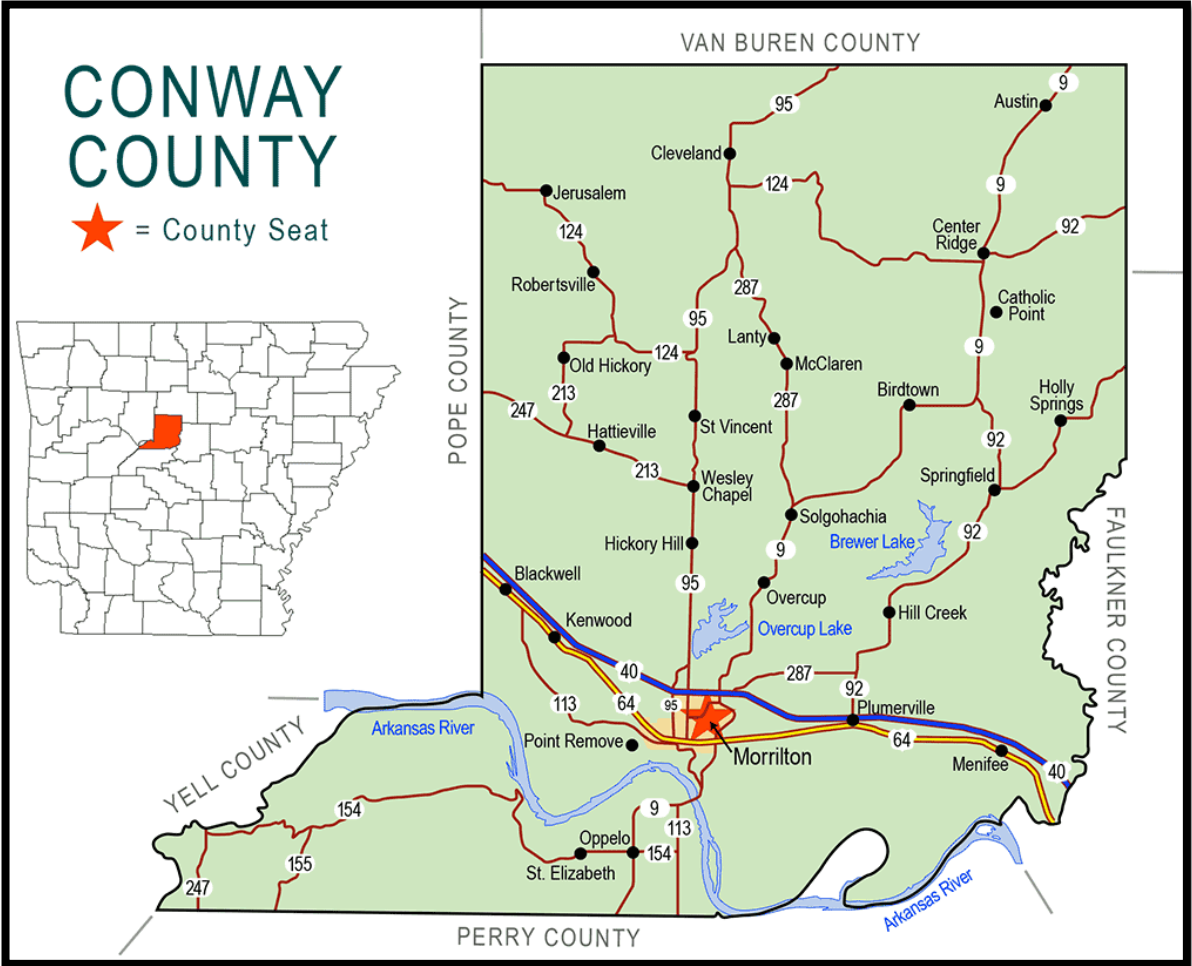


2023 Conway County Hazard Mitigation Plan HMGP FEMA 4441-DR-AR Awarded June 8, 2020



MAP CREATED BY MIKE KECKHAVER

Prepared By:
West Central Arkansas Planning and Development District
1000 Central Ave.
Hot Springs, AR 71902

Table of Contents

- TABLE OF CONTENTS.....2**

- SAMPLE RESOLUTION.....4**

- SECTION 1 INTRODUCTION.....6**
 - 1.1 GENERAL DESCRIPTION6
 - 1.2 PARTS OF THE PLAN8
 - 1.3 INVOLVEMENT OF LOCAL GOVERNMENTS.....9
 - 1.4 NEIGHBORING COMMUNITY INVOLVEMENT11

- SECTION 2 PLANNING PROCESS.....12**
 - 2.1 PLANNING PROCESS12
 - 2.2 PUBLIC REVIEW17
 - 2.3 PLAN DEVELOPERS.....17
 - 2.4 PLAN MAINTENANCE.....21
 - 2.5 CONTINUOUS PUBLIC INVOLVEMENT24
 - 2.6 INCORPORATION INTO EXISTING PLANNING MECHANISMS24

- SECTION 3 PLANNING AREA AND RESOURCES.....26**
 - 3.1 GENERAL GEOGRAPHY26
 - 3.2 GENERAL LAND USE/ANALYZING DEVELOPMENT TRENDS27
 - 3.3 NFIP PARTICIPATION.....27
 - 3.4 CAPABILITY ASSESSMENT36
 - 3.5 IMPROVING CAPABILITIES.....40

- SECTION 4 HAZARD IDENTIFICATION AND RISK ASSESSMENT41**
 - 4.1 RISK ASSESSMENT OVERVIEW41
 - 4.2 STRUCTURE OF THE RISK ASSESSMENT.....41
 - 4.3 DEVELOPING THE 2023 RISK ASSESSMENT41
 - 4.4 HAZARD RISK PROFILE OVERVIEW.....42
 - 4.5 VULNERABILITY AND RISK ASSESSMENT BY HAZARD42
 - 4.6 DISASTER DECLARATION HISTORY44
 - 4.7 HAZARD CLASSIFICATION AND IDENTIFICATION44

4.8	NATURAL HAZARDS AFFECTING CONWAY COUNTY	46
4.8.1	DAM	46
4.8.2	DROUGHT	64
4.8.3	EARTHQUAKE	71
4.8.4	EXTREME HEAT	77
4.8.5	FLOOD	84
4.8.6	LANDSLIDE	114
4.8.7	THUNDERSTORM	117
4.8.8	TORNADO	125
4.8.9	WILDFIRE	133
4.8.10	WINTER WEATHER	153
 <u>SECTION 5</u>		
	<u>MITIGATION STRATEGIES</u>	<u>167</u>
5.1	MITIGATION GOALS AND OBJECTIVES FOR EACH HAZARD	167
5.2	IMPLEMENTATION OF MITIGATION ACTIONS	169
 <u>SECTION 6</u>		
	<u>ACRONYMS</u>	<u>183</u>
<u>SECTION 8</u>		
	<u>RESOLUTIONS/ADOPTION</u>	<u>184</u>
<u>SECTION 9</u>		
	<u>SUPPORTING DOCUMENTS</u>	<u>185</u>
9.1	PUBLIC REVIEW	186
9.2	SAMPLE QUESTIONNAIRE	187
9.3	QUESTIONNAIRE REPOSSES	193
9.4	NATIONAL RISK ASSESSMENT REPORT	202
9.5	FIRMS	214

SAMPLE ADOPTION RESOLUTION

SAMPLE RESOLUTION

RESOLUTION NO. _____

A RESOLUTION OF (LOCAL GOVERNMENT) ADOPTING THE (TITLE AND DATE OF MITIGATION PLAN)

WHEREAS the (local governing body) recognizes the threat that natural hazards pose to people and property within its jurisdiction; and

WHEREAS the (local government) has prepared a multi-hazard mitigation plan, hereby known as (title and date of mitigation plan) in accordance with federal laws, including the [Robert T. Stafford Disaster Relief and Emergency Assistance Act](#), as amended; the [National Flood Insurance Act of 1968](#), as amended; and the [National Dam Safety Program Act](#), as amended; and

WHEREAS (title and date of mitigation plan) identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in its jurisdiction from the impacts of future hazards and disasters; and

WHEREAS adoption by the (local governing body) demonstrates its commitment to hazard mitigation and achieving the goals outlined in the (title and date of mitigation plan).

NOW THEREFORE, BE IT RESOLVED BY THE (LOCAL GOVERNMENT), (STATE), THAT:

In accordance with (local rule for adopting resolutions), the (local governing body) adopts the (title and date of mitigation plan). While content related to (local government) may require revisions to meet the plan approval requirements, changes occurring after adoption will not require (local government) to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

ADOPTED by a vote of (local governing body) this _____ day of __,____.

Mayor: _____

Clerk: _____

SAMPLE

SECTION 1 INTRODUCTION

1.1 General Description

Hazards are part of the world around us. The occurrence of floods, hurricanes, tornadoes, winter storms, earthquakes, wildfires, and other hazardous events are inevitable. These hazards are natural phenomena we cannot control. These events damage the ecological environment. Despite their destructiveness, these occurrences are part of the natural system.

The natural environment is recuperative and can regenerate with resiliency. It is when manmade environments intersect with these natural phenomena that disasters result. Disasters occur when human activity, such as buildings, infrastructure, agriculture, and other land uses take place in the path of the forces of nature. The man-made environment is not as recuperative as the natural one. The consequences could mean damage and hardship for entire communities for years to come.

While we cannot prevent natural hazards, we can take some measures to reduce some of their adverse consequences. We have tools and techniques which, when put into effect in a timely fashion, allow us to avoid the worst-case scenario when a hazard does occur. By managing a community's capabilities and infrastructure before a hazardous event occurs, we can mitigate many of the negative impacts of a disaster. This reduces the magnitude of an event.

Hazard mitigation is the cornerstone of emergency management. It is defined as any sustained action to reduce or eliminate long-term risk to life and property from a hazard event. Mitigation encourages long-term reduction of hazard vulnerability. The goal of mitigation is to save lives and reduce property damage.

In the past, federal legislation has provided funding for disaster relief, recovery, and some hazard mitigation planning. The Disaster Mitigation Act of 2000 (DMA 2000) is the latest legislation to improve this planning process. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous Mitigation Planning section (409) and replacing it with a new Mitigation Planning section (322). This new section emphasizes the need for State, Tribal, and local entities to closely coordinate mitigation planning and implementation efforts. The new legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. As such, this Act establishes a pre-disaster hazard mitigation program (PDM) and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). It also requires communities to have an approved hazard mitigation plan to receive Stafford Act assistance, excluding assistance provided pursuant to emergency provisions.

The goals of this Conway County Hazard Mitigation plan are:

1. Reduce the potential for loss of life, injury and economic damage created by exposure to natural hazard for residents of the planning area due to natural disasters.
2. Provide a framework and coordination to encourage all levels of government, public/private organizations, and other participants to undertake mitigation to minimize potential disasters and to employ mitigation in the recovery following disasters.
3. Seek grants for mitigation projects through State and Federal funding.
4. Protect existing properties from natural disasters.

Whole community approach to mitigation has specific planning objectives to minimize damage due to disasters. These five specific objectives are:

1. Identify, describe, and characterize the natural hazards to which Conway County is susceptible,
2. Assess the risk of each hazard including probability and frequency, exposure, and consequences,
3. Examine feasible mitigation opportunities appropriate for the identified hazards and prioritize those opportunities,
4. Implement mitigation actions to reduce loss of lives and property, and
5. Identify mitigation opportunities for long-range planning consideration.

The Conway County Hazard Mitigation Plan has been developed to assess the ongoing natural hazard mitigation activities in Conway County. It evaluates additional mitigation measures that should be undertaken and outlines a strategy for implementation of mitigation projects. This Hazard Mitigation Plan is multi-jurisdictional with a planning area that includes all unincorporated Conway County and municipalities; Menifee, Morrilton, Oppelo and Plumerville within the County including school districts; Wonderview, Nemo Vista, Sacred Heart, Riverview Baptist, and South Conway County, plus the University of Arkansas Community College at Morrilton.

Formal adoption and implementation of a hazard mitigation plan presents many benefits to Conway County and its residents. By identifying problems and possible solutions in advance of a disaster, the Planning Area will be in a better position to obtain pre- and post-disaster funding. Specifically, the Disaster Mitigation Act of 2000 establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). It requires states and communities to have a FEMA approved hazard mitigation plan in place prior to receiving post-disaster HMGP funds. Adoption of this hazard mitigation strategy will also increase Conway County's eligibility for assistance from FEMA's Flood Mitigation Assistance (FMA) program. The Planning Area will also gain additional credit points under FEMA's Community Rating System (CRS) program. This program provides discounts on National Flood Insurance Program (NFIP) flood insurance premiums for residents of communities

who voluntarily participate in this program. Most importantly, Conway County will be able to recover faster and more wisely from a disaster. Through planning and acting on local mitigation strategies, Conway County communities will reduce vulnerability to disasters and identify opportunities for mitigation. In addition, the communities may meet comprehensive planning requirements and achieve community goals.

This update includes information pertaining to disasters that have impacted the Planning Area since the last revision. This document helps in obtaining information to better mitigate hazards in areas within the county that are prone to certain disasters. This plan is an update of the 2015 FEMA approved Conway County Hazard Mitigation Plan. The priorities of the 2023 Conway County Hazard Mitigation Plan remain consistent with the 2015 FEMA approved Conway County Hazard Mitigation Plan. The priorities of the county have not changed.

1.2 Parts of the Plan

The Conway County Hazard Mitigation Plan is divided into sections. These sections are created to address FEMA requirements that became effective April 19, 2023.

1. Element A: Planning Process
2. Element B: Hazard Identification and Risk Assessment
3. Element C: Mitigation Strategy
4. Element D: Plan Maintenance
5. Element E: Plan Update
6. Element F: Plan Adoption
7. Element G: High Hazard Potential Dams
8. Element H: Additional State Requirements/Supporting Documentation

This Hazard Mitigation Plan is multi-jurisdictional with a planning area that includes all of unincorporated Conway County and municipalities; Menifee, Morrilton, Oppelo and Plumerville within the County including school districts; Wonderview, Nemo Vista, Sacred Heart, Riverview Baptist, and South Conway County, plus the University of Arkansas Community College at Morrilton.

All jurisdictions and school districts listed above actively participated in the planning process from its inception. Each jurisdiction provided a representative to participate on the planning team or if a representative was unable to attend, they chose to be represented by the Conway County Office of Emergency Management. Planning team members actively participated in meetings, solicited input from members of their communities, and ensured that all jurisdiction information was reflected in the plan.

1.3 Involvement of Local Governments

Conway County's mitigation planning process was initiated June 8, 2020, when the County, through the efforts of the Conway County Office of Emergency Management (OEM), was awarded a Hazard Mitigation Grant Program (HMGP) grant by FEMA through ADEM, under Conway County Judge Jimmy Hart. Conway County negotiated a subcontract with West Central Arkansas Planning and Development District to facilitate their mitigation planning efforts. West Central Arkansas Planning and Development District served as facilitator. Steve Beavers, Director of the Conway County OEM, led the planning effort.

Once all participants in the Planning Area under the responsibility of the Conway County OEM formally agreed to participate, an initial planning team comprised of representatives from the Planning Area was organized.

This initial team was instructed to solicit interested people from their communities to participate on the planning team. This solicitation led to the addition of several planning team members. The planning team members include representatives from County government, local governments, city governments, public works officials, emergency management officials, fire districts, school districts and nonprofits.

All participating jurisdictions actively participated in the planning process. This participation was performed by soliciting input from communities in the Planning Area and participation in meetings. Due to Covid-19 pandemic meetings were primarily by Zoom. If a city or school district could not attend a meeting, Conway County OEM Steve Beavers represented them. Also, all minutes and materials were mailed/mailed out to the jurisdiction representatives that could not attend. Communication was followed up by phone and email by Steve Beavers Conway County OEM and Kristen Lancaster or Kristin Cawyer at West Central Arkansas Planning and Development District.

The Planning Teams main discussion topics with WCAPDD were:

- Discussion on what mitigation is and how it benefits the Planning Area
- Risk for the Planning Area
- Past hazard occurrences
- Mitigation actions/plans
- Ongoing/future mitigation projects

Four planning events were scheduled throughout the planning process. The Covid-19 Pandemic resulted in restrictions on public gatherings. Meetings held in April 2022 and May 2022 were virtual and not well attended. For this reason, two additional meetings were held once the Pandemic allowed people to safely gather for public meetings.

A kickoff meeting was held February 15, 2021, virtually due to the Covid-19 Pandemic.

A virtual meeting was held February 16, 2021, to discuss and distribute the Natural Hazard Questionnaire.

May 26, 2022, a virtual planning meeting was held to develop a mitigation strategy.

In April 2023 there was a staff change at WCAPDD. Due to staff changes, the amount of time that passed, and the end of the Covid-19 Pandemic, it was important to conduct a public meeting where the community could attend. October 27, 2023, a planning meeting was held. Invites were sent out via email and phone calls. The meeting date, time, place, and reason were advertised in the newspaper, social media and on the West Central Arkansas Planning and Development District website. This meeting allowed us to:

- Define mitigation and establish its purpose for the Planning Area
- Organize a consistent Planning Team
- Assess capabilities
- Engage the community

January 25, 2024, a planning meeting was held. Invites were sent out via email and phone calls. The meeting date, time, place, and reason were advertised in the newspaper, social media and on the West Central Arkansas Planning and Development District website. This meeting was lengthy and allowed the Planning Team to:

- Assess the risks for the Planning Area using the results from the Natural Hazards Questionnaire and the National Risk Index
- Identify specific vulnerable populations
- Discuss mitigation actions from the 2016 Hazard Mitigation Plan and identify what had been completed.
- Develop new mitigation actions
- Develop new mitigation plans/future projects
- Determine how the Planning Team will maintain the Hazard Mitigation Plan once it is adopted.

Technical assistance and training were provided to WCAPDD by the Arkansas Department of Emergency Management and FEMA. Both entities discussed the importance of incorporating whole community into the process. Guidelines for the mitigation plan were outlined in FEMA Local Mitigation Planning Policy Guide FP 206-21-0002.

A whole community approach to mitigation planning was encouraged. According to FEMA a whole community approach is one that attempts to engage the full capacity of residents, emergency management, government (local, tribal, state, territorial and federal), private and nonprofit sectors. This includes businesses, faith-based organizations, and disability organizations. A whole community approach to mitigation provides people of the planning area a more informed and shared understanding of the community's risk, needs and capabilities. This approach empowers the whole community and allows for resources to be effectively used. Using a whole community approach to mitigation planning paves a path to the planning areas stability and resilience.

1.4 Neighboring Community Involvement

During the Mitigation Planning Process neighboring communities, State and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development were informed of planning meetings. They received a personal invite by the Conway County OEM to attend these meetings. Representatives from Arkansas Department of Emergency Management (Layce Blake, Jennifer Oakley), attended in person. Pope County 911 Director (Bill Teeter) attended in person. Perry County Office of Emergency Management (Dennis Ball) attended in person. Yell County Office of Emergency Services Jeff Gilkey were unable to attend in person but provided input and research on past disasters. The Conway County Coordinator, Steve Beavers, was brought into the discussion to help prioritize hazards and mitigation projects for the Planning Area. The knowledge and experience of other emergency managers was beneficial during the planning process Yell County, Perry County, Faulkner County and Conway County all have mutual aid agreements. These mutual aid agreements were reviewed and discussed during the planning process.

SECTION 2 PLANNING PROCESS

2.1 Planning Process

The Planning Process consisted of the following items:

- Once the initial planning meeting was held, Planning Committees were formed. These committees were divided by county/city/municipality. Everyone was encouraged to participate in their committee and invite others to join often. Conway County OEM was in charge of organizing and overseeing these committees. Conway County OEM was responsible for collecting data and documentation from committees and sharing them with West Central Arkansas Planning and Development District (WCAPDD).
- Conway County Judge engaged West Central Arkansas Planning and Development District (WCAPDD), the regional planning organization, to provide staff support in conducting the planning process and preparing the plan.
- Meetings were held with committee members to understand and agree on the planning process. The steps required for the planning process include organizing resources, assessing hazards, developing a mitigation plan, implementing the plan, and monitoring progress.
- WCAPDD staff attended workshops presented by FEMA and ADEM on the preparation of the mitigation plan.
- WCAPDD staff had numerous subsequent discussions about the planning process with ADEM staff.
- The WCAPDD staff discussed planning process issues with others in the state that were involved in the preparation of other hazard mitigation plans such as neighboring Counties and other Planning and Development Districts.
- Natural Hazard Mitigation Questionnaires were distributed and a total of 26 were returned. The natural hazards that the public seemed most concerned about were tornadoes and thunderstorms. A copy of the Natural Hazards Questionnaire and the results collected are in the Supporting Documents section of this plan. The Natural Hazards Questionnaire will be available year-round at the public library, County Website, and WCAPDD website. The questionnaire is a google form. The google form provides easy access to anyone with a cellphone or computer. The information will be collected/documentated in the next update.
- Mitigation actions were created using the data from the Natural Hazards Questionnaire by the planning team
-

The Planning Committee utilized these technical documents:

- Arkansas Hazard Mitigation Plan: used as a guidance tool for past occurrences and risk assessments.
- Conway County Land Use Plan: used to prevent land-use conflicts during developing mitigation actions.
- Conway County Emergency Operations Plan: used to better understand how Conway County responds to emergencies and disasters while providing for the safety and welfare of its citizens. Plan provided information about critical facilities in the County.

- WCAPDD Comprehensive Economic Development Strategy: used to review Disaster and Resiliency procedures from natural disasters that helped during the mitigation actions process.
- Conway County Arkansas Continuity of Operations Plan: utilized in the capability assessment to incorporate how the departments and agencies in Conway County continue the operations of their essential functions under a broad range of circumstances including all-hazard emergencies natural, man-made, technological threats and national security emergencies

Timeline Of Events

Date	Meeting Information	Attendees
May 13, 2020	No meeting FEMA-4441-DR-AR, Project 0002 Mitigation Grant Awarded	<ul style="list-style-type: none"> • Judge Jimmy Hart
February 6, 2020	No meeting. Information sent by email. Participation letter agreeing to participate and adopt the Conway County Hazard Mitigation Plan was discussed and signed.	<ul style="list-style-type: none"> • Judge Jimmy Hart • Gary Green (replaced by Terry Coleman) Mayor of Menifee • Allon Lipsmeyer Mayor City of Morrilton • Larry Wilson (replaced by Josh Young) Mayor City of Oppelo • Ed Paladino (replaced by Patsy Johnson) Mayor City of Plumerville • Shannon Halbroom Superintendent South Conway County School District • Jamie Stacks Superintendent Wonderview School District • Logan Williams Superintendent Nemo Vista School District
June 8, 2020	No Meeting Memorandum of Understanding (MOU) signed between Conway County and Arkansas Department of Emergency Management (ADEM)	<ul style="list-style-type: none"> • Judge Jimmy Hart
February 15, 2021	Kickoff Meeting: Due to Covid-19 attendance was minimal and length of meeting was kept short. Invitations were sent via email.	<ul style="list-style-type: none"> • Judge Jimmy Hart • Kristen Lancaster

Timeline Of Events

	<p>Each person who attended received a workbook containing a copy of the Power Point “Overview of the Mitigation Planning Process”. The Power Point was presented, and then the floor was opened up for a question-and-answer session.</p> <p>Questionnaire was handed out and everyone was encouraged to share it with the public.</p>	<p>(WCAPDD)</p> <ul style="list-style-type: none"> • Jonathon Trafford (OEM) • Steve Beavers (OEM) • Jaymy Williams (Deputy OEM) • Jennifer Oakley (ADEM) • Lacye Blake (ADEM) • Jim Taylor
February 16, 2021	<p>Hazard Questionnaire Meeting. Teleconference meeting per Covid-19 safety precautions</p> <p>The Natural Hazard Questionnaire was distributed to all the Superintendents. It was also made available online at www.wcapdd.org and the Conway County Office of Emergency Management Facebook page.</p>	<p>Members of the Planning Team were asked to distribute this information</p> <p>Information was distributed via email.</p>
March 6, 2021	<p>Hazard Questionnaire</p> <p>Results from the collected Hazard Questionnaire were compiled</p>	<ul style="list-style-type: none"> • Kristin Lancaster (WCAPDD) • Steve Beavers (OEM) • Jaymy Williams (Deputy OEM)
May 26, 2022	<p>Mitigation Strategy Meeting</p> <p>Meeting was virtual with information dispensed via email.</p>	<p>No documented sign in sheet. Meeting was repeated January 25, 2024.</p>
April 16 2023	<p>Staff Change</p> <p>Kristen Lancaster was replaced by Kristin Cawyer at WCAPDD</p>	<ul style="list-style-type: none"> • Judge Jimmy Heart • OEM Steve Beavers
October 27, 2023	<p>Planning meeting</p> <p>Due to staff changes, the amount of time that passed, and the end of the Covid-19 Pandemic, it was important to conduct a public meeting where the community could attend.</p> <p>Invites were sent out via email and phone calls. The meeting date, time, place, and reason were advertised in the newspaper, social media and on the West Central Arkansas Planning and Development District website.</p> <p>This meeting allowed us to:</p> <ul style="list-style-type: none"> • Define mitigation and establish its purpose for the Planning Area • Discuss the purpose of updating the County Hazard Mitigation Plan • Organize a consistent Planning Team • Define and assess capabilities • Engage the community 	

Timeline Of Events

	<p>This meeting was followed up with an email containing a Capabilities Assessment form to be filled out and returned.</p>	
<p>January 25, 2024</p>	<p>Planning meeting Mitigation Strategy/Risk Assessment</p> <p>Risk assessment using the Natural Hazard Questionnaire and the National Risk Index were discussed. There were no questions or discussion from attendees.</p> <p>Mitigation actions in the plan were reviewed to identify if actions were completed, ongoing or no longer applicable.</p> <p>Mitigation plans were discussed, and the floor was open to discussion for new mitigation projects. Items that were discussed consist of:</p> <ul style="list-style-type: none"> • Acquisition of real property from willing sellers for demolition or relocation of buildings to convert the property to green space. • Retrofitting structure and facilities to minimize damage from high winds, earthquakes, floods, wildfire, or other natural hazards. • Elevation of flood prone structures • Development of initial implementation of vegetative management programs. • Minor flood control projects especially in areas of critical facilities • Construction of safe rooms for public and private structures meeting FEMA construction criteria in FEMA 320 “Taking Shelter from the Storm” and FEMA 361 “Design and Construction Guidance for Community Shelters” <p>Safe rooms were the largest topic of discussion. Many safe rooms are located in schools. During school hours they are only for the school children while those in nursing homes and day care centers are left vulnerable.</p> <p>Procedure for keeping the Hazard Mitigation Plan updated was documented.</p>	

Those not in attendance for public meetings were represented by the Conway County OEM Steve Beavers. Information from the meeting was followed up by email/phone conversation.

Follow up meetings were held throughout 2023 and into 2024 with the Planning Team to address questions regarding capabilities assessments, mitigation actions, and future mitigation plans to address concerns in the Planning Area.

Prevention actions were updated:

- Zoning codes limiting development in a floodplain, open space preservation, and development of parks and recreation areas in hazard prone areas.
- Land development regulations such as requiring large lot sizes to ensure a minimum amount of impervious surface area.
- Storm water management regulations requiring retention/detention basins and clearing of ditches.
- Capital improvements planning preventing extension of public infrastructure into hazard areas.
- Building or fire codes requiring certain types of roofing or sprinkler systems

Property Protection actions addressing individual buildings were addressed and updated such as:

- Acquisition
- Relocation
- Retrofitting
- flood proofing
- installing structures such as piles and retaining walls
- grouting rock joints and fissures

Public Education and Awareness actions:

- Provide hazard maps with specific hazard information.
- Develop websites making hazard information publicly available.
- Implement outreach programs providing hazard and mitigation information to the public.
- Asking business owners to provide mitigation information to employees.
- Mailouts about hazards
- Newspaper articles
- Designing education programs for school age children and adults

Natural Resource Protection actions:

- erosion and sediment control programs
- wetland protection programs
- expanding public open space
- environmental restoration, and freshwater/sediment diversion programs)

Emergency Services Protection actions:

- emergency services before, during and immediately after an occurrence such as protection of warning system capability
- protection or hardening of critical facilities (fire stations and hospitals)
- protection of infrastructure (roads needed for emergency response)

Structural Projects actions to control the hazard including:

- reservoirs
- levees
- floodwalls
- other stormwater diversions.

2.2 Public Review

After the completion of planning meetings, the draft plan was provided for the public viewing. Copies of the draft were placed in the public library and the Conway County Courthouse. The draft can be found online on Conway County social media page, WCAPDD social media page, and on the WCAPDD website. The goal was to reach as many community members as possible for public comment before submission to the Arkansas Department of Emergency Management. There were BLANK comments received from the public regarding the plan. Please see Section 7 for screen shots of where plan was posted (this will be filled out after the two week public review)

2.3 Plan Developers

The following individuals participated in the plan development for their jurisdictions.

Developers and Planning Activities	
Jurisdiction	Name of Participation/Involvement
Conway County, unincorporated areas, State Agencies, and neighboring counties	County Judge Jimmy Hart – Represented Conway County. Received hazard mitigation workbook, attended planning meetings, completed questionnaires, and provided information on disasters. Participated in phone calls, emails, and other correspondence. Conway County Office of Emergency Management; Steve Beavers, Director, Volunteer, Jim Taylor, Jonathan Trafford, Deputy OEM Director All members of CCOEM received hazard mitigation workbooks, attended planning meetings, completed, and distributed hazard questionnaires, participated in collection of historical natural disasters information.

Developers and Planning Activities

	<p>Participated in phone calls, emails, and other correspondence with facilitator and school districts, cities, and fire departments.</p> <p>Jaymy Williams Deputy Director Conway County 911 and Carrie Leggett Conway County OEM/911 Received hazard mitigation workbook, attended planning meetings, participated in open discussion, completed natural hazard questionnaire.</p> <p>Arkansas Department of Emergency Management; Lacye Blake and Jennifer Oakley; Received hazard mitigation workbook, attended first planning meeting. Addressed questions from planning team about hazard mitigation and assisted in transition between Kristin Lancaster and Kristin Cawyer.</p> <p>Bill Teeter Pope County OEM; Received hazard mitigation workbook, attended planning meetings, completed questionnaires, and participated in open discussion.</p> <p>Med Tech EMS; Denise Carson, Jennifer Davis Employees of Med Tech EMS in Conway County attended planning meetings, received hazard mitigation workbook, assisted with Risk Assessment, and participated in open discussion of historical storm events</p> <p>AKD (Arkansas Kraft);Ginger Andres, Johnny Henson, Raymond Craven, Tom Holte, Dennis Wright, Stan Chivers Employees of Arkansas Kraft, one of the larger employers in Conway County attended planning meetings, received hazard mitigation workbook, assisted with Risk Assessment, and participated in open discussion of historical storm events.</p> <p>Arkansas Tech University Department of Emergency Management; Graduate Student Will Sappington and Professor Elizibeth Gray attended meetings and participated in open discussion on historical and technical events.</p> <p>Arkansas Forestry Commission; Olivia Standridge assisted with wildfire risk/vulnerability</p> <p>St. Vincents, Arkansas Department of Health, and Arkansas Game and Fish were invited but did not attend</p>
City Of Meniffee	<p>Mayor Terry Coleman; Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</p>

Developers and Planning Activities	
City of Morrilton	Mayor Allen Lipsmeyer; Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.
City of Oppelo	Mayor Josh Young Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.
City of Plummerville	Mayor Edward Paladino Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.
Nemo Vista School District	Superintendent Logan Williams Attended planning meetings, received hazard mitigation workbook, completed inclement weather questionnaire for school district, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.
Riverview Baptist Christian School	Principal Josh Young Attended planning meetings, completed capabilities assessment, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.
Sacred Heart Catholic School	Director of Advancement Alicia Koonce Attended planning meetings, received hazard mitigation workbook, completed inclement weather questionnaire for school district, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.
South Conway County School District	Superintendent Lora Hendrix Attended planning meetings, received hazard mitigation workbook, completed inclement weather questionnaire for school district, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.
Wonderview School District	Superintendent Jamie Stacks Attended planning meetings, received hazard mitigation workbook, completed inclement weather questionnaire for school district, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.
University of Arkansas Community College at Morrilton	David Hall Attended planning meetings, received hazard mitigation workbook, completed inclement weather questionnaire for school district, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.

Developers and Planning Activities	
Private Sector	Richard and Jacki Morris-First Start Leaning UAMS Kids First- Margie Fillinger Attended planning meetings, completed natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion
Non-Profit	Suzanne Kennedy-Center Ridge Food Pantry Attended planning meetings, completed natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion
West Central Arkansas Planning and Development District	Kristen Lancaster, Program Manager with WCAPDD, served as the facilitator in the update of the Conway County Hazard Mitigation Plan. She met and held telephone conferences with school districts, cities, and county members to discuss the mitigation plan process and the HMGP, BRIC, and the FMA grant programs. She contacted local jurisdictions and schools to gather information thru the planning process. April of 2023, these duties were transferred to Kristin Cawyer of WCAPDD who completed the planning process and update.

Points of Contact		
Judge Jimmy Hart Conway County 117 S. Moose Street Morrilton, AR 72110	Conway County OEM Director of OEM Steve Beavers 117 North Division St Morrilton AR 72110	City of Menifee Mayor Terry Coleman P.O. Box 38 Menifee, AR 72107
City of Morrilton Mayor Allen Lipsmeyer P.O. Box 583 Morrilton, AR 72110	City of Oppelo Mayor Josh Young 8 Municipal Drive Oppelo, AR 72110	City of Plumerville Mayor Edward Paladino P.O. Box 7 Plumerville, AR. 72127
Chancellor Lisa Willenburg University of Arkansas Community College at Morrilton 1537 University Blvd. Morrilton, AR 72110	Logan Williams, Supt. Nemo Vista School District 5690 Highway 9 Center Ridge, AR 72027	Josh Young, Principal River View Baptist Christian School 123 Riverview Rd Morrilton, AR 72110
Jennifer Roscoe, Principal Sacred Heart Catholic School 106 N. Joseph St. Morrilton, AR 72110	Lora Hendrix, Supt. South Conway County School Dist. 100 Baramore Street Morrilton, AR 72110	Jamie Stacks, Supt. Wonderview School District 2436 Hwy 95 Hattiesville, AR 72063

2.4 Plan Maintenance

This plan is a blueprint for reducing risk and protecting the planning area's investments. Below is the process for maintaining the plan reflecting change. The purpose is threefold:

1. To track progress on implementing the mitigation strategy
2. To update the plan as new information becomes available
3. To record when disasters occur

The plan needs to be revisited at regular intervals to keep it relevant. FEMA regulations require this to be done every five years. It should also be done after major disaster events or if new conditions significantly change risk.

Monitoring, Evaluating and Updating the Conway County Hazard Mitigation Plan is required by FEMA every five years. A review of the Conway County Hazard Mitigation Plan is required yearly. The planning team developed a method to ensure monitoring, evaluation, and updating of the Conway County Hazard Mitigation Plan occurs annually or as needed. The plan will be submitted to FEMA within five years for review. The County will form a Hazard Mitigation Plan Evaluation Sub-Committee of the existing Conway County Local Emergency Planning Committee (LEPC). The LEPC consists of members from fire service, health officials, emergency management, law enforcement, community groups, transportation, hospital personnel, school administration, emergency medical personnel, elected officials, and owners/operators of covered facilities. The Director of the Conway County Office of Emergency Management will be the initial Chair of the sub-committee or Planning Team Leader. The Planning Team Leader will contact the planning team committee, set up meeting dates quarterly, and ensure each community will maintain a representative on the team.

During the update period, representatives of the Planning Team will verify point of contact information is still correct. Also, as events occur within the jurisdictions covered by this plan, they will be recorded in the appropriate sections throughout. If the planning team feels a new hazard is faced by the County and its jurisdictions, then this hazard should be added and addressed in the plan. When Conway County receives a new presidential declaration, this will be noted in the appropriate sections of the plan. Mitigation actions are completed, the appropriate section of the plan is updated. The responsible party for overseeing and assuring plan updates is the Conway County Office of Emergency Management. At this time, the maintenance procedures for the Mitigation Plan will be conducted at the quarterly LEPC meeting. Each community's representative will be responsible for monitoring and evaluating the progress of the mitigation strategies in the plan. The team members will monitor the plan by providing a mitigation planning update at each quarterly meeting. During the last LEPC meeting of each year, the sub-committee

will meet to review and evaluate each goal and objective to determine their relevance to changing situations in Conway County. Changes in State or Federal policy will be evaluated. The Sub-committee will also review and evaluate the risk assessment portion of the plan to determine if this information should be updated or modified. The parties or agencies responsible for the various implementation actions will report on the status of their projects and will evaluate which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies should be revised.

The Conway County Office of Emergency Management will update the plan within three months before submitting it to the Sub-Committee members and the State Hazard Mitigation Officer. If no changes are necessary, the State Hazard Mitigation Officer will be given a justification for this determination. Comments and recommendations offered by Sub-Committee members and the State Hazard Mitigation Officer will be incorporated into the plan update. In addition, the Conway County Hazard Mitigation Plan will be integrated into other plans. Integrating hazard mitigation into the local comprehensive plan establishes resilience as an overarching value of the community and provides opportunity to continuously manage development in a way that does not increase hazard vulnerability.

Land Use and Development Plans will guide future growth and development away from areas with known hazards. Plans will ensure design standards for new or improved construction taking potential hazards into account. Land use policies can build community resilience by taking information on location, frequency, and severity of hazards into consideration and setting forth recommendations that influence development in a way that does not increase risk to life and property.

Transportation Plans can build community resilience by adopting policies directing growth away from known hazard areas. Transportation systems and other critical infrastructure are designed to withstand the effect of known hazards, so they still function in the event of an emergency or disaster.

Housing Plans help strengthen community resilience by ensuring new or improved housing complies with existing building codes. They are a tool for identifying when building code improvements are needed. Opportunities to strengthen or replace structures identified as vulnerable to hazards can be promoted using existing maintenance or rehabilitation programs, or policies regarding non-conforming, substantially damaged, or improved properties.

Economic Development Plans can promote commercial or industrial expansion in areas that are not vulnerable to damage or disruption from hazards. They make community resilience a key feature in attracting, expanding, and retaining businesses and industry. Public Facilities and Infrastructure Plans can be adopted to ensure critical facilities (police and fire stations) and key infrastructure (water and wastewater treatment plants) are protected from the effects of hazards. They provide establish goals and policies for mitigation projects such as storm water drainage improvements or the public acquisition of hazard areas for open space.

Natural Resource Protection Plans have policies designed to preserve or enhance environmental areas of concern, such as wetlands, riparian corridors, and floodplains. They often include the added benefit of avoiding or minimizing development in hazard areas. These types of policies build community resilience by protecting lives and property and maintaining natural and beneficial functions of system acting as buffers against hazardous events.

Historic Properties and Cultural Resources Plans are designed to protect and preserve historic and cultural sites, buildings, and other resources. They can be linked with mitigation strategies to prevent damage and losses from hazardous events.

The Hazard Mitigation Plan will account for any changes in these plans and incorporate the information accordingly in its next update.

The Planning Committee will make every attempt to ensure the public will be able to directly comment on and provide feedback about the Plan. This will be done by posting the agenda and submitting meeting notice to the local media through newspaper articles, county websites and postings in public locations. This process will inform the citizens of the planning area on any changes or revisions of the Conway County Hazard Mitigation Plan.

Since future plans and government regulations may need to be adopted into the Hazard Mitigation Plan, Conway County Quorum Court will be informed of any necessary changes to the plan by the Team Leader, to be adopted into the Plan by county resolution. The Arkansas Department of Emergency Management will be contacted as necessary for professional and technical advice as needed.

2.5 Continuous Public Involvement

Conway County is dedicated to involving the public directly in the continual reshaping and updating of the Conway County Hazard Mitigation Plan. The Hazard Mitigation Plan Evaluation Sub-Committee members are responsible for the annual monitoring, evaluation, and update of the plan. Although they represent the public to some extent, the public will be able to directly comment on and provide feedback about the plan.

Copies of the FEMA approved Conway County Hazard Mitigation Plan will be available at www.wcapdd.org. Contained in the plan are the address, phone number, and e-mail of the Director of the Conway County Office of Emergency Management, the primary point of contact for the plan.

A public announcement inviting all interested parties will be made prior to each quarterly LEPC meeting, including the December LEPC meeting during which the Hazard Mitigation Planning Sub-Committee reviews and evaluates the plan in its entirety. This meeting will provide the public a forum for which the general public can express concerns, opinions, or ideas about the plan. The Conway County Office of Emergency Management and the Conway County LEPC will publicize and host this meeting. Following the meeting, the evaluation committee will review the comments and make changes to the plan, as appropriate.

2.6 Incorporation into Existing Planning Mechanisms

Conway County and all plan participants currently use state laws pertaining to compliance with the National Flood Insurance Program and state fire codes, to keep compliance with its hazard mitigation programs. These existing mechanisms have hazard mitigation strategies integrated into them. Conway County has a current Emergency Operations Plan. The Hazard Mitigation Plan will become an annex of the EOP for future submissions.

The Conway County Hazard Mitigation Plan will be available for public view on the West Central Arkansas Planning and Development District's website www.wcapdd.org and the Counties website for any entity or citizen who wishes to view or make a copy of it. Copies will also be made available at public libraries, the Conway County Courthouse, municipalities within the County including the Cities of Menifee, Morrilton, Oppelo, and Plumerville also including the School Districts located in Conway County, Nemo Vista School District, Riverview Baptist Christian School, Sacred Heart Catholic School, South Conway County School District, Wonderview School District, and University of Arkansas Community College at Morrilton.

Any participant without previous plans in place will be encouraged to develop zoning plans and other land ordinances to incorporate mitigation strategies. Participants will incorporate the Conway County Hazard Mitigation Plan as it pertains to them. After these discussions, each incorporating mechanism will follow their local laws or guidelines necessary for implementation through open forum public meetings. Each incorporating party will monitor the progress of any incorporated mitigation strategy and report the success or failure to the Emergency Operations Council for inclusion in its annual report. After each update of the Garland County Hazard Mitigation Plan, each incorporating participant will be informed of the changes so they can reflect these changes in their plans also.

All participating jurisdictions will use the risk assessment that was conducted in this mitigation plan for creating strategies when dealing with hazards. The data and maps will be used as supporting documentation to encourage participating jurisdictions to address hazards affecting the planning area and organizations. This supporting data may be used in grant applications.

Conway County will incorporate the Conway County Hazard Mitigation Plan into the Conway County Continuity of Operations Plan and in county land use ordinances and/or plans by following the laws set forth by the county government.

Incorporating the plan into other plans will be done by vote at the regular quorum court meetings and passed by resolution.

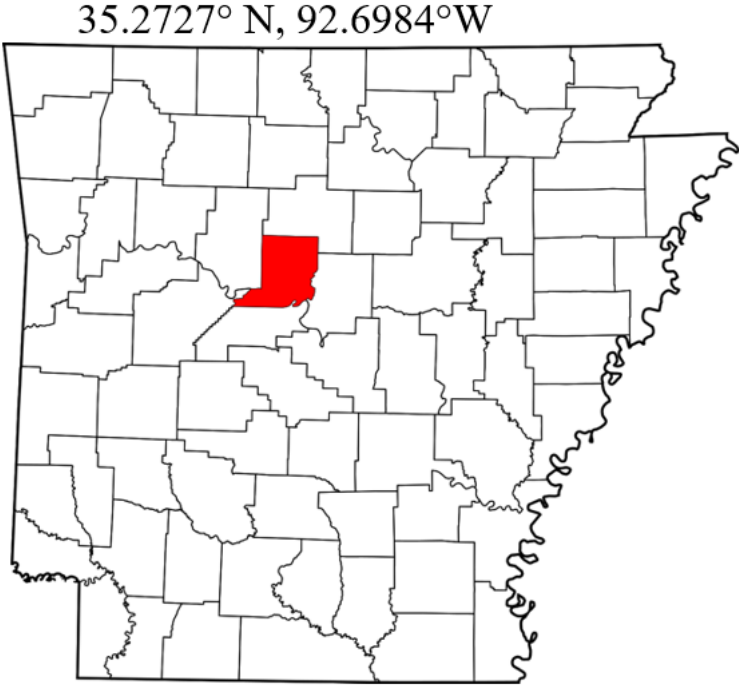
All participating schools will incorporate the Conway County Hazard Mitigation Plan into their Continuity of Operations Plan by following the rules set forth by each school board. Incorporating the plan into continuity of operation plans will be done at regular school board meetings.

The previous plan was incorporated into the listed planning mechanisms to request grant funding for:

- Wonderview School District Saferoom (unfunded)
- Wonderview School District Drainage Project (funded)

SECTION 3 PLANNING AREA AND RESOURCES

3.1 General Geography



Conway County consists of a total area of 567 square miles. 552 square miles is land. 14 square miles is water. It is located in the Arkansas River Valley region. It is a fertile, low-lying valley along the Arkansas River between the Ozark Mountains to the north and the Ouachita Mountains to the south. It is located approximately 52 miles northwest of Little Rock, 109 miles east of Fort Smith, and 180 miles west of Memphis Tennessee. Conway County is surrounded by Faulkner County to the east, Perry County to the south, Van Buren County to the north, and both Yell County and Pope County to the southwest. The city of Morrilton is the County seat.

Conway County landscape consists of rolling farmlands, forested ridges, isolated mountains, and lakes. Petite Jean Mountain is known by both locals and tourists for its excellent hiking, waterfalls, and mountain top views. The Arkansas River, Lake Overcup, and Cadron Creek provide excellent recreation and fishing opportunities.

For the purposes of the Conway County Hazard Mitigation Plan the planning area will consist of the incorporated cities of Menifee, Morrilton, Oppelo, Plumerville, as well as the unincorporated areas of Cleveland, Hattieville, Jerusalem, and Springfield. The planning area also includes Nemo Vista School District, Riverview Baptist Christian School, Sacred Heart Catholic School, South

Conway School District, Wonderview School District, and University of Arkansas Community College at Morrilton.

3.2 General Land Use/Analyzing Development Trends

From 2010 to 2022, Conway County experienced a population decrease of .8%. The 2010 Census reported a population of 21,219. The population in 2022 decreased to 21,046. This decrease is projected to continue in 2024. Despite the decrease in population, land use and development increased. In 2020 census there were approximately 9,646 housing units in Conway County.

According to Conway County records and the 2020 census there are approximately 9,646 Housing units in Conway County.

Despite a population decrease, Conway County continues to see new construction. There were 19 new building permits for the city of Morrilton in 2022. The county does not require a building permit for new construction; however, the 911 system tracks how many new addresses were requested. A new apartment complex that Steve will give me information on.

There have been positive changes in the area due to the mitigation actions. Wonderview school District received funding to complete a drainage project. This project was completed February 24, 2023. The project was expected to mitigate flooding in the Wonderview School District High School and Superintendents office. It also reduced Flood Insurance rates. Before this mitigation project the High School has flooded more than once damaging 2 classrooms as well as creating erosion issues.

The planning area has not seen a substantial increase or decrease in population, land use and development that would impact the community's infrastructure, people, and economy. However, this information will continue to be documented by the planning team over the next five years.

3.3 NFIP Participation

The National Flood Insurance Program (NFIP) enables property owners to purchase flood insurance. To qualify, communities must agree to adopt and implement local floodplain management regulations. These regulations are intended to protect lives and reduce the risk of new construction or substantial improvements from flooding.

Conway County ID 050426B



Conway County is a member of the National Flood Insurance Program. Their community Identification number is 050426B. Their initial Flood Hazard Boundary Map (FHBM) was identified 06/10/77, their current effective map date 3/21/2019 and Reg-Emergency Date 06/03/86.

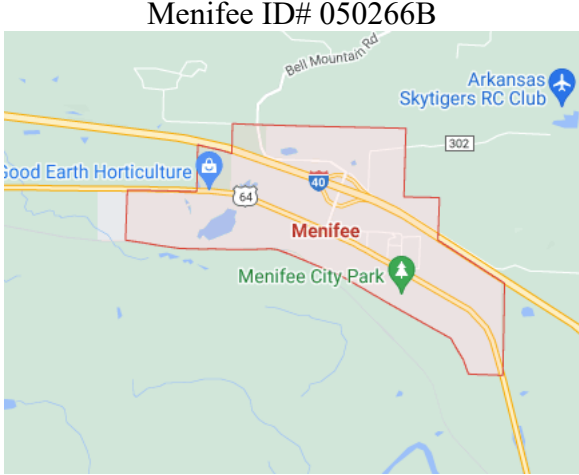
Conway County participates in the NFIP by assisting residents with filling out documents for the NFIP and educating citizens about the NFIP program. Building permits are not issued by Conway County. In Conway County the city of Morrilton is the only city to issue building permits. However, Conway County does have a Certified Floodplain Manager (CFM) who oversees the Counties floodplain management. The CFM monitors land use. This includes new construction, substantial alterations to a structure, and changes in the use of a structure or land. If floodplain resources are needed that the County cannot provide, the Counties CFM requests assistance from Arkansas Natural Resource Conservation Service and FEMA. The ANRC provides technical assistance to the community assuring that the community is adequately enforcing its floodplain management regulations.

The county plans to continue participating in the NFIP through continuing floodplain education and continually evaluating structures:

- In need of improvements
- Substantially damaged
- Located within the floodplain

The County will work with owners who have structures that are substantially damaged or need improvements/repairs. The County will work with the owner to bring the structure into compliance with State and Federal NFIP compliance codes by providing the owner with the necessary codes and monitoring to ensure compliance

Conway County does not have a Community Rating System (CRS) Classification. Conway County currently lacks the necessary resources to take part in the CRS.



The City of Menifee is a member of the National Flood Insurance Program, Community Identification Number 050226B. Their initial Flood Hazard Boundary Map was identified 04/25/75, the Initial Flood Insurance Rate Map identified 07/04/11, current effective map date 03/21/19, and Reg-Emergency Date 02/28/12.

The City of Menifee participates in the NFIP by assisting the residents with filling out documents for the NFIP and educating citizens about the NFIP program.

The Mayor of Menifee is the designated Floodplain Manager. The Floodplain Manager oversees the city's floodplain management program. The Floodplain Manager monitors land use within the city. This includes new construction, substantial alterations to a structure, and changes in the use of a structure or land. If floodplain resources are needed that the city of Menifee cannot provide, the Floodplain Manager requests assistance from County. If the County cannot provide the needed assistance they will rely on State/Federal guidelines and resources such as Arkansas Natural Resource Conservation Service (AMRC) and FEMA. ANRC provides technical assistance to the community assuring that the community is adequately enforcing its floodplain management regulations. The city plans to continue to participate through continuing floodplain education and staying in compliance with NFIP.

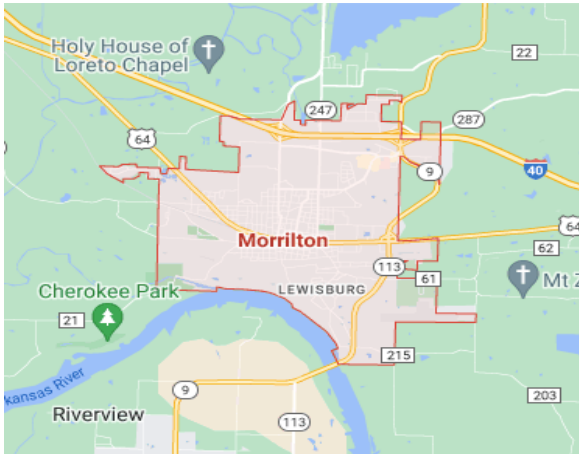
The City of Menifee and Conway County continues to evaluate structures that are:

- In need of improvements
- Substantially damaged
- Located within the floodplain

The city will work with owners who have structures that are substantially damaged or need improvements/repairs. The city will work with the owner to bring the structure into compliance with State and Federal NFIP compliance codes by providing the owner with the necessary codes and monitoring to ensure compliance.

The city of Menifee does not have a Community Rating System (CRS) Classification. At this time the city lacks the necessary resources to take part in the CRS.

Morrilton ID# 050044B



The City of Morrilton is a member of the National Flood Insurance Program, Community Identification Number 050044B. Their initial Flood Hazard Boundary Map was identified 11/02/73, the Initial Flood Insurance Rate Map identified 03/15/82, current effective map date 03/21/19, and Reg-Emergency Date 03/15/82.

The City of Morrilton participates in the NFIP by assisting the residents with filling out documents for the NFIP, issuing permits, and educating citizens about the NFIP program.

The city of Morrilton has a Certified Floodplain Manager. The Floodplain Manager oversees the city's floodplain management program. The Floodplain Manager monitors land use within the city. This includes new construction, substantial alterations to a structure, and changes in the use

of a structure or land. If floodplain resources are needed that the city of Morrilton cannot provide, the Floodplain Manager requests assistance from County. If the County cannot provide the needed assistance they will rely on State/Federal guidelines and resources such as Arkansas Natural Resource Conservation Service (AMRC) and FEMA. ANRC provides technical assistance to the community assuring that the community is adequately enforcing its floodplain management regulations.

The city plans to continue to participate through continuing floodplain education, overseeing, issuing permits and staying in compliance with NFIP.

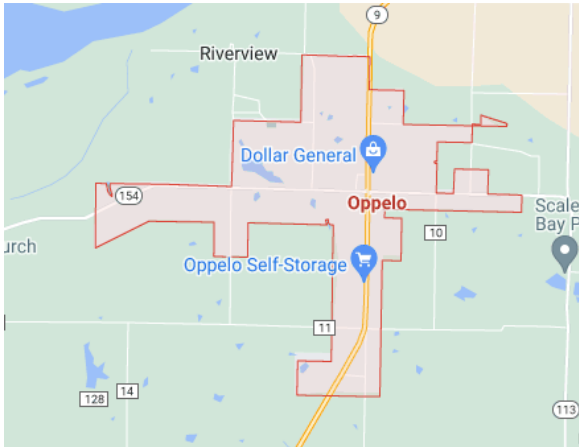
The City of Morrilton and Conway County continues to evaluate structures that are:

- In need of improvements
- Substantially damaged
- Located within the floodplain

The County will work with owners who have structures that are substantially damaged or need improvements/repairs. The County will work with the owner to bring the structure into compliance with State and Federal NFIP compliance codes by providing the owner with the necessary codes, permits and monitoring to ensure compliance.

The city of Morrilton does not have a Community Rating System (CRS) Classification. At this time the city lacks the necessary resources to take part in the CRS.

Oppelo ID# 050597B



The City of Oppelo is a member of the National Flood Insurance Program, Community Identification Number O50597BB. Their initial Flood Hazard Boundary Map was identified

07/04/11, the Initial Flood Insurance Rate Map identified 07/04/11, current effective map date 03/21/19, and Reg-Emergency Date 07/04/11.

The City of Oppelo participates in the NFIP by assisting the residents with filling out documents for the NFIP and educating citizens about the NFIP program.

The Mayor of Oppelo is the designated Floodplain Manager. The Floodplain Manager oversees the city's floodplain management program. The Floodplain Manager monitors land use within the city. This includes new construction, substantial alterations to a structure, and changes in the use of a structure or land. If floodplain resources are needed that the city of Oppelo cannot provide, the Floodplain Manager requests assistance from County. If the County cannot provide the needed assistance they will rely on State/Federal guidelines and resources such as Arkansas Natural Resource Conservation Service (ANRCS) and FEMA. ANRCS provides technical assistance to the community assuring that the community is adequately enforcing its floodplain management regulations. The city plans to continue to participate through continuing floodplain education and staying in compliance with NFIP.

The City of Oppelo and Conway County continues to evaluate structures that are:

- In need of improvements
- Substantially damaged
- Located within the floodplain

The city will work with owners who have structures that are substantially damaged or need improvements/repairs. The city will work with the owner to bring the structure into compliance with State and Federal NFIP compliance codes by providing the owner with the necessary codes and monitoring to ensure compliance.

The city of Oppelo does not have a Community Rating System (CRS) Classification. At this time the city lacks the necessary resources to take part in the CRS.

Plumerville ID# 050364B



The City of Plumerville is a member of the National Flood Insurance Program, Community Identification Number O50364B. Their initial Flood Hazard Boundary Map was identified 06/27/75, the Initial Flood Insurance Rate Map identified 01/17/86, current effective map date 03/21/19, and Reg-Emergency Date 01/17/86.

The City of Plumerville participates in the NFIP by assisting the residents with filling out documents for the NFIP and educating citizens about the NFIP program.

The Mayor of Plumerville is the designated Floodplain Manager. The Floodplain Manager oversees the city's floodplain management program. The Floodplain Manager monitors land use within the city. This includes new construction, substantial alterations to a structure, and changes in the use of a structure or land. If floodplain resources are needed that the city of Plumerville cannot provide, the Floodplain Manager requests assistance from County. If the County cannot provide the needed assistance they will rely on State/Federal guidelines and resources such as Arkansas Natural Resource Conservation Service (AMRC) and FEMA. ANRC provides technical assistance to the community assuring that the community is adequately enforcing its floodplain management regulations. The city plans to continue to participate through continuing floodplain education and staying in compliance with NFIP.

The City of Plumerville and Conway County continues to evaluate structures that are:

- In need of improvements
- Substantially damaged
- Located within the floodplain

The city will work with owners who have structures that are substantially damaged or need improvements/repairs. The city will work with the owner to bring the structure into compliance

with State and Federal NFIP compliance codes by providing the owner with the necessary codes and monitoring to ensure compliance.

The city of Plumerville does not have a Community Rating System (CRS) Classification. At this time the city lacks the necessary resources to take part in the CRS.

School Districts: There are three school districts, two private schools and one college campus located in the planning area.

Nemo Vista Elementary, Middle School, and High School are located on the school campus at 5690 Hwy 9, Center Ridge, AR.

Sacred Heart Catholic School is located at 106 N Joseph Street in Morrilton

South Conway County School District has 6 schools in Morrilton.

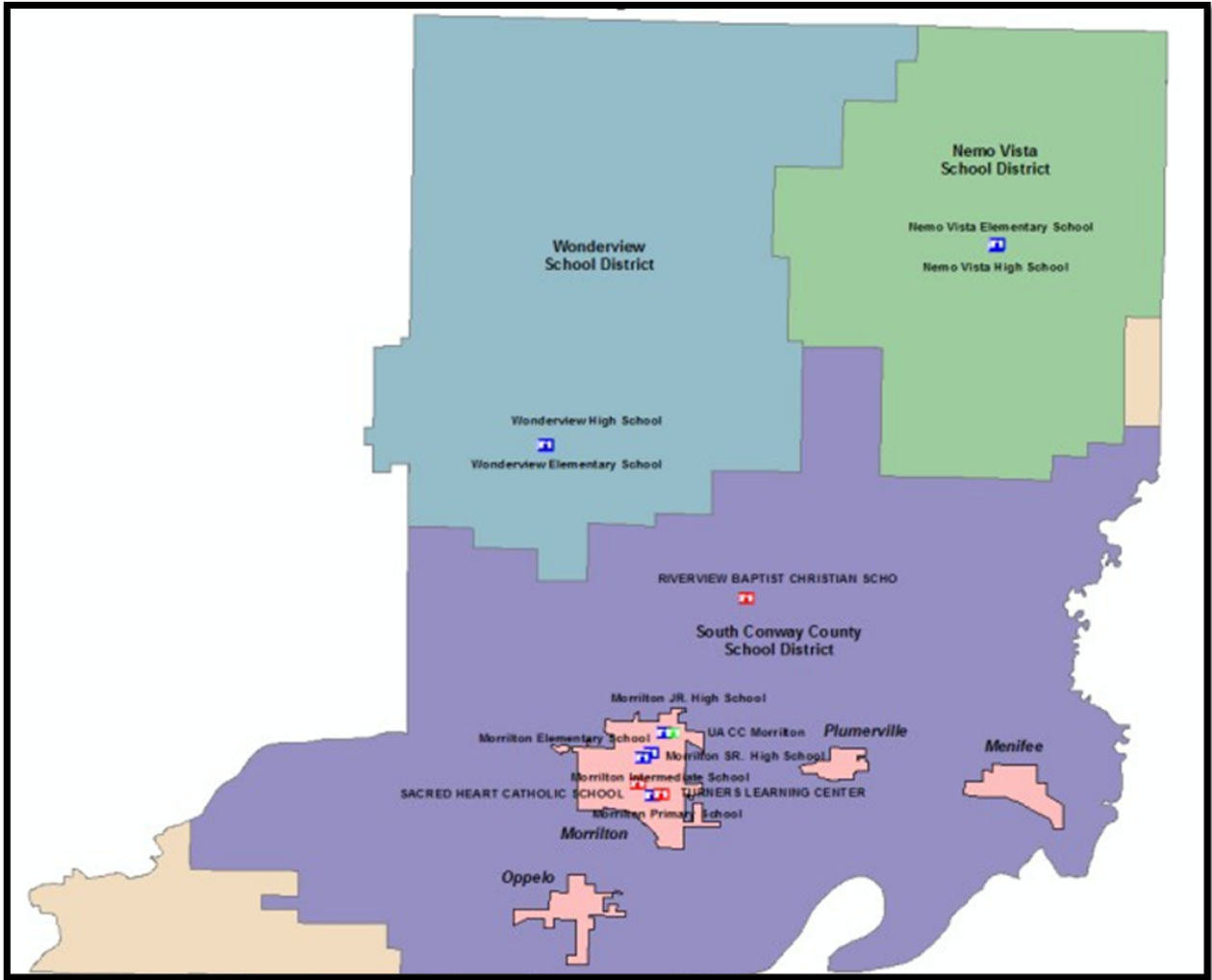
- Elementary School located at 1203 North Saint Joseph St.
- Intermediate Scholl located at 1907 Poor Farm Rd.
- Primary School located at 410 South Bridge St.
- Senior High School located at 701 East Harding St.
- River Valley Vocation Center located at 1905 Poor Farm Rd.

Riverview Baptist Christian School is located at 123 Riverview Road in Morrilton.

Wonderview Elementary and High School are located on the school campus at 2436 Hwy 95, Hattiesville, AR.

The University of Arkansas Community College at Morrilton is a two-year college located at 1537 University Blvd., Morrilton, AR 72110.

National Flood Insurance Program (NFIP) School Districts are not required to be a member of the NFIP, but they are located in Conway County and the City of members.2.2.2 Fire Districts.



Jurisdiction	Financial Capabilities						
	Fees for water, sewer, gas, or electric services	Capital improvements project funding	Community Development Block Grant	Federal Funding Programs	State Funding Programs	Impact fees for new development	Authority to levy taxes for specific purposes
Conway County		X	X	X	X	X	X
Morrilton							
Menifee	X						X
Oppelo							
Plumerville							
Nemo Vista School District							
Sacred Heart Catholic School							
South Conway County School District				X	X		X
River View Christian School							
Wonderview School District				X	X		
University of Arkansas Community College at Morrilton							

Jurisdiction	Education and Outreach Capabilities					
	n-Profit Organizations for environmental protection, emergency preparedness, or access to assist functional needs populations	Ongoing Public Education Program or information program	Natural Disaster or safety related school programs	Firewise Communities Certification	Public-private partnership initiatives addressing disaster related issues	Storm Ready Certification
Conway County	X	X	X	NOT YET	X	X
Morrilton						
Menifee						
Oppelo						
Plumerville						
Nemo Vista School District						
Sacred Heart Catholic School						
South Conway County School District		X	X			
River View Christian School						
Wonderview School District						
University of Arkansas Community College at Morrilton						

Jurisdiction	Administrative and Technical Capabilities										
	Garland County Local Emergency Planning Committee	Planning Commission	Mutual Aid Agreements	Maintenance Programs to Reduce Risk	Floodplain Administrator	Emergency Manager	Community Planner / Grant Writers	GIS / HAZUS	Warning Systems	Civil Engineer	Hazard Data and Information
Conway County	X		X	X	X	X	X		X		X
Morrilton											
Menifee	X	X	X		X				X		
Oppelo											
Plumerville											
Nemo Vista School District											
Sacred Heart Catholic School											
South Conway County School District				X							
River View Christian School											
Wonderview School District			X	X							
University of Arkansas Community College at Morrilton									X		

3.5 Improving Capabilities

Leadership and representatives in all participating jurisdictions are very receptive to mitigation. The Conway County Judge, Conway County OEM, and leadership make mitigation a top priority. Representatives are actively seeking additional funding to improve the readiness and preparedness of their communities. Ways the communities are improving capabilities are:

- Expand upon education and outreach about mitigation activities with an emphasis on underserved populations.
- Work with schools and local jurisdictions to construct saferooms.
- Exploring funding options for flood mitigation.
- Improving roadways and bridges against flooding
- Constructing a County/Community Wildfire Plan

SECTION 4 HAZARD IDENTIFICATION AND RISK ASSESSMENT

4.1 Risk Assessment Overview

This chapter focuses on how the hazards identified in the Planning Area directly and uniquely impact people, the economy, the built environment, and the natural environment.

The risk assessment helps communicate vulnerabilities, develop priorities, and inform decision-making for the hazard mitigation plan and for other emergency management efforts. This plan was completed with hours of input from stakeholders and community members in the Planning Area. The 2023 risk assessment provides the factual basis for developing a mitigation strategy for the Planning Area.

This assessment integrates an assets-based approach with an analysis of individual hazards to provide a deeper understanding of specific hazards and their impact on the Planning Area. An assets-based approach aligns with the most current FEMA guidance, allows communities to identify assets that are critical to their stability and that are most exposed to hazards. For hazard mitigation planning, this approach allows communities to drive mitigation actions more effectively. Beyond the scope of this mitigation plan, results from the risk assessment should be integrated into future emergency management planning, recovery planning, and development efforts.

4.2 Structure of the Risk Assessment

This introductory section includes a brief discussion of previous FEMA disaster declarations, an overview of the hazard assessment process, and a summary risk profile for the Planning Area. The risk profile is driven by an assessment of the hazard's overall significance, combined with a hazard's probability and extent, along with community vulnerabilities to the hazard. The individual risk assessment for each hazard aligns with the same format. They outline a hazard's overall significance from a determination of its specific probabilities, risks, and communities' specific vulnerabilities to them.

4.3 Developing the 2023 Risk Assessment

The 2023 risk assessment updates the risk assessment found in the 2016 Conway County Hazard Mitigation Plan. The update process included reviews of the 2016 Plan, previous events, and the specific vulnerabilities of the planning communities.

Outreach to subject-matter experts, stakeholders, the public and information from the National Risk Index ensured the appropriate elements of each hazard were included and that the best-available data was used for the risk assessment.

4.4 Hazard Risk Profile Overview

The hazard risk profile summarized each hazard's probability, location, extent, vulnerability, and overall significance. FEMA's Local Mitigation Planning Handbook Worksheet 5.1 provided the basis for these classifications, but they were adjusted to better meet the needs of the Planning Area. An overview of these four classifications is provided below.

4.5 Vulnerability and Risk Assessment by Hazard

Vulnerability examines what assets are susceptible to damage from each hazard. Vulnerability is a qualitative estimate based on the Planning Teams desktop research and local expertise from the officials and stakeholders in the Planning Area.

The Planning Team did not use a quantitative metric to describe the vulnerability for each hazard since the vulnerability was not uniform across the Planning Area for all hazards. Instead, the Planning Team used a narrative to describe vulnerability.

The Conway County Hazard Mitigation Plan includes a description or profile, location, and extent of all-natural hazards affecting each jurisdiction. (44 CFR 201.6(c)(2)(i) and 44 CFR 201.6(c)(2)(iii).

Description: the natural hazard affecting the jurisdictions in the planning area.

Location: (Geographic Area Affected) the geographic areas in the planning area affected by the hazard, and when possible, maps to illustrate the location. But for some hazards, such as tornados, the plan states the entire planning area is equally at risk to that hazard.

Extent: (Magnitude/Strength based on historic events or future probability)

Previous Occurrences: hazard events for each jurisdiction (44 CFR 201.6 (c)(2)(i) that have been addressed.

Probability of Future Events: means the likelihood of the hazard occurring in the future and may be defined in terms of general descriptors, historical frequencies, and statistical probabilities. Statistical probabilities often refer to events of a specific size or strength. Hazard likelihood can

also be compared using general descriptions or rankings. For the purpose of this plan, we will use the general descriptors to describe the likelihood of hazard events based on historical frequency.

The equation used to estimate probability of future events:

$$\frac{\# \text{ of events}}{\# \text{ of days}} \times 100 = \underline{\hspace{2cm}}$$

Impact: the consequence or effect of the hazard on the community and its assets. Impacts will be described by referencing historical disaster impacts and/or an estimate of potential future losses, such as percent damage of total exposure.

Vulnerability of Estimating Potential Loss: identifies structures, systems, populations, or other community assets as defined by the community susceptible to damage and loss from hazard events. It is a list of key issues or problem statements that clearly describe the community’s greatest vulnerabilities and will be addressed in the mitigation strategy.

Repetitive Loss Properties and Severe Repetitive Loss Properties: addresses NFIP insured structures describing the types (residential, commercial, institutional, etc.) and estimates the number of repetitive loss properties located in the identified flood hazard areas. (44 CFR 201.6(c)(2)(ii))

Methodology used in Estimating Potential Loss

The methodology used in this plan for the potential loss estimate was developed by using past hazard events data from The National Climatic Data Center (NCDC) Storm Events Database.

If we were unable to obtain information of a certain type of past hazard event, we did not estimate a potential loss due to the lack of information.

Natural Hazards Affecting the Planning Area

This mitigation plan addresses the natural hazards affecting the planning area. The hazards of concern are dam failure, drought, earthquake, extreme heat, flooding, landslides, thunderstorms, tornadoes, wildfire, and winter storms. Expansive soils are not addressed in this plan since they are not an issue/threat to the planning area.

4.6 Disaster Declaration History

The Planning Area has been a recipient to 20 disaster declarations from 2000-2023. Since the adoption of the Conway County Hazard Mitigation Plan in 2016, there have been 6 disaster declarations in the Planning Area. The table below is a list of disaster declarations from 2000-2023. For more information on the data in the table below please go to [Disaster Declarations for States and Counties | FEMA.gov](https://www.fema.gov/disaster-declarations-states-counties).

Disaster Declaration	Date	Incident Description
1354	12/29/2000	Ice Storm
1363	04/09/2001	Flooding
1472	06/06/2003	Severe Storms, Tornadoes and Flooding
3215	09/02/2005	Hurricane
1636	04/12/2006	Tornadoes and Storms
1744	02/07/2008	Severe Storms, Tornadoes, and Flooding
1751	03/26/2008	Severe Storms, Tornadoes, and Flooding
1758	05/20/2008	Severe Storms, Tornadoes, and Flooding
1793	09/18/2008	Severe Storms and Flooding associated with Hurricane Gustav
3301	01/28/2009	Severe Ice
1819	02/06/2009	Severe Winter Storm
1845	06/16/2009	Severe Storms, Tornadoes, and Flooding
1861	12/03/2009	Severe Storms, Tornadoes, and Flooding
1975	05/02/2011	Flooding
4318	60/15/2017	Severe Storms, Tornadoes, Straight-line Winds, and Flooding
3414	05/30/2019	Flood
4441	06/08/2019	Severe Storms and Flooding
3461	03/13/2020	Covid-19
3541	08/27/2020	Hurricane Laura
4518	04/03/2020	Covid-19 Pandemic

4.7 Hazard Classification and Identification

Classification

The planning team considered a full range of hazards that could affect the area for the 2023 Conway County Hazard Mitigation Plan. FEMA and the Department of Homeland Security generally organize threats and hazards into three categories:

- Natural
- Technological/accidental (dam incident)
- Human-induced/intentional

This plan will address hazards that can be categorized as natural or technological/accidental. Although this plan recognizes the potential threat caused by human-induced/intentional threats,

these considerations are outside the scope of this mitigation plan. Natural or technological hazards that have posed a historical threat or a probable future threat were addressed because they FMEA’s hazard mitigation requirements. These assessed hazards were derived from the State Hazard Mitigation Plan and from the 2016 Conway County Hazard Mitigation Plan. The planning team, stakeholders, and the public participated in meetings and hazard questionnaires that were designed to discuss each hazard as it relates to the Planning Area.

Identification

Hazard identification is the process of identifying hazards threatening a given area. It is the first step in the risk assessment process. The planning team identified several natural hazards posing a threat to the Planning Area warranting a complete profile in this hazard mitigation plan.

The following hazards were identified from historical information provided by planning team members, newspapers, review of plans, reports, internet research, the State Mitigation Plan, FEMA publication “Multi-Hazard Identification and Risk Assessment”, and information provided by FEMA and ADEM.

Hazards	Hazard Events
Dam/Levee Failure	There have been no dam/levee failures in Conway County
Drought	15 events reported from 2000-2023
Earthquake	67 events greater than 1.5 from 2000-2023
Extreme Heat	2 events from 2000-2023
Flood / Flash Floods	25 Flood events/ 28 Flash Flood events from 2000-2023
Hailstorm	111 events from 2000-2023
Landslide	1 event (2009) from 2000-2023
Lightning	11 events from 2000-2023
Strong Winds	6 events from 2000-2023
Thunderstorm Wind	82 events reported from 2000-2023
Tornado	20 events from 2000-2023
Wildfire	3 events reported from 2000-2023
Winter Storm / Ice Storm	62 Winter Weather events, 5 Ice storm events from 2000-2023

[Storm Events Database - Search Results | National Centers for Environmental Information \(noaa.gov\)](#)

4.8 Natural Hazards Affecting Conway County

This mitigation plan addresses the natural hazards affecting the planning area. The hazards of concern are dam failure, drought, extreme heat, earthquake, flooding, landslides, thunderstorms, tornadoes, wildfire, and winter storms. Expansive soils are not addressed in this plan since they are not an issue/threat to the planning area.

4.8.1 Dam

Dam failure: A dam failure is the collapse, breach or other failure resulting in downstream flooding. A dam impounds water in the upstream area, referred to the reservoir. The amount of water impounded is measured in acre-feet. An acre-foot is the volume of water that covers an acre of land to a depth of one foot. As a function of upstream topography, even a very small dam may impound or detain many acre-feet of water. Two factors influence the potential severity of a full or partial dam failure:

1. Amount of water impounded
2. Density, type, and value of development and infrastructure located downstream

The Arkansas Natural Resource Commission (ANRC) provides comprehensive regulation and supervision of dams. The link may be used to reference the ANRC Rules Governing Design and Operation of Dams Title 7. [TITLE VII \(arkansas.gov\)](https://www.arkansas.gov)

Low Risk Dams that are private, county, or state-owned dams not presenting a danger to individuals, structures, residential housing, county roads or state highways will not be addressed in this plan.

Extent, Magnitude or Severity of Dam Failure: Currently, no studies are available for the dams to determine the extent of dam failure in the Planning Area. The need to conduct flood inundation studies for high and significant risk hazard dams will be addressed in this plan as a mitigation action.

Possible Impact of Climate Change: The challenges posed by climate change, such as more intense storms, frequent heavy precipitation, heat waves, drought, and extreme flooding would have minimal impact on dam failure but will be noted for continued research on nature-based solutions to mitigate all possibilities of potential increased impact.

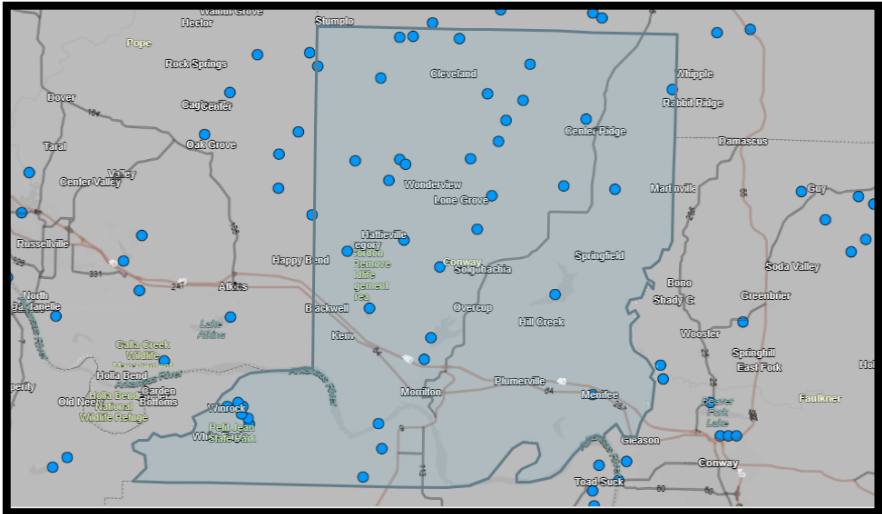
Possible Impact of Population Change: Changes in population pose a threat to dams and dam failure. Population growth and urbanization change the landscape of the area. This results in loss/addition of natural landscaping such as trees, grass, and rock. Building structure influence

climate and the natural path of water flow. Population growth will have an impact on the number of resources used. Adjustments for population growth impacts wildlife. Population growth increases the chances of loss of life if dam failure were to occur.

Previous Occurrences: There have been no previous occurrences of dam failure in the Planning Area. However, there is always a possibility that a dam failure could occur. There is less than 1 percent chance that a dam failure will occur in any given year.

Each dam will be described separately with their corresponding location, impact, and overall summary of vulnerability due to the uniqueness of each dam and location.

Dams located in the Planning Area



[National Inventory of Dams \(army.mil\)](http://army.mil)

Dam	Category	ANRC Hazard Classification	EAP	Data Deficiency	Probability of Future Events
West Fork Point Remove Creek WID Site 07	Intermediate	High	Yes	Yes	Unlikely
Lake Abby Dam	Small	High	No	Yes	Unlikely
East Fork Point Remove Creek WID Site 09	Small	High	Yes	Yes	Unlikely
East Fork Point Remove Creek WID Site 08	Intermediate	Significant	No	Yes	Unlikely
East Fork Point Remove Creek WID Site 04	Intermediate	Significant	No	Yes	Unlikely
East Fork Point Remove Creek WID Site 06	Intermediate	Significant	No	Yes	Unlikely
Lake Bailey Dam	Intermediate	Significant	No	Yes	Unlikely
Lake Jeannette Dam	Small	Significant	No	Yes	Unlikely
Lake Overcup Dam	Intermediate	Significant	No	Yes	Unlikely
Petit Jean Water Supply Dam	Small	Significant	No	Yes	Unlikely
Winrock Farms Lake Dam	Small	Significant	No	Yes	Unlikely
Arthur V. Ormond Lock & Dam	Large	Low	Yes	Yes	Unlikely

E FORK PT REMOVE CREEK WID SITE 04: Lat: 35.405,

Long: -92.67500000000001, NPDP ID : AR00318, Significant Risk Hazard.



E Fork Pt Remove Creek Wid Site 04 is a local government lake owned by Point Remove Creek Watershed Improvement District. The dam was constructed in 1967 and is used for flood risk reduction. It is located in the unincorporated area of the Conway County. The community of Cleveland is the nearest community. It has a dam height of 4601 feet and is 1,184 feet long. It is of earthen construction. It has a normal surface area of 31 acres. Maximum discharge is 3,907 cubic

feet per second. Its maximum capacity is 3,290-acre feet. Normal storage is 165-acre feet. The drain area is 6 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

Minor to severe damage could occur to private land in Cleveland, an unincorporated area of Conway County. There are no residential structures, businesses, critical facilities, or people located in the inundated area. Farmland, agricultural animals, and some timber would be damaged or destroyed. Loss of life is not expected.

Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure near Cleveland, an unincorporated area of Conway County. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

E FORK PT REMOVE CREEK WID SITE 06: Lat: 35.3825, Long: -92.65583333,

NPDP ID : AR00320, Significant Risk Hazard.



E Fork Pt Remove Creek Wid Site 06 is a local government lake owned by Point Remove Creek Watershed Improvement District. The dam was constructed in 1973 and is used as a fish and wildlife pond. It is located in the unincorporated area of the Conway County. The town of Center Ridge is the nearest community. It has a dam height of 60 feet and is 1,410 feet long. It is of earthen construction. It has a normal surface area of 61 acres. Maximum discharge is 12,744 cubic feet per second. Its maximum capacity is 8,108-acre feet. Normal storage is 450-acre feet. The drain area is 16.1 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

Minor to severe damage could occur in the area surrounding the of Center Ridge, an unincorporated area of Conway County. There are no residential structures, businesses, critical facilities, or people located in the inundated area. Pastureland and areas of timber could be damaged or destroyed. Highway 124 and Watershed Road would be damaged or destroyed. Any populations traveling this road could be injured or killed. However, loss of life is not expected.

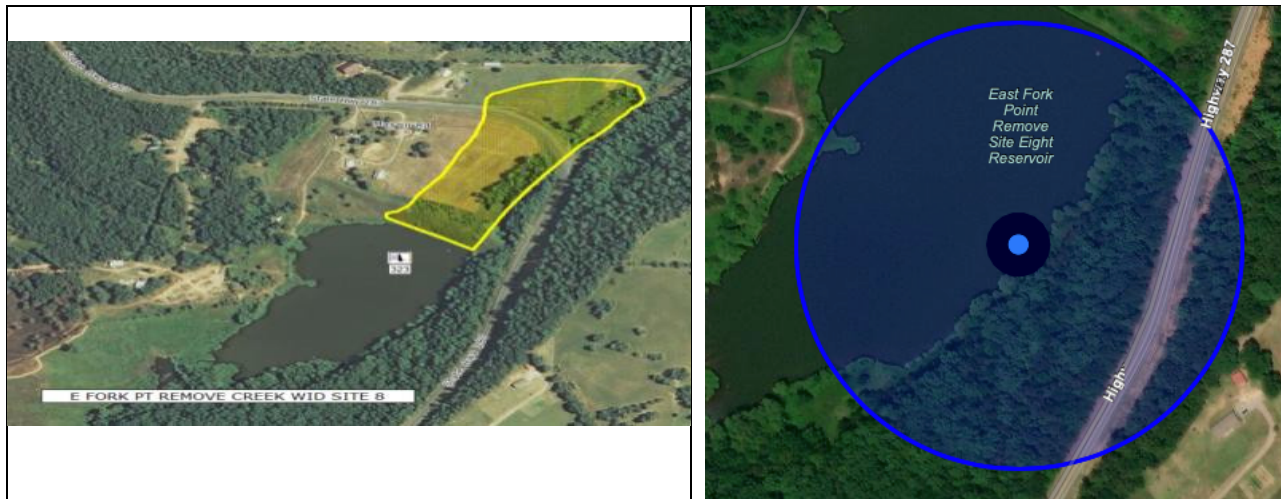
Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure near Center Ridge, an unincorporated area of Conway County. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

E FORK PT REMOVE CREEK WID SITE 08: Lat: 35.35, Long: -92.69250000000001,

NPDP ID : AR00322, Significant Risk Hazard.



E Fork Pt Remove Creek Wid Site 08 is a local government lake owned by Point Remove Creek Watershed Improvement District. The dam was constructed in 1967 and is used as a fish and wildlife pond. It is located in the unincorporated area of the Conway County. It has a dam height of 50 feet and is 1,003 feet long. It is of earthen construction. It has a normal surface area of 13 acres. Maximum discharge is 2,880 cubic feet per second. Its maximum capacity is 1,655-acre feet. Normal storage is 62-acre feet. The drain area is 3 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover

could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

The inundation area does not contain residential structures. There are residential structures to the northeast of the inundation area. These structures are not expected to be impacted. Privately owned land and areas with timber could be destroyed. Areas of Highway 287 could be damaged or destroyed. Any populations traveling this highway could be injured or killed. However, loss of life is not expected.

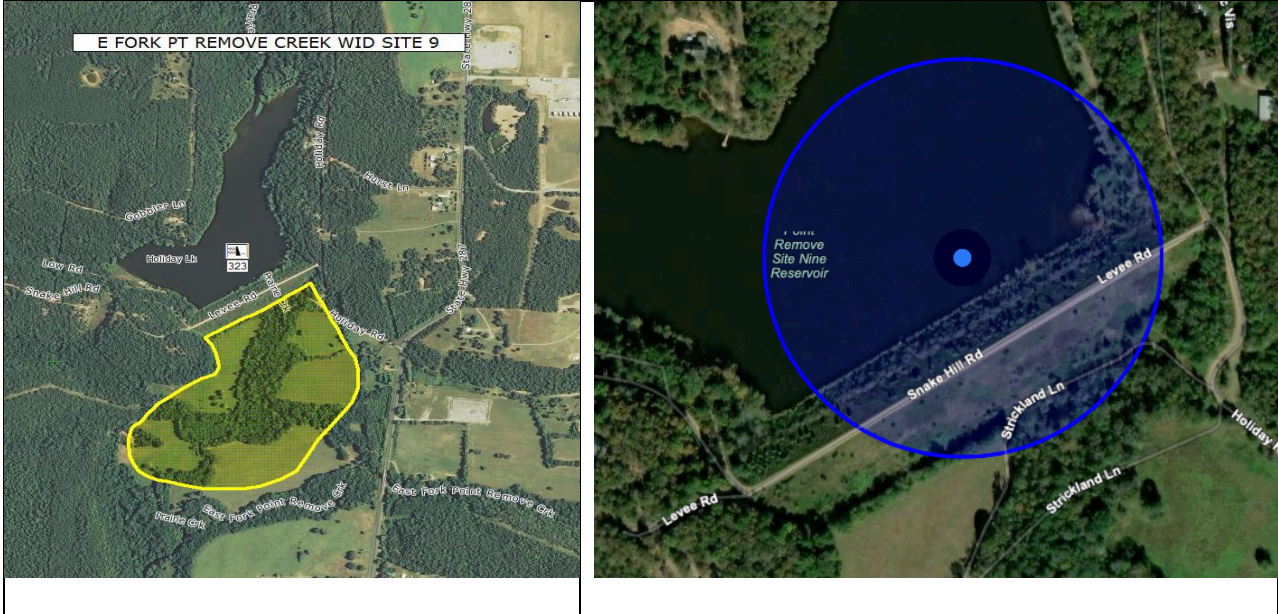
Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

E FORK PT REMOVE CREEK WID SITE 09: Lat: 35.29027778, Long: -92.68555556,

NPDP ID : AR00323, High Risk Hazard.



E Fork Pt Remove Creek Wid Site 09 is a local government lake owned by Point Remove Creek Watershed Improvement District. The dam was constructed in 1969 and is used as a fish and wildlife pond. It is located in the city of Morrilton. It has a dam height of 69 feet and is 1,450 feet

long. It is of earthen construction. It has a normal surface area of 42 acres. Maximum discharge is 7,580 cubic feet per second. Its maximum capacity is 7,808-acre feet. Normal storage is 282-acre feet. The drain area is 14.2 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

Minor to major damage to property would occur around Snake Hill Road, Levee Road, and Strickland Lane. There could be minor damage to Holiday Road and areas of State Hwy 287. Travelers on these roads could be injured or killed. The jurisdictions of the city of Morrilton, Menifee, Oppelo, Plumerville, and the school districts of Nemo Vista, Wonderview, South Conway County, and University of Arkansas Community College at Morrilton will not be impacted by a dam failure. There are no critical facilities in this area. This dam is located in a predominately rural area. Loss of life is expected to be minimal.

Extent, Magnitude, or Severity of Dam Failure

This dam does have an EAP. There are inundation studies located in the EAP for this dam, however, the information is unavailable. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

W FORK PT REMOVE CREEK WID SITE 07: Lat: 35.42833333,

Long: -92.85000000000001, NPDP ID : AR00332, High Risk Hazard.



W Fork Pt Remove Creek Wid Site 07 is a local government lake owned by Point Remove Creek Watershed Improvement District. The dam was constructed in 1963 and is used for flood risk reduction. It is located in the city of Appleton. It has a dam height of 38 feet and is 1,487 feet long. It is of earthen construction. It has a normal surface area of 17 acres. Maximum discharge is 4,561 cubic feet per second. Its maximum capacity is 1,645-acre feet. Normal storage is 85-acre feet. The drain area is 3.8 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

The dam poses no immediate threat to either structures or individuals. Mounty Zion West Road would be washed out or destroyed. Any population traveling along Mount Zion would be vulnerable and could be injured or killed.

Extent, Magnitude, or Severity of Dam Failure

This dam does have an EAP. There are inundation studies located in the EAP for this dam, however, the information is unavailable. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

Lake Abby Dam: Lat: 35.14, Long: -92.94333333, NPDP ID: AR00352, High Risk Hazard



Lake Abby Dam is a private owned dam. It is owned by Winrock International. The dam was constructed in 1958 and is used for recreation and water supply. It is located in Petite Jean State Park. It has a dam height of 24 feet and is 950 feet long. It is an earth/gravity constructed dam. It has a normal surface area of 6 acres. Maximum discharge is 990 cubic feet per second. Its maximum capacity is 85-acre feet. Normal storage is 64-acre feet. The drain area is 0.03 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

The unincorporated area around Petit Jean Mountain is predominately rural. There are no structures or critical facilities in the inundation area. However, it is a popular area for locals and tourists to visit. There are multiple lookout points and hiking trails. In the event of a dam breach those in the inundation area could be injured or killed. There could be minor to major damage to the agriculture in the area. Doc Ferguson Road could be washed out and destroyed. People on Doc Ferguson Road could be injured or killed.

Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

Lake Bailey Dam: Lat: 35.13, Long: -92.92194444, NPDP ID: AR00348, Significant Risk Hazard



Lake Bailey Dam is a State-owned dam. It is owned by Arkansas Parks and Tourism. The dam was constructed in 1940 and is used for recreation purposes. It is located in Petite Jean State Park. It has a dam height of 31 feet and is 250 feet long. It is an earth/gravity constructed dam. It has a normal surface area of 64 acres. Maximum discharge is 2,540 cubic feet per second. Its maximum capacity is 1,842-acre feet. Normal storage is 992-acre feet. The drain area is 6.4 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

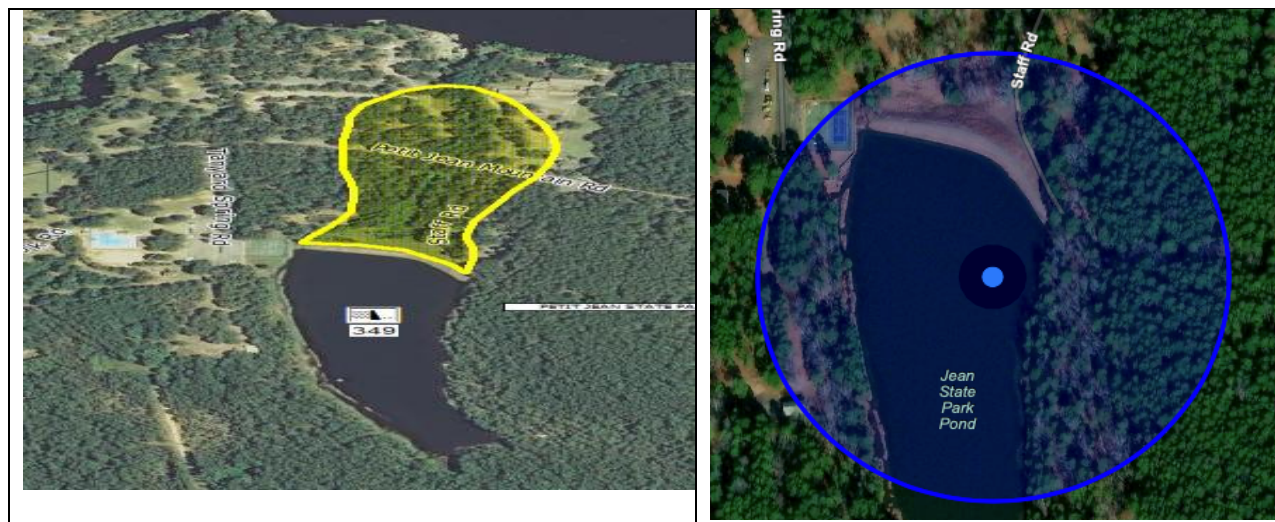
The inundation area is along low-lying areas and creek beds in the Petit Jean State Park. Residential structures that are located in the area are not expected to be damaged due to having raised elevations. There are camp grounds located in the inundation area that could be damaged or destroyed. People and wildlife in these areas could be injured or killed. The bridge crossing Roosevelt Lake on Red Bluff drive could be washed out and destroyed. Timber and forestry in and along the inundation line could be damaged or destroyed. Any travelers crossing Roosevelt Lake during or after dam failure would be injured or killed.

Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

Petite Jean Water Supply Dam: Lat: 35.129, Long: -92.92055556, NPDP ID: AR00349, Significant Risk Hazard



Petite Jean Water Supply Dam is a State-owned dam. It is owned by Arkansas Parks and Tourism. The dam was constructed in 1959 and is used for water supply purposes. It is located in Petite Jean State Park. It has a dam height of 29 feet and is 600 feet long. It is an earth/gravity constructed dam. It has a normal surface area of 11 acres. Maximum discharge is 21,600 cubic feet per second. Its maximum capacity is 210-acre feet. Normal storage is 90-acre feet. The drain area is 0.2 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

There are no residential or critical structures in or around the inundated area. Minor to major damage could occur in Petite Jean State Park. Areas of pasture and timberland could be damaged or destroyed. Highway 154 (Petit Jean Mountain Road) and Staff Road could be washed out or

destroyed. Any populations traveling along Hwy 154 or Staff Road during or after a dam failure event could be injured or killed.

Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

Lake Overcup Dam: Lat: 35.19833333, Long: -92.73333333, NPDP ID: AR00356, Significant Risk Hazard



Lake Overcup Dam is a State-owned dam. It is owned by Arkansas Game and Fish Commission. The dam was constructed in 1963 and is used as a fish and wildlife pond. It is located in the city of Morrilton. It has a dam height of 26 feet and is 5,200 feet long. It is an earthen dam. It has a normal surface area of 1,025 acres. Maximum discharge in cubic feet per second is not listed on National Inventory of Dams. Its maximum capacity is 12,000-acre feet. Normal storage is 6,000-acre feet. The drain area is 16.4 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

Lake Overcup Dam inundation area is located in the unincorporated area of Conway County, north of I-40 and Morrilton. Areas of timberland and farmland located in the inundation area could be damaged or destroyed. Highway 95 could be washed out or destroyed. The private residential structures and property along Lakeview Road, Crappie Road, Bream Road, and Hook Road could be damaged and destroyed. Lakeview Landing Camping and R.V. could be underwater and destroyed. Campers at Lakeview Landing could be injured or killed. McKennon Road, Interstate Road, and Turkey Pond Loop could be damaged. Populations traveling along these roads could be injured or killed.

Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

Arthur V. Ormond Lock & Dam: Lat: 35.125387049, Long: -92.787426212, NPDP ID: AR00165, Significant Risk Hazard





Arthur V. Ormond Lock and Dam is federally owned by the United States Army Corps of Engineers. The dam was constructed in 1969 and is used for navigation, hydroelectric and recreational purposes. It is located in the city of Morrilton. It has a dam height of 28 feet and is 1,850 feet long. It is of concrete/gravity construction. It has a normal surface area of 5,660 acres. Maximum discharge is 518,000 cubic feet per second. Its maximum capacity is 70,400-acre feet. Normal storage is 48,800-acre feet. The drain area is 154,949 square miles.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

There are no residential structures located at the base of the dam. However, people, livestock and wildlife could be injured or killed if sudden unexpected dam failure occurred. Recreational areas, pastureland, fields, timber plantations and livestock near the water could be underwater, damaged or destroyed. Old Morrilton Hwy 64 and Interstate 40 could be damaged or destroyed near the

underpass of Cadron Creek. Any populations traveling along these roads could be injured or killed. Campers located in recreational areas could be injured or killed.

Extent, Magnitude, or Severity of Dam Failure

This dam does have an EAP. Emergency contacts on the EAP were updated on 2/25/2022. The date of last revision was 7/11/2023. The date of last EAP exercise was 8/3/2023. There are inundation studies located in the EAP for this dam, however, the information is unavailable. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

Lake Jeanette Dam: Lat: 35.13361111, Long: -92.92861111, NPDP ID: AR00353, Significant Risk Hazard



Lake Jeanette Dam is a private owned dam. It is owned by WP Rockefeller. The dam was constructed in 1958 and is used for irrigation purposes. It is located in the city of Petite Jean. It has a dam height of 14 feet and is 550 feet long. It is of earthen construction. Normal surface area, maximum discharge, and drain area data is not provided. Its maximum capacity is 124-acre feet. Normal storage is 98-acre feet.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

There are no vulnerable populations in this area. Minor to major damage could be seen to privately owned property. Agricultural areas could see minor to major damage.

Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

Winrock Farms Lake Dam: Lat: 35.14, Long: -92.92722222, NPDP ID: AR01223, Significant Risk Hazard



Winrock Farms Lake Dam is privately owned by Winrock Farms. The dam was constructed in 1973 and is used for fire protection, stock, and small fish pond purposes. It is located near Petite Jean State Park. It has a dam height of 24 feet and is 447 feet long. It is of earthen construction. Normal surface area and drain area data is not provided. Its maximum capacity is 124-acre feet. Normal storage is 98-acre feet. Maximum discharge is 335 cubic ft/second.

Impact and Vulnerability

In the event of dam failure, the inundation area outlined in yellow on the map above is an estimate of the area impacted. Dam failure can range from spillover up to a catastrophic breach. Spillover could cause damage or destruction of property. A complete breach would threaten loss of life to people and animals, as well as destruction of property and the environment.

The inundation area is located in Petit Jean State Park. There are not any residential structures in or around the inundated area. However, Petit Jean State Park is a popular place for tourists and locals to visit. Tourists and locals that are located in this area could be injured or killed. Timberland and pasture land could be damaged or destroyed.

Extent, Magnitude, or Severity of Dam Failure

This dam does not have an EAP. There have not been any inundation studies documented to determine the extent of dam failure. According to Association of Dam Safety Dams Incident Database there have been no breaches (<https://damsafety.org/incidents>).

Over the next five years the Planning Team should research and document natural based mitigation projects for dam failure.

4.8.2 Drought

A drought is a period of unusually dry weather that persists long enough to cause serious deficiencies in water supply (surface or underground). Drought conditions can mean different things in different regions. Normally a drought conditions are defined depending on the average amount of precipitation that an area is accustomed to receiving.

Determining the start of a drought can be tricky as there is no sudden and dramatic onset of this natural hazard unlike tornadoes, earthquakes, and hurricanes. Droughts are more of a slow onset hazard. It can take weeks or years for the full effects of long-term inadequate rainfall to become apparent. However, over time they can severely affect crops, municipal water supplies, recreation resources and wildlife. If drought conditions extend over a number of years, the direct and indirect economic, social, vegetative, wildlife and climate impacts can be significant. In addition, human actions and demands for water resources can accelerate drought-related impacts. There can be a cascading effect as high temperatures, high winds, and low humidity occurring in drought conditions may make areas more susceptible to wildfire.

The end of a drought is also difficult to determine. A single rainstorm will provide short term relief from a drought, but it may take weeks or months before levels of precipitation return to normal.

The United States Droughty Monitor (USDM) differentiates between short-term and long-term drought. Short-term drought can have impacts on agriculture and grasslands, and the drought classification can rapidly change. Long-term drought, in contrast, has deeper impacts on hydrology and ecology and can persist even with short-term gains in precipitation (Drought Classification | U.S. Drought Monitor (unl.edu)).

- S = Short-term, typically less than 6 months (agriculture, grasslands)
- L = Long-term, typically more than 6 months (hydrology, ecology)
- SL = Area contains both short- and long-term impacts
-

Locations Affected by Drought

The entire Planning Area is equally susceptible to experiencing a drought. There is no defined geographic hazard boundary.

Extent, Magnitude or Severity of Drought

The entire Planning Area could experience a drought that is rated between a D0 and D2 in any given year.

Drought Severity Classification								
RANGES								
Category	Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Percent of Normal Precipitation	Standardized Precipitation Index (SPI)	Satellite Vegetation Health Index
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.	-1.0 to -1.9	21-30	21-30	<75% for 3 months	-0.5 to -0.7	36-45
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing, or imminent, voluntary water use restrictions	-2.0 to -2.9	11-20	11-20	<70% for 3 months	-0.8 to -1.2	26-35
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed	-3.0 to -3.9	6-10	6-10	<65% for 6 months	-1.3 to -1.5	16-25
D3	Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions	-4.0 to -4.9	3-5	3-5	<60% for 6 months	-1.6 to -1.9	6-15
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies	-5.0 or less	0-2	0-2	<65% for 12 months	-2.0 or less	1-5

[Drought Classifications \(weather.gov\)](http://www.weather.gov)

Previous Occurrences

There have been 15 past occurrences of drought in the Planning area in the years of 2000-2023.

NOAA Storms Database for Drought

Number of County/Zone areas affected:	1
Number of Days with Event:	15
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	0
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

Location	County/Zone	St.	Date	Time	LZ.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	09/08/2000	18:00	CST	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	12/21/2010	06:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	01/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	02/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	03/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	08/02/2011	06:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	06/19/2012	06:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	07/01/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	08/01/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	09/01/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	10/01/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	11/01/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	12/01/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	01/01/2013	00:00	CST-6	Drought		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	11/14/2017	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

[Storm Events Database - Search Results | National Centers for Environmental Information \(noaa.gov\)](#)

September 8, 2000, the Governor of Arkansas asked that all 75 counties in Arkansas be declared agricultural disasters areas. Dry foliage and dead grass led to numerous grass fires. 1200 acres burned in the Petit Jean State Park leaving several forested areas completely burned.

The Planning Area was stricken with drought conditions January to March and again in August of 2011.

In May of 2012 there was unusually dry weather in Arkansas. It was the driest May on record for the Planning Area and surrounding jurisdictions. As June approached the combination of sparse rainfall and rising temperatures led the drought event to be categorized as extreme. Water companies-initiated water conservation strategies. Pastures and stock ponds dried up forcing cattle grower to send their cattle to market. Crops failed. The entire State of Arkansas was placed under a burn ban. Daily wildfires broke out across the State, burning up to 100 acres each time. July 3, 2012, Governor Mike Beebe authorized the National Guard to use Black Hawk helicopters

to assist firefighters by dropping water on the larger fires using 660-gallon Bambi Buckets. Drought conditions in the Planning Area continued to exist thru January of 2013.

In 2017, the months of September thru November were very dry. There had been a 50% decrease in normal rainfall and November 2017 is the driest November on record. Vegetation was dry and tributaries were low. The Planning Area entered D2 drought designation on November 14, 2017.

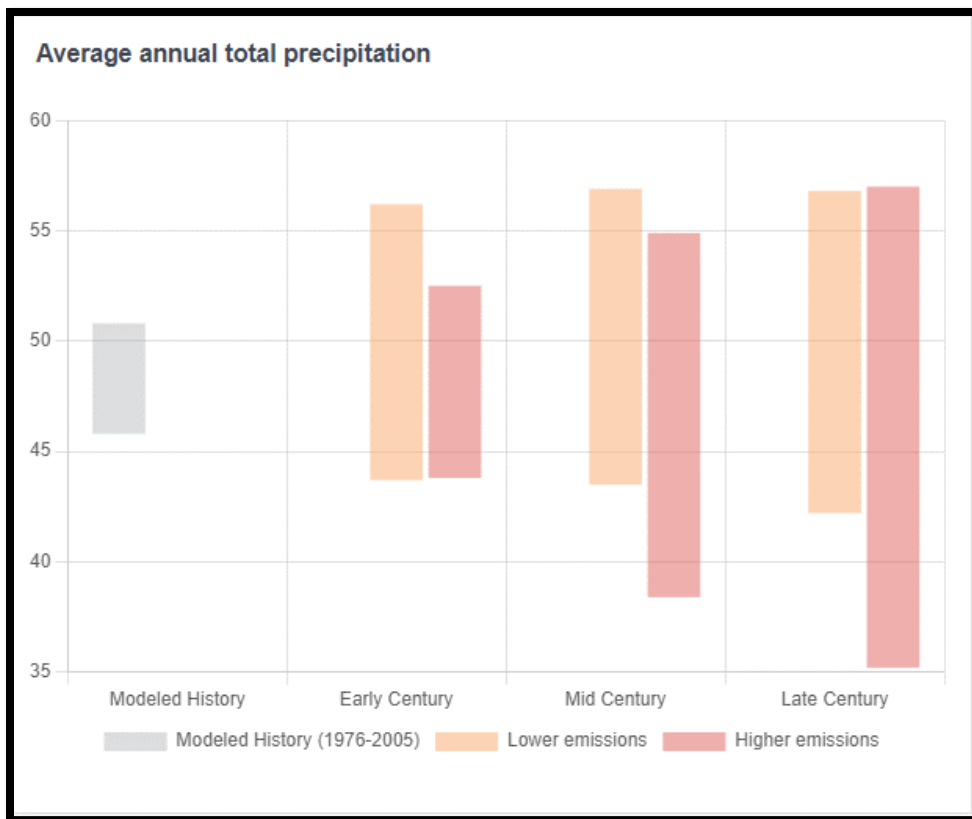
For mapping of past drought conditions, please go to [Conway County Conditions | Drought.gov](#). Mapping goes back to 1979 and is updated every five days.

Probability of Future Events

Future Climate Indicators							
Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Average annual total precipitation	48" 46 - 51	49" 44 - 56	49" 44 - 52	49" 44 - 57	49" 38 - 55	49" 42 - 57	49" 35 - 57
Days per year with precipitation (wet days)	163 days 156 - 170	159 days 146 - 170	158 days 132 - 168	158 days 142 - 170	156 days 122 - 174	157 days 140 - 171	152 days 110 - 175
Days per year with no precipitation (dry days)	203 days 195 - 209	206 days 195 - 220	207 days 197 - 233	207 days 196 - 223	209 days 192 - 243	208 days 194 - 226	213 days 190 - 255
Maximum number of consecutive dry days	16 days 14 - 20	17 days 14 - 21	17 days 14 - 20	18 days 15 - 21	17 days 14 - 22	18 days 15 - 25	18 days 15 - 26
Temperature thresholds:							
Annual days with maximum temperature > 90 °F	63 days 63 - 75	92 days 74 - 113	95 days 73 - 116	103 days 75 - 127	111 days 88 - 130	114 days 87 - 144	142 days 112 - 168
Annual days with maximum temperature > 100 °F	7 days 6 - 9	19 days 5 - 37	21 days 7 - 54	27 days 6 - 57	35 days 15 - 84	36 days 12 - 57	68 days 30 - 117

N/A = Data Not Available for the selected area

Climate Projections for Early Century (2015–2044) ⚡		Lower emissions	Higher emissions
Average annual total precipitation	48.8 Inches + 0.5 since 1976-2005	49.0 Inches + 0.7 since 1976-2005	
Days per year with precipitation (wet days)	159.0 Days - 3.6 since 1976-2005	158.1 Days - 4.5 since 1976-2005	
Days per year with no precipitation (dry days)	206.2 Days + 3.6 since 1976-2005	207.1 Days + 4.5 since 1976-2005	
Maximum number of consecutive dry days	17.1 Days + 0.8 since 1976-2005	17.2 Days + 0.8 since 1976-2005	
Annual days with maximum temperature > 90°F	92.1 Days + 25.1 since 1976-2005	94.6 Days + 27.6 since 1976-2005	
Annual days with maximum temperature > 100°F	18.7 Days + 11.8 since 1976-2005	21.0 Days + 14.0 since 1976-2005	



[CMRA - Climate Mapping For Resilience and Adaptation \(arcgis.com\)](https://arcgis.com)

Climate mapping trends indicate a slight increase in annual precipitation with a decrease in the number of wet days. This combined with an increase in the number of dry days, an increase in the number of consecutive dry days, and rising temperature thresholds could mean that future drought conditions could exist.

The probability that the Planning Area will experience a drought event every year is less than one percent.

The probability of a drought was estimated using the following formula:

$$\frac{\# \text{ of events}}{\# \text{ of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

Vulnerability and Impact of Drought

Lack of water could be devastating to the Planning Area. As a dry period progresses and water supplies dwindle, existing water supplies will be overtaxed and dry up. If the drought persists long term the impact of the drought could be permanent. Specific impacts may be:

- Economy: loss of revenue/income, higher rates of unemployment, loss of land value/prices
- Population density: there may be forced migration
- Health: dehydration, poor nutrition, famine
- Natural wildlife: wildlife will be competing for the same resources as people
- Land use: not all plant life will be able to survive in drought conditions changing availability of food for both people and wildlife. Erosion from flash floods, high winds, and possible wildfire from consistent dry conditions may change the landscape and natural habitats permanently.
- Damage or loss of infrastructure
- Social: conflict over resources

While all populations in the Planning Area are vulnerable, children, elderly, and the economically challenged populations are most at risk.

The unincorporated areas of Conway County, the city of Menifee, the city of Oppelo, and the city of Plumerville, are mostly rural with a large amount of timber plantations, farmland, and pasture for farm animals. Farmers, ranchers, and private individuals own about 90% of the timberland in the Planning Area. Drought can have serious impact on farmland and agriculture. Failed crops, inability to maintain healthy livestock, and decreased land value/prices will cause economic strain. The landscape may be unable to adapt and could be permanently changed. Those who depend on the land for their livelihood may be forced to sell their herds, migrate in search of better grazing lands/fertile fields, or move to urban areas in search of employment. If the dwindling supplies of food are not replaced, famine can occur, further accelerating migration out of these jurisdictions.

The school districts of Nemo Vista, Wonderview, South Conway County, Riverview Baptist, Sacred Heart, and the campus of the University of Arkansas Community College at Morrilton will also be greatly affected by the dwindling water supply. School schedules could be delayed or canceled altogether. Drought conditions could create famine worldwide, but locally they could create food insecurity for those students dependent on the school food program.

Severe droughts also elevate the potential for wildfires. Burned areas that were once forested or used as stock ponds may dry up permanently. The increased dry fuel load created by drought could ignite. The wildfire could ravage the Planning Area as well as surrounding Counties.

Population

Population changes would impact drought. As populations grow there is an increased strain on water supplies. The Planning Area has seen a decrease in population but an increase in industry that relies on the current water supply. Increased population and increased industry would stress the current water supply, without a drought. Drought conditions would expedite the impact. Over the next ten years the Planning Area plans to expand its water supply to meet the need of increased industry.

Land Use

Changes in land use could impact the Planning Area. The Planning Area has both agricultural and industrial areas. Both agriculture and industry are dependent on sustainable sources of water. Unsustainable land use by either agriculture or industry can lead to a breakdown of the ecosystem and environmental degradation. Green Bay Packaging Arkansas Craft Paper Mill Division has plans for expansion. Over the next ten years the Planning Area will be working to increase water supply to meet the increased demand that is projected.

The Planning Area has not conducted a study to determine an increase or decrease in agriculture.

Over the next five years the Planning Team will need to research and document changes in land use and its effects on the Planning Area.

Climate

Climate change is expected to correlate with land use. Lack of green space, increased land use for agriculture, and waste from industry impact climate. The Planning Area contains large amounts of rural agricultural areas and is expected to see a growth in industry. The Planning Team will need

to continue to research over the next five years the impact and possible natural mitigation methods that can be taken to prevent drought.

4.8.3 Earthquake

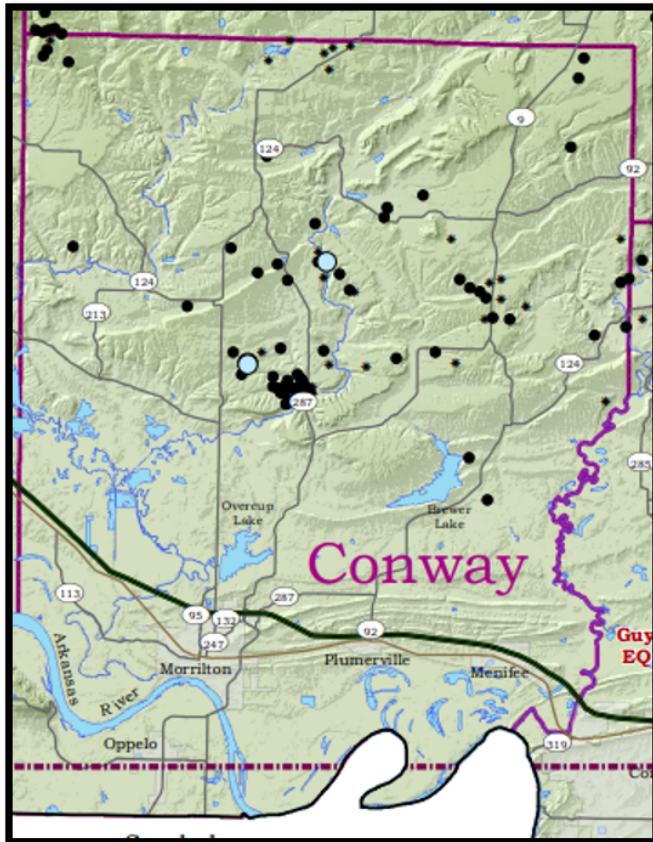
An earthquake is a sudden motion or trembling caused by an abrupt release of accumulated strain on the tectonic plates comprising the Earth's crust.

An earthquake is what happens when two blocks of the earth suddenly slip past one another. The surface where they slip is called the fault or fault plane. The location below the earth's surface where the earthquake starts is called the hypocenter, and the location directly above it on the surface of the earth is called the epicenter.

Sometimes an earthquake has foreshocks. These are smaller earthquakes that happen in the same place as the larger earthquake that follows. Scientists can't tell that an earthquake is a foreshock until the larger earthquake happens. The largest, main earthquake is called the mainshock. Mainshocks always have aftershocks that follow. These are smaller earthquakes that occur afterwards in the same place as the mainshock. Depending on the size of the mainshock, aftershocks can continue for weeks, months, and even years after the mainshock.

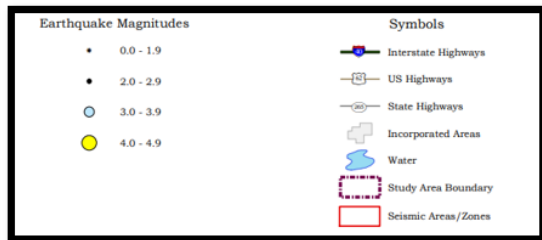
Locations Affected by Earthquake

The map below shows the location and magnitude of reported earthquakes that have occurred in the Planning Area from 1965-2011. [north-central-arkansas-seismic-zone.pdf](#)



About the Map

This map illustrates the location and magnitude of reported earthquakes that have occurred in north-central Arkansas from 1965 to 2011. The data source for the earthquakes depicted on this map was derived from the Arkansas Geological Survey (AGS) earthquake catalog. This catalog has been compiled from various sources and publications and includes date, time, latitude, longitude, magnitude or intensity and depth information. Some event records may contain incomplete data due to their date and/or source. The AGS earthquake catalog is dynamic and continually updated as event parameters are modified, new events are added, and occasionally, events are deleted. The seismic areas/zones, illustrated on this map are derived from various geologic sources and publications on file at the AGS. Depicted seismic areas/zones, are for illustration purposes only and may not represent all the seismically active features within a given location or relate to the origin of the earthquakes depicted on this map.



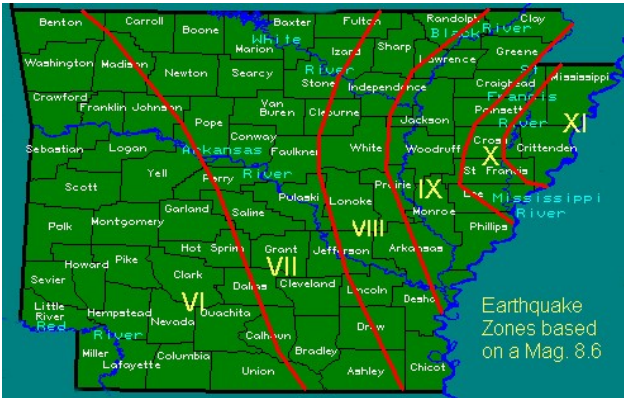
Extent, Magnitude or Severity of Earthquake Events

The Planning Area can expect to see earthquakes up to a magnitude of 5.5 on the Richter Scale. The area with the highest probability due to past recorded occurrences would be the city of Morrilton. According to USGS Earthquake data, six earthquakes have previously occurred in the city of Morrilton. These earthquakes have ranged between 1.7 to 2.3 on the Richter Scale. No other earthquake activity has been reported for the Planning Area. However, it is possible that the Planning Area could experience an earthquake.

County	Location	Date	Time	Magnitude	Depth
Conway	Morrilton	12-5-2013	10:14 am	2.0	6 km
Conway	Morrilton	12-5-2013	8:35 pm	1.7	3 km
Conway	Morrilton	12-17-2013	7:13 am	1.8	7 km
Conway	Morrilton	12-19-2013	4:00 pm	1.8	4 km
Conway	Morrilton	12-20-2013	11:15 pm	2.3	6 km
Conway	Morrilton	1-3-2014	1:18 pm	2.0	2 km

Category	Effects	Richter Scale (approximate)
I. Instrumental	Not felt	1-2
II. Just perceptible	Felt by only a few people, especially on upper floors of tall buildings	3
III. Slight	Felt by people lying down, seated on a hard surface, or in the upper stories of tall buildings	3.5
IV. Perceptible	Felt indoors by many, by few outside; dishes and windows rattle	4
V. Rather strong	Generally felt by everyone; sleeping people may be awakened	4.5
VI. Strong	Trees sway, chandeliers swing, bells ring, some damage from falling objects	5
VII. Very strong	General alarm; walls and plaster crack	5.5
VIII. Destructive	Felt in moving vehicles; chimneys collapse; poorly constructed buildings seriously damaged	6
IX. Ruinous	Some houses collapse; pipes break	6.5
X. Disastrous	Obvious ground cracks; railroad tracks bent; some landslides on steep hillsides	7
XI. Very disastrous	Few buildings survive; bridges damaged or destroyed; all services interrupted (electrical, water, sewage, railroad); severe landslides	7.5
XII. Catastrophic	Total destruction; objects thrown into the air; river courses and topography altered	8

The Arkansas Geological Survey confirms that damage is not a concern unless a quake has a magnitude of at least 4.0. Morrilton is the only jurisdiction that has experienced an earthquake. Morrilton has experienced up to a 2.3 magnitude earthquake. As shown below, the Planning Area can experience up to a 5.5 magnitude earthquake on the Richter Scale.



Previous Occurrences

There have been six recorded earthquakes in the Planning Area. All six earthquakes took place in the city of Morrilton.

Location	Date	Magnitude
Morrilton	12-5-2013	2.0
Morrilton	12-5-2013	1.7
Morrilton	12-17-2013	1.8
Morrilton	12-19-2013	1.8
Morrilton	12-20-2013	2.3
Morrilton	1-3-2014	2.0

Probability of Future Events

The probability of an earthquake taking place in any given year is less than one percent. The probability of an earthquake was estimated using the following formula:

$$\frac{\text{\# of events}}{\text{\# of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

Vulnerability and Impact of Earthquakes

According to the Arkansas State Mitigation Plan the regions with the highest probability of impact and vulnerability are those located along the New Madrid Fault. The portions of Arkansas that are most likely to experience damage are located in the northeast part of the state. This does not include the Planning Area.

The Arkansas Geological Survey confirms that damage is not a concern unless a quake has a magnitude of at least a 4.0. The Planning Area is located in Earthquake Zone VII. This means the planning area could see an earthquake up to a 5.5 on the Richter Scale. Damage at this magnitude could result in cracked walls.

All buildings and infrastructure in the Planning Area are vulnerable to earthquakes. As businesses and residential areas grow so will the impact and vulnerability of the Planning Area. Growth in the number and size of both businesses and residential areas will require more mitigation efforts to address both new and existing structures.

Damage from an earthquake can be widespread and varied. Buildings can be structurally damaged or collapse depending on the magnitude of the earthquake. Furniture and equipment may be overturned or displaced. Windows could be broken or become unanchored from the structure. Mobile homes could be knocked off their foundations. Infrastructure and lifesaving services could be delayed, damaged, or destroyed by an earthquake. Depending on the magnitude of the earthquake, pipes carrying water and other utilities may become damaged. Hazardous material may be released. Services such as cell service and landlines may become unavailable due to damage or capacity limits.

The planning Area includes populations under the age of 5, over the age of 65, special needs, and those living below the poverty level. These population are at risk of injury, death, or inability to recover from an earthquake.

The city of Morrilton would be most affected by an earthquake due to previous occurrences, building density and population density in the urban areas. There are vulnerable commercial structures located downtown Morrilton that are constructed with unreinforced masonry. These buildings have historically sustained damage and collapse without the occurrence of an earthquake. During a 5.5 magnitude earthquake, the walls of the buildings could crack and collapse. The windows could break. All furniture, equipment, and material inside the buildings could be overturned and broken. The doors could be uneven and disturbed. Cars parked downtown could be rocked and displaced. Sidewalks could be cracked. Pedestrians located in downtown Morrilton would be especially vulnerable. They could be knocked off their feet, and falling debris from buildings could strike a bystander.

The St. Vincent Medical Clinic, Conway Outpatient Surgery Center, Conway Interfaith Clinic, TLC Pediatrics, and Sherwood Urgent Care, River Chase Rehabilitation Center and Brookridge Cove Rehabilitation and Care Center are new buildings built to state code and could receive slight damage. Possible damage could be cracks in the walls and broken windows. Equipment in the facilities that are not strapped down could be displaced or turned over. Patients in these facilities are vulnerable to additional injuries.

The Conway County Fire Department and Morrilton Fire Department are located in the city of Morrilton. These buildings are suspected to have negligible damage. Most equipment in the fire departments is contained or strapped down and is not suspected to be displaced.

Children present at the South Conway County school campus and Southern Christian Home would be vulnerable to falling structures and moving furniture/equipment inside the buildings. Due to the

ratio of adults to children, there is a high risk of children becoming lost or missing. Fear could be prevalent in children and cause widespread panic.

The University of Arkansas Community College at Morrilton is located in the city of Morrilton. Some of the buildings are older and constructed with unreinforced masonry. The walls of the buildings could crack or collapse. Furniture and equipment inside the buildings could be overturned and displaced. Heavy furniture and equipment could strike students, faculty, or staff located in the buildings during an earthquake event. Due to the amount of people that could be in one area during an earthquake event, widespread panic could pose additional risk to those located on campus trying to exit the building and injuring others in their path.

The cities of Menifee, Plumerville, and Oppelo are located in rural areas. Housing in these areas may be constructed with unreinforced masonry. The walls may crack or collapse. The windows may break, and unanchored furniture could be turned over or displaced. Uncontained materials inside homes could be broken and destroyed.

In Plumerville, there are no hospitals. The Plumerville Fire Department and Hill Creek Fire Department will receive little damage, if any. The Hightower Oil and Petroleum building is an old building constructed with unreinforced masonry and contains hazardous materials. This building could be destroyed. Building collapse and leaked hazardous materials could pose additional risk to nearby travelers and residents.

In Menifee, the Menifee Fire Department District 9 would receive little damage, if any. There are no medical facilities or schools located in the city of Menifee.

The city of Oppelo has no fire department or medical facilities in their jurisdiction.

The school districts of Wonderview and Nemo Vista may receive damage to the buildings. The walls could crack, and windows may break. Unanchored furniture and other contents inside the buildings could be turned over and displaced. If an earthquake event were to occur during the hours of 8 a.m. and 4 p.m., the students, faculty, and staff located on these campuses would be vulnerable. There could be fear and panic. Students are at risk of becoming lost due to the faculty/student ratio. Unanchored desks, chairs, and other furniture could injure any person located in the buildings on campus.

Population

Population increase/decrease will not alter the probability of an earthquake event; however, changes in demographic, socioeconomic characteristics, and distribution of population can affect

the vulnerability and impact of earthquakes. Higher population density and lower economic characteristics will result in increased vulnerability and impact. Over the next five years, the planning team should monitor increase/decrease of population and its impact. The mitigation plan should be updated for any significant changes.

Land Use

Sustainable urban resilience to natural disasters is a constant challenge. Lack of green space makes urban areas more vulnerable. Land use planning is an essential tool in promoting earthquake resilience. There have been no land use studies conducted for the Planning Area. Over the next five years the planning team should consider a land use study and update the mitigation plan with any significant changes.

Climate

Climate change does not have a direct impact on earthquake vulnerability, impact, or frequency.

4.8.4 Extreme Heat

There is no strict definition of extreme heat. The term is used to describe a hotter than usual period for the time and place of the extreme heat event.

Extreme heat is a dangerous weather condition. According to MIT it is the leading cause of weather-related deaths in the United States (<https://climate.mit.edu/explainers/extreme-heat>).

Extreme heat effects:

- Health
- Roads
- Infrastructure
- Crops
- Livestock
- Escalates natural disasters like drought and wildfire

Locations Affected by Extreme Heat

There is no geographic hazard boundary for extreme heat. The entire Planning Area is a risk for extreme heat.

Extent, Magnitude, or Severity of Extreme Heat

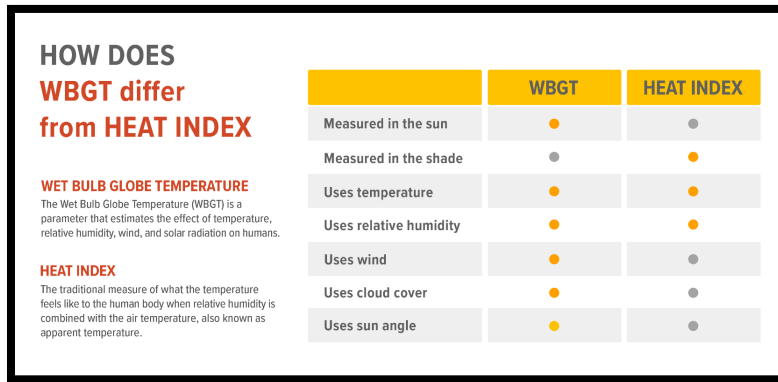
The entire Planning Area can experience extreme heat seasonally. Temperatures in the summer months average between 80° and 115°.

The magnitude or intensity of an extreme heat event is measured in relation to the percentage of humidity. According to the National Oceanic Atmosphere Administration (NOAA) this relationship is referred to as the “Heat Index”. The Heat Index measures how hot it feels outside when humidity is combined with high temperatures. The Planning Area has seen heat indices near 120° ([Storm Events Database - Event Details | National Centers for Environmental Information \(noaa.gov\)](#)).

		HEAT INDEX CHART																	
		RELATIVE HUMIDITY (%)																	
		100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15
AIR TEMPERATURE (CELSIUS)	20	21	21	20	20	20	20	20	20	20	20	19	19	19	19	19	19	19	18
	22	23	23	23	22	22	22	22	22	22	22	22	21	21	21	21	21	21	21
	24	25	25	25	25	25	24	24	24	24	24	24	24	24	24	23	23	23	23
	26	28	28	28	28	28	28	27	27	27	26	26	26	26	26	25	25	25	25
	28	36	35	34	33	32	31	31	30	29	29	28	28	28	27	27	27	27	27
	30	44	43	41	39	38	36	35	34	33	32	31	30	30	29	29	28	28	28
	32	54	52	49	47	44	42	40	39	37	36	34	33	32	31	31	30	30	30
	34	66	62	58	55	52	49	47	44	42	40	38	37	35	34	33	33	32	32
	36	78	74	69	65	61	58	54	51	48	46	43	41	39	38	36	35	34	34
	38	92	87	81	76	71	67	63	59	55	52	49	46	43	41	39	38	37	36
	40	108	101	95	88	83	77	72	67	63	59	55	51	48	46	43	41	39	38
	42	125	117	109	102	95	88	82	77	71	66	62	58	54	50	47	45	42	41
	44	143	134	125	116	108	101	94	87	81	75	69	64	60	56	52	48	46	43
46	163	152	142	132	123	114	106	98	91	84	78	72	66	61	57	53	49	46	
48	184	172	160	149	139	129	119	111	102	94	87	80	73	67	62	57	53	49	
50	206	193	180	168	156	145	134	124	114	105	96	88	81	74	68	62	57	52	

Less than 29	No discomfort	Note: The above chart is based on shady conditions, light winds and no physical activity. In direct sunlight the index can go up by almost 10 degrees Celsius, even more with added factors like physical activity, air speed, etc.
30 - 39	Some discomfort	
40 - 45	Great discomfort	
45 - 54	Dangerous	
Above 54	Heat stroke imminent	

The heat index does not account for variables such as direct sunlight and wind speed. Many individuals in the Planning Area must perform activities outside, therefore these variables must be considered. A Wet Bulb Globe Temperature (WBGT) would be utilized to identify and notify when protective measures should be taken for outdoor work ([Heat Forecast Tools \(weather.gov\)](#)). The chart below is an example of the differences between heat index and WBGT.



Previous Occurrences

There have been two previous occurrences of extreme heat between January 2000 and December 2023.

Storm Events Database Excessive Heat 2000-2023

Number of County/Zone areas affected:	1
Number of Days with Event:	2
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	0
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	08/02/2010	03:00	CST-6	Excessive Heat		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	08/02/2011	11:00	CST-6	Excessive Heat		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

[Storm Events Database - Search Results | National Centers for Environmental Information \(noaa.gov\)](#)

Probability of Future Events

Climate mapping trends indicate that the number of annual days at maximum temperatures will continue to grow. Annual single highest maximum temperatures will continue to rise. Annual highest maximum temperatures averaged over a 5 day period will continue to hold at higher temperatures.

The probability of an extreme heat event occurring in the Planning Area in any given year is less than one percent. The probability of an extreme heat event was estimated using the following formula:

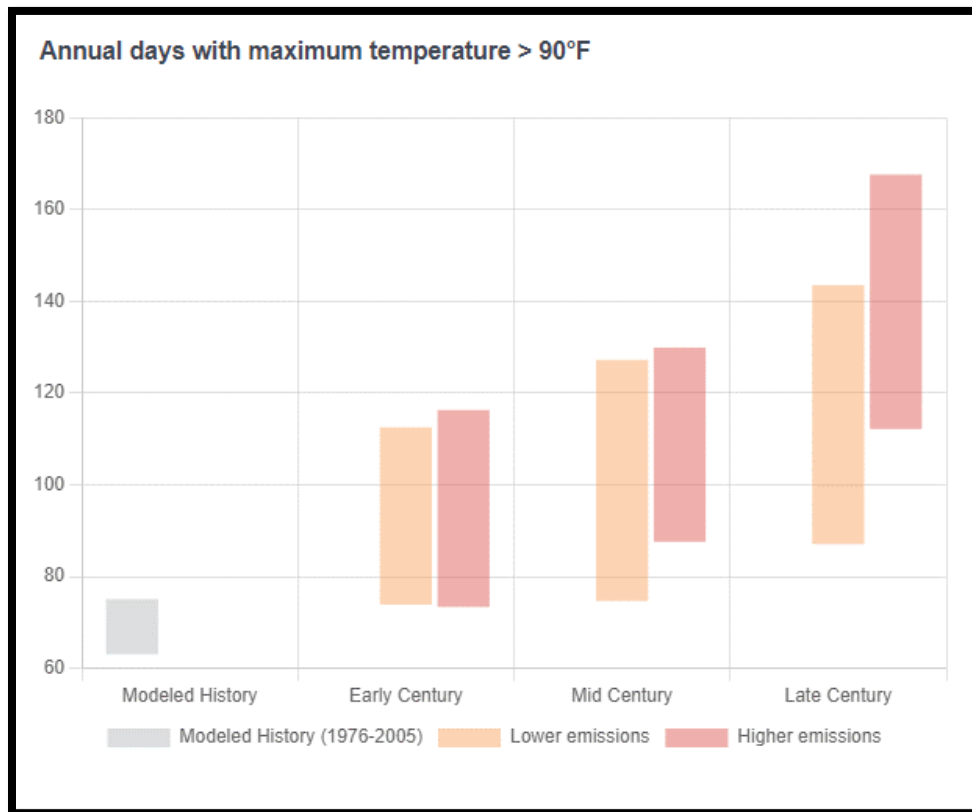
$$\frac{\text{\# of events}}{\text{\# of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

Future Climate Indicators							
Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
Min - Max							
Temperature thresholds:							
Annual days with maximum temperature > 90°F	63 days 63 - 75	92 days 74 - 113	95 days 73 - 116	103 days 75 - 127	111 days 88 - 130	114 days 87 - 144	142 days 112 - 168
Annual days with maximum temperature > 95°F	27 days 24 - 31	50 days 26 - 75	53 days 35 - 84	62 days 28 - 95	71 days 45 - 104	73 days 43 - 113	106 days 67 - 143
Annual days with maximum temperature > 100°F	7 days 6 - 9	19 days 5 - 37	21 days 7 - 54	27 days 6 - 57	35 days 15 - 84	36 days 12 - 57	68 days 30 - 117
Annual days with maximum temperature > 105°F	1 days 1 - 1	5 days 1 - 14	5 days 0 - 24	8 days 1 - 17	11 days 3 - 49	12 days 2 - 31	34 days 9 - 88
Annual temperature:							
Annual single highest maximum temperature °F	103 °F 101 - 105	106 °F 102 - 110	107 °F 103 - 113	108 °F 103 - 112	109 °F 105 - 116	110 °F 105 - 114	114 °F 107 - 126
Annual highest maximum temperature averaged over a 5-day period °F	99 °F 98 - 101	102 °F 98 - 106	103 °F 99 - 109	104 °F 99 - 108	105 °F 101 - 112	106 °F 101 - 110	110 °F 104 - 122
Cooling degree days (CDD)	1870 degree-days 1807 - 1956	2,362 degree-days 2,046 - 2,749	2,409 degree-days 2,086 - 2,829	2,602 degree-days 2,176 - 3,128	2,805 degree-days 2,369 - 3,563	2,856 degree-days 2,292 - 3,627	3,699 degree-days 2,867 - 4,672

Climate Projections for Early Century (2015–2044) ⌵		
	Lower emissions	Higher emissions
Annual days with maximum temperature > 90°F	92.1 Days + 25.1 since 1976-2005	94.6 Days + 27.6 since 1976-2005
Annual days with maximum temperature > 95°F	50.1 Days + 23.2 since 1976-2005	53.0 Days + 26.2 since 1976-2005
Annual days with maximum temperature > 100°F	18.7 Days + 11.8 since 1976-2005	21.0 Days + 14.0 since 1976-2005
Annual days with maximum temperature > 105°F	4.6 Days + 3.6 since 1976-2005	5.3 Days + 4.3 since 1976-2005
Annual single highest maximum temperature	106.4 °F + 3.3 since 1976-2005	107.1 °F + 4.0 since 1976-2005
Annual highest maximum temperature averaged over a 5-day period	102.4 °F + 3.3 since 1976-2005	103.0 °F + 3.9 since 1976-2005
Cooling-degree days (CDD)	2,361.9 Degree Days + 491.6 since 1976-2005	2,409.4 Degree Days + 539.1 since 1976-2005

[CMRA - Climate Mapping For Resilience and Adaptation \(arcgis.com\)](https://arcgis.com)



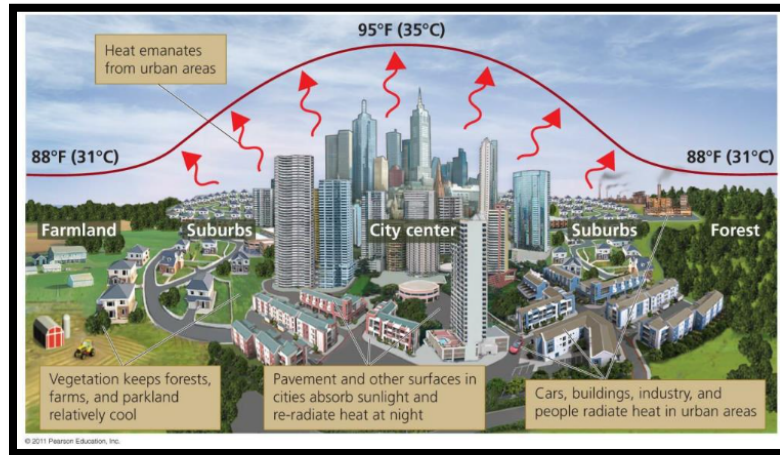
[CMRA - Climate Mapping For Resilience and Adaptation \(arcgis.com\)](http://arcgis.com)

Vulnerability and Impact of Extreme Heat

The entire Planning Area could be impacted by extreme heat.

The city of Morrilton has a higher percentage of buildings, population, and industry. The South Conway School District, Sacred Heart Catholic School, Riverview Baptist, and the University of Arkansas Community College at Morrilton are located in the city of Morrilton. The city of Morrilton and the school districts located within have less green space and shade than the more rural parts of the Planning Area. Urban areas are typically hotter than the surrounding rural areas. Construction materials such as asphalt absorb and re-emit more heat. This creates an urban heat island effect. Changing the natural landscape of an area destroys its ability to moderate air temperatures. Trees, plants, soil, and water can naturally lower air temperatures through evaporative cooling ([Urban Heat Islands | MIT Climate Portal](#)).

Urban Heat Island Effect



[urban heat island - Search Images \(bing.com\)](#)

Populations located within the city of Morrilton have an increased risk of heat injuries due to the lack of shade. The most vulnerable populations are those under the age of 5, over the age of 65, those with pre-existing medical conditions, those on certain medications, those experiencing homelessness, economically challenged, athletes, outdoor workers, and pregnant women. Tips for preventing heat-related illness can be found at [Tips for Preventing Heat-Related Illness | Natural Disasters and Severe Weather | CDC](#).

The unincorporated areas of Conway County, the cities of Menifee, Plumerville, Oppelo, Wonderview School District and Nemo Vista School Districts are located in rural areas. Rural areas have a higher percentage of green space and shade. The natural landscape is less altered than urban areas. However, rural areas may be vulnerable to extreme heat. The rising temperatures may impact people, the natural environment, wildlife, livestock, and farmland. Extreme heat may result in people, the natural environment, wildlife, livestock, and farmland to increase water usage. Extreme heat may cause water sources to run short or dry up.

Those that are under the age of 5, over the age of 65, those with pre-existing medical conditions, those on certain medications, those experiencing homelessness, economically challenged, pregnant women, and those who must work outdoors are most vulnerable to extreme heat.

Extreme heat may impact the growth cycle production of many crops. In extreme heat crops may become stressed causing crop production to be altered or fail. Rate of plant growth and development is dependent on the surrounding temperatures. Roots development may be altered depending on the amount of moisture in the soil. Pollinators such as bees may be harmed by

extreme heat. Dry soil and crops may become prone to drought and wildfire. The economic loss may be felt by the farmer, community or global economy creating a food shortage.

Extreme heat may impact livestock. As temperatures rise livestock will require more water. During extreme heat water sources may become low or dry up. Heat stress can increase vulnerability to disease, reduce fertility, and reduce milk production. Heat stress is one of the major climate change impacts on domesticated livestock. Livestock is responsible for revenue that exceeds \$140 million in the Planning Area.

During extreme heat the natural environment such as trees and wildlife also compete for water resources. Tree growth may be altered due to the availability of water. Wildlife is at a higher risk of disease. Extreme heat may result in drought and an increase in wildfire. The natural environment may be permanently altered or destroyed.

Population

Population changes in size and spatial distribution may have an impact on extreme heat. The Planning Area has seen a decrease in population. There have been no specific studies performed in the Planning Area to document the impact and extent of population changes. Over the next five years the Planning Team will need to research how population changes and distribution are affecting the Planning Area.

Land Use

Land cover plays a vital role in controlling the amount of heat absorbed/radiated by the environment. Temperatures rise in urban areas due to the concentration of asphalt and other materials while rural areas with larger portions of green space remain cooler. The Planning Area has been experiencing decreased population but expects to have growth in industry. There have been no studies in the Planning Area for land use and its effect on extreme heat. Over the next five years the Planning Team will need to research and document heat mitigation. Heat mitigation involves changing land use to reduce the heat island effect.

Climate

The Planning Area has already experienced rising temperatures and extreme highs. Future climate mapping indicators predict rising temperatures. With the expected growth in industry, it will be important for the Planning Team to research, document and mitigate against rising temperatures over the next five years.

4.8.5 Flood

Flood is defined as an overflowing of a large amount of water beyond its normal confines, especially over what is normally dry land. It can be a partial or complete inundation. The various types of flooding in the Planning Area include riverine flooding, urban flooding, shallow flooding and flash flooding.

Riverine flooding occurs from excessive rainfall in upstream areas that gradually cause rivers and streams to overflow their banks inundating the adjacent floodplains. However, it can also be caused by runoff, snowmelt, or dam release. This type of flooding typically lasts longer than flash flooding or shallow flooding. This type of flooding often causes more damage due to the length of time structures are inundated, the velocity and depth of water and size/force of floating debris.

Urban flooding occurs when heavy rainfall runs off structures, parking lots and streets. It converges in culverts and drainage ways that are often clogged with debris, causing streets to flood and storm sewers to back up.

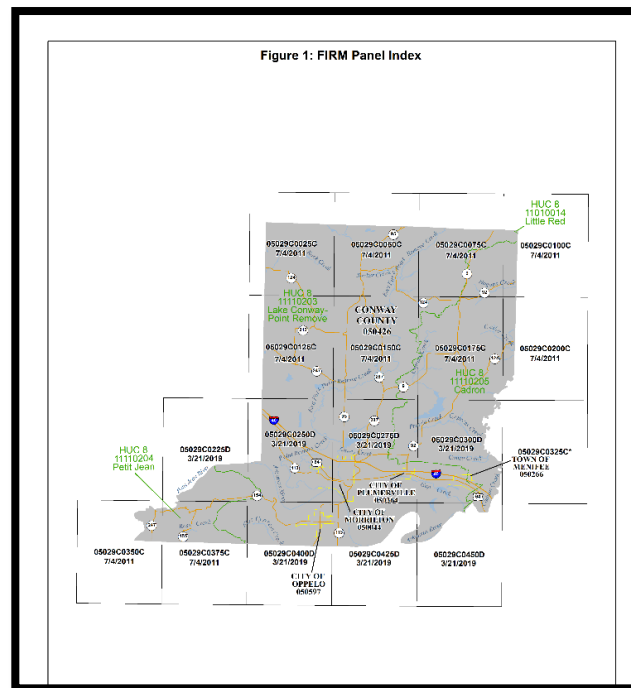
Shallow flooding is defined as flooding with an average depth limited to 3 feet or less where no defined channel exists.

A flash flood is caused by heavy or excessive rainfall in a short period of time, usually less than 6 hours. Flash floods can reach peak flow within a few minutes. They are usually characterized by raging torrents and move with great force and velocity. They can sweep through river beds, urban streets, or mountain canyons sweeping everything in their path, rolling boulders, tearing out trees and destroying structures.

Flooding can result in damage to personal property, buildings and infrastructure. In addition to property destruction, flooding can lead to injuries or even fatalities.

Locations Affected by Flooding

FIRM Panel Index



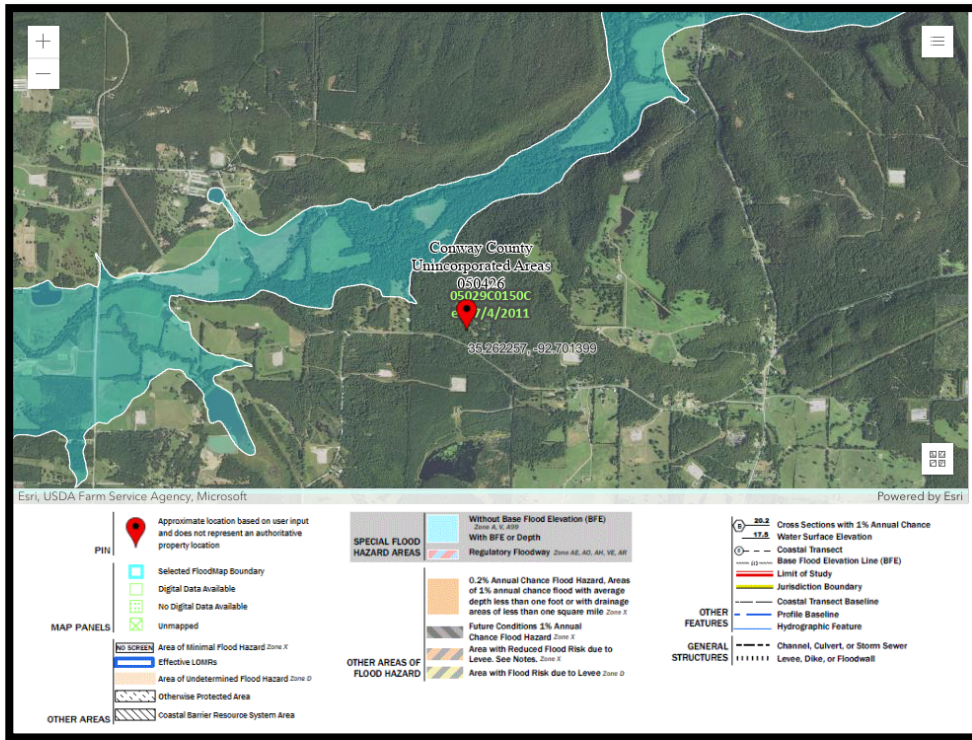
The FIRM Panel index for the planning area and can be found at the following link:

<https://map1.msc.fema.gov/firm?id=05029CIND0B>.

There are a total of 17 panels that make up the planning area. These panels are located in the appendix of this Hazard Mitigation Plan. Each map contains a quick link below the map.

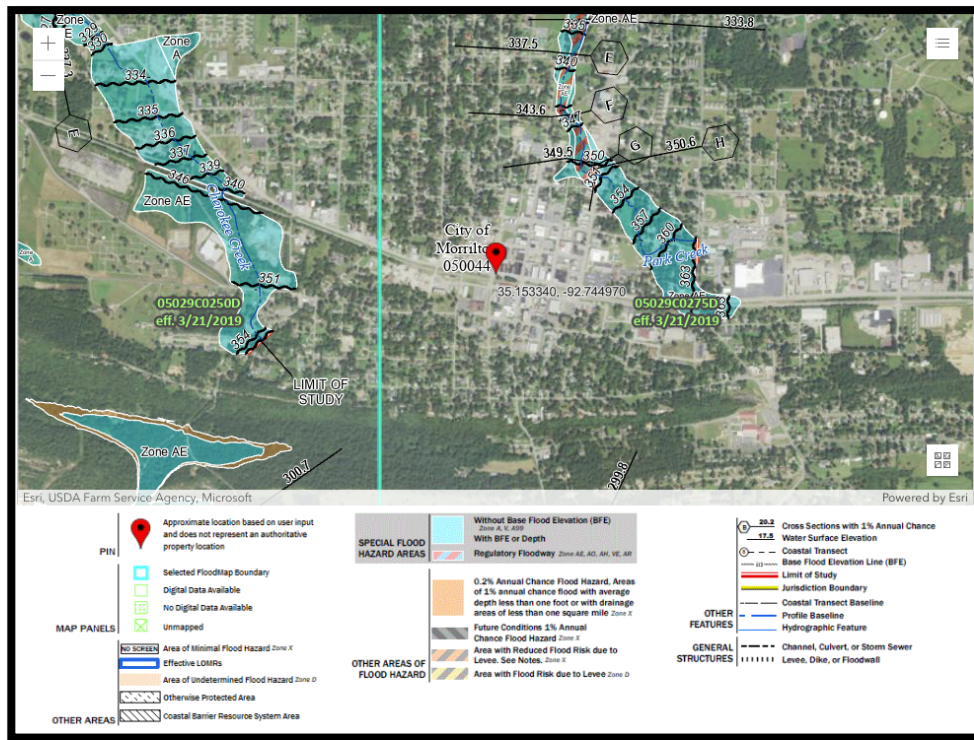
The Flood Insurance Rate Maps (FIRM) inserted below depict the locations of flood zones within each jurisdiction. The entire planning area has potential to be affected by one or more of the flood events described above, even if they are not directly located in a designated flood zone.

Conway County Flood Map 05029C0150C Effective 7/4/2011



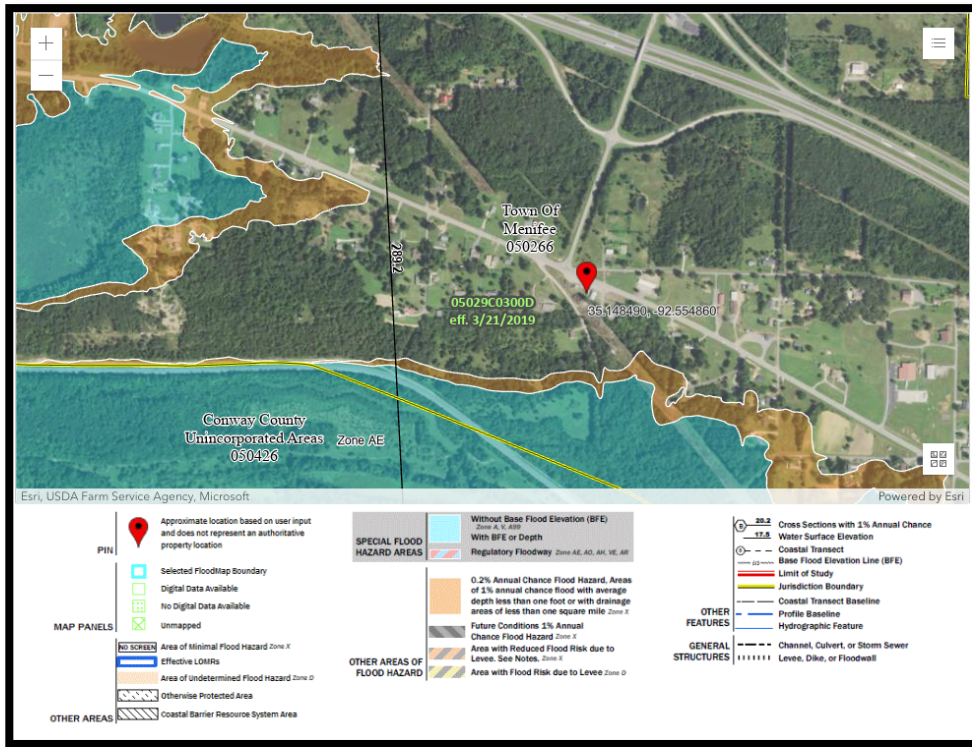
<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

City of Morrilton Flood Map 05029C0275D Effective 3/21/2019



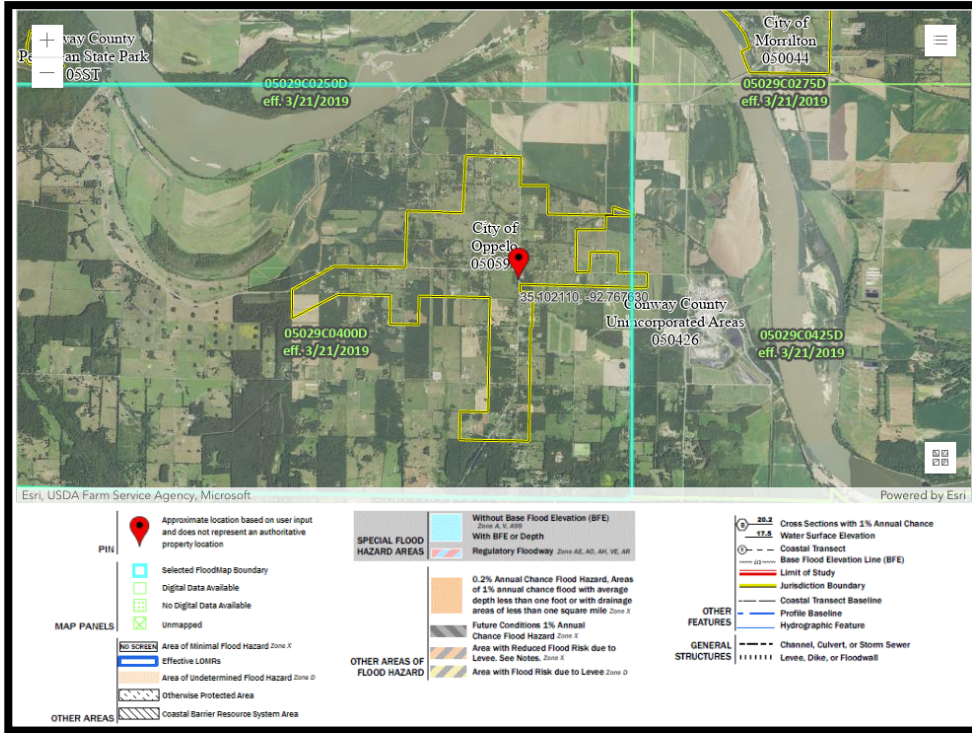
<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

City of Menifee Flood Map 05029C0150C Effective 7/4/2011



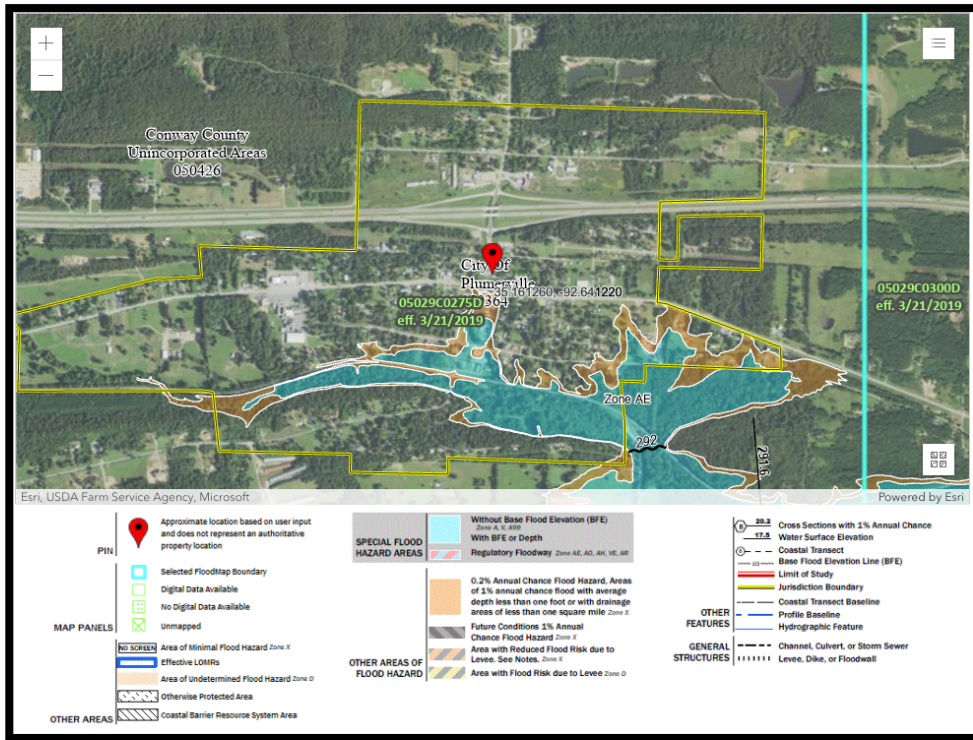
<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

City of Oppelo Flood Map 05029C0400D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

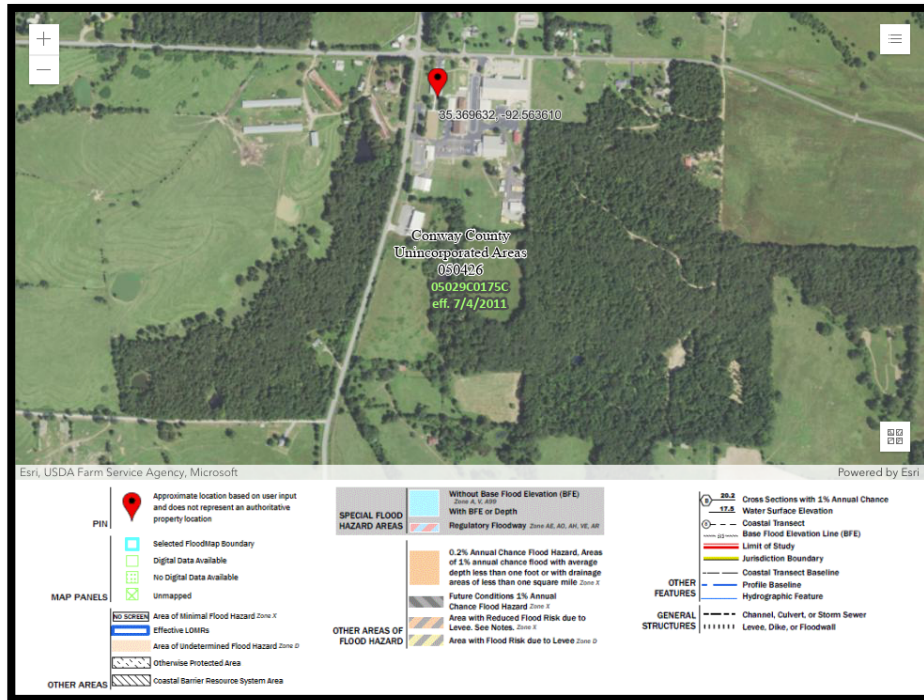
City of Plumerville Flood Map 05029C0275D Effective 3/21/2029



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

Nemo Vista School District

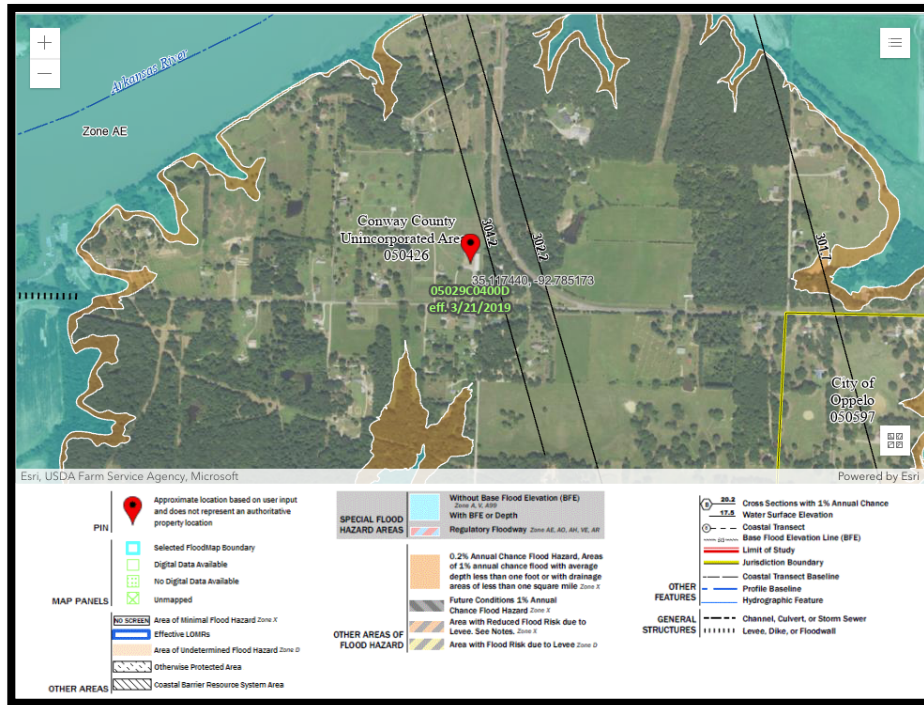
Flood Map 05029C0175C Effective 7/4/2011



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

Riverview Baptist Christian School

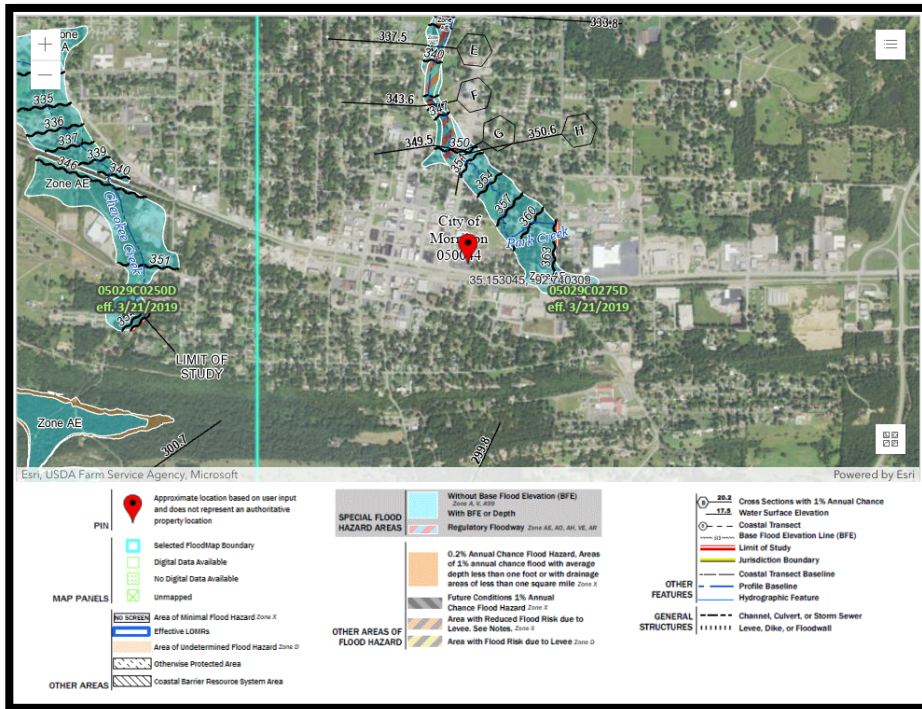
Flood Map 05029C0400D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

Sacred Heart Catholic School

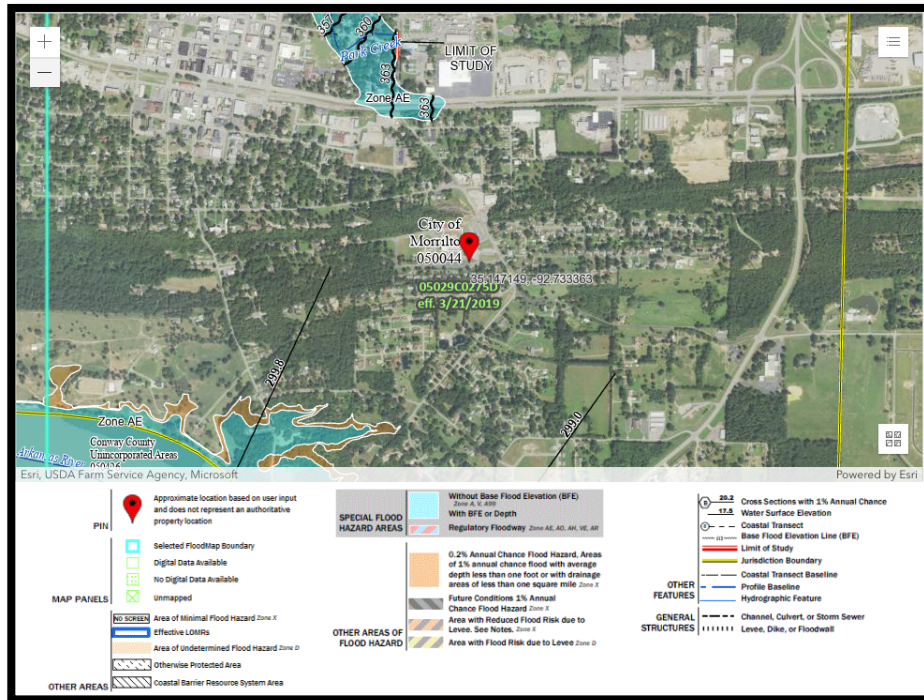
Flood Map 05029C0275D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

South Conway County School District Morrilton Primary

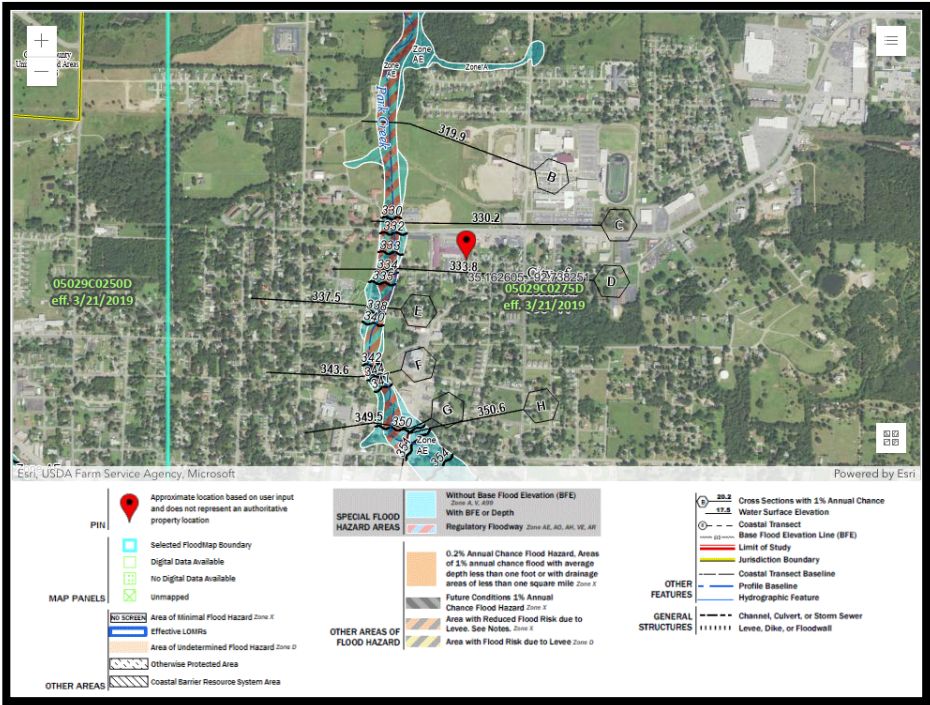
Flood Map 05029C0275D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

South Conway County School District Morrilton Elementary

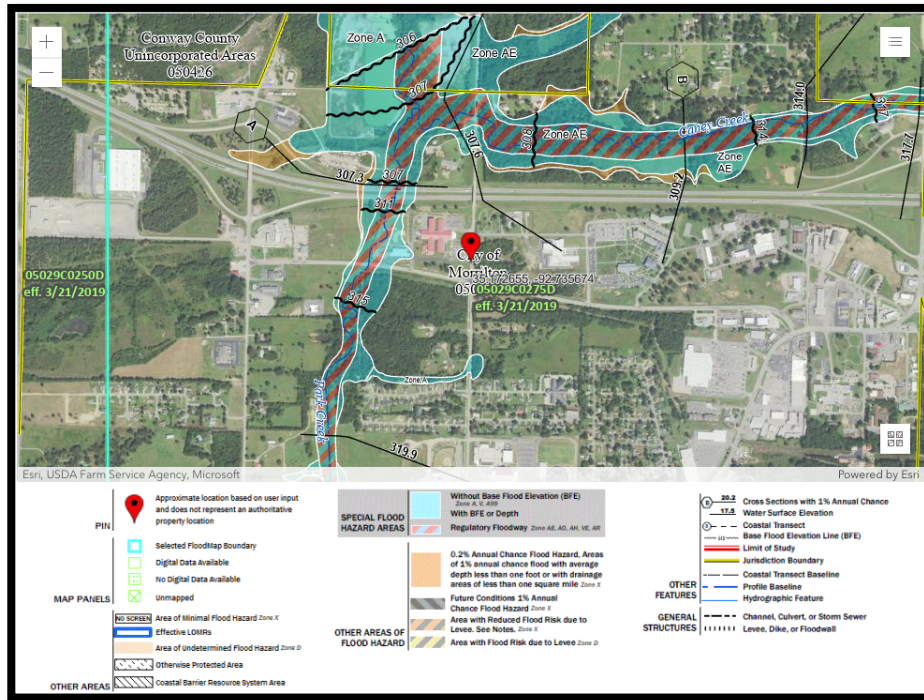
Flood Map 05029C0275D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

South Conway County School District Morrilton Intermediate School

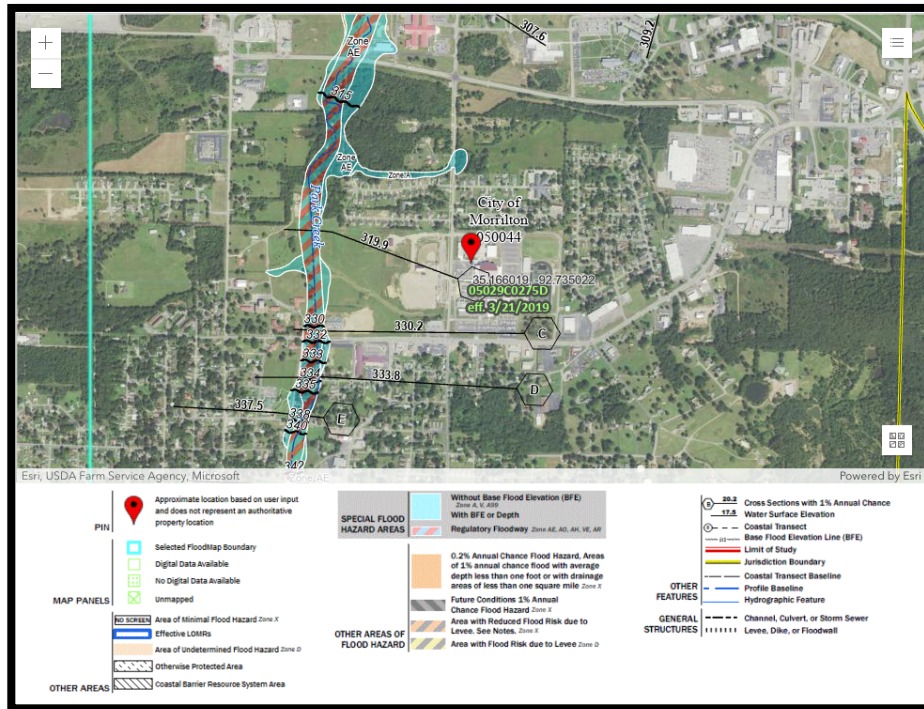
Flood Map 05029C275D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

South Conway County School District Morrilton Junior High School

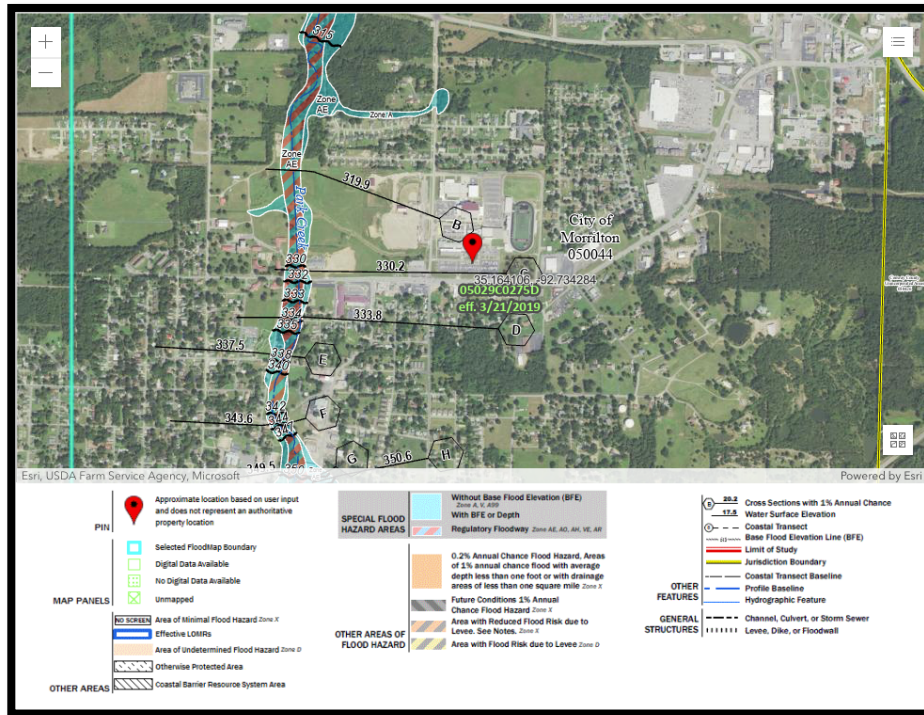
Flood Map 05029C0275D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

South Conway County School District Morrilton High School

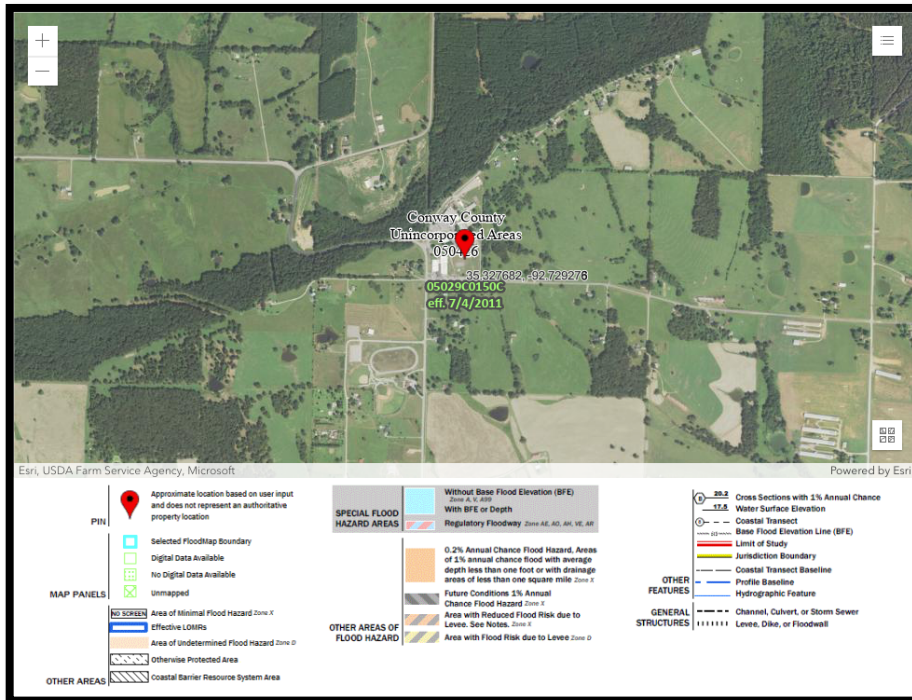
Flood Map 05029C0275D



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

Wonderview School District

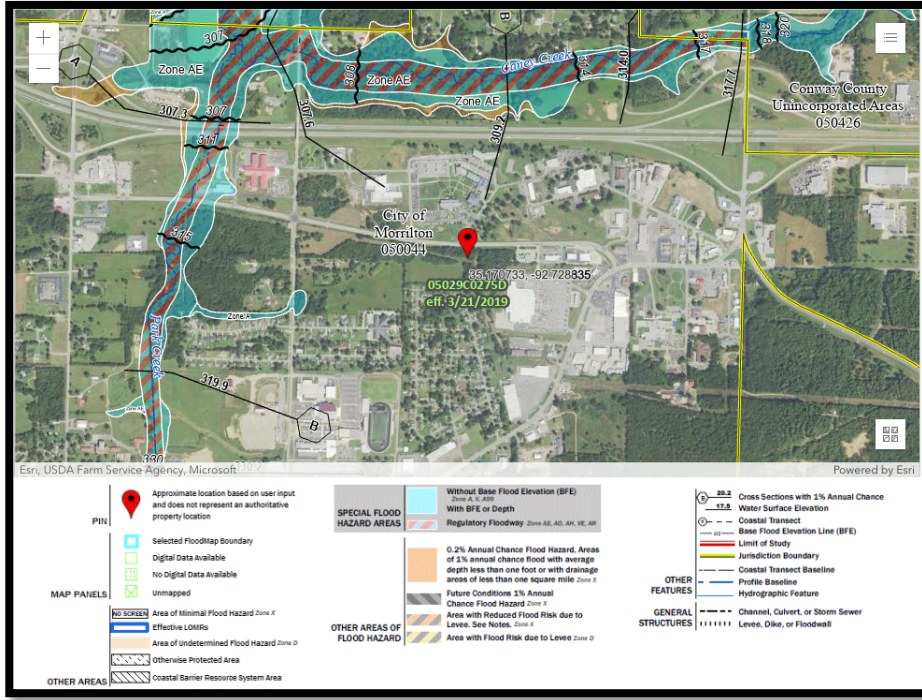
Flood Map 05029C0150C Effective 7/4/2011



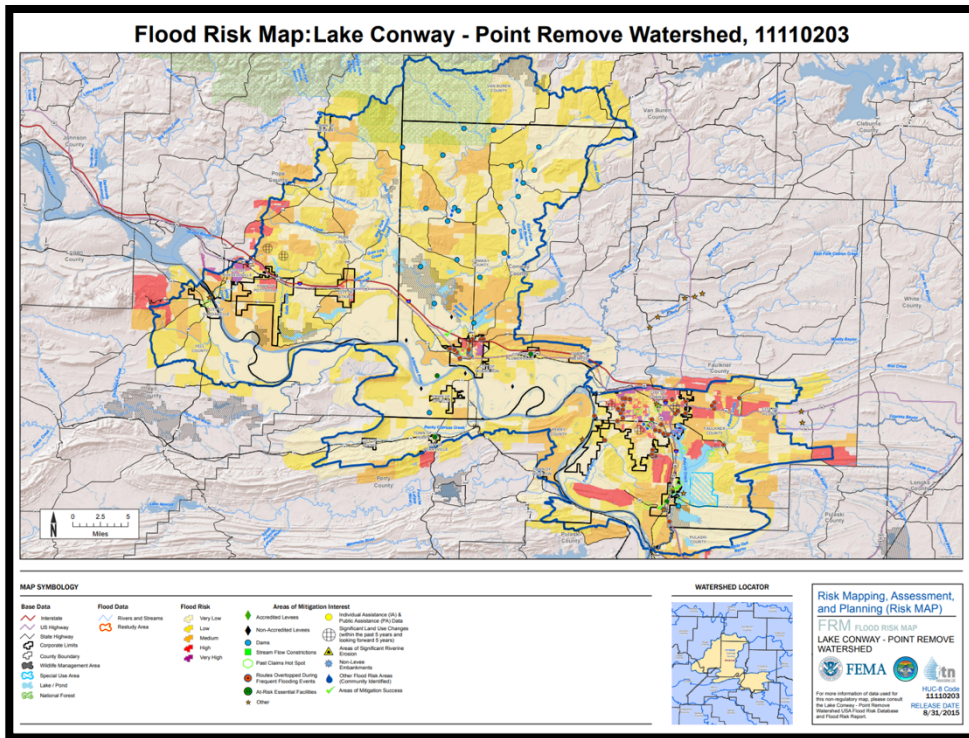
<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>

University of Arkansas Community College at Morrilton

Flood Map 05029C0275D Effective 3/21/2019



<https://msc.fema.gov/portal/search?AddressQuery=conway%20county%20arkansa>



https://map1.msc.fema.gov/data/FRP/FRM_11110203_20150924.pdf?LOC=2f7e3a58def821d3e195e26c643b095c

Extent, Magnitude, or Severity of Flood

For flooding, location refers to areas of the planning area that are at the highest risk of flooding frequently. Location is based on FIRM mapping and data from communities in the planning area.

The unincorporated jurisdictions of Conway County may expect flash flooding events when receiving 3” or more rainfall. Other locations may experience minor to moderate flood events:

- Springfield Road
- Bell Mountain Road
- Shaw Bridge Road
- Arena Road
- Highway 95 by Lake Overcup and Possum Trot
- Areas of Hwy 64 and Interstate 40 around Cadron Creek and Point Remove Creek
-

The city of Morrilton may expect flash flooding events when receiving 3” or more rainfall.

Other locations may experience minor to moderate flood events:

- Joseph Street
- Poor Farm Road
- NW are of Sacred Heart Catholic School
- Playground area for South Conway County School District Intermediate School
- River Valley Vo-Tech
- Southern Christian Home

The city of Menifee may expect flash flooding events when receiving 3” or more rainfall.

Other locations may experience minor to moderate flood events:

- Areas located around the East and West side of Highway 64

The city of Plumerville can expect flash flooding events when receiving 3” or more of rainfall.

Other locations may experience minor to moderate flood events:

- West Church Street
- Springfield Street
- Van Buren Street
- Plumerville Police Station
- Plumerville Fire Station
- Western Petroleum LLC

The city of Oppelo may experience one or more defined flood events and is located in a Special Flood Hazard Area. Other locations may experience minor to moderate flood events:

- West side of Highway 154
- Highway 113
- Highway 9
- City Wastewater Pump Station

All portions of the Planning Area are expected to receive the same amount of rainfall.

Flood severity categories used by the National Weather Service (NWS) include minor flooding, moderate flooding, and major flooding. Each category has a definition based on property damage and public threat.

Severity	Impact
Minor Flooding	Minimal or no property damage, but possibly some public threat or inconvenience
Moderate Flooding	Some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations are necessary.
Major Flooding	Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.

Previous Occurrences

The planning area suffered 55 flooding events between January 1, 2000, and January 31, 2023, resulting in \$6,116,000 in property losses and \$5,710,000 in crop losses.

There were 29 flash flood events reported between 01/01/2000 and 12/31/2023.

Number of County/Zone areas affected:	1
Number of Days with Event:	25
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	12
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:							0	0	0	1.965M	0.00K
NORTH PORTION	CONWAY CO.	AR	06/21/2000	11:10	CST	Flash Flood	0	0	0	0.00K	0.00K
COUNTYWIDE	CONWAY CO.	AR	12/16/2001	20:00	CST	Flash Flood	0	0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	05/16/2003	14:37	CST	Flash Flood	0	0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	11/18/2003	02:30	CST	Flash Flood	0	0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	04/22/2004	01:30	CST	Flash Flood	0	0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	04/22/2004	03:30	CST	Flash Flood	0	0	0	0.00K	0.00K
MALLET TOWN	CONWAY CO.	AR	01/13/2007	23:15	CST-6	Flash Flood	0	0	0	50.00K	0.00K
LEWISBURG	CONWAY CO.	AR	03/18/2008	16:00	CST-6	Flash Flood	0	0	0	75.00K	0.00K
MORRILTON	CONWAY CO.	AR	04/03/2008	22:00	CST-6	Flash Flood	0	0	0	1.000M	0.00K
MORRILTON	CONWAY CO.	AR	04/10/2008	02:50	CST-6	Flash Flood	0	0	0	0.00K	0.00K
ST VINCENT	CONWAY CO.	AR	06/13/2008	23:00	CST-6	Flash Flood	0	0	0	0.00K	0.00K
MENIFEE	CONWAY CO.	AR	09/03/2008	21:00	CST-6	Flash Flood	0	0	0	150.00K	0.00K
CLEVELAND	CONWAY CO.	AR	05/01/2009	22:00	CST-6	Flash Flood	0	0	0	0.00K	0.00K
CENTER RIDGE	CONWAY CO.	AR	05/01/2009	22:00	CST-6	Flash Flood	0	0	0	250.00K	0.00K
MENIFEE	CONWAY CO.	AR	05/06/2009	00:15	CST-6	Flash Flood	0	0	0	10.00K	0.00K
MORRILTON	CONWAY CO.	AR	08/10/2009	18:15	CST-6	Flash Flood	0	0	0	10.00K	0.00K
MORRILTON	CONWAY CO.	AR	09/16/2009	17:00	CST-6	Flash Flood	0	0	0	75.00K	0.00K
MORRILTON	CONWAY CO.	AR	10/09/2009	08:20	CST-6	Flash Flood	0	0	0	0.00K	0.00K
JERUSALEM	CONWAY CO.	AR	10/29/2009	18:20	CST-6	Flash Flood	0	0	0	300.00K	0.00K
MORRILTON	CONWAY CO.	AR	04/25/2011	17:59	CST-6	Flash Flood	0	0	0	15.00K	0.00K
MORRILTON	CONWAY CO.	AR	11/21/2011	22:30	CST-6	Flash Flood	0	0	0	25.00K	0.00K
PETIT JEAN STATE PARK	CONWAY CO.	AR	08/12/2013	15:00	CST-6	Flash Flood	0	0	0	5.00K	0.00K
SPRINGFIELD	CONWAY CO.	AR	04/29/2017	22:40	CST-6	Flash Flood	0	0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	04/29/2017	22:46	CST-6	Flash Flood	0	0	0	0.00K	0.00K
OPPELO	CONWAY CO.	AR	02/24/2018	15:15	CST-6	Flash Flood	0	0	0	0.00K	0.00K
SPRINGFIELD	CONWAY CO.	AR	02/28/2018	21:00	CST-6	Flash Flood	0	0	0	0.00K	0.00K
MALLET TOWN	CONWAY CO.	AR	02/11/2019	12:14	CST-6	Flash Flood	0	0	0	0.00K	0.00K
PETIT JEAN STATE PARK	CONWAY CO.	AR	02/11/2019	15:44	CST-6	Flash Flood	0	0	0	0.00K	0.00K
ROUND MTN	CONWAY CO.	AR	02/20/2019	00:21	CST-6	Flash Flood	0	0	0	0.00K	0.00K
Totals:							0	0	0	1.965M	0.00K

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Flash+Flood&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2000&endDate_mm=12&endDate_dd=31&endDate_yyyy=2023&county=CONWAY%3A29&hailfilter=0.00&tomfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=5%2CARKANSAS

On April 3, 2008, flash flooding damaged downtown building in Morrilton. Water reached about 5 feet at a furniture’s stores loading dock and warehouse at the bottom of a hill on Harding Street. Nearly a foot of water entered the rear of the building. Numerous county streets were flooded. A dumpster was carried more than a block from its original location by moving water. This flood event resulted in 1 million dollars in property damage.

There were 26 flood events reported between 01/01/2000 and 12/31/2023.

Number of County/Zone areas affected:	1
Number of Days with Event:	25
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	10
Number of Days with Event and Crop Damage:	5
Number of Event Types reported:	1

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	4.151M	5.710M
PETIT JEAN STATE PARK	CONWAY CO.	AR	03/19/2008	11:11	CST-6	Flood		0	0	1.00K	10.00K
JERUSALEM	CONWAY CO.	AR	10/30/2009	05:00	CST-6	Flood		0	0	0.00K	0.00K
SPRINGFIELD	CONWAY CO.	AR	10/30/2009	20:30	CST-6	Flood		0	0	50.00K	0.00K
MENIFEE	CONWAY CO.	AR	12/24/2009	04:00	CST-6	Flood		0	0	75.00K	0.00K
LEWISBURG	CONWAY CO.	AR	04/25/2011	23:55	CST-6	Flood		0	0	10.00K	150.00K
JERUSALEM	CONWAY CO.	AR	04/26/2011	02:00	CST-6	Flood		0	0	500.00K	0.00K
JERUSALEM	CONWAY CO.	AR	05/01/2011	00:00	CST-6	Flood		0	0	1.500M	5.000M
MORRILTON	CONWAY CO.	AR	05/03/2011	01:50	CST-6	Flood		0	0	10.00K	50.00K
MORRILTON	CONWAY CO.	AR	03/22/2012	04:15	CST-6	Flood		0	0	5.00K	0.00K
LEWISBURG	CONWAY CO.	AR	05/11/2015	00:30	CST-6	Flood		0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	05/21/2015	05:15	CST-6	Flood		0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	06/01/2015	00:00	CST-6	Flood		0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	12/28/2015	05:45	CST-6	Flood		0	0	0.00K	0.00K
LEWISBURG	CONWAY CO.	AR	01/01/2016	00:00	CST-6	Flood		0	0	0.00K	0.00K
MENIFEE	CONWAY CO.	AR	04/29/2016	09:40	CST-6	Flood		0	0	0.00K	0.00K
LEWISBURG	CONWAY CO.	AR	05/21/2017	21:52	CST-6	Flood		0	0	0.00K	0.00K
LEWISBURG	CONWAY CO.	AR	02/25/2018	18:40	CST-6	Flood		0	0	0.00K	0.00K
OPPELO	CONWAY CO.	AR	02/28/2018	13:15	CST-6	Flood		0	0	0.00K	0.00K
HATTIEVILLE	CONWAY CO.	AR	03/01/2018	05:45	CST-6	Flood		0	0	0.00K	0.00K
POINT REMOVE	CONWAY CO.	AR	05/24/2019	11:31	CST-6	Flood		0	0	1.000M	500.00K
POINT REMOVE	CONWAY CO.	AR	06/01/2019	00:00	CST-6	Flood		0	0	1.000M	0.00K
POINT REMOVE	CONWAY CO.	AR	06/24/2019	12:15	CST-6	Flood		0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	04/29/2021	23:54	CST-6	Flood		0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	05/01/2021	00:00	CST-6	Flood		0	0	0.00K	0.00K
POINT REMOVE	CONWAY CO.	AR	05/07/2022	08:30	CST-6	Flood		0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	03/25/2023	16:27	CST-6	Flood		0	0	0.00K	0.00K
Totals:								0	0	4.151M	5.710M

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Flood&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2000&endDate_mm=12&endDate_dd=31&endDate_yyyy=2023&county=CONWAY%3A29&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=5%2CARKANSAS

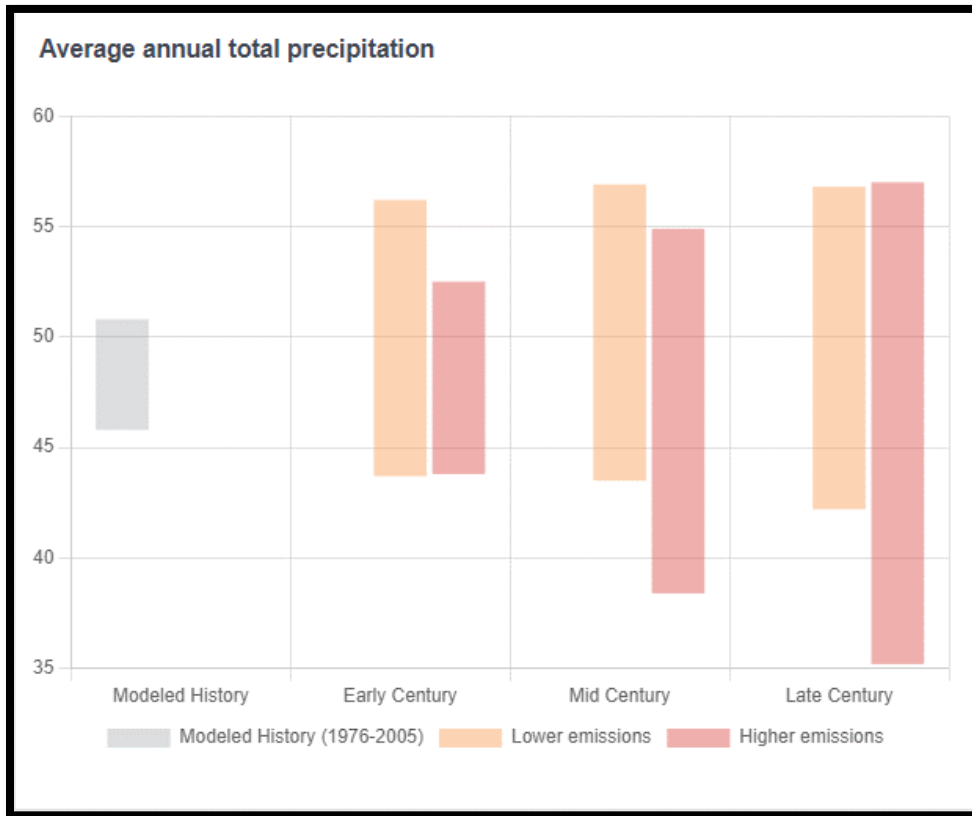
May 5, 2011, there was widespread flooding in Arkansas. The flooding was caused by large amounts of rain on April 30th, May 1, and May 2. This caused high water to flow down from Missouri and backwater flooding from rivers and large creeks/bayous. The Mississippi River was also experiencing unusually high stages, causing the /white and Arkansas Rivers to back up neat the rivers confluence. The Arkansas farm Bureau estimated that more than one million acres of farmland was under water in the State. The city of Jerusalem sustained 1.5 million dollars in property damage and 5 million dollars in crop damage.

Probability of Future Flood Events

Future Climate Indicators							
Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
		Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Annual average total precipitation	48" 46 - 51	49" 44 - 56	49" 44 - 52	49" 44 - 57	49" 38 - 55	49" 42 - 57	49" 35 - 57
Days per year with precipitation (wet days)	163 days 156 - 170	159 days 146 - 170	158 days 132 - 168	158 days 142 - 170	156 days 122 - 174	157 days 140 - 171	152 days 110 - 175
Maximum period of consecutive wet days	12 days 10 - 13	12 days 10 - 15	12 days 9 - 15	12 days 9 - 16	12 days 9 - 15	12 days 9 - 15	12 days 9 - 14
Annual days with:							
Annual days with total precipitation > 1inch	9 days 8 - 10	9 days 8 - 11	10 days 8 - 12	10 days 8 - 12	10 days 7 - 12	10 days 8 - 12	10 days 7 - 14
Annual days with total precipitation > 2 inches	1 days 1 - 1	1 days 1 - 2	1 days 1 - 2	1 days 1 - 2	1 days 1 - 2	1 days 1 - 2	2 days 1 - 3
Annual days with total precipitation > 3 inches	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1
Annual days that exceed 99th percentile precipitation	7 days 7 - 7	7 days 7 - 8	8 days 8 - 9	8 days 8 - 8	9 days 8 - 9	8 days 8 - 9	9 days 9 - 10
Days with maximum temperature below 32 °F	4 days 3 - 5	2 days 1 - 4	2 days 1 - 3	2 days 0 - 4	1 days 0 - 3	1 days 0 - 3	0 days 0 - 2

N/A = Data Not Available for the selected area

Climate Projections for	Early Century (2015-2044) ⌵	Lower emissions	Higher emissions
Average annual total precipitation		48.8 Inches + 0.5 since 1976-2005	49.0 Inches + 0.7 since 1976-2005
Days per year with precipitation (wet days)		159.0 Days - 3.6 since 1976-2005	158.1 Days - 4.5 since 1976-2005
Maximum number of consecutive wet days		12.0 Days + 0.3 since 1976-2005	11.8 Days + 0.1 since 1976-2005
Annual days with total precipitation > 1 inch		9.5 Days + 0.4 since 1976-2005	9.8 Days + 0.8 since 1976-2005
Annual days with total precipitation > 2 inches		1.1 Days + 0.2 since 1976-2005	1.2 Days + 0.2 since 1976-2005
Annual days with total precipitation > 3 inches		0.2 Days No change since 1976-2005	0.3 Days + 0.1 since 1976-2005
Annual days that exceed 99th percentile precipitation		7.4 Days + 0.6 since 1976-2005	8.1 Days + 1.2 since 1976-2005



[CMRA - Climate Mapping For Resilience and Adaptation \(arcgis.com\)](https://arcgis.com)

Climate mapping trends do not show a significant change in precipitation and how it relates to flooding. There is a slight increase in annual average total precipitation with a slight decrease in wet days per year. Data for the annual days with total precipitation for less than 1 inch, less than 2 inches, and less than 3 inches remains consistent with no trending changes.

The probability for a flood event occurring in the Planning Area in any given year is less than one percent. The probability for a flood event was estimated using the following formula:

$$\frac{\# \text{ of events}}{\# \text{ of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

Vulnerability and Impact of Flood

Unincorporated areas of Conway County the areas of Springfield Road, Bell Mountain Road, Shaw Bridge Road, Arena Road, and others may be closed during flood events. Many of the roads in Conway County are unpaved. These unpaved roads are susceptible to a great deal of damage during flooding events that may go unnoticed until the water recedes. Residents may experience a much longer drive time to avoid the closed roads. Highway 95 at Lake Overcup and again at Possum Trot, Shaw Bridge Road, and Chapel Road have been elevated to reduce the risk of roadway flooding. These roads may still be susceptible to flooding during large flooding events. Arkansas Highway 64 and Interstate 40 may be impacted by flooding events elsewhere that raise the level of the Arkansas River. The Cadron Creek on the east side of the county and Point Remove Creek just West of Morrilton are the two major tributaries entering the Arkansas River in Conway County. Both Creeks cross both Arkansas Highway 64 and Interstate 40.

Conway County is served by 12 county fire districts working out of 17 stations around the county. Conway County Fire Department District 8 Hill Creek has its main station off Highway 92 located within a Special Flood Hazard Zone A. Due to the elevated pad on which the station is built, there should be little risk of flooding affecting emergency response. The remaining 16 fire stations around the county are located well away from any Special Flood Hazard Areas and should experience little to no impact from flood events.

Wonderview School District and Nemo Vista School District are located in the unincorporated areas of Conway County. Due to their locations, both school campuses should experience little to no affect from flooding. Bussing of students may be affected due to flooded or closed roads.

A major concern in most areas of the county is the impact of flooding on crops, livestock, and timber plantations. During flood events, fields may wash out and crops lost. Farmers will suffer economically from the loss of crops and livestock forage. Timber plantations may become stressed or die out after being submerged during extended flood events. Flood water may drown livestock or cut off their access to feed and forage.

In all the above jurisdictions, flood waters could interrupt gas, electric, and water services. Flood water could contaminate the water supply, making drinking water unavailable. Homes, personal belongings, and businesses can be damaged or destroyed during flood events. Home and Business owners without flood insurance could suffer great financial hardships due to the cost of cleanup and repair.

Flooding events within the City of Morrilton could negatively impact the city through damage to roadways, damage to homes and businesses, as well as the financial impacts of businesses being closed or employees being unable to travel to their workplace.

Arkansas Hwy 64, Arkansas Hwy 9, Arkansas Hwy 113, St. Joseph St., and Poor Farm Road, along with others, may become flooded during heavy rain events. Travelers attempting to cross these flooded areas may find themselves stalled out or carried away by the flood waters. Flood waters may damage road surfaces, undermine roadways, and damage bridges. These types of damages may not be seen until the water recedes and inspections of the roadway are carried out.

Morrilton Fire Department North and South stations are located well away from any known flooding hazards and should be safe during a flooding event. Morrilton Fire Departments West station is adjacent to a Special Flood Hazard Zone AE with a base flood elevation of 328 feet. Due to the built-up surface on which the station is positioned, flooding should have little to no effect on emergency response. Morrilton Fire Department East station is located adjacent to a Special Flood Hazard Area AE with a base flood elevation of 363 feet. The Special Flood Hazard Area only affects a small portion of the concrete apron in front of the station, there should be little to no effect on emergency response.

Residential as well as commercial structures located along Park Creek, Caney Creek, and Cherokee Creek may be susceptible to flooding during flood events. Home owners and business owners in these areas may have limited ingress and egress from their properties due to closed roadways. Many structures near these creeks may suffer water damage during flooding events. There are several structures within the Special Flood Hazard Areas along these creeks with some structures located within the mapped floodways. These structures predate the adoption of NFIP standards in the community. No further development should occur in these areas.

CHI St. Vincent Morrilton, Brookridge Cove Rehabilitation and Care, Morrilton Medical Clinic, Conway County Health Unit, Med Tech Ambulance, and CHI St. Vincent Primary Care are located within Morrilton. Flooding events should not directly affect any of these facilities, but there may be staff and patients unable to reach the facilities due to closed roads.

South Conway County School District and Sacred Heart Schools are also located in the City of Morrilton. Sacred Heart is located adjacent to a Special Flood Hazard Zone AE with a base flood elevation of 350 feet. The hazard area only affects a small area on the northwest corner of the property, the school should not be affected. SCCSD Elementary School campus is located adjacent to a Special Flood Hazard Zone AE with a base flood elevation of 333 feet, the school should not be affected during a flood event. SCCSD Intermediate School campus is located adjacent to a

Special Flood Hazard Area with a base flood elevation of 311 feet. This flood zone area encompasses the majority of the playground area as well as the River Valley Vo-Tech building located behind the school. The main school building should not be affected during a flooding event. SCCSD High school, Jr. High School, and Primary campuses are located away from any Special Flood Hazard Zones and should experience little to no impact from flooding events.

Southern Christian Home is bisected by Park Creek which runs south through their campus. Any flood event on this creek could cut half the campus off from the other half. Housing for the residents is located outside the mapped Special Flood Hazard Zone and should not be affected.

The City of Oppelo only has a few areas within its city limits that fall within a Special Flood Hazard Area. These areas are primarily undeveloped or farmland with no structures. On the west side of Oppelo, on Highway 154, there is an area where a Special Flood Hazard Area crosses State Highway 154. Flooding in this area could impact traffic flowing in and out of Oppelo from Petit Jean Mountain. In this same area is one of the city's wastewater pump stations. This pump station is located in a Zone AE with a base flood elevation of 305. This site has flooded previously, reducing the city's capacity to pump wastewater.

During the flood events of June 2019, Highway 113 at the Perry County line and Highway 9 just south of Oppelo were closed due to flooding. This greatly impacted flow of traffic in and out of Oppelo. Secondary roads used to bypass the flooded areas quickly deteriorated due to the increase in traffic.

Due to its location near the Arkansas River, the city of Menifee has several areas located within a Special Flood Hazard Area. Highway 64 to the west of the Town of Menifee is susceptible to flooding events and may become impassable. Highway 64 to the west of Menifee may also become flooded during flood events. Highway 64 to the east of the Town of Menifee was closed during the flooding event of June 2019 due to flooding. This had a tremendous impact on travel in and out of Menifee.

Pinecrest Lumber and the Arkansas Kraft Slitter Mill are located on the south side of Highway 64 in the western portion of the Town of Menifee, these facilities are located primarily within a Special Flood Hazard Zone AE, with the remaining portions located within a 500-year flood zone.

Due to the location of Menifee City Hall, Police Station, and Fire Station, there should be little to no impact on these facilities due to flooding.

Areas in the city of Plumerville such as West Church St., Springfield St., Van Buren, and many other streets easily flood and may be closed to traffic during flood events.

Plumerville Police/Fire Station is surrounded by a Special Flood Hazard Zone AE and located within a 500-year flood zone. Historically flood waters have reached two feet deep in the street in front of the Police/Fire Station. This could potentially slow emergency response during flood events.

Weston Petroleum LLC may be affected by runoff flowing down the hill behind their property and through the facility. This runoff could carry chemicals offsite and towards Gap Creek.

Economic

Residential loss or damage. Businesses also suffer, not only from the loss of property, but the lack of customers during the flood and recovery. Farmers suffer from the loss of their crops.

Financial

Residents who do not carry flood insurance suffer a great financial hardship. Those who do have insurance get help with the clean-up, but some costs may still come out of pocket. Towns and cities impacted by a flood carry the financial burden of fixing the public buildings, roads and other structures damaged by the flood waters. People who are impacted by the flood may also lose wages because the business they work for suffered damages or they are unable to get to work.

Health

Flood waters can also damage the health of those living and working in the area. Because flood waters can wash dangerous waste into water supplies, tap water may become unsafe to use if the local authorities do not issue a boil advisory warning everyone to boil water before ingesting it. Mold is also likely to grow in homes and other buildings engulfed by the flood waters. It is important to search all homes for mold and remove it completely before moving back in. Breathing the mold spores is dangerous for your health. A flood can also contribute to other health problems from human waste contaminating the ground.

Safety

Once flooding begins, strong currents can pull a grown man beneath the water to drown. Once the flood waters have settled, it is still unsafe to wander through the water by car or on foot. Deep spots may be undetectable and there may be electric currents running through the water.

Rural Impact

Floods damage farmland by burying crops in silt, uprooting crops by the force of the water or drowning crops. Flood waters can drown livestock as well. Flooding devastates wetlands and other wildlife habitats by depositing massive amounts of silt or leaving behind toxic substances such as petroleum products, fertilizers and pesticides and other man-made chemicals. This can kill animals and lead to water and land pollution.

Disease

Flooding increases human exposure to dysentery and other diseases. Flooded sewage treatment plants contaminate drinking water supply.

Population

Population may have an impact on flood events when there is a shift in population size and composition. Population growth and urbanization alter the natural landscape. This results in loss/addition of natural landscaping such as trees, grass, and rock. Building structures to accommodate growth influences climate and the natural path of water flow. Population growth/density will place a larger number of people at risk for injury or death. The shift could create limited escape routes. Rising populations could mean that more people are vulnerable to a flood event. Population growth will increase the need for mitigation measures to protect people, property, resources, and the natural environment.

The Planning Area is currently trending a decrease in population. There have been no research studies on population and flood risk for the Planning Area. Over the next five years the Planning Team will need to research and document the shift in population and its effect if any on flood events.

Land Use

Changes in land cover such as urbanization, deforestation and cultivation may result in increased flood frequency and severity. The city of Morrilton is expecting a growth in industry.

Urbanization may result in a lack of the natural environments capacity to absorb water. Loss of vegetation and forest clearing disrupts the natural environments process of evaporating water from both the soil and leaves of plants.

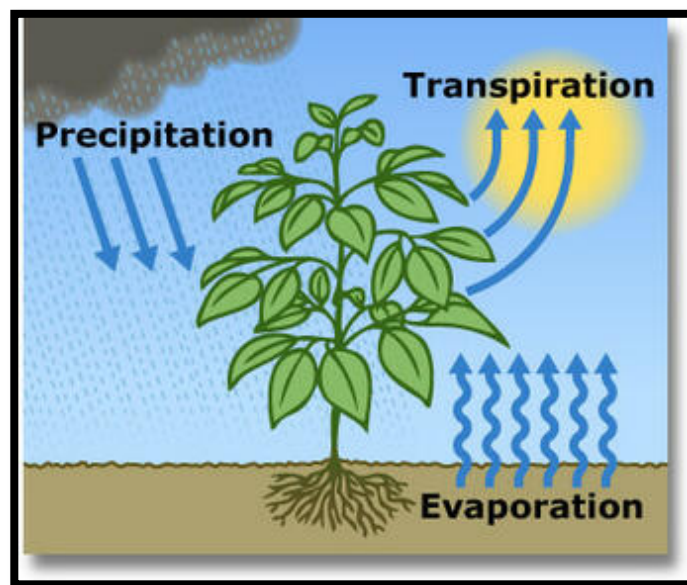
Flooding results in poor soil aeration, leading to poor plant growth. Soil becomes more acidic following a flood. In addition, flooding can lead to soil erosion or soil contamination from such man-made pollutants as oils (on roadways), fertilizers (in yards and farms) and paints.

Flooding can severely stress or even kill trees, depending on how deeply or how long they remain submerged. Floods kill trees that are completely covered by water and seedlings pushed over by the force of the water or buried under silt. Prolonged flooding can cause root rot, leading to tree death. Prior tree health plays a role in whether the trees survive after flooding.

Currently there is no documented research for the Planning Area on land use and its effect on flood events. Over the next five years the Planning Team will need to conduct and document research on the effects of land use and flood events in the Planning Area.

Climate

Climate change may have an impact on flooding. Changes in temperatures impact the frequency and severity of flood events. Warmer temperatures could cause increased amounts of precipitation. The Planning Area is currently trending both higher temperatures and more days each year of extreme heat. These warmer temperatures, in addition to population distribution and land use, affect the amounts of water evaporating from the land. This process called evapotranspiration, impacts atmospheric temperature changes. Higher rates of evapotranspiration can have a cooling effect on the lands surface and aid the natural environments ability to filter water.



<https://www.usgs.gov/special-topics/water-science-school/science/evapotranspiration-and-water-cycle>

The Planning Area does not have any documented research on climate change and its effects on flooding. Over the next five years the Planning Team will need to research and document climate changes and its effect on frequency and size of flood events.

Repetitive Loss

Repetitive loss information was provided by Whit Montague, Arkansas Natural Resources. No persona identifiable information will be presented. Information is as of 3/5/2024.

Jurisdiction	Morrilton (Single Family Home)	Morrilton (Business)	Plumerville
Community Number	050044	050044	050364
RI Number	123160	175590	256641
Mitigated	No	No	No
NFIP Insured	No	No	No
Total Losses	7	2	2
Total Paid	\$89204.17	\$4052.48	\$19426.99
NFIP Repetitive Loss	Yes	Yes	Yes
NFIP Severe Repetitive Loss	Yes	Yes	No
FEMA Severe Repetitive Loss	No	No	No

There are 11 repetitive loss properties in the Planning Area. Two properties were commercial with the total cost of \$4,052.00. Nine were residential properties with a total cost of \$108,631.16. There are 9 repetitive loss properties in the city of Morrilton. 2 properties are commercial properties and 7 are residential. The city of Plumerville had 2 residential repetitive loss properties totaling \$6,618.73.

Vulnerability of Estimating Potential Loss

The entire Planning Area is vulnerable to one or more types of flood events. Loss of life and injuries are possible. Expect damage to residential and business structures, transportation systems, disruption of utility services, and major environmental damage.

4.8.6 Landslide

“Landslide” is used to describe the downward and outward movement of slope-forming materials reacting under the force of gravity. Landslides are classified by type of movement and type of materials. The types of movement are:

- Slides of soil or rock involve downward displacement along one or more failure surfaces. The material from the slide may be broken into several pieces or remain a single, intact mass.
- Flows are characterized by shear distributed throughout the mass of material.
- Lateral Spreads are large elements of distributed, lateral displacement of materials characterize lateral spreads.
- Falls and topples occur when masses of rock or other material detach from a steep slope or cliff, and descend by free fall, rolling, or bouncing.

Extent, Magnitude or Severity of Landslide:

Landslide movement is measuring using an extensometer. This is an instrument that can detect movement of the ground surface between stable ground and sliding ground. Mapping and observations are other ways of detecting landslide activity.

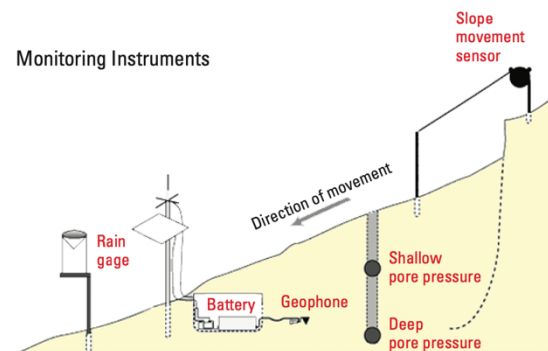
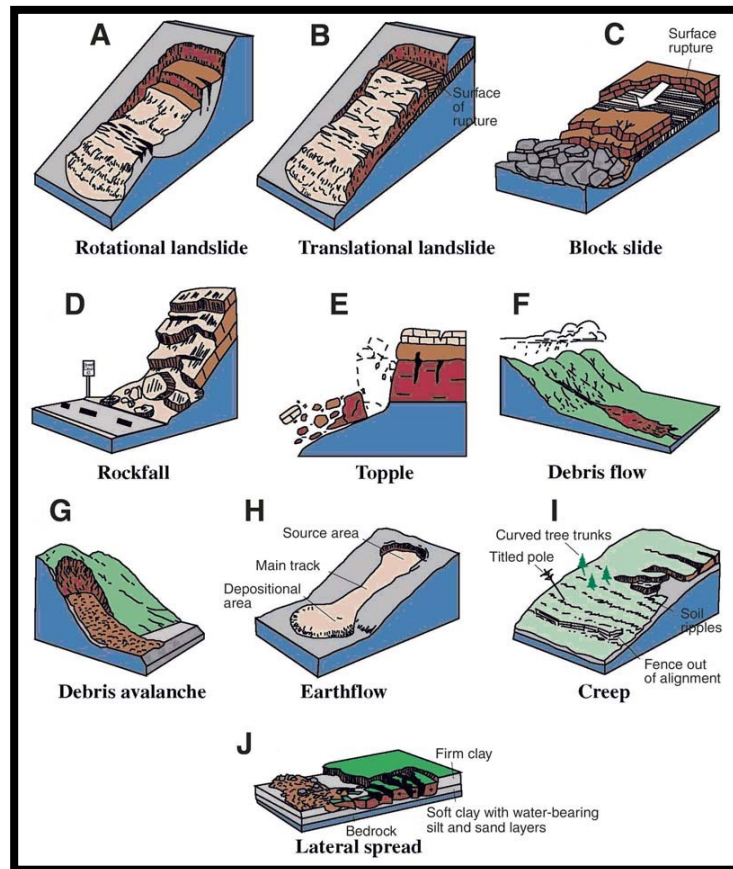


Figure B10. Example of a network for measurement and transmission of real-time landslide data. (Schematic from U.S. Geological Survey.)

As can be seen in the figure below, slope movement can occur in multiple ways. They typically start on steep hillsides such as the ones surrounding Petit Jean Mountain. Landslides may occur with or without warning and travel up to 35 mph. Historically, landslides have been responsible for moving up to 1,000 tons of rock, dirt, and debris.

Arkansas Highway 154 on Petit Jean Mountain can expect a rock fall, topple, or slide to occur unexpectedly in a matter of seconds with no warning time.

Examples of different types of landslide movement



(modified from Cruden and Varnes, 1996)

Location of Landslide Events

The only area vulnerable to a landslide is Arkansas Highway 154 on Petit Jean Mountain located in the unincorporated area of Conway County.

Previous Occurrences

There has only been one landslide which occurred on Petit Jean Mountain located in the unincorporated area of Conway County.

Probability of Future Landslides

The probability for a flood event occurring in the Planning Area in any given year is less than one percent. The probability for a flood event was estimated using the following formula:

$$\frac{\# \text{ of events}}{\# \text{ of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

Vulnerability and Impact of Landslides

Based on historical records pertaining to a singular landslide incident, it was observed that the resultant damage necessitated the removal of approximately 200 truckloads of mud, topsoil, and fallen trees from Arkansas Highway 154. This event underscored the potential risks posed to travelers, as any individuals traversing this route could have been exposed to the possibility of vehicular accidents resulting in fatalities or injuries. Furthermore, the occurrence of a landslide along this highway has the capacity to significantly disrupt traffic flow, thereby impeding the movement of both regular commuters and emergency response vehicles.

The Unincorporated area of Conway County is vulnerable to a landslide event, specifically Highway 154.

The following districts are not vulnerable to landslides: the Cities of Menifee, Morrilton, Oppelo and Plumerville, and the School Districts of Nemo Vista, River View Christian School, Sacred Heart Catholic School, South Conway County and Wonderview, and University of Arkansas Community College at Morrilton.

The most vulnerable populations will be those who are unable to move out of harm's way due to disability, age, or poverty levels. Since landslides typically happen suddenly and without notice these are the populations most likely to have inadequate abilities and resources.

Population, Land Use, and Climate

Population density influences both the natural landscape and climate.

As people build, they remove rock, dirt, trees, and grass. They build structures for homes, businesses, and infrastructure. Areas that were once full of trees become prime real estate or farmland to meet increased food demands. These changes in structure, weight and landscape alter the vulnerability and impact of a landslide. The human-made changes in topography and vegetation impact the earth's natural balance. Cutting roads, building retaining walls, adding concrete, or clearing vegetation for farmland may weaken slopes. According to research by the American Geophysical Union in 2021, urban areas are at a greater risk for precipitation-triggered landslides than rural areas.

As population dynamics and climate patterns undergo transformation, their combined impact and associated vulnerabilities also evolve. A growing population necessitates the construction of additional infrastructure, thereby heightening the likelihood of resource depletion, property damage, and loss of life in the face of adverse events. The shifting demographic and climatic landscape highlight the need for comprehensive analysis by the planning team.

Currently, the Planning Area lacks documented research concerning the effects of population, land use, and climate change, on landslide events. These impacts will be monitored by the planning team over the next 5 years to continue research for nature-based solutions to mitigate all possibilities of potential increased impact.

4.8.7 Thunderstorm

Thunderstorms are formed from a combination of moisture, rapidly rising warm air and a force capable of lifting air such as a warm or cold fronts.

Thunderstorms can bring heavy rains, strong winds, hail, lightning, and tornadoes.

Lightning is an electrical discharge resulting from the buildup of positive and negative charges within a thunderstorm.

Hail - Hail is a form of precipitation occurring when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into balls of ice. Hail can damage aircraft, homes and cars, and can be deadly to livestock and people.

Strong Winds - also referred to as straight-line wind, is any wind that is not associated with rotation. This term is used mainly to differentiate thunderstorm winds from tornado winds. High winds originate as a downdraft of rain-cooled air, which reaches the ground and spreads out rapidly. This can produce a potentially damaging gust of wind up to and sometimes over 100 mph. In recent years, there have been several occasions in Arkansas where winds greater than 100 mph have been measured. Winds of 58 mph (50 knots) or more are considered severe. The horizontal component of near-surface wind phenomena is the most significant aspect of the hazard.









Extent, Magnitude, or Severity

All plan participants experience thunderstorms, lightning, strong winds and hail events. All parts of the planning area are equally subject to thunderstorms ranging from marginal to high risk.

Location of Thunderstorm, Lightning, Strong Winds, and Hail Events

Thunderstorm, lightning, strong winds and hail events do not have any geographical boundaries in the Planning Area. The entire planning area is capable of experiencing thunderstorm, lightning, strong winds and hail events.

Understanding Severe Thunderstorm Risk Categories

THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with <u>all</u> thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
					
<ul style="list-style-type: none"> Winds to 40 mph Small hail 	<ul style="list-style-type: none"> Winds 40-60 mph Hail up to 1" Low tornado risk 	<ul style="list-style-type: none"> One or two tornadoes Reports of strong winds/wind damage Hail ~1", isolated 2" 	<ul style="list-style-type: none"> A few tornadoes Several reports of wind damage Damaging hail, 1 - 2" 	<ul style="list-style-type: none"> Strong tornadoes Widespread wind damage Destructive hail, 2" + 	<ul style="list-style-type: none"> Tornado outbreak Derecho
<small>* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.</small>					
		National Weather Service			
www.spc.noaa.gov					

Damage from severe thunderstorm winds account for half of all severe reports in the lower 48 states and is more common than damage from tornadoes. Wind speeds can reach up to 100 mph and can produce a damage path extending for hundreds of miles.

Previous Occurrences

Event	Events	Fatalities	Injuries	Property Damage/Crop Damage	Total Loss
Thunderstorm winds	82	0	1	40	\$4,613,000.00
Strong Winds	6	0	0	6	\$110,000.00
Lightning	9	0	1	8	\$652,000.00
Hail Events	73	0	0	1	\$10,000

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Thunderstorm+Wind&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2000&endDate_mm=12&endDate_dd=31&endDate_yyyy=2023&county=CONWAY%3A29&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=5%2CARKANSAS

There has been a total of 170 events over the last 23 years. There have been only two reported injuries for thunderstorm, strong winds, lightning and hail events.

August 12, 2011, a man was injured by lightning while on the campus of the University of Aransas Community College at Morrilton. His injuries were not serious.

March 20, 2012, in Lewisburg, a severe thunderstorm moved through the east side of Morrilton. The roof of a packaging company was badly damaged. At the Conway County Fairgrounds, a concession stand was completely destroyed, an exhibition building was blown in, and a restroom building was damaged. There was damage to the Morrilton High School football field. Numerous trees and power lines were blown down. About 50 homes were damaged. Damage ranged from a few missing shingles to being destroyed by fallen trees. One person was injured when a tree fell on the house they were located in. Damage from this storm resulted in \$400,000.00.

The largest amount of property damage has been the result of thunderstorm winds.

June 9, 2008, in Center Ridge, thunderstorm winds were the cause in \$500,000.00 in property damage. Five houses had roof damage. There were 15 other houses that sustained some form of minor damage. A chicken house that had been under construction was blown down. Two additional chicken houses had their roofs blown off. There were power lines down in many areas. Trees were blown down with one tree blowing through a house. A pump house was blown into a gas pipeline causing a gas leak. This gas leak resulted in Arkansas Highway 9 to be temporarily shut down.

June 12, 2009, a line of fast-moving thunderstorm damaged 30 homes from 3WSW Old Hickory to 1SSW Cypress Valley. Other damage from this line of storms includes damage to a dozen rural farm buildings, the destruction of three chicken houses, the deaths of 100,000 chickens, downed power lines, and hundreds of trees completely blown down. This line of thunderstorms resulted in \$1,750,000.00.

Probability of Future Occurrences

The probability for a thunderstorm, strong wind, lightening, or hail event occurring in the Planning Area in any given year is less than one percent. The probability for a flood event was estimated using the following formula:

$$\frac{\# \text{ of events}}{\# \text{ of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

Climate change may increase the probability and strength of thunderstorms and associated hazards. These impacts will be monitored by the planning team over the next 5 years to continue to research nature-based solutions to mitigate all possibilities of potential increased impact.

Vulnerability and Impact for Thunderstorm Events

The threat of thunderstorms, strong winds, lightning and hailstorms effect all the participating jurisdictions including the unincorporated areas of Conway County, cities of Menifee, Morrilton, Oppelo and Plumerville and school districts of South Conway County, Nemo Vista, Wonderview, Sacred Heart, and Riverview Baptist and the campus of the University of Arkansas Community College at Morrilton.

In all participating jurisdictions, structures and their contents are vulnerable to damage by thunderstorms winds. Strong winds can down trees onto power lines, damage mobile homes that are not anchored, and rip off roofing. Winds can cause death and injuries by lifting unanchored objects. Lightning strikes can cause structural, timberland, and grass fires. It can cause damage to the communication towers throughout the jurisdictions and disrupt service. Hailstorms could cause damage to all structures, mainly roof shingles which can lead to roof leaks and further damage to the structure interiors. All types of real estate and personal property are vulnerable to hail; such as cars, trailers, boats, and crops. Hailstorms can cause bodily injury if caught outside without protection.

Unincorporated areas of Conway County:

Many homes may be damaged or destroyed during severe storm events due to the materials used in their construction. Those living in structures built of unreinforced masonry or homes without a safe room are at higher risk of injury or death during thunderstorms, this is especially true for the elderly and the young. Travelers and those camping, without a substantial shelter or safe room nearby, are extremely vulnerable to injury or death. Many rural farm's infrastructure and livestock may be vulnerable to damage or loss during severe weather events. Crops and timberland are at risk from lightning strikes. These strikes may cause injuries or start fires that can destroy infrastructure and/or crops or other field grown products.

The City of Morrilton:

In the city of Morrilton, commercial and residential structures throughout the city may be susceptible to destruction or damage during a severe weather event due to the materials used in their construction. CHI St. Vincent Morrilton, CHI St. Vincent Medical Clinic, Morrilton Medical Clinic, and Brookridge Cove Rehabilitation and Care are the major health facilities located in the City of Morrilton. Damages to the power grid feeding these facilities may cause a loss of services during a severe weather event. Patient care may be delayed until power systems are restored. There are other critical facilities in the city of Morrilton that could receive major damage that would impede their abilities to respond and provide support during a thunderstorm event. These would include the 911 Dispatch Center, Conway County Office of Emergency Management, and the four fire stations of the Morrilton Fire Department.

The City of Plumerville:

In the city of Plumerville, commercial and residential structures throughout the city may be susceptible to destruction or damage during a severe weather event due to the materials used in their construction. There are no major health facilities located in the City of Plumerville. There are other critical facilities in the city of Plumerville that could receive major damage that would impede their abilities to respond and provide support during a thunderstorm event. These would include the Plumerville City Hall, Plumerville Police Department, Plumerville Fire Department, Plumerville Wastewater Treatment Plant, Plumerville Water Department. Weston Petroleum is located in the City of Plumerville. Any damages to the Weston Petroleum site could result in a release of chemicals affecting the environment. The City of Plumerville is located near the Conway County Regional Water Distribution Plant. This plant processes and distributes water to the majority of Conway County. Any damages to this water plant could affect most of the county. There are no public saferooms or shelters located in the City of Plumerville.

The City of Oppelo:

In the city of Oppelo, commercial and residential structures throughout the city may be susceptible to destruction or damage during a severe weather event due to the materials used in their construction. There are no major health facilities located in the City of Oppelo. Riverview Baptist School is located on the western border of the City of Oppelo. This small private school has no safe room available for students or staff. This will greatly increase the risk of injury to those located on campus. There are other critical facilities in the city of Oppelo that could receive major damage that would impede their abilities to respond and provide support during a thunderstorm event. These would include the Oppelo City Hall, Oppelo Police Department, Oppelo Fire

Department, and Oppelo Wastewater Treatment Plant. The City of Oppelo is located near the Arkansas Kraft Papermill located on the Arkansas River. This plant has a large number of employees who could be affected by a severe weather event. There are no public saferooms or shelters located in the City of Oppelo.

The City of Menifee:

In the city of Menifee, commercial and residential structures throughout the city may be susceptible to destruction or damage during a severe weather event due to the materials used in their construction. There are no major health facilities located in the City of Menifee. There are other critical facilities in the city of Menifee that could receive major damage that would impede their abilities to respond and provide support during a thunderstorm event. These would include the Menifee City Hall, Menifee Police Department, Conway County Fire Department Menifee District, Menifee Wastewater Treatment Plant, and Menifee Water. There are no public saferooms or shelters located in the City of Menifee.

The South Conway County School District:

The buildings on campus may be susceptible to the effects of a thunderstorm. Buildings could be damaged or destroyed during a severe storm event. Losses could also include the contents such as computers, gym equipment, desks, chairs, and records. There are saferooms located on the Morrilton Primary, Morrilton Elementary, Morrilton Intermediate, and Morrilton High School campuses to provide safety to the students and staff during school hours. This saferoom is available to those living nearby outside of school hours. This helps reduce the risk to those on or near one of the campuses during a severe weather event.

The University of Arkansas Community College at Morrilton:

The buildings on campus may be susceptible to the effects of a thunderstorm. Buildings could be damaged or destroyed during a severe storm event. Losses could also include the contents such as computers, gym equipment, desks, chairs, and records. There is a saferoom located on campus to provide safety to the students and staff during school hours. This helps reduce the risk to those on campus during a severe weather event.

The Nemo Vista School District:

The buildings on campus may be susceptible to the effects of a thunderstorm. Buildings could be damaged or destroyed during a severe storm event. Losses could also include the contents such as computers, gym equipment, desks, chairs, and records. There is a saferoom located on campus to

provide safety to the students and staff during school hours. This saferoom is available to those living nearby outside of school hours. This helps reduce the risk to those on or near campus during a severe weather event.

The Wonderview School District:

The buildings on campus may be susceptible to the effects of a thunderstorm. Buildings could be damaged or destroyed during a severe storm event. Losses could also include the contents such as computers, gym equipment, desks, chairs, and records. There is a saferoom located on campus to provide safety to the students and staff during school hours. This saferoom is available to those living nearby outside of school hours. This helps reduce the risk to those on or near campus during a severe weather event.

Sacred Heart School

The buildings on campus may be susceptible to the effects of a thunderstorm. Buildings could be damaged or destroyed during a severe storm event. Losses could also include the contents such as computers, gym equipment, desks, chairs, and records. There is no saferoom located on campus to provide safety to the students and staff during school hours. This may increase the risk to those on or near campus during a severe weather event.

Riverview Baptist School

The buildings on campus may be susceptible to the effects of a thunderstorm. Buildings could be damaged or destroyed during a severe storm event. Losses could also include the contents such as computers, gym equipment, desks, chairs, and records. There is no saferoom located on campus to provide safety to the students and staff during school hours. This may increase the risk to those on or near campus during a severe weather event.

Population changes in the Planning Area and its effect on thunderstorm events are unknown. The Planning Area has had a decline in population that is expected to continue. Historically there have only been 2 injuries and zero deaths due to thunderstorm events. However, changes in population demographics could potentially increase the need for mitigation in the Planning Area due to thunderstorm events. Over the next five years the Planning Team will need to monitor and document an increase/decrease in population as well as track demographics to see if there is a rise or decline in vulnerable populations.

Land use changes can have an impact on atmospheric temperatures. Urbanization creates higher air temperatures compared to the surrounding rural areas. The Planning Area is expecting an increase in industry over the next five years. The Planning Team will need to monitor and document land use changes to see if they correlate with an increase/decrease in thunderstorm events over the next five years.

Climate change may increase the probability and strength of thunderstorms and associated hazards. These impacts will be monitored by the planning team over the next 5 years to continue to research nature-based solutions to mitigate all possibilities of potential increased impact.

4.8.8 Tornado

A tornado is a rapidly rotating vortex or funnel of air extending groundward from a cumulonimbus cloud.

Tornado damage severity is measured by the Enhanced Fujita Scale. The Enhanced Fujita Scale assigns numerical values based on wind speeds and categorizes tornadoes from EF-0 to EF-5. Scale values above EF-5 are not used because wind speeds above 318 mph (513km/h) are unlikely.

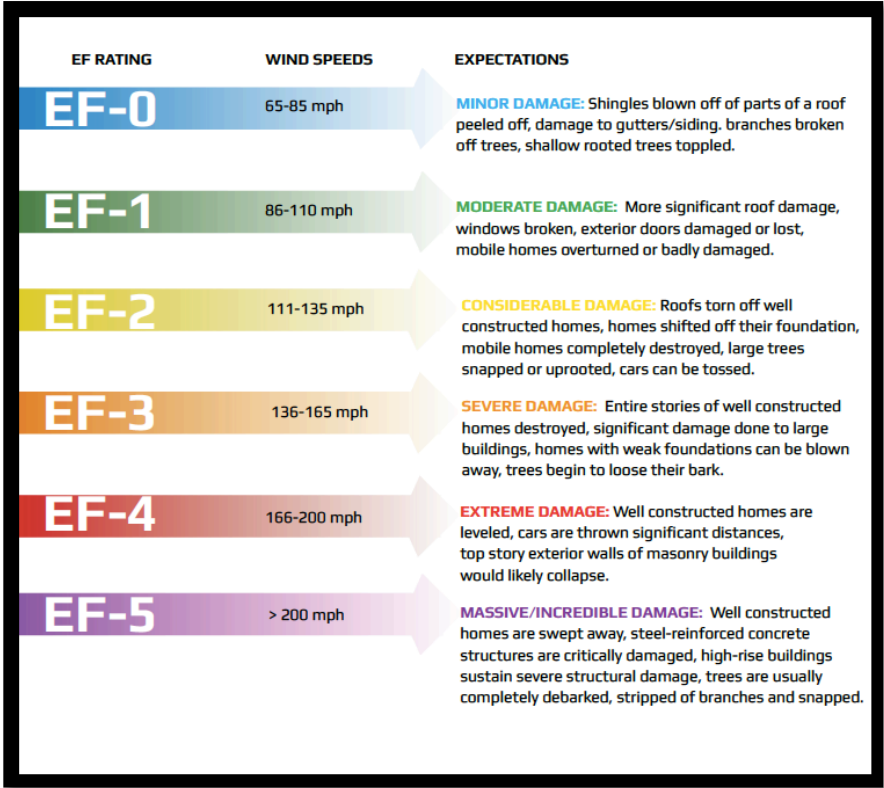
Locations of Tornado Events

There are no defined geographic hazard boundaries. All people and property in the planning area are exposed to the risk of a tornado event.

Extent, Magnitude, or Severity of Tornado

The entire Planning Area is exposed to the risk of a tornado event any time of the year. The Planning Area could have a tornado ranging from EF-0 to an EF-5 causing minor to massive damage.

Enhanced Fujita Scale



<https://www.weather.gov/oun/efscale>

Previous Occurrences

There have been 20 tornado events reported between 01/01/2000 and 12/31/2023. There are 4 recorded deaths, \$23,680,000 in property damage and \$3,000 in lost crops.

Number of County/Zone areas affected:	1
Number of Days with Event:	14
Number of Days with Event and Death:	3
Number of Days with Event and Death or Injury:	4
Number of Days with Event and Property Damage:	10
Number of Days with Event and Crop Damage:	1
Number of Event Types reported:	1

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								5	20	23.680M	3.00K
CLEVELAND	CONWAY CO.	AR	04/24/2004	11:00	CST	Tornado	F0	0	0	0.00K	0.00K
CLEVELAND	CONWAY CO.	AR	09/24/2005	17:48	CST	Tornado	F2	0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	11/27/2005	17:37	CST	Tornado	F2	0	0	0.00K	0.00K
BLACKWELL	CONWAY CO.	AR	11/27/2005	17:45	CST	Tornado	F2	0	0	0.00K	0.00K
OPPELLO	CONWAY CO.	AR	11/27/2005	18:00	CST	Tornado	F3	0	0	0.00K	0.00K
MORRILTON	CONWAY CO.	AR	11/27/2005	18:09	CST	Tornado	F3	1	8	0.00K	0.00K
SPRINGFIELD	CONWAY CO.	AR	11/27/2005	18:27	CST	Tornado	F2	0	0	0.00K	0.00K
JERUSALEM	CONWAY CO.	AR	01/08/2008	08:41	CST-6	Tornado	EF2	0	1	1.750M	0.00K
HATTIEVILLE	CONWAY CO.	AR	02/05/2008	17:08	CST-6	Tornado	EF3	2	5	14.500M	0.00K
BIRDTOWN	CONWAY CO.	AR	05/02/2008	07:15	CST-6	Tornado	EF2	2	6	5.000M	0.00K
POSSUM TROT	CONWAY CO.	AR	06/12/2009	13:10	CST-6	Tornado	EF1	0	0	200.00K	0.00K
GOBBLERS PT	CONWAY CO.	AR	04/30/2010	17:56	CST-6	Tornado	EF1	0	0	100.00K	0.00K
LICK MTN	CONWAY CO.	AR	04/30/2010	18:55	CST-6	Tornado	EF2	0	0	1.850M	0.00K
CENTER RIDGE	CONWAY CO.	AR	05/01/2011	18:13	CST-6	Tornado	EF1	0	0	35.00K	0.00K
OVERCUP	CONWAY CO.	AR	04/19/2015	16:35	CST-6	Tornado	EF1	0	0	50.00K	0.00K
RHONDO	CONWAY CO.	AR	03/01/2017	02:16	CST-6	Tornado	EF1	0	0	30.00K	0.00K
AUSTIN	CONWAY CO.	AR	03/01/2017	02:18	CST-6	Tornado	EF0	0	0	40.00K	0.00K
OPPELO	CONWAY CO.	AR	04/13/2018	20:13	CST-6	Tornado	EF0	0	0	0.00K	3.00K
MT OLIVE	CONWAY CO.	AR	09/01/2020	12:59	CST-6	Tornado	EF1	0	0	100.00K	0.00K
OPPELO	CONWAY CO.	AR	05/18/2021	18:23	CST-6	Tornado	EF0	0	0	25.00K	0.00K
Totals:								5	20	23.680M	3.00K

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Tornado&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2000&endDate_mm=12&endDate_dd=31&endDate_yyyy=2023&county=CONWAY%3A29&hailfilter=0.00&torfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=5%2CARKANSAS

On November 27, 2005, a F3 tornado went thru the city of Morrilton. The tornado went over Interstate 40 and overturned several vehicles. This caused the death of one person and injured seven others. Homes and businesses were heavily damaged or destroyed. A large barn that contained several bass boats and vehicles was destroyed. A fire Station, numerous barns, outbuilding and chicken houses were damaged. Mobile homes were overturned. There were hundreds of trees, power lines and power poles downed.

On January 8, 2008 , at 8:08 in the morning, a EF2 tornado went thru the town of Jerusalem. The tornado started in Pope County and moved into northwestern Conway County, ending in Cleveland County. One person was injured. The tornado destroyed three homes and damaged 12 others. Ten structures such as barns and chicken houses were destroyed, and 13 structures were damaged. A church that had stood for more than 100 years was destroyed and the adjacent cemetery was damaged. Three natural gas well sites were damaged but there was no release of gas. There was one injury and zero fatalities. Arkansas Governor Mike Beebe declared Conway County a state of disaster area. There was a total of \$1,750,000 in property damage.

On February 5, 2008, an EF3 tornado traveled from Pope County to Conway County hitting the town of Hattiesville. Two adults over the age of 65 in mobile homes were killed. Five people were injured. There was a total of 32 residences destroyed, 6 residences with major damage, and 18 residences with minor damage. Several chicken houses were destroyed and approximately 80,000 chickens were killed. Numerous trees, power lines, and power poles were blown down. There was a total of \$14,500,000 in property damage.

On May 2, 2008, an EF2 tornado began in Birdtown and continued to move out of Conway County into and into Van Buren County. This tornado killed two people and injured six people. Fifteen homes, three chicken houses, kennels, six vehicles and six outbuildings were destroyed. Nine houses, four chicken houses, five outbuildings, vehicles and farm equipment sustained major damage. Minor damage occurred to multiple houses, roofs, vehicles, a cemetery, community building, ball field and multiple outdoor buildings. There was a total of 5 million dollars in property damage.

Probability of Future Occurrences

There is less than one percent chance of a tornado occurring in any given year. Probability is estimated using the following equation:

$$\frac{\# \text{ of events}}{\# \text{ of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

Vulnerability and Impact of Tornado

The Planning Area is located in “Tornado Alley”, the most tornado prone area of the nation.

Because there is no defined geographic hazard boundary, all areas, residents, structures, and critical facilities in Planning Area are at high risk from tornado events.

People, wildlife, and livestock in the Planning Area, are all vulnerable to tornados and airborne objects. Fatalities can occur with a tornado event. Those that are most vulnerable are children under the age of 5, older adults over the age of 65, those with disabilities, those suffering from economic hardship and the unhoused. Even with advances in meteorology, tornado warning times may be issued in a short period of time.

All infrastructure in the Planning Area is vulnerable to a tornado event. This includes energy, gas, communication, and transportation. Electrical wires and communication towers are the most vulnerable to tornados. Downed power lines combined with other debris from the tornado can cause delay in travel, injury or death. Power and water outages would cause food spoilage and sanitation problems for communities, increasing the chance of disease. Power outages and water outages during seasonal heat or cold could contribute to fatalities.

All critical facilities in the Planning Area are vulnerable to a tornado event. This includes nursing homes, clinics, hospitals, day care centers, and schools. At least one of these facilities is located in every part of the Planning Area. These facilities house a large portion of the Planning Areas most vulnerable populations. Infrastructure and utility outages caused by a tornado event could prevent staff and emergency workers from working. Supply shipments may be interrupted leaving people without basic necessities and medications. Schools may be forced to close for a short term or longer.

All businesses in the Planning Area are vulnerable to a tornado event. Businesses could receive minor to major damage or be completely destroyed. Damage or destruction of a business could lead to economic hardship for individual business owners, economic damage to the Planning Area, or hazardous waste/contamination.

All residences in the Planning area are vulnerable to a tornado event. Residential structures may receive mild damage or be completely destroyed. Damage to residential structures could cause a significant amount of people to be without shelter or living in unsafe conditions.

The natural environment is vulnerable to a tornado event. Trees may be ripped out of the ground clearing large areas of forest. Change to the natural landscape could have a cascading effect on the Planning Area.

The structures most vulnerable to tornadoes are wood frame structures and manufactured homes. Damage to residential structures could cause hundreds to be without shelter leaving them with no place to live.

Jurisdiction	Total Housing Structures	Wood/Frame Structures	Unreinforced Masonry/Frame Structures	Manufactured Homes
Entire County	9,664	4,542	580	1,836
Unincorporated Areas	4,012	1,907	243	771
Menifee	139	45	6	18
Morrilton	3,100	1,453	186	588
Oppelo	349	136	17	55
Plumerville	424	182	23	73

In the unincorporated areas of Conway County, commercial and residential structures throughout the county may be susceptible to destruction or damage during a tornadic weather event due to the materials used in their construction. There may be vulnerable populations located at Hilltop Healthcare Clinic and Boston Mtn. Medical Clinic. Those suffering from previous illnesses and injuries are more vulnerable to further injury, or death. The buildings of these facilities are susceptible to damage or destruction. The Wonderview and Nemo Vista School Districts have tornado safe rooms at each of their campuses. The children and staff located on this campus have a reduction of risk from the tornado hazard. However, the buildings and equipment on the campus, other than the safe room, may be damaged or destroyed. Conway County Fire Department has seventeen fire stations spread around the county. These stations are all of steel construction and may be lost during tornadic event causing damage to emergency response vehicles housed inside. Power and communications to these facilities may be lost during a tornadic event. Communications towers located at Petit Jean Mountain, Lost Mountain, St. Vincent, and White Oak Mountain could be damaged, affecting communications with first responders throughout the county.

In the city of Morrilton there may be vulnerable populations located at CHI St. Vincent Morrilton, CHI St. Vincent Medical Clinic, Morrilton Medical Clinic, and Brookridge Cove Rehabilitation and Care Center. Those suffering from previous illnesses and injuries are more vulnerable to further injury, or death. The buildings of these facilities are susceptible to damage or destruction. The South Conway County School District has tornado safe rooms at each of their campuses. The University of Arkansas Community College at Morrilton has a safe room in the Earle Love Child

Study Center. The students and staff located on these campuses have a reduction of risk from the tornado hazard. However, the buildings and equipment on the campus, other than the safe room, may be damaged or destroyed. Sacred Heart School does not have a safe room on campus, therefore, those on campus would be at a greater risk of injury. Conway County OEM/911 Center and Morrilton Police Department buildings are of masonry construction and should be somewhat resistant to major tornado damage. These buildings provide safe areas within for any onsite staff. Power and communications to these properties may be lost during a tornadic event. The Morrilton Fire Department has four stations all constructed of steel. These structures may be lost during a tornadic event causing damage to emergency response vehicles within. Conway County Sheriff's Department and Conway County Detention Center are located on the southwest border of the City of Morrilton. These structures would be somewhat resistant to tornadic damage, but utilities could be lost causing issues for those housed within.

In the city of Plumerville, commercial and residential structures throughout the city may be susceptible to destruction or damage during a tornadic weather event due to the materials used in their construction. There are no major health facilities located in the City of Plumerville. There are other critical facilities in the city of Plumerville that could receive major damage that would impede their abilities to respond and provide support during a tornado event. These would include the Plumerville City Hall, Plumerville Police Department, Plumerville Fire Department, Plumerville Wastewater Treatment Plant, Plumerville Water Department. The communications tower for Plumerville Fire is located on the water tower behind Weston Petroleum and could be damaged during a tornado affecting notification of emergency response personnel. Weston Petroleum is located in the City of Plumerville. Any damages to the Weston Petroleum site could result in a release of chemicals affecting a nearby creek which feeds into the Arkansas River. The City of Plumerville is located near the Conway County Regional Water Distribution Plant. This plant processes and distributes water to the majority of Conway County. Any damages to this water plant could affect most of the county. There are no public saferooms or shelters located in the City of Plumerville.

In the city of Oppelo, commercial and residential structures throughout the city may be susceptible to destruction or damage during a tornadic weather event due to the materials used in their construction. There are no major health facilities located in the City of Oppelo. Riverview Baptist School is located on the western border of the City of Oppelo. This small private school has no safe room available for students or staff. This will greatly increase the risk of injury to those located on campus. There are other critical facilities in the city of Oppelo that could receive major damage that would impede their abilities to respond and provide support during a tornado event. These would include the Oppelo City Hall, Oppelo Police Department, Oppelo Fire Department,

and Oppelo Wastewater Treatment Plant. The communications tower for Oppelo Police and Fire is located near the city hall facility and could be damaged during a tornadic weather event affecting notification of emergency response personnel. The City of Oppelo is located near the Arkansas Kraft Papermill located on the Arkansas River. This plant has a large number of employees who could be affected by a tornadic weather event. There are no public saferooms or shelters located in the City of Oppelo.

In the city of Menifee, commercial and residential structures throughout the city may be susceptible to destruction or damage during a tornadic weather event due to the materials used in their construction. There are no major health facilities located in the City of Menifee. There are other critical facilities in the city of Menifee that could receive major damage that would impede their abilities to respond and provide support during a tornado event. These would include the Menifee City Hall, Menifee Police Department, Conway County Fire Department Menifee District, Menifee Wastewater Treatment Plant, and Menifee Water. There are no public saferooms or shelters located in the City of Menifee.

The South Conway County, Wonderview, Nemo Vista, Sacred Heart, and Riverview Baptist School Districts could be closed for extended periods of time due to power and water outages or due to damage to building structures on school campuses. School bus routes may be disrupted due to damaged roads and bridges or downed trees and powerlines. South Conway County, Wonderview, and Nemo Vista School Districts have tornado shelters on each of their campuses that helps reduce the risk of injury or death to students and staff on the school campus. The University of Arkansas Community College at Morrilton has one tornado shelter, which is located in the Earle Love Child Study Center.

Population

As population rises and cities become denser the impact of tornados change. It is not the frequency of tornadoes that changes due to population changes. It is the level of damage that can result due to higher populations, structures, automobiles, and other objects that can be thrown around damaging property and injuring/killing people. The most vulnerable population in the planning area will be those who are unable to take adequate shelter due to disability, age, or poverty levels. These impacts will be monitored by the planning team over the next 5 years to continue research for nature-based solutions to mitigate all possibilities of potential increased impact.

Land Use

The Planning Area does not currently have any documented research on how land use in the Planning Area would affect tornado events. The Planning Area is currently experiencing a

continued trend in decrease of population while expecting an increase in industry. These factors will change the natural environment and land use patterns. These impacts will be monitored by the planning team over the next 5 years to continue research for nature-based solutions to mitigate all possibilities of potential increased impact.

Climate

Climate change caused by population growth, burning of fossil fuels, release of carbon dioxide in larger amounts has an impact on global warming. Global warming is attributed to drought in some places and higher levels of rainfall in others. However, nationalgeographic.org states that weather events such as tornadoes are much harder for climatologists to attribute to climate change. As of right now the data does not support any long-term increase in tornado frequency.

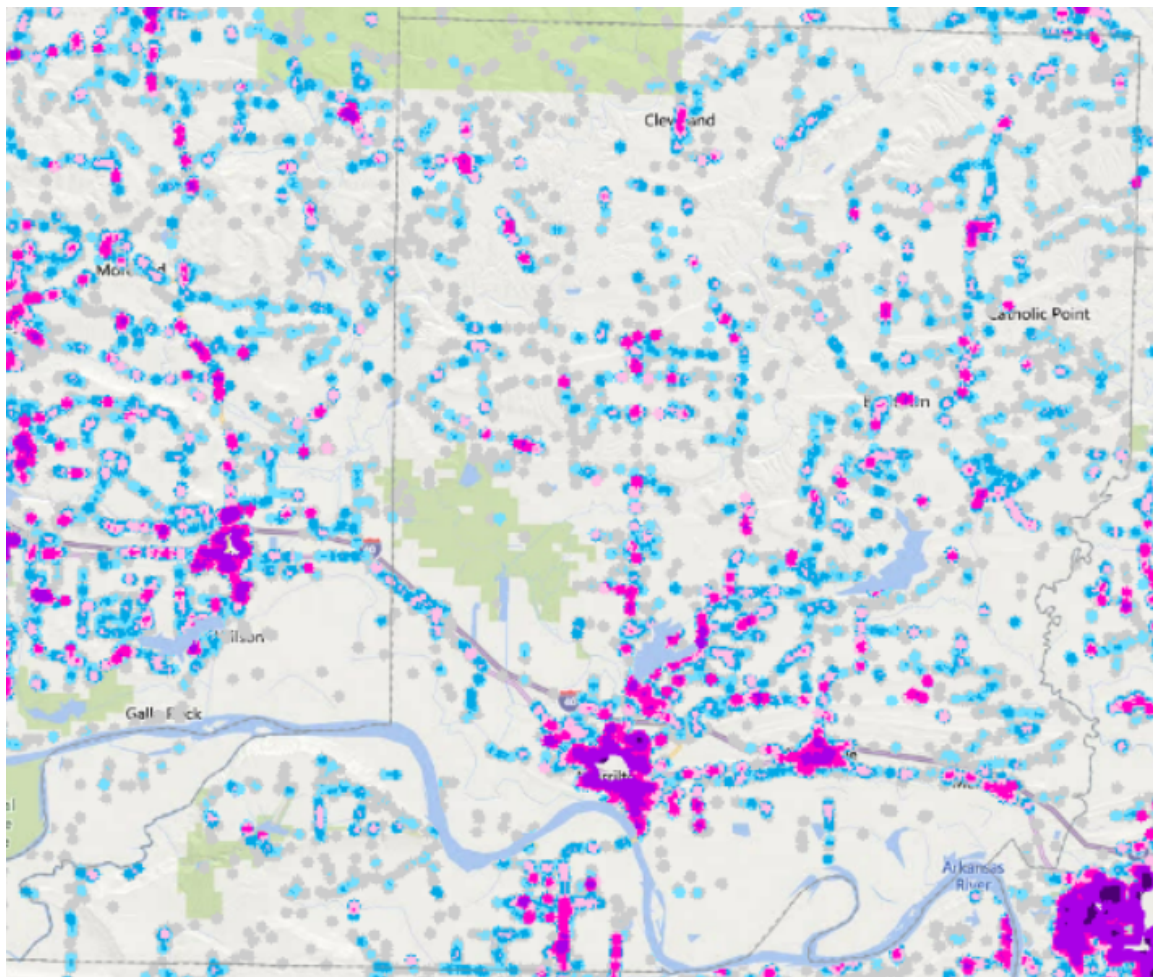
4.8.9 Wildfire

A wildfire is an unplanned, unwanted fire burning in a natural area, such as a forest, grassland, or prairie. Wildfires can start from natural causes, such as lightning, but most are caused by humans, either accidentally or intentionally. Wildfires can damage natural resources, destroy homes, and threaten human lives and safety. ([FEMA](#))

Locations Affected by Wildfires

According to the Southern Group of State Foresters, the Wildland Urban Interface (WUI) provides the best assessment of wildfire risk to humans. WUI reflects housing density depicting where humans and their structures meet or intermix with wildland fuels. The darker purple indicates a higher population in proximity to burnable areas.

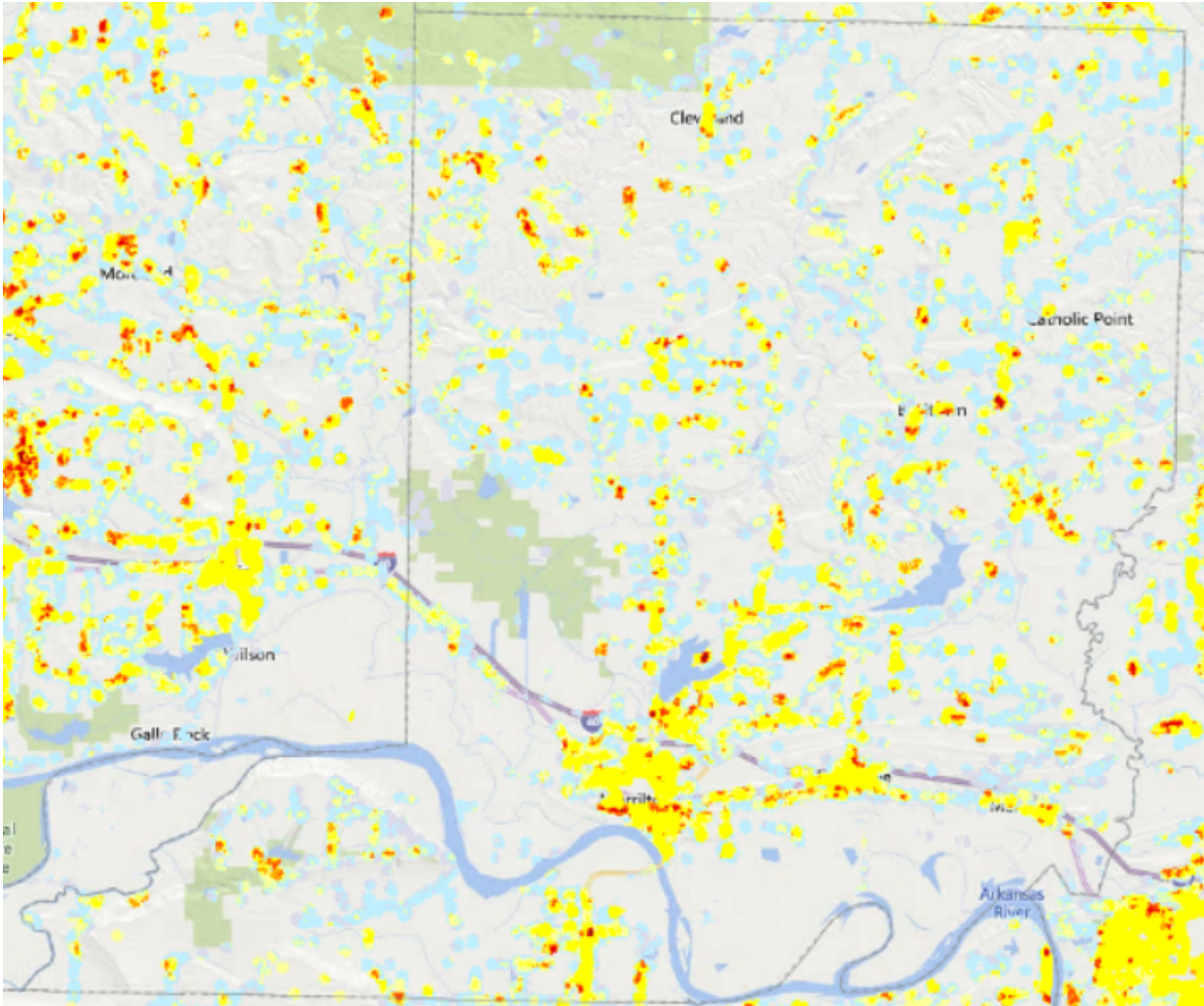
Wildland Urban Interface (WUI)



[SGSF Wildfire Risk Assessment Portal](#)

The WUI Risk Index visualizes the potential impact of a wildfire on people and their homes. The Risk Index is based on WUI (housing density) and the susceptibility to fire at different intensity levels, such as flame length. Areas with a high housing density and high flame length have a higher risk than areas with low housing density and low flame lengths. Locations in red determine where the greatest potential impact to homes and people is likely to occur.

WUI Risk Index GPS coordinates



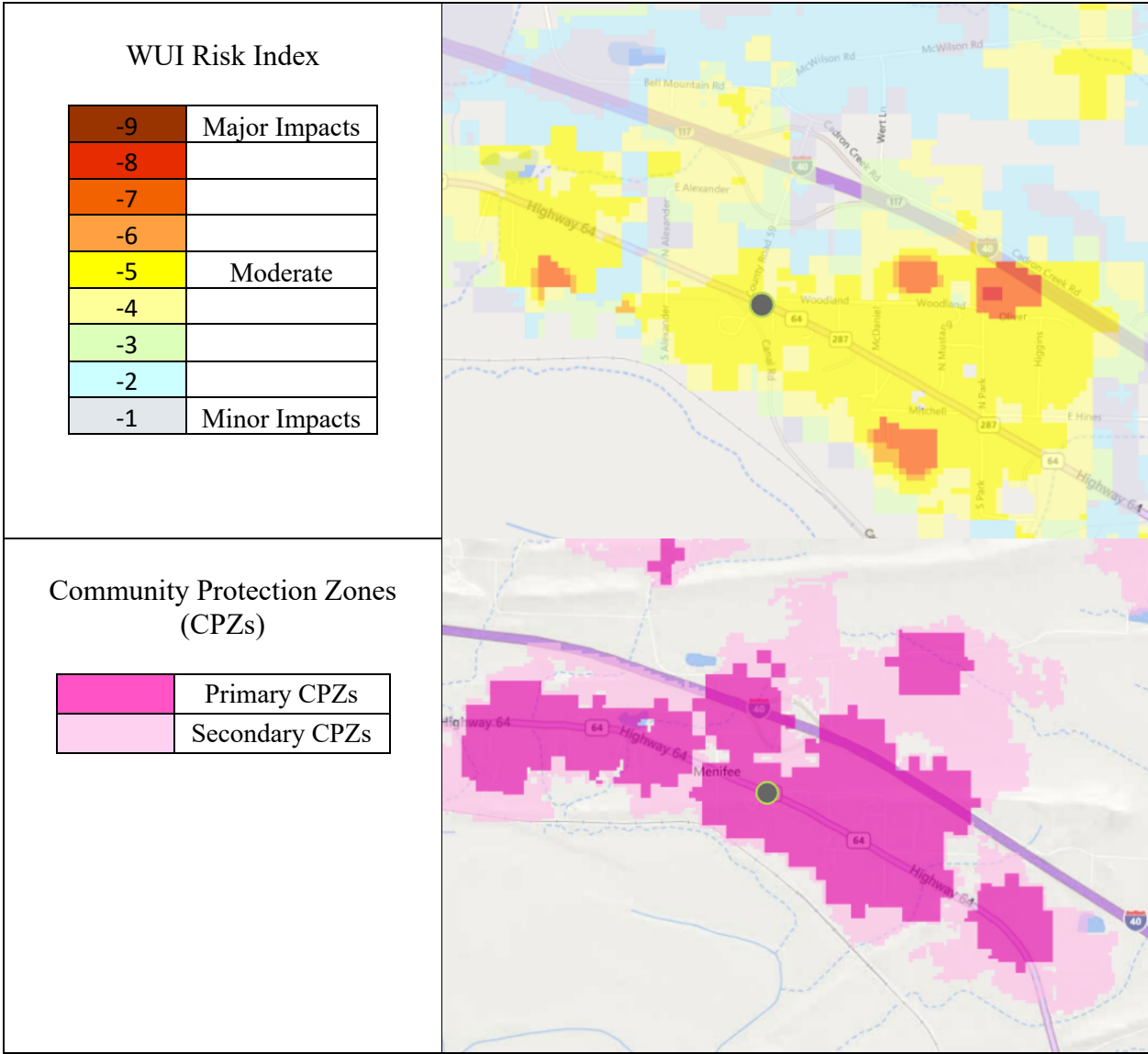
SGSF Wildfire Risk Assessment Portal

Extent, Magnitude and Severity of Wildfires

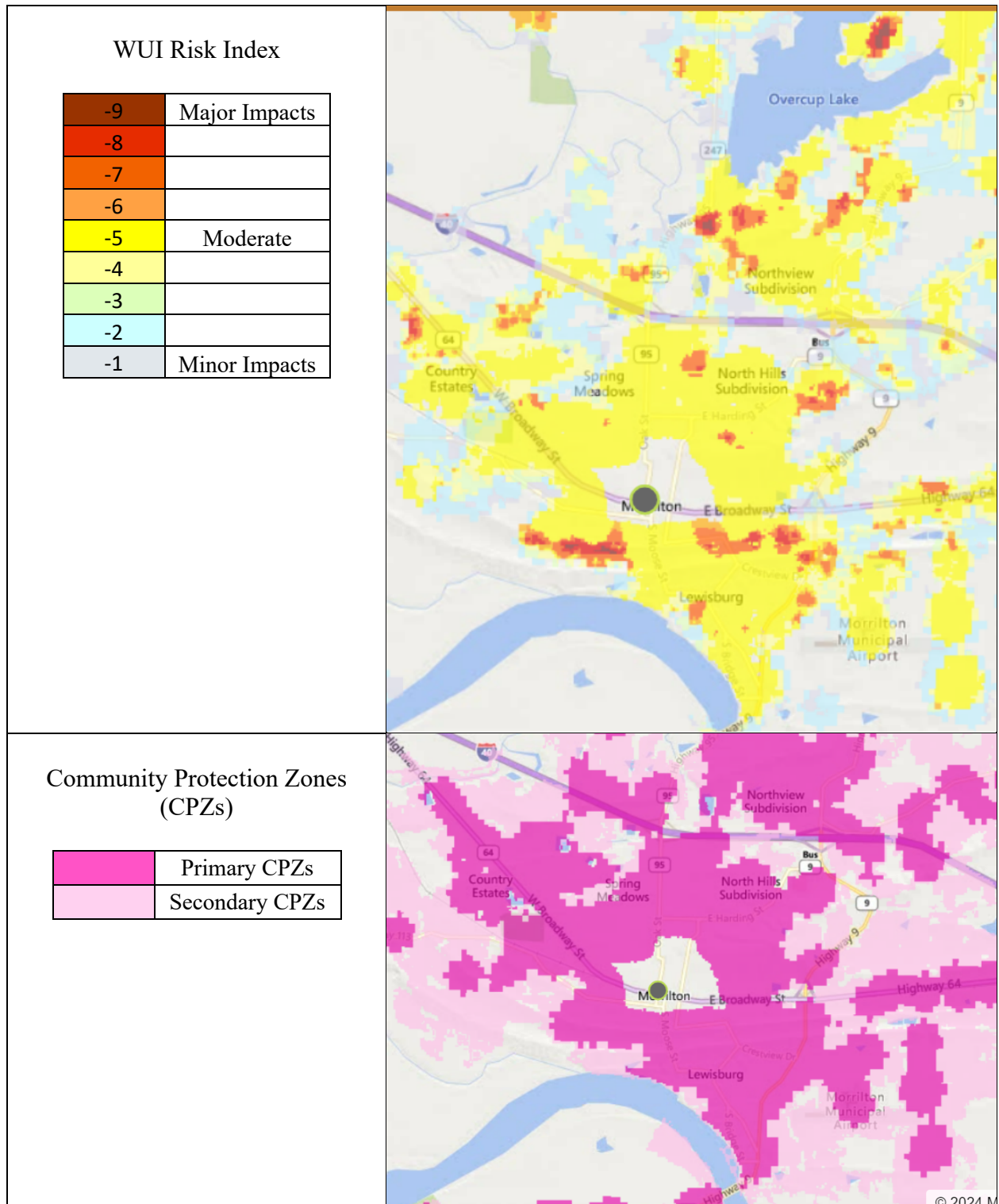
Two methods were used to analyze wildfires risk and mitigation for each plan participant. First, the WUI Risk Index was reviewed to determine the areas with the highest potential impact of a wildfire on people and their homes.

Second, Community Protection Zones (CPZs) were evaluated. CPZs are based on an analysis of the housing density data and surrounding fire behavior potential. Primary CPZs represent those areas considered highest priority for mitigation planning activities. Secondary CPZs are determined using the rate of spread data to determine buffer areas around populated areas within a 2-hour fire spread distance.

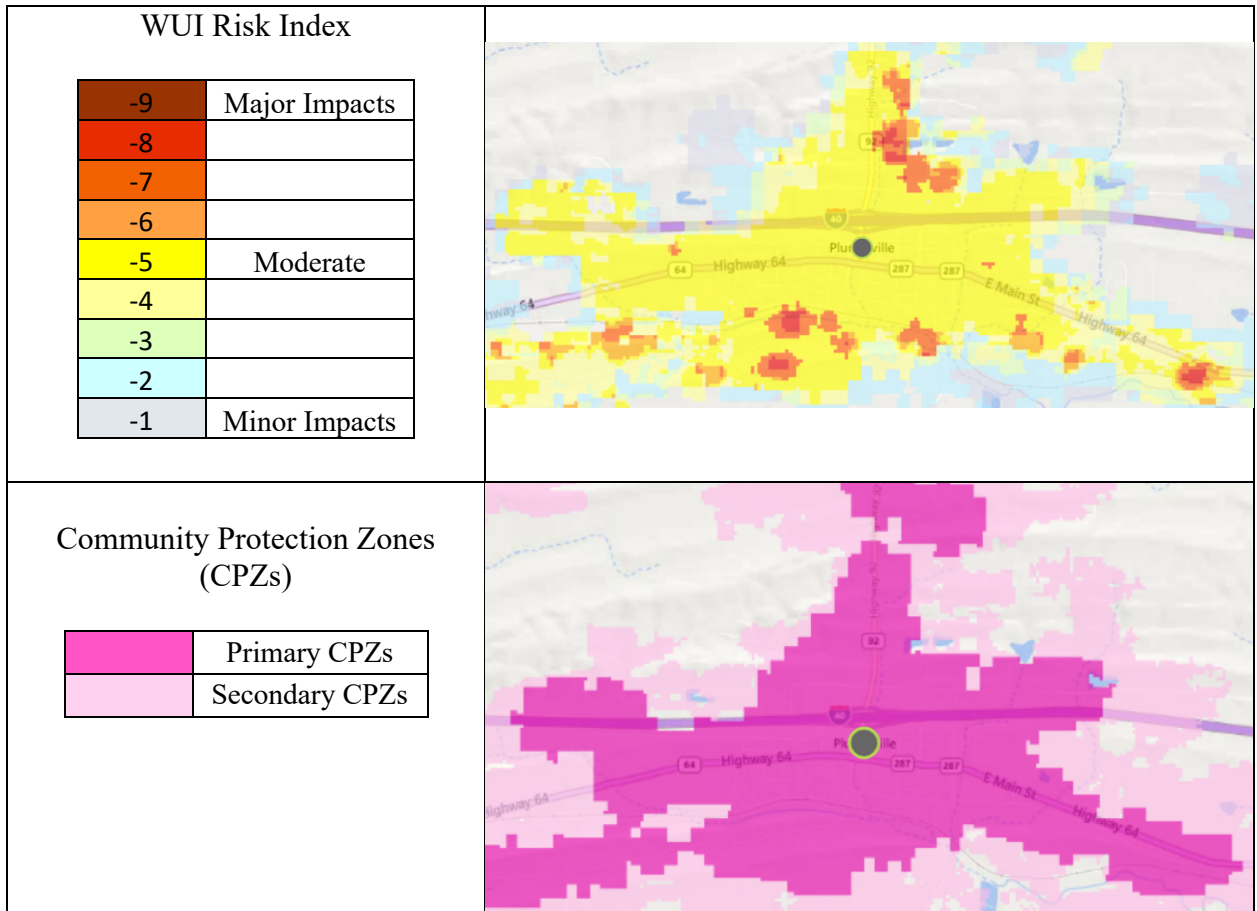
City of Menifee



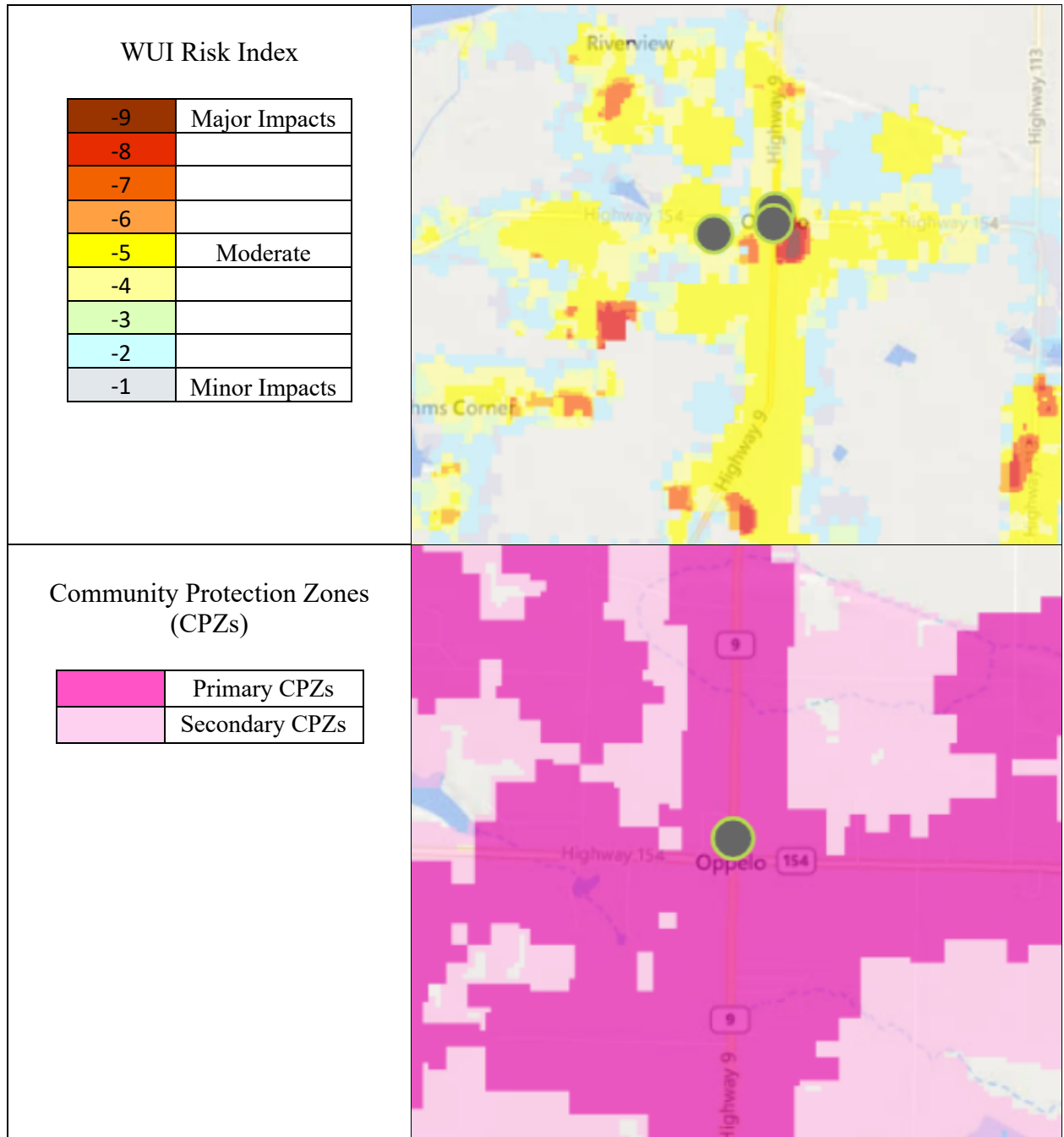
City of Morrilton



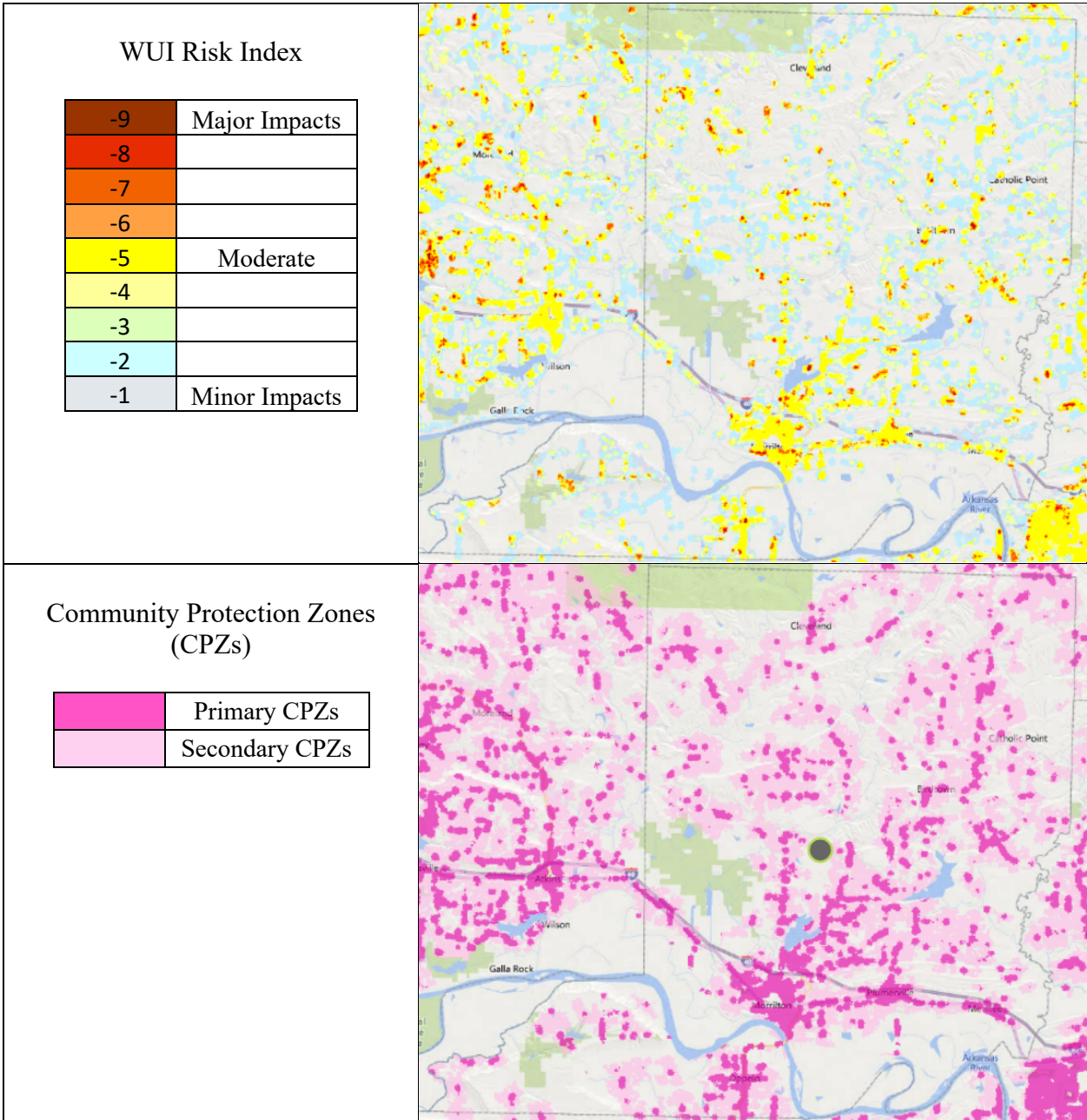
City of Plumerville



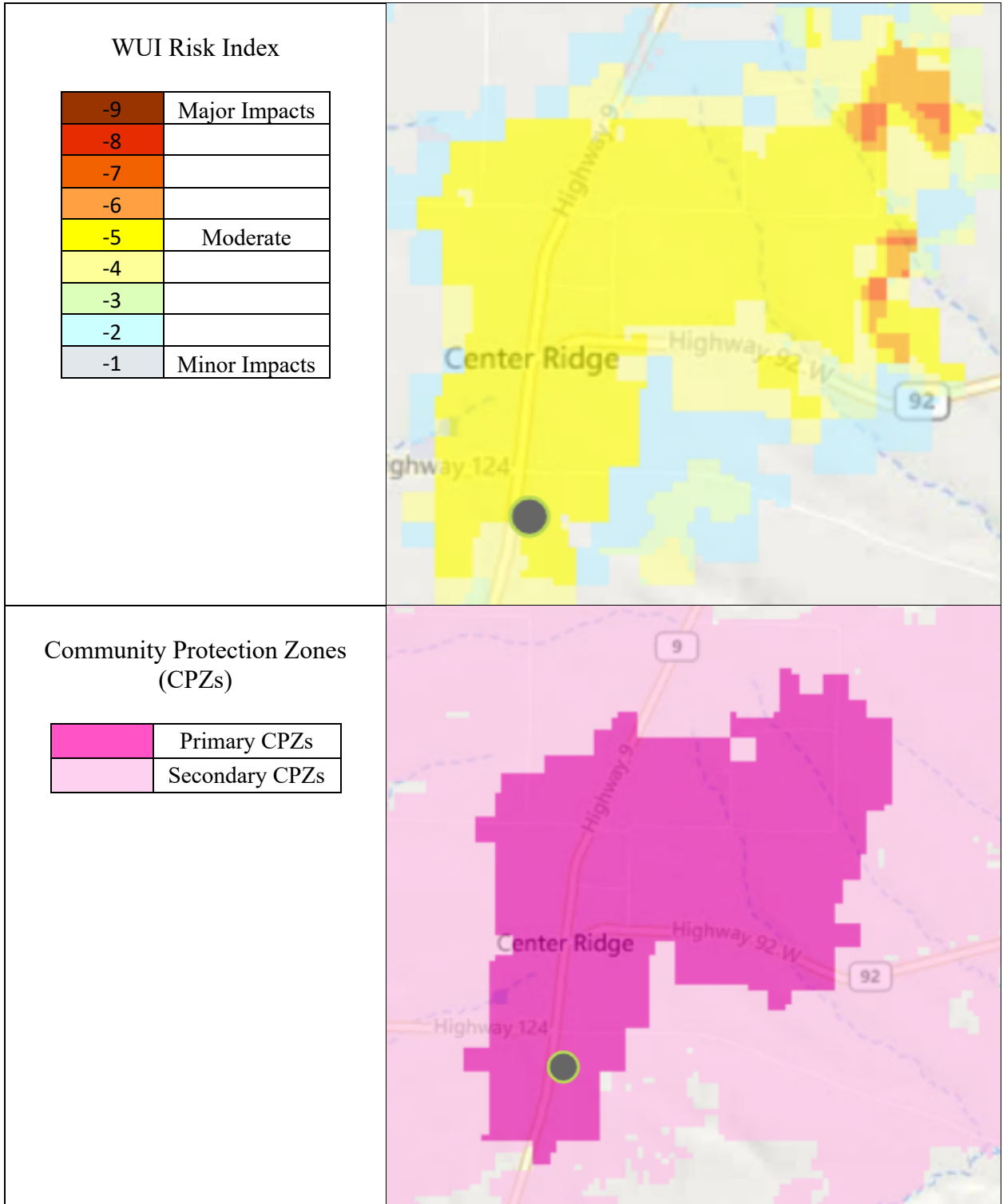
City of Oppelo



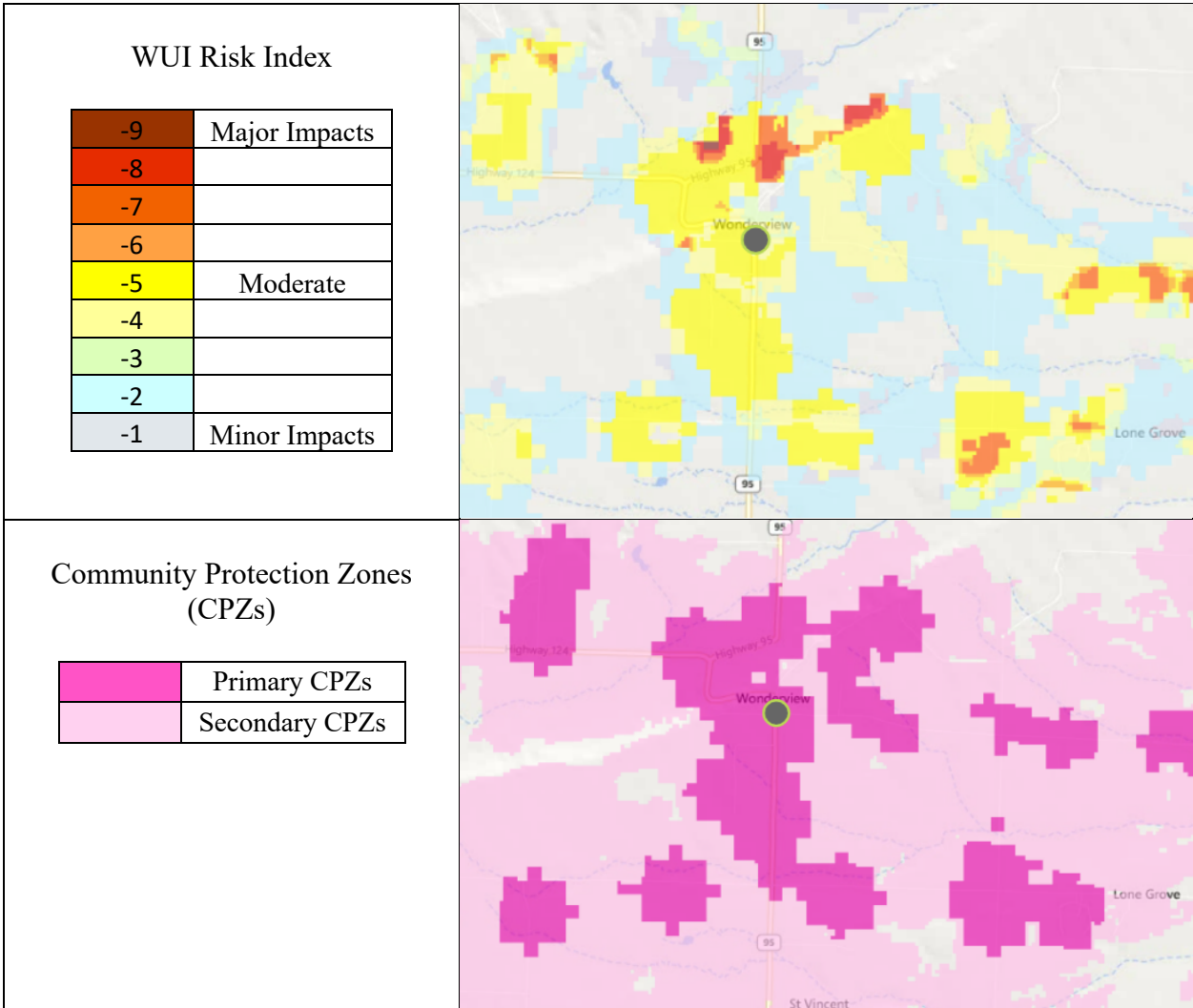
Unincorporated Areas of Conway County



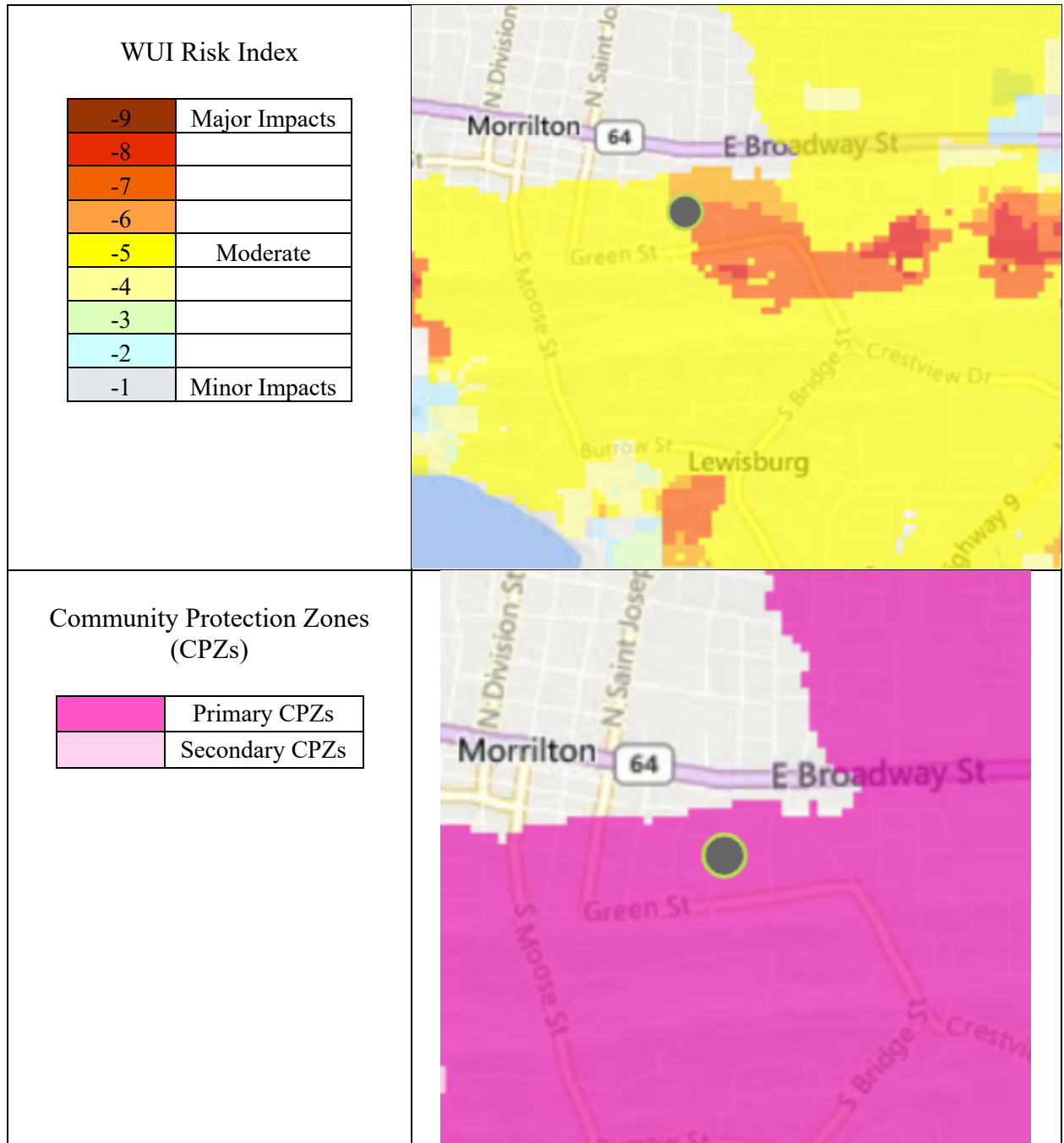
Nemo Vista School Campus



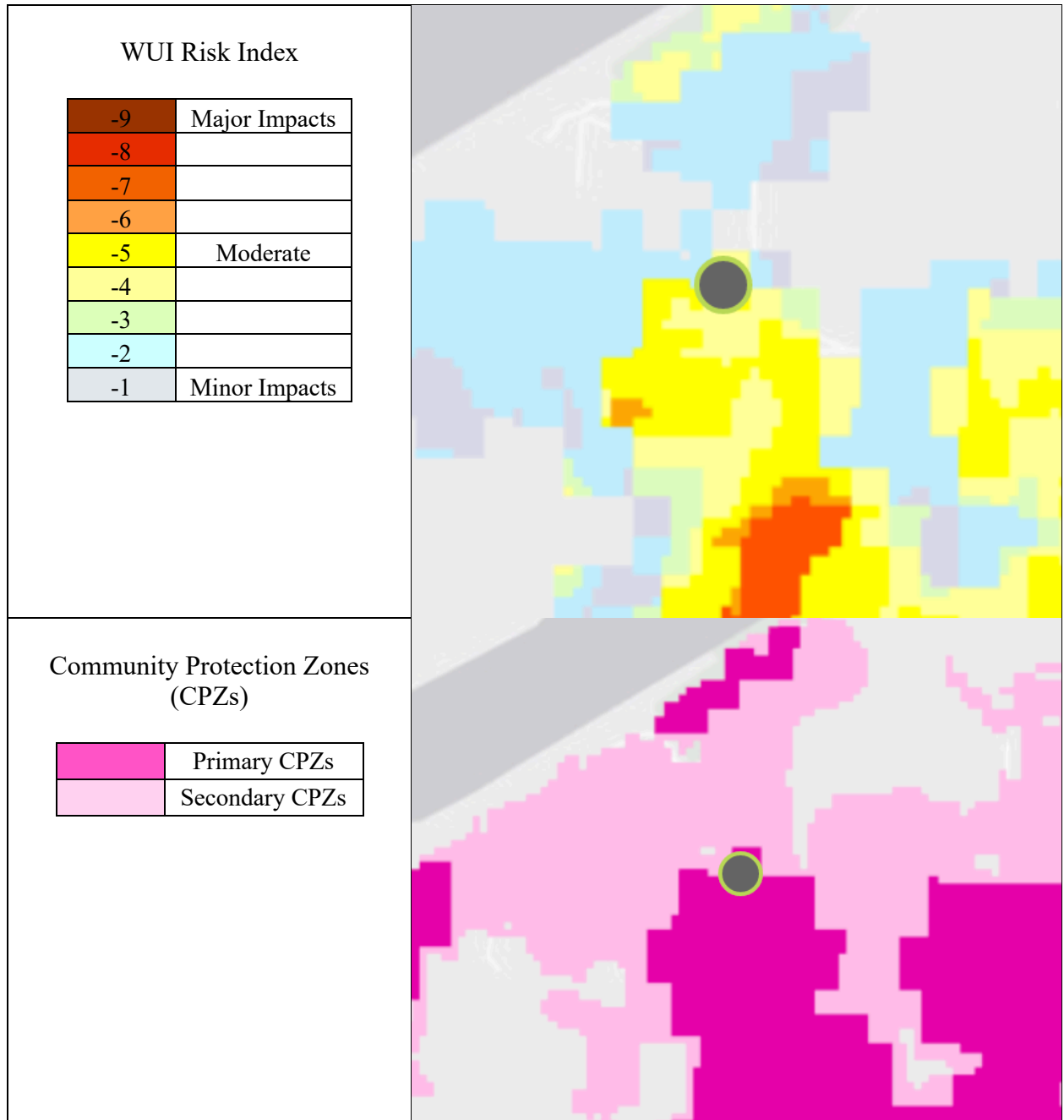
Wonderview School Campus



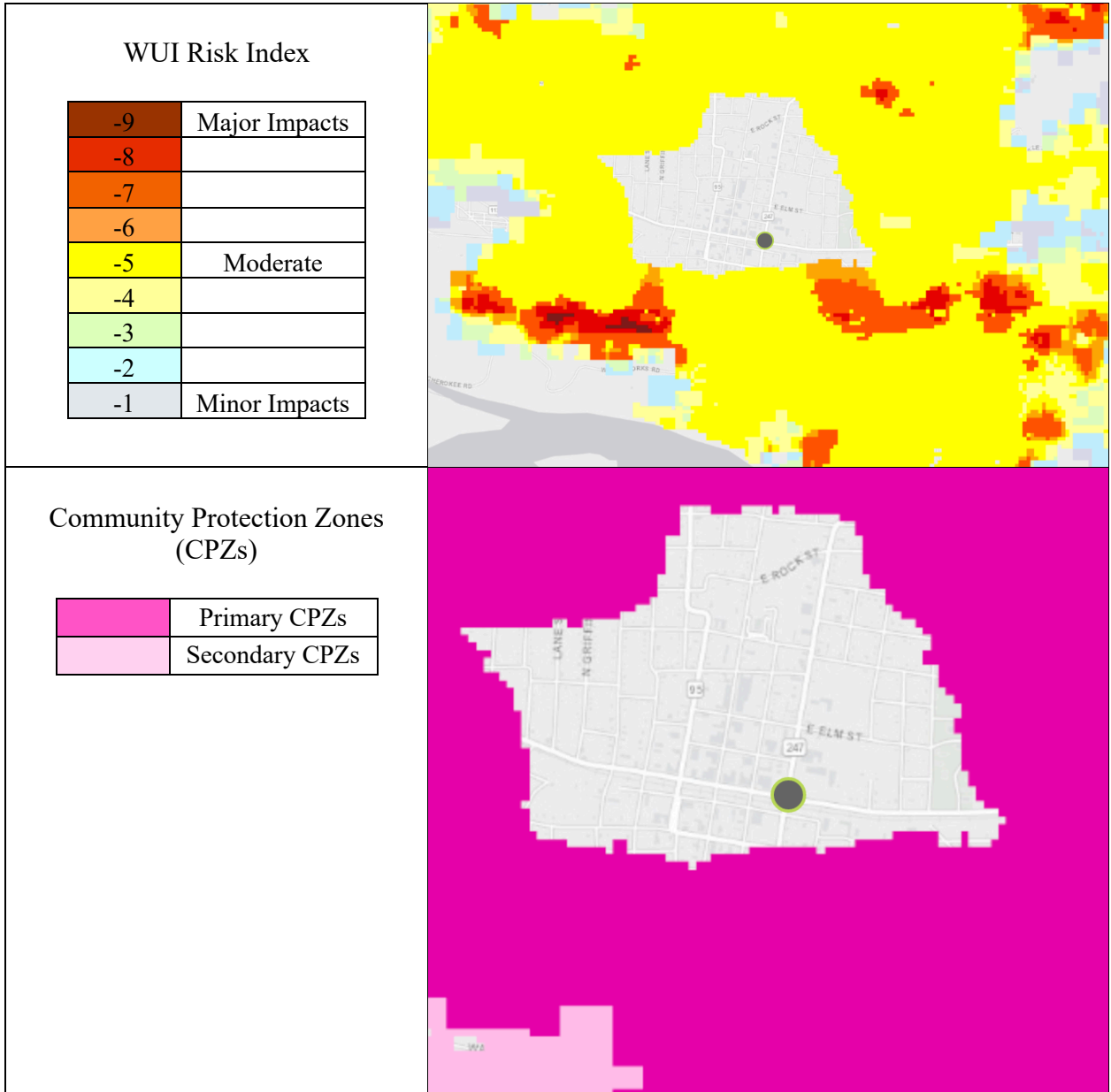
South Conway County School Campus



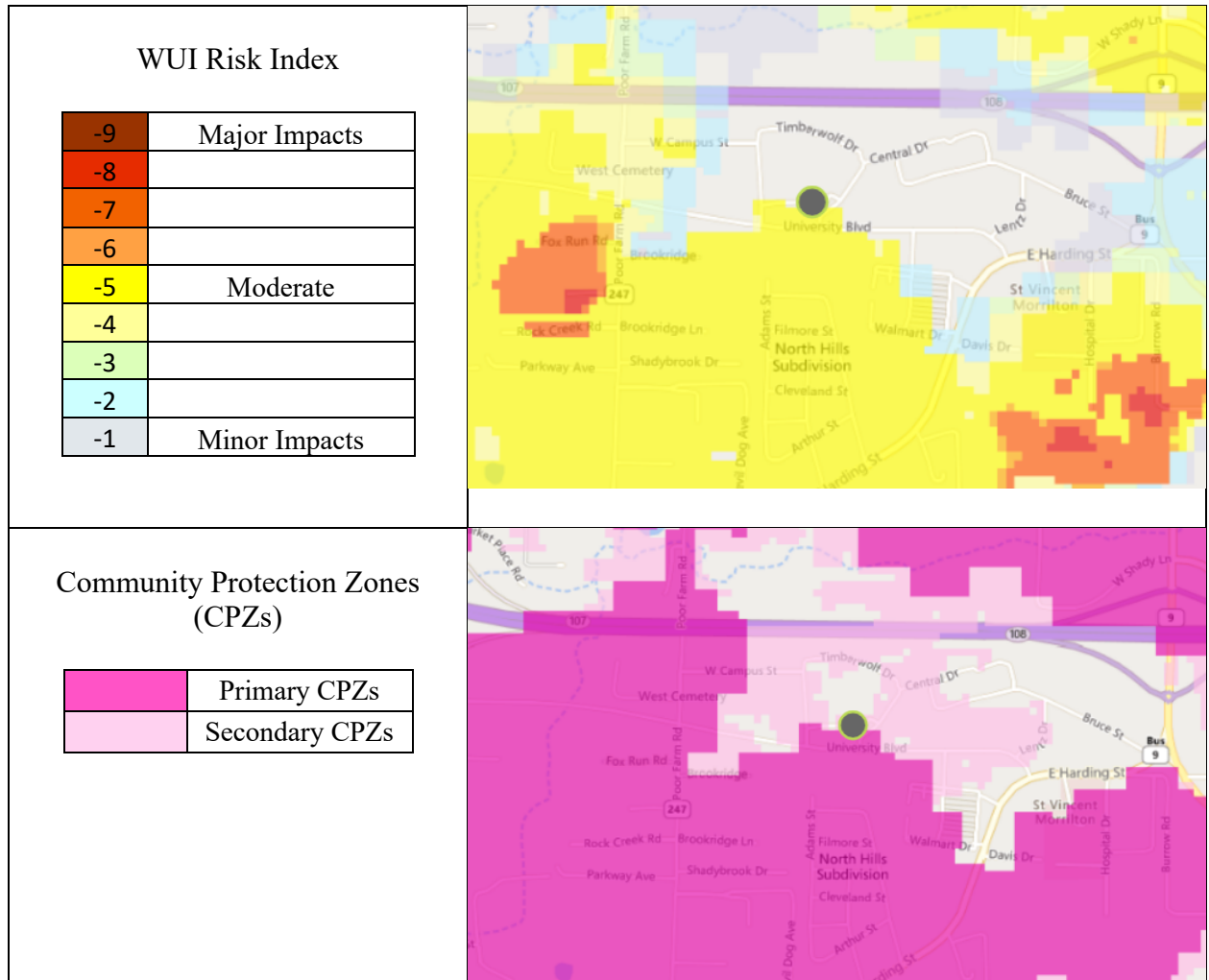
Riverview Baptist Christian School



Sacred Heart Catholic School



University of Arkansas Community College at Morrilton



Previous Occurrences

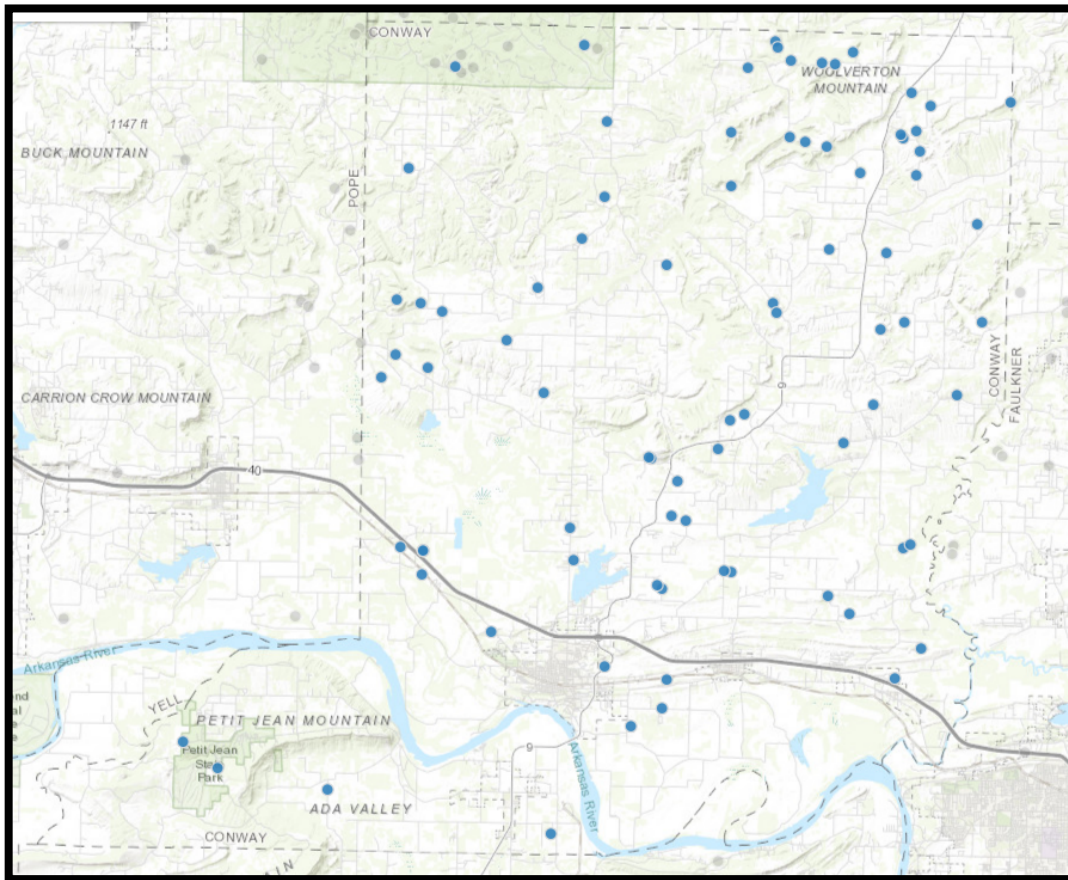
According to the National Interagency Fire Center (NIFC), there were 82 wildfires from 2020 to 2023. A total of 2,326.3 acres were burned.

Between 2013 and 2019, the Arkansas Department of Agriculture Forestry division reported 176 fires in the Planning area, which burned 3,388 acres.

FEMA has not declared any wildfire disasters in the Planning Area.

Year	Fires	Acres
2013	9	67
2014	32	544
2015	26	538
2016	32	448
2017	40	763
2018	24	585
2019	13	443
2020	22	660
2021	23	719
2022	36	825.3
2023	1	122
TOTAL	258	5,714

NIFC Wildland Fire Data (2020 to 2023)



<https://data-nifc.opendata.arcgis.com/>

The NOAA Storms Events Database only reports three wildfires from 2000-2023. Three people were injured from wildfire in this time period.

Number of County/Zone areas affected:	1
Number of Days with Event:	3
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	1
Number of Days with Event and Property Damage:	0
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

Location	County/Zone	St.	Date	Time	I.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	3	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	09/04/2011	20:00	CST-6	Wildfire		0	0	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	06/30/2012	15:00	CST-6	Wildfire		0	3	0.00K	0.00K
CONWAY (ZONE)	CONWAY (ZONE)	AR	08/28/2012	11:00	CST-6	Wildfire		0	0	0.00K	0.00K
Totals:								0	3	0.00K	0.00K

[Storm Events Database - Search Results | National Centers for Environmental Information \(noaa.gov\)](#)

September 4, 2011, to September 5, 2011, dry weather, low humidity, and gusty winds provided favorable conditions for wildfires. A wildfire near the Pope County/Conway County line west of Jerusalem burned 107 acres. There were no injuries or deaths reported.

June 30, 2012, the Clinton Fire began near Cleveland in Conway County and spread into Van Buren County. The fire burned 110 acres. Three firefighters were injured. They were treated for heat exhaustion. At least five fire departments and the Arkansas Forestry Commission fought the fire.

August 28, 2012, the Claude Schoolhouse Fire 10 miles southwest of Clinton burned a total of 300 acres in Van Buren and Conway counties. There were no injuries or deaths reported.

The Planning Area experiences many grass fires that end up burning several hundred acres but the reporting system used was not been updated to centrally report these fires until February 2024.

Probability of Future Events

There are potentially many more wildfires in the Planning Area than documented. However, due to the multiple ways of documenting or classifying fires at the time of reporting those numbers may not be captured in this document. The Planning Area has experienced an average of 23 wildfires per year. The probability of the Planning Area experiencing a wildland fire is approximately 6.4% per day. Based upon previous occurrences (258 events over an 11-year period).

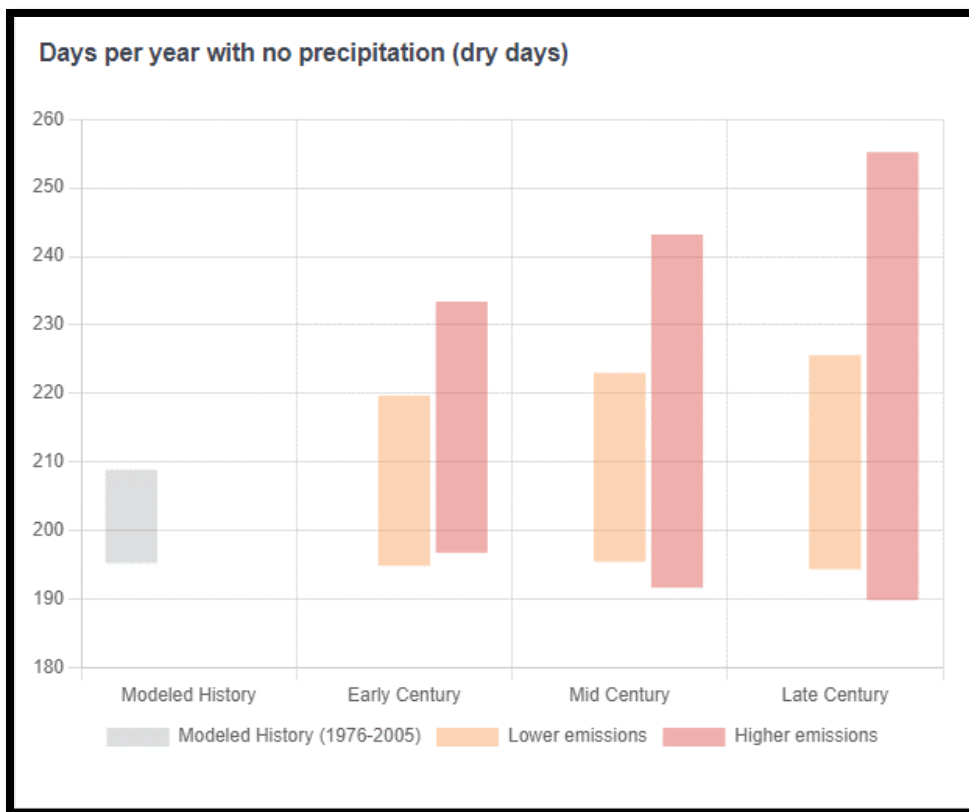
Probability is estimated using the following formula:

$$\frac{\text{\# of events}}{\text{\# of days}} \times 100 = \underline{\hspace{2cm}}$$

Future Climate Indicators							
Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
	Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max
Precipitation:							
Days per year with no precipitation (dry days)	203 days 195 - 209	206 days 195 - 220	207 days 197 - 233	207 days 196 - 223	209 days 192 - 243	208 days 194 - 226	213 days 190 - 255
Maximum number of consecutive dry days	16 days 14 - 20	17 days 14 - 21	17 days 14 - 20	18 days 15 - 21	17 days 14 - 22	18 days 15 - 25	18 days 15 - 26
Days per year with precipitation (wet days)	163 days 156 - 170	159 days 146 - 170	158 days 132 - 168	158 days 142 - 170	156 days 122 - 174	157 days 140 - 171	152 days 110 - 175
Temperature thresholds:							
Annual days with maximum temperature > 90°F	63 days 63 - 75	92 days 74 - 113	95 days 73 - 116	103 days 75 - 127	111 days 88 - 130	114 days 87 - 144	142 days 112 - 168
Annual days with maximum temperature > 100°F	7 days 6 - 9	19 days 5 - 37	21 days 7 - 54	27 days 6 - 57	35 days 15 - 84	36 days 12 - 57	68 days 30 - 117

N/A = Data Not Available for the selected area

Climate Projections for Early Century (2015–2044) ⌵		Lower emissions	Higher emissions
Days per year with no precipitation (dry days)	206.2 Days + 3.6 since 1976-2005	207.1 Days + 4.5 since 1976-2005	
Maximum number of consecutive dry days	17.1 Days + 0.8 since 1976-2005	17.2 Days + 0.8 since 1976-2005	
Days per year with precipitation (wet days)	159.0 Days - 3.6 since 1976-2005	158.1 Days - 4.5 since 1976-2005	
Annual days with maximum temperature > 90°F	92.1 Days + 25.1 since 1976-2005	94.6 Days + 27.6 since 1976-2005	
Annual days with maximum temperature > 100°F	18.7 Days + 11.8 since 1976-2005	21.0 Days + 14.0 since 1976-2005	



[CMRA - Climate Mapping For Resilience and Adaptation \(arcgis.com\)](https://arcgis.com)

Climate mapping trends indicate a rise in the number of dry days, maximum number of consecutive dry days, and a decrease in the number of wet days. This combined with rising temperatures, and a sharp increase in annual days with maximum temperatures greater than 100°F could lead to an increase in wildfire for the Planning Area.

According to FEMA’s National Risk Index, the Planning Area’s risk index is relatively low (66.9) compared to the rest of the U.S.:

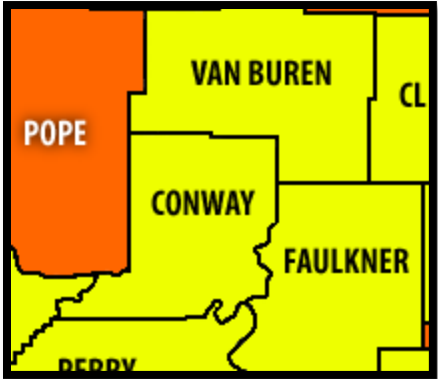
Hazard Type	Expected Annual Loss Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
Wildfire	\$120,806	Relatively High	Relatively Low	1.3	\$140,579	66.9

FEMA’s Expected Annual Loss Values:

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Wildfire	\$120,806	\$90,821	\$29,795	0.00	\$191

See supporting documents section for full FEMA National Risk Index report.

Wildfire Danger



Low
Moderate
High
Extreme
Show Districts

To find out the most recent wildfire danger and current burn bans please click the link:

[Wildfire Map : Arkansas Forestry Division](#)

The Forestry Division is asking you to report fires by calling 1-800-468-8834

Vulnerability and Impact of Wildfires

Wildfires can result in significant damage to the Planning Area including risk to human life, property damage, agricultural impacts, as well as cutting off access to utilities, emergency services, and evacuation routes.

Wildfires moving into residential areas and along roadways place the population at risk due to smoke inhalation and burn wounds. Firefighters responding to wildfires may be at an increased risk of injury or death. Area evacuations due to fires could put individuals at additional risk.

Wildfires may impact the economy by destroying crops and farm animals. Business may be damaged or destroyed, forcing them too permanently close. Much of the Planning Area is rural containing large amount of timberland, farmland and pastures for animals. Livestock and product sales continue to be a major source of income for farmers.

Wildfire may cause utility outages placing those even out of the path of the wildfire at risk.

Petite Jean Mountain and the area directly around is more vulnerable than other areas of the Planning Area due to the forested areas and terrain.

Jerusalem has been the location of previous wildfire events and is more vulnerable due to the National Forest and the surrounding terrain.

Wolverton Mountain has been vulnerable to past wildfire due to arson.

The city of Morrilton has only been minimally impacted by wildfire. However, since the Wildland Urban Interface (WUI) has a higher fire intensity, structures located in those areas are vulnerable to damage and destruction. Those structure are:

- River Chase Rehabilitation and Care Center
- Sardis Fire Station
- Morrilton Municipal Airport

The city of Menifee does not contain any critical infrastructure or commercial buildings locate in the WUI that is at risk. However, Menifee has a population of 48 disabled and elderly people that are vulnerable to death and serious injury due to wildfire.

The city of Oppelo does not contain any commercial structures that may receive substantial damage or destruction to wildfire. The Oppelo Volunteer Fire Department could be damaged hindering response capabilities to a wildfire event. The Oppelo Police Department could be

destroyed. The city of Oppelo has a population of 90 elderly and disabled people who would be vulnerable to injury or death due to a wildfire event.

The city of Plumerville has structures located in the WUI that would be at a higher risk of damage or destruction due to a wildfire event. These structures are:

- Cottonwood Place
- Plumerville Fire Department

Damage or destruction to the Plumerville Fire Department could hinder response capabilities in a wildfire event.

Plumerville has a population of 48 disabled and elderly people who are vulnerable to injury or death due to a wildfire event.

The school districts located in the Planning Area are vulnerable to damage or destruction from a wildfire event. Students located on campus are considered vulnerable populations and will have limited capabilities due to age. Students and staff could experience injury or death.

Climate

Changes in the climate are anticipated to increase warming and the likelihood of drought. Both of these changes may heighten the frequency and severity of wildfires across the planning area. These impacts will be monitored by the planning team over the next 5 years. Research will be documented for nature-based solutions to mitigate potential increased impact.

Population

Changes in population will affect the impact of wildfires. As populations grow, more individuals and infrastructure will be impacted by wildfires. These impacts will be monitored by the planning team over the next 5 years. Research will be documented for nature-based solutions to mitigate potential increased impact.

Land Use

As land is developed, the risk of wildfires can become greater if precautions are not taken. Constructing residential buildings in close proximity to flammable vegetation or other materials can degrade the Wildland Urban Interface Risk. However, ensuring defense zones are included during new construction can minimize the risk of fire damage. Land use impacts will be monitored by the planning team over the next 5 years. Research will be documented for nature-based solutions to mitigate potential increased impact.

4.8.10 Winter Weather

Description

A winter storm is a combination of severe winter weather types occurring over a wide area. Winter storm formation requires below freezing temperatures, moisture, and precipitation. Severe winter storms include heavy snowfall, ice storms, strong winds, extreme cold, and/or freezing fog.

The National Weather Service defines a winter weather event as a winter weather phenomenon (such as snow, sleet, ice, wind chill) that impacts public safety, transportation, and/or commerce. It typically occurs during the climatological winter season between October 15 and April 15.

Types of winter warnings

Warning Type	Description
Blizzard Warning	Blizzard event is imminent or expected in the next 12 to 36 hours. Sustained wind or frequent gusts greater than or equal to 35 mph will accompany falling and/or blowing snow to frequently reduce visibility to less than 1/4 mile for three or more hours.
Ice Storm Warning	An ice storm event is expected to meet or exceed local ice storm warning criteria in the next 12 to 36 hours. Criteria for ice is 1/2 inch or more over at least 50 percent of the zone or encompassing most of the population.
Winter Storm Warning	A winter storm event (heavy sleet, heavy snow, ice storm, heavy snow and blowing snow or a combination of events) is expected to meet or exceed local winter storm warning criteria in the next 12 to 36 hours. Criteria for snow is 7 inches or more in 12 hours or less; or 9 inches or more in 24 hours covering at least 50 percent of the zone or encompassing most of the population. Use "mid-point" of snowfall range to trigger warning (i.e 5 to 8 inches of snow = warning). Criteria for ice is 1/2 inch or more over at least 50 percent of the zone or encompassing most of the population.
Wind Chill Warning	Wind chill temperatures are expected to meet or exceed local wind chill warning criteria in the next 12 to 36 hours. Wind chill temperatures may reach or exceed -25°F.

[National Weather Service \(weather.gov\)](http://www.weather.gov)

Severe winter storms produce heavy snowfall, sleet, ice, and/or freezing rain. They can also include extreme cold temperatures and high winds, intensifying the impact of the storm. Severe winter weather impacts travel, causes widespread power outages, damages property, and can result in fatalities and injuries.

Locations Affected by Winter Storms

There is no defined geographical hazard boundary. Winter storms are typically widespread. The entire Planning Area is susceptible to severe winter storm events. Higher elevations typically experience lower temperatures and higher probability of frozen precipitation. Geographical

features influence wind chill. The more rural areas of Plumerville, Oppelo, Menifee, and the Unincorporated areas of Conway County are more vulnerable to the effects of a winter storm.

Extent, Magnitude and Severity of Winter Storms

The magnitude and severity of winter storms are affected by the duration of the storm. Factors such as the precipitation type (snow compared to ice), rate, and amount affect the storm's impact.

According to National Climatic Data Center (NCDC) and National Weather Service Data, typical snow accumulations in the Planning Area during heavy snow and winter storm events range from 1 inch to 8 inches of snow. Typical ice storm accumulations range from 1/10 of one inch to 1/2 of an inch of ice. However, the Planning Area had a record snowfall of 12.5 inches on December 26, 2012. Therefore, historically the Planning Area can expect 1-12.5 inches of snow/ice.

When severe winter storm events do occur (the worse typically associated with ice), they are usually widespread over the area and impede the movement of vehicles. They limit regular movement of traffic, cause accidents, and limit responsiveness of emergency services. Power lines and communication networks can also be downed. Structures may sustain serious damage creating potentially critical conditions for the entire area.

School Districts located in the Planning Area monitor weather updates via television, radio and internet. If weather becomes hazardous as determined by the Superintendent, then appropriate actions are taken. There is not an actual policy on inclement weather response. Instead, the school administrators use their judgement based on weather forecast, time of day, and location of students to implement actions.

Extreme low temperatures and wind chill can also significantly affect the impact of winter storms. The lowest temperature ever recorded in Morrilton was -15 °F, which occurred on February 2, 1951. The average low temperature for the winter months is approximately 30 °F.

When temperatures below 32-40 degrees, students may be kept inside by the determination of school principals to protect against extreme cold temperatures. Wind chill would be the determining factor in keeping students inside.

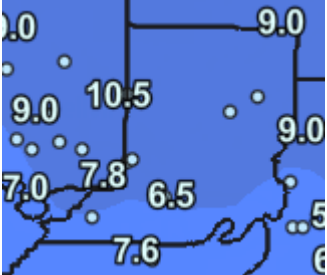
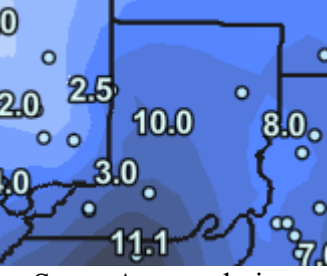
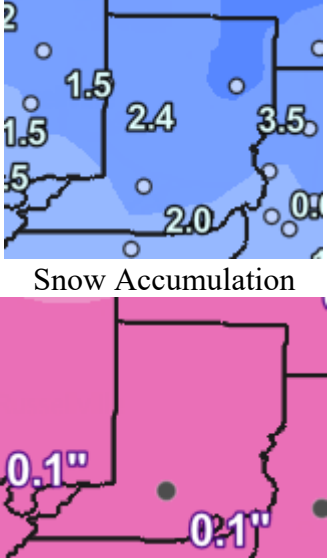
Previous Occurrences

From 2000 to 2023, the National Weather Service recorded 30 severe weather events in the Planning Area, although only seven events resulted in significant property damage. No injuries or deaths were attributed directly to the severe winter weather. These events were classified as winter

storms, ice storms, and heavy snow. Two ice storms (Dec 2000 and Jan 2009) resulted in declared disasters per FEMA.

County	Date	Type	Death	Injury	Property Damage
Conway	1/27/2000	Winter Storm	0	0	\$0.00
Conway	12/13/2000	Winter Storm	0	0	\$0.00
Conway	12/26/2000	Ice Storm*	0	0	\$0.00
Conway	2/5/2002	Winter Storm	0	0	\$0.00
Conway	3/2/2002	Winter Storm	0	0	\$0.00
Conway	2/25/2003	Winter Storm	0	0	\$0.00
Conway	2/26/2003	Ice Storm	0	0	\$0.00
Conway	12/22/2004	Winter Storm	0	0	\$0.00
Conway	3/4/2008	Heavy Snow	0	0	\$0.00
Conway	3/7/2008	Winter Storm	0	0	\$0.00
Conway	12/15/2008	Winter Storm	0	0	\$0.00
Conway	1/26/2009	Ice Storm*	0	0	\$10,000,000.00
Conway	1/29/2010	Winter Storm	0	0	\$0.00
Conway	2/8/2010	Heavy Snow	0	0	\$0.00
Conway	1/9/2011	Heavy Snow	0	0	\$0.00
Conway	2/9/2011	Heavy Snow	0	0	\$0.00
Conway	12/25/2012	Winter Storm	0	0	\$2,000,000.00
Conway	2/20/2013	Ice Storm	0	0	\$25,000.00
Conway	12/5/2013	Winter Storm	0	0	\$100,000.00
Conway	2/4/2014	Ice Storm	0	0	\$200,000.00
Conway	3/2/2014	Winter Storm	0	0	\$50,000.00
Conway	2/15/2015	Winter Storm	0	0	\$0.00
Conway	3/4/2015	Winter Storm	0	0	\$20,000.00
Conway	2/14/2021	Heavy Snow	0	0	\$0.00
Conway	2/17/2021	Heavy Snow	0	0	\$0.00
Conway	2/2/2022	Winter Storm	0	0	\$0.00
Conway	2/23/2022	Winter Storm	0	0	\$0.00
Conway	2/23/2022	Winter Storm	0	0	\$0.00
Conway	3/11/2022	Winter Storm	0	0	\$0.00
Conway	1/24/2023	Winter Storm	0	0	\$0.00

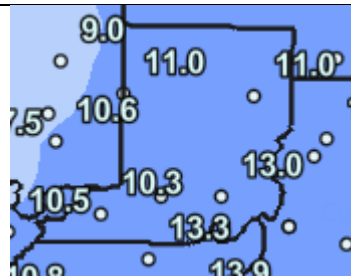
The National Weather Service in Little Rock maintains an [Arkansas Winter Storm Database](#). The database includes severe winter weather events from 2011. From the database, the following significant events impacted the Planning Area:

<p>February 9-11, 2011 Heavy snow fell in much of northern and central Arkansas, with as much as two feet of accumulation in parts of the Ozarks. The snow was followed by bitterly cold arctic air, with most places recording the coldest February temperatures since 1996 or 1951. Some locations in northern and central Arkansas recorded their coldest temperatures since the December 1989 Arctic outbreak. Morrilton saw low temperatures of -1 °F.</p>	 <p>Snow Accumulation</p>
<p>December 25-26, 2012 Record heavy snow fell on top of some light freezing rain in much of western, central, and northeast Arkansas. Many locations saw the snowiest December on record, just from this one storm. The ice and heavy snow downed trees and caused widespread power outages, especially around Little Rock. Conway County experienced record-breaking snowfall of 12.5 inches.</p>	 <p>Snow Accumulation</p>
<p>March 1-4, 2014 Snow & Sleet (blue) and Freezing Rain (red) A strong Arctic front stalled in southern Arkansas. Heavy rain fell. Behind the front, freezing rain, sleet and snow accumulated in northern and central Arkansas. Three to five inches of snow fell in northern Arkansas, with one to three inches of sleet and snow in the central on top of a quarter to half inch of freezing rain.</p>	 <p>Snow Accumulation</p> <p>Freezing Rain</p>

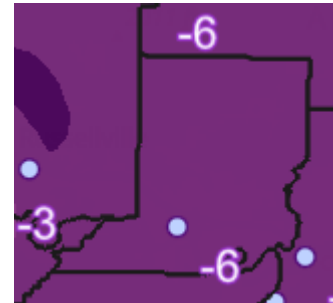
February 14-18, 2021

Within the span of five days, beginning on February 14th and lasting through the 18th, two significant winter storms affected Arkansas in back-to-back fashion. The storms produced record snowfall and snow depths across the state. Additionally, record Arctic cold set in, with low temperatures below zero around most of the state.

Very cold Arctic air moved in behind the system, with widespread below zero temperatures in much of the state. The morning of the 16th brought the coldest temperatures of the Arctic Snap, however a prolonged period of high temperatures below freezing also preceded and accompanied the cold snap.



Snow Accumulation



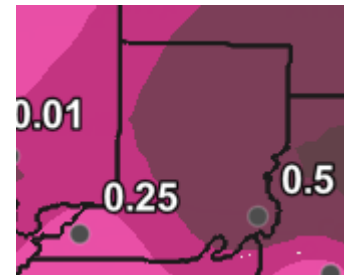
Sub-zero low temperatures

February 24-25, 2022

On February 24-25, 2022, the state was impacted with less snow, and greater coverage of primarily sleet and freezing rain, driving widespread travel impacts.

The greatest ice accumulations were observed over central and eastern Arkansas, with ice accruals as thick as one-half inch to three-quarters of an inch common, and over one inch of ice reported near Searcy (White County), and a light glazing of ice more common elsewhere in the state.

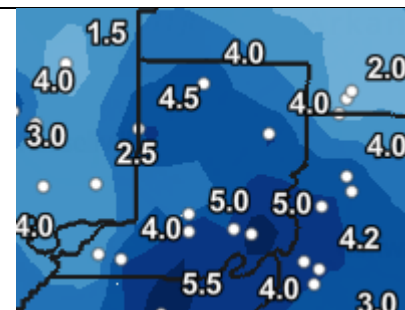
In addition to travel impacts, over 30,000 power outages were reported over eastern Arkansas where ice accumulations were the most significant.



Sleet / freezing rain

March 11, 2022

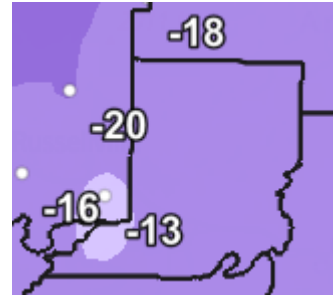
On March 11, 2022, a late-season winter weather event impacted much of the state, with the greatest snow totals observed over much of central Arkansas, and eastern portions of the state near the Mississippi River. Snow totals of 3 to 5 inches were common around the Little Rock and Conway metro areas, with most other locations receiving 2 to 3 inches of snow.



Snow Accumulation

December 22, 2022

A strong Arctic cold front swept through the state on the afternoon of December 22, bringing northwesterly winds of 30 to 40 mph to portions of the area. Extremely cold air was ushered into the state overnight, with low temperatures on the morning of December 23, falling to their lowest values the state had seen in the month of December since 1989. Single-digit air temperatures were common over central and southern Arkansas, with much of northern Arkansas and the higher terrain regions falling into the negative single-digits. Strong winds associated with the cold front drove wind chill values into the negative teens and twenties across much of central and northern Arkansas on the morning of December 23



Wind Chill Values

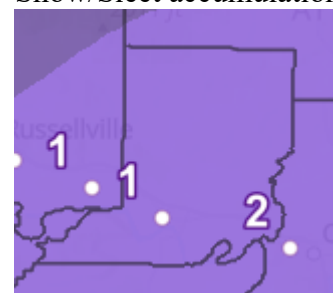
January 14-16, 2024

A winter storm impacted mostly northern Arkansas as an Arctic Air Outbreak overspread across the central and southern United States. A band of totals from four to seven (or more) inches of snow was observed across northern Arkansas and the higher terrain of the Boston Mountains/Ozark National Forest. Over the central and southern portions of the state, sleet was much more predominant, and this lowered snow totals to one to three inches, despite bitter cold temps near the surface.

Numerous cold mornings were observed, with progressively colder mornings observed daily through the Arctic Air outbreak, but most areas saw their coldest reading on the mornings of January 16th or the 17th. In addition to record cold lows, several area locations set records for daily "low-high" temperatures on both January 15th and 16th.



Snow/Sleet accumulation



Minimum observed air temperatures

Probability of Future Events

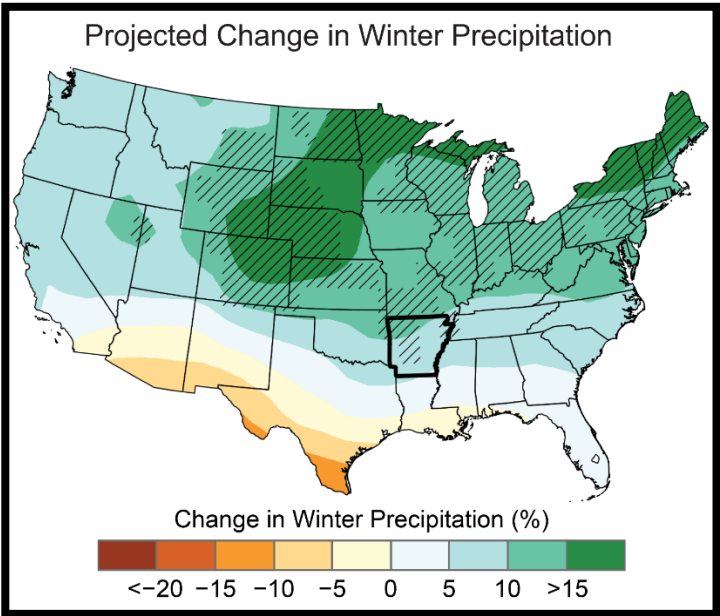
The probability the Planning Area will experience a severe winter storm event is less than 1% per year. Based upon previous occurrences (30 events between 2000 and 2023), the probability is estimated using the following formula:

$$\frac{\# \text{ of events}}{\# \text{ of days}} \times 100 = \underline{\hspace{2cm}}$$

Data collected from 2000-2023 was equal to 8,395 days.

The Planning Area has experienced 1.25 events per year since 2000. Based on climate research, Arkansas’ wintertime precipitation is expected to increase. NOAA National Centers for Environmental Information performed a State Climate Summary in 2022. According to their research,

Wintertime precipitation is projected to increase in Arkansas by midcentury (see figure below), with the increase being in the form of rain rather than snow. In the other seasons, precipitation changes are uncertain. Increases in evaporation rates due to rising temperatures may increase the rate of soil moisture loss during dry spells. As a result, naturally occurring droughts are projected to be more intense.



Projected changes in total winter (December–February) precipitation (%) for the middle of the 21st century compared to the late 20th century under a higher emissions pathway. Hatching represents areas where the majority of climate models indicate a statistically significant change. Arkansas is part of a large area of projected increases in winter precipitation across the United States. Sources: CISESS and NEMAC. Data: CMIP5.

Based on historical evidence, the planning team determined the likelihood of future winter storms is HIGH.

Vulnerability and Impact of Winter Storms

Historical data reports that the Planning Area has had 30 winter weather events in the last 23 years. This means theoretically the Planning Area can expect at least one winter weather event per year. Damage from winter storms is often not reported to public agencies for recording in databases such as SHELDUS.

The overall impact of a severe winter storm is high for the Planning Area. Winter storms can cause dangerous travel conditions and possible structural damage, placing communities and individuals at risk. Utilities including electricity, water, and communications can be lost.

Winter storms can immobilize an entire county. Wet snow quickly turns into ice rendering roads impassable, damaging trees, power lines, cutting off power/communications, and causing death.

Winter storms may bring strong winds, freezing rain, snow, ice, and blizzard like conditions that limit visibility. During a winter weather event, roads will likely be impassible. The availability of emergency and essential services will be restricted throughout all participating jurisdictions. Ice accumulation may leave roads, bridges and culverts damaged. The County Road Department has access to equipment for clearing roads and has mutual aid agreements with private services and other counties for support. However, due to the extent of winter weather, there will be limited manpower for clearing roads in the Planning Area. Roads will be cleared on a priority bases. The Planning Area may not have the capabilities to clear rural and unpaved roads. Road conditions as described may leave motorists stranded, interrupt supply chains, and disrupt lifesaving services.

All people and structures in the Planning Area are vulnerable to downed limbs and trees. Ice accumulation on tree branches may cause limbs to fall on people or structures causing minor to extreme impacts.

The entire Planning Area is at risk of extended power outages resulting in exposure to freezing temperatures. Rural areas of the Planning Area are most at risk of losing power and becoming isolated during a winter storm. Children under the age of 5, adults over the age of 65, those with disabilities, economically challenged, and the unhoused are at the greatest risk of hypothermia and other life-threatening health problems.

Potential Winter Storm Impacts	
	<p>No Impacts Impacts not expected.</p>
	<p>Limited Impacts Rarely a direct threat to life and property. Typically results in little inconveniences.</p>
	<p>Minor Impacts Rarely a direct threat to life and property. Typically results in an inconvenience to daily life.</p>
	<p>Moderate Impacts Often threatening to life and property, some damage unavoidable. Typically results in disruptions to daily life.</p>
	<p>Major Impacts Extensive property damage likely, life saving actions needed. Will likely result in major disruptions to daily life.</p>
	<p>Extreme Impacts Extensive and widespread severe property damage, life saving actions will be needed. Results in extreme disruptions to daily life.</p>

In addition to hypothermia risks, there is a greater risk of fire, carbon monoxide (CO) poisoning, electrical shock or electrocution during winter weather due to increased use of portable heaters and generators. According to a 2013 Consumer Product Safety Commission report, half of the generator-related deaths happened in the four coldest months of the year, November through February, and portable generators were involved in the majority of carbon monoxide deaths involving engine-driven tools. According to the National Fire Protection Association (NFPA), home fires occur more in the winter than in any other season, and heating equipment is involved in one of every six reported home fires, and one in every five home fire deaths ([“Put a Freeze on Winter Fires”](#), NFPA) ([“Extreme Cold Guide”](#), CDC). In addition, frozen pipes and impassable roads may impede firefighting efforts.

Severe winter weather also negatively impacts the Planning Area’s economy. Businesses are closed due to snow and ice as well as power outages. Infrastructure can be damaged by a buildup of ice and snow. Extreme cold can rupture pipes. The agricultural sector can be impacted by damaged crops and lost farm animals from winter weather events.

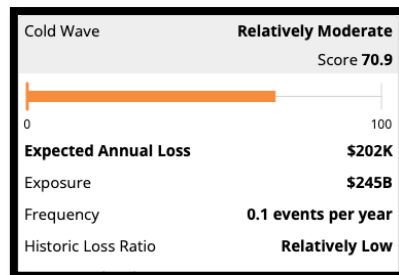
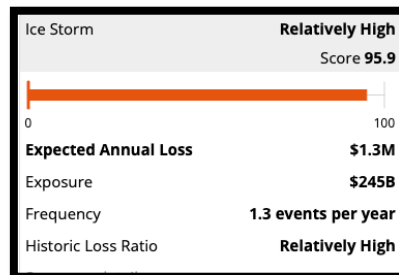
Estimating Potential Loss

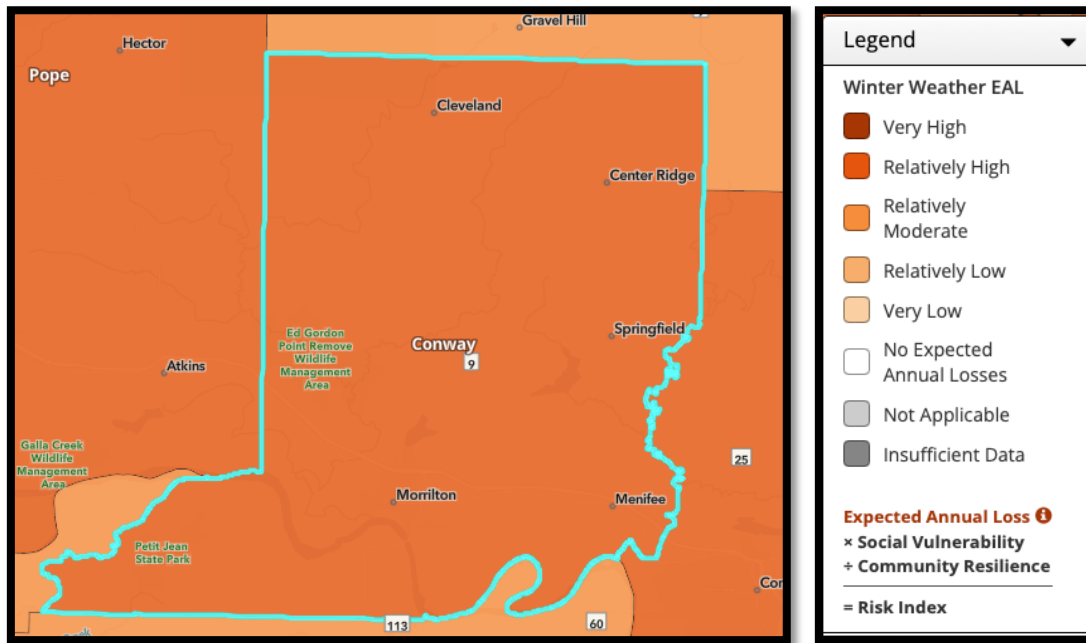
Expected annual loss was calculated for the Planning Area at <https://hazards.fema.gov/nri/map>.

Expected annual loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios for the hazard type.

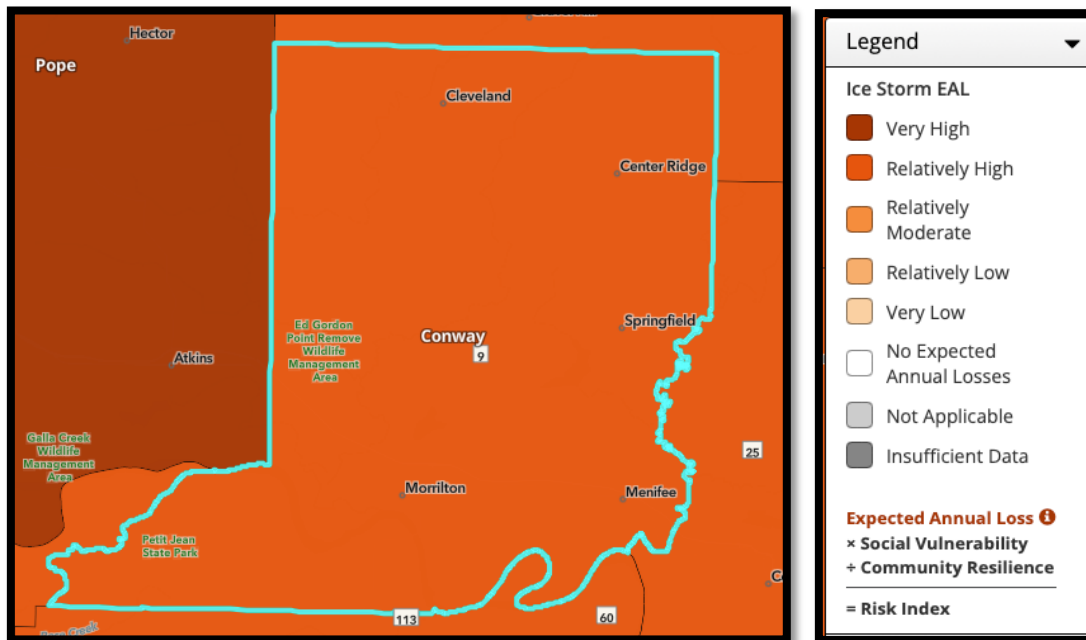
$$\begin{array}{l}
 \text{Exposure} \\
 \times \text{ Annualized Frequency} \\
 \times \text{ Historic Loss Ratio} \\
 \hline
 = \text{Expected Annual Loss}
 \end{array}$$

Expected Annual Loss Overview	
Composite Expected Annual Loss	\$8,516,184.84
Building EAL	\$5,017,348.47
Building EAL Rate	\$1 per \$954.73 of building value
Population EAL	0.26 fatalities
Population EAL Rate	1 per 79.44K people
Population Equivalence EAL	\$3,022,138.31
Agriculture EAL	\$476,698.06
Agriculture EAL Rate	\$1 per \$414.46 of agriculture value





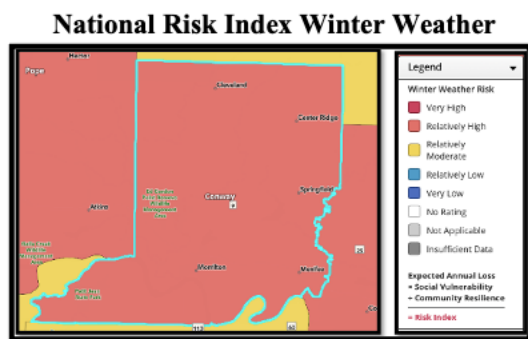
<https://hazards.fema.gov/nri/map>



<https://hazards.fema.gov/nri/map>

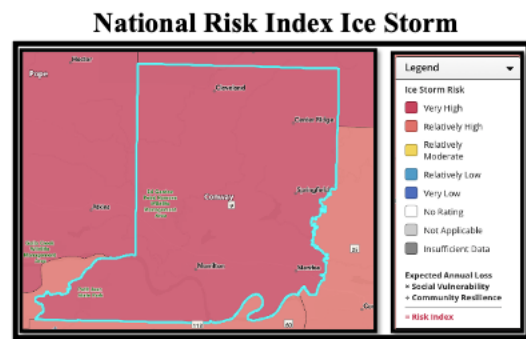
The entire planning area is affected by winter storms. Winter storms are not unique to any portion of the planning area. The occurrence of severe winter storms can have a substantial impact on the planning area's buildings, utility systems, transportation systems, and agriculture. Heavy accumulations of ice or snow commonly result in damage to buildings. Damage may be caused directly by the excessive weight of the ice/snow or by ice-laden trees or branches falling on structures. Homes, businesses, as well as weaker nonresidential structures are most vulnerable to

this type of structural damage. The abundant wood structures and manufactured houses in the planning area are much more vulnerable than steel, concrete, or masonry structures. Past storms indicate poultry houses are particularly vulnerable. Heavy accumulations of ice or snow as well as high winds can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communication and power can be disrupted for days or weeks while utility companies repair the damage. Power and communication disruptions are common consequences of ice storms and heavy snow. Transportation systems are vulnerable to severe winter storms. Accumulations of ice and snow can be extremely hazardous to motorists. The planning area lacks the necessary snow removal equipment due to the infrequent occurrence of severe winter storms. Motorists in the planning area are not accustomed to driving on icy roads. These factors result in an increase in traffic accidents. When major roads are blocked, travel flow and the availability of essential services throughout the area is affected.



<https://hazards.fema.gov/nri/map>

National Risk Index Ice Storm



<https://hazards.fema.gov/nri/map>

The cities of Plumerville, Oppelo, Menifee, and the Unincorporated areas of Conway County are very rural and somewhat isolated from more developed areas without adequate supply of fuel, food and equipment. Also, when utilities and communications are disrupted due to a winter storm event, these areas are the last to receive support and service reconnection. The populations in these areas may go a week without access to heat, fresh food, and other resources. During very icy conditions residents in these areas may be trapped at home making them extremely vulnerable. Children under the age of 5 and disabled or elderly residents are the most vulnerable and account for the largest percentage of hypothermia victims. House fires in these areas are common during winter storm events due to the use of alternate heat sources such as stoves. These rural areas account for many large farms with both vegetation and livestock. The cold will damage/destroy vegetation and may kill livestock. Poultry houses without a heat source may lose their entire population of birds. Homes in these areas may be damaged by fallen branches or destroyed by

toppled trees. Roads may become impassable. The fire districts in these areas are not equipped with plows or other winter storm equipment and may be unable to respond when needed.

A winter storm event may immobilize the greater parts of the city of Morrilton. Interstate 40 may become temporarily impassable. Major roads in the city may also be temporarily impassable as the State and County Transportation Department prioritizes the clearing of roads using their limited resources. Road closures will prevent residents from accessing some essential services. Trees that are weighted down by ice and snow may damage or destroy structures such as businesses and homes. All utilities in the city of Morrilton could be affected. Water pipes may freeze, and power lines could be taken down by ice. Frozen water pipes could prevent fire fighters from being able to adequately respond to a fire. The most vulnerable populations are children under the age of 5, disabled and elderly residents of the city of Morrilton. Below is a list of critical facilities that may be affected but are equipped with a secondary power source:

- St. Vincent medical Clinic
- Conway outpatient Surgery Center
- Conway Interfaith Clinic
- TLC Pediatrics
- Sherwood Urgent Care
- River Chase Rehabilitation and Care Center
- Brookridge Cove Rehabilitation and Care
- Conway County Fire Department
- Morrilton Fire Department

All school districts in the Planning Area are vulnerable to winter storm events. Many of the school buildings may not be insulated well enough to withstand the freezing temperatures if they exist for multiple days. The school buildings may have frozen pipes or damage from surrounding trees. Students would be considered vulnerable populations. It is likely classes will be canceled due to a winter storm event.

Population

Changes in population will affect the impact of winter storms. As populations grow, more individuals and infrastructure will be impacted by winter storms. Currently the Planning Area is trending a decrease in population. However, the Planning Area is expecting growth in industry. Over the next five years the Planning Team will need to research and document the effects of population on winter weather.

Land Use

Changes in land use could impact the effects of a winter storm. The Planning Area has both agricultural and industrial areas, which are affected by winter storms. Over the next five years the Planning Team will need to research and document changes in land use and its effects on the Planning Area.

Climate

According to NOAA National Centers for Environmental Information wintertime precipitation is projected to increase. The increase will consist of more rain than snow. The challenges posed by climate change can increase the probability of extreme weather events including winter storms and ice storms. These impacts will be monitored by the planning team over the next 5 years to continue research for nature-based solutions to mitigate all possibilities of potential increased impacts.

SECTION 5 MITIGATION STRATEGIES

The Conway County Hazard Mitigation plan includes a mitigation strategy that provides the Planning Area’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

The County, Cities, and School District have varying capabilities for implementing and maintaining mitigation efforts. These capabilities depend on existing authorities, policies, programs, and resources.

The cities of Morrilton, Menifee, Oppelo, and Plumerville are each different in terms of staffing, funding, policies, and programs capabilities providing the ability to carry out their local hazard mitigation goals. However, each city has the capability to:

- be an active member in the NFIP,
- to pass mitigation ordinances for their local government,
- regulate and limit the development in wildfire hazard areas and flood prone areas through land use planning implement retrofit construction plans,
- brace equipment
- provide emergency preparedness information to area residents through FEMA brochures.

The entire Planning Area is dependent upon grant funding to assist with larger mitigation projects. Examples of projects that may be requested:

- Safe Rooms
- Heavy Duty Generators (back up and maintain electrical power for critical facilities)
- Communication and early warning systems
- Heating/Cooling Centers
- Flood Inundation Study for the Planning Area
- Flash Flood Inundation Studies
- Inspection, Maintenance, and Enforcement Programs for High-Risk Dams

5.1 Mitigation Goals and Objectives for Each Hazard

Based upon the results of the local and State risk assessments, the Conway County Hazard Mitigation Planning Team, with input from local jurisdictions and officials, developed hazard mitigation goals and objectives and selected those that were determined to be of greatest benefit. These goals and objectives represent what Conway County believes is a long-term vision for reduction and enhancement of mitigation capabilities.

Goal 1: Reduce the potential for loss of life, injury and economic damage created by exposure to natural hazard for residents of Conway County due to natural disasters.

- Identify, describe, and characterize the natural hazards to which Conway County is susceptible Objective
- Assess the risk of each hazard including probability and frequency, exposure, and consequences Objective
- Examine feasible mitigation opportunities appropriate for the identified hazards and prioritize those opportunities.
- Implement mitigation actions to reduce loss of lives and property Objective
- Identify mitigation opportunities for long-range planning consideration.
- Encourage members of the Conway County Local Emergency Planning Committee (LEPC) and other stakeholders to include mitigation measures in emergency planning efforts.
- Promote NFIP compliance throughout the County.

Goal 2: Provide a framework and coordination to encourage all levels of government and public and private organizations to undertake mitigation to minimize potential disasters and to employ mitigation in the recovery following disasters.

- Hold regular LEPC meetings to discuss mitigation actions with city officials, County emergency office, and private sectors.
- Keep records of all natural hazards and analyze areas that are at risk to prevent future losses.

Goal 3: Seek grants for mitigation projects through the State and Federal funding.

- Update Hazard Mitigation plan every 5 years.
- Inquire grant information from Arkansas Department of Emergency Management, and Planning and Development District.

Goal 4- Protect existing properties from natural disasters.

- Protect existing structures from natural hazards using cost-effective approaches.

5.2 Implementation of Mitigation Actions

The mitigation actions are prioritized based upon their effect on the overall:

- Risk to life
- Risk to property
- Ease of implementation
- Community
- Agency support
- Ability to obtain funding

The County and participating jurisdictions have used the STAPLEE method to prioritize mitigation actions. This method has the benefit that the Mitigation actions are considered in discrete categories of:

- Social
- Technical
- Administrative
- Political
- Economic
- Environmental

Prioritization can be effectively conducted by meticulously considering each of these categories. By comprehensively analyzing each aspect, potential oversights can be minimized, enabling a thorough evaluation of the most appropriate actions for each jurisdiction to contemplate.

Criteria used for prioritization and review of mitigation actions based on STAPLEE

Evaluation Category	Sources of Information
Social	Members of Local governments and the County Government were members of the Hazard Mitigation Planning Team and had input throughout the planning process. It must be noted that many small-town political leaders are also business or professional persons. They are also members of the LEPC. Existing community plans were and will be relied on wherever possible. Members of the media were contacted and invited to all attend all HMPT meetings.

Technical	The following persons/agencies were consulted as to the technical feasibility of the various projects: Arkansas Geological Commission, University of Arkansas Extension Service, Arkansas Soil and Water Conservation Commission, Arkansas Health Department, Arkansas Highway and Transportation Department, Arkansas Department of Environmental Quality, Arkansas Governor's Pre-Disaster Advisory Council, Arkansas Governor's Earthquake Advisory Council, and Arkansas Forestry Service. Arkansas Department of Emergency Management. All of these had their comments and suggestions incorporated.
Administrative	Staffing for proper implementation of the plan currently will rely largely on existing members of the various agencies involved. Technical assistance is available from various local and state agencies. Some local jurisdictions have incorporated Hazard Mitigation efforts into their Capital Improvement Plans. Operations costs are under discussion by the appropriate agency or department heads.
Political	The County Quorum Court has passed resolutions in support of mitigation activities involving floodplain ordinances, mitigation planning, and fire districts, among others. The Governor of Arkansas issued an Executive Order in August of 2004 (EO 04-02) instructing all state agencies to assist ADEM in mitigation planning and implementation of mitigation goals.
Legal	Members of the HMPT discussed legal issues, and it was their opinion that no significant legal issues were involved in the projects that were selected by the HMPT. However, where legalities may be an issue, this is noted.
Economic	Economic and benefit cost issues were the predominant topics discussed by all concerned. Each entity felt that the projects selected would have positive effects, but yet realized that actions often have costs, sometimes hidden, imposed on the community, residents and businesses. Funding for the various activities was a major concern as local budgets are always under pressures with existing and competing projects and activities. Where necessary, particularly for costly capital projects, outside grants would be relied on heavily.
Environmental	The Arkansas Geological Survey, Arkansas Department of Environmental Quality, Arkansas Forestry Commission, and Arkansas Soil and Water Conservation Commission were all consulted as to the environmental impact of the various projects and it was felt that there would be no negative impact. Local environmental issues and concerns were also taken into consideration.

The Conway County Office of Emergency Management (CCOEM) will be responsible for evaluating actions among competing actions. The Planning Team prioritized the list of mitigation actions by conducting a cost-benefit review. This review was conducted by:

1. Considering the number of people who would be affected by a chosen project.
2. Determining the area the project would cover.
3. Considering how critical the structures were within in the project area.
4. Which structures were most critical?
5. How would it benefit the entire community?

The CCOES shall evaluate actions based on funding availability, comparative value to mitigation objectives, and consideration of economic benefits and environmental concerns of the communities. Actions are prioritized in three different categories:

- **High** need for immediate action
- **Medium** need for action
- **Low** lacking in urgency

All Conway County actions are the responsibility of the Conway County Office of Emergency Management Director. Actions for the cities of Morrilton, Menifee, Oppelo, and Plumerville are the responsibility of their respective Mayors. The School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and University of Arkansas Community College at Morrilton will be the responsibility of their School Board Administration.

The Responsible Agency for each mitigation action will identify resources. Their responsibility will be to examine resources from all levels of government. The responsible parties will integrate the requirements of the mitigation plan into other plans when appropriate. This will also include funding and support for enacting and enforcing:

- Building codes
- Zoning ordinances
- Developing public education programs
- Alert residents to risks
- Alert resident how they can reduce hazard losses.

Plans will be made to earmark resources for implementing these actions.

Each jurisdiction and school district within the Planning Area that participated in the planning process has at least two actions that will benefit the jurisdiction.

For the purpose of developing the Garland County Hazard Mitigation Plan, mitigation actions are categorized into six groups;

- **Prevention:** Actions that will keep problems from getting worse.
- **Property Protection:** Actions that address individual buildings
- **Public Education and Awareness:** Actions that will inform the public.
- **Natural Resource Protection:** Actions that will protect natural resources.
- **Emergency Service Protection:** Actions that will protect emergency services before, during, and immediately after an occurrence.
- **Structural Projects:** Actions that will control the hazard.

Previous Mitigation Actions

Previous Mitigation Action/Project list below have been:

- Updated to reflect changes over the past 5 years.
- Updated to reflect changes in economic growth.
- Updated to reflect changes in population growth.
- Updated to reflect changes in FEMA Plan requirements.

Certain initiatives, such as safe room construction, may have been pursued, albeit not achieving the desired level of coverage as envisioned by the Planning Area.

Completed Mitigation Actions/Projects	
Jurisdiction	Action/Project
Conway County	Backup generators have been placed at: <ul style="list-style-type: none"> • County Courthouse • EOC/911 office • Conway Regional Water Distribution District Facilities
School Districts	Backup generators have been placed at existing safe rooms for the following School Districts: <ul style="list-style-type: none"> • Nemo Vista • South Conway County • Wonderview
School Districts	Safe Rooms have been installed at the following School Districts: <ul style="list-style-type: none"> • Nemo Vista • South Conway County • Wonderview <p>While the schools have been able to find funding for safe room projects the Planning Area will continue to seek funding to protect other vulnerable populations in the Planning Area such as nursing homes and Day Care Centers. During school hours current safe rooms are available for school students and staff only.</p>
Conway County	Equipment upgrades to address power line design. Further upgrades needed will have to be addressed by the privately owned utility companies and is out of the Planning Areas control.
Mitigation Actions/Projects in Progress	
Jurisdiction	Action/Project
Conway County Office of Emergency Management	Provide mitigation information and resources for extreme weather conditions through an active education outreach program with

	specific plans and procedures for at-risk populations.
Conway County Office of Emergency Management	Use GIS to map hazard areas, at-risk structures and associated hazards in order to assess high risk-areas.
Conway County Quorum Court	Pass an ordinance (County) to prioritize or control water use, particularly for emergency situations in order make more water available for firefighting.
Arkansas Forestry Commission (through the Stafford Act with the assistance of the Conway County Fire Department)	Implements fuel management team using prescribed burning techniques to reduce the hazardous vegetative fuels that threaten public safety and property on public lands and working with landowner on privateland, and near essential infrastructure.

Mitigation Actions/Projects
<p>Purchase heavy duty generators to back up and maintain electrical power for critical facilities, schools, and shelters to maintain power and water supply during disasters.</p> <p>Associated Hazard: Dam Failure, Extreme Heat, Flood, Lightning, Thunderstorm, Tornados, Wildfire, and Winter Storms</p> <p>Type of Action: Prevention</p> <p>Contribution to Mitigation Objective: Continuation water service and temperature control.</p> <p>Priority: High</p> <p>Rationale of Priority: Past Disasters</p> <p>Addresses New or Existing buildings: New and Existing</p> <p>Cost Benefit: Highly Beneficial, cost varies by size and type of generator.</p> <p>TimeLine: 3 years</p> <p>Projected Resources: Existing County, City, and School Resources as well as potential grant funding.</p> <p>Responsible Party: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.</p> <p>Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.</p> <p>STAPLEE: Meets all Criteria</p>

Construct safe rooms within new and existing public buildings such as schools, libraries, and community centers.

Associated Hazard:

Type of Action: Thunderstorm, Tornado

Contribution to Mitigation Objective: Prevent loss of life

Priority: High

Rationale of Priority: Past Disasters

Addresses New or Existing buildings: New and Existing

Cost Benefit: Benefits outweigh the cost. Possible grants for construction.

TimeLine: 5 years

Projected Resources: HMPG Funding

Responsible Party: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Install hail resistant roofing, window covering, shutters and laminate glass in windowpanes with a focus on critical infrastructures.

Associated Hazard: Hail

Type of Action: Structural

Contribution to Mitigation Objective: Protect property, Prevent loss of life

Priority: Medium

Rationale of Priority: Past storm events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Beneficial, low cost to responsible party

TimeLine: 3 years

Projected Resources: Existing County, City, and School Resources as well as potential grant funding.

Responsible Party: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Protect exceptionally vulnerable populations from the impacts of severe weather events through identifying specific at-risk populations in the event of long-term power outages by establishing accessible heating and cooling centers.

Associated Hazard: Winter Storms, Thunderstorm, Tornado

Type of Action: Structural

Contribution to Mitigation Objective: Protect loss of life

Priority: High

Rationale of Priority: Past storm events

Addresses New or Existing buildings: Existing

Cost Benefit: Benefits outweigh the cost. Possible grants for refurbishment.

TimeLine: 1 year

Projected Resources: HMGP Funding

Responsible Party: Conway County Office of Emergency Management, County government offices, City Government offices.

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville

STAPLEE: Meets all Criteria

Purchase all-hazard NOAA Weather Radios in all schools, city halls, churches, assisted living facilities, hospitals, nursing homes, day care facilities, churches, businesses, industries where large numbers of people congregate. Provide information to public on importance of having NOAA Weather Radios, how to acquire one, and how to operate it.

Associated Hazard: All Hazards

Type of Action: Prevention

Contribution to Mitigation Objective: Prevent loss of life

Priority: High

Rationale of Priority: Past storm events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Benefit outweigh the cost/ low cost to responsible party

TimeLine: 2 years

Projected Resources: Existing County, City, and School Resources as well as potential grant funding.

Responsible Party: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Implement mass notification system designed to automatically deliver targeted weather notifications for the immediate threats of severe thunderstorms, flash floods, tornados, etc.

Associated Hazard: All Hazards

Type of Action: Prevention

Contribution to Mitigation Objective: Prevent loss of life

Priority: Hight

Rationale of Priority: Past Storm Events

Addresses New or Existing buildings: NA

Cost Benefit: Highly beneficial

TimeLine: 2 years

Projected Resources: Existing County and possible outside resources

Responsible Party: Conway County

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Design informational program to encourage the Planning Area to adopt building codes specific for bracing equipment whose failure may disrupt the operation of a critical facility such as hospitals and schools.

Associated Hazard: Earthquake, Thunderstorm, Tornado

Type of Action: Structural

Contribution to Mitigation Objective: Prevent damage to necessary operating equipment and loss of life

Priority: High

Rationale of Priority: Past storm events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly beneficial with minimum cost

TimeLine: 3 years

Projected Resources: Existing State, County, and City resources.

Responsible Party: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Apply window film to windows in public schools and public use buildings to prevent shattering.

Associated Hazard: Earthquake, Thunderstorm, Tornado

Type of Action: Prevention

Contribution to Mitigation Objective: Reduce risk of injury due to broken glass.

Priority: Medium

Rationale of Priority: Past Storm Events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly Beneficial with little cost.

TimeLine: 2 years

Projected Resources: Existing County, City, and School Resources as well as potential grant funding.

Responsible Party: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Create a data base within each fire district to track those individuals at high risk of death such as children under the age of 5, disabled and elderly populations, shut-ins, the unhoused, and individuals dependent on medical equipment. Many of these individuals may need to be transported to cooling or heating stations, relocated to places with operating utilities if experiencing a utility outage, relocated due to flood or tornado hazard, or unable to recover in the event of dam failure, landslide, or earthquake.

Associated Hazard: All Hazards

Type of Action: Prevention

Contribution to Mitigation Objective: Prevent loss of life

Priority: High

Rationale of Priority: Past Storm Events

Addresses New or Existing buildings: NA

Cost Benefit: Highly beneficial with little cost

TimeLine: 1 year

Projected Resources: Little or no funding required. Project is expected to be coordinated with County Fire Department and 911 Center.

Responsible Party: Conwy County, Conway County Fire Department

Action adopted by: Conway County

STAPLEE: Meets all Criteria

Conduct inspections, maintenance and enforcement programs on dams to ensure structural integrity (NFIP consideration; CRS 330 Outreach, CRS 350 Flood Protection Information).

Associated Hazard: Dam failure

Type of Action: Prevention

Contribution to Mitigation Objective: Prevent loss of life, property and resources due to future dam and levee failure by correcting structural weakness.

Priority: High

Rationale of Priority: Grade of existing dams and levee with failure a possibility

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly beneficial, unknown cost

TimeLine: 5 years

Projected Resources: Existing County and city resources.

Responsible Party: Conway County Soil and Water Conservation

Action adopted by: Conway County

STAPLEE: Meets all Criteria

Add and adopt an ordinance to the current Flood Prevention Ordinance to limit development in areas that could be affected by flooding caused by one or more flood type events or dam failure.

Associated Hazard: Flood, Dam failure

Type of Action: Prevention

Contribution to Mitigation Objective: Prevent loss of life, property and resources.

Priority: High

Rationale of Priority: Past flood events/ possibility of dam failure

Addresses New or Existing buildings: New

Cost Benefit: Highly beneficial with no cost

TimeLine: 2 years

Projected Resources: Existing County, City, and School Resources as well as potential grant funding.

Responsible Party: Conway County

Action adopted by: Conway County

STAPLEE: Meets all Criteria

Establish Memorandums of Understanding with adjacent communities designed to source additional sources of water.

Associated Hazard: Drought

Type of Action: Prevention

Contribution to Mitigation Objective: Prevent loss of life due to water shortages

Priority: Medium

Rationale of Priority: Past drought events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly beneficial with minimum cost

TimeLine: 1 year

Projected Resources: County funds to develop plan. Possible grant funding

Responsible Party: Conway County Quorum Court

Action adopted by: Conway County

STAPLEE: Meets all Criteria

Create a seismic safety committee to provide policy recommendations evaluate and recommend changes in seismic safety standards and give an annual assessment of local and statewide implementation of seismic safety improvements

Associated Hazard: Earthquake, landslide

Type of Action: Prevention

Contribution to Mitigation Objective: Prevent loss of life due to water shortages

Priority: Medium

Rationale of Priority: Past events/possible future events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly beneficial with minimum cost

TimeLine: 1 year

Projected Resources: County funds to develop plan.

Responsible Party: Conway County

Action adopted by: Conway County

STAPLEE: Meets all Criteria

Establish school survey procedures and guidance documents to inventory structural and non-structural hazards in and around school buildings.

Associated Hazard: Earthquake, Landslide, Tornado

Type of Action: Prevention

Contribution to Mitigation Objective: Actions will keep problems from getting worse/ containment of objects that could become flying missiles during storm event

Priority: High

Rationale of Priority: Past storm events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly beneficial with minimum cost

TimeLine: 1 years

Projected Resources: Existing State, County, and City resources.

Responsible Party: School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

Action adopted by: School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Pass Ordinance requiring all critical facilities to meet requirement of Executive Order 11988 and be built 1 foot above the 500-year flood elevation,

Associated Hazard: Flood

Type of Action: Structural/Prevention

Contribution to Mitigation Objective: Protect critical facilities

Priority: High

Rationale of Priority: Past storm events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly beneficial with minimum cost

TimeLine: 1 year

Projected Resources: Guidance from FEMA Resources/Publication

Responsible Party: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville

STAPLEE: Meets all Criteria

County and local Road Departments implement retrofit construction plans to increase drainage or absorption capacities with detention and relief drains, extra culverts, and bridge modification where susceptible to flooding.

Associated Hazard: Flood events

Type of Action: Prevention and Structural

Contribution to Mitigation Objective: Corrects current weaknesses and prevents any future structural damage as well as preventing loss of life

Priority: High

Rationale of Priority: Past storm events

Addresses New or Existing buildings: NA

Cost Benefit: Benefit outweighs the cost

TimeLine: 3 years

Projected Resources: Existing State, County, and City resources.

Responsible Party: State Highway Department, County and City Road Departments

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville

STAPLEE: Meets all Criteria

Conduct countywide community NFIP workshops for newly elected officials and the public

Associated Hazard: Flood event

Type of Action: Public education and awareness

Contribution to Mitigation Objective: Educate residents on the need for flood insurance and ensure newly elected officials are knowledgeable so they can assist residents

Priority: High

Rationale of Priority: Past storm events

Addresses New or Existing buildings: New and Existing

Cost Benefit: Highly beneficial with minimum cost

TimeLine: 1 year

Projected Resources: FEMA F-679 online free brochures

Responsible Party: Conway County Flood Plain Manager

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville

STAPLEE: Meets all Criteria

Install surge protection, lightning protection devices on all communications infrastructure and critical facilities.

Associated Hazard: Lightning

Type of Action: Property protection

Contribution to Mitigation Objective: Guard critical communication equipment from lightning strikes

Priority: High

Rationale of Priority: past events

Addresses New or Existing buildings: New and existing

Cost Benefit: Beneficial, cost to owners of communications infrastructure and critical facilities

TimeLine: 2 years

Projected Resources: Existing County, City, and unidentified outside resources

Responsible Party: : Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

Action adopted by: Conway County, Cities of Morrilton, Menifee, Oppelo, Plumerville, and the School Districts of Nemo Vista, Sacred Heart Catholic School, South Conway County, Riverview Baptist Christian School, Wonderview, and The University of Arkansas Community College at Morrilton.

STAPLEE: Meets all Criteria

Mitigate future losses by regulating development in wildfire hazard areas through land use planning and address density and quantity of development, as well as emergency access, landscaping and water supply

Associated Hazard: Wildfire

Type of Action: Prevention

Contribution to Mitigation Objective: Reduces the risk of wildfire due to land use

Priority: High

Rationale of Priority: past wildfire events

Addresses New or Existing buildings: Existing

Cost Benefit: Highly beneficial with low cost

TimeLine: 2 years

Projected Resources: Publish notice in paper at minimum expense

Responsible Party: : Conway County Quorum Court

Action adopted by: Conway County

STAPLEE: Meets all Criteria

SECTION 6 ACRONYMS

ADA	Average Daily Attendance
ADEM	Arkansas Department of Emergency Management
BCA	Benefit-Cost Analysis
BMPs	Best Management Practices
CFR	Code of Regulations
CRS	Community Rating System
DMA 2000	Disaster Mitigation Act of 2000
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
GIS	Geographic Information System
HMC	Hazard Mitigation Committee
HMGP	Hazard Mitigation Grant Program
IBC	Internal Building Code
FR	Final Rule
LEPC	Local Emergency Planning Committee
MOU	Memorandum of Understanding
NFIP	National Flood Insurance Program
PDM	Pre-Disaster Mitigation Program
PGA	Peak Ground Acceleration
SHMO	State Hazard Mitigation Officer
STAPLEE	Social, Technical, Administrative, Political, Legal,
UCC	Uniform Construction Code
WUI	Wildland Urban Interface
YCOEM	CONWAY County Office of Emergency Management
YCOES	CONWAY County Office of Emergency Services

SECTION 8 RESOLUTIONS/ADOPTION

The following county, cities and school districts will submit and adopted resolutions after FEMA has approved the 2023 Conway County Hazard Mitigation Plan.

- Conway County
- City of Morrilton
- City of Menifee
- City of Oppelo
- City of Plumerville
- Nemo Vista School District
- Riverview Baptist Christian School
- Sacred Heart Catholic School
- South Conway County School District
- Wonderview School District
- University of Arkansas Community College at Morrilton

SECTION 9 SUPPORTING DOCUMENTS

9.1 Public Review

Snapshot of proof of public review will go here

9.2 Sample Questionnaire

Name: _____

Email: _____

Please indicate the municipality you reside in: _____

Campuses you visit (select all that apply):

- South Conway County School District
- Nemo Vista School District
- Riverview Baptist Christian School
- Sacred Heart Catholic School
- South Conway County School District
- University of Arkansas at Morrilton
- Wonderview School District

Are you responding as:

- Citizen
- Community Organization
- Company
- Local Jurisdiction
- School Administrator
- UA Morrilton

Have you ever experienced or been impacted by a disaster? (select all that apply)

- Dam Failure
- Drought
- Earthquake
- Extreme Heat
- Flood
- Mud/Landslide
- Thunderstorm (Including High Winds/Lightning/Hail)
- Tornado
- Wildfire
- Wind
- Winter storm
- None

How concerned are you about the possibility of your neighborhood being impacted by a disaster?

- Very concerned
- Somewhat concerned
- Not concerned

Please explain your answer:

Is your home located in a FEMA designated floodplain?

Yes

No

Unknown

Do you have flood insurance on your home?

Yes

No

Unknown

If you do not have flood insurance, why not?

What is the most effective way for you to receive information about protecting your family and preparing your home from hazard events?

Email

Mail

Public or School Meetings/Workshops

Radio

Social Media

Television

Other (explain):

Please rank the following hazards according to the degree of threat faced by your community. One (1) represents the highest/greatest threat and ten (10) represents the lowest/least threat.

<u>Hazards</u>	<u>List Hazards from highest threat to lowest</u>
Tornado	1. _____
Winter Storm	2. _____
Thunderstorm (Including High Winds/Lightning/Hail)	3. _____
Extreme Heat	4. _____
Wildfire	5. _____
Flood	6. _____
Drought	7. _____
Dam Failure	8. _____
Earthquake	9. _____
Mud/Landslide	10. _____

Is there another natural hazard that is a threat that was not listed in the previous question?

Have you or your community taken any actions to make your home or neighborhood more resistant to hazards?

If you answered yes to the previous question regarding actions to make your home or neighborhood more resistant to hazards, please explain.

Are there specific actions you have taken for the following hazards?

Flood: _____

Wildfire: _____

Drought: _____

Earthquake: _____

Severe Winter Storm: _____

Thunderstorm (including high winds/lightning/hail): _____

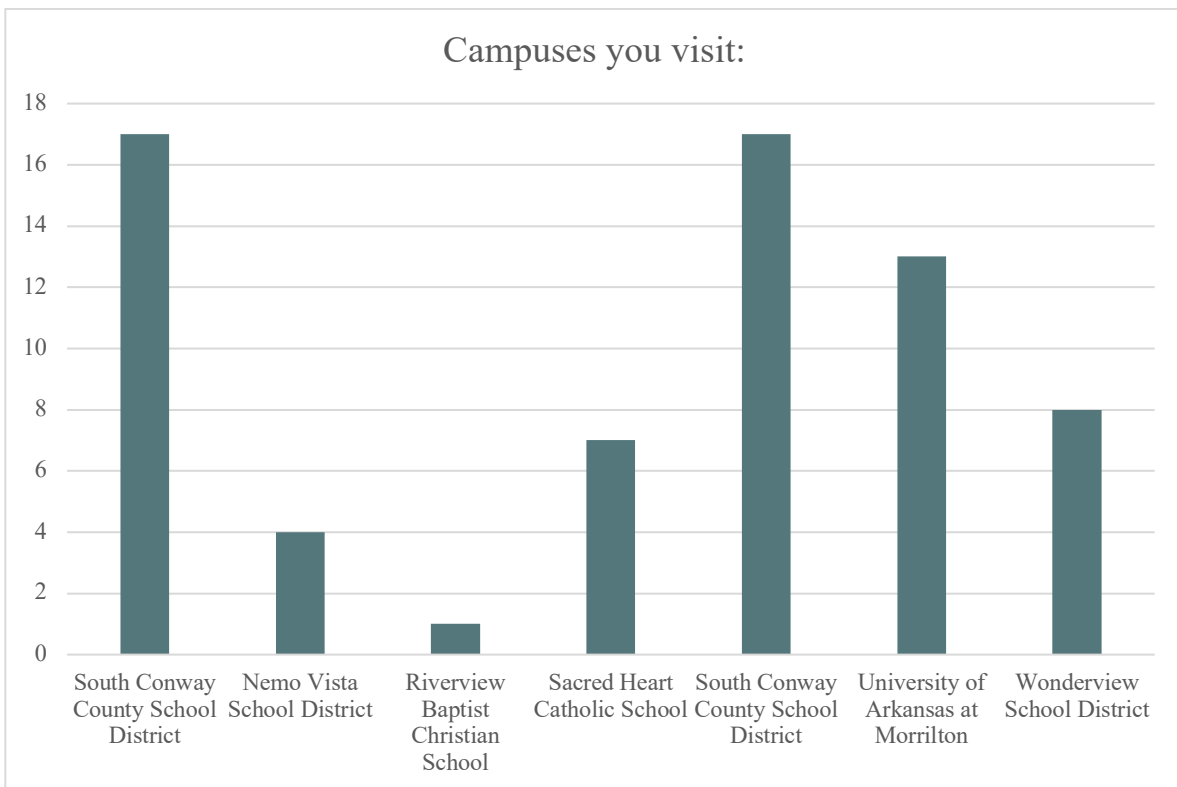
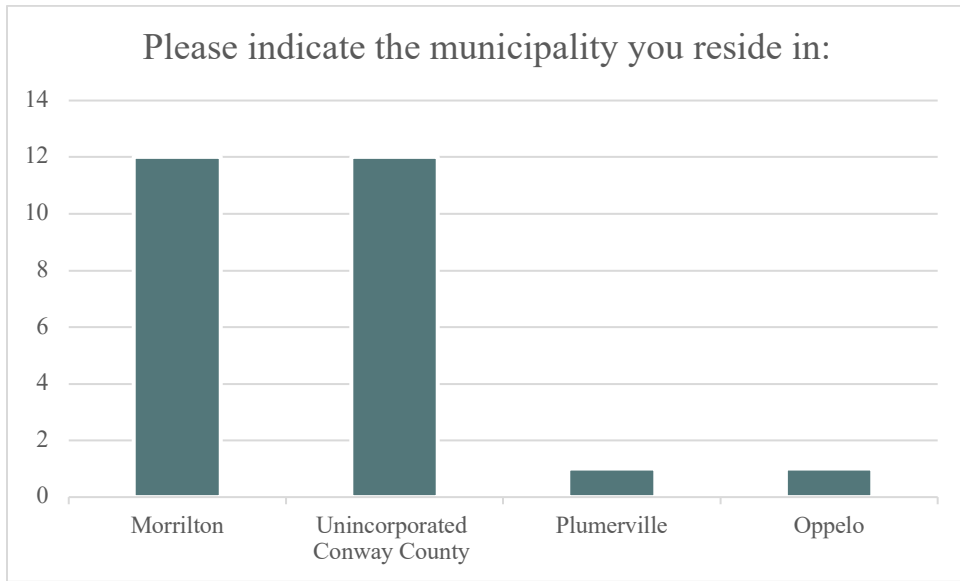
Tornado: _____

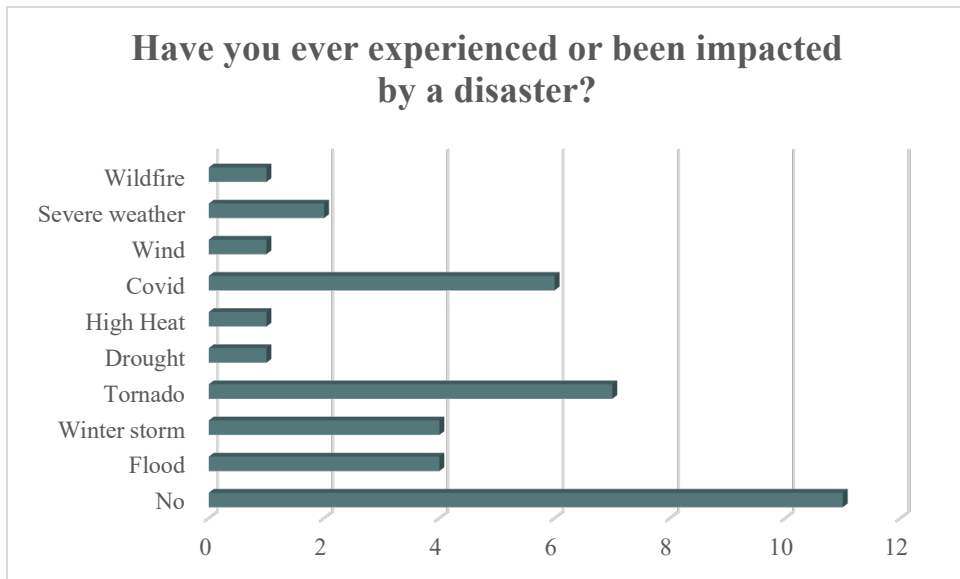
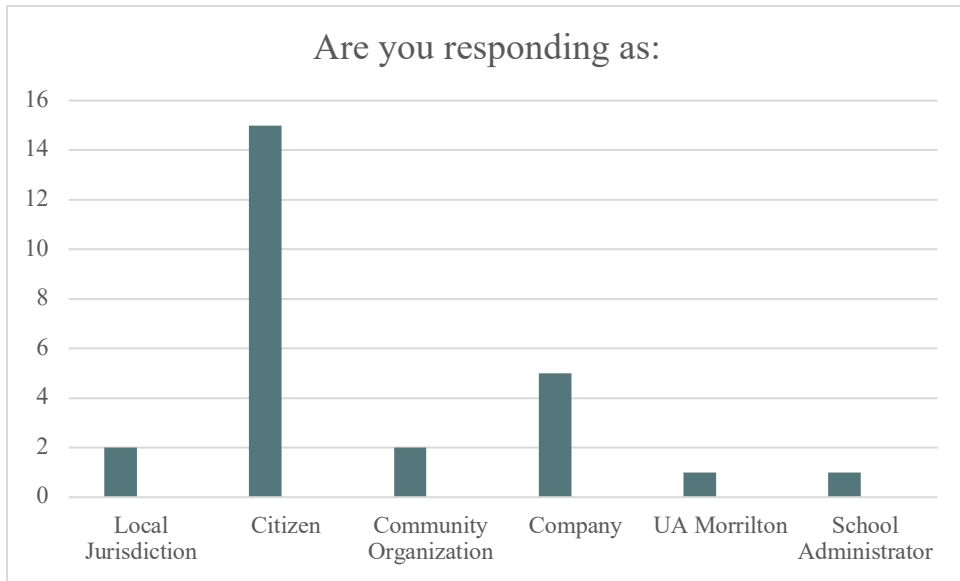
Dam Failure: _____

Extreme Heat: _____

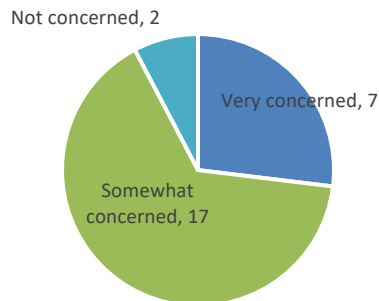
Mud/Landslide: _____

9.3 Questionnaire Reponses



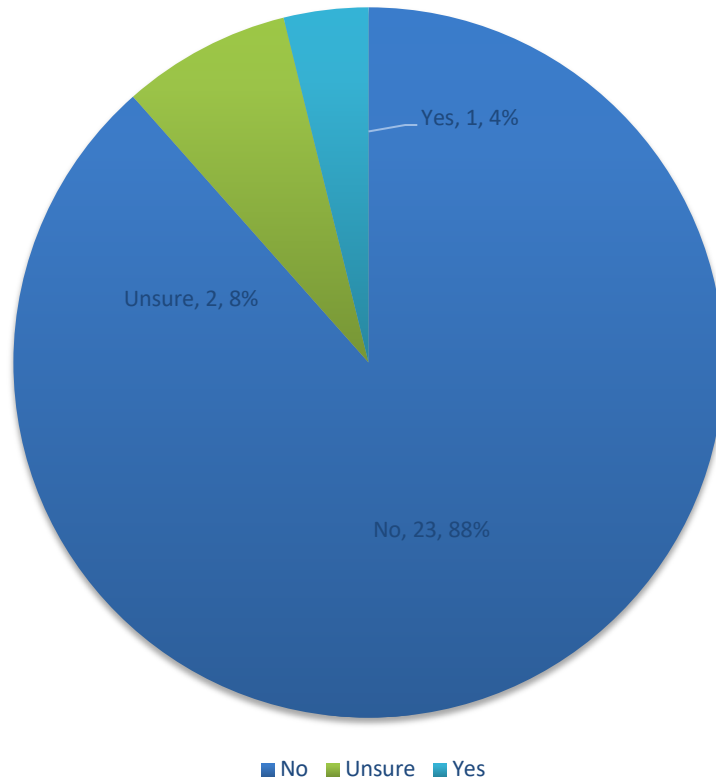


How concerned are you about the possibility of your neighborhood being impacted by a disaster?

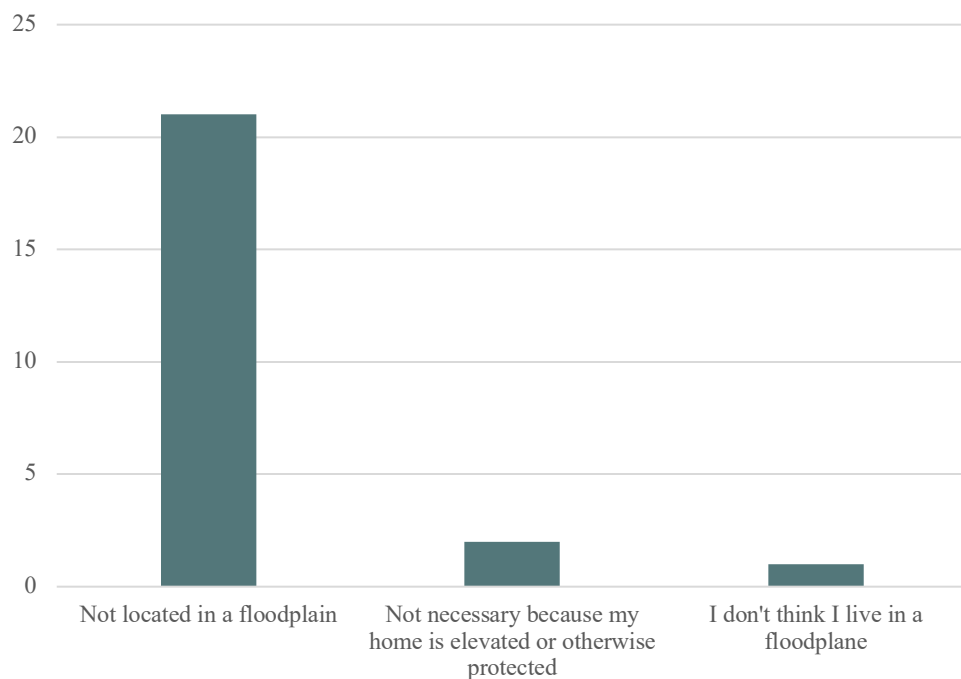


Please explain if you answered, "Somewhat Concerned" or "Very Concerned" on the last question	
Very	Always concerned with the safety and welfare of those around me.
Somewhat	Weather related disasters are what worry me the most
Somewhat	Tornado risk is high. No sirens where I live.
Somewhat	Worries if slow response times due to being in rural area if tornados strike.
Very	Tornadoes are common so that is concerning
Very	We have seen disaster in our neighborhood. It took weeks to get back to "normal"
Somewhat	Flood (closer to Arkansas River), Snow/Ice Storm (roadways), Tornado
Somewhat	I always am concerned about tornadoes and also losing power during wind or ice storms.
Somewhat	Power outage , Wind, Thunderstorms, tornado, accident on interstate involving hazardous materials with a south wind. I live less than 1 mile north of the interstate, drought, heat wave, pandemic. Lesser extent Wildland/Urban Interface Fire, Railroad or River Barge Hazardous Material incident, earthquake,
Very	I think more information such as pamphlets in the mail to residents on where to go, what to do, or a number to call in case of a natural disaster. Perhaps information on what to put in a disaster kit.
Somewhat	The street I live on (Winfrey Street) is the only street in or out of the neighborhood. Anything happens where the street is blocked people can't get in or out.
Somewhat	Worry for family, neighbors, and property.
Somewhat	1) COVID and its effect on residents and staff, 2) bad weather and its effect of preventing staff from arriving at work to care for residents, 3) fire and its effects of having to evacuate
Somewhat	Tornadoes are always a threat in Arkansas. COVID19 is very real and has greatly impacted our community.
Very	You never know what natural disaster may come your way. Act of Nature.
Somewhat	We live in a tornado area and the last flood we had, the levy on the Oppelo side of the river almost broke.
Somewhat	Because history repeats itself, I expect various disasters will continue.
Very	As a school administrator, the safety of our faculty, staff, students, and parents are always at the top of the list.
Somewhat	Preparedness - training
Somewhat	Tornado Damage
Somewhat	I worry about strong storms in the county.

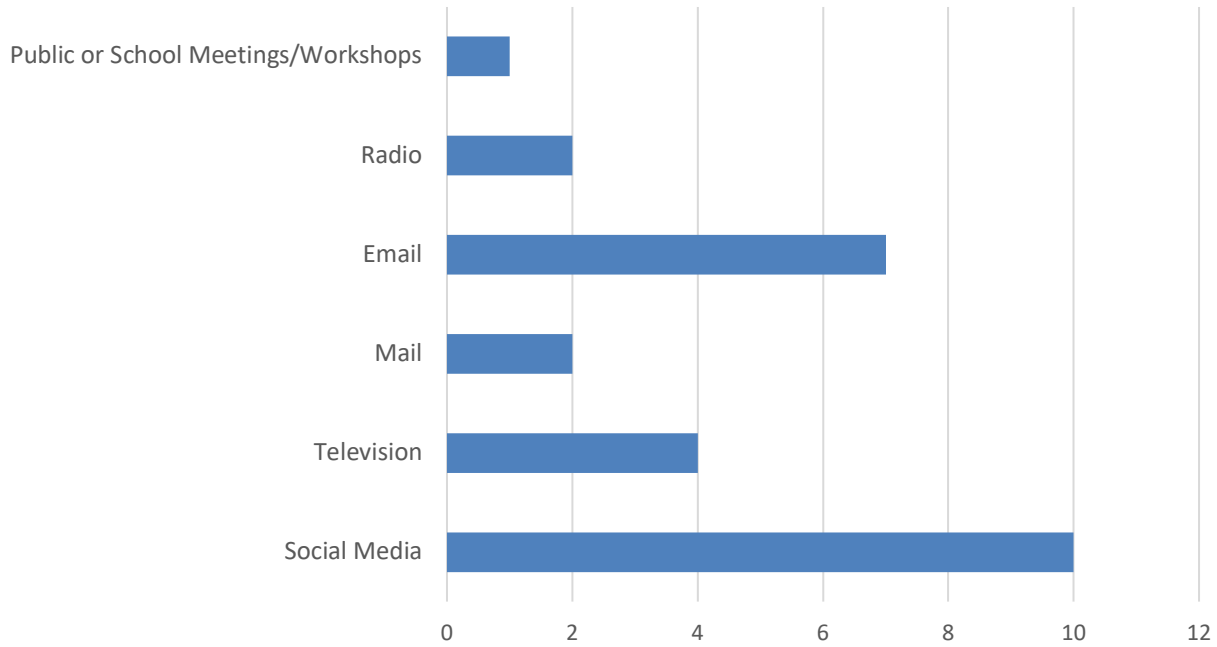
Do you have flood insurance on your home?



If not, why not?



What is the most effective way for you to receive information about protecting your family and prepare your home from hazard events?



Please rank the following hazards according to the degree of threat faced by your community. One (1) represents the highest/greatest threat and ten (10) represents the lowest/least threat.

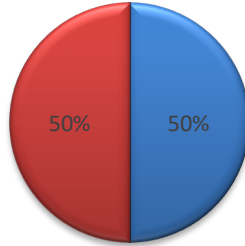
	Highest threat ← → Lowest threat									
Tornado	16	7	2	0	1	0	0	0	0	0
Winter Storm	0	2	10	4	2	4	2	1	1	0
Thunderstorm (Including High Winds/Lightning/Hail)	9	12	2	1	0	0	2	0	0	0
Extreme Heat	0	0	4	9	3	2	1	4	2	1
Wildfire	0	1	2	4	5	5	4	4	0	1
Flood	1	1	3	4	2	6	5	2	2	0
Drought	0	2	3	3	7	4	5	2	0	0
Dam Failure	0	1	0	0	2	0	5	4	10	4
Earthquake	0	0	0	0	4	5	2	6	7	2
Mud/Landslide	0	0	0	1	0	0	0	3	4	18

Numbers represent number of votes ranking each threat from greatest (1) to least (10)

Is there another natural hazard that is a threat that was not listed in the previous question?

Fire
Pandemic / COVID-19 (3 votes)
Mosquito/tick borne disease
Power outage or internet outage not due to storm.

Have you or your community taken any actions to make your home or neighborhood more resistant to hazards?



■ Yes ■ No

If you answered yes to the previous question regarding actions to make your home or neighborhood more resistant to hazards please explain.
Backup generator
Common preventative maintenance measures implemented, safety measures, etc.
Community Tornado Shelter, Flooding prevention on campus, and established communication channels.
Fire monitoring systems, Fire drills, tornado drills, etc.
I installed a metal roof which is supposed to be wind and hail resistant. The trees along the powerlines are trimmed regularly and dangerous trees have been removed.
Installed storm shelter
Making home Firewise
My mother, who lives next door, had a storm room installed.
Portable Generator, Defensive space from wildland fire
Reinforced levee, tornado shelter (at home and on all SCCSD campuses), prescribed burns (forest lands)
Started a fire department
We have a safe room. We built on land high above flood stage. We keep high grass and brush away from our home. We have wood fireplace; we have a generator.
We have built a storm shelter in our school

Flood
Better street drainage during heavy rain events
Clean the levees around the river
Clear the drainage on our street.
Continued routing of water during extreme rain. Sidewalks along the road.
Continuous upkeep of our drainage system. Keeping the drainages clean.
Ensure strength of levees
Improving routine maintenance on the levee system throughout our county
Keep culverts open.
Levee boards becoming active
Fed Gov dollars for maintaining levees
Levee Construction
Levee improvements
Levee maintenance
make sure AR River dike system is maintained
Make sure levies are secure.
More than one way in and out.
practice evacuation drills
Raise low lying roads
We are not in a flood plain
When we flooded a few years ago the community and OES and emergency responders built a coffer dam on farmland to keep HWY 9 open. Very impressive effort by all.

Wildfire
Be more prepared.
Building codes
Burn bans, fire breaks, removing dead limbs, underbrush
Control burn
control burns
Controlled burns schedule
Fire dept volunteers
Fire wise
Fire Drill
Have adequate firefighting abilities
Join Firewise, clear empty lots of brush and tall grass
Keep trees and brush trimmed and remove leaves and dry grass
Keep underbrush cleared from structures
More fire breaks and controlled burns
More prescribed burns. Making more homes fire wise
More than one way in and out.
Prescribed burns

Drought
Conservation of water
Have extra water stored for drought use
Help the citizens conserve water for future usage.
implement emergency water supply drill
Increase the size of or number of potable water sources to serve the county.
Install watering systems.
Irrigation
Irrigation supply
More efficient water systems for less waste
No way to protect against a drought
Rain dance?
The govt should give grants to open these water sheds back up and get them back to capacity.
Water conservation measures implementation

Earthquake
Checking homes for structural integrity and promoting earthquake awareness
Do not know any
Expand knowledge of safe places.
Hold on.
Make sure all residents have the information needed about what to do in case of an earthquake
More than one way in and out.
Practice earthquake drills
Provide information for earthquake safety by having an individual plan and a survival kit.
Provide the public with information on what to do in the event of an earthquake.
Reinforce structures, purchase insurance, study natural gas drilling effects in the region.
We practice Earthquake drills in school.

Severe Winter Storm
Advertise precaution and safety tips well ahead of any severe weather.
Begin road preparation before the storm arrives.
better road maintenance
Blade off accumulations on secondary and rural roads quickly.
Enforce parking and traffic regulations to lessen street hazards; better snowplows; raising awareness of winter hazards
Have equipment ready to clear roads. Keep trees away from power lines
Increase public outreach ahead of storms to insure everyone has adequate time to prepare. Also identify warming centers throughout the county in the event of <u>long term</u> power outages.
Make sure all residents have the information needed about what to do in case of a winter storm. Also, have places for people to go if loss of heat, water, or food.
More road equipment
More than one way in and out.
Network to mitigate risks related, formulate restoration teams, communicate potential hazards.
Open lines of communication. Safe shelter open for shelter.
Plan for storm longevity. Have on hand the items needed. Check on our elderly and animals.
Road clearing equipment
Support utility tree trimming
Warming centers and power grid improvements

Thunderstorm (including high winds/lightning/hail)
Advanced alert system.
Advertise precaution and safety tips well ahead of any severe weather.
Clear the power lines more often.
Community-wide warning siren systems
Everyone needs a hidey hole.
Improve warning system. Would lightning rods help?
Increase the number of storm sirens around the county. Encourage more people to purchase and use weather alert radios. implement a reverse 911 type system.
More early detection and storm shelter
More than one way in and out.
Removing tree limbs that could fall on buildings, having lightning detectors in public locations
safe rooms
Stay home. Businesses release employees early enough to get home for safety.
We have a safe shelter.

Tornado
Add sirens to rural populated areas outside the city limits.
Advanced alert system. A place for people to go in case of a tornado if they do not have a shelter at their home.
Advertise precaution and safety tips well ahead of any severe weather.
Clean up assistance.
Community shelters
Community tornado shelters; reliable early warning system; sirens audible from all parts of town
Community-wide warning siren systems.
Drills
Expand knowledge of safe places and work on being able to warn the community as soon as possible.
Increase the number of storm sirens around the county. Encourage more people to purchase and use weather alert radios. implement a reverse 911 type system.
Install community storm cellars at all fire stations. Keep a record of every home with a storm cellar or safe room in case a tornado hits their house, rescuers will know where to look for survivors
More storm shelters for the community
More than one way in and out.
Promote the safe rooms. What's the capacity, what's allowed and what's not. How soon can people show up. What should or shouldn't they bring.
safe rooms
We have a safe shelter.

Dam Failure
Early warning system if this may happen. Evacuation plan.
Educate those who may be affected by such an event, discourage any further development in those at-risk areas.
FEMA rated Levee construction
Keep current tests and upkeep on the dam.
maintain river dike system
Maintenance on existing structures
Make grant money available for private dam owners for repairs or help with maintenance.
More than one way in and out.
No dams in our area
Regular inspections: warning system to reach those who might be in danger (phone calls, text alerts)
Strengthen dam, preventative maintenance
Updates and repairs
We live above flood area

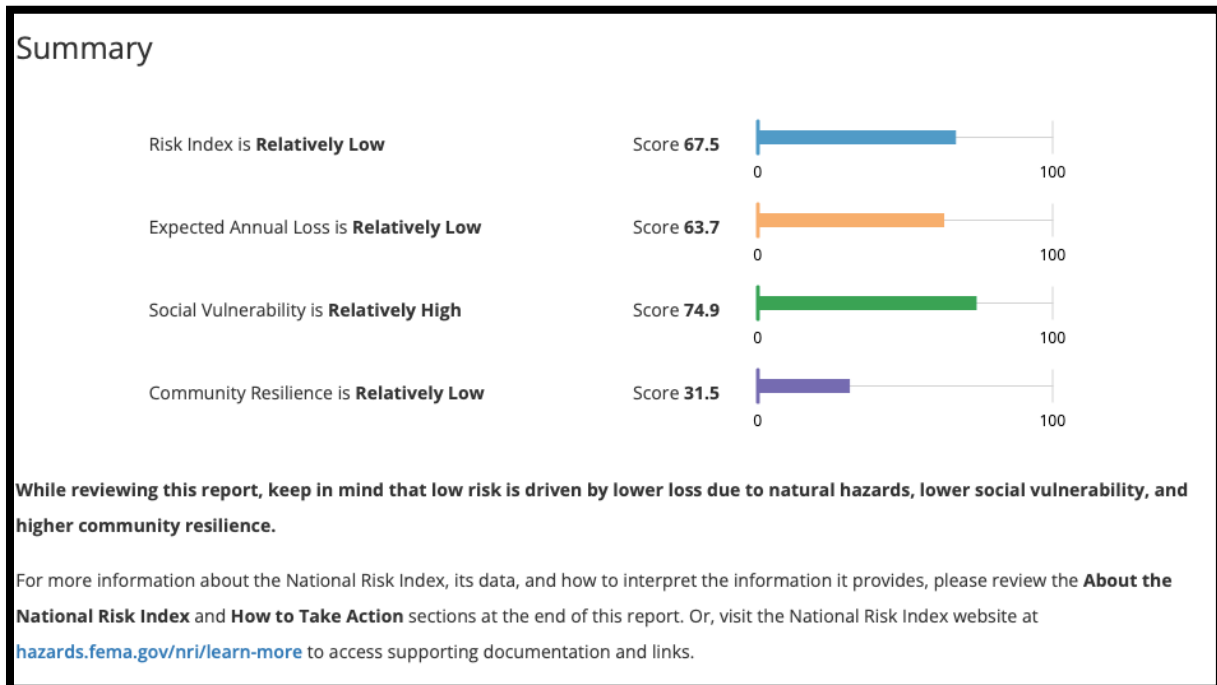
Extreme Heat
Advertise precaution and safety tips well ahead of any severe weather.
Check on the elderly and work with Electric Companies to keep costs down.
close blinds, adjust temps
Community-wide system to identify those at greatest risk for such conditions. Also, energy conservation measures would be a helpful discussion.
Cooling areas for those affected
Cooling centers and available fans for public
Cooling shelters: emergency funds to help those who cannot afford air conditioning
Large fan to send arctic weather south during the hot summer months
New HVAC units.
plant more trees in town
Provide cooling shelters for those without adequate cooling.
Safety precautions for extreme heat. Check on the elderly. Electric company should not disconnect the elderly for nonpayment during extreme heat.

Mud/Landslide
Advertise precaution and safety tips well ahead of any severe weather.
Build retaining walls as necessary.
Early warning system (phone, text) ; regulations on building in risky areas
Early warning systems if this may happen. Evacuation plan.
Keep community informed.

9.4 National Risk Assessment Report

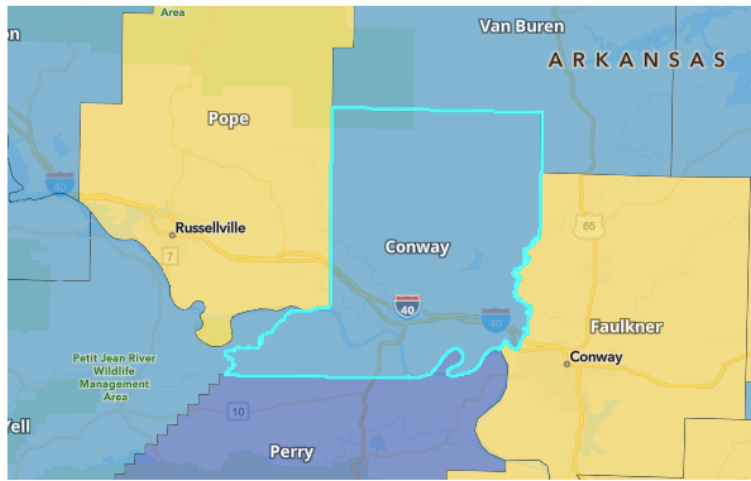


For full report: <https://hazards.fema.gov/nri/report/viewer?dataLOD=Counties&dataIDs=C05029>

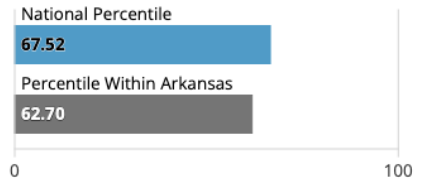


Risk Index

The Risk Index rating is **Relatively Low** for **Conway County, AR** when compared to the rest of the U.S.



Score **67.52**

















68% of U.S. counties have a lower Risk Index
63% of counties in Arkansas 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 Expected Annual Loss value, community risk factors, and the adjustment factor used to calculate the risk value.

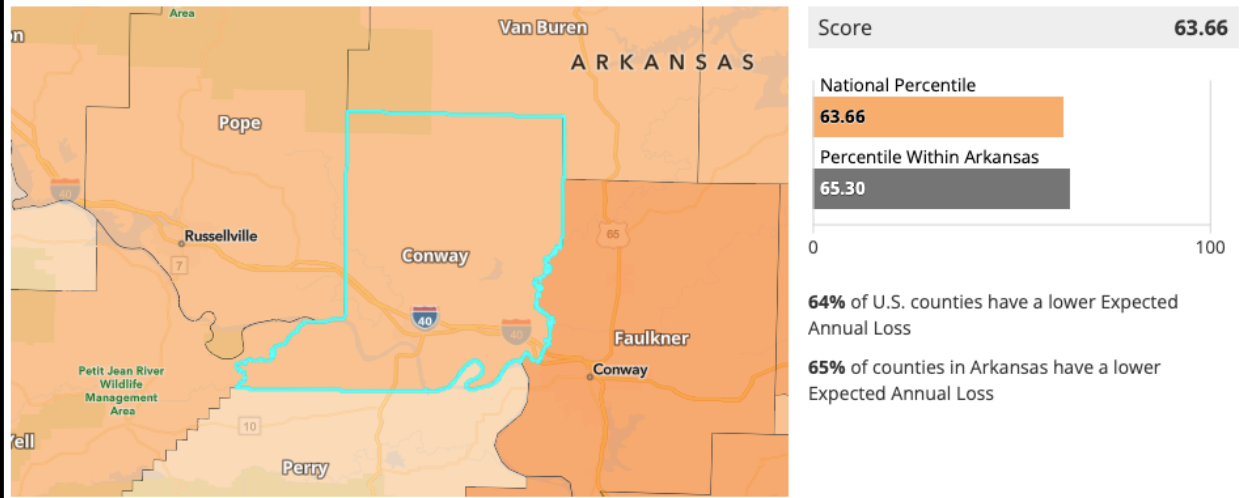
Hazard Type	Risk Index Rating	Risk Index Score	National Percentile
Avalanche	Not Applicable	--	
Coastal Flooding	Not Applicable	--	
Cold Wave	Relatively Moderate	73.3	0  100
Drought	Relatively Low	68.3	0  100
Earthquake	Relatively Low	86.5	0  100
Hail	Relatively Low	58.8	0  100
Heat Wave	Relatively Low	70.7	0  100
Hurricane	Very Low	43.1	0  100
Ice Storm	Very High	96.4	0  100
Landslide	Relatively Low	56	0  100
Lightning	Relatively Low	49.8	0  100
Riverine Flooding	Relatively Low	73.5	0  100
Strong Wind	Relatively Moderate	77.6	0  100
Tornado	Relatively Moderate	79.3	0  100
Tsunami	Not Applicable	--	
Volcanic Activity	Not Applicable	--	
Wildfire	Relatively Low	66.9	0  100
Winter Weather	Relatively High	86.5	0  100

Risk Factor Breakdown

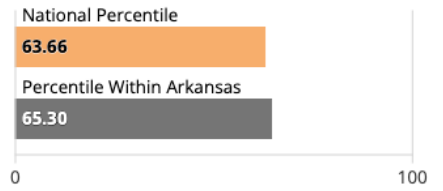
Hazard Type	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
Tornado	\$2,761,359	Relatively High	Relatively Low	1.3	\$3,580,139	79.3
Earthquake	\$1,475,223	Relatively High	Relatively Low	1.3	\$1,985,571	86.5
Ice Storm	\$1,347,347	Relatively High	Relatively Low	1.3	\$1,741,233	96.4
Riverine Flooding	\$1,011,530	Relatively High	Relatively Low	1.3	\$1,344,015	73.5
Strong Wind	\$707,692	Relatively High	Relatively Low	1.3	\$916,061	77.6
Winter Weather	\$239,157	Relatively High	Relatively Low	1.3	\$308,546	86.5
Heat Wave	\$228,160	Relatively High	Relatively Low	1.3	\$295,045	70.7
Cold Wave	\$201,676	Relatively High	Relatively Low	1.3	\$256,191	73.3
Hail	\$135,761	Relatively High	Relatively Low	1.3	\$160,908	58.8
Wildfire	\$120,806	Relatively High	Relatively Low	1.3	\$140,579	66.9
Drought	\$94,476	Relatively High	Relatively Low	1.3	\$118,807	68.3
Hurricane	\$88,293	Relatively High	Relatively Low	1.3	\$112,553	43.1
Lightning	\$82,805	Relatively High	Relatively Low	1.3	\$107,222	49.8
Landslide	\$21,900	Relatively High	Relatively Low	1.3	\$27,862	56
Avalanche	--	Relatively High	Relatively Low	1.3	--	--
Coastal Flooding	--	Relatively High	Relatively Low	1.3	--	--
Tsunami	--	Relatively High	Relatively Low	1.3	--	--
Volcanic Activity	--	Relatively High	Relatively Low	1.3	--	--

Expected Annual Loss

In **Conway County, AR**, expected loss each year due to natural hazards is **Relatively Low** when compared to the rest of the U.S.



Score **63.66**



64% of U.S. counties have a lower Expected Annual Loss

65% of counties in Arkansas 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 **\$8,516,184.84**

Composite Expected Annual Loss Rate National Percentile **79.1**

Building EAL **\$5,017,348.47** Population EAL **0.26 fatalities**

Building EAL Rate **\$1 per \$954.73 of building value** Population EAL Rate **1 per 79.44K people**

Agriculture EAL **\$476,698.06** Population Equivalence EAL **\$3,022,138.31**

Agriculture EAL Rate **\$1 per \$414.46 of agriculture value**

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 **Conway County, AR**.

Hazard Type	Expected Annual Loss Rating	EAL Value	Score
Tornado	Relatively Moderate	\$2,761,359	77.5
Earthquake	Relatively Low	\$1,475,223	83.2
Ice Storm	Relatively High	\$1,347,347	95.9
Riverine Flooding	Relatively Low	\$1,011,531	70.9
Strong Wind	Relatively Moderate	\$707,692	75.4
Winter Weather	Relatively High	\$239,157	85.1
Heat Wave	Relatively Low	\$228,160	70.1
Cold Wave	Relatively Moderate	\$201,676	70.9
Hail	Relatively Low	\$135,761	59.6
Wildfire	Relatively Low	\$120,806	66.8
Drought	Relatively Low	\$94,476	67.4
Hurricane	Very Low	\$88,293	40.9
Lightning	Relatively Low	\$82,805	47.9
Landslide	Relatively Low	\$21,900	52.4

Expected Annual Loss Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	--	--	--	--	--
Cold Wave	\$201,676	\$416	\$159,850	0.01	\$41,411
Drought	\$94,476	n/a	n/a	n/a	\$94,476
Earthquake	\$1,475,223	\$980,653	\$494,570	0.04	n/a
Hail	\$135,761	\$2,612	\$1,912	0.00	\$131,237
Heat Wave	\$228,160	\$150	\$227,821	0.02	\$189
Hurricane	\$88,293	\$66,075	\$377	0.00	\$21,840
Ice Storm	\$1,347,347	\$1,334,263	\$13,083	0.00	n/a
Landslide	\$21,900	\$4,500	\$17,400	0.00	n/a
Lightning	\$82,805	\$33,324	\$49,481	0.00	n/a
Riverine Flooding	\$1,011,530	\$403,912	\$432,545	0.04	\$175,073
Strong Wind	\$707,692	\$522,226	\$185,330	0.02	\$135
Tornado	\$2,761,359	\$1,364,747	\$1,392,395	0.12	\$4,218
Tsunami	--	--	--	--	--
Volcanic Activity	--	--	--	--	--
Wildfire	\$120,806	\$90,821	\$29,795	0.00	\$191
Winter Weather	\$239,157	\$213,648	\$17,580	0.00	\$7,929

Exposure Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	--	--	--	--	--
Cold Wave	\$245,072,978,229	\$4,790,207,758	\$240,085,200,000	20,697.00	\$197,570,471
Drought	\$11,301,150	n/a	n/a	n/a	\$11,301,150
Earthquake	\$245,084,134,000	\$4,790,134,000	\$240,294,000,000	20,715.00	n/a
Hail	\$245,072,978,229	\$4,790,207,758	\$240,085,200,000	20,697.00	\$197,570,471
Heat Wave	\$245,072,978,229	\$4,790,207,758	\$240,085,200,000	20,697.00	\$197,570,471
Hurricane	\$244,813,094,735	\$4,786,258,333	\$239,839,283,671	20,675.80	\$187,552,731
Ice Storm	\$244,875,407,758	\$4,790,207,758	\$240,085,200,000	20,697.00	n/a
Landslide	\$69,665,709,762	\$1,355,552,333	\$68,310,157,429	5,888.81	n/a
Lightning	\$244,875,407,758	\$4,790,207,758	\$240,085,200,000	20,697.00	n/a
Riverine Flooding	\$6,969,301,073	\$205,410,567	\$6,717,443,809	579.09	\$46,446,697
Strong Wind	\$245,072,978,229	\$4,790,207,758	\$240,085,200,000	20,697.00	\$197,570,471
Tornado	\$245,072,978,229	\$4,790,207,758	\$240,085,200,000	20,697.00	\$197,570,471
Tsunami	--	--	--	--	--
Volcanic Activity	--	--	--	--	--
Wildfire	\$10,748,844,216	\$191,264,075	\$10,548,158,059	909.32	\$9,422,082
Winter Weather	\$245,072,978,229	\$4,790,207,758	\$240,085,200,000	20,697.00	\$197,570,471

Annualized Frequency Values

Hazard Type	Annualized Frequency	Events on Record	Period of Record
Avalanche	--	--	--
Coastal Flooding	--	--	--
Cold Wave	0.1 events per year	1	2005-2021 (16 years)
Drought	10.1 events per year	294	2000-2021 (22 years)
Earthquake	0.159% chance per year	n/a	2021 dataset
Hail	5.7 events per year	195	1986-2021 (34 years)
Heat Wave	1.1 events per year	17	2005-2021 (16 years)
Hurricane	0 events per year	1	East 1851-2021 (171 years) / West 1949-2021 (73 years)
Ice Storm	1.3 events per year	85	1946-2014 (67 years)
Landslide	0 events per year	0	2010-2021 (12 years)
Lightning	80.4 events per year	1,769	1991-2012 (22 years)
Riverine Flooding	1.9 events per year	45	1996-2019 (24 years)
Strong Wind	3.5 events per year	119	1986-2021 (34 years)
Tornado	0.4 events per year	37	1950-2021 (72 years)
Tsunami	--	--	--
Volcanic Activity	--	--	--
Wildfire	0.142% chance per year	n/a	2021 dataset
Winter Weather	1.4 events per year	22	2005-2021 (16 years)

Historic Loss Ratios

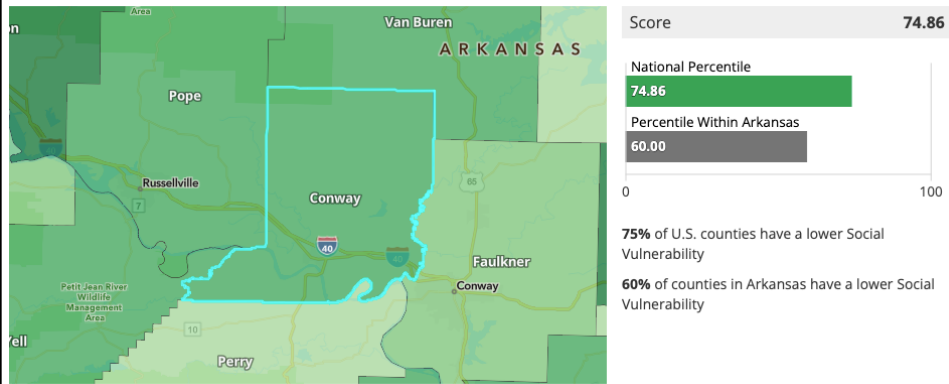
Hazard Type	Overall Rating
Avalanche	--
Coastal Flooding	--
Cold Wave	Relatively Low
Drought	Relatively Moderate
Earthquake	Relatively High
Hail	Relatively Low
Heat Wave	Relatively Low
Hurricane	Relatively Moderate
Ice Storm	Relatively High
Landslide	Very Low
Lightning	Relatively Low
Riverine Flooding	Relatively Low
Strong Wind	Relatively Moderate
Tornado	Relatively High
Tsunami	--
Volcanic Activity	--
Wildfire	Relatively Low
Winter Weather	Relatively High

Expected Annual Loss Rate

Hazard Type	Building EAL Rate (per building value)	Population EAL Rate (per population)	Agriculture EAL Rate (per agriculture value)
Avalanche	--	--	--
Coastal Flooding	--	--	--
Cold Wave	\$1 per \$11.52M	1 per 1.50M	\$1 per \$4.77K
Drought	--	--	\$1 per \$2.09K
Earthquake	\$1 per \$4.88K	1 per 485.44K	--
Hail	\$1 per \$1.83M	1 per 125.54M	\$1 per \$1.51K
Heat Wave	\$1 per \$31.85M	1 per 1.05M	\$1 per \$1.05M
Hurricane	\$1 per \$72.50K	1 per 636.21M	\$1 per \$9.05K
Ice Storm	\$1 per \$3.59K	1 per 18.35M	--
Landslide	\$1 per \$1.06M	1 per 13.80M	--
Lightning	\$1 per \$143.75K	1 per 4.85M	--
Riverine Flooding	\$1 per \$11.86K	1 per 555.05K	\$1 per \$1.13K
Strong Wind	\$1 per \$9.17K	1 per 1.30M	\$1 per \$1.46M
Tornado	\$1 per \$3.51K	1 per 172.43K	\$1 per \$46.84K
Tsunami	--	--	--
Volcanic Activity	--	--	--
Wildfire	\$1 per \$52.74K	1 per 8.06M	\$1 per \$1.03M
Winter Weather	\$1 per \$22.42K	1 per 13.66M	\$1 per \$24.92K

Social Vulnerability

Social groups in **Conway County, AR** have a **Relatively High** susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.

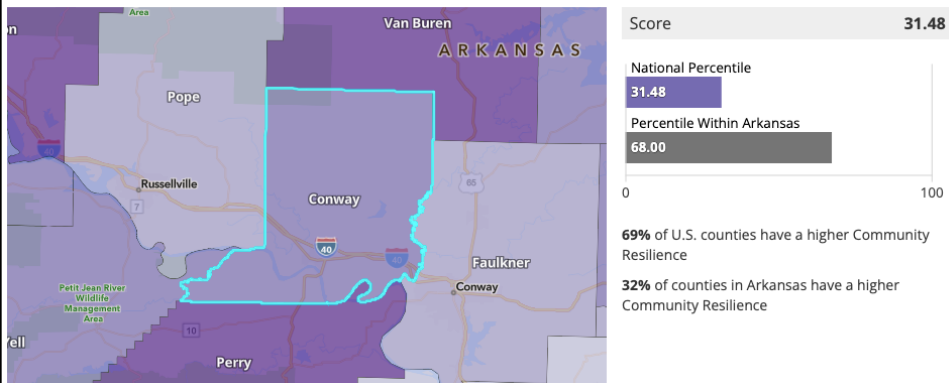


Social Vulnerability Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- Data Unavailable

Community Resilience

Communities in **Conway County, AR** have a **Relatively 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.

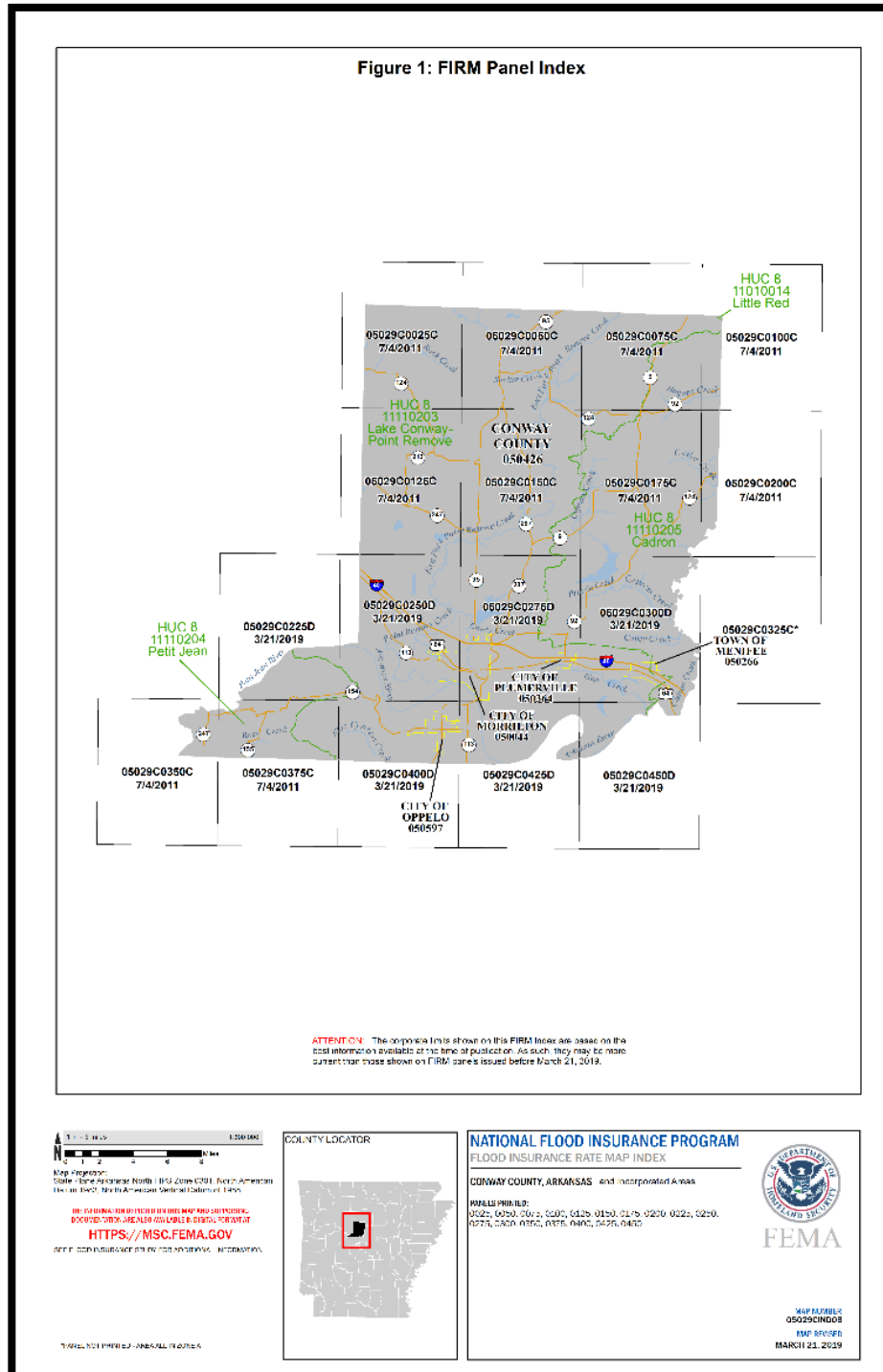


Community Resilience Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- Data Unavailable

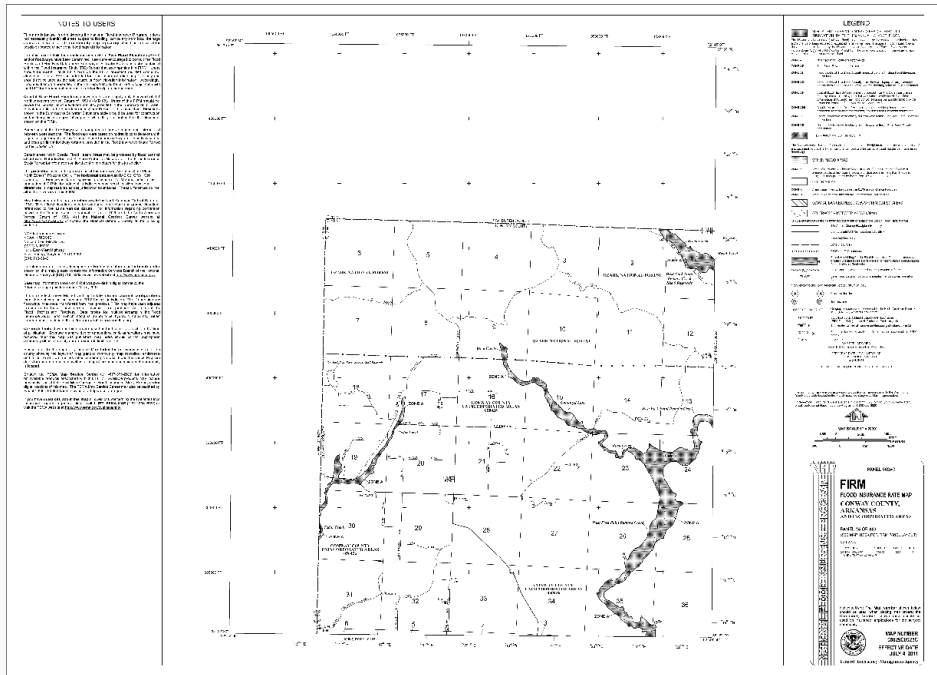
9.5 Firms

Panels can be found at the links provided or at [FEMA Flood Map Service Center | Search All Products](#). There are 17 panels that make up Conway County.



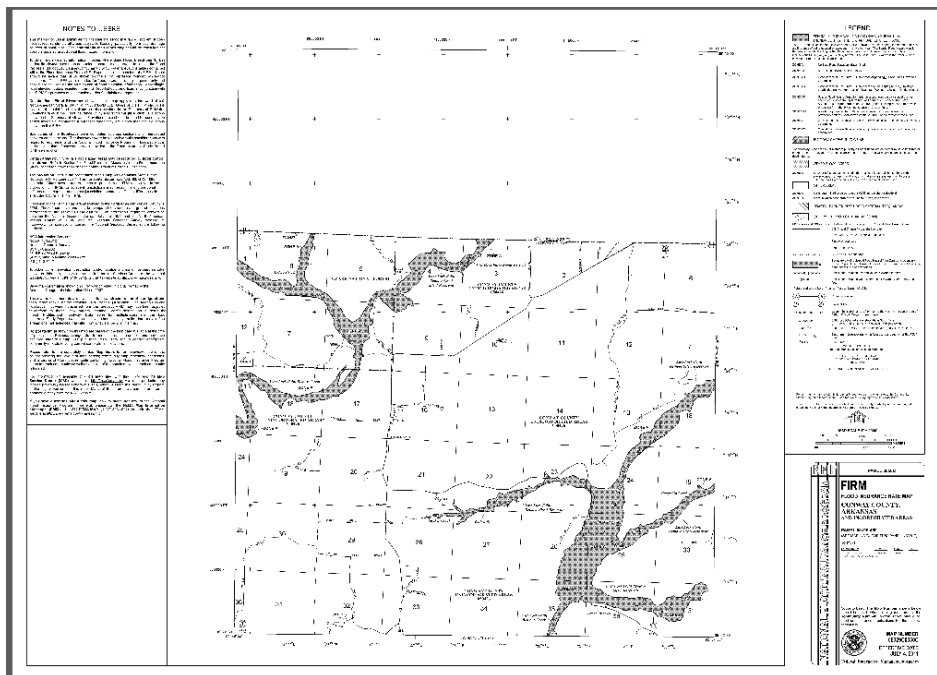
[FIRMette Web \[05029CIND0B\] \(fema.gov\)](https://www.fema.gov/firmette)

05029C0025C Effective Date 07/04/2011



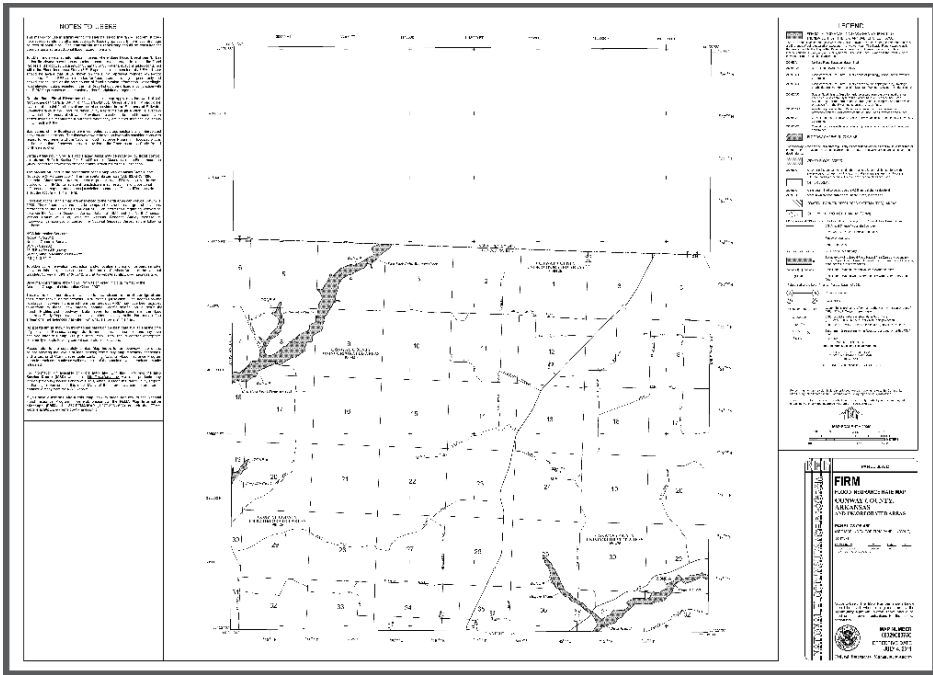
FIRMette Web [05029C0025C] (fema.gov)

05029C0050C Effective Date: 07/04/2011



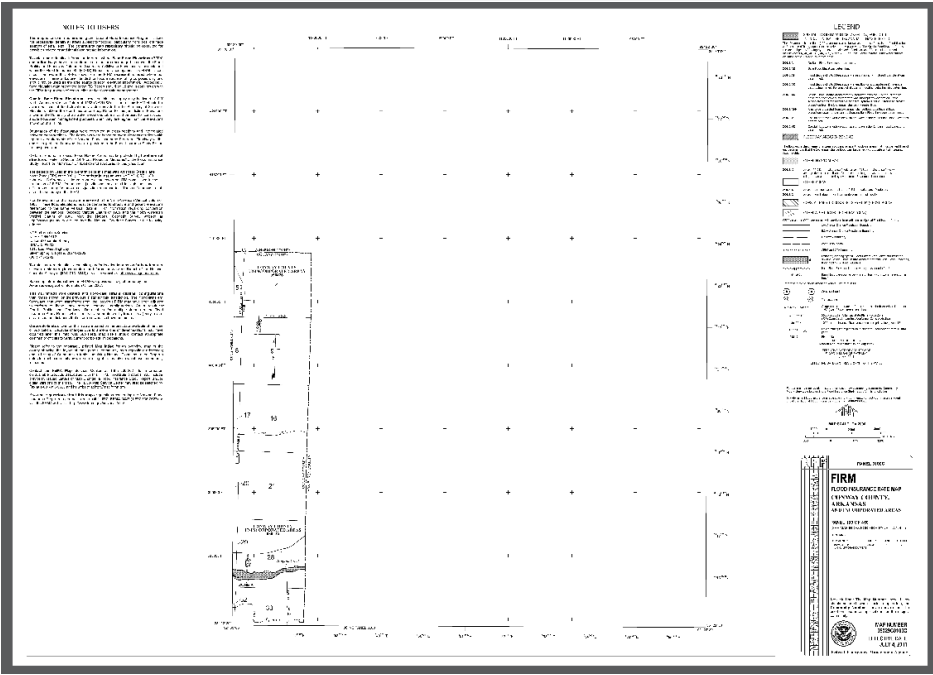
FIRMette Web [05029C0050C] (fema.gov)

05029C0075C Effective Date: 07/04/2011



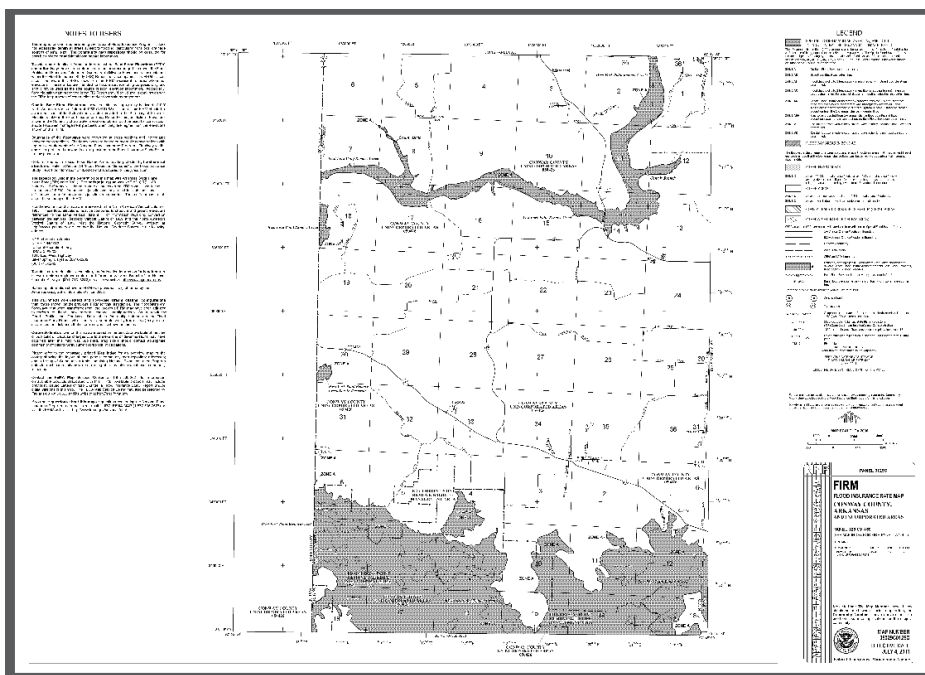
FIRMette Web [05029C0075C] (fema.gov)

05029C0100C Effective Date: 07/04/2011



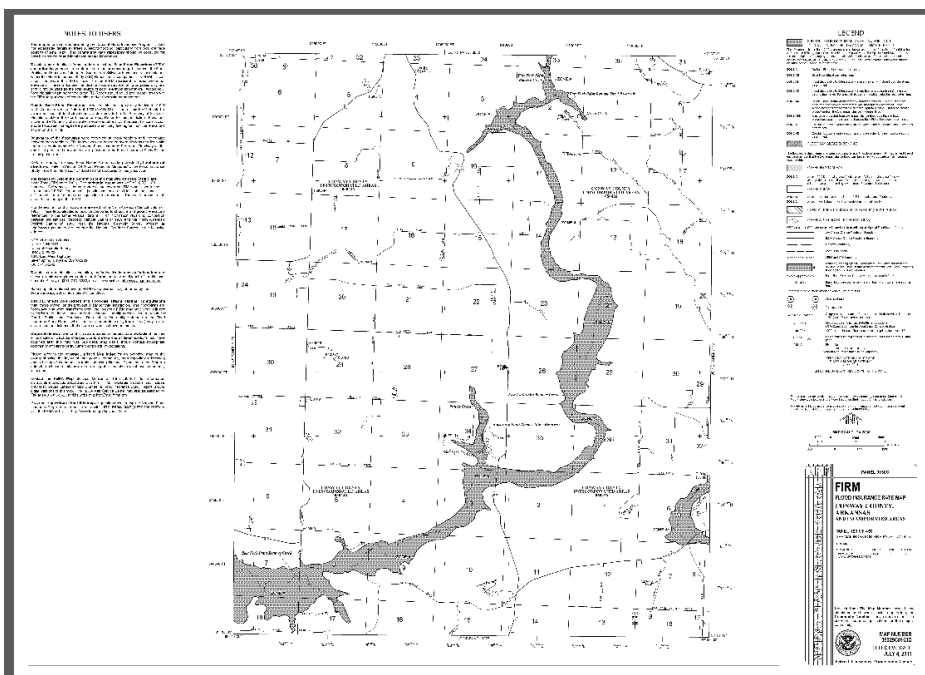
FIRMette Web [05029C0100C] (fema.gov)

05029C0125C Effective Date: 07/04/2011



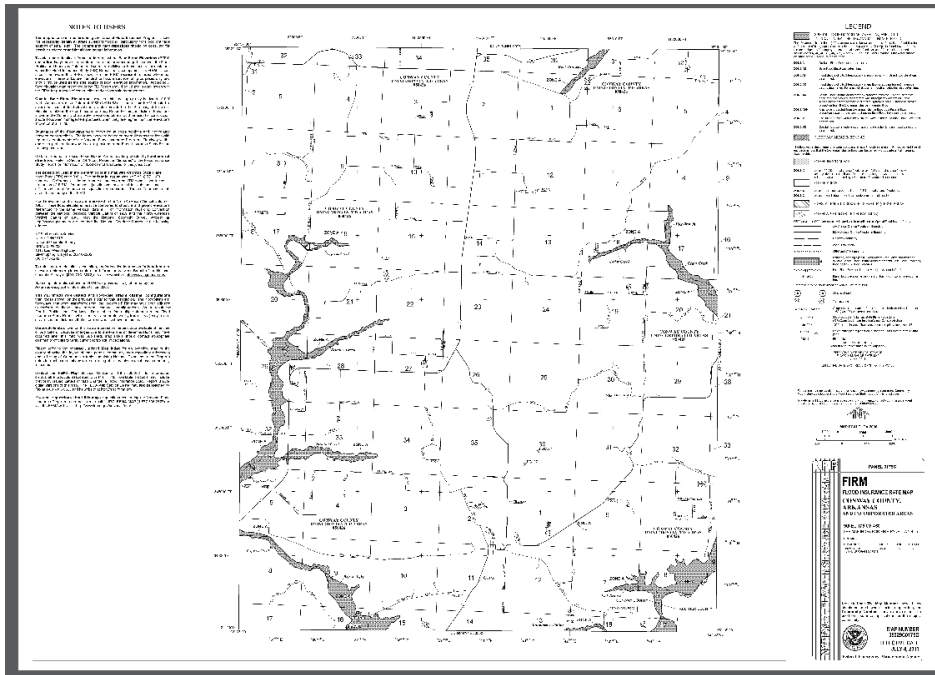
[FIRMette Web \[05029C0125C\] \(fema.gov\)](http://fema.gov)

05029C0150C Effective Date: 07/04/2011



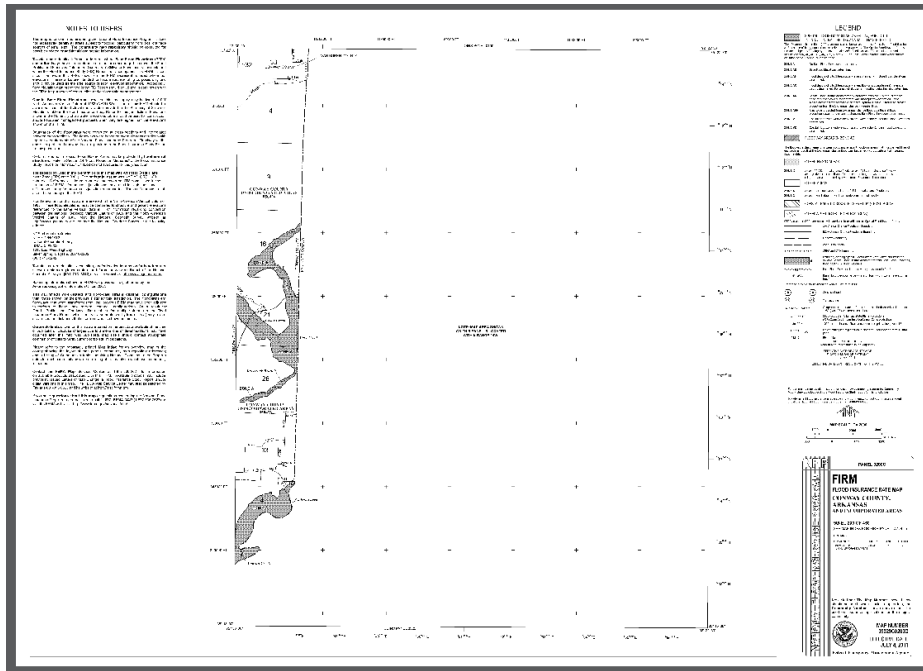
[FIRMette Web \[05029C0150C\] \(fema.gov\)](http://fema.gov)

05029C0175C Effective Date: 07/04/2011

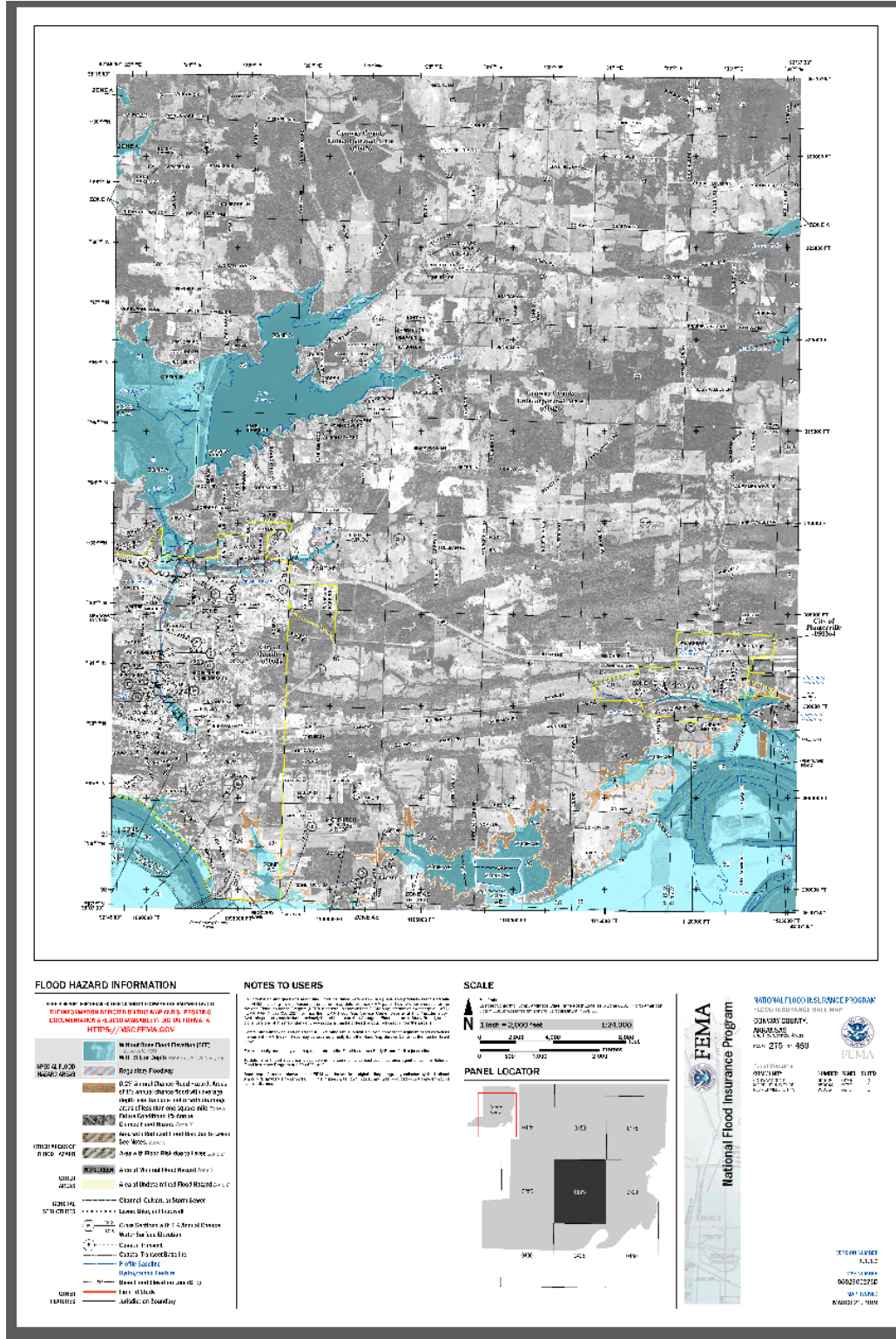


[FIRMette Web \[05029C0175C\] \(fema.gov\)](http://FIRMetteWeb[05029C0175C](fema.gov))

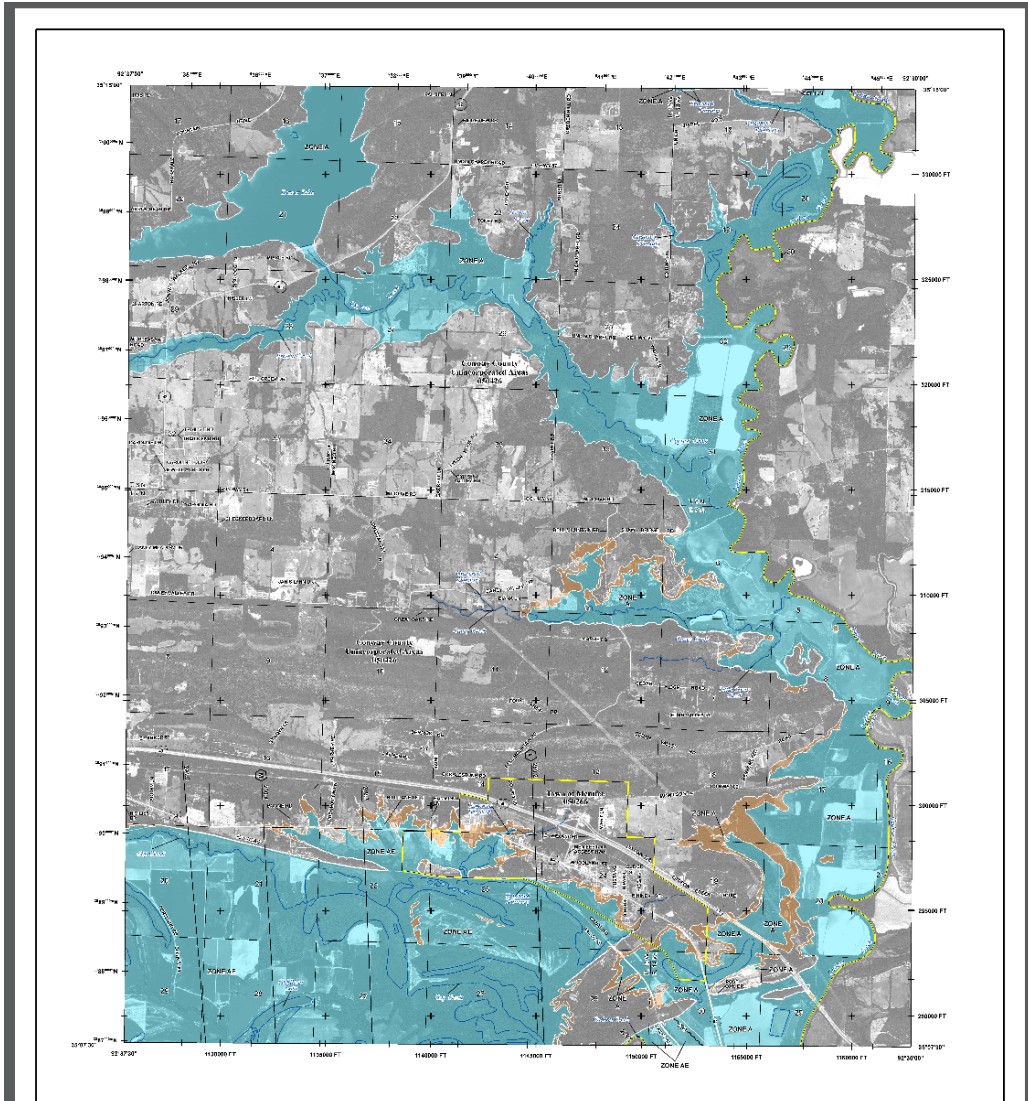
05029C0200C Effective Date: 07/04/2011



[FIRMette Web \[05029C0200C\] \(fema.gov\)](http://FIRMetteWeb[05029C0200C](fema.gov))



05029C0300D Effective Date: 03/21/2019



FLOOD HAZARD INFORMATION

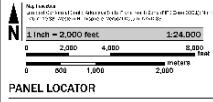
BEFORE BUYING PROPERTY, CHECK THE MAP FOR FLOOD HAZARD INFORMATION DEPICTED ON THIS MAP. IT IS SUPPORTING DOCUMENTATION. ALSO AVAILABLE IN DIGITAL FORMATS AT [HTTPS://MSC.FEMA.GOV](https://MSC.FEMA.GOV)

- SPECIAL ADDED HAZARD AREAS**
 - 0.2% Annual Chance Flood Hazard: Areas of 0.2% Annual Chance Flood with average depth less than one foot or with drainage areas of less than 500,000 sq. ft.
 - 1% Annual Chance Flood Hazard: Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than 500,000 sq. ft.
 - Area of Flood Risk due to Lower Sea Levels: Areas of Flood Risk due to Lower Sea Levels.
 - Area of Unincorporated Flood Hazard: Areas of Unincorporated Flood Hazard.
- OTHER AREAS OF FLOOD HAZARD**
 - Area of Unincorporated Flood Hazard: Areas of Unincorporated Flood Hazard.
- OTHER AREAS**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
 - Cross Sections with 1% Annual Chance Surface Elevations
 - Channel Inlet
 - Canal/Tunnel: Baseline
 - Profile Elevation
 - Bottom Profile Elevation
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary

NOTES TO USERS

This map is a general representation of flood hazard information. It is not intended to be used as a basis for engineering design or construction. The user should consult the National Flood Insurance Program (NFIP) Flood Insurance Study (FIS) and the National Flood Hazard Data (NFHD) for more detailed information. The user should also consult the National Flood Insurance Program (NFIP) Flood Insurance Study (FIS) and the National Flood Hazard Data (NFHD) for more detailed information.

SCALE



PANEL LOCATOR



FEMA
National Flood Insurance Program

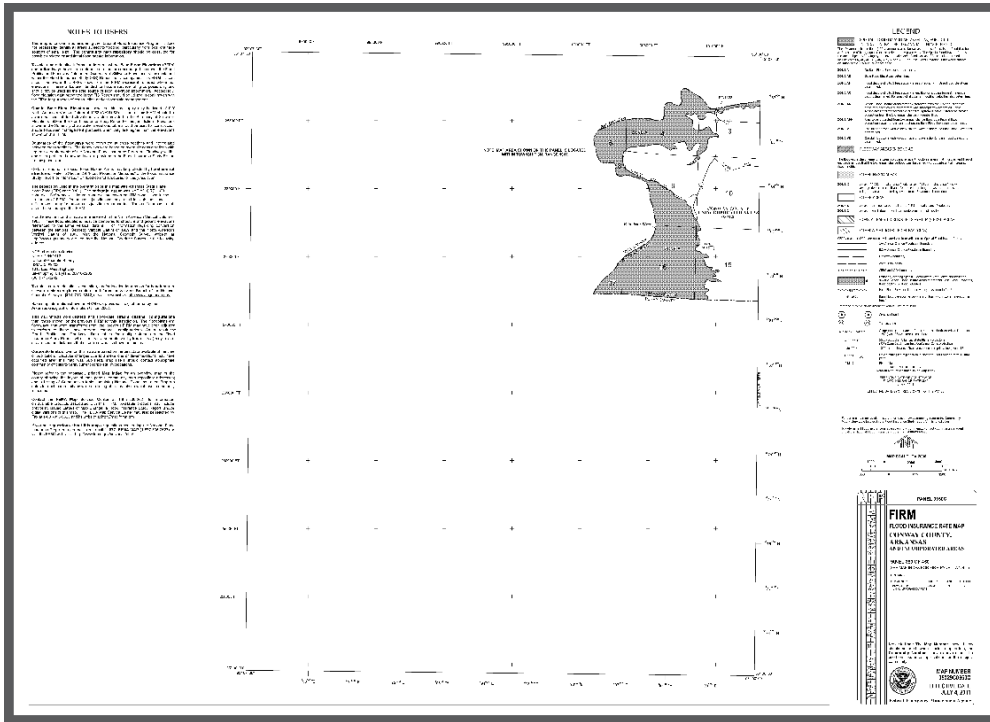
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
CONWAY COUNTY, ARKANSAS
Panel: 300 of 450

Panel Contact: CONWAY COUNTY, ARKANSAS
FEMA
FEMA
FEMA

4-800-368-5848
252-334-3
810 WENTWORTH
0529C0300D
MAP PREPARED
MARCH 21, 2019

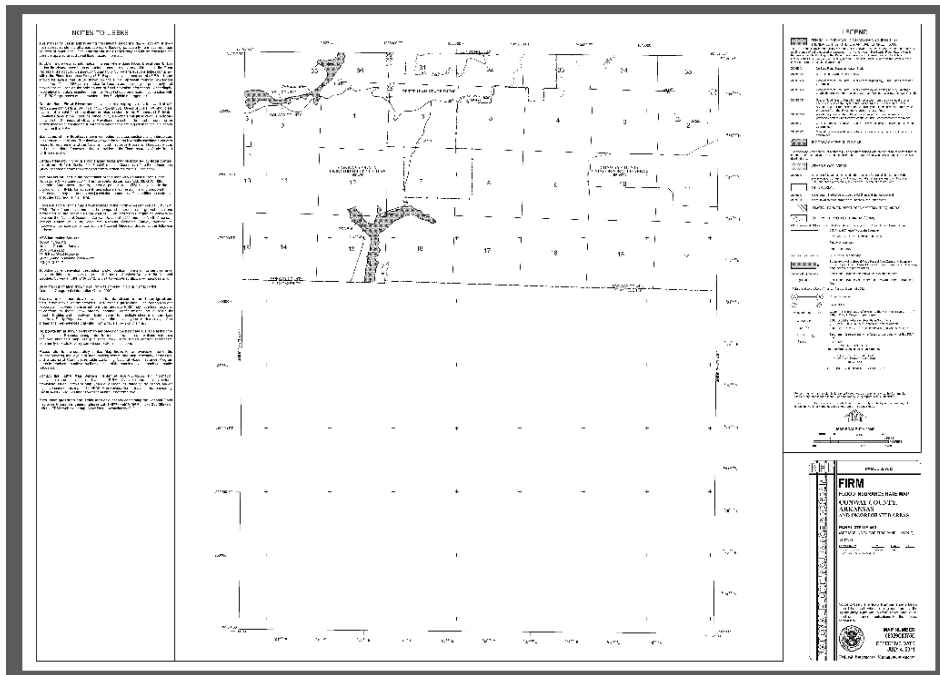
[FIRMette Web \[05029C0300D\] \(fema.gov\)](https://www.fema.gov)

05029C0350C Effective Date: 07/04/2011

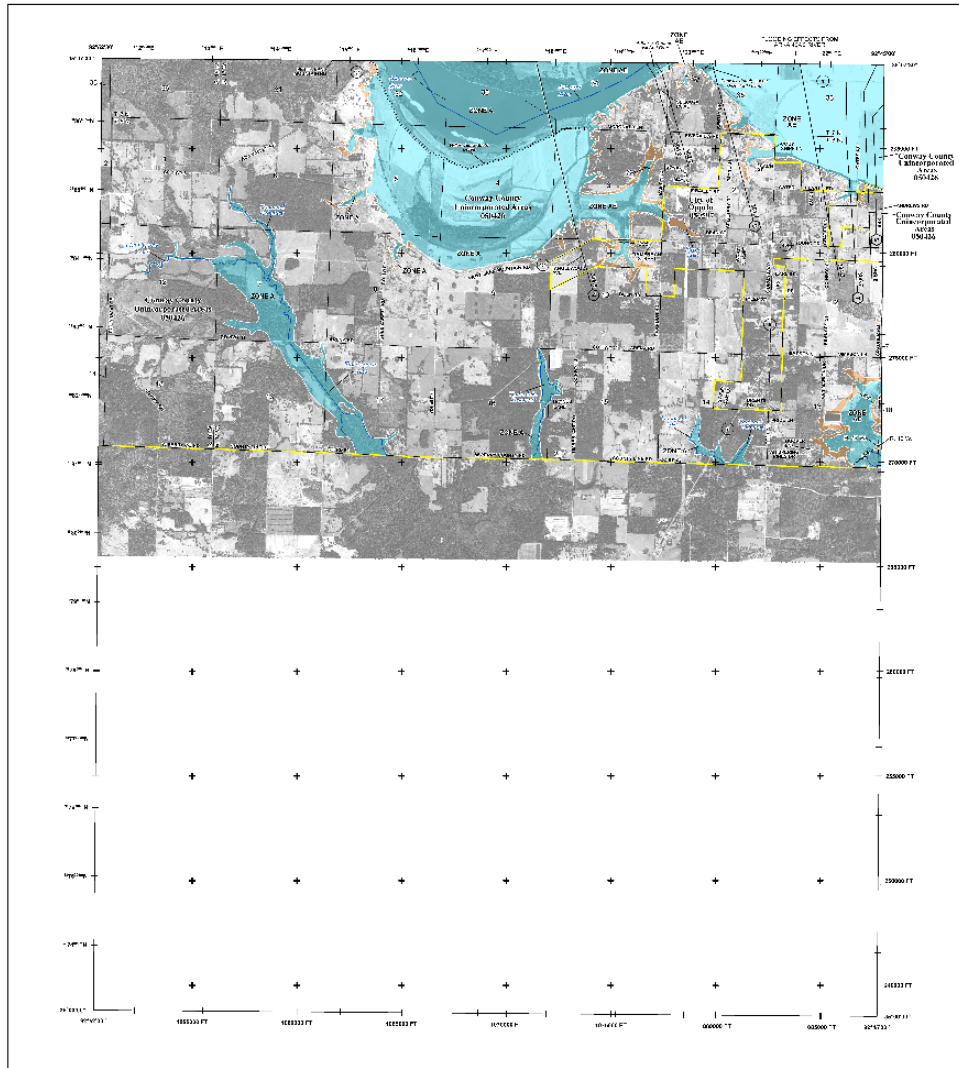


[FIRMette Web \[05029C0350C\] \(fema.gov\)](http://fema.gov)

05029C0375C Effective Date: 07/04/2011



[FIRMette Web \[05029C0375C\] \(fema.gov\)](http://fema.gov)



FLOOD HAZARD INFORMATION

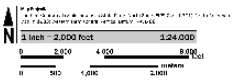
SEEK REVISIONS TO THIS MAP AND INFORMATION FROM FEMA. THE INFORMATION IS PROVIDED AS IS AND DOES NOT CONSTITUTE A GUARANTEE OF ACCURACY. FOR MORE INFORMATION, VISIT www.fema.gov.

- Special Flood Hazard Areas (SFHAs)**
 - 1. Areas with Flood Hazard (Zone A)
 - 2. Areas with Flood Hazard (Zone AE)
 - 3. Areas with Flood Hazard (Zone AH)
 - 4. Areas with Flood Hazard (Zone AO)
 - 5. Areas with Flood Hazard (Zone AR)
 - 6. Areas with Flood Hazard (Zone AV)
 - 7. Areas with Flood Hazard (Zone A1-30)
 - 8. Areas with Flood Hazard (Zone A99)
- Other Flood Hazard Areas**
 - 9. Areas with Flood Hazard (Zone X)
 - 10. Areas with Flood Hazard (Zone Y)
 - 11. Areas with Flood Hazard (Zone Z)
- Other Features**
 - 12. County Boundary
 - 13. State Boundary
 - 14. Water Body
 - 15. Road
 - 16. Rail
 - 17. Airport
 - 18. Dam
 - 19. Power Line
 - 20. Pipeline
 - 21. Canal
 - 22. Ditch
 - 23. Easement
 - 24. Easement
 - 25. Easement
 - 26. Easement
 - 27. Easement
 - 28. Easement
 - 29. Easement
 - 30. Easement

NOTES TO USERS

1. This map was prepared using the best available data. The user should verify the accuracy of the data before using it for any purpose. The user should also verify the accuracy of the data before using it for any purpose. The user should also verify the accuracy of the data before using it for any purpose.

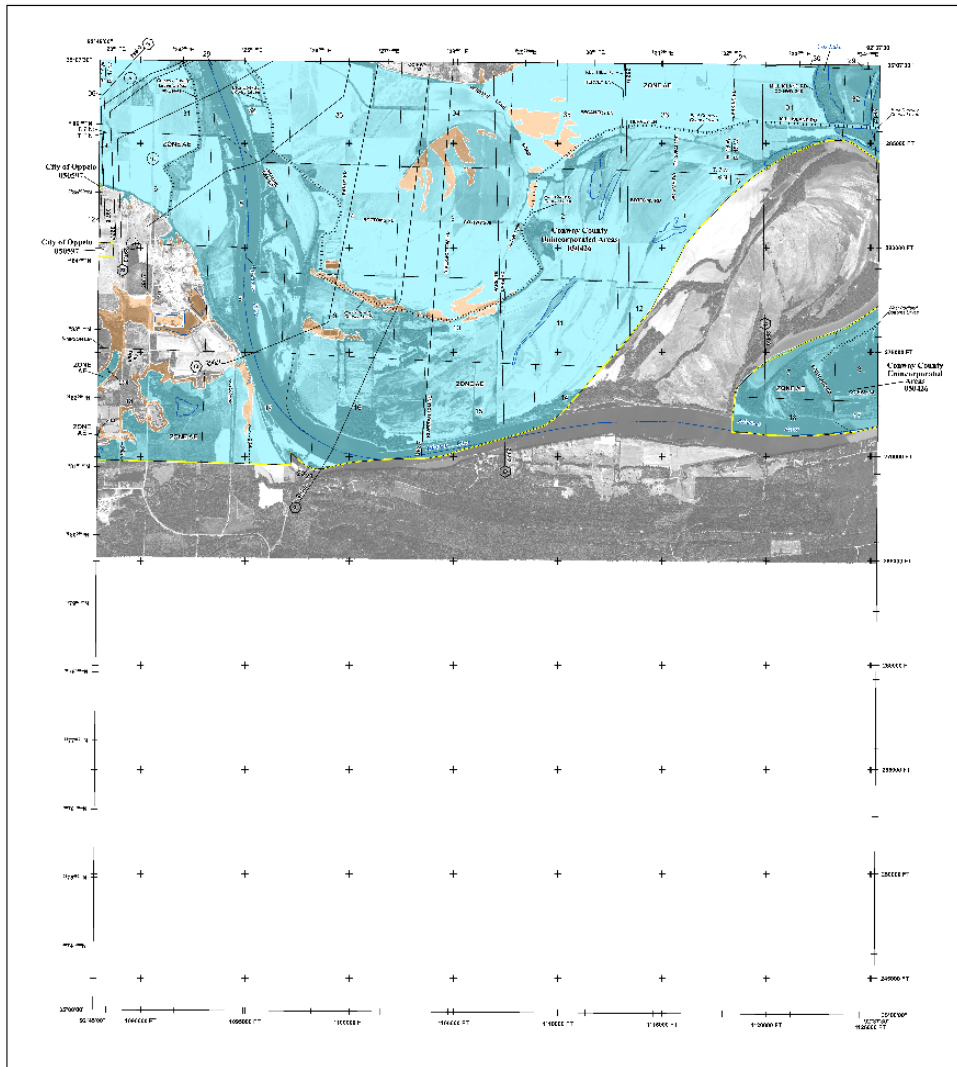
SCALE



PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
 ULTIMATE EDITION
 05029C0400D
 400 x 450
 1:2000
 03/21/2019



FLOOD HAZARD INFORMATION

SEE THE NOTES TO USERS AT THE BOTTOM OF THIS MAP FOR ADDITIONAL INFORMATION.
 THE INFORMATION ON THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. FEMA IS NOT RESPONSIBLE FOR ANY DAMAGE TO PROPERTY OR PERSONS ARISING FROM THE USE OF THIS MAP.
[HTTPS://WWW.FEMA.GOV](https://www.fema.gov)

- 15 YEAR FLOOD HAZARD AREAS**
 - 15 Year Flood Direction (Blue)
 - 15 Year Flood (Blue)
 - 15 Year Flood (Orange)
 - 15 Year Flood (Yellow)
 - 15 Year Flood (Green)
 - 15 Year Flood (Purple)
 - 15 Year Flood (Pink)
 - 15 Year Flood (Brown)
 - 15 Year Flood (Grey)
 - 15 Year Flood (Black)
- 200 YEAR FLOOD HAZARD AREAS**
 - 200 Year Flood (Blue)
 - 200 Year Flood (Orange)
 - 200 Year Flood (Yellow)
 - 200 Year Flood (Green)
 - 200 Year Flood (Purple)
 - 200 Year Flood (Pink)
 - 200 Year Flood (Brown)
 - 200 Year Flood (Grey)
 - 200 Year Flood (Black)
- OTHER FEATURES**
 - City of Uppella
 - City of Depue
 - Knox County Municipal Area
 - Waterway
 - Highway
 - Railroad
 - Power Line
 - Telephone Line
 - Gas Line
 - Water Line
 - Sanitary Sewer
 - Storm Sewer
 - Drainage Canal
 - Levee
 - Dike
 - Barrier
 - Other

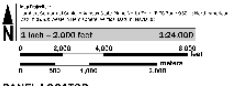
NOTES TO USERS

1. THIS MAP IS A REPRESENTATION OF THE FLOOD HAZARD INFORMATION AS OF THE EFFECTIVE DATE OF THIS MAP. FEMA IS NOT RESPONSIBLE FOR ANY DAMAGE TO PROPERTY OR PERSONS ARISING FROM THE USE OF THIS MAP.

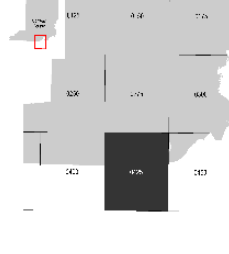
2. THE INFORMATION ON THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. FEMA IS NOT RESPONSIBLE FOR ANY DAMAGE TO PROPERTY OR PERSONS ARISING FROM THE USE OF THIS MAP.

3. THE INFORMATION ON THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. FEMA IS NOT RESPONSIBLE FOR ANY DAMAGE TO PROPERTY OR PERSONS ARISING FROM THE USE OF THIS MAP.

SCALE



PANEL LOCATOR



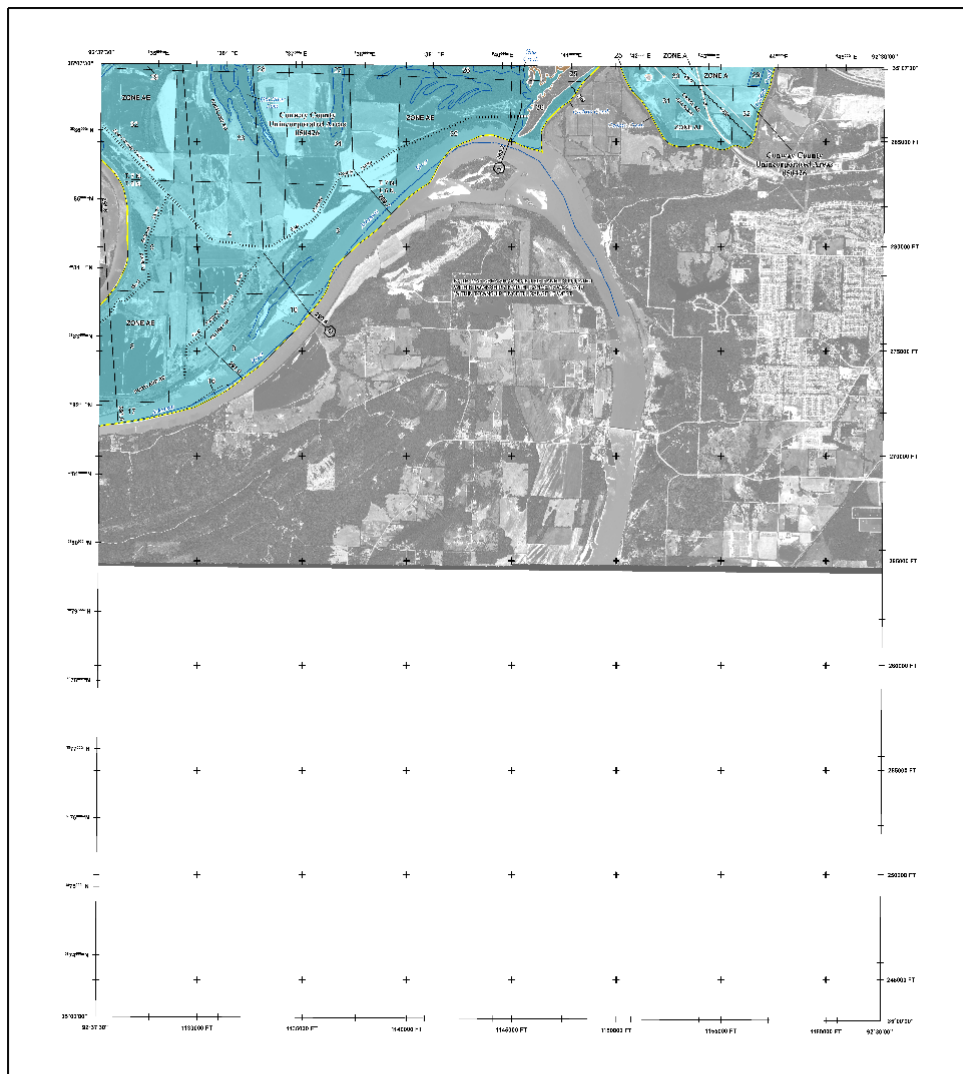
FEMA
 National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
 FLOOD INSURANCE RATE MAP

COMMUNITY EXHIBIT
 APPROXIMATE
 MAP NO. 425-045D

FEMA
 FEDERAL EMERGENCY MANAGEMENT AGENCY
 U.S. DEPARTMENT OF HOMELAND SECURITY

VERSION INFO
 2.3.30
 05029C0425D
 05/18/2019
 05029C0425D



FLOOD HAZARD INFORMATION

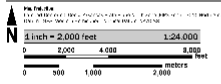
ALL FIRM MAPS ARE AVAILABLE FOR DOWNLOAD FROM THE FIRM WEBSITE. THE INFORMATION PROVIDED ON THIS MAP AND ITS SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTPS://MSC.FEMA.GOV](https://msc.fema.gov)

- SPECIAL FLOOD HAZARD AREAS**
 - Without Flood Hazard Indicator (BFLI)
 - With BFLI or CDFI (see map key for details)
 - Regulatory Floodway
 - 0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depths less than one foot or with drainage areas of less than one square mile
 - 1% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depths less than one foot or with drainage areas of less than one square mile
 - Areas with Reduced Flood Risk due to Levees (see map key for details)
 - Areas with Flood Risk due to Levees (see map key for details)
- OTHER AREAS OF FLOOD HAZARD**
 - 1% ACF Flood Hazard
 - 1% ACF of Undetermined Flood Hazard
- GENERAL SYMBOLS**
 - Chimney, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
 - 0.2% Annual Chance Flood Hazard
 - 1% Annual Chance Flood Hazard
 - Catchment
 - Coastal Inundation Base Line
 - Public Gasmain
 - Hydrographic Profile
 - Base Flood Elevation Line (BFL)
 - Line of Sight
 - Political Risk Boundary

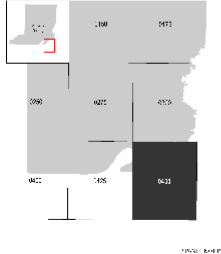
NOTES TO USERS

This map is a representation of the information that was available to the Federal Emergency Management Agency (FEMA) at the time of the map's production. It is not intended to be used for any purpose other than that for which it was originally intended. The information on this map is not to be used for any purpose other than that for which it was originally intended. The information on this map is not to be used for any purpose other than that for which it was originally intended.

SCALE



PANEL LOCATOR



FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
POLICY NUMBER: 450 450
COWAY COUNTY, ARKANSAS
POLICY NUMBER: 450 450

Plan Contact: 800.450.450
Customer Care: 800.450.450

Version: 2.2.0
Map Date: 03/21/2019
Approved: 03/21/2019

Link to the Flood Risk Report and Firm for Lake Conway- Point Remove Watershed:

[FRM_11110203_20150924.pdf \(fema.gov\)](#)

[Flood Risk Report Template final revised draft \(fema.gov\)](#)



FLOOD INSURANCE STUDY



CONWAY COUNTY, ARKANSAS AND INCORPORATED AREAS

Community Name	Community Number
CONWAY COUNTY (UNINCORPORATED AREAS)	050426
MENIFEE, TOWN OF	050266
MORRILTON, CITY OF	050044
OPPELO, CITY OF ¹	050597
PLUMERVILLE, CITY OF	050364

¹ NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED



Effective: July 4, 2011



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
05029CV000A

[Microsoft Word - Conway County FIS Report Cover.doc \(fema.gov\)](#)