistent with the goals of reducing hazard losses, such as the preservation of wetlands or other flood-prone areas in their natural state in perpetuity.

Stormwater Management Plan: A stormwater management plan is designed to address flooding associated with stormwater runoff. The stormwater management plan is typically focused on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

6.3.4 Administrative and Technical Capability

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities.

Technical capability can be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using Geographic Information Systems (GIS) to analyze and assess community hazard vulnerability. The Capability Assessment Survey was used to capture information on administrative and technical capability through the identification of available staff and personnel resources.

Table 6-4 provides a summary of the capability assessment results for the County regarding relevant staff and personnel resources. A checkmark (✓) indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill.

Credit for having a floodplain manager was given to those jurisdictions that have a flood damage prevention ordinance, and therefore an appointed floodplain administrator, regardless of whether the appointee was dedicated solely to floodplain management. Credit was given for having a scientist familiar with the hazards of the community if a jurisdiction has a Cooperative Extension Service or Soil and Water Conservation Department. Credit was also given for having staff with education or expertise to assess the community's vulnerability to hazards if a staff member from the jurisdiction was a participant on the existing hazard mitigation plan's planning committee.

Table 6-4: Relevant Staff / Personnel Resources

Staff / Personnel Resource	Lea County	Eunice	Hobbs	Jal	Lovington	Tatum
Planners with knowledge of land development / land management practices	✓				✓	
Engineers or professionals trained in construction practices related to buildings and/or infrastructure	✓					
Planners or engineers with an understanding of natural and/or human- caused hazards	✓					
Building Official						
Emergency Manager	✓				✓	
Floodplain Manager	✓				✓	
Land Surveyors			✓			
Scientists familiar with the hazards of the community						
Staff with education or expertise to assess the community's vulnerability to hazards						
Personnel skilled in GIS and/or HAZUS	✓					
Resource development staff or grant writers	✓					
Maintenance Programs to Reduce Risk	✓					
Warning Systems/Services	✓				✓	
Mutual Aid Agreements	✓				✓	

6.3.5 Fiscal Capability

The ability of a local government to act is often strongly associated with the amount of money available to implement policies and projects. This may take the form of outside grant funding awards or locally based revenue and financing. The costs associated with mitigation policy and project implementation vary widely. In some cases, policies are tied primarily to staff time or administrative costs associated with the creation and monitoring of a given program. In other cases, direct expenses are linked to an actual project, such as the acquisition of flood-prone homes, which can require a substantial commitment from local, state, and federal funding sources.

The Capability Assessment Survey was used to capture information on the region’s fiscal capability through the identification of locally available financial resources.

Table 6-5 provides a summary of the results for the County regarding relevant fiscal resources. A checkmark (✓) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds) according to the previous county hazard mitigation plans.

Table 6-5: Relevant Fiscal Resources

Fiscal Tool / Resource	Lea County	Eunice	Hobbs	Jal	Lovington	Tatum
Capital Improvement Programming	✓				✓	
Community Development Block Grants (CDBG)					✓	
Special Purpose Taxes (or taxing districts)	✓					
Gas / Electric Utility Fees						
Water / Sewer Fees					✓	
Stormwater Utility Fees						
Development Impact Fees						
General Obligation Bonds						
Revenue Bonds						
Special Tax Bonds						

6.3.6 Political Capability

One of the most difficult capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to reduce the impact of future hazard events. Hazard mitigation may not be a local priority or may conflict with or be an impediment to other goals of the community, such as growth and economic development. Therefore, the local political climate must be considered in designing mitigation strategies as it could be the most difficult hurdle to overcome in accomplishing their adoption and implementation.

The Capability Assessment Survey was used to capture information on the political capability of the County. Previous hazard mitigation plans were reviewed for general examples of local political capability, such as guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum state or federal requirements (i.e., building codes, floodplain management, etc.).

- Lea County Commissioners are community minded and have historically answered any community needs with Ordinances, Resolutions, Code Development, and other necessary means to protect the public and make Lea County safe.
- The City of Lovington can enact ordinances and resolutions to address issues within its town limits. The city is always looking at more economic development, CDBG projects to improve the city assets. The city is also looking at new water projects and streets and drainage projects.

6.4 Conclusions on Local Capability

To form meaningful conclusions on the assessment of local capability, a quantitative scoring methodology was designed and applied to the results of the Capability Assessment Survey. This methodology attempts to assess the overall level of capability of the County to implement hazard mitigation actions.

The overall capability to implement hazard mitigation actions varies among the participating jurisdictions. For planning and regulatory capability, many of the jurisdictions are in the moderate to high range. There is also variation in the administrative and technical capability among the jurisdictions with larger jurisdictions having greater staff and technical resources. Most jurisdictions are in the moderate range of fiscal capability.

Table 6-6 shows the results of the capability assessment using the designed scoring methodology. The capability score is based solely on the information found in existing hazard mitigation plans and readily available on the jurisdictions' government websites. The scoring methods ranking is presented as follows:

- Limited: 0-29
- Moderate: 30-59
- High: 60-100

According to the assessment, the average local capability score for all jurisdictions is 50.8, which falls into the moderate capability ranking.

Table 6-6: Capability Assessment Results

Jurisdiction	Overall Capability Score	Overall Capability Rating
Lea County	30-59	Moderate
City of Eunice	30-59	Moderate
City of Hobbs	30-59	Moderate
City of Jal	30-59	Moderate
City of Lovington	0-29	Limited
Town of Tatum	30-59	Moderate

As previously discussed, one of the reasons for conducting a Capability Assessment is to examine local capabilities to detect any existing gaps or weaknesses within ongoing government activities that could hinder proposed mitigation activities and exacerbate community hazard vulnerability. These gaps or weaknesses have been identified for each jurisdiction in the tables found throughout this section. The participating jurisdictions used the Capability Assessment as part of the basis for the Mitigation Actions that are identified in Section 8; therefore, each jurisdiction addresses their ability to expand on and improve their existing capabilities through the identification of their Mitigation Actions.

6.4.1 Linking the Capability Assessment with the Risk Assessment and the Mitigation Strategy

The conclusions of the Risk Assessment and Capability Assessment serve as the foundation for the development of a meaningful hazard mitigation strategy. During the process of identifying specific mitigation actions to pursue, the Planning Team considered not only each jurisdiction’s level of hazard risk, but also their existing capability to minimize or eliminate that risk. The county and all jurisdictions specifically identified types of personnel and staff that may be needed to expand on implementing mitigation activities more fully in their communities.; these include engineers, planners, GIS analysts, building officials, land surveyors, and scientists. They will consider employing more staff and/or providing additional training opportunities with these specific skillsets to further improve and expand capabilities throughout the County and participating jurisdictions.

SECTION 7: MITIGATION STRATEGY

This section of the Plan provides the blueprint for the participating jurisdictions in the County to follow to become less vulnerable to its identified hazards. It is based on the consensus of the Lea County Hazard Mitigation Planning Team and the findings and conclusions of the *Capability Assessment* and *Risk Assessment*. It consists of the following five subsections:

- ◆ 7.1 Introduction
- ◆ 7.2 Mitigation Goals
- ◆ 7.3 Identification and Analysis of Mitigation Techniques
- ◆ 7.4 Selection of Mitigation Techniques for Lea County
- ◆ 7.5 Plan Update Requirement

7.1 Introduction

The intent of the Mitigation Strategy is to provide the communities with the goals that will serve as guiding principles for future mitigation policy and project administration, along with an analysis of mitigation techniques available to meet those goals and reduce the impact of identified hazards. It is designed to be comprehensive, strategic, and functional in nature:

- In being *comprehensive*, the development of the strategy includes a thorough review of all hazards and identifies extensive mitigation measures intended to not only reduce the future impacts of high-risk hazards, but also to help the region achieve compatible economic, environmental, and social goals.
- In being *strategic*, the development of the strategy ensures that all policies and projects proposed for implementation are consistent with pre-identified, long-term planning goals.
- In being *functional*, each proposed mitigation action is linked to established priorities and assigned to specific departments or individuals responsible for their implementation with target completion deadlines. When necessary, funding sources are identified that can be used to assist in project implementation.

The first step in designing the Mitigation Strategy includes the identification of mitigation goals. Mitigation goals represent broad statements that are achieved through the implementation of more specific mitigation actions. These actions include both hazard mitigation policies (such as the regulation of land in known hazard areas through a local ordinance) and hazard mitigation projects that seek to address specifically targeted hazard risks (such as the acquisition and relocation of a repetitive loss structure).

The second step involves the identification, consideration, and analysis of available mitigation measures to help achieve the identified mitigation goals. This is a long-term, continuous process sustained through the development and maintenance of this Plan. Alternative mitigation measures will continue to be considered as future mitigation opportunities are identified, as data and technology improve, as mitigation funding becomes available, and as this Plan is maintained over time.

The third and last step in designing the Mitigation Strategy is the selection and prioritization of specific mitigation actions for the County (provided separately in Section 8: *Mitigation Action Plan*). The county and participating jurisdiction has its own Mitigation Action Plan (MAP) that reflects the needs and concerns of that jurisdiction. The MAP represents an unambiguous and functional plan for action and is the most essential outcome of the mitigation planning process.

The MAP includes a prioritized listing of proposed hazard mitigation actions (policies and projects) for the County to complete. Each action has accompanying information, such as those departments or individuals assigned responsibility for implementation, potential funding sources, and an estimated target date for completion. The MAP provides those departments or individuals responsible for implementing mitigation actions with a clear roadmap that also serves as a useful tool for monitoring success or progress over time. The cohesive collection of actions listed in the MAP can also serve as an easily understood menu of mitigation policies and projects for those local decision makers who want to quickly review the recommendations and proposed actions of the Hazard Mitigation Plan.

In preparing each Mitigation Action Plan for the County, officials considered the overall hazard risk and capability to mitigate the effects of hazards as recorded through the risk and capability assessment process, in addition to meeting the adopted mitigation goals and unique needs of the community.

7.1.1 Mitigation Action Prioritization

The Hazard Mitigation Planning Team members were tasked with establishing a priority, implementation status, and completion timeline for each action. Prioritization of the proposed mitigation actions was based on the following six factors:

- Effect on overall risk to life and property
- Ease of implementation
- Political and community support
- A general economic cost/benefit review¹
- Funding availability
- Continued compliance with the NFIP (National Flood Insurance Program)

The point of contact for the county helped coordinate the prioritization process by reviewing each action and working with the lead agency/department responsible to determine a priority for each action using the six factors listed above. Priorities have not changed since the plan was previously approved.

Using these criteria, actions were classified as high, medium, or low priority by the participating jurisdiction officials. The actions were and will be identified, prioritized, implemented, and administered by each local jurisdiction. The prioritization includes emphasis on the extent to which benefits are maximized according to the cost benefit review of the proposed projects and their associated costs. The mitigation actions in Section 8 have been ranked based on a cost-benefit review conducted by the planning team through the planning process. Each action has been provided a priority of low, medium, or high based on this review. The following provides a breakdown of the factors utilized to conduct this general cost benefit review:

- High Priority: Highly cost-effective, administratively feasible and politically feasible strategies that could be implemented in 2 fiscal years and be continued.
- Medium Priority: Strategies that have at least two of the following characteristics (but not all three) and could be implemented in 3 fiscal years: Highly cost-effective; or administratively

¹ Only a general economic cost/benefit review was considered by the Lea County Hazard Mitigation Planning Committee through the process of selecting and prioritizing mitigation actions. Mitigation actions with “high” priority were determined to be the most cost effective and most compatible with the participating jurisdictions’ unique needs. Actions with a “moderate” priority were determined to be cost-effective and compatible with jurisdictional needs but may be more challenging to complete administratively or fiscally than “high” priority actions. Actions with a “low” priority were determined to be important community needs, but the community likely identified several potential challenges in terms of implementation (e.g. lack of funding, technical obstacles). A more detailed cost/benefit analysis will be applied to projects prior to the application for or obligation of funding, as appropriate.

Mitigation Strategy

feasible, given current levels of staffing and resources; or are politically popular and supportable given the current environment.

- Low Priority: Strategies that have one of the following characteristics and could be implemented in the next five years): Highly cost-effective; or administratively feasible, given current levels of staffing and resources; or are politically popular and supportable given the current environment.

44 CFR (Code of Federal Regulations) Requirement

44 CFR Part 201.6(c)(3)(i): The mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

7.2 Mitigation Goals

The primary goal of all local governments is to promote the public health, safety, and welfare of its citizens. In keeping with this standard, Lea County and the participating municipalities have developed goal statements for local hazard mitigation planning in the region. In developing these goals, the previous Plan's goals were reviewed to determine if they were still valid. The goals were presented, reviewed, voted on, and accepted by the Planning Team at their kickoff meeting. Each goal, purposefully broad in nature, serves to establish parameters that were used in developing more mitigation actions. The Lea County Mitigation Goals are presented in **Table 7-1**. Consistent implementation of actions over time will ensure that community goals are achieved.

The Lea County Hazard Mitigation Team reviewed the 2007 Goals and Objectives in 2014 and again in 2021 and 2022, each of the goals was discussed. The HMPT did not make any changes to the 2007 goals. To create a disaster-resistant community and improve the safety and well-being of Lea County residents by reducing deaths, injuries, property damage, and environmental and other losses from natural and technological hazards in a manner that advances community goals, quality of life, and results in a more livable, viable, and sustainable community the HMPT revalidated these goals:

Table 7-1: Lea County Mitigation Goals

	Goal
Goal #1	Minimize loss of life and property from natural hazard events, protect public health and safety, Reduce risk and effects of natural hazards. Improve disaster prevention.
Goal #2	Increase public preparedness awareness of risk from natural hazards through countywide information programs.
Goal #3	Identify hazards and assess risks for the local area. Ascertain historical incidence and frequency of occurrence. Determine increased risk from specific hazards due to location and other factors.
Goal #4	Improve forecasting of natural hazard events.
Goal #5	Provide guidance for buildings in high-risk areas including building resilient construction to reduce the dangers of natural hazards.
Goal #6	Support government and public response to natural hazard disasters.

7.3 Identification and Analysis of Mitigation Techniques

44 CFR Requirement
44 CFR Part 201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effect of each hazard, with particular emphasis on new and existing buildings and infrastructure.

In formulating the Mitigation Strategy for the County, a wide range of activities were considered to help achieve the established mitigation goals, in addition to addressing any specific hazard concerns. These activities were discussed during the Planning Team meetings. In general, all activities considered by the Planning Team can be classified under one of the following six broad categories of mitigation techniques: Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, and Public Awareness and Education. These are discussed in detail below.

7.3.1 Prevention

Preventative activities are intended to keep hazard problems from getting worse and are typically administered through government programs or regulatory actions that influence the way land is developed and buildings are built. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred, or capital improvements have not been substantial. Examples of preventative activities include:

- Planning and zoning
- Building codes
- Open space preservation
- Floodplain regulations
- Stormwater management regulations
- Drainage system maintenance
- Capital improvements programming
- Riverine / fault zone setbacks

7.3.2 Property Protection

Property protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or removal of the structures from hazardous locations.

Examples include:

- Acquisition
- Relocation
- Building elevation
- Critical facilities protection/generators
- Retrofitting (e.g., wind proofing, floodproofing, seismic design techniques, etc.)
- Safe rooms, shutters, shatter-resistant glass
- Insurance

7.3.3 Natural Resource Protection

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their protective functions. Such areas include floodplains, wetlands, steep slopes, and sand dunes. Parks, recreation, or conservation agencies and organizations often implement these protective measures. Examples include:

- Floodplain protection
- Watershed management
- Riparian buffers
- Forest and vegetation management (e.g., fire resistant landscaping, fuel breaks, etc.)
- Erosion and sediment control
- Wetland preservation and restoration
- Habitat preservation
- Slope stabilization

7.3.4 Structural Projects

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event through construction. They are usually designed by engineers and managed or maintained by public works staff. Examples include:

- Reservoirs
- Dams / levees / dikes / floodwalls
- Diversions / detention / retention
- Channel modification
- Storm sewers

7.3.5 Emergency Services

Although not typically considered a “mitigation” technique, emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a hazard event. Examples include:

- Warning systems
- Generators
- Evacuation planning and management
- Emergency response training and exercises
- Sandbagging for flood protection
- Installing temporary shutters for wind protection

7.3.6 Public Education and Awareness

Public education and awareness activities are used to advise residents, elected officials, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:

- Outreach projects
- Speaker series / demonstration events
- Hazard map information
- Real estate disclosure
- Library materials
- School educational programs
- Hazard expositions

7.4 Selection of Mitigation Techniques for Lea County

To determine the most appropriate mitigation techniques for the communities in the County, the Planning Team members thoroughly reviewed and considered the findings of the *Capability Assessment*

and *Risk Assessment* to determine the best activities for their respective communities. Other considerations included the effect of each mitigation action on overall risk to life and property, its ease of implementation, its degree of political and community support, its general cost-effectiveness, and funding availability (if necessary).

7.5 Plan Update Requirement

In keeping with FEMA (Federal Emergency Management Agency) requirements for plan updates, the Mitigation Actions identified in the previous plan were evaluated to determine their current implementation status. Updates on the implementation status of each action are provided. The mitigation actions provided in Section 8: *Mitigation Action Plan* include the mitigation actions from the previous plan as well as any new mitigation actions proposed through the current planning process.

SECTION 8: MITIGATION ACTION PLANS

This section includes the listing of the mitigation actions proposed by the participating jurisdictions in Lea County. It consists of the following two subsections:

- ◆ 8.1 Overview
- ◆ 8.2 Mitigation Action Plans

44 CFR Requirement
44 CFR Part 201.6(c)(3)(iii): The mitigation strategy shall include an action plan describing how the actions identified in paragraph (c)(2)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction.

8.1 Overview

As described in the previous section, the Mitigation Action Plan, or MAP, provides a functional plan of action for each jurisdiction. It is designed to achieve the mitigation goals established in Section 7: *Mitigation Strategy* and will be maintained on a regular basis according to the plan maintenance procedures established in Section 9: *Plan Maintenance*.

Each proposed mitigation action has been identified as an effective measure (policy or project) to reduce hazard risk for Lea County. Each action is listed in the MAP in conjunction with background information such as hazard(s) addressed, relative priority, and estimated cost. Other information provided in the MAP includes potential funding sources to implement the action should funding be required (not all proposed actions are contingent upon funding). Integrating the mitigation plan into the capital improvements plan through identification of mitigation actions that may require local funding were considered as well. Most importantly, implementation mechanisms are provided for each action, including the designation of a lead agency or department responsible for carrying the action out as well as a timeframe for its completion. These implementation mechanisms ensure that the Lea County Hazard Mitigation Plan remains a functional document that can be monitored for progress over time. The proposed actions are not listed in priority order, though each has been assigned a priority level of “High,” “Medium,” or “Low” as described below.

The actions were and will be identified, prioritized, implemented, and administered by each local jurisdiction. The prioritization includes emphasis on the extent to which benefits are maximized according to the cost benefit review of the proposed projects and their associated costs. The actions in the following table have been ranked based on a cost-benefit review conducted by the planning team through the planning process. Each action has been provided a priority of low, medium, or high based on this review. The following provides a breakdown of the factors utilized to conduct this general cost benefit review:

- High Priority: Highly cost-effective, administratively feasible and politically feasible strategies that could be implemented in 2 fiscal years and be continued.
- Medium Priority: Strategies that have at least two of the following characteristics (but not all three) and could be implemented in 3 fiscal years: Highly cost-effective; or administratively feasible, given current levels of staffing and resources; or are politically popular and supportable given the current environment.

Mitigation Action Plans

- Low Priority: Strategies that have one of the following characteristics and could be implemented in the next five years): Highly cost-effective; or administratively feasible, given current levels of staffing and resources; or are politically popular and supportable given the current environment.

The following are the key elements described in the Mitigation Action Plan:

- Project Description: Description of the mitigation action.
- Jurisdiction: Jurisdictions participating in the mitigation action.
- Hazard(s) Addressed: Hazard which the action addresses.
- Responsible Agency: Department responsible for undertaking the action.
- Funding Sources: potential Local, State, or Federal sources of funds are noted here, where applicable.
- Estimated Costs: High (greater than \$50,000), Medium (between \$20,000 to \$50,000), or Low (less than \$20,00).
- Funding Sources: Potential contribution sources.
- Timeline for Implementation: Date by which the action should be completed. More information is provided when possible.
- Priority: High, Medium, or Low priority as assigned by the jurisdiction.
- Implementation Status (2022)—Indication of completion, progress, deferment. If the action is new, that will be noted here.
 - In Progress- actions are in progress and have some percentage of completion.
 - To Be Continued- actions occur on a regular basis and will continue to do so on an annual frequency.
 - Deferred- actions were unable to be addressed to current capabilities.
 - Deleted- actions were considered not to be feasible or mitigation related.
 - New- actions that are new.
- Some jurisdictions have started some of the actions, however multiple (for example: items, buildings, projects) need to be implemented, therefore all the actions listed in Table 8-1 still have actions that are to be implemented.

8.2 Mitigation Action Plans

8.2.1 Lea County

Action #1 Mass Alert	
Project Description:	Mass public notification and warning system
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: In 2012 the County purchased the CodeRed Warning System and is currently providing weather and hazard warnings throughout the County. This system is phone, text and email based and can provide up to the minute information to the public. It operates on both landline and cell phone systems and requires annual updating, maintenance, outreach, and training

Action #2 Lightning Rod Installation	
Project Description:	Installing Lightning Rods
Jurisdiction:	Lea County
Hazard(s) Addressed:	Severe Storms
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets,
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Delete: No longer feasible for the County to complete

Action #3 Hazard Education	
Project Description:	Comprehensive Hazard Education Program for Community Fairs and Special Events
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: The Lea County OEM (Office of Emergency Management) has been active in participating in numerous local events including, fire safety with schools, vector control, defensible space and provides educational materials for distribution at these events along with posting on County website and social media. The County plans to continue this outreach in the future and at least annually All participating jurisdictions have identified educational action items as need for hazard mitigation. The County would take a lead role to coordinate and collaborate with all the participating jurisdictions to develop a Comprehensive Education Program. Each jurisdiction will participate to develop a comprehensive program.

Action #4 Provide Back-Up Power for Critical Facilities	
Project Description:	This project would allow for back-up power to be installed at critical facilities to ensure continuity of emergency services to the public during hazard events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

Action #5 Disaster Resistant Community Marketing	
Project Description:	Work with local retailers to promote Disaster Resistant Community framework. FEMA (Federal Emergency Management Agency) disaster readiness would be the emphasis at some of the stores within the community, i.e., lumber, hardware stores, to promote the city for disaster resistance by showing individuals how to use construction materials that are less susceptible to hazard damage and/or items that can help regulate water usage.
Jurisdiction:	Lea County
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: This action is in progress with the effort being lead through the Lea County OEM; project 5% complete.

8.2.2 City of Eunice

Action #1 Hire Emergency Management Professional	
Project Description:	Hire an Emergency Management Consultant to Prepare an Emergency Operations Plan (EOP).
Jurisdiction:	City of Eunice
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Eunice, Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: Lea County is in the process of completing an EOP that will include the City of Eunice and provide for comprehensive emergency planning for the entire County; project is 25% complete.

Action #2 Requisition of Whelen Public Address Siren Warning System	
Project Description:	Requisition of Whelen Public Address Siren Warning System
Jurisdiction:	City of Eunice
Hazard(s) Addressed:	Severe Storms, Tornado
Responsible Agency:	City of Eunice, Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets

Mitigation Action Plans

Timeline for Implementation:	5 years
Priority:	High
2022 Status:	Complete: The County has purchased the CodeRed Warning System and is currently providing current weather conditions and hazard warnings throughout the County including the City of Eunice for all hazards now

Action #3 Mass Alert	
Project Description:	Mass public notification and warning system.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: In 2012 the County purchased the CodeRed Warning System and is currently providing weather and hazard warnings throughout the County. This system is phone, text and email based and can provide up to the minute information to the public. It operates on both landline and cell phone systems and requires annual updating, maintenance, outreach, and training.

Action #4 Back-Up Power	
Project Description:	Purchase of Trailer Mounted Generator and Lighting System
Jurisdiction:	City of Eunice
Hazard(s) Addressed:	Severe Storms, Tornado, Wildfire, Winter Weather, Extreme Heat
Responsible Agency:	City of Eunice, Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	Delete: No generator has been purchased for the City of Eunice; however, the Lea County OEM (Office of Emergency Management) has a generator available for each jurisdiction's use. This project is no longer a priority for Eunice.

Action #5 Hazard Education	
Project Description:	Comprehensive Hazard Education Program for Community Fairs and Special Events
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: The Lea County OEM (Office of Emergency Management) has been active in participating in numerous local events including, fire safety with all schools, vector control, defensible space and provides educational materials for distribution at these events along with posting on County website and social media. The County plans to continue this outreach in the future and at least annually.

Action #6 Provide Back-Up Power for Critical Facilities	
Project Description:	This project would allow for back-up power to be installed at critical facilities to ensure continuity of emergency services to the public during hazard events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets, Grants

Mitigation Action Plans

Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

Action #7 Disaster Resistant Community Marketing	
Project Description:	Work with local retailers to promote Disaster Resistant Community framework. FEMA (Federal Emergency Management Agency) disaster readiness would be the emphasis at some of the stores within the community, i.e., lumber, hardware stores, to promote the city for disaster resistance by showing individuals how to use construction materials that are less susceptible to hazard damage and/or items that can help regulate water usage.
Jurisdiction:	City of Eunice
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Eunice
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: This action is in progress with the effort being lead through the Lea County OEM. No measurable progress due to lack of funding and staff resources.

8.2.3 City of Hobbs

Action #1 Hobbs Drainage Basin/Diversion Channel Improvements	
Project Description:	This project consists of purchasing the right-of-way, performing the earthwork to construct an earthen channel and earthen detention basins, and installing various roadway crossings. This project was included in the Storm Drainage Management Plan in 1994 and was also incorporated into the City of Hobbs Flood Mitigation Plan, 1999. The channels will intercept floodwaters flowing towards the southeast before they enter the developed areas within the city limits and neighboring areas in Lea County. Eliminating these waters from entering the flow paths through the City will provide relief for existing storm drainage systems and roadways that carry run-off, allowing the existing facilities to protect properties from floodwaters. The city hopes that much of the 100-year flood zone for the City of Hobbs will be eliminated after the construction of this project.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Flood
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium

Mitigation Action Plans

Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: Project is in progress and is still a priority to the City of Hobbs and is 20% complete.

Action #2 Update City of Hobbs Emergency Response Plan	
Project Description:	The project would review and evaluate the City of Hobbs existing emergency response plan and make updates to cover all hazards. Coordination between emergency response personnel and other departments will be to adapt to the potential hazards that impact our community
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Hobbs, Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: Lea County is in the process of updating an EOP that will include the City of Hobbs and provide for comprehensive emergency planning for the entire County; approximately 25% complete.

Action #3 CRS Application	
Project Description:	CRS (Community Rating System) Program Application Class 7
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Flood
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: The City of Hobbs has implemented tasks and has Class 8 certification.

Action #4 Weather-Proofing Infrastructure	
Project Description:	Utility/Critical Facilities Manhole Infiltration Rings. Infiltration rings would be placed on all utility access hole covers that service all the flood zones that pertain to the sanitary sewer system. The excessive amounts of storm water input into the sanitary sewer system will lessen the overload effects to the treatment plant.
Jurisdiction:	City of Hobbs

Mitigation Action Plans

Hazard(s) Addressed:	Flood
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: Project has not been completed and will be included as a project within this HMP (Hazard Mitigation Plan) and has no measurable progress due to lack of funding and staff resources.

Action #5 Weather-Proofing Infrastructure	
Project Description:	Utility/Critical Facilities Fireproof Water Wells. The 28 water well sites within the City of Hobbs would be fire-proofed inside and out on the actual building site locations to prevent fire damage and loss of critical water to the city.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Wildfire
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: Project has not been completed and will be included as a project within this HMP (Hazard Mitigation Plan) and has no measurable progress due to lack of funding and staff resources.

Action #6 Weather-Proofing Infrastructure	
Project Description:	Utility/Critical Facilities Fire Breaks at Critical Sites.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Wildfire
Responsible Agency:	City of Hobbs This project would entail firebreaks around critical sites, water well locations, the Wastewater Treatment Plant, and other locations to prevent wildfire interface damage. We have experienced loss from wildfires burning up into the City of Hobbs city limits and causing damage. This would create firebreaks to prevent future occurrences.
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: Project has not been completed and will be included as a project within this HMP (Hazard Mitigation Plan) and has no measurable progress due to lack of funding and staff resources.

Action #7 Disaster Resistant Community Marketing	
Project Description:	Work with local retailers to promote Disaster Resistant Community framework. FEMA (Federal Emergency Management Agency) disaster readiness would be the emphasis at some of the stores within the community, i.e., lumber, hardware stores, to promote the city for disaster resistance by showing individuals how to use construction materials that are less susceptible to hazard damage and/or items that can help regulate water usage.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: This action is in progress with the effort being lead through the Lea County OEM. No measurable progress due to lack of funding and staff resources.

Action #8 Adopt Policy on the Construction of Public Facilities/Critical Structures	
Project Description:	Develop a policy that will restrict the future construction of Public Facilities/Critical Structures without proper hazard resistant materials.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Hobbs

Mitigation Action Plans

<i>Estimated Costs:</i>	Medium
<i>Funding Sources:</i>	Local budgets,
<i>Timeline for Implementation:</i>	5 years
<i>Priority:</i>	Medium
<i>2022 Status:</i>	Project not completed and is addressed as review of County Wide Building Codes.

Action #9 Property Acquisition	
Project Description:	Acquiring properties prone to flood.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Flood
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: Project not completed and is considered to not have political or public support.

Action #10 Mobile Home Anchoring	
Project Description:	Adopt city ordinances to require anchoring of mobile homes. Require mobile homes within the city to be properly anchored and conduct technical assistance to assist mobile homeowners in properly anchoring their homes.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Severe Storms, Tornado
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Project not completed and is addressed as review of County Wide Building Codes.

Mitigation Action Plans

Action #11 Bury Powerlines	
Project Description:	Bury powerlines to avoid power disruption during hazard events. Burying overhead facilities will decrease their vulnerability to outages due to hazard events. City staff to prepare documentation for city advisory boards' consideration of all newly constructed subdivisions to be installed with all underground utility services, as well as the City of Hobbs to consider underground improvement project for existing overhead utilities along primary trunk lines, strategic corridors, and arterial/collector roadways.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Severe Storms, Tornado, Winter Weather
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: No measurable progress has been made in the last 5 years due to lack of funding and staff resources.

Action #12 Debris Management	
Project Description:	Tree Trimming and Replacement Program. The City of Hobbs Parks and Recreation Department will establish a Tree Replacement Program to mitigate damage to critical City facilities near older trees, such as the Public Library. In addition, coordination with the existing utility companies will be established to monitor and implement a tree trimming program to protect aerial facilities.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Severe Storms, Tornado
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: This project is in progress though the local utility providers and occurs on a regular basis

Action #13 Water Irrigation	
Project Description:	Effluent water irrigation systems. Establish effluent water irrigation systems to be utilized in watering golf courses and landscaped areas.
Jurisdiction:	City of Hobbs
Hazard(s) Addressed:	Drought
Responsible Agency:	City of Hobbs
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: The City of Hobbs has completed projects that use effluent at landscaped areas around the City of Hobbs and continues to look for opportunities for additional projects and maintenance of areas.

Action #14 Mass Alert	
Project Description:	Mass public notification and warning system.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium

Mitigation Action Plans

2022 Status:	To Be Continued: In 2012 the County purchased the CodeRed Warning System and is currently providing weather and hazard warnings throughout the County. This system is phone, text and email based and can provide up to the minute information to the public. It operates on both landline and cell phone systems and requires annual updating, maintenance, outreach, and training.
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Action #15 Hazard Education	
Project Description:	Comprehensive Hazard Education Program for Community Fairs and Special Events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: The Lea County OEM (Office of Emergency Management) has been active in participating in numerous local events including, fire safety with all schools, vector control, defensible space and provides educational materials for distribution at these events along with posting on County website and social media. The County plans to continue this outreach in the future and at least annually.

Action #16 Provide Back-Up Power for Critical Facilities	
Project Description:	This project would allow for back-up power to be installed at critical facilities to ensure continuity of emergency services to the public during hazard events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

8.2.4 City of Jal

Action #1 Extreme Heat Evacuation	
Project Description:	Intensify the list of homebound citizens for proper evacuation in case of extreme heat. Information included on everyone will include street address, phone number, disability, and any special needs.
Jurisdiction:	City of Jal
Hazard(s) Addressed:	Extreme Heat
Responsible Agency:	City of Jal
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Completed: The County has an evacuation plan in place in the Lea County EOP.

Action #2 Hazard Education	
Project Description:	Comprehensive Hazard Education Program for Community Fairs and Special Events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: The Lea County OEM (Office of Emergency Management) has been active in participating in numerous local events including, fire safety with all schools, vector control, defensible space and provides educational materials for distribution at these events along with posting on County website and social media. The County plans to continue this outreach in the future and at least annually.

Action #3 Mass Alert	
Project Description:	The addition of two sirens to the warning system
Jurisdiction:	City of Jal
Hazard(s) Addressed:	Severe Storms, Tornado, Wildfire
Responsible Agency:	City of Jal
Estimated Costs:	Medium
Funding Sources:	Local budget
Timeline for Implementation:	5 years

Mitigation Action Plans

Priority:	Medium
2022 Status:	In Progress: CodeRed Warning System and is currently providing weather and hazard warnings throughout the County including the City of Jal. The complimentary warning sirens are approximately 25% complete.

Action #4 Mass Alert	
Project Description:	Mass public notification and warning system.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: In 2012 the County purchased the CodeRed Warning System and is currently providing weather and hazard warnings throughout the County. This system is phone, text and email based and can provide up to the minute information to the public. It operates on both landline and cell phone systems and requires annual updating, maintenance, outreach, and training.

Action #5 Provide Back-Up Power for Critical Facilities	
Project Description:	This project would allow for back-up power to be installed at critical facilities to ensure continuity of emergency services to the public during hazard events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

8.2.5 City of Lovington

Action #1 Hazard Education	
Project Description:	Comprehensive Hazard Education Program for Community Fairs and Special Events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: The Lea County OEM (Office of Emergency Management) has been active in participating in numerous local events including, fire safety with all schools, vector control, defensible space and provides educational materials for distribution at these events along with posting on County website and social media. The County plans to continue this outreach in the future and at least annually.

Action #2 CRS Application	
Project Description:	Join the Community Rating System. The City of Lovington is not involved in the Community Rating System program at this time. Points may be given for participation in the Lea County All Hazard Mitigation Plan.
Jurisdiction:	City of Lovington
Hazard(s) Addressed:	Flood
Responsible Agency:	City of Lovington
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: The City of Lovington is currently working the Lea County Floodplain Manager to complete this effort; approximately 25% complete.

Action #3 Mass Alert	
Project Description:	Mass public notification and warning system.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets

Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: In 2012 the County purchased the CodeRed Warning System and is currently providing weather and hazard warnings throughout the County. This system is phone, text and email based and can provide up to the minute information to the public. It operates on both landline and cell phone systems and requires annual updating, maintenance, outreach, and training.

Action #4 Water Conservation Project	
Project Description:	Conserve outside water by planting landscape plants that require less water. Require watering outdoors after 5:30 PM and before 10 PM.
Jurisdiction:	City of Lovington
Hazard(s) Addressed:	Drought
Responsible Agency:	City of Lovington
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: Project in progress; 10 percent complete.

Action #5 Hazard Education for Drought	
Project Description:	Comprehensive Education Program for drought awareness.
Jurisdiction:	City of Lovington
Hazard(s) Addressed:	Drought
Responsible Agency:	City of Lovington
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	In Progress: Project in progress in conjunction with the Lea County OEM; 10 percent complete.

Action #6 Provide Back-Up Power for Critical Facilities	
Project Description:	This project would allow for back-up power to be installed at critical facilities to ensure continuity of emergency services to the public during hazard events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium

Mitigation Action Plans

Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

Action #7 Update and/or correct Flood Maps

Project Description:	This project would allow LOMR for area incorrectly mapped on FIRM panel 965 D, map number 35025C0965D, South end of the Main Street Ditch.
Jurisdiction:	City of Lovington
Hazard(s) Addressed:	Flood
Responsible Agency:	City of Lovington
Estimated Costs:	Medium
Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

Action #8 Flood Drainage

Project Description:	This project would allow drainage design and construction for E Washington Ave, E Central Ave and S Eddy St.
Jurisdiction:	City of Lovington
Hazard(s) Addressed:	Flood
Responsible Agency:	City of Lovington
Estimated Costs:	High
Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

Action #9 Flood Drainage

Project Description:	This project would allow Drainage design and construction for the FIRM panel 965 D, map number 35025C0965D, Railroad Ditch.
Jurisdiction:	City of Lovington
Hazard(s) Addressed:	Flood
Responsible Agency:	City of Lovington
Estimated Costs:	High
Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

Action #10 Disaster Resistant Community Marketing	
Project Description:	Work with local retailers to promote Disaster Resistant Community framework. FEMA (Federal Emergency Management Agency) disaster readiness would be the emphasis at some of the stores within the community, i.e., lumber, hardware stores, to promote the city for disaster resistance by showing individuals how to use construction materials that are less susceptible to hazard damage and/or items that can help regulate water usage.
Jurisdiction:	City of Lovington
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Lovington
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: This action is in progress with the effort being lead through the Lea County OEM. No measurable progress due to lack of funding and staff resources.

8.2.6 Town of Tatum

Action #1 Hazard Education	
Project Description:	Comprehensive Hazard Education Program for Community Fairs and Special Events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: The Lea County OEM (Office of Emergency Management) has been active in participating in numerous local events including, fire safety with all schools, vector control, defensible space and provides educational materials for distribution at these events along with posting on County website and social media. The County plans to continue this outreach in the future and at least annually.

Action #2 Implement Audible Alert System	
Project Description:	Maintain an audible alert system and make sure that all residents are informed as to signal meanings.
Jurisdiction:	City of Tatum

Mitigation Action Plans

Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Tatum
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: On-going drills and public information are occurring annually.

Action #3 Mass Alert	
Project Description:	Mass public notification and warning system.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	To Be Continued: In 2012 the County purchased the CodeRed Warning System and is currently providing weather and hazard warnings throughout the County. This system is phone, text and email based and can provide up to the minute information to the public. It operates on both landline and cell phone systems and requires annual updating, maintenance, outreach, and training

Action #4 Provide Indoor Climate Control	
Project Description:	Provide indoor climate control for the vulnerable populations during hazard events. The city will join churches and community groups to help provide inexpensive air conditioning/box fans/heaters to the vulnerable populations to decrease the danger of extreme weather on these populations during hazard events.
Jurisdiction:	City of Tatum
Hazard(s) Addressed:	Floods, Tornado, Severe Weather, Extreme Heat, Winter Storm
Responsible Agency:	City of Tatum
Estimated Costs:	Medium
Funding Sources:	Local budget
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: No measurable progress has been made in the last 5 years due to lack of funding and staff resources.

Action #5 Back-Up Power for Critical Facilities	
Project Description:	Installing power surge protectors and battery backup in critical facilities.
Jurisdiction:	City of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	City of Tatum
Estimated Costs:	Medium
Funding Sources:	Local budget
Timeline for Implementation:	5 years
Priority:	Medium
2022 Status:	Deferred: No measurable progress has been made in the last 5 years due to lack of funding and staff resources.

Action #6 Provide Back-Up Power for Critical Facilities	
Project Description:	This project would allow for back-up power to be installed at critical facilities to ensure continuity of emergency services to the public during hazard events.
Jurisdiction:	Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, Town of Tatum
Hazard(s) Addressed:	All Hazards (Flood, Tornado, Severe Weather, Extreme Heat, Drought, Winter Storm, Wildfire)
Responsible Agency:	Lea County
Estimated Costs:	Medium
Funding Sources:	Local budgets, Grants
Timeline for Implementation:	5 years
Priority:	High
2022 Status:	New Action

SECTION 9: PLAN MAINTENANCE AND PROCEDURES

This section discusses how the Lea County Mitigation Strategy and Mitigation Action Plan will be implemented and how the Plan will be evaluated and enhanced over time. This section also discusses how the public will continue to be involved in a sustained hazard mitigation planning process. It consists of the following three subsections:

- ◆ 9.1 Implementation and Integration
- ◆ 9.2 Monitoring, Evaluation, Update and Enhancement
- ◆ 9.3 Continued Public Involvement

44 CFR Requirement
<p>44 CFR Part 201.6(c)(4)(i): The plan shall include a plan maintenance process that includes a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.</p> <p>44 CFR Part 201.6(c)(4)(ii): The plan maintenance process shall include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.</p>

9.1 Implementation and Integration

Each agency, department, or other partner participating under the Lea County Hazard Mitigation Plan is responsible for implementing specific mitigation actions as prescribed in the Mitigation Action Plan. Every proposed action listed in the Mitigation Action Plan is assigned to a specific “lead” agency or department to assign responsibility and accountability and increase the likelihood of subsequent implementation.

In addition to the assignment of a local lead department or agency, an implementation period or a specific implementation date has been assigned to assess whether actions are being implemented in a timely fashion. The County will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the Mitigation Action Plan.

The participating jurisdictions will integrate this Plan into relevant city and county government decision-making processes or mechanisms, where feasible. This includes integrating the requirements of the Plan into other local planning documents, processes, or mechanisms, such as comprehensive or capital improvement plans, when appropriate. The members of the Lea County Hazard Mitigation Planning Team will remain charged with ensuring that the goals and mitigation actions of new and updated local planning documents for their agencies or departments are consistent, or do not conflict with, the goals and actions of the Plan, and will not contribute to increased hazard vulnerability in the County.

Since the previous Plan was adopted the county and participating jurisdiction has worked to integrate the Plan into other planning mechanisms where applicable/feasible. Examples of how this integration has occurred have been documented in the Implementation Status discussion provided for each of the mitigation actions found in Section 8. Specific examples of how integration has occurred include:

- Integrating the mitigation plan (level of flooding risk) into reviews and updates of floodplain management ordinances. (Lea County and Lovington)
- Integrating the mitigation plan (critical facilities) into reviews and updates of County emergency operations plans. (Lea County)
- Integrating the mitigation plan (cross reference data) into review and updates of building codes. (Lea County and Lovington)
- Integrating the mitigation plan into the capital improvements plan through identification of mitigation actions that may require local funding. (Lea County, Eunice, Hobbs, Jal, Lovington, Tatum)

Opportunities to further integrate the requirements of this Plan into other local planning mechanisms shall continue to be identified through future meetings of the Hazard Mitigation Planning Team, individual county meetings, and the annual review process described herein. Although it is recognized that there are many benefits to integrating components of this Plan into other local planning mechanisms, the development and maintenance of this stand-alone Hazard Mitigation Plan is deemed by the Planning Team to be the most effective and appropriate method to implement local hazard mitigation actions at this time.

9.2 Monitoring, Evaluation, Update and Enhancement

Periodic revisions and updates of the Plan are required to ensure that the goals of the Plan update are kept current, considering potential changes in hazard vulnerability and mitigation priorities. In addition, updates may be necessary to ensure that the Plan is in full compliance with applicable federal and state regulations. Periodic evaluation of the Plan will also ensure that specific mitigation actions are being reviewed and carried out according to the Mitigation Action Plan.

The Lea County Emergency Management Coordinator will be responsible for reconvening the Hazard Mitigation Planning Team for these reviews.

Plan monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives. In the more limited approach, monitoring may focus on tracking projects and the use of the agency's resources. In the broader approach, monitoring also involves tracking strategies and actions being taken by partners and non-partners, and figuring out what new strategies and actions need to be taken to ensure progress towards the most important results. A monitoring report will be written and submitted to the LEPC (Local Emergency Planning Committee) annually and/or when triggered by a situation change. The Mitigation Action Progress Report Form (Worksheet 7.1 from FEMA) will form the basis of questions to be asked and progress/obstacles to report. The plan maintenance process is cyclical and maintenance items can operate simultaneously within the process.

A plan evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making. An evaluation report will be written and submitted to the LEPC when the situation dictates. The following situations are typical examples of when an evaluation will be necessary: Post hazard event; Post tabletop or drill exercise; Meaningful change or completion of a mitigation project and/or action. The Plan Update Evaluation Worksheet (Worksheet 7.2 from FEMA) will provide the basis of the evaluation report.

See Appendix G for FEMA guidance worksheets to facilitate plan maintenance.

9.2.1 Five Year Plan Review and Update

The Plan will be thoroughly reviewed by the Hazard Mitigation Planning Team every five years to determine whether there have been any significant changes in the County that may, in turn, necessitate updates in the types of mitigation actions proposed. New development in identified hazard areas, an increased exposure to hazards, an increase or decrease in capability to address hazards, and changes to federal or state legislation are examples of factors that may affect the necessary content of the Plan.

The Plan review provides county officials with an opportunity to evaluate those actions that have been successful and to explore the possibility of documenting potential losses avoided due to the implementation of specific mitigation measures. The Plan review also provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned. The Lea County Emergency Management Coordinator will be responsible for reconvening the Hazard Mitigation Planning Team and conducting the five-year review and update.

During the five-year plan review and update process, the following questions will be considered as criteria for assessing the effectiveness and appropriateness of the Plan:

- Do the goals address current and expected conditions?
- Has the nature or magnitude of risks changed?
- Are the current resources appropriate for implementing the Plan?
- Are there implementation problems, such as technical, political, legal or coordination issues with other agencies?
- Have the outcomes occurred as expected?
- Did County departments participate in the plan implementation process as assigned?

Following the five-year review and update, any updates deemed necessary will be summarized and implemented according to the reporting procedures and plan amendment process outlined herein. Upon completion of the review and update/amendment process, the Hazard Mitigation Plan will be submitted to the State Hazard Mitigation Officer at the New Mexico Department of Homeland Security and Emergency Management (NMDHSEM) for final review and approval in coordination with the Federal Emergency Management Agency (FEMA).

Because the plan update process can take several months to complete, and because Federal funding may be needed to update the plan, it is recommended that the five-year review process begin at the beginning of the third year after the plan was last approved. This will allow the participants in the Hazard Mitigation Plan to organize to seek Federal funding if necessary and complete required plan update documentation before the plan expires at the end of the fifth year.

9.2.2 Disaster Declaration

Following a disaster declaration, the Hazard Mitigation Plan will be revised as necessary to reflect lessons learned, or to address specific issues and circumstances arising from the event. It will be the responsibility of the Lea County Emergency Management Coordinator to reconvene the Hazard Mitigation Planning Team and ensure the appropriate stakeholders are invited to participate in the plan revision and update process following declared disaster events.

9.2.3 Reporting Procedures

The results of the five-year review and update will be summarized by the Hazard Mitigation Planning Team in a report that will include an evaluation of the effectiveness of the Plan and any required or recommended changes or amendments. The report will also include an evaluation of implementation

progress for each of the proposed mitigation actions, identifying reasons for delays or obstacles to their completion along with recommended strategies to overcome them.

9.2.4 Plan Amendment Process

Upon the initiation of the amendment process, representatives from the County will forward information on the proposed change(s) to all interested parties including, but not limited to, all directly affected County departments, residents, and businesses. Information will also be forwarded to the New Mexico Department of Homeland Security and Emergency Management. This information will be disseminated to seek input on the proposed amendment(s) for no less than a 45-day review and comment period.

At the end of the 45-day review and comment period, the proposed amendment(s) and all comments will be forwarded to the Hazard Mitigation Planning Team for final consideration. The Planning Team will review the proposed amendment along with the comments received from other parties, and if acceptable, the committee will submit a recommendation for the approval and adoption of changes to the Plan.

In determining whether to recommend approval or denial of a Plan amendment request, the following factors will be considered by the Hazard Mitigation Planning Team:

- There are errors, inaccuracies, or omissions made in the identification of issues or needs in the Plan.
- Current issues or needs have been identified which are not addressed in the Plan.
- There has been a change in information, data, or assumptions from those on which the Plan is based.

Upon receiving the recommendation from the Hazard Mitigation Planning Team, and prior to adoption of the Plan, the participating jurisdictions will hold a public hearing, if deemed necessary. The governing bodies of each participating jurisdiction will review the recommendation from the Hazard Mitigation Planning Team (including the factors listed above) and any oral or written comments received at the public hearing. Following that review, the governing bodies will take one of the following actions:

- Adopt the proposed amendments as presented.
- Adopt the proposed amendments with modifications.
- Refer the amendments request back to the Planning Team for further revision.
- Defer the amendment request back to the Planning Team for further consideration and/or additional hearings.

9.3 Continued Public Involvement

44 CFR Requirement
44 CFR Part201.6(c)(4)(iii): The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

Public participation is an integral component to the mitigation planning process and will continue to be essential as this Plan evolves over time. As described above, significant changes or amendments to the Plan shall require a public hearing prior to any adoption procedures.

Other efforts to involve the public in the maintenance, evaluation, monitoring and update process will be made annually. These efforts may include:

- Advertising meetings of the Hazard Mitigation Planning Team in local newspapers, public bulletin boards and/or County office buildings, websites, and social media platforms.
- Designating willing and voluntary citizens and private sector representatives as official members of the Hazard Mitigation Planning Team.
- Utilizing local media to update the public on any maintenance and/or periodic review activities taking place.
- Utilizing social media to advertise opportunities to comment as well as participate in surveys.
- Utilizing the websites of participating jurisdictions to advertise any maintenance and/or periodic review activities taking place.
- Keeping copies of the Plan update in public libraries.

Appendix A::Plan Adoption

This appendix to the Lea County Hazard Mitigation Plan contains a copy of the adoption resolutions for Lea County, City of Eunice, City of Hobbs, City of Jal, City of Lovington, and Town of Tatum who formally adopted the updated plan.

Appendix B: Regulation Checklist

This appendix to the Lea County Hazard Mitigation Plan contains a copy of a completed Regulation Checklist from FEMA's *Local Mitigation Plan Review Tool*. This checklist provides page numbers indicating where in the Plan each element required by FEMA is met. This serves as a final internal review to confirm that the Plan meets Federal requirements.

LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdictions: Lea County, Eunice, Hobbs, Jal, Lovington, Tatum	Title of Plan: Lea County Hazard Mitigation Plan	Date of Plan: September 13, 2021
Local Point of Contact: Cassie Corley, CFM – Lea County	Address: 1019 E. Bender, Hobbs, NM 88240	
Title: Supervisor Environmental and Floodplain	E-Mail: ccorley@leacounty.net	
Agency: Lea County Government		
Phone Number: T: 575.391.2983 M:575.942.8222		
State Reviewer:	Title: Senior Emergency	Date:
FEMA Reviewer:	Title:	Date:
Date Received in FEMA Region IV		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

**SECTION 1:
REGULATION CHECKLIST**

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST	Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)			
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Section 2 (pages 2-1 – 2-6), Appendix F	X	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Section 2.6 (page 2-5 – 2-6)	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 2.5 (pages 2-5 – 2-6), Appendix D and E	X	
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 6 (pages 6-1 – 6-12)	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Section 9 (pages 9-4 – 9-5)	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Section 9 (pages 9-2 – 9-4)	X	
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Section 5 (pages 5-2 – 5-76)	X	
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Section 5 (pages 5-2 – 5-76)	X	
B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Section 5 (pages 5-2 – 5-76) Vulnerability & Impact sub sections Section 6 (page 6-1)	X	
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Section 5.10.4 (page 5-66)	X	

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT C. MITIGATION STRATEGY				
C1. Does the plan document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 6 (pages 6-1 – 6-16)	X		
C2. Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Section 6 (pages 6-8 – 6-10), Section 7 (page 7-2), Section 8 (pages 8-3 – 8-21)	X		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Section 7.2-7.3 (pages 7-3 – 7-5)	X		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Section 7 (page 7-1) Section 8 (pages 8-3 – 8-24)	X		
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Section 7 (page 7-2 – 7-3) Section 8 (pages 8-3 – 8-24)	X		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Section 9.1 (page 9-1 – 9-2)	X		
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 6 (page 6-1) Section 5 (pages 5-2 – 5-76)	X		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 7.1-7.2 (pages 7-1 – 7-3) Section 8 (pages 8-3 – 8-24)	X		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Section 7.1-7.2 (pages 7-1 – 7-3)	X		
ELEMENT E. PLAN ADOPTION				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Appendix A (adoptions pending FEMA approval)			X
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Appendix A (adoptions pending FEMA approval)			X

1. REGULATION CHECKLIST

Regulation (44 CFR 201.6 Local Mitigation Plans)

Location in Plan
(section and/or
page number)

Met

Not Met

ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)

F1. There are no additional State requirements.			
F2.			

ELEMENT F: REQUIRED REVISIONS

SECTION 2: PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

How does the Plan go above and beyond minimum requirements to document the planning process with respect to:

- *Involvement of stakeholders (elected officials/decision makers, plan implementers, business owners, academic institutions, utility companies, water/sanitation districts, etc.);*
- *Involvement of Planning, Emergency Management, Public Works Departments or other planning agencies (i.e., regional planning councils);*
- *Diverse methods of participation (meetings, surveys, online, etc.); and*
- *Reflective of an open and inclusive public involvement process.*

Element B: Hazard Identification and Risk Assessment

In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:

- 1) *A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions;*
- 2) *The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
- 3) *A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

How does the Plan go above and beyond minimum requirements to document the Hazard Identification and Risk Assessment with respect to:

- *Use of best available data (flood maps, HAZUS, flood studies) to describe significant hazards;*
- *Communication of risk on people, property, and infrastructure to the public (through tables, charts, maps, photos, etc.);*
- *Incorporation of techniques and methodologies to estimate dollar losses to vulnerable structures;*
- *Incorporation of Risk MAP products (i.e., depth grids, Flood Risk Report, Changes Since Last FIRM, Areas of Mitigation Interest, etc.); and*
- *Identification of any data gaps that can be filled as new data became available.*

Element C: Mitigation Strategy

How does the Plan go above and beyond minimum requirements to document the Mitigation Strategy with respect to:

- *Key problems identified in, and linkages to, the vulnerability assessment;*
- *Serving as a blueprint for reducing potential losses identified in the Hazard Identification and Risk Assessment;*
- *Plan content flow from the risk assessment (problem identification) to goal setting to mitigation action development;*
- *An understanding of mitigation principles (diversity of actions that include structural projects, preventative measures, outreach activities, property protection measures, post-disaster actions, etc);*
- *Specific mitigation actions for each participating jurisdictions that reflects their unique risks and capabilities;*
- *Integration of mitigation actions with existing local authorities, policies, programs, and resources; and*
- *Discussion of existing programs (including the NFIP), plans, and policies that could be used to implement mitigation, as well as document past projects.*

Element D: Plan Update, Evaluation, and Implementation (Plan Updates Only)

How does the Plan go above and beyond minimum requirements to document the 5-year Evaluation and Implementation measures with respect to:

- *Status of previously recommended mitigation actions;*
- *Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk;*
- *Documentation of annual reviews and committee involvement;*
- *Identification of a lead person to take ownership of, and champion the Plan;*
- *Reducing risks from natural hazards and serving as a guide for decisions makers as they commit resources to reducing the effects of natural hazards;*
- *An approach to evaluating future conditions (i.e. socio-economic, environmental, demographic, change in built environment etc.);*
- *Discussion of how changing conditions and opportunities could impact community resilience in the long term; and*
- *Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience.*

B. Resources for Implementing Your Approved Plan

Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:

- *What FEMA assistance (funding) programs are available (for example, Hazard Mitigation Assistance (HMA)) to the jurisdiction(s) to assist with implementing the mitigation actions?*
- *What other Federal programs (National Flood Insurance Program (NFIP), Community Rating System (CRS), Risk MAP, etc.) may provide assistance for mitigation activities?*
- *What publications, technical guidance or other resources are available to the jurisdiction(s) relevant to the identified mitigation actions?*
- *Are there upcoming trainings/workshops (Benefit-Cost Analysis (BCA), HMA, etc.) to assist the jurisdiction(s)?*
- *What mitigation actions can be funded by other Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA) Smart Growth, Housing and Urban Development (HUD) Sustainable Communities, etc.) and/or state and local agencies?*

SECTION 3:

MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were ‘Met’ or ‘Not Met,’ and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/township/village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
1	Lea	County	Cassie Corley	1019 E. Bender, Hobbs, NM 88240	ccorley@leacounty.net	575.391.2983						
2	Eunice	City	Casey Arcidez		carcidez@cityofeunice.org	575.552.5073						
3	Jal	City	Pat Walter		p.walter@cityofjal.us	575.441.1990						
4	Lovington	City	Crystal Ball		cball@lovington.org	575.396.9301						
5	Tatum	Village	Cheryl LeCrone		townoftatum4@leaco.net	573-398.4633						

Appendix C: FEMA Approval Letter

This appendix to the Lea County Hazard Mitigation Plan contains a copy of the letter from FEMA approving the final plan.

Appendix D: Public Outreach Strategy

This appendix to the Lea County Hazard Mitigation Plan contains a copy of the Public Outreach Strategy to guide the public outreach element of the mitigation planning process.

Public Outreach Strategy

Project Summary

The County of Lea, in coordination with their participating municipal jurisdictions, are updating their hazard mitigation plan. The Lea County Hazard Mitigation Plan will identify local policies and actions for reducing risk and future losses from natural hazards such as floods, severe storms, wildfires, and winter weather.

The plan will also serve to meet key federal planning regulations which require local governments to develop a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance, including funding for hazard mitigation projects. These mitigation planning requirements stem from the Disaster Mitigation Act of 2000, which was passed by the U.S. Congress in October of 2000. This Act amended federal law to require that all states and local governments must have hazard mitigation plans in place in order to be eligible to apply for funding under such programs as the Hazard Mitigation Grant Program (HMGP) and the Pre-Disaster Mitigation (PDM) program.

Public Outreach

A key element in the mitigation planning process is the discussion it promotes among community members about creating a safer, more disaster-resilient community. A plan that accurately reflects the community's values and priorities is likely to have greater legitimacy and "buy-in" and greater success in implementing mitigation actions and projects to reduce risk.¹ Therefore, the purpose of the Valencia County Hazard Mitigation Plan Public Outreach Strategy is to:

- Generate public interest;
- Solicit citizen input; and
- Engage additional partners in the planning process.

The following specific public outreach opportunities and methods have been identified for citizens and targeted stakeholders to participate at various points in the mitigation planning process, and are presented in more detail on the following pages:

1. In-person public meeting
2. Public information website (including social media integration)
3. Planning resources
4. Public participation survey

¹ FEMA, *Local Mitigation Planning Handbook*, March 2013.

OUTREACH METHOD 1
In-Person Public Meeting
AVAILABILITY
Public survey & at each jurisdiction council meeting for adoption.
BRIEF DESCRIPTION
Public meetings will be scheduled at key points in the project timeline following completion of the draft plan (and prior to the plan’s local adoption). These meetings will be coordinated and arranged by Lea County with facilitation support from AECOM.
DETAILS
<p>For all public meetings:</p> <ul style="list-style-type: none"> • The purpose will be to inform the public on the process and current status of the regional planning process, as well as gain input to the process during the drafting stage and prior to plan completion and approval • AECOM will prepare presentation and handout materials as needed to help facilitate two-way communication with public meeting attendees
LEAD AGENCY
Lea County/AECOM

OUTREACH METHOD 2
Public Information Website (including Social Media Integration)
AVAILABILITY
June 2021
BRIEF DESCRIPTION
A project information website will be hosted by Lea County and will be available to the general public and to members of the Hazard Mitigation Planning Committee for the duration of the project. The primary purpose of this site will be to share information relevant to the Lea County Hazard Mitigation Plan planning process.
DETAILS
<p>Specific resources to be included on this site include:</p> <ul style="list-style-type: none"> • Project information fact sheet • Drafts of Hazard Mitigation Plan sections • List of Local Jurisdiction Leads • List of project tasks and subtasks with schedule • PowerPoint files from Hazard Mitigation Planning Committee meetings • PDFs of existing county-level hazard mitigation plans for reference during the plan update process • Links to planning resources, including recently published FEMA hazard mitigation planning guidance • Social media integration including, but not limited to, Facebook, Twitter, Tumblr, and Pinterest
LEAD AGENCY
Lea County /AECOM

OUTREACH METHOD 3
Planning Resources
AVAILABILITY
June 2021
BRIEF DESCRIPTION
Mitigation planning resources will be made available for Hazard Mitigation Planning Committee members and other interested parties in order to promote education and participation in the mitigation planning process.
DETAILS
<p>Specific planning resources will include:</p> <ul style="list-style-type: none"> • FEMA mitigation planning guidance <ul style="list-style-type: none"> ○ <i>Local Mitigation Planning Handbook</i> ○ <i>Mitigation Ideas</i> ○ <i>Integrating Hazard Mitigation Into Local Planning</i> • Other appropriate planning resources as identified throughout the duration of the planning process
LEAD AGENCY
Lea County/AECOM

OUTREACH METHOD 5
Public Participation Survey
AVAILABILITY
January 2022-April 2022
BRIEF DESCRIPTION
<p>An online public participation survey will be hosted by AECOM using the SurveyMonkey web hosting service and will be open to the public for the duration of the planning process. The primary purpose of this survey will be to solicit input from any interested parties in the planning area and will be used so that individuals throughout the planning area have the opportunity to provide valuable information and feedback to the project team. The online survey will give individuals that are unable to attend the in-person meetings the opportunity to participate in the plan update process. Information from the online survey will allow the project team to better understand the types of hazards that most concern the public and the mitigation actions that are of particular interest. The survey will be made accessible through hyperlinks posted on the project information website and can be circulated via email, Facebook, etc. Additionally, hard copies of the survey will be distributed at the in-person public meetings. The feedback received will be evaluated and incorporated into the Hazard Mitigation Planning Committee’s decision making process and the final plan.</p>
DETAILS
<p>Types of specific questions to be asked as part of this survey may include:</p> <ul style="list-style-type: none"> • Personal history with natural hazards • Natural hazard concerns • Perception of vulnerable community assets • Importance of community assets • Priorities concerning natural hazard preparedness • Steps local government can take to reduce natural hazard risk • Types of mitigation activities deemed important • Personal interest in natural hazard mitigation • Effective ways to communicate with residents • Location in the floodplain • Questions regarding flood insurance • Personal actions to mitigate property • Mitigation activities planned for the respondent’s household • Location within the planning area • Age (optional)* • Gender (optional) • Highest level of education (optional) • Length of time living in the planning area • Ownership of property versus rental status • Type of dwelling • Open comments** <p><i>* All information will be kept strictly confidential</i> <i>** Information will be processed and summarized by AECOM in order to produce summary statistics and summary responses</i></p>
LEAD AGENCY
Lea County/AECOM

Appendix E: Public Participation Survey

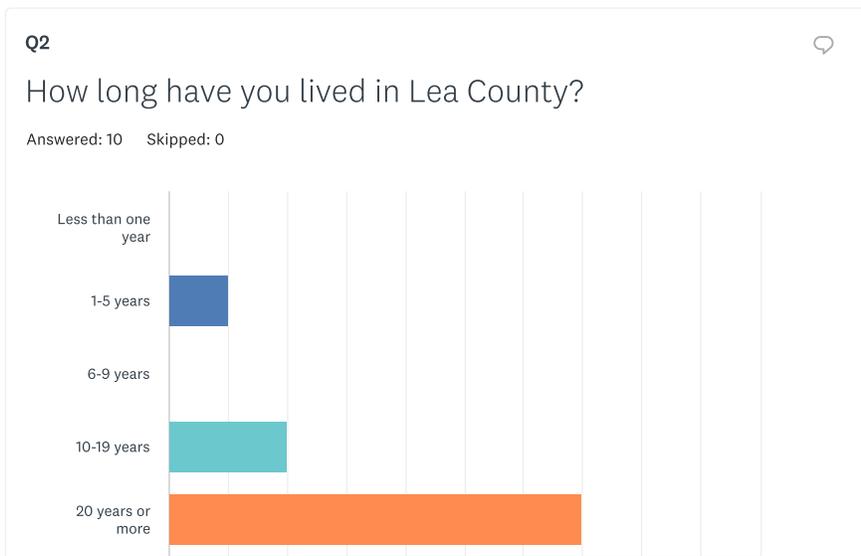
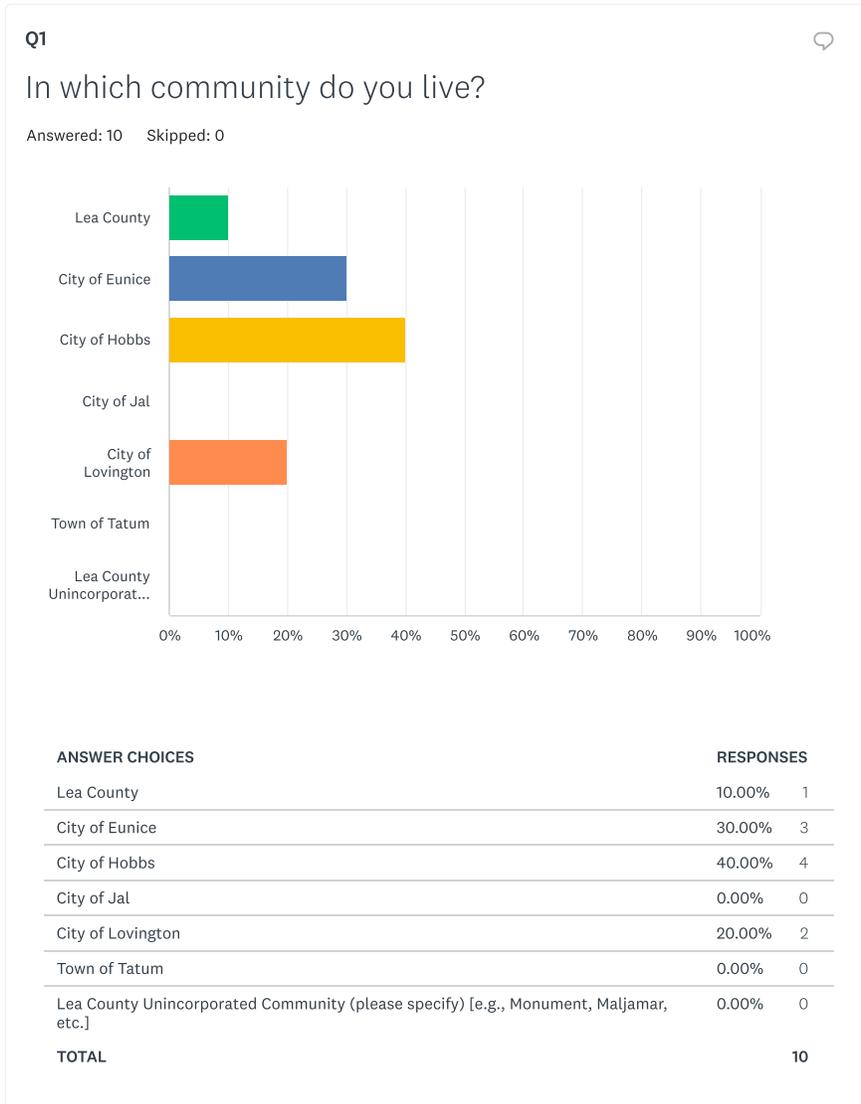
This appendix to the Lea County Hazard Mitigation Plan contains a summary of the results obtained through the public participation survey offered from March 2022 to December 2022. The survey was conducted online through SurveyMonkey, an online survey software provider, and was also made available in print form at public meetings and at other locations throughout the planning area. These written responses were added to the online database and are reflected in the summary report provided in this appendix.



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2022 Lea County Hazard Mitigation Plan Update



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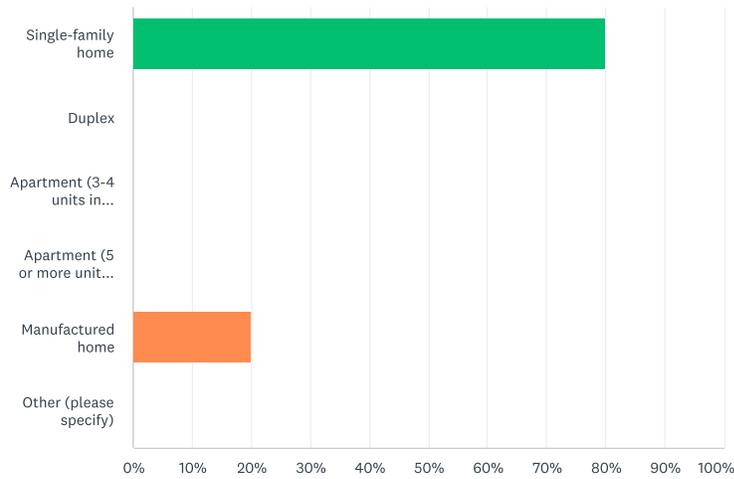
ANSWER CHOICES	PERCENTAGE	RESPONSES
Less than one year	0.00%	0
1-5 years	10.00%	1
6-9 years	0.00%	0
10-19 years	20.00%	2
20 years or more	70.00%	7
TOTAL		10

Q3



What type of building do you live in?

Answered: 10 Skipped: 0



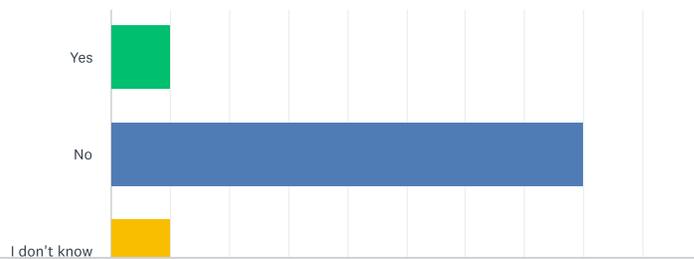
ANSWER CHOICES	PERCENTAGE	RESPONSES
Single-family home	80.00%	8
Duplex	0.00%	0
Apartment (3-4 units in structure)	0.00%	0
Apartment (5 or more units in structure)	0.00%	0
Manufactured home	20.00%	2
Other (please specify)	0.00%	0
TOTAL		10

Q4



Is your home located in a floodplain?

Answered: 10 Skipped: 0



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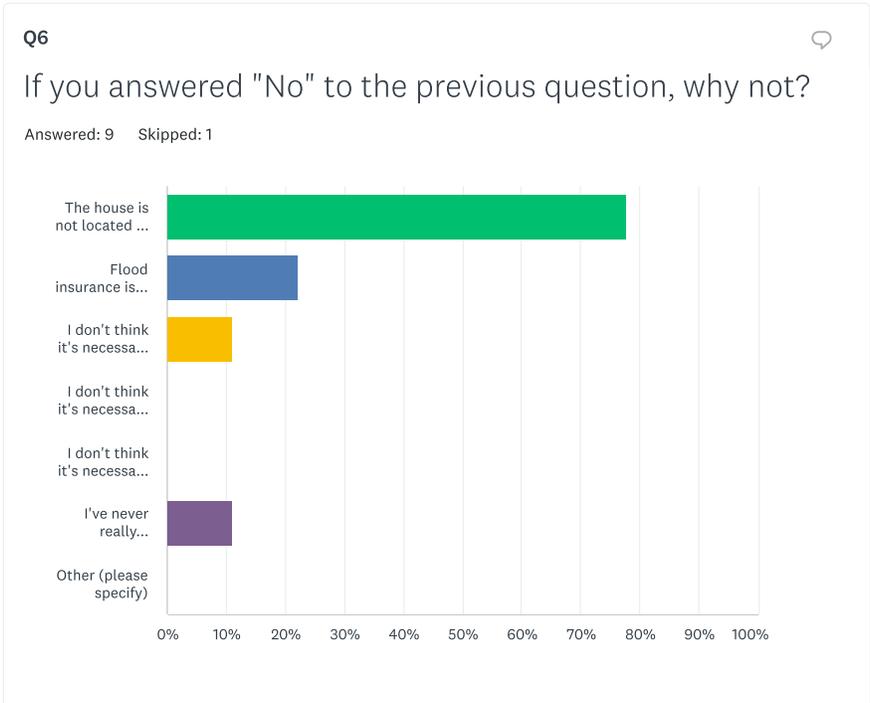
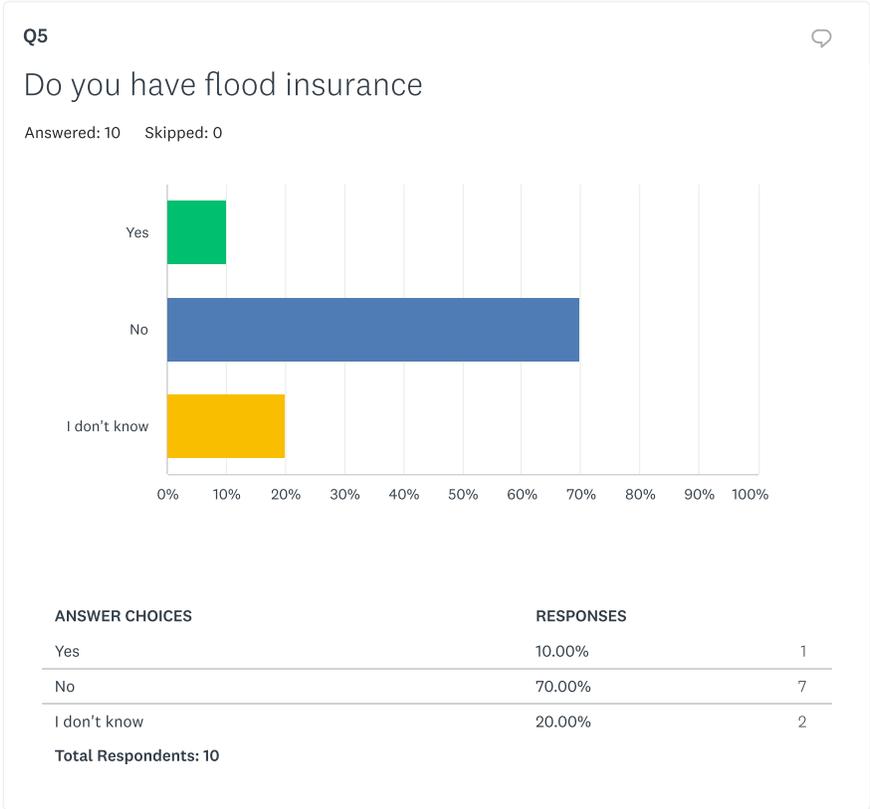
10 responses



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ANSWER CHOICES	RESPONSES	
Yes	10.00%	1
No	80.00%	8
I don't know	10.00%	1
Total Respondents: 10		



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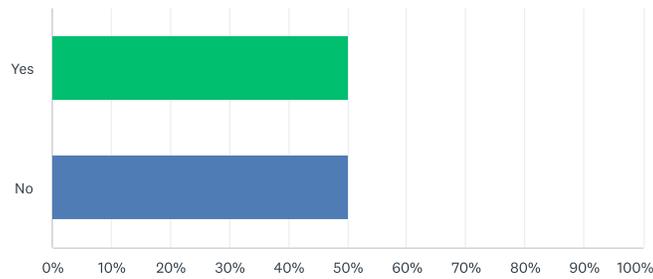
I don't think it's necessary because it never floods	11.11%	1
I don't think it's necessary because I'm elevated or otherwise protected	0.00%	0
I don't think it's necessary because I have homeowners insurance	0.00%	0
I've never really considered it	11.11%	1
Other (please specify)	0.00%	0
Total Respondents: 9		

Q7



Have you ever experienced or been impacted by a disaster in Lea County or neighboring areas?

Answered: 10 Skipped: 0



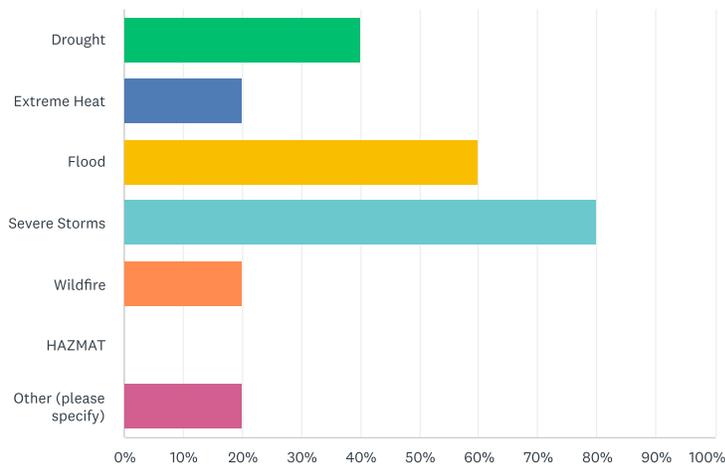
ANSWER CHOICES	RESPONSES	
Yes	50.00%	5
No	50.00%	5
TOTAL		10

Q8



If yes, Which of these hazards have you experienced or been impacted by? (Check all that apply.)

Answered: 5 Skipped: 5



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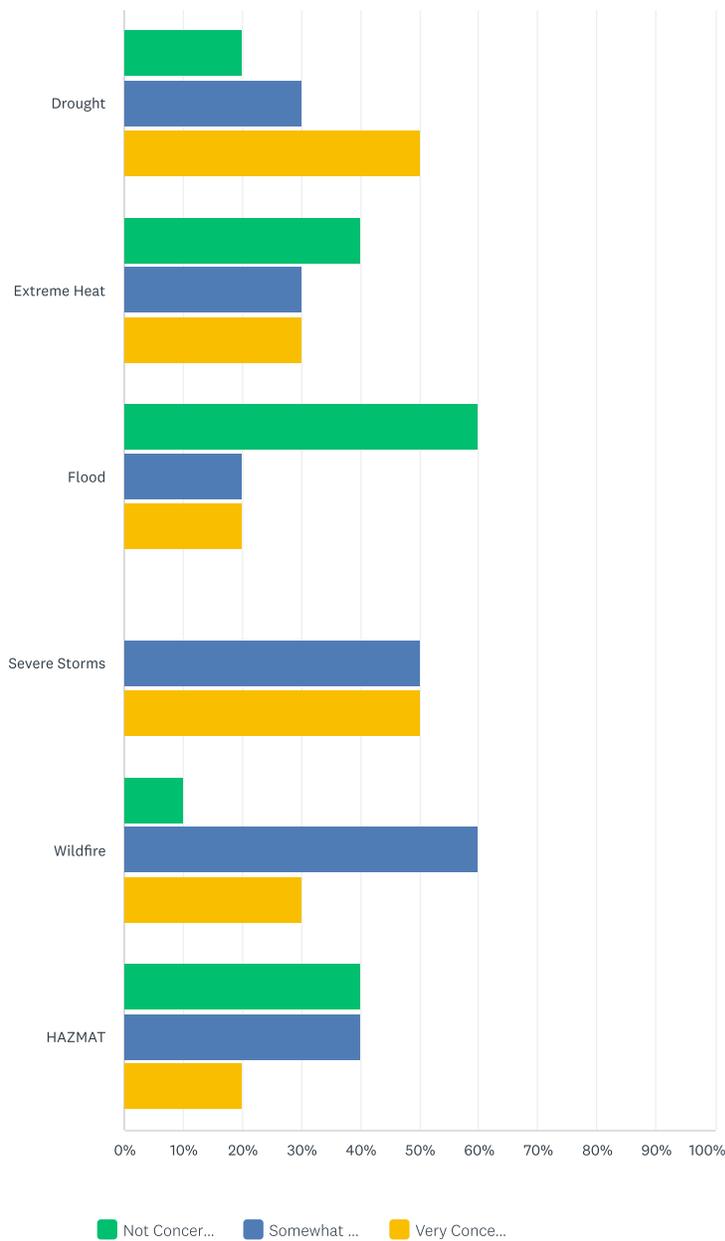
Flood	60.00%	3
Severe Storms	80.00%	4
Wildfire	20.00%	1
HAZMAT	0.00%	0
Other (please specify)	20.00%	1
Total Respondents: 5		

Q9



How concerned are you about the possibility of your community being impacted by each of these hazards? (Check the corresponding circle for each natural hazard.)

Answered: 10 Skipped: 0



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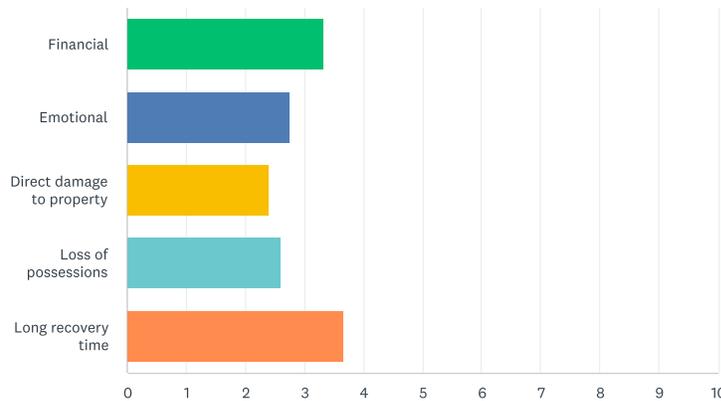
Extreme Heat	40.00% 4	30.00% 3	30.00% 3	10	1.90
Flood	60.00% 6	20.00% 2	20.00% 2	10	1.60
Severe Storms	0.00% 0	50.00% 5	50.00% 5	10	2.50
Wildfire	10.00% 1	60.00% 6	30.00% 3	10	2.20
HAZMAT	40.00% 4	40.00% 4	20.00% 2	10	1.80

Q10



What was the most difficult part for you in recovering from past disasters that you have experienced? (1 being least difficult and 5 being most difficult.)

Answered: 7 Skipped: 3



	1	2	3	4	5	TOTAL	SCORE
Financial	16.67% 1	33.33% 2	16.67% 1	33.33% 2	0.00% 0	6	3.33
Emotional	25.00% 1	0.00% 0	25.00% 1	25.00% 1	25.00% 1	4	2.75
Direct damage to property	20.00% 1	20.00% 1	0.00% 0	0.00% 0	60.00% 3	5	2.40
Loss of possessions	0.00% 0	0.00% 0	60.00% 3	40.00% 2	0.00% 0	5	2.60
Long recovery time	33.33% 2	33.33% 2	16.67% 1	0.00% 0	16.67% 1	6	3.67

Q11



In your opinion, which of the following categories are most likely to be impacted by natural hazards in your community? (1 being least likely and 6 being most likely.)

Answered: 10 Skipped: 0



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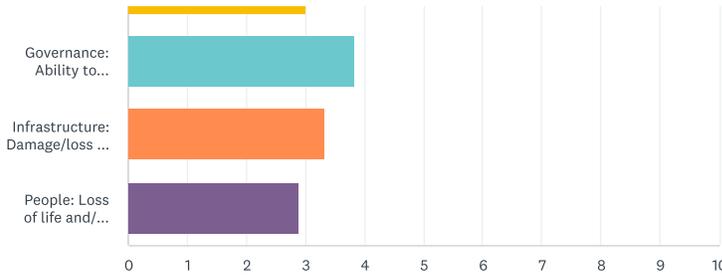
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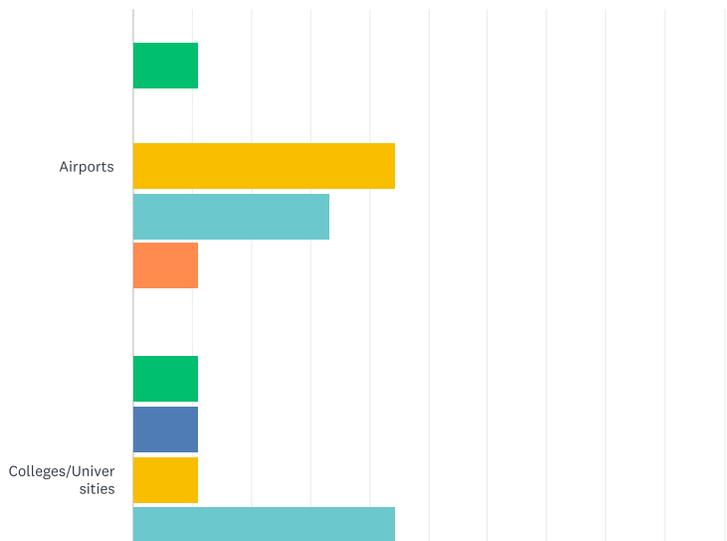
	1	2	3	4	5	6	TOTA
Cultural/Historic: Damage or loss of libraries, museums, historic properties, etc.	14.29% 1	0.00% 0	14.29% 1	42.86% 3	0.00% 0	28.57% 2	
Economic: Business interruptions/closures, job losses, etc.	0.00% 0	40.00% 2	0.00% 0	40.00% 2	0.00% 0	20.00% 1	
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.	0.00% 0	28.57% 2	0.00% 0	28.57% 2	28.57% 2	14.29% 1	
Governance: Ability to maintain order and/or provide public amenities and services	16.67% 1	0.00% 0	50.00% 3	16.67% 1	16.67% 1	0.00% 0	
Infrastructure: Damage/loss of roads, bridges, utilities, schools, etc.	11.11% 1	22.22% 2	11.11% 1	0.00% 0	55.56% 5	0.00% 0	
People: Loss of life and/or injuries	22.22% 2	0.00% 0	22.22% 2	0.00% 0	11.11% 1	44.44% 4	

Q12



How important is protecting each of the following specific community assets to you when dealing with a natural disaster? (Check the appropriate circle for each asset.)

Answered: 10 Skipped: 0



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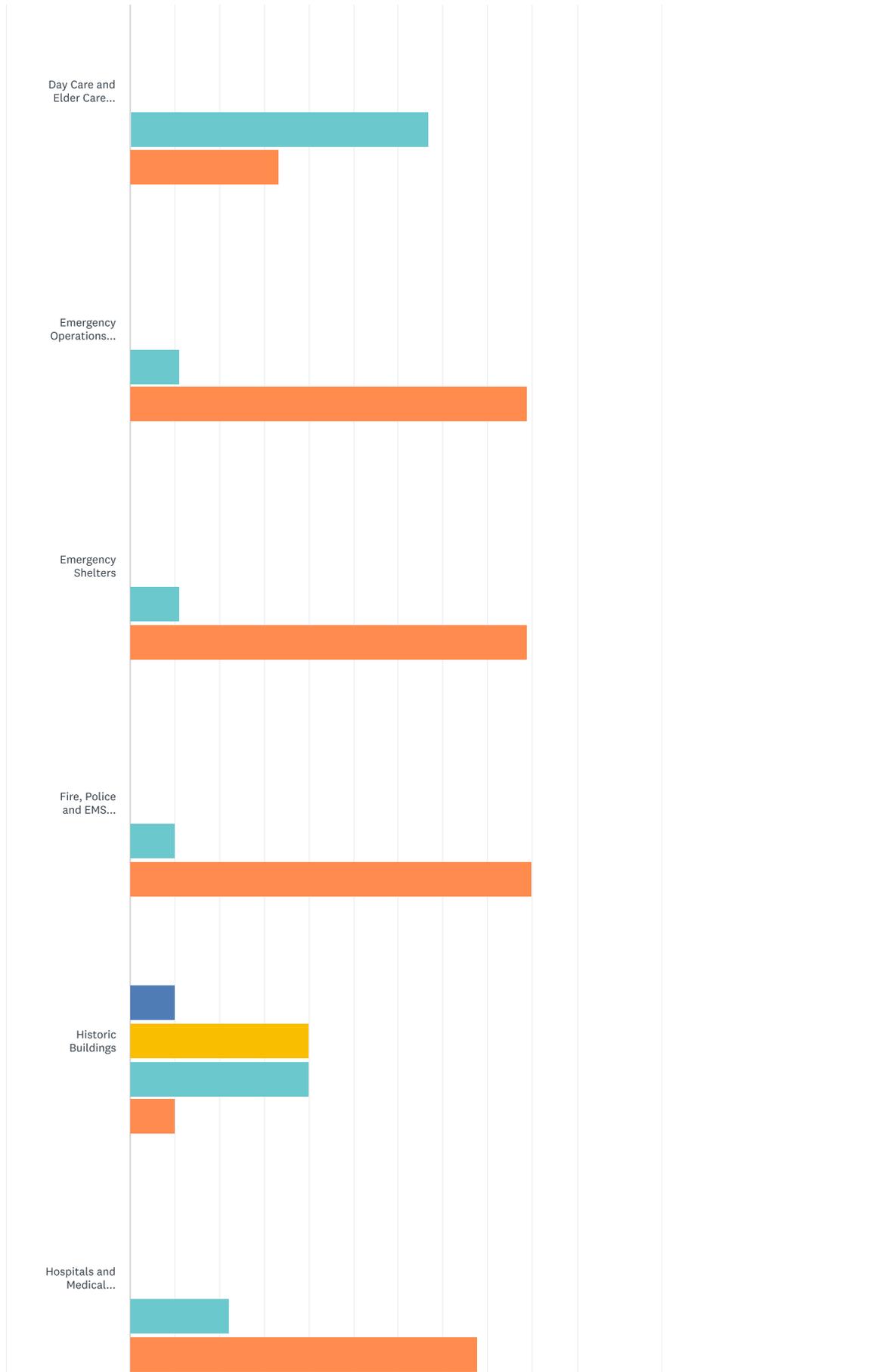
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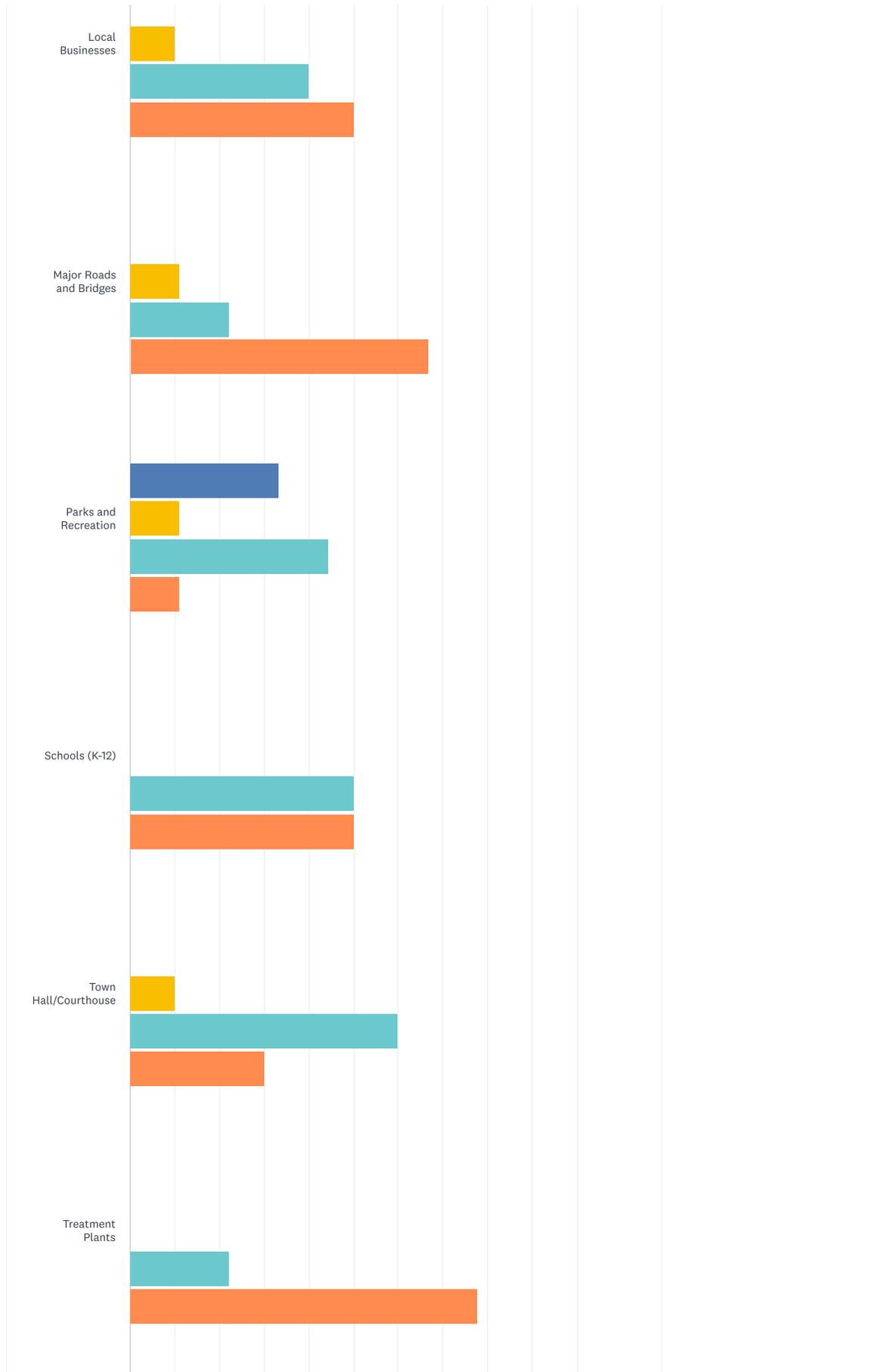
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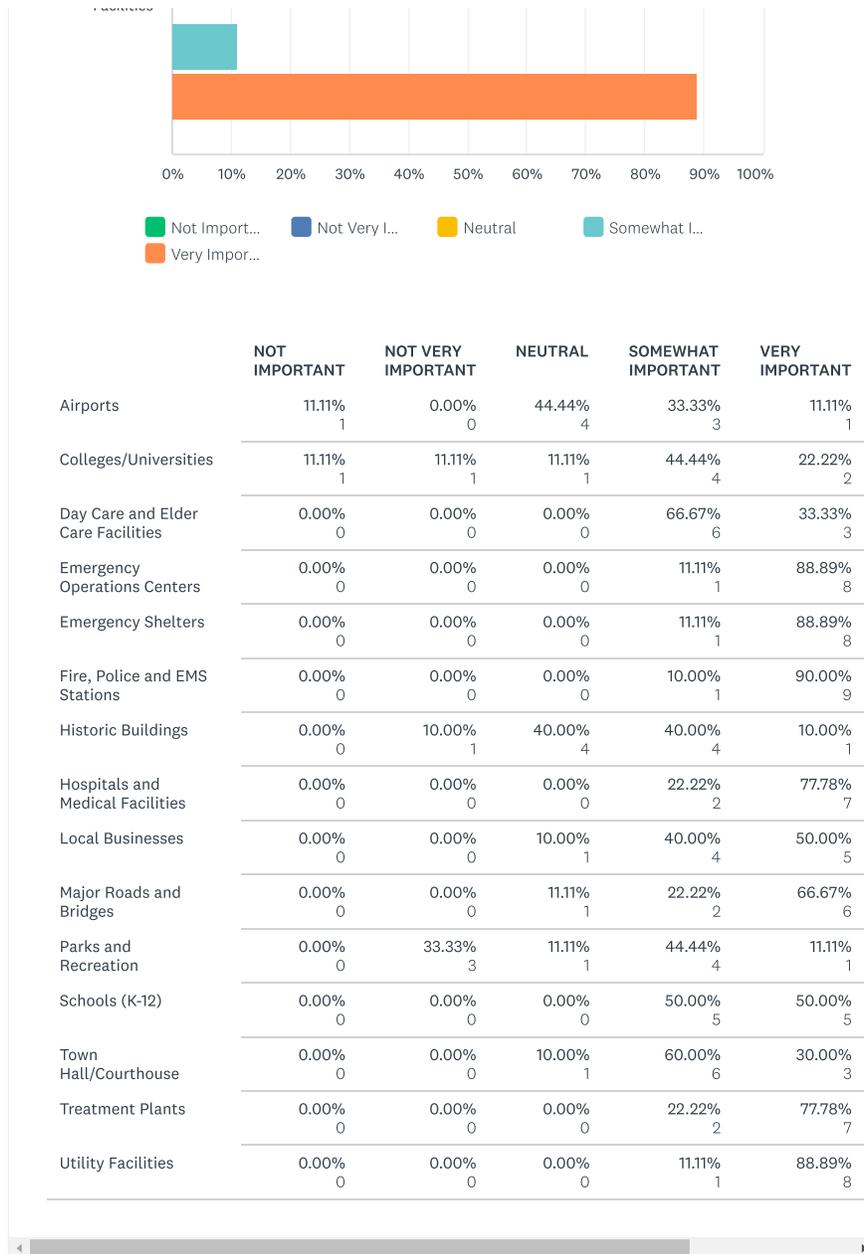
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Q13

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. Please tell us how important each statement is to you by checking the appropriate circle for each.

Answered: 10 Skipped: 0

Protecting private...

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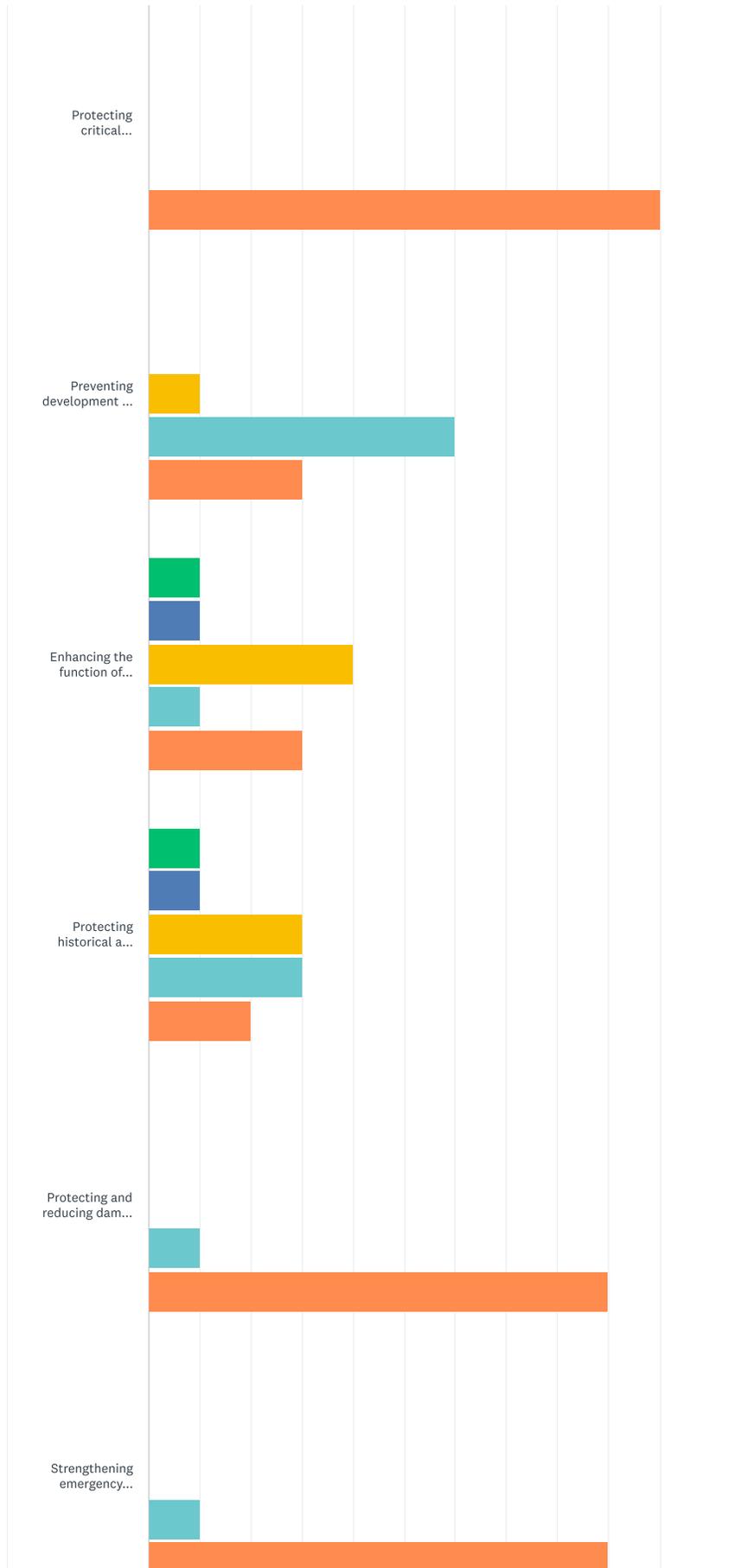
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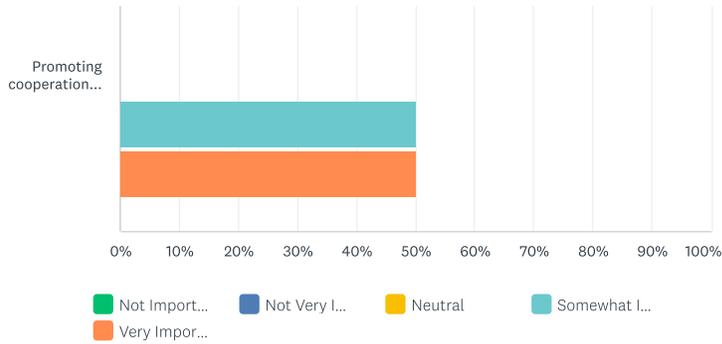
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	NOT IMPORTANT	NOT VERY IMPORTANT	NEUTRAL	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL
Protecting private property	0.00% 0	0.00% 0	0.00% 0	44.44% 4	55.56% 5	5
Protecting critical facilities (for example, hospitals, police stations, fire stations, etc.)	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 10	10
Preventing development in hazard areas	0.00% 0	0.00% 0	10.00% 1	60.00% 6	30.00% 3	3
Enhancing the function of natural features (for example, streams, wetlands, etc.)	10.00% 1	10.00% 1	40.00% 4	10.00% 1	30.00% 3	3
Protecting historical and cultural landmarks	10.00% 1	10.00% 1	30.00% 3	30.00% 3	20.00% 2	2
Protecting and reducing damage to utilities	0.00% 0	0.00% 0	0.00% 0	10.00% 1	90.00% 9	9
Strengthening emergency services (for example, police, fire, ambulance)	0.00% 0	0.00% 0	0.00% 0	10.00% 1	90.00% 9	9
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	0.00% 0	0.00% 0	0.00% 0	50.00% 5	50.00% 5	5

Q14

What are some steps that you and/or your local government could take to reduce or eliminate the risk of future natural hazard damages in your neighborhood?

Answered: 9 Skipped: 1

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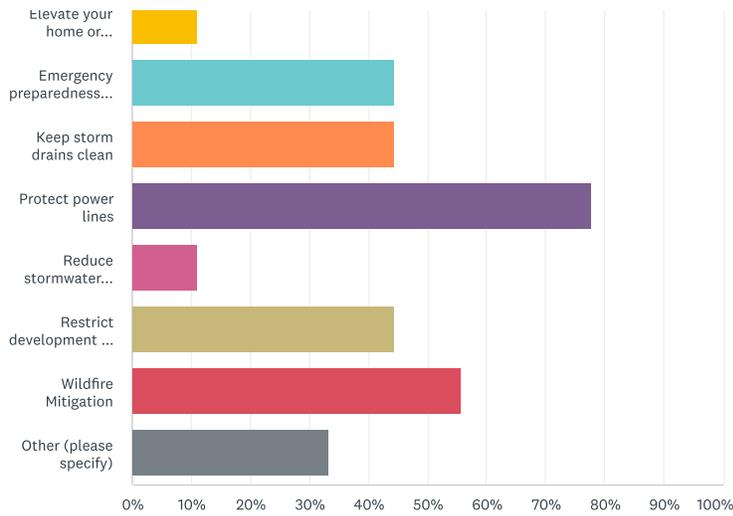
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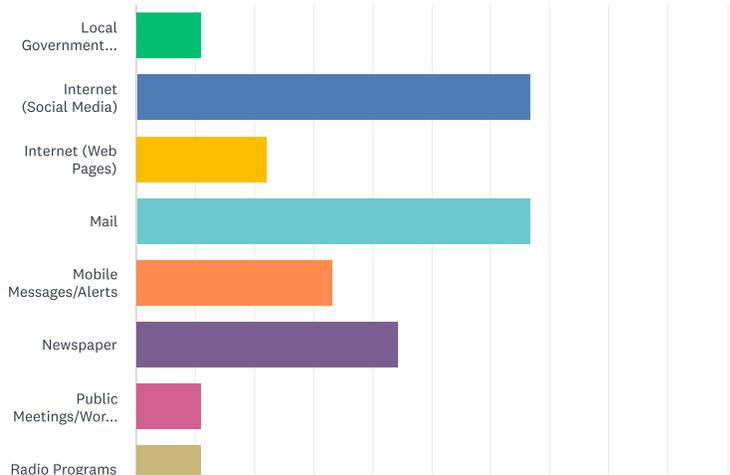


ANSWER CHOICES	RESPONSES
Assist vulnerable populations	44.44% 4
Education and awareness activities	55.56% 5
Elevate your home or business	11.11% 1
Emergency preparedness kits	44.44% 4
Keep storm drains clean	44.44% 4
Protect power lines	77.78% 7
Reduce stormwater runoff	11.11% 1
Restrict development in floodplain areas	44.44% 4
Wildfire Mitigation	55.56% 5
Other (please specify)	33.33% 3
Total Respondents:	9

Q15

What are the most effective ways for you to receive information about how to make your home and neighborhood more resistant to natural hazards?

Answered: 9 Skipped: 1



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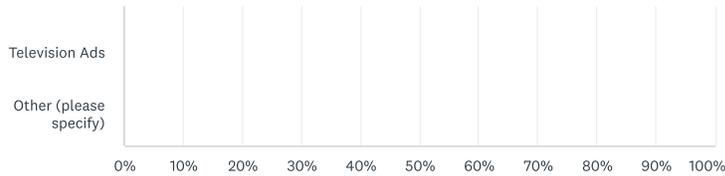
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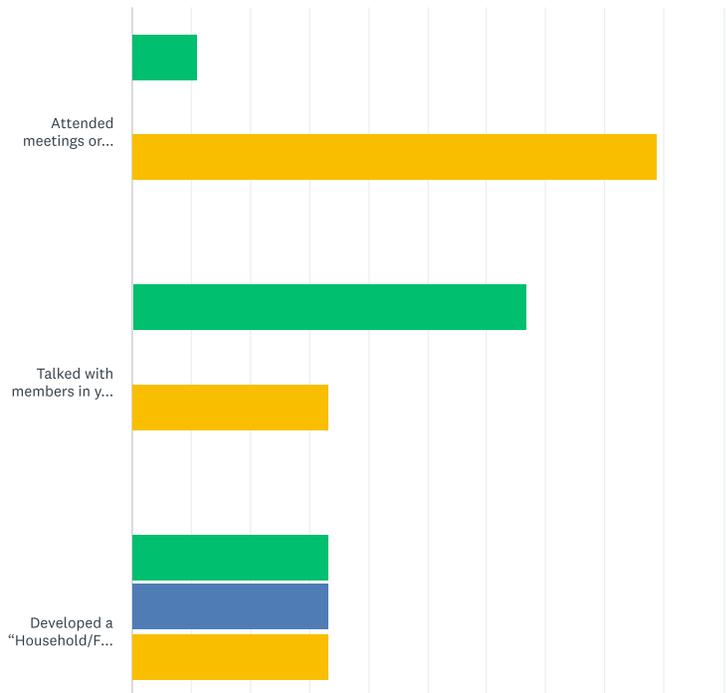
ANSWER CHOICES	RESPONSES	
Local Government Channel	11.11%	1
Internet (Social Media)	66.67%	6
Internet (Web Pages)	22.22%	2
Mail	66.67%	6
Mobile Messages/Alerts	33.33%	3
Newspaper	44.44%	4
Public Meetings/Workshops	11.11%	1
Radio Programs	11.11%	1
Radio Ads	0.00%	0
Television News	0.00%	0
Television Ads	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 9		

Q16



In the following list, please check the activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. (Please check one response for each preparedness activity.)

Answered: 9 Skipped: 1



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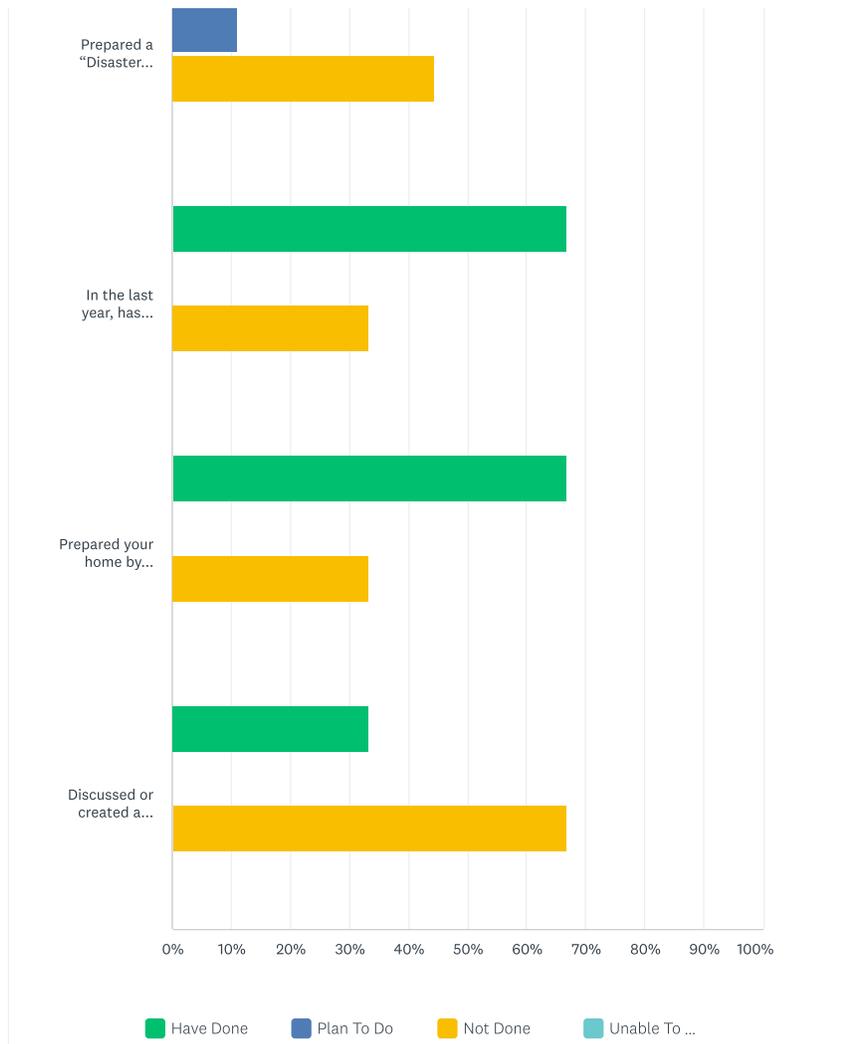
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	HAVE DONE	PLAN TO DO	NOT DONE	UNABLE TO DO	TOTAL
Attended meetings or received written information on natural disasters or emergency preparedness?	11.11% 1	0.00% 0	88.89% 8	0.00% 0	9
Talked with members in your household about what to do in case of a natural disaster or emergency?	66.67% 6	0.00% 0	33.33% 3	0.00% 0	9
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	33.33% 3	33.33% 3	33.33% 3	0.00% 0	9
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries or other emergency supplies)?	44.44% 4	11.11% 1	44.44% 4	0.00% 0	9
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	66.67% 6	0.00% 0	33.33% 3	0.00% 0	9
Prepared your home by installing smoke detectors on each level of the house?	66.67% 6	0.00% 0	33.33% 3	0.00% 0	9
Discussed or created a utility shutoff procedure in the event of a natural disaster?	33.33% 3	0.00% 0	66.67% 6	0.00% 0	9

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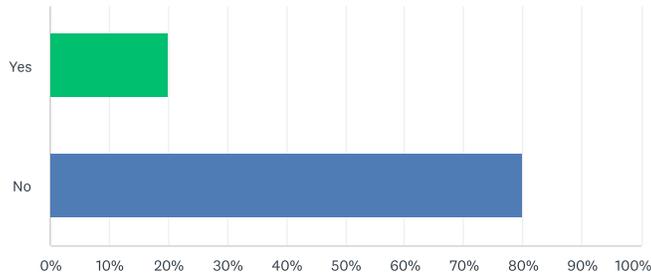


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etc.)?)

Answered: 10 Skipped: 0



ANSWER CHOICES

RESPONSES

Yes	20.00%	2
No	80.00%	8
TOTAL		10

Q18



Additional Comments

Answered: 3 Skipped: 7

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Appendix F: Meeting Files

This appendix to the Lea County Hazard Mitigation Plan contains a copy of the meeting materials used during the development of the plan.

Lea County Hazard Mitigation Plan

Kickoff Meeting

June 22, 2021

1:30 p.m. – 3:30 p.m.

In-Person (Lea County Annex) and Virtual (MS Teams) Meeting

AGENDA

1. Welcome and Introductions
2. Project Overview
 - Purpose, scope and schedule
 - Roles and responsibilities
3. Plan Update Process
 - Planning team organization, including official adoption
 - Leveraging existing resources
 - Communication, including websites, social media, etc.
4. Review and Discussion of Existing Plan
5. Capability Assessment Surveys
6. Public Participation Survey
 - Public outreach and stakeholder engagement strategy
 - Discussion of questions to ask the public
7. Mitigation Goals
 - Review existing mitigation goals
8. Hazard Identification
 - Hazard identification and assessment exercise
 - Includes discussion of existing and new hazards
9. Mitigation Action Plans
 - Creation of new actions
 - Update of existing actions
10. Maintaining Momentum and Implementing the Plan
 - Keeping the public and stakeholders involved
 - Plan Maintenance Procedures

11. Reviewing the Final Draft

- Status on plan sections
- Review/comment process
- Suggested areas of focus

12. Questions and Open Discussion

- Potential opportunities for this plan update
- Potential obstacles or barriers
- Other local issues, concerns or ideas

13. Next Steps

- Jurisdictions will review and begin updating Mitigation Action Plans (MAPs)
- Discuss time/date/location for Draft Hazard Mitigation Plan Meeting

MEETING SIGN-IN

▶ TIME: June 22, 2021 @ 1:30PM MDT
 PLACE: Lea County Annex Building
 1019 East Bender Boulevard
 Hobbs, NM 88240

▶ Lea County Hazard Mitigation Plan Update – Kickoff Meeting

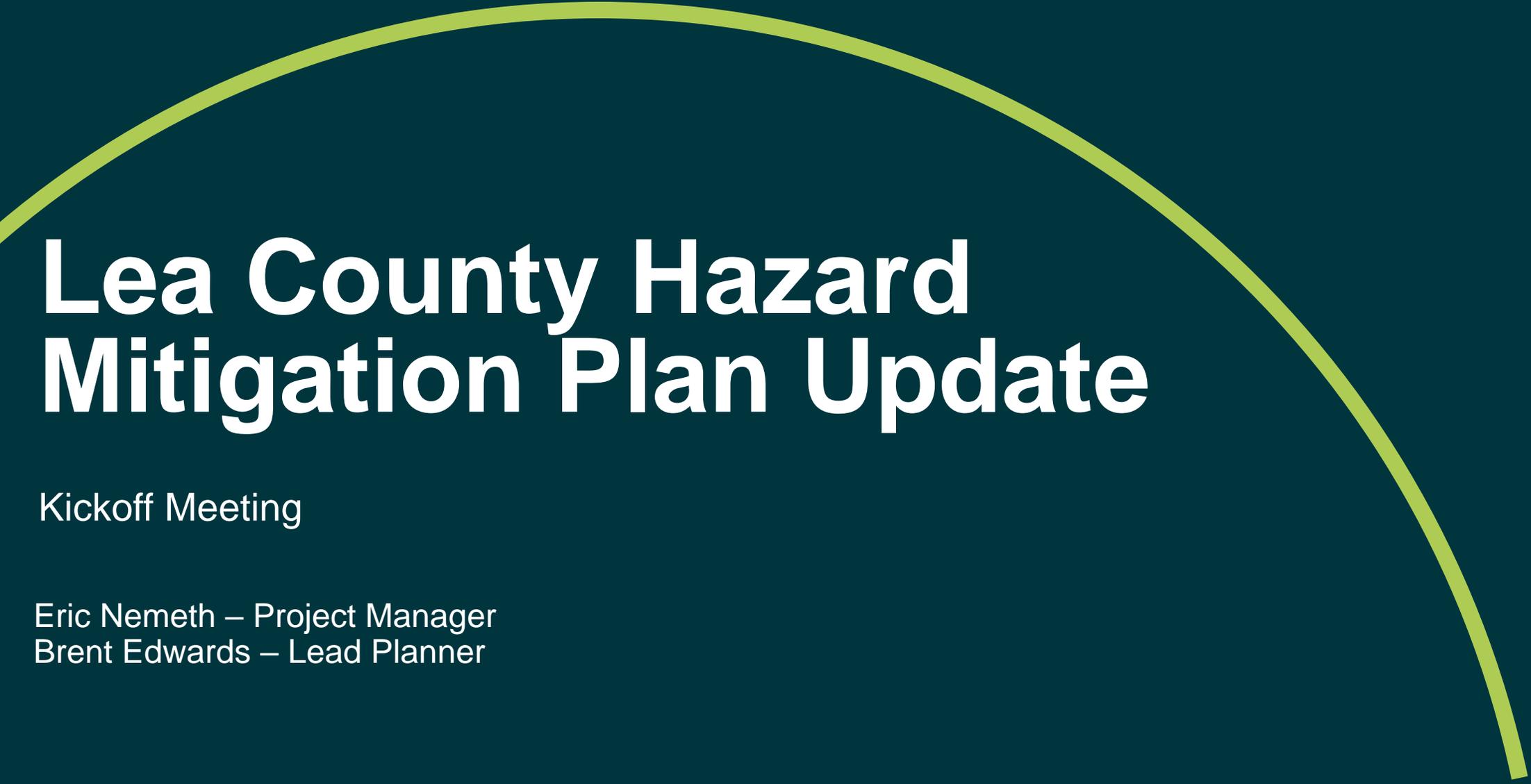
Name	Title	Organization	Phone	Email
Eric Nemeth	Project Manager	AECOM	505-206-1395	eric.nemeth@accom.com
Cassie Corley	Environmental Supervisor	Lea County	575-942-8222	ccorley@leacounty.net
Lorenzo Velasquez	Director	Lea County	575-605-6561	lvelasquez@leacounty.net
Cheryl LeCrone	Asst. Clerk	Town of Tatum	573-398-4633	townoftatum4@leaco.net
Marilyn J. Burns	Mayor	Town of Tatum	575-369-6750	tatummayor@leaco.net
AUGUST FONS	DEP. CLERK	HFD	575-942-8210	AFONS@HOBBSNM.ORG
BARRY YOUNG	DEPUTY CLERK	HFD	575-397-8606	byoung@hobbsnm.org
Crystal Ball	Planning & Zoning Coordinator	City of Lovington	575-396-9301	cball@lovington.org
(See next page for virtual attendees)				

MEETING SIGN-IN

▶ TIME: June 22, 2021 @ 1:30PM MDT
 PLACE: Lea County Annex Building
 1019 East Bender Boulevard
 Hobbs, NM 88240

▶ Lea County Hazard Mitigation Plan Update – Kickoff Meeting

Name	Title	Organization	Phone	Email
<u>On the phone:</u>				
David Turk	Project Director	AECOM	505-554-5379	dave.turk@aecom.com
Brent Edwards	Lead Planner	AECOM	919-801-0088	brent.edwards@aecom.com
Pat Walter	Fire Chief	Jal Fire Dept.	575-441-1990	p.walter@cityofjal.us
Casey Arcidez	Chief of Police	Eunice Police Dept.	575-552-5073	carcidez@cityofeunice.org
Terrance Lizardo	Fire Chief	Lovington Fire Dept.	575-396-2359	tlizardo@lovington.org
Whitney Moody	EMS Coordinator	Jal Fire Dept.	575-602-5805	w.moody@cityofjal.us
Sara Gerlitz	Mitigation Specialist	NMDHSEM	505-476-9682	Sara.M.Gerlitz@state.nm.us
Manny Gomez	City Manager	City of Hobbs	575-397-9206	mgomez@hobbsnm.org



Lea County Hazard Mitigation Plan Update

Kickoff Meeting

Eric Nemeth – Project Manager
Brent Edwards – Lead Planner

- Project Overview
- Capability Assessments
- Public Participation Survey
- Mitigation Goals
- Hazard Exercise
- Mitigation Actions
- Review of Final Draft
- Adoption Process
- Next Steps
- Open Discussion

Agenda



Vision and Purpose

Hazard mitigation planning:

- Prepares communities for the future by reducing their risk to natural disasters.

Comprehensive hazard mitigation planning prepares a community to:

- Protect lives and property
- Avoid damages and save dollars
- Reduce or eliminate future damages by guiding new development
- Speed post-disaster recovery
- Avoid interruptions caused by hazards

Structure

A hazard mitigation plan describes:

- “What are we at risk for and how do we fix it”

A hazard mitigation plan is comprised of:

- Introduction and description of the planning process
- Description of the planning area (i.e. Lea County)
- Identification of the hazards affecting this area
- Risk assessment to determine the affects of those hazards
- Capabilities you have to protect yourself from the hazards
- Actions on how you plan, within your capabilities, to reduce the hazards from the assessed risk to protect that part of the county

Planning Resources



Local Mitigation Planning Handbook

March 2013



FEMA planning guidance

- Local Mitigation Planning Handbook
- Mitigation Ideas
- Integrating Hazard Mitigation Into Local Planning



Mitigation Ideas

A Resource for Reducing Risk to Natural Hazards

January 2013



Integrating Hazard Mitigation Into Local Planning

Case Studies and Tools for Community Officials

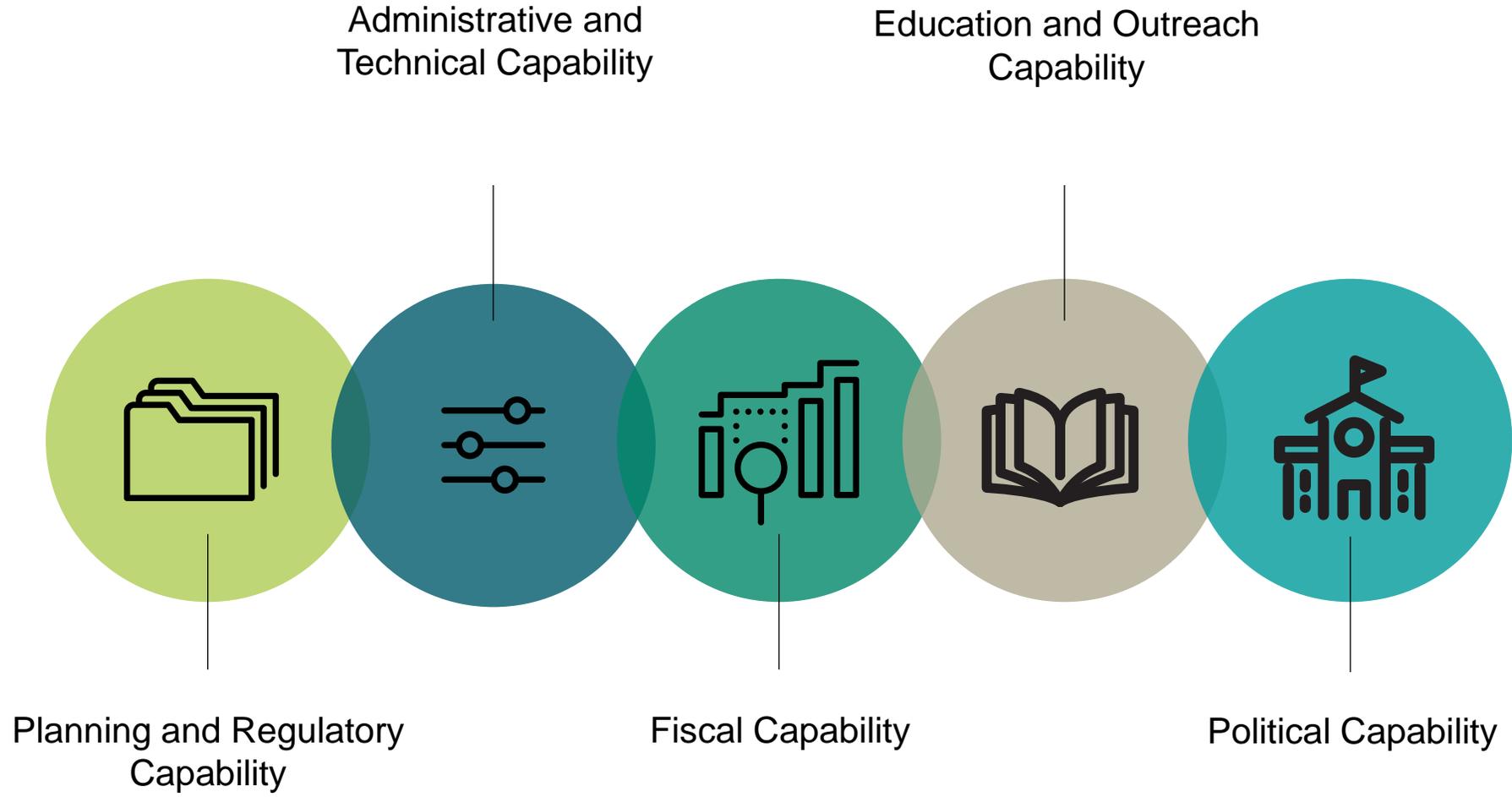
March 1, 2013



Links to other online planning resources

Capability Assessment

Process



Capability Assessment Methodology

0-29

Limited Overall Capability

30-59

Moderate Overall Capability

60-100

High Overall Capability

Public Outreach Strategy

Public Outreach Strategy

Goals

- Generate public interest
- Solicit citizen input
- Engage additional partners in the planning process

Identification of specific opportunities for participation

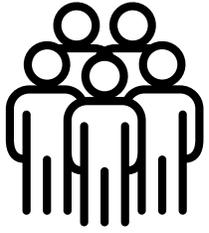
- In-person/virtual meetings
- Web-based survey(s)
- Social media (Facebook, Twitter, RSS, etc.)

Products/resources

- Project information fact sheet

Mitigation Strategy

Mitigation Strategy



Strategies



Goals



Objectives



Actions

Goals

1

Minimize loss of life and property from natural hazard events, Protect public health and safety, Reduce risk and effects of natural hazards. Improve disaster prevention.

2

Increase public preparedness awareness of risk from natural hazards through countywide information programs.

3

Identify hazards and assess risk for local area. Ascertain historical incidence and frequency of occurrence. Determine increased risk from specific hazards due to location and other factors.

4

Improve forecasting of natural hazard events.

5

Provide guidance for building in high-risk areas including building construction to reduce the dangers of natural hazards.

6

Support government and public response to natural hazard disasters

Hazards

Hazards Addressed

State Hazards

- Dam Failure
- Drought
- Earthquake
- Expansive Soils
- Extreme Heat
- Flood
- Hail
- High Wind
- Lightning
- Land Subsidence
- Landslide
- Severe Storms
- Tornado
- Volcano

Lea County Hazards

- Drought
- Extreme Heat
- Flood
- Severe Storms
- Wildfire
- HAZMAT

Hazards Exercise



Drought

Extreme Heat

Flood

Severe Storms

Wildfire

HAZMAT



Mitigation Action Plans

Actions

Discuss Actions

- ? What is the best process of completion?
- ? What is each action's priority? (High/Medium/Low)
- ? What is action's funding source and estimated cost?
- ? What is action's timeframe?
- ? What is needed to complete the action? (funding/resources)

Hazard Mitigation Plan Update

- Mitigation Actions need to updated with a status and description

Requirement:

- Every hazard needs to have at least two mitigation actions for each jurisdiction

Plan Maintenance

Plan Maintenance Questions

What will be the schedule for any ongoing meetings of the HMPC, prior to the next 5-year plan update?

- Annual meetings, bi-annual meetings, “as-needed” meetings, etc.

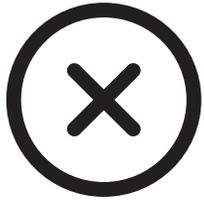
To what extent will you seek to integrate the regional plan with other local plans, policies and programs?

- Comprehensive plans, land use plans, emergency operations plans, etc.

What other implementation strategies can you use?

Draft Review

Process



**Acknowledge any wrong data
or statements**



**Addition of missing
information/new data**



Options for comments
Track changes
Word documents list
Email list

Adoption

Adoption Process

- Once the plan is Approved Pending Adoption (APA), the county can then adopt the plan
- All jurisdictions must adopt the plan individually
- Each jurisdiction has one year to adopt the plan from the time the county adopts
- Jurisdiction specific adoption gives each jurisdiction the ability to apply for funding on their own

Next Steps

- AECOM to receive information discussed to incorporate
- Complete capability assessment
- Start reviewing actions
- Next meeting

Questions?

Thank you!

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better world

Project Name:	<i>Lea County, New Mexico, Hazard Mitigation Plan Update</i>	
Meeting:	<i>Kickoff Meeting</i>	
Date:	June 22, 2021	Time: 1:30 MDT
Place:	In- Person (Lea County Annex) and Virtual (MS Teams) Meeting	

Attendees: See attached Sign-In sheet.

Materials: Agenda and Presentation Slides

Welcome and Introductions

- E. Nemeth (AECOM Project Manager) introduced himself and explained AECOM is supporting Lea County and incorporated jurisdictions with the update to their Hazard Mitigation Plan (HMP). He indicated the purpose of this meeting was to (1) explain hazard mitigation planning, (2) kickoff the process to update the Lea County Multi-Jurisdictional HMP, and (3) obtain input from the participating communities to support the update. He then gave instructions for those in-person to use the sign-in sheet and those on the phone to sign in using the MS Teams chat box.
- D. Turk (AECOM Project Director) introduced himself and outlined his mitigation experience and noted that he was the immediate past chair of the New Mexico Floodplain Managers Association.
- B. Edwards (AECOM Lead Mitigation Planner) introduced himself and explained his background in hazard mitigation planning. He started in North Carolina and is currently working on plans for the state of New Mexico.
- E. Nemeth then introduced C. Corley, from Lea County, and invited C. Corley to share any opening statements about the project and plan.
- C. Corley (Lea County Environmental Supervisor) introduced herself and explained this is their second attempt to finalize their HMP. The first attempt at the plan update was not finalized by the Federal Emergency Management Agency (FEMA). C. Corley is the Lea County Project Manager for this HMP update.
- L. Velasquez (Lea County Director) introduced himself. He commented on how the first HMP was close to being complete but could not move forward since FEMA did not approve. When the plan is complete, he encouraged others to use the Lea County HMP as a source to be adopted into other municipalities.
- E. Nemeth had attendees in the room first go around for introductions and then had attendees on the phone introduce themselves.
- M. Burns (Town of Tatum Mayor) introduced herself.
- C. LeCrone (Town of Tatum Assistant Clerk) introduced herself.
- C. Ball (City of Lovington Planning and Zoning Coordinator) introduced herself.
- B. Young (City of Hobbs Fire Department Deputy Chief) introduced himself.
- A. Fons (City of Hobbs Police Department Deputy Chief) introduced himself.
- C. Arcidez (City of Eunice Police Department Chief of Police) introduced himself.
- T. Lizardo (City of Lovington Fire Department Fire Chief) introduced himself.

- P. Walter (City of Jal Fire Department Fire Chief) introduced herself.
- S. Gerlitz (NMDHSEM Mitigation Specialist) introduced herself. S. Gerlitz represents the state.
- W. Moody (City of Jal Fire Department EMS Coordinator) introduced herself.
- E. Nemeth closed the introductions and started the PowerPoint presentation by going through the agenda.

Project Overview

- E. Nemeth explained the vision and purpose behind hazard mitigation planning and how it prepares communities for the future by reducing their risk towards natural disasters.
- E. Nemeth emphasized the overarching purpose of a HMP is to protect lives and property. The goal is to be more resilient when a natural disaster occurs by having a HMP in place. An approved HMP also opens the door to grant funding for pre- and post-disaster mitigation.
- E. Nemeth explained a basic HMP describes what are we at risk for and how do we fix it. He then reviewed the general structure of an HMP. The structure is comprised of an: (1) introduction and description of the planning process, (2) description of the planning area, which in this case is Lea County, (3) identification of the hazards affecting this area, (4) risk assessment to determine the effects of those hazards, (5) capabilities communities have to protect themselves from the hazards, and (6) actions on how communities within their capabilities plan to reduce the hazards from the assessed risk.
- E. Nemeth recommended three beneficial mitigation planning resources published by FEMA which are (1) Local Mitigation Planning Handbook, (2) Mitigation Ideas, and (3) Integrating Hazard Mitigation into Local Planning. These publications can be found on FEMA's website (www.fema.gov) and help with developing strategies to protect against natural disasters.

Capability Assessment

- E. Nemeth explained the information that needs to be gathered to update the HMP. The initial information comes from conducting a capability assessment to understand the resources of each jurisdiction.
- The capability assessment is broken down into five sections which include: (1) Planning and Regulatory Capability, (2) Administrative and Technical Capability, (3) Fiscal Capability, (4) Education and Outreach Capability, and (5) Political Capability.
- After conducting the capability assessment, a scoring system is applied that indicates in general each community's capability to mitigate hazards. The scoring system is as follows:
 - 0-29 points = Limited overall capability
 - 30-59 points = Moderate overall capability
 - 60-100 points = High overall capability
- E. Nemeth explained the scoring system helps to define from a high level the type of mitigation actions that are possible for a community. For limited capability, a community may want to consider implementing mitigation actions that build up their resources to better protect against hazards. For moderate and high capability, communities can implement more extensive mitigation actions to provide a stronger layer of protection against disasters.
- E. Nemeth walked through the capability assessment survey.

- E. Nemeth explained the capability assessment survey will be distributed to each jurisdiction a few weeks after the meeting.

Public Outreach Strategy

- E. Nemeth described the goal of the public outreach for the HMP is to generate public interest, solicit citizen input, and engage more partners in the planning process.
- E. Nemeth explained the main purpose of the HMP is to reduce the impact of disasters on lives and property (i.e. the public); therefore, it is important to generate public interest in hazard mitigation planning. Public input can provide important information useful for decision making, and the coordination and cooperation help drive action forward.
- E. Nemeth explained the different opportunities to get participation from the public. The opportunities include in-person/virtual meetings, web-based surveys, and social media posts (Facebook, Twitter, RSS, etc.).
- E. Nemeth explained from previous experience web-based surveys achieve better results and participation than an in-person public meeting. Therefore, AECOM uses an online public survey, as it was found to greatly increase the amount of public input and involvement.
- E. Nemeth described how using SurveyMonkey, which is a web survey platform, has been a great way to get public engagement. The questionnaire can be filled out by the public at their leisure, and the surveys do not take much time to complete.
- E. Nemeth explained that FEMA requires two public engagements during the planning process. For instance, one engagement can be a survey, and the other can be a meeting.
- E. Nemeth invited B. Edwards to share his screen to look at the survey monkey questions to get it updated for Lea County.
- B. Edwards demonstrated a standard questionnaire that AECOM typically uses for HMPs. He invited participants to provide any initial comments on the public survey to better suit their municipalities need.
- E. Nemeth invited attendees to participate in the review of the survey question. The goal is to go through each question in the survey and change or omit questions as necessary to accommodate the needs for Lea County.
- C. Corley pointed out in question 4 (most difficult part of recovering from a disaster) that the “other” answer option does not have a text box where participants can elaborate. B. Edwards suggested adding a follow up question to resolve this issue.
- B. Edwards elaborated on the importance of language in a survey. If the language in the survey is difficult for participants to understand, then that can impact the overall success of the survey. B. Edwards invited attendees to provide feedback on the current language of the survey and if anything needs to be changed.
- E. Nemeth reiterated the importance of the survey being a reasonable length so as not to lose the participant’s interest.
- M. Burns commented on how the survey should be kept plain and simple for the participants.
- C. Corley commented on the length of question 7 (importance of planning events). The length could perhaps be overwhelming for some participants.
- L. Velasquez suggested adding additional facilities to the survey for question 7.

- C. Ball asked if the survey will be tailored for each jurisdiction. B. Edwards explained how there is a question 11 at the end that asks participants what jurisdiction they live in.
- C. Corley suggested moving the question 11 about which jurisdiction the participant lives in towards the top of survey. This is so the questions can be specific to the jurisdiction the participant selected.
- Attendees had suggestions about adding additional communities to question 11.
- S. Gerlitz commented on the distinction between a participating jurisdiction and a subject group in relation to grants and funding.
- L. Velasquez commented how there is no governance for those smaller communities but instead fall under Lea County unincorporated.
- E. Nemeth asked if those smaller communities should be added at all or do those small communities know they fall under Lea County unincorporated?
- C. Corley suggested to do a dropdown for Lea County unincorporated communities.
- B. Edwards suggested adding an “other (please specify option)” for Lea County. This will give participants the option to type the community they are from if they do not see it listed.
- B. Edwards continued to go through each question on the survey,
- Positive feedback was received for question 10 (what household preparedness activities have been conducted). L. Velasquez elaborated how they want to know where the public stands. Their goal is to get better with engaging with the public through announcements and social media.
- E. Nemeth recommended to move question 12 (how long you have lived in Lea County) and 13 (what type of building do you live in) towards the top with question 11 to ensure everything stays consolidated.
- E. Nemeth explained how the survey can be filled out by the public. This can also include government employees to ensure that everyone’s input is being captured in the form of a public survey.
- B. Edwards indicated the survey is anonymous and can be completed multiple times on the same device (which is useful if filling out for multiple people).
- B. Edwards demonstrated how to analyze the results by showing Chaves County results as an example.
- B. Edwards also showed floodplain questions relating to floodplain insurances. Attendees showed interested in incorporating those questions for Lea County.
- E. Nemeth indicated a copy of the survey would be sent to the HMP planning team soon after the kickoff meeting to allow for review and updates prior to the survey being made public.

Mitigation Strategy

- E. Nemeth explained the mitigation strategy portion of the HMP. The mitigation strategy encompasses strategies, goals, objections, and actions.
- E. Nemeth reviewed the previous six mitigation goals shown in the Lea County HMP and invited participants’ review for updating or consolidating goals.
- C. Ball suggested updating goal five (guidance for building in high-risk areas) to include “building resilient construction”.

- E. Nemeth explained how each mitigation action in the plan should support at least one of the mitigation goals.

Hazards Addressed

- E. Nemeth described the hazards currently addressed in the Lea County HMP and compared it to the hazards addressed in the State of New Mexico HMP to check if any additional hazards should be added to the Lea County plan.
- The State of New Mexico HMP addresses 14 natural hazards, whereas, the Lea County HMP currently addresses 6 hazards.
- E. Nemeth explained how FEMA only reviews natural hazards. Lea County has 5 natural hazards listed and one manmade hazard (HAZMAT).
- S. Gerlitz explained how to profile additional natural hazards.

“Mayor For A Day” Hazard Identification Exercise

- Listing the 14 hazards from the State plan, E. Nemeth and B. Edwards held an exercise to help determine priority based on the meeting attendees’ input.
- B. Edwards held the exercise, via Menti, to determine from the attendees which hazards have the highest priority for mitigation. Each attendee was given \$100 to put toward any of the hazards. If you were a mayor for a day, where would you put your money to mitigate the hazard?
- Below are the results showing the attendee’s highest priority hazards:

Hazard	Percent	Rank
Extreme Heat	16%	1
Drought	15%	2
Flood	13%	3
Wildfire	11%	4
Severe Storms	10%	5
High Wind	9%	6
Tornado	8%	7
Lightning	7%	8
Hail	7%	8
Winter Storm	3%	9
Volcano	1%	10
Dam Failure	0%	11
Earthquake	0%	11
Expansive Soils	0%	11
Landslide	0%	11

Hazards Identification

- E. Nemeth asked if any listed hazards should possibly be removed from the Lea County HMP or if any other hazards should be added.

- B. Edwards listed hazards that were most voted on and explained how some of those hazards could be incorporated into the HMP.
- Attendees suggested adding tornado to the Lea County HMP. Although it was low risk, it is safer to have it.
- B. Edwards explained that severe storms include lightning, hail, and high winds. That will be all one hazard instead of being separate hazards.
- Attendees also suggested adding winter storms to the Lea County HMP.
- S. Gerlitz clarified that winter storms are part of the State HMP but are called severe winter storms instead.
- E. Nemeth highlighted that the additional hazards (tornado and winter storms) will be added to the HMP for Lea County.

Mitigation Action Plans

- E. Nemeth stated the Mitigation Action Plans are the most important but often most challenging part of creating and updating an HMP.
- E. Nemeth showed Valencia County Mitigation Action Plans as an example.
- Requirements for an action include:
 - Description of the hazard
 - Priority level
 - Funding source
 - Time frame
 - Estimated cost
 - Description of status
- E. Nemeth explained the mitigation actions currently shown in the Lea County HMP need to be updated to include a “Status” as well as a description of the status.
- The “Status” can be noted as in-progress, complete, partially complete, deferred, deleted, etc., along with a brief explanation.
- New mitigation actions can also be added to the Lea County HMP update.
- E. Nemeth emphasized FEMA’s requirement, which is every hazard listed in the HMP must have at least two mitigation actions for each jurisdiction.

Plan Maintenance

- E. Nemeth described the final section of the HMP is the plan maintenance.
- The HMP needs to be maintained prior to the next 5-year plan update.
- The plan maintenance section will include documentation of the schedule for ongoing HMP meetings, such as annual, bi-annual, as-needed, etc.
- The maintenance plan can also include implementation strategies for integrating the HMP into other local plan, policies, and programs.
- After the HMP has been approved, it stays as a living document that can be updated.
- B. Edwards noted amendments can always be made to add additional information to the plan after it is approved.
- B. Edwards clarified that amendments do not change the expiration date; it just updates the current plan.

- S. Gerlitz mentioned that the turnaround approval time for amendments is unclear. However, she mentioned that she can get that information the next time she meets with FEMA.

Draft Review

- E. Nemeth explained the draft HMP will be created by AECOM with the planning team's input. Once finished, the draft will need to be reviewed by each jurisdiction to make sure the data, statements, and information is correct or if something needs to be added or removed due to importance.
- E. Nemeth explained once AECOM has the updated plan drafted, it will be distributed to attendees for review. A meeting will also be held to discuss the plan and any edits or comments that need to be incorporated.
- E. Nemeth described when the time comes, the draft HMP can be reviewed by using the "find" function to search and review information that pertains to the respective jurisdiction. The draft can also be reviewed line-by-line if preferred, but for efficiency, it is recommended to review the pertinent information.
- The draft can be shared as a Word document or PDF file to track changes.
- After review and comment incorporation, the final draft will be made. Once the final draft is ready, the plan will be sent for State review followed by FEMA review. Once the FEMA review is complete, and any changes incorporated, the plan will then become "Approved Pending Adoption" (APA).

Adoption Process

- E. Nemeth explained that once the plan is APA, the county is then able to adopt the plan.
- All jurisdictions must adopt the plan individually.
- Each jurisdiction has one year to adopt the plan from the time the county adopts.
- E. Nemeth described how jurisdiction specific adoption gives each jurisdiction the ability to apply for funding on their own; otherwise, they would have to go through the county to apply.
- Once all jurisdictions adopt, the adoption letters are sent to FEMA and incorporated into the HMP, and then the plan is final; thereby, completing the process.

Next Steps

- AECOM will distribute the public survey questions for review and approval before the survey is posted on-line for public input.
- AECOM distribute the capability assessment spreadsheets to the team.
- AECOM will compile all the hazard information and conduct a risk assessment to determine the impact of those hazards on each jurisdiction.
- AECOM will distribute the mitigation goals for approval/revision.
- AECOM will hold a draft hazard mitigation meeting and walk through the draft plan.

Action Items

- AECOM
 - L. Velasquez shared both the Lea County 2007 and 2016 HMP plans and requested to have those sent to each jurisdiction. E. Nemeth to distribute to all jurisdictions.

- E. Nemeth to provide C. Corley the public survey to distribute to the team for review.
- E. Nemeth to provide C. Corley the capability assessments to distribute to each jurisdiction.
- E. Nemeth to provide C. Corley the mitigation goals to distribute to the team for review.
- E. Nemeth to coordinate with C. Corley to acquire any available GIS or hazard data necessary for the risk assessment.

Meeting was adjourned at 3:30 PM. These notes are an interpretation of discussions held. Please provide any additions or corrections to the originator within 5 days of the date signed; otherwise they will be assumed correct as written.

Prepared by: Eric Nemeth and David Turk, AECOM

Date: July 7, 2021

Lea County Hazard Mitigation Plan

Draft HMP Meeting

September 1, 2021

9:30 a.m. – 11:30 a.m.

Virtual Meeting

AGENDA

1. Welcome and Introductions
2. Capability Assessment Surveys
3. Public Participation Survey
 - Public outreach and stakeholder engagement strategy
4. Mitigation Action Plans
 - Creation of new actions
 - Update of existing actions
5. Reviewing the Final Draft
 - Status on plan sections
 - Review/comment process
 - Suggested areas of focus
6. Questions and Open Discussion
 - Potential opportunities for this plan update
 - Potential obstacles or barriers
 - Other local issues, concerns or ideas
7. Next Steps
 - Jurisdictions will complete:
 - i. Capability assessments
 - ii. Mitigation actions update
 - iii. Review final draft

MEETING SIGN-IN

► Lea County Hazard Mitigation Plan – Draft HMP Meeting

► TIME: September 1, 2021 @ 9:30AM MDT
 PLACE: Microsoft Teams Virtual Platform

Name	Title	Organization	Phone	Email
Eric Nemeth	Project Manager	AECOM	505-206-1395	eric.nemeth@aecom.com
Brent Edwards	Lead Planner	AECOM	919-801-0088	brent.edwards@aecom.com
Cassie Corley	Environmental Supervisor	Lea County	575-942-8222	ccorley@leacounty.net
Lorenzo Velasquez	Emergency Management Director	Lea County	575-605-6561	lvelasquez@leacounty.net
Karen Sanders	Emergency Manager	Chaves County	575-624-6740	K.Sanders@roswell-nm.gov
Barry Young	Deputy Chief	Hobbs Fire Department	575-397-8606	byoung@hobbsnm.org
Crystal Ball	Planning & Zoning Coordinator	Lovington	575-396-9301	cball@lovington.org
Jennifer Armendariz	Emergency Manager	Eddy County	575-499-5111	JArmendariz@eddyoem.com
Pat Walter	Fire Chief	Jal Fire Department	575-441-1990	p.walter@cityofjal.us
Terrance Lizardo	Fire Chief	Lovington Fire Department	575-396-2359	tlizardo@lovington.org



Lea County Hazard Mitigation Plan Update

Draft HMP Meeting

Eric Nemeth – Project Manager
Brent Edwards – Lead Planner

- Capability Assessments
- Public Participation Survey
- Mitigation Actions
- Next Steps
- Open Discussion

Agenda



Planning Resources



Local Mitigation Planning Handbook

March 2013



FEMA planning guidance

- Local Mitigation Planning Handbook
- Mitigation Ideas
- Integrating Hazard Mitigation Into Local Planning



Mitigation Ideas

A Resource for Reducing Risk to Natural Hazards

January 2013



Integrating Hazard Mitigation Into Local Planning

Case Studies and Tools for Community Officials

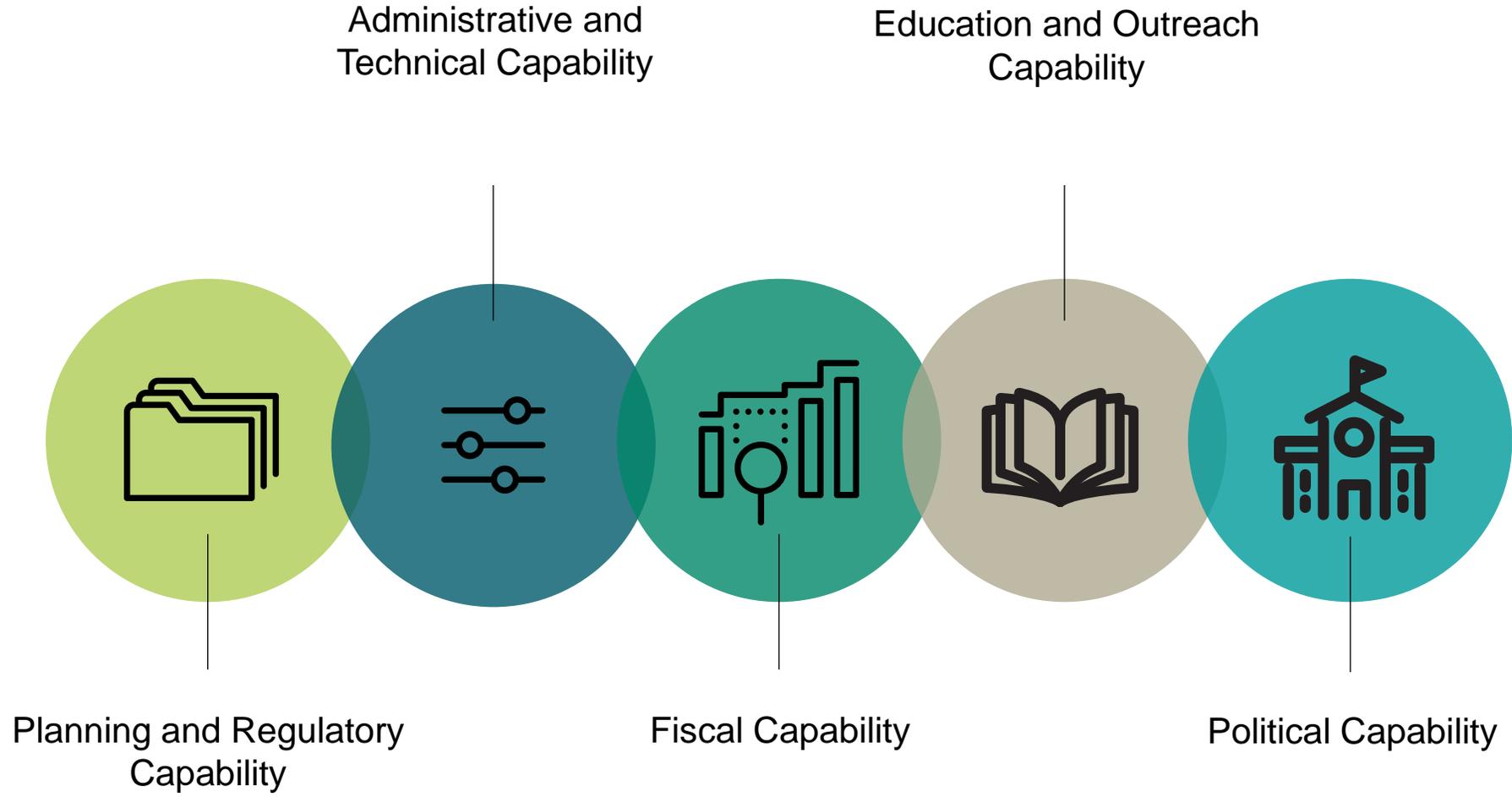
March 1, 2013



Links to other online planning resources

Capability Assessment

Process



Capability Assessment Methodology

0-29

Limited Overall Capability

30-59

Moderate Overall Capability

60-100

High Overall Capability

Public Outreach Strategy

Public Outreach Strategy

Goals

- Generate public interest
- Solicit citizen input
- Engage additional partners in the planning process

Identification of specific opportunities for participation

- In-person/virtual meetings
- Web-based survey(s)
- Social media (Facebook, Twitter, RSS, etc.)

Products/resources

- Project information fact sheet

Mitigation Action Plans

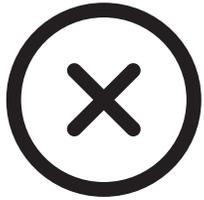
Actions

Discuss Actions

- ? What is the best process of completion?
- ? What is each action's priority? (High/Medium/Low)
- ? What is action's funding source?
- ? What is action's timeframe?
- ? What is needed to complete the action? (funding/resources)

Draft Review

Process



**Acknowledge any wrong data
or statements**



**Addition of missing
information/new data**



Options for comments
Track changes
Word documents list
Email list

Next Steps

- Lea County to complete the following:
 - Capability assessment
 - Mitigation actions update
 - Review draft plan
- AECOM to complete the following:
 - Incorporate capability assessments and mitigation actions
 - Compile the draft plan
 - Distribute for jurisdictional review

Questions?

Thank you!

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Project Name:	Lea County, New Mexico, Hazard Mitigation Plan (HMP) Update		
Meeting:	Draft HMP Meeting		
Date:	September 1, 2021	Time:	9:30 AM MST
Place:	Microsoft Teams Virtual Platform		

Attendees: See attached Sign-In sheet.

Materials: Agenda and Presentation Slides

Welcome and Introductions

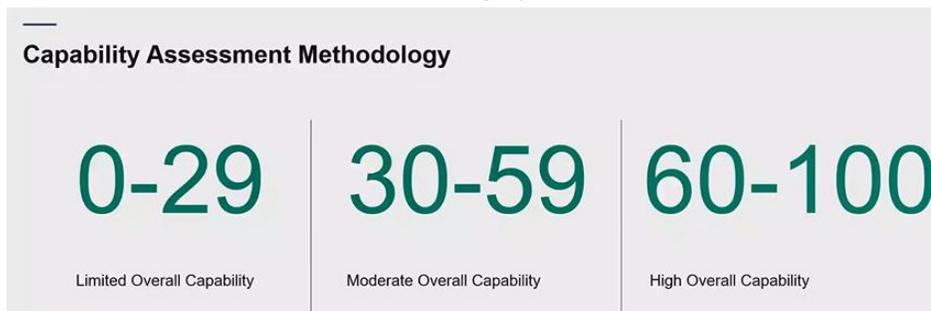
- B. Edwards (AECOM Lead Mitigation Planner) introduced himself and requested all attendees to please sign-in using the chat box within the Teams Virtual Platform to record attendance.
- L. Velasquez (Lea County Director) welcomed everyone and indicated all anticipated participants were present.

Project Overview

- B. Edwards stated the purpose of the meeting is to provide a status of the draft Hazard Mitigation Plan (HMP) and to review the capability assessments and public survey. Then, the majority of meeting will be spent reviewing the mitigation actions to be updated in the draft HMP.
- B. Edwards reiterated the availability of FEMA mitigation planning guidance literature on FEMA’s website for reference when developing the plan.

Capability Assessment

- B. Edwards reviewed the capabilities assessment survey process which includes:
 - Planning and Regulatory Capability
 - Administrative and Technical Capability
 - Fiscal Capability
 - Education and Outreach Capability
 - Political Capability
- B. Edwards explained once the capability assessment survey is complete, the survey is scored within a scale of 0-100 as shown on the graphic below:



- B. Edwards explained survey scoring does not hinder the HMP planning process. Scoring is used to help determine capabilities as they relate to desired mitigation actions. The scoring also gives

an indication of the additional resources that may need to be acquired to improve or increase the possible mitigation actions for the next HMP plan update.

- B. Edwards explained how points are tallied by jurisdiction.
- The following is a summary of the responses to the items and questions listed in the Lea County Capability Assessment:
 - Planning & Regulatory Capability:
 - B. Edwards indicated their HMP is under development.
 - L. Velasquez indicated they do not have a comprehensive land use plan.
 - L. Velasquez indicated they do not have a floodplain management plan but do have a floodplain ordinance.
 - L. Velasquez indicated they do not have open space management plan for the county.
 - L. Velasquez indicated there is a stormwater management plan for a designated area but not countywide.
 - B. Edwards indicated the designated area stormwater management plan would suffice to mark as “In Place” however a note is made stating plan is for designated place.
 - E. Nemeth thanked L. Velasquez for his detailed input and reiterated the importance of documenting the measures in place to reflect abilities within the community.
 - L. Velasquez indicated possession of all hazard emergency operations plan and environmental hazardous materials as annex to plan. B. Edwards marked “in place” for SARA Title III / Hazardous Material Facility Emergency Response Plan.
 - L. Velasquez asked B. Young if they had a radiological emergency plan to which B. Young needed to check files. Item placed on hold in meantime.
 - L. Velasquez indicated continuity of operations plan is present but not countywide.
 - C. Corley verified some continuity of operations plan and also verified possession of emergency operations plan. Both marked “in place” by B. Edwards with note indicating only designated areas.
 - C. Corley indicated and L. Velasquez verified, emergency operations plan has not been updated since 2019 due to COVID-19 restrictions.
 - L. Velasquez indicated evacuation plan, capital improvements plan, and economic development plan are in place. B. Edwards marked “in place”.
 - L. Velasquez indicated he is not sure if a historic preservation plan (HPP) is in place. E. Nemeth and B. Edwards indicated HPP is rare.
 - L. Velasquez indicated there is not a countywide transportation plan but is in place for City of Hobbs.
 - C. Corley indicated zoning ordinance only in place for the Extraterritorial Zoning (ETZ) of Lovington. B. Edwards marked “in place” with note.
 - C. Corley verified presence of subdivision ordinance. B. Edwards marked “in place”.
 - L. Velasquez indicated community wildfire protection plan. B. Edwards marked “in place”.
 - L. Velasquez indicated building code present for City of Hobbs, City of Lovington, and State of New Mexico. B. Edwards indicated county is covered under State of New Mexico Plan, marked as “in place”.

- C. Corley indicated participation in National Flood Insurance Program (NFIP). B Edwards marked “in place”.
- C. Corley indicated no participation in NFIP Community Rating System (CRS) Program.
- L. Velasquez indicated Hobbs does participate in NFIP Community Rating System (CRS Program).
- Administrative and Technical Capability:
 - L. Velasquez indicated not sure on planners with knowledge of land development and land management practices. Skipped.
 - L. Velasquez indicated Assistant County Manager is an engineer. B. Edwards marked engineers or professionals trained in construction practices related to buildings and/or infrastructure as “yes”.
 - L. Velasquez indicated “yes” to planners or engineers with an understanding of natural and/or human-caused hazards.
 - L. Velasquez indicated “no” to presence of Building Official and Emergency Manager.
 - L. Velasquez indicated “yes” to presence of Floodplain Manager.
 - L. Velasquez indicated “no” to land Surveyors, (present in Hobbs).
 - L. Velasquez indicated “no” to scientist familiar with the hazards of the community.
 - L. Velasquez indicated “no” to staff with education or expertise to assess the community’s vulnerability to hazard.
 - L. Velasquez indicated “yes” to personnel skilled in Geographic Information Systems (GIS) and/or FEMA’s Hazus program.
 - L. Velasquez indicated “yes” to resource development staff or grant writers.
 - L. Velasquez indicated “yes” to maintenance programs to reduce risk.
 - L. Velasquez indicated “yes” to warning systems/services.
 - L. Velasquez indicated “yes” to mutual aid agreements.
- Fiscal Capability:
 - L. Velasquez indicated “yes” to Capital Improvement Programming.
 - L. Velasquez indicated “not sure” to Community Development Block Grants.
 - L. Velasquez indicated “yes” to special purpose taxes (environmental gross receipts tax).
 - L. Velasquez indicated “no” to gas/electric utility fees.
 - L. Velasquez indicated “no” to water/sewer fees.
 - L. Velasquez indicated “no” to stormwater utility fees.
 - L. Velasquez indicated “no” to development impact fees.
 - L. Velasquez indicated “no” to any outstanding bonds including general obligation bonds, revenue bonds, and special tax bonds.
- Education and Outreach Capability:
 - L. Velasquez indicated “yes” to local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.
 - L. Velasquez indicated “yes” to ongoing public education or information program.
 - L. Velasquez indicated “yes” to natural disaster or safety related school programs.
 - L. Velasquez indicated “no” to StormReady certification (Hobbs does).
 - L. Velasquez indicated “no” to Firewise Communities certification.

- L. Velasquez indicated “yes” to public-private partnership initiatives addressing disaster-related issues.

- Political Capability:
 - B. Edwards explained this section is primarily used if there are big roles in the community; however, most communities leave this section blank.
 - L. Velasquez agreed to leave blank.
- Self-Assessment of Capability:
 - B. Edwards explained this section is not based directly on the sections just reviewed but of the county’s perception of their overall capability.
 - C. Corley indicated planning and regulatory capability, administrative and technical capability, and fiscal capability as “moderate”. Education and outreach capability, and political capability as “limited”. Overall capability as “moderate”.
- B. Edward explained the Capability Assessment for Lea County would be sent to the other jurisdictions as an aid when filling out their own Capability Assessments.

Public Participation Survey

- B. Edwards indicated the main part of a Hazard Mitigation Plan is to receive public input through various channels.
- B. Edwards indicated the public survey, via survey monkey, is the best most effective tool for gaining public input. The site link can be shared to various platforms.
- B. Edwards indicated there has not been any response to the Lea County Public Participation Survey and encouraged participants to share the link again.
- B. Edwards explained FEMA requirements can be fulfilled via the public survey and the public city/county counsel plan adoption meetings.
- E. Nemeth indicated he would send out the link for the survey again along with an explanation of what purpose of the survey is.
- B. Edwards explained a QR code could be provided as an option to put in flyers, etc. for people to scan which will access the survey.

Mitigation Actions

- B. Edwards indicated the mitigation actions section is one of the most important parts of the HMP. The HMP update will need to address several areas regarding actions:
 - Best process to complete action
 - Action priority
 - Action Funding source
 - Action timeframe
 - Action requirements for completion
- B. Edwards explained FEMA is requesting more detailed descriptions for each action’s status update.
- B. Edwards explained FEMA requires that there must be two actions per hazard per jurisdiction, which can be accommodated by having “all hazard” actions. Actions must be “in progress” or

“working” to count toward the requirement. Previously completed actions do not count toward the requirement for the update.

- B. Edwards shared the previous action list from the 2016 plan. He explained the previous actions have been transferred into a table format with fields populated using the previous information. This is to streamline the information for each action. See the following graphic for an example:

Action #1	
Project Description/Comments:	Mass public notification and warning system
Jurisdiction:	Lea County
Hazard(s) Addressed:	All Hazards
Responsible Organization:	Lea County
Estimated Costs:	Medium
Possible Funding Sources:	Local budgets,
Timeline for Implementation:	5 years
Priority:	Medium
2021 Status:	The County has purchased the <u>CodeRed</u> Warning System and is currently providing weather and hazard warnings throughout the County. This system is phone, text and email based and can provide up to the minute information to the public. It operates on both landline and cell phone systems.

The following are the key elements described in the Mitigation Action Plan:

- Hazard(s) Addressed—Hazard which the action addresses.
- Relative Priority—High, Moderate, or Low priority as assigned by the jurisdiction.
- Lead Agency/Department—Department responsible for undertaking the action.
- Potential Funding Sources—Local, State, or Federal sources of funds are noted here, where applicable.
- Cost Estimate—High (greater than \$50,000), Medium (between \$20,000 to \$50,000), or Low (less than \$20,00).
- Implementation Schedule—Date by which the action should be completed. More information is provided when possible.
- Implementation Status (2021)—Indication of completion, progress, deferment, or no change since the previous plan. If the action is new, that will be noted here.

- B. Edwards indicated previous actions need to be updated based on their 2021 status. If an action is not important, it may be deleted.
- B. Edwards walked through the previous Lea County Mitigation Actions and updated them during the meeting.

Draft HMP Review

- B. Edwards explained, once the plan is updated, the draft will be provided for jurisdictional review. He asked what format they would like to receive the plan in for review.
- C. Corey indicated PDF is an acceptable format to receive the draft plan for review.
- B. Edwards requested participants to review the plan to ensure the data is correct and to add additional items as needed.

- B. Edwards indicated previous hazard occurrences noted in the plan came from the National Climate Data Center (NCDC); however, this reporting system can lag up to 4 months, so more recent occurrences can be documented in the plan via local knowledge.
- B. Edwards explained the entire document does not need to be reviewed by each jurisdiction. The ctrl+f shortcut to find information can be used to quickly locate information specific to each jurisdiction.
- B. Edwards explained if changes are needed, individual jurisdictions can make revisions as deemed necessary.
- B. Edwards re-capped the draft HMP review process:
 - AECOM to send the draft HMP for review to jurisdictions
 - Jurisdictions makes changes or comments and sends back to AECOM
 - AECOM addresses comments and sends back to jurisdictions for verification
 - Once draft updates are approved by jurisdictions, AECOM sends HMP to the State for review.

State and FEMA Review

- B. Edwards explained the State and FEMA review process:
 - When the State receives the draft plan, they will conduct a review.
 - Any revisions required to meet State guidelines will be sent back to AECOM for incorporation.
 - AECOM will make the necessary revisions and send the plan back to the jurisdictions for approval.
 - Once the jurisdictions approve the revisions, AECOM sends the plan back to the State.
 - The State will then send the plan to FEMA and follow the same process (review, send back revisions, obtain jurisdictions approval, and send back to FEMA).
 - Once FEMA approves the plan, FEMA will send an Approved Pending Adoption letter (APA) which will then be relayed to jurisdiction to proceed with the adoption process.

Adoption Process

- All jurisdictions listed must adopt the plan individually.
- County adoption of the plan does not automatically apply to all jurisdictions, only unincorporated areas.
- Once adopted, resolutions can be signed, dated, and sealed, and AECOM will forward to FEMA. (Sample resolution can be provided by AECOM.)
- Once FEMA receives and approves the adoption resolutions, that date will set the future expiration date. The plan will need to be updated after five years to the day.
- Once the adoption process begins, another meeting will be held to refresh jurisdictions on the process.
- When the plan is approved by FEMA, changes can be made to the plan prior to the five-year update. An amendment can be sent to FEMA, for example, to add mitigation actions.

Action Items

- Lea County to complete the following:
 - Complete remaining jurisdictions capabilities assessments.
 - Update mitigation actions.
 - Review draft plan.
- AECOM to complete the following:
 - Send link, QR code, and description for the public survey.
 - Incorporate capability assessments and mitigation actions into draft HMP.
 - Compile the draft plan.
 - Distribute draft for jurisdictional review.
 - Start preparation for State review.

Meeting was adjourned at 11:30 AM. These notes are an interpretation of discussions held. Please provide any additions or corrections to the originator within 5 days of the date signed; otherwise they will be assumed correct as written.

Prepared by: Eric Nemeth and Misty Franklin, AECOM

Date: September 29, 2021

Hazard Mitigation Planning Team Meeting

Date: 8/10/22

Start Time: 2:00 PM

Ending Time: 2:30 PM

Name	Signature	Agency
Cassie Corley	Cassie Corley	Lea County
Victoria Dorell	Victoria Dorell	Lea County
Lorenzo Velasquez	Lorenzo Velasquez	Lea County
Barry Young	Zoom	City of Hobbs
Tim Benenati	Zoom	AECOM
Todd Randall	Zoom	City of Hobbs
Crystal Ball	Zoom	City of Lovington
Danny Garrett	Zoom	City of Hobbs
Kelly Keefe	Zoom	AECOM
<p>HMP Update Discussion Items: Vision & Purpose, Plan Overview, Public Participation Survey, Hazards Addressed, Mitigation Strategy & Goals, Mitigation Actions, Review of Final Draft, Adoption Process, Next Steps, Open Discussion.</p>		

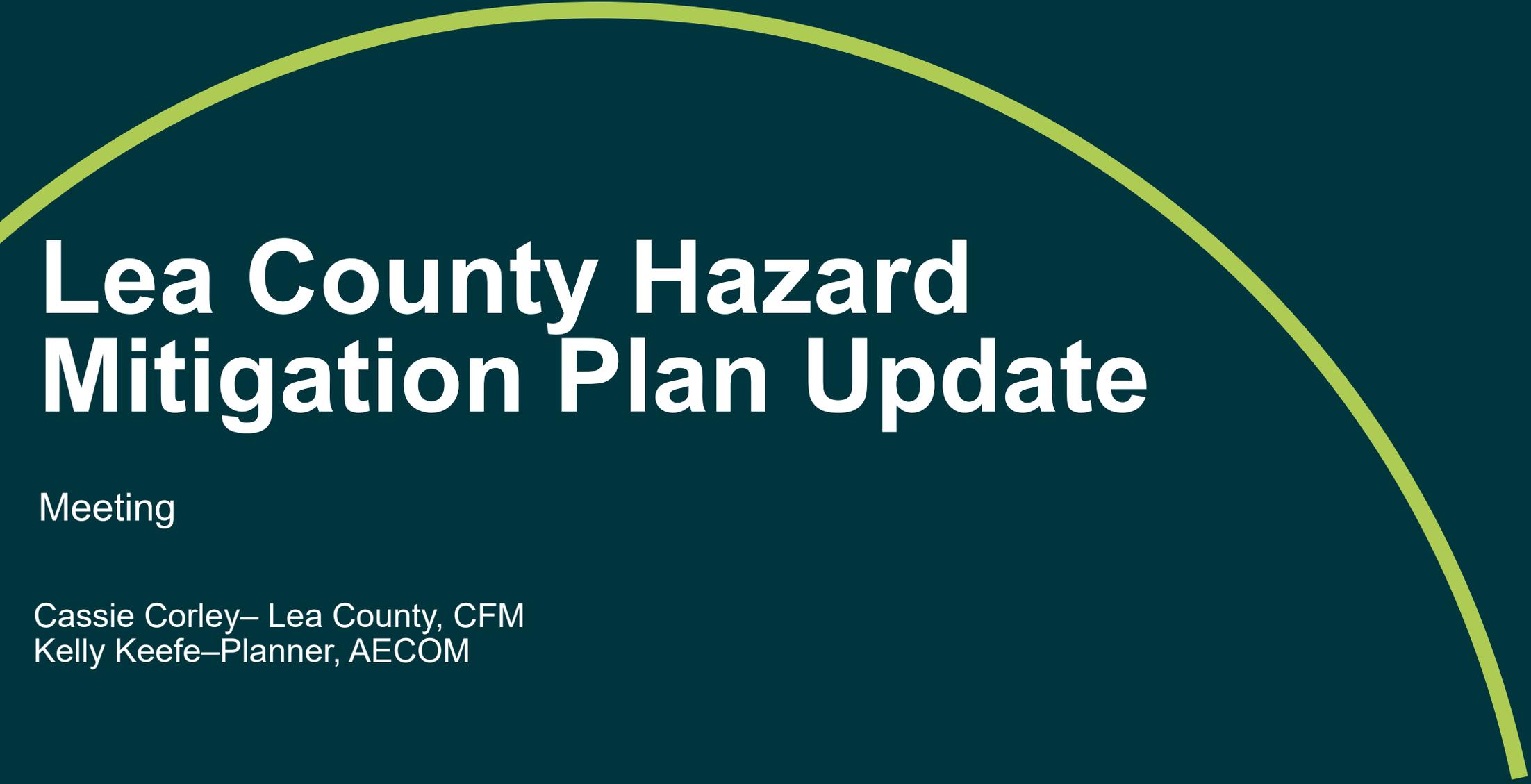
Lea County Hazard Mitigation Public Meeting

Date: 8/10/22

Start Time: 2:30 PM

Ending Time:

Name	Signature	Agency
Cassie Corley	Cassie Corley	Lea County
Victoria Dowell	Victoria Dowell	Lea County
Lorenzo Velazquez	Lorenzo Velazquez	Lea County
Barry Young	zoom	City of Hobbs
Tim Benenati	zoom	AECOM
Todd Randall	zoom	City of Hobbs
Crystal Ball	zoom	City of Lovington
Danny Garrett	zoom	City of Hobbs
Kelly Keefe	zoom	AECOM
<p>HMP Update Discussion Items: Vision & Purpose, Plan Overview, Public Participation Survey, Hazards Addressed, Mitigation Strategy & Goals, Mitigation Actions, Review of Final Draft, Adoption Process, Next Steps, Open Discussion.</p>		



Lea County Hazard Mitigation Plan Update

Meeting

Cassie Corley– Lea County, CFM
Kelly Keefe–Planner, AECOM

- Vision & Purpose
- Plan Overview
- Public Participation Survey
- Hazards Addressed
- Mitigation Strategy & Goals
- Mitigation Actions
- Review of Final Draft
- Adoption Process
- Next Steps
- Open Discussion

Agenda



Vision and Purpose

Hazard mitigation planning:

- Prepares communities for the future by reducing their risk to natural disasters.

Comprehensive hazard mitigation planning prepares a community to:

- Protect lives and property
- Avoid damages and save dollars
- Reduce or eliminate future damages by guiding new development
- Speed post-disaster recovery
- Avoid interruptions caused by hazards

Mitigation Planning Cycle



XX

What is Mitigation?

- Any sustained actions taken to reduce or eliminate the long-term risk to human life and property from hazards.
- Continuous, on-going process
- Pre- and post-disaster

Examples of Mitigation

- Elevating homes in floodplains
- Levees and floodwalls
- Stronger building codes
- Land use planning
- Safe rooms



Plan Overview

A hazard mitigation plan describes:

- “What are we at risk for and how do we fix it”

A hazard mitigation plan is comprised of:

- Introduction and description of the planning process
- Description of the planning area (i.e. Lea County)
- Identification of the hazards affecting this area
- Risk assessment to determine the affects of those hazards
- Capabilities to protect yourself from the hazards
- Actions on how you plan, within your capabilities, to reduce the hazards from the assessed risk to protect that part of the county

Mitigation Benefits

- Mitigation saves money
- Every \$1 invested will save \$6
- Mitigation creates safer, more resilient communities
- Break the cycle of disaster damage
- Mitigation speeds disaster recovery

Planning Resources



Local Mitigation Planning Handbook

March 2013



FEMA planning guidance

- Local Mitigation Planning Handbook
- Mitigation Ideas
- Integrating Hazard Mitigation Into Local Planning



Mitigation Ideas

A Resource for Reducing Risk to Natural Hazards

January 2013



Integrating Hazard Mitigation Into Local Planning

Case Studies and Tools for Community Officials

March 1, 2013



Public Outreach Strategy

Public Survey

Public Survey:

https://www.surveymonkey.com/results/SM-dXW4Hfyk2HaAK4sIrMCldg_3D_3D/

Q1

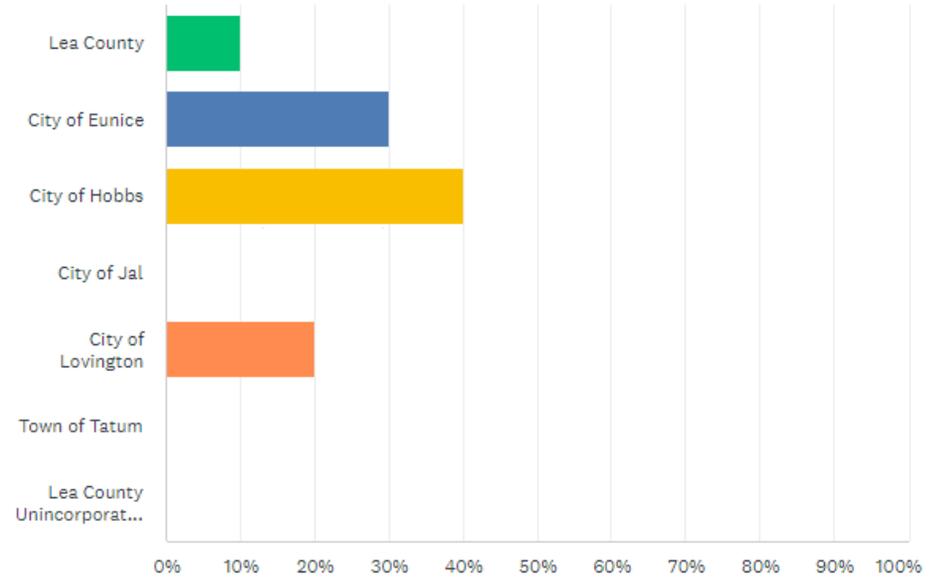


Customize

Save as ▾

In which community do you live?

Answered: 10 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ Lea County	10.00% 1
▼ City of Eunice	30.00% 3
▼ City of Hobbs	40.00% 4
▼ City of Jal	0.00% 0
▼ City of Lovington	20.00% 2
▼ Town of Tatum	0.00% 0
▼ Lea County Unincorporated Community (please specify) [e.g., Monument, Maljamar, etc.]	Responses 0.00% 0
TOTAL	10

Hazards

Hazards Addressed

State Hazards

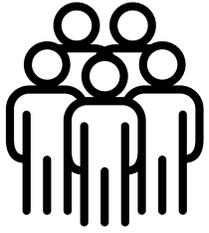
- Dam Failure
- Drought
- Earthquake
- Expansive Soils
- Extreme Heat
- Flood
- Hail
- High Wind
- Lightning
- Land Subsidence
- Landslide
- Severe Storms
- Tornado
- Volcano

Lea County Hazards

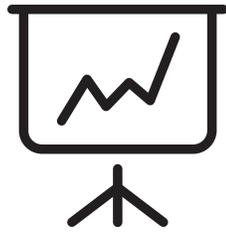
- Drought
- Extreme Heat
- Tornado (added)
- Winter Storm (added)
- Flood
- Severe Storms (includes hail, high wind, lightning)
- Wildfire
- HAZMAT

Mitigation Strategy

Mitigation Strategy



Strategies



Goals



Objectives



Actions

Mitigation Goals

1

Minimize loss of life and property from natural hazard events, Protect public health and safety, Reduce risk and effects of natural hazards. Improve disaster prevention.

2

Increase public preparedness awareness of risk from natural hazards through countywide information programs.

3

Identify hazards and assess risk for local area. Ascertain historical incidence and frequency of occurrence. Determine increased risk from specific hazards due to location and other factors.

4

Improve forecasting of natural hazard events.

5

Provide guidance for building in high-risk areas including building construction to reduce the dangers of natural hazards.

6

Support government and public response to natural hazard disasters

Mitigation Action Plans

Actions

Discuss Actions

- ? What is the best process of completion?
- ? What is each action's priority? (High/Medium/Low)
- ? What is action's funding source and estimated cost?
- ? What is action's timeframe?
- ? What is needed to complete the action? (funding/resources)

Hazard Mitigation Plan Update

- Mitigation Actions need to updated with a status and description

Requirement:

- Every hazard needs to have at least two mitigation actions for each jurisdiction

Plan Maintenance

Plan Maintenance Questions

What will be the schedule for any ongoing meetings of the HMPC, prior to the next 5-year plan update?

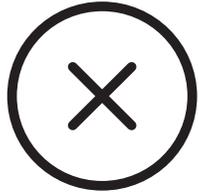
- Annual meetings, bi-annual meetings, “as-needed” meetings, etc.

To what extent will you seek to integrate the regional plan with other local plans, policies and programs?

- Comprehensive plans, land use plans, emergency operations plans, etc.

Draft Review

Process



**Acknowledge any wrong data
or statements**



**Addition of missing
information/new data**



Options for comments
Track changes
Word documents list
Email list

Adoption

Adoption Process

- All jurisdictions must adopt the plan individually
- Jurisdiction specific adoption gives each jurisdiction the ability to apply for funding on their own

Next Steps

Questions?

Thank you!

Appendix G: FEMA Worksheets

This appendix to the Lea County Hazard Mitigation Plan includes FEMA Local Mitigation Planning Handbook (March 2013) guidance worksheets to facilitate plan maintenance.

Mitigation Planning Team Worksheet

Use this worksheet to identify partner organizations to invite to participate on the planning team. Some organizations do not need to be involved in every decision of the planning process but are stakeholders that require outreach and involvement during the planning process. Revise the list of general partners below to reflect the organizations in your community. Mark which organizations will be invited to participate on the planning team and which will be involved through stakeholder outreach activities.

Planning Team – The core group responsible for making decisions, guiding the planning process, and agreeing upon the final contents of the plan

Stakeholders – Individuals or groups that affect or can be affected by a mitigation action or policy

Partner Organization	Planning Team	Stakeholder	Notes
Local Agencies			
Building Code Enforcement			
City Management/County Administration			
Emergency Management			
Fire Department/District			
Floodplain Administration			
Geographic Information Systems			
Parks and Recreation			
Planning/Community Development			
Public Works			
Stormwater Management			
Transportation (Roads and Bridges)			
City Council/Board of Commissioners			
Planning Commission			
Planning/Community Development			
Regional/Metropolitan Planning Organization(s)			
City/County Attorney's Office			
Economic Development Agency			
Local Emergency Planning Committee			
Police/Sheriff's Department			
Sanitation Department			
Tax Assessor's Office			
Special Districts and Authorities			
Airport, Seaport Authorities			
Fire Control District			
Flood Control District			
School District(s)			
Transit Authority			
Utility Districts			

Worksheet 2.1

Mitigation Planning Team Worksheet

Partner Organization	Planning Team	Stakeholder	Notes
Non-Governmental Organizations			
American Red Cross			
Chamber of Commerce			
Community/Faith-Based Organizations			
Environmental Organizations			
Homeowners Associations			
Neighborhood/Community Organizations			
Utility Companies			
State Agencies			
State Emergency Management Agency			
State Dam Safety			
State Department of Transportation			
State Fire and Forestry Agency			
State Geological Survey			
State Water Resources Agency			
State National Flood Insurance Program Coordinator			
State Planning Office			
Federal Agencies			
Federal Emergency Management Agency			
Land Management Agencies (USFS/NPS/BLM)			
National Weather Service			
US Army Corps of Engineers			
US Department of Housing and Urban Development			
US Department of Transportation			
US Environmental Protection Agency			
US Geological Survey			
Other			
Tribal Officials			
Colleges/Universities			
Land Developers and Real Estate Agencies			
Major Employers and Businesses			
Professional Associations			
Neighboring Jurisdictions			

Note: Multi-jurisdictional planning teams require at least one representative for each participating jurisdiction. This worksheet can be used by each jurisdiction to identify their local sub-team.

Mitigation Action Evaluation Worksheet

Use this worksheet to help evaluate and prioritize each mitigation action being considered by the planning team. For each action, evaluate the potential benefits and/or likelihood of successful implementation for the criteria defined below.

Rank each of the criteria with a -1, 0 or 1 using the following scale:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

Example Evaluation Criteria

Life Safety – How effective will the action be at protecting lives and preventing injuries?

Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?

Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.

Political – Is there overall public support for the mitigation action? Is there the political will to support it?

Legal – Does the community have the authority to implement the action?

Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?

Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

Administrative – Does the community have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?

Local Champion – Is there a strong advocate for the action or project among local departments and agencies that will support the action's implementation?

Other Community Objectives – Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of the comprehensive plan?

Worksheet 6.1

Mitigation Action Evaluation Worksheet

Mitigation Action	Life Safety	Property Protection	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
Local Plans and Regulations											
Structure and Infrastructure Projects											
Natural Systems Protection											
Education and Awareness Programs											

Mitigation Action Implementation Worksheet

Complete a mitigation action implementation worksheet for each identified mitigation action.

Jurisdiction:	
Mitigation Action/Project Title:	
Background/Issue:	
Ideas for Integration:	
Responsible Agency:	
Partners:	
Potential Funding:	
Cost Estimate:	
Benefits: (Losses Avoided)	
Timeline:	
Priority:	
Worksheet Completed by:	(Name/Department)

Worksheet 6.2

Mitigation Action Implementation Worksheet

This page intentionally left blank.

Mitigation Action Progress Report Form

Progress Report Period	From Date:	To Date:
Action/Project Title		
Responsible Agency		
Contact Name		
Contact Phone/Email		
Project Status	<input type="checkbox"/> Project completed <input type="checkbox"/> Project canceled <input type="checkbox"/> Project on schedule <input type="checkbox"/> Anticipated completion date: _____ <input type="checkbox"/> Project delayed Explain _____	

Summary of Project Progress for this Report Period

1. What was accomplished for this project during this reporting period?

2. What obstacles, problems, or delays did the project encounter?

3. If uncompleted, is the project still relevant? Should the project be changed or revised?

4. Other comments

Worksheet 7.1

Mitigation Action Progress Report Form

This page intentionally left blank.

Plan Update Evaluation Worksheet

Plan Section	Considerations	Explanation
Planning Process	Should new jurisdictions and/or districts be invited to participate in future plan updates?	
	Have any internal or external agencies been invaluable to the mitigation strategy?	
	Can any procedures (e.g., meeting announcements, plan updates) be done differently or more efficiently?	
	Has the Planning Team undertaken any public outreach activities?	
	How can public participation be improved?	
	Have there been any changes in public support and/or decision-maker priorities related to hazard mitigation?	
Capability Assessment	Have jurisdictions adopted new policies, plans, regulations, or reports that could be incorporated into this plan?	
	Are there different or additional administrative, human, technical, and financial resources available for mitigation planning?	
	Are there different or new education and outreach programs and resources available for mitigation activities?	
	Has NFIP participation changed in the participating jurisdictions?	
Risk Assessment	Has a natural and/or technical or human-caused disaster occurred?	
	Should the list of hazards addressed in the plan be modified?	
	Are there new data sources and/or additional maps and studies available? If so, what are they and what have they revealed? Should the information be incorporated into future plan updates?	
	Do any new critical facilities or infrastructure need to be added to the asset lists?	
	Have any changes in development trends occurred that could create additional risks?	
	Are there repetitive losses and/or severe repetitive losses to document?	

Worksheet 7.2

Plan Update Evaluation Worksheet

Plan Section	Considerations	Explanation
Mitigation Strategy	Is the mitigation strategy being implemented as anticipated? Were the cost and timeline estimates accurate?	
	Should new mitigation actions be added to the Action Plan? Should existing mitigation actions be revised or eliminated from the plan?	
	Are there new obstacles that were not anticipated in the plan that will need to be considered in the next plan update?	
	Are there new funding sources to consider?	
	Have elements of the plan been incorporated into other planning mechanisms?	
Plan Maintenance Procedures	Was the plan monitored and evaluated as anticipated?	
	What are needed improvements to the procedures?	

Appendix H: FEMA Worksheets

This appendix to the Lea County Hazard Mitigation Plan includes the National Risk Index Report.

National Risk Index



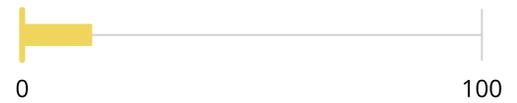
September 12, 2022

Lea County, New Mexico

Summary

Risk Index is **Relatively Moderate**

Score **15.37**



Expected Annual Loss is **Relatively Moderate**

Score **19.48**



Social Vulnerability is **Relatively Low**

Score **33.94**



Community Resilience is **Very Low**

Score **49.71**

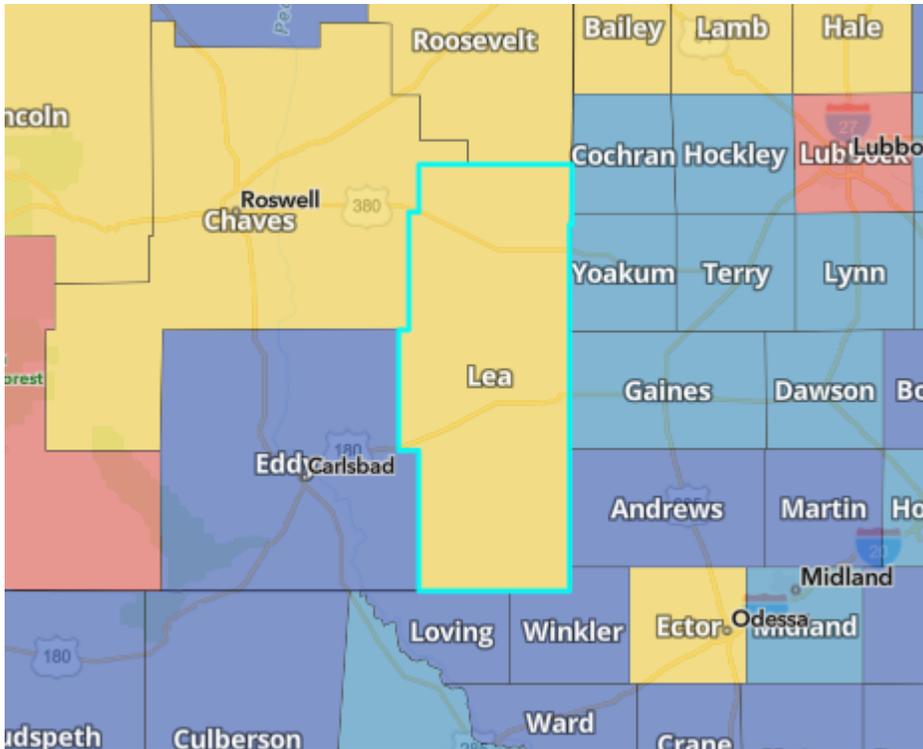


While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

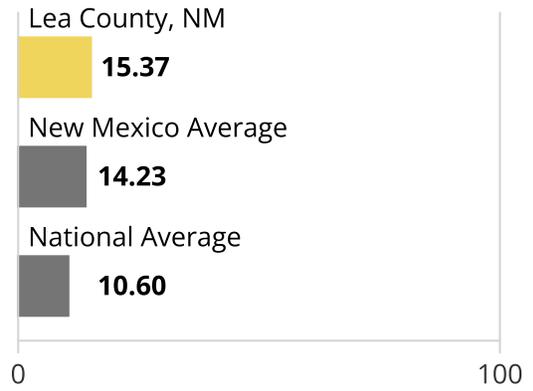
For more information about the National Risk Index, its data, and how to interpret the information it provides, please review the **About the National Risk Index** and **How to Take Action** sections at the end of this report. Or, visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Risk Index

The Risk Index rating is **Relatively Moderate** for **Lea County, NM** when compared to the rest of the U.S.



Score **15.37**



85.7% of U.S. counties have a lower Risk Index

57.5% of counties in New Mexico have a lower Risk Index

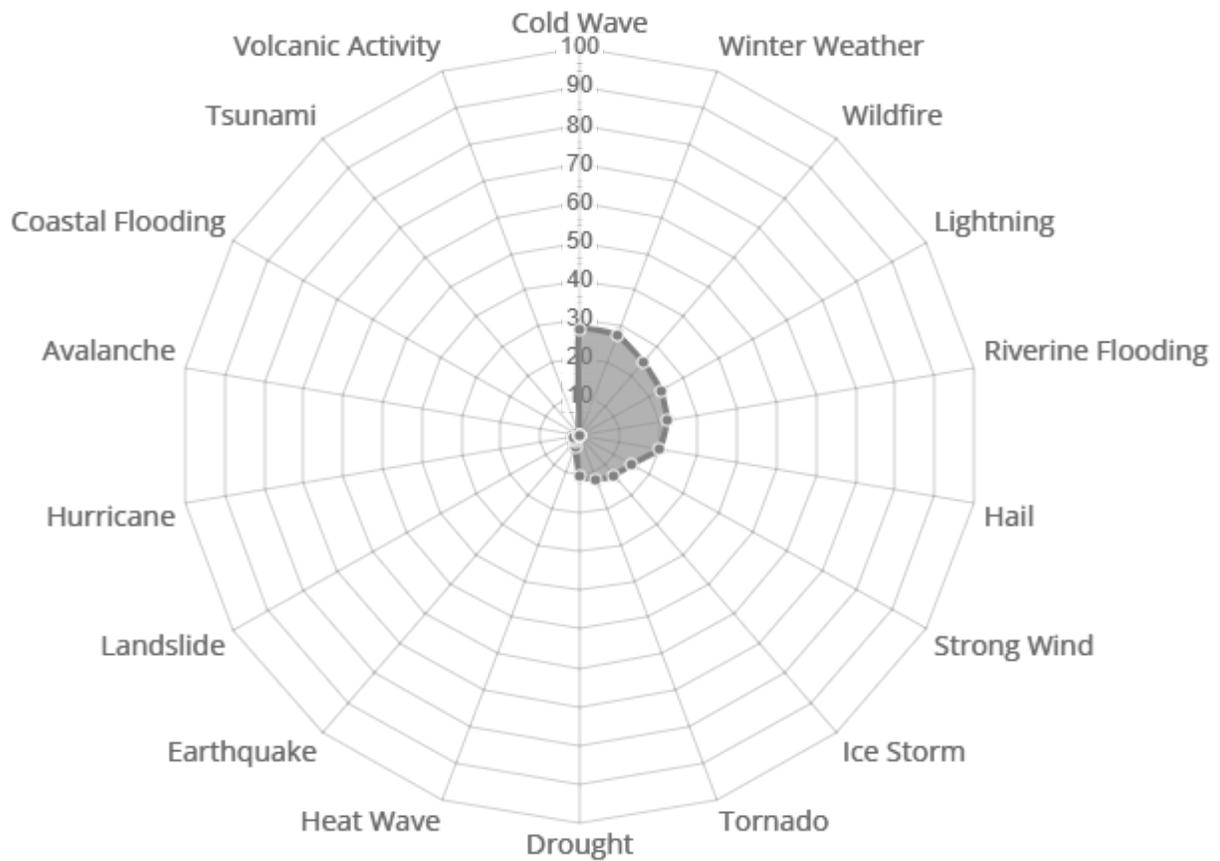
Risk Index Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- No Rating
- Not Applicable
- Insufficient Data

Hazard Type Risk Index

Hazard type Risk Index scores are calculated using data for only a single hazard type, and reflect a community's relative risk for only that hazard type.

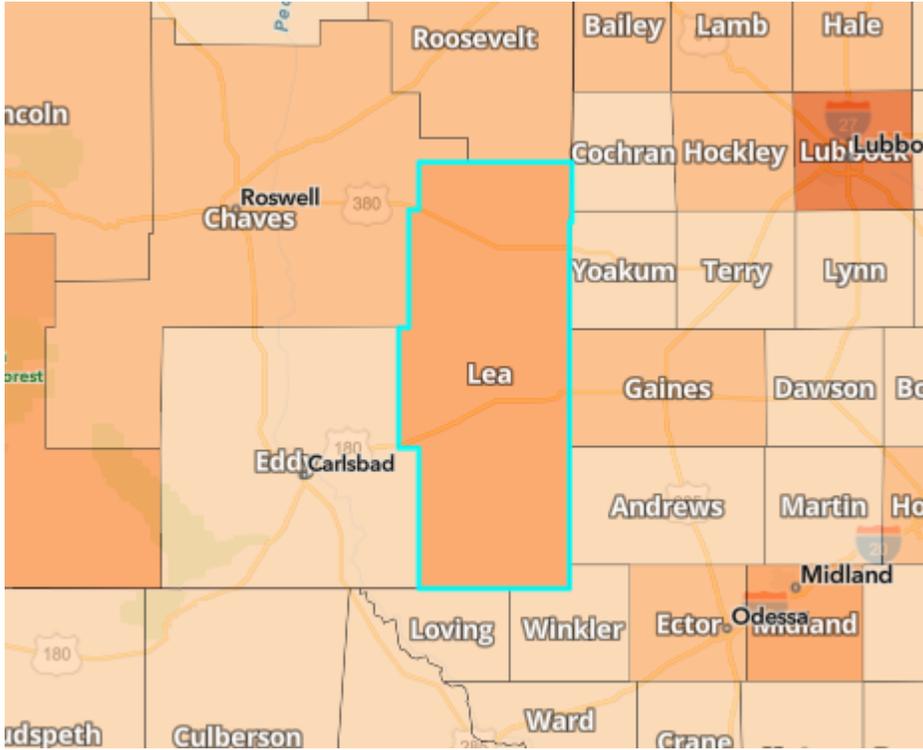
Hazard Type	Risk Index Rating	Risk Index Score		
Avalanche	Not Applicable	--		
Coastal Flooding	Not Applicable	--		
Cold Wave	Relatively Moderate	27.53	0	100
Drought	Relatively Low	10.61	0	100
Earthquake	Very Low	1.78	0	100
Hail	Relatively Moderate	20.13	0	100
Heat Wave	Very Low	3.06	0	100
Hurricane	Very Low	1.66	0	100
Ice Storm	Relatively Low	13.53	0	100
Landslide	Very Low	1.67	0	100
Lightning	Relatively Moderate	23.28	0	100
Riverine Flooding	Relatively High	22.09	0	100
Strong Wind	Relatively Moderate	15.17	0	100
Tornado	Relatively Low	11.99	0	100
Tsunami	Not Applicable	--		
Volcanic Activity	Not Applicable	--		
Wildfire	Relatively Moderate	24.52	0	100
Winter Weather	Relatively High	27.42	0	100



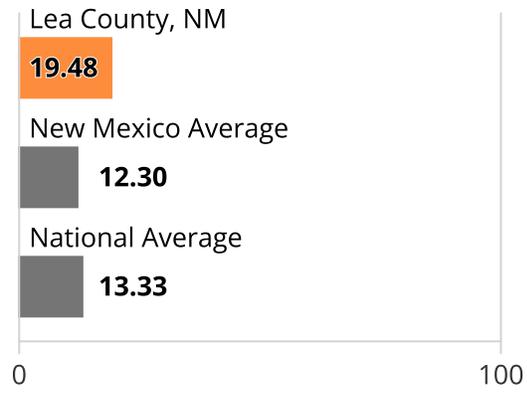
The chart above demonstrates the relative distribution of hazard type Risk Index scores for **Lea County, NM**. Risk Index scores are plotted for each hazard type included in the National Risk Index. Higher relative risk corresponds to larger colored areas inside a given hazard type chart slice.

Expected Annual Loss

In **Lea County, NM**, expected loss each year due to natural hazards is **Relatively Moderate** when compared to the rest of the U.S.



Score **19.48**



86.4% of U.S. counties have a lower Expected Annual Loss
90.9% of counties in New Mexico have a lower Expected Annual Loss

Expected Annual Loss Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- No Expected Annual Losses
- Not Applicable
- Insufficient Data

Composite Expected Annual Loss		\$13,118,445.39	
Building Value	\$4,545,123.41	Population	1.07 fatalities
Population Equivalence	\$8,113,037.90	Agriculture Value	\$460,284.08

Expected Annual Loss for Hazard Types

Expected Annual Loss scores for hazard types are calculated using data for only a single hazard type, and reflect a community's relative expected annual loss for only that hazard type. **14 of 18** hazard types contribute to the expected annual loss for **Lea County, NM**.

Hazard Type	Expected Annual Loss Rating	Expected Annual Loss Score		
Avalanche	Not Applicable	--		
Coastal Flooding	Not Applicable	--		
Cold Wave	Relatively Moderate	31.36	0	100
Drought	Relatively Moderate	11.07	0	100
Earthquake	Very Low	2.26	0	100
Hail	Relatively Moderate	23.90	0	100
Heat Wave	Very Low	3.71	0	100
Hurricane	Very Low	1.81	0	100
Ice Storm	Relatively Low	19.12	0	100
Landslide	Very Low	2.32	0	100
Lightning	Relatively High	38.01	0	100
Riverine Flooding	Relatively High	24.10	0	100
Strong Wind	Relatively Moderate	28.55	0	100
Tornado	Relatively Low	13.08	0	100
Tsunami	Not Applicable	--		
Volcanic Activity	Not Applicable	--		
Wildfire	Relatively Moderate	26.73	0	100
Winter Weather	Relatively High	37.25	0	100

Expected Annual Loss Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	--	--	--	--	--
Cold Wave	\$200,795	\$566	\$73,497	0.01	\$126,733
Drought	\$330,619	n/a	n/a	n/a	\$330,619
Earthquake	\$21,966	\$21,520	\$446	0.00	n/a
Hail	\$915,239	\$898,946	\$15,967	0.00	\$326
Heat Wave	\$3,583	\$1	\$3,581	0.00	\$0
Hurricane	\$3,083	\$1,177	\$1,455	0.00	\$451
Ice Storm	\$76,821	\$52,097	\$24,724	0.00	n/a
Landslide	\$108	\$66	\$42	0.00	n/a
Lightning	\$458,689	\$311	\$458,378	0.06	n/a
Riverine Flooding	\$7,013,088	\$32,912	\$6,980,082	0.92	\$94
Strong Wind	\$417,246	\$105,975	\$311,058	0.04	\$212
Tornado	\$317,961	\$268,062	\$48,337	0.01	\$1,562
Tsunami	--	--	--	--	--
Volcanic Activity	--	--	--	--	--
Wildfire	\$3,026,480	\$2,991,158	\$35,259	0.00	\$63
Winter Weather	\$332,767	\$172,332	\$160,211	0.02	\$224

Exposure Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	--	--	--	--	--
Cold Wave	\$455,908,088,232	\$4,711,372,413	\$451,008,922,335	59,343.28	\$187,793,484
Drought	\$143,859,308	n/a	n/a	n/a	\$143,859,308
Earthquake	\$497,143,423,000	\$5,218,223,000	\$491,925,200,000	64,727.00	n/a
Hail	\$497,335,665,000	\$5,218,223,000	\$491,925,200,000	64,727.00	\$192,242,000
Heat Wave	\$41,494,440,758	\$507,413,853	\$40,986,786,793	5,393.00	\$240,112
Hurricane	\$497,335,651,861	\$5,218,222,855	\$491,925,187,007	64,727.00	\$192,242,000
Ice Storm	\$497,143,236,644	\$5,218,222,118	\$491,925,014,526	64,726.98	n/a
Landslide	\$277,464,668	\$4,926,102	\$272,538,566	35.86	n/a
Lightning	\$497,143,423,000	\$5,218,223,000	\$491,925,200,000	64,727.00	n/a
Riverine Flooding	\$74,690,025,900	\$780,099,239	\$73,909,789,482	9,724.97	\$137,179
Strong Wind	\$497,335,665,000	\$5,218,223,000	\$491,925,200,000	64,727.00	\$192,242,000
Tornado	\$497,335,665,000	\$5,218,223,000	\$491,925,200,000	64,727.00	\$192,242,000
Tsunami	--	--	--	--	--
Volcanic Activity	--	--	--	--	--
Wildfire	\$80,618,436,214	\$818,042,767	\$79,678,709,056	10,484.04	\$121,684,391
Winter Weather	\$497,321,869,679	\$5,218,114,422	\$491,916,337,968	64,725.83	\$187,417,288

Annualized Frequency Values

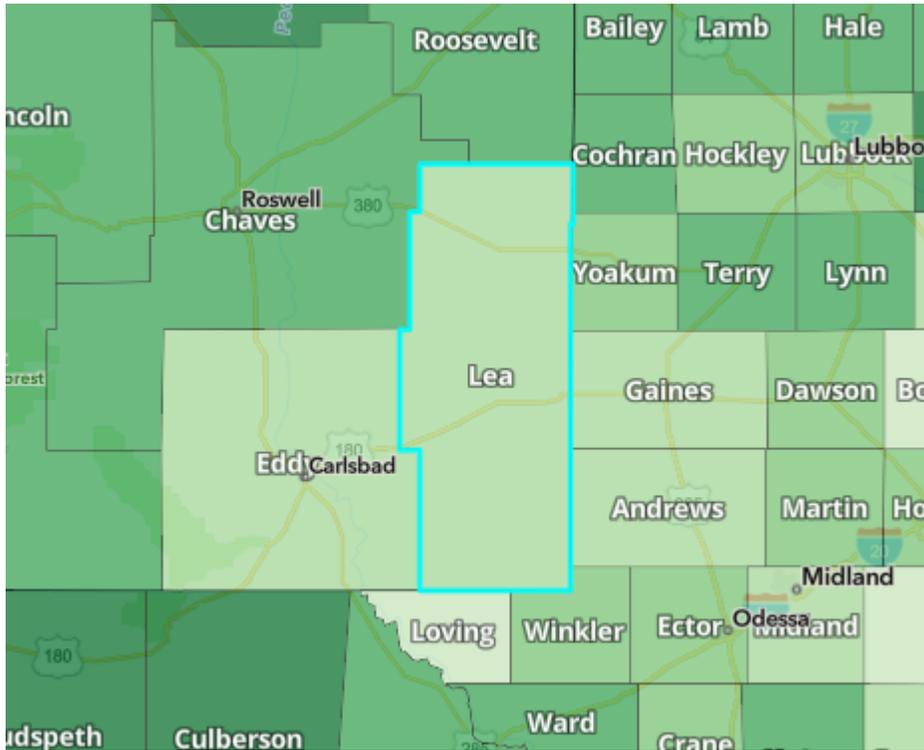
Hazard Type	Annualized Frequency	Events on Record	Period of Record
Avalanche	--	--	--
Coastal Flooding	--	--	--
Cold Wave	0.1 events per year	4	2005-2017 (12 years)
Drought	57.4 events per year	1,246	2000-2017 (18 years)
Earthquake	0.020% chance per year	n/a	2017 dataset
Hail	2.9 events per year	94	1986-2017 (32 years)
Heat Wave	0 events per year	1	2005-2017 (12 years)
Hurricane	0 events per year	1	East 1851-2017 (167 years) / West 1949-2017 (69 years)
Ice Storm	0.5 events per year	31	1946-2014 (67 years)
Landslide	0 events per year	0	2010-2019 (10 years)
Lightning	58.5 events per year	1,288	1991-2012 (22 years)
Riverine Flooding	2.8 events per year	66	1996-2019 (24 years)
Strong Wind	1.1 events per year	35	1986-2017 (32 years)
Tornado	1.4 events per year	50	1986-2019 (34 years)
Tsunami	--	--	--
Volcanic Activity	--	--	--
Wildfire	1.050% chance per year	n/a	2016 dataset
Winter Weather	2.1 events per year	128	2005-2017 (12 years)

Historic Loss Ratios

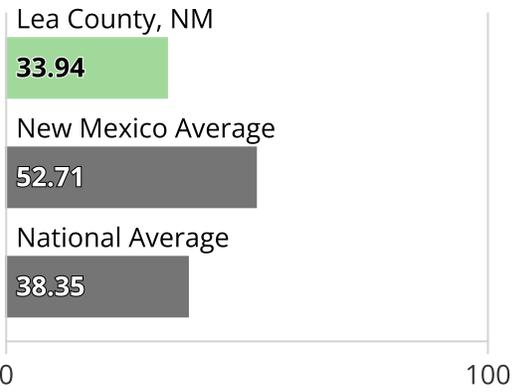
Hazard Type	Overall Rating	Building Value	Population	Agriculture Value
Avalanche	--	--	--	--
Coastal Flooding	--	--	--	--
Cold Wave	Very Low	\$1.32 per \$1M	1.82 per 1M	\$3.39 per \$1K
Drought	Very Low	n/a	n/a	\$3.48 per \$100K
Earthquake	Very Low	\$1.68 per \$100	1.40 per 10K	n/a
Hail	Relatively Low	\$5.25 per \$100K	9.83 per 1B	\$5.76 per \$10M
Heat Wave	Very Low	\$2.61 per \$100M	1.06 per 1M	\$9.07 per \$10M
Hurricane	Very Low	\$2.55 per \$100K	3.28 per 10M	\$2.46 per \$10K
Ice Storm	Very Low	\$2.23 per \$100K	1.12 per 10M	n/a
Landslide	Very Low	\$1.34 per \$1K	1.54 per 100K	n/a
Lightning	Relatively Low	\$9.99 per \$10B	1.55 per 100M	n/a
Riverine Flooding	Very Low	\$1.53 per \$100K	3.43 per 100K	\$2.49 per \$10K
Strong Wind	Relatively Low	\$1.56 per \$100K	4.81 per 10M	\$1.05 per \$1M
Tornado	Very Low	\$3.70 per \$100K	7.07 per 100M	\$5.85 per \$1M
Tsunami	--	--	--	--
Volcanic Activity	--	--	--	--
Wildfire	Very Low	\$4.00 per \$10	4.85 per 100K	\$2.98 per \$100K
Winter Weather	Very Low	\$1.61 per \$100K	1.58 per 10M	\$5.72 per \$10M

Social Vulnerability

Social groups in **Lea County, NM** have a **Relatively Low** susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.



Score **33.94**



32.1% of U.S. counties have a lower Social Vulnerability

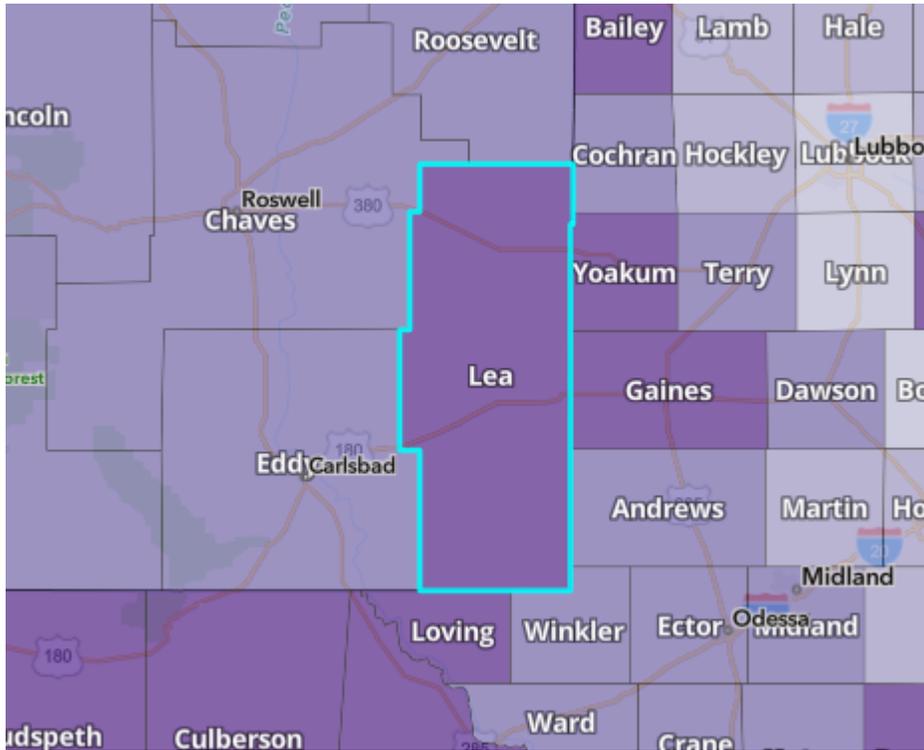
6.0% of counties in New Mexico have a lower Social Vulnerability

Social Vulnerability Legend

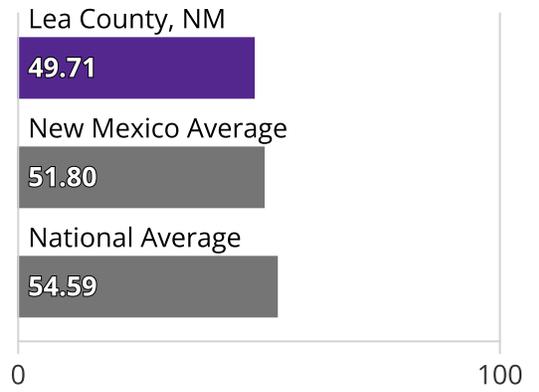
- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- Data Unavailable

Community Resilience

Communities in **Lea County, NM** have a **Very Low** ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.



Score **49.71**



95.4% of U.S. counties have a higher Community Resilience

81.9% of counties in New Mexico have a higher Community Resilience

Community Resilience Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- Data Unavailable

About the National Risk Index

The National Risk Index is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather.

The National Risk Index leverages available source data for Expected Annual Loss due to these 18 hazard types, Social Vulnerability, and Community Resilience to develop a baseline relative risk measurement for each United States county and Census tract. These measurements are calculated using average past conditions, but they cannot be used to predict future outcomes for a community. The National Risk Index is intended to fill gaps in available data and analyses to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

Explore the National Risk Index Map at hazards.fema.gov/nri/map.

Visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Calculating the Risk Index

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability and Community Resilience:

$$\text{Risk Index} = \text{Expected Annual Loss} \times \text{Social Vulnerability} \div \text{Community Resilience}$$

Risk Index scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit hazards.fema.gov/nri/determining-risk.

Calculating Expected Annual Loss

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios for 18 hazard types:

$$\text{Expected Annual Loss} = \text{Exposure} \times \text{Annualized Frequency} \times \text{Historic Loss Ratio}$$

Expected Annual Loss scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit hazards.fema.gov/nri/expected-annual-loss.

Calculating Social Vulnerability

Social Vulnerability is measured using the Social Vulnerability Index (SoVI) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit hazards.fema.gov/nri/social-vulnerability.

Calculating Community Resilience

Community Resilience is measured using the Baseline Resilience Indicators for Communities (HVRI BRIC) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit hazards.fema.gov/nri/community-resilience.

How to Take Action

There are many ways to reduce natural hazard risk through mitigation. Communities with high National Risk Index scores can take action to reduce risk by decreasing Expected Annual Loss due to natural hazards, decreasing Social Vulnerability, and increasing Community Resilience.

For information about how to take action and reduce your risk, visit hazards.fema.gov/nri/take-action.

Disclaimer

The National Risk Index (the Risk Index or the Index) and its associated data are meant for planning purposes only. This tool was created for broad nationwide comparisons and is not a substitute for localized risk assessment analysis. Nationwide datasets used as inputs for the National Risk Index are, in many cases, not as accurate as available local data. Users with access to local data for each National Risk Index risk factor should consider substituting the Risk Index data with local data to recalculate a more accurate risk index. If you decide to download the National Risk Index data and substitute it with local data, you assume responsibility for the accuracy of the data and any resulting data index. Please visit the [Contact Us](#) page if you would like to discuss this process further.

The methodology used by the National Risk Index has been reviewed by subject matter experts in the fields of natural hazard risk research, risk analysis, mitigation planning, and emergency management. The processing methods used to create the National Risk Index have produced results similar to those from other natural hazard risk analyses conducted on a smaller scale. The breadth and combination of geographic information systems (GIS) and data processing techniques leveraged by the National Risk Index enable it to incorporate multiple hazard types and risk factors, manage its nationwide scope, and capture what might have been missed using other methods.

The National Risk Index does not consider the intricate economic and physical interdependencies that exist across geographic regions. Keep in mind that hazard impacts in surrounding counties or Census tracts can cause indirect losses in your community regardless of your community's risk profile.

Nationwide data available for some risk factors are rudimentary at this time. The National Risk Index will be continuously updated as new data become available and improved methodologies are identified.

The National Risk Index Contact Us page is available at hazards.fema.gov/nri/contact-us.