

# Hazard Mitigation Plan Faulkner County, AR

## **Including**

Faulkner County Unincorporated

City of Conway

City of Damascus

City of Enola

City of Greenbrier

City of Guy

City of Holland

City of Mayflower

City of Mt. Vernon

City of Twin Groves

City of Vilonia

City of Wooster

Conway School District

Guy-Perkins School District

Greenbrier School District

Mayflower School District

Mount Vernon/Enola School District

St. Joseph School

Vilonia School District

University of Central Arkansas

Central Baptist College

Hendrix University

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## SECTION 1 – INTRODUCTION

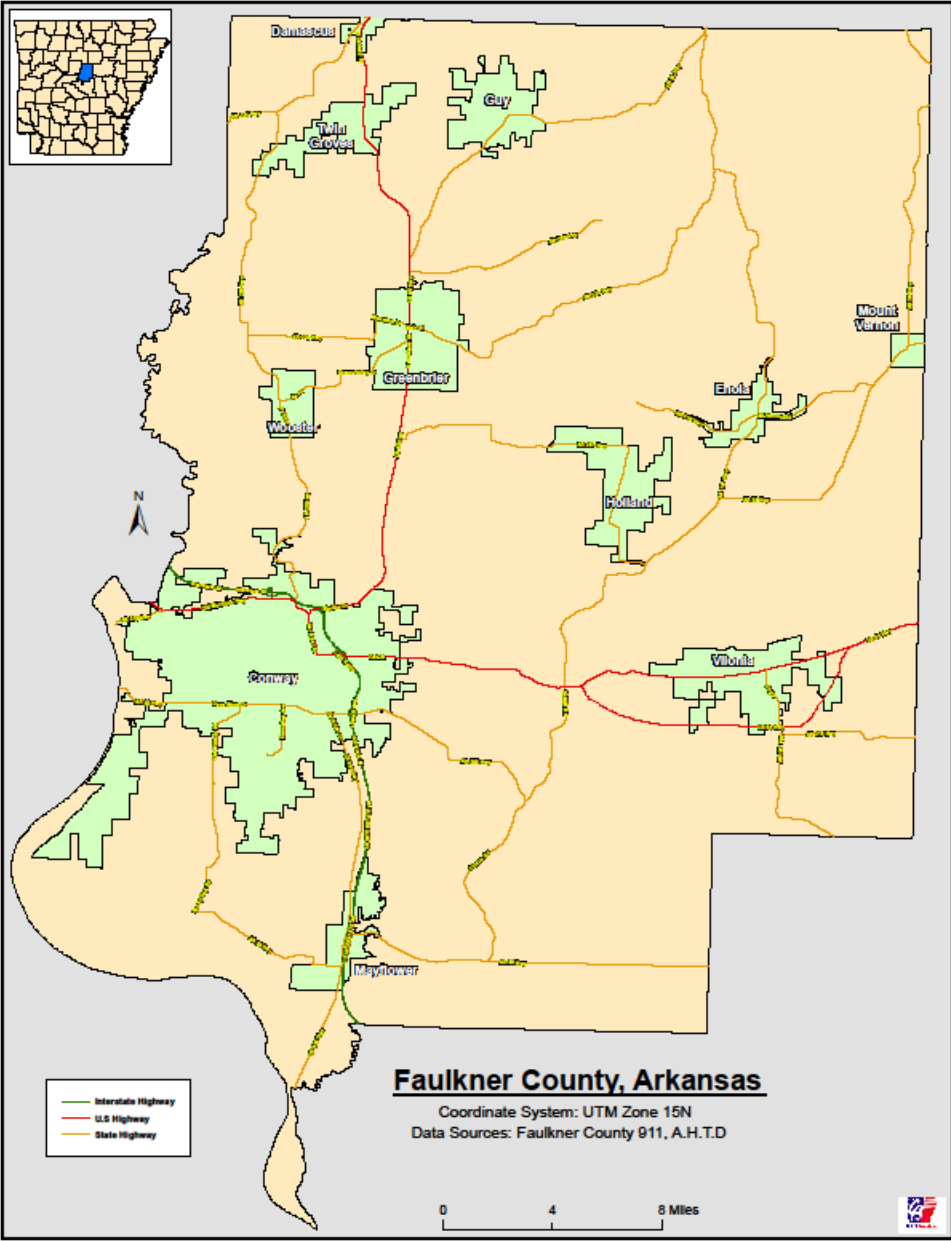
### 1.1 General Description

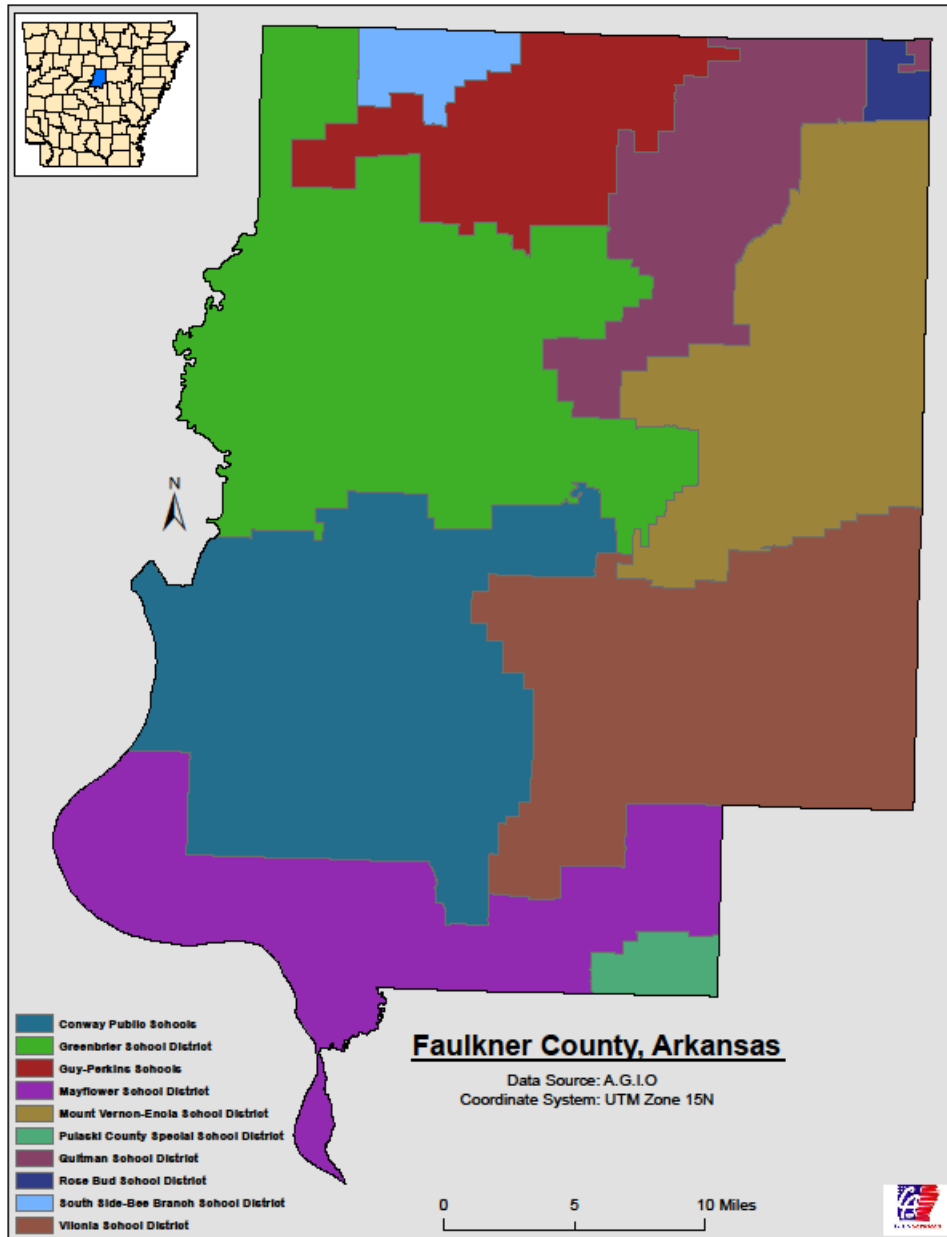
Hazard mitigation is the cornerstone of emergency management. It is defined as any sustained action to reduce or eliminate long-term risk to life and property from a hazard event. Mitigation encourages long-term reduction of hazard vulnerability. The goal of mitigation is to save lives and reduce property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

The goals of this Faulkner County Hazard Mitigation plan are to 1) Reduce the loss of life and decrease property losses in Faulkner County due to natural disasters, and 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. Specific planning objectives are to: 1) Identify, describe, and characterize the natural hazards to which Faulkner 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 Faulkner County Hazard Mitigation Plan was developed to assess the ongoing natural hazard mitigation activities in Faulkner County, to evaluate additional mitigation measures that should be undertaken, and to outline a strategy for implementation of mitigation projects. **The 2014 Update includes new information, hazard events, and relevant data within the timeframe of January 1, 2009 until June 30, 2014.** This plan is multi-jurisdictional with a planning area that includes all of unincorporated Faulkner County and eleven (11) municipalities within the County including the City of Conway, City of Enola, City of Greenbrier, City of Guy, City of Mayflower, City of Mt. Vernon, City of Vilonia, City of Wooster, City of Twin Groves, City of Damascus, and City of Holland. The locations of each of these jurisdictions within Faulkner County are shown on the following map. This plan also includes the five (5) public schools: Conway, Guy-Perkins, Greenbrier, Mayflower and Vilonia, one (1) private school: St. Joseph School, and three (3) universities: University of Central Arkansas, Central Baptist College, and Hendrix University.

2014 Update- There was one new participant added to the plan. The new participant is St. Joseph School, which is a K-12 private school located in Conway, AR.





Formal adoption and implementation of a hazard mitigation plan presents many benefits to Faulkner County and its residents. Faulkner County and participating jurisdictions 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 (PDM) and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). It requires that states and communities 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 Faulkner County’s eligibility for assistance from FEMA’s Flood Mitigation Assistance (FMA) program.



Faulkner County and participating communities will also gain additional credit points under FEMA's Community Rating System (CRS) program, which provides discounts on National Flood Insurance Program (NFIP) flood insurance premiums for residents of communities that voluntarily participate in this program. Most importantly, Faulkner County will be able to recover faster and more wisely from a disaster. Through planning and acting on local mitigation strategies, the city will reduce vulnerability to disasters and identify opportunities for mitigation. In addition, the communities may meet comprehensive planning and other planning requirements and achieve community goals.

## **1.2 Purpose and Authority**

The purpose of the Faulkner County Hazard Mitigation Plan is to provide guidance for hazard mitigation activities in Faulkner County. The Faulkner County Office of Emergency Management has the responsibility to coordinate all local activities relating to hazard evaluation and mitigation and to prepare and submit to FEMA a Local Mitigation Plan following the criteria established in 44 CFR 201.4 and Section 322 of the Disaster Mitigation Act of 2000 (Public Law 106-390). The Disaster Mitigation Act of 2000 became law on October 30, 2000, and amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the “Stafford Act”) (Public Law 93-288, as amended). Regulations for this activity can be found in Title 44 of the Code of Federal Regulations part 206, Subpart M.

This Plan meets requirements for a local mitigation plan under Interim Final Rule 44 CFR 201.4, published in the Federal Register by the Federal Emergency Management Agency (FEMA) on February 28, 2002. Meeting the requirements of the regulations cited above keeps Faulkner County qualified to obtain all disaster assistance including hazard mitigation grants available through the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended.

## **1.3 Community Information**

### **1.3.1 Topography, Physiography and Geology**

Faulkner County is located just north of the exact center of the state and is bordered by seven other counties: Van Buren, Cleburne, White, Lonoke, Pulaski, Perry and Conway. Physiographically, Faulkner County can be characterized as being dominated by approximately southwest northeast oriented parallel ridges and valleys. This ridge and valley topography was formed when a vast area south of the Ozark Uplift was pushed northward resulting in the folding of the underlying strata. The ridges are unfolded layers of rocks called anticlines, while the down folded areas between the ridges are called synclines. The synclines have filled with sediments eroded from the ridges and lighter material deposited by the streams has evolved into the fertile agricultural areas found in the county.

Faulkner County spans two major physiographic divisions of Arkansas: the Fourche Mountain subdivision of the Ouachita Mountains and the Arkansas Valley Division. The Fourche Mountain Subdivision of the Ouachitas encompasses the southern two-thirds of the county and is characterized by an abundance of sandstone of the Atoka and Jackford series with a few interbedded shale layers. The predominant landforms here are the aforementioned sharply-folded anticline ridges (Cadron Anticline and Bayou Meto Anticline) with relatively steep slopes separated by level valleys. Such physiographic characteristics are consistent with those of the foothills of the Ouachita Mountains and thus provide rationale for this part of the county being included in that particular division. Also located in the southern part of the county near the western extremity of Bayou Meto Anticline is Round Mountain. This mountain actually is a synclinal structure that was exposed as a result of the erosion of the surrounding environment by the Arkansas River

and its tributaries, leaving the mountain perched above the lowered river and stream valleys. Such a structure is referred to as an "erosional remnant."

The northern part of the county lies within the Arkansas River Valley Division and is considered to be transitional between the Ouachita Mountains to the south and the Ozark Uplift to the north. In this part of the county the anticline ridges are not as sharply folded as those farther south. These gently sloping ridges are characteristic of and consistent with the Physiography of the Arkansas River Valley in spite of the fact that the river does not flow through this part of the county. The Arkansas Valley physiographic division of Faulkner County is comprised mainly of Atoka Sandstone with some interbedded shale. This formation is dominant in the county and is sedimentary structure, which was laid down in a shallow sea over a duration of several million years some 300 million years ago during the Pennsylvanian Period. In addition to this dominant bedrock structure of sandstone and shale, there are some significant alluvial deposits along the many streams that (1) flow in and through the county, (2) flow along a portion of the western boundary (Cadron Creek), and (3) provide an important accumulation of river-deposited soils where the Arkansas River forms the southwestern boundary.

Across the northern part of the county run at least four faults that provide evidence of some earthquake activity during the county's pre-history. In 1933 some earthquake activity was recorded close to the central part of the county near Naylor and Enola. Earthquakes have always been commonplace in Faulkner County but not always to the degree of magnitude, intensity, and amount as manifested in the 1983 swarm. Earthquakes in Faulkner County are a result of the brittle and fractured structure of the underlying crust. The intensive folding and fracturing, which occurred during the formation of the Ouachita Mountains during the Pennsylvanian Period, has caused this area to be somewhat unstable since that episode of mountain building.

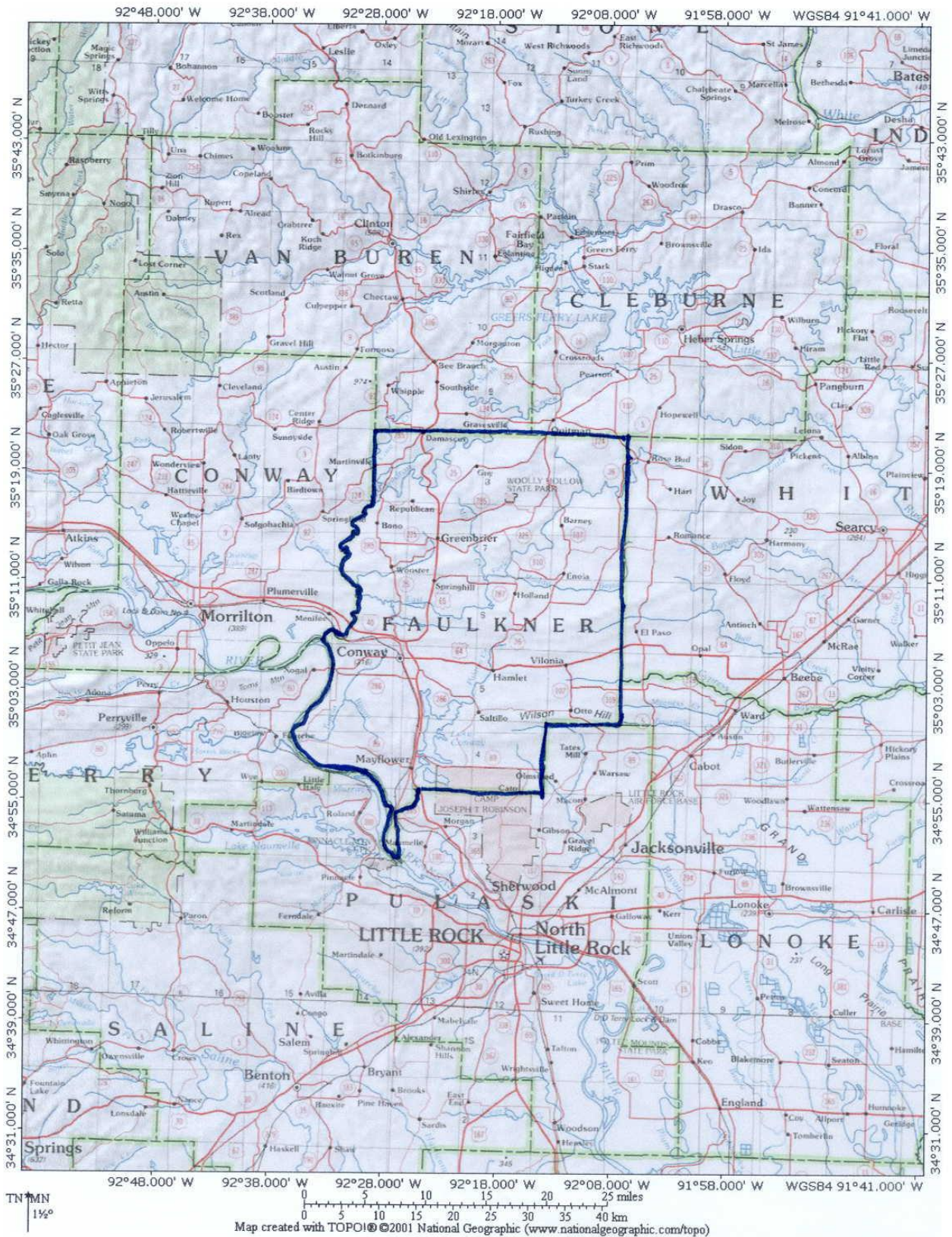
Mineral resources have never been a matter of consequence in Faulkner County; however, in recent times there has been some oil and gas exploration with a moderate amount of drilling. There is a good possibility of gas deposits below the surface but at present it is not economically feasible to indulge in widespread drilling and extraction.

The soils of Faulkner County are considered to be the primary natural resources of the area, providing for crops and livestock. Soil use has become more diversified over the past 100 years, progressing primarily from producing cotton as the principal cash crop to soybeans, rice, wheat, sorghum, and livestock consisting mainly of cattle, milk cows, and pigs. Six major types represent the soil resources of Faulkner County: Linker-Mountainburg, Leadville-Taft, Moreland-Perry, Spradra-Ouachita-Amy, Roxana-Gallion, and Muskogee-Salisaw.

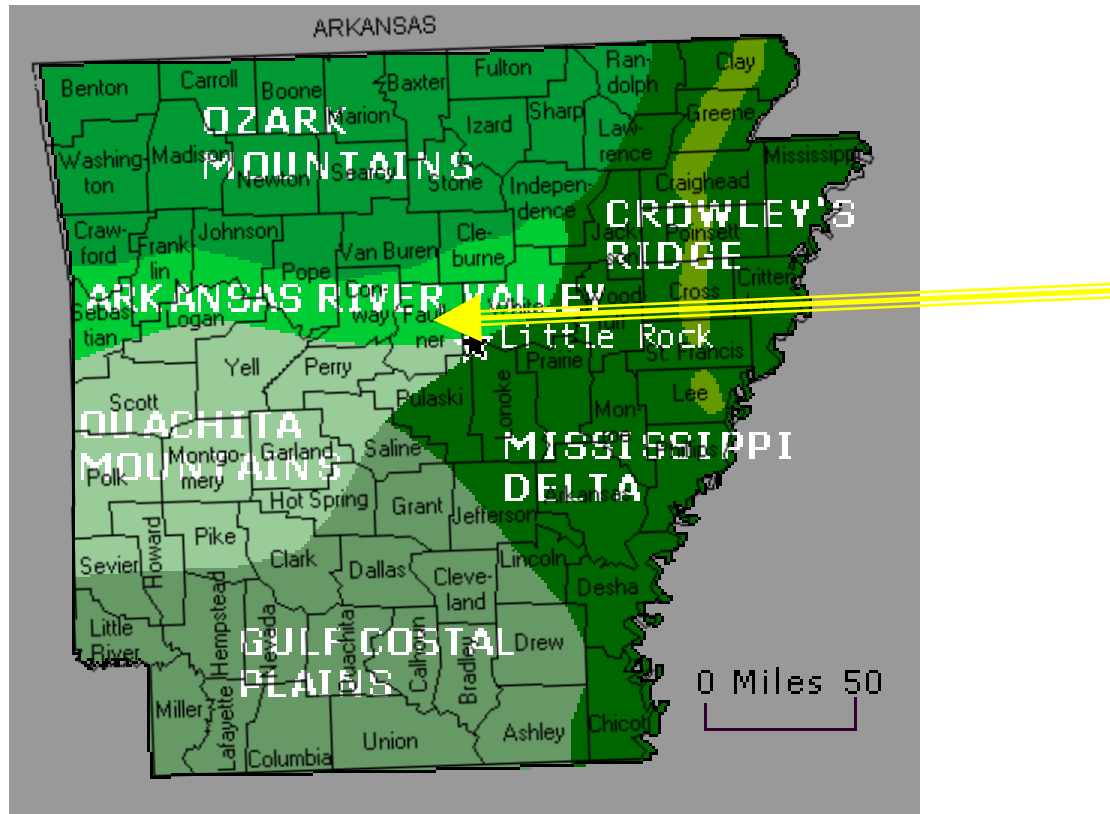
The Arkansas River Valley lies between the Ozark Region and the Ouachita Region. The area is dominated by the Arkansas River, which originates in the mountains of Colorado. The river has been greatly modified to make it navigable commercially. The largest city in Arkansas, Little Rock, is located on its banks as are several larger Arkansas cities including Russellville, Ft. Smith, Conway and Pine

Bluff. It is a valley that has been changed by running water. It is another alluvial region of Arkansas. It is an alluvial valley that is crossed by the Petite Jean and Maumelle Rivers with mixed vegetation. The Arkansas Valley has the highest and most impressive peaks of the State. It contains the Arkoma basin and supports agricultural activity. The soils are classified as Bottomland Terrace. They are derived from sandstone and shale rocks. They are sandy and silty in texture and support a mixed deciduous and evergreen forest. Prime farmland is supported in the valley floor. Magazine Mountain, the state's highest peak is included in this area, as is Petit Jean Mountain. Read about Petit Jean, which is a part of the Ouachita Mountains in the region Ouachitas. Magazine Mountain is part of the Arkoma Basin. Arkoma was a plateau millions of years ago and as erosion occurred these mountains were left standing above the erosion plane. Paris, Arkansas, is a natural obelisk. It is 2,850 feet above sea level and is the highest point in Arkansas. Several endemic species exist on this mountain that are not recorded anywhere else in the world. They include the Maple-leafed Oak, two land snails, a beetle, and an amphipod "Stygobromus elatus" (Holsinger).

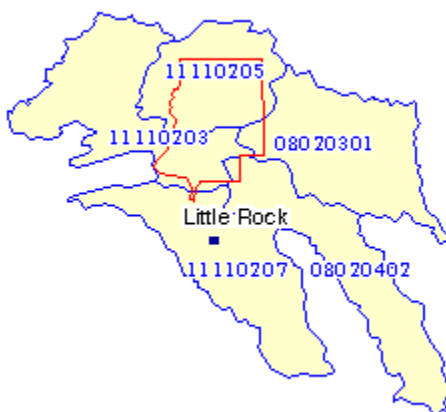
The Topography Map (Figure 1.3) is included below.



Topography of Faulkner County and vicinity showing locations of the physiographic province comprising the Arkansas River Valley and Quachita Mountains.



Watersheds in Faulkner County - Lake Conway & the Cadron Water shed



- [08020301](#) Lower White-Bayou Des Arc; state(s): AR
- [08020402](#) Bayou Meto; state(s): AR
- [11110203](#) Lake Conway-Point Remove; state(s): AR
- [11110205](#) Cadron; state(s): AR
- [11110207](#) Lower Arkansas-Maumelle; state(s): AR

### 1.3.2. Climate

The average daily temperature in Faulkner County is 60.4° with a low daily average of 27.5° in January and high daily average temperature of 92° in July. The average maximum temperature for the year is 71.8°, and minimum average low of 49°. The average precipitation for the year is 49.04 inches. The highest average monthly rainfall of 5.2 inches occurs in May and the lowest average monthly rainfall of 2.9 inches occurs in August. Faulkner County averages 4 inches of snowfall each year.

2014 Update- The above mentioned temperatures were all roughly one (1) degree cooler than the in the previous version of the plan.

### 1.3.3. Population and Demographics

#### Faulkner County

Faulkner County, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	113,237	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	658	0.58%
Asian alone	1,277	1.13%
Black or African American alone	11,568	10.22%
Native Hawaiian and Other Pacific native alone	48	0.04%
Some other race alone	1,997	1.76%
Two or more races	2,269	2.00%
White alone	95,420	84.27%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	108,802	96.08%
Persons of Hispanic or Latino Origin	4,435	3.92%
<b>Population by Gender</b>		
Female	57,614	50.88%
Male	55,623	49.12%
<b>Population by Age</b>		
Persons 0 to 4 years	7,931	7.00%
Persons 5 to 17 years	19,811	17.50%
Persons 18 to 64 years	74,177	65.51%
Persons 65 years and over	11,318	9.99%

## Conway

Conway, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	58,908	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	260	0.44%
Asian alone	1,120	1.90%
Black or African American alone	9,177	15.58%
Native Hawaiian and Other Pacific native alone	32	0.05%
Some other race alone	1,392	2.36%
Two or more races	1,317	2.24%
White alone	45,610	77.43%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	55,910	94.91%
Persons of Hispanic or Latino Origin	2,998	5.09%
<b>Population by Gender</b>		
Female	30,428	51.65%
Male	28,480	48.35%
<b>Population by Age</b>		
Persons 0 to 4 years	4,152	7.05%
Persons 5 to 17 years	9,208	15.63%
Persons 18 to 64 years	40,400	68.58%
Persons 65 years and over	5,148	8.74%

## Damascus

Damascus, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	382	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	4	1.05%
Black or African American alone		0%
Two or more races	5	1.31%
White alone	373	97.64%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	378	98.95%
Persons of Hispanic or Latino Origin	4	1.05%
<b>Population by Gender</b>		
Female	188	49.21%
Male	194	50.79%
<b>Population by Age</b>		
Persons 0 to 4 years	25	6.54%
Persons 5 to 17 years	67	17.54%
Persons 18 to 64 years	231	60.47%
Persons 65 years and over	59	15.45%



## Enola

Enola, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	338	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	3	0.89%
Black or African American alone	3	0.89%
Some other race alone		0%
Two or more races	6	1.78%
White alone	326	96.45%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	335	99.11%
Persons of Hispanic or Latino Origin	3	0.89%
<b>Population by Gender</b>		
Female	169	50.00%
Male	169	50.00%
<b>Population by Age</b>		
Persons 0 to 4 years	25	7.40%
Persons 5 to 17 years	70	20.71%
Persons 18 to 64 years	192	56.80%
Persons 65 years and over	51	15.09%

## Greenbrier

Greenbrier, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	4,706	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	35	0.74%
Asian alone	25	0.53%
Black or African American alone	37	0.79%
Some other race alone	57	1.21%
Two or more races	97	2.06%
White alone	4,455	94.67%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	4,546	96.60%
Persons of Hispanic or Latino Origin	160	3.40%
<b>Population by Gender</b>		
Female	2,404	51.08%
Male	2,302	48.92%
<b>Population by Age</b>		
Persons 0 to 4 years	434	9.22%
Persons 5 to 17 years	1,006	21.38%
Persons 18 to 64 years	2,788	59.24%
Persons 65 years and over	478	10.16%

## Guy

Guy, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	708	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	6	0.85%
Asian alone	5	0.71%
Black or African American alone	1	0.14%
Two or more races	9	1.27%
White alone	687	97.03%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	703	99.29%
Persons of Hispanic or Latino Origin	5	0.71%
<b>Population by Gender</b>		
Female	363	51.27%
Male	345	48.73%
<b>Population by Age</b>		
Persons 0 to 4 years	53	7.49%
Persons 5 to 17 years	140	19.77%
Persons 18 to 64 years	415	58.62%
Persons 65 years and over	100	14.12%

## Holland

Holland, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	557	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	4	0.72%
Black or African American alone	1	0.18%
Some other race alone	2	0.36%
Two or more races	16	2.87%
White alone	534	95.87%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	541	97.13%
Persons of Hispanic or Latino Origin	16	2.87%
<b>Population by Gender</b>		
Female	272	48.83%
Male	285	51.17%
<b>Population by Age</b>		
Persons 0 to 4 years	23	4.13%
Persons 5 to 17 years	106	19.03%
Persons 18 to 64 years	351	63.02%
Persons 65 years and over	77	13.82%

## Mayflower

Mayflower, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	2,234	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	10	0.45%
Asian alone	4	0.18%
Black or African American alone	111	4.97%
Native Hawaiian and Other Pacific native alone	1	0.04%
Some other race alone	17	0.76%
Two or more races	43	1.92%
White alone	2,048	91.67%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	2,181	97.63%
Persons of Hispanic or Latino Origin	53	2.37%
<b>Population by Gender</b>		
Female	1,139	50.98%
Male	1,095	49.02%
<b>Population by Age</b>		
Persons 0 to 4 years	148	6.62%
Persons 5 to 17 years	332	14.86%
Persons 18 to 64 years	1,402	62.76%
Persons 65 years and over	352	15.76%

## Mount Vernon

Mount Vernon, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	145	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	1	0.69%
Asian alone	1	0.69%
Some other race alone		0%
Two or more races	6	4.14%
White alone	137	94.48%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	145	100.00%
Persons of Hispanic or Latino Origin	0	0%
<b>Population by Gender</b>		
Female	76	52.41%
Male	69	47.59%
<b>Population by Age</b>		
Persons 0 to 4 years	13	8.97%
Persons 5 to 17 years	19	13.10%
Persons 18 to 64 years	96	66.21%
Persons 65 years and over	17	11.72%

## Twin Groves

Twin Groves, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	335	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	5	1.49%
Black or African American alone	185	55.22%
Two or more races	5	1.49%
White alone	140	41.79%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	333	99.40%
Persons of Hispanic or Latino Origin	2	0.60%
<b>Population by Gender</b>		
Female	167	49.85%
Male	168	50.15%
<b>Population by Age</b>		
Persons 0 to 4 years	12	3.58%
Persons 5 to 17 years	64	19.10%
Persons 18 to 64 years	210	62.69%
Persons 65 years and over	49	14.63%

## Vilonia

Vilonia, Arkansas - Overview	2010 Census	
	Counts	Percentages
Total Population	3,815	100.00%
<b>Population by Race</b>		
American Indian and Alaska native alone	25	0.66%
Asian alone	8	0.21%
Black or African American alone	21	0.55%
Some other race alone	30	0.79%
Two or more races	65	1.70%
White alone	3,666	96.09%
<b>Population by Hispanic or Latino Origin (of any race)</b>		
Persons Not of Hispanic or Latino Origin	3,714	97.35%
Persons of Hispanic or Latino Origin	101	2.65%
<b>Population by Gender</b>		
Female	1,963	51.45%
Male	1,852	48.55%
<b>Population by Age</b>		
Persons 0 to 4 years	338	8.86%
Persons 5 to 17 years	974	25.53%
Persons 18 to 64 years	2,201	57.69%
Persons 65 years and over	302	7.92%

## Wooster

Wooster, Arkansas - Overview	2010 Census		
	Counts	Percentages	
Total Population	860	100.00%	!
<b>Population by Race</b>			
American Indian and Alaska native alone	8	0.93%	
Asian alone	6	0.70%	
Black or African American alone		0%	
Some other race alone	8	0.93%	
Two or more races	21	2.44%	
White alone	817	95.00%	
<b>Population by Hispanic or Latino Origin (of any race)</b>			
Persons Not of Hispanic or Latino Origin	846	98.37%	
Persons of Hispanic or Latino Origin	14	1.63%	
<b>Population by Gender</b>			
Female	442	51.40%	
Male	418	48.60%	
<b>Population by Age</b>			
Persons 0 to 4 years	55	6.40%	
Persons 5 to 17 years	195	22.67%	
Persons 18 to 64 years	512	59.53%	
Persons 65 years and over	98	11.40%	

**Table 1.3.3-1: Population Changes in Faulkner County and Incorporated Jurisdictions Since 1990**

	2005 Census	2014 Census	Percent Change 2005-2014
Faulkner County (including cities)	97,147	120,768	43.3%
Conway	51,999	63,816	22.7%
Damascus	314	382	24.4%
Enola	192	345	79.6%
Greenbrier	3,615	5,111	41.3%
Guy	551	711	29.0%
Holland	595	542	- 8.9%
Mayflower	1,900	2,314	21.7%
Mount Vernon	147	148	00.6%
Twin Groves	287	341	18.8%
Vilonia	2,719	4,226	55.4%
Wooster	665	940	41.3%
Unincorporated Faulkner County Areas	33,422	33,145	-00.8%

#### FAULKNER COUNTY SCHOOL INFORMATION

Conway Public School District: 10 Elementary Schools 4 Middle and 1 Jr. High, 1 Sr. High

Full-Time Teachers: 621

Grade Span: PreK-12

Number of Students: 9771

Greenbrier Public School: 3 Elementary, 1 Middle School, 1 Jr. High and 1 High School

Full-Time Teachers: 237

Grade Span: PreK-12

Number of Students: 3375

Guy-Perkins School District has 1 Elementary and 1 High School

Full-Time Teachers: 57

Grade Span: PreK-12

Number of Students: 408

Mayflower Public School District has 1 Elementary, 1 Middle School and 1 High School

Full-Time Teachers: 103

Grade Span: PreK-12

Number of Students: 1123

Mt. Vernon –Enola Schools District has 1 Elementary School and 1 High School

Full-Time Teachers: 43  
Grade Span: PreK-12  
Number of Students: 497

Vilonia Public School District has 1 Elementary, 1 Middle School, 1 Jr. High and 1 High School  
Full-Time Teachers: 222  
Grade Span: PreK-12  
Number of Students: 3228

St. Joseph School has 1 elementary, 1 Middle School, 1 High School  
Full-Time Teachers: 39  
Grade Span: PreK-12  
Number of Students: 445

### **Places in Faulkner County**

- Conway (County Seat)	city	Incorporated Area
- Damascus	town	Incorporated Area
- Enola	town	Incorporated Area
- Greenbrier	city	Incorporated Area
- Guy	town	Incorporated Area
- Holland	city	Incorporated Area
- Mayflower	city	Incorporated Area
- Mount Vernon	city	Incorporated Area
- Twin Groves	town	Incorporated Area
- Vilonia	town	Incorporated Area
- Wooster	town	Incorporated Area

**Note:** The above listing includes cities, towns, villages, and boroughs as per the [US Census Bureau](#).

#### **US Census Definitions:**

**Place:** A concentration of population either legally bounded as an incorporated place, or identified as a Census Designated Place (CDP) including communities, and urban zoning in Puerto Rico. Incorporated places have legal descriptions of borough (except in Alaska and New York), city, town (except in New England, New York, and Wisconsin), or village.

**Incorporated Place:** A type of governmental unit incorporated under state law as a city, town (except the New England states, New York, and Wisconsin), borough (except in Alaska and New York), or village and having legally prescribed limits, powers, and functions.

Other places in Faulkner County not listed by the US Census Bureau

- Barney
- Beryl
- Brumley

- Garland Springs
- Gleason
- Gold Creek
- Gold Lake Estates
- Gravesville
- Hammonsville
- Linder
- Lollie
- Martinville
- McGintytown
- Naylor
- Otto
- Pleasant Valley
- Preston
- Republican
- Saltillo
- Skunkhollow
- Springhill

#### **1.3.4 Capability Assessment**

The capability of Faulkner County’s county and city governments to address mitigation issues was determined through the collection of “capability assessment” information about each jurisdiction. For each, it was determined if a jurisdiction had adopted ordinances implementing such mitigation-related activities as storm water management, stream management, zoning management, subdivision management and floodplain management. Information was also documented regarding the jurisdiction’s participation in the floodplain management program, including its join date, NFIP number and maintenance of elevation certificates.

The following capabilities describe what the County, Cities, Universities and School Districts may or may not have to implement and maintain mitigation efforts, are addressed in the existing authorities, policies, programs and resources available to accomplish hazard mitigation;

Cities of Conway, Damascus, Enola, Greenbrier, Guy, Holland, Mayflower, Mt. Vernon, Twin Groves, Vilonia and Wooster each are different in terms of staffing, funding, policies and program giving them the ability to carry out their local hazard mitigation goals. 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, and provide emergency preparedness information to area residents through FEMA brochures.

There are eleven incorporated municipalities in Faulkner County in addition to Faulkner County government. Communities range in size. Damascus, Enola, Guy, Holland, Mt. Vernon, Twin Groves and Wooster all have populations less than 1,000, and therefore have less capacity and resources to reduce losses in the future when compared to Conway, Greenbrier, Mayflower, Vilonia and unincorporated Faulkner County. Each of the School Districts and Universities follow their respective jurisdiction’s policies and programs. These education institutions also



have varying resources to implement mitigation activities. It is likely grant funds may be needed to help all jurisdictions implement identified mitigation projects. Each jurisdiction does have an effective governing body (quorum court, city council, or board) and executive leadership (county judge, mayor, superintendent) that will enable it to expand on and improve the policies set forth in this plan. Each jurisdiction may also expand on its capabilities and increase its ability to implement these projects by adding staff and acquiring training when the governing body of each jurisdiction deems it appropriate and financially feasible. The governing body of each jurisdiction may also consider levying taxes/fees in order to raise additional funds to increase its capabilities. Most importantly, all of the jurisdictions in this plan have worked, and will continue to work closely, with Central Arkansas Planning and Development District (CAPDD) as this process goes forward. Although mayors, judges, city council/quorum court, and even local staff may leave their roles at a jurisdiction, CAPDD will still be available to provide a consistent source of planning and technical support to the plan participants.

Jurisdiction/ Department	Comprehensive Plan	Zoning	Building Code	Floodplain Ordinance	Drainage/ Public Buildings	Wastewater or Onsite Wastewater Systems	Potable Water or Individual Well	Emergency Management
<b>Conway</b>								
• City Council								x
• Code Enforcement			x	x				
• Permits and Inspections			x	x				
• Planning & Development	x	x			x			
• Street Department					x			
• Conway Corporation						x	x	
<b>Damascus</b>			0					
• City Council				x	x			x
• Permit Department			x					
• City Water Department				x			x	
• Fire/Police Dept.								x
<b>Enola</b>			0					
• City Council					x			x
• Vilonia Waterworks							x	
• CAPDD				x				
<b>Greenbrier</b>								
• City Council/Mayor								x
• Greenbrier Water/Wastewater		x	x	x	x	x	x	
• Street Dept.				x				
• Fire Dept.		x						
<b>Guy</b>								

Jurisdiction/ Department	Comprehensive Plan	Zoning	Building Code	Floodplain Ordinance	Drainage/ Public Buildings	Wastewater or Onsite Wastewater Systems	Potable Water or Individual Well	Emergency Management
• City Council	x	x	x	NFIP Under Consideration				
• Water Department					x			
• Police Dept./Vol Fire Dept.								x
Holland								
• Planning Department	x	x	x					
• Vilonia Water Association							x	
• Mayor/Fire Chief				x				x
Mayflower								
• City Council/Mayor	x	x	x		x			x
• Fire Department				x				
• Planning Commission	x	x	x					
• Mayflower Water/Wastewater						x	x	
Mt. Vernon								
• City Council					x			x
• Vilonia Waterworks							x	
Twin Groves								
• City Council			x					
• City Liaison								x
• Parks and Rec		x						
• Street Dept.					x			
• Damascus Water							x	
Vilonia								
• City Council	x	x			x			
• Code Enforcement			x					
• Emergency Preparedness/Fire Department			x					x
• Planning and Commission	x	x	x	x				
• Vilonia Sewer Department						x		
• Street Department					x			
• Vilonia Water Works							x	
Wooster								
• Wooster Water Department					x		x	

Jurisdiction/ Department	Comprehensive Plan	Zoning	Building Code	Floodplain Ordinance	Drainage/ Public Buildings	Wastewater or Onsite Wastewater Systems	Potable Water or Individual Well	Emergency Management
• City Council	x							x
• Planning and Zoning Commission	x	x	x					
• City Engineer				x				
Unincorporated Faulkner County			0					
• County Judge/Quorum Court					x			
• Office of Emergency Management				x				x
• Road Department					x			
• Conway Corp						x	x	
• Faulkner County Health Unit						x	x	
Conway Public Schools			0					
• Supervisor of Maintenance					x			x
• Conway Corporation						x	x	
Guy-Perkins Public Schools			0					
• K-12 Coordinator								x
• Guy Water Dept.							x	
Greenbrier School District			0					
• Transportation/F acilities Director								x
• Greenbrier Water/Wastewater						x	x	
Mayflower School District			0					
• Director of Facilities								x
• Mayflower Water/Wastewater						x	x	
Mt. Vernon/Enola School District			0					
• Facilities Supervisor								0
• Vilonia Water Works							x	
St. Joseph School			0					

Jurisdiction/ Department	Comprehensive Plan	Zoning	Building Code	Floodplain Ordinance	Drainage/ Public Buildings	Wastewater or Onsite Wastewater Systems	Potable Water or Individual Well	Emergency Management
• Maintenance Director								x
• Conway Corporation						x	x	
Vilonia School District			0					
• Superintendent								x
• Vilonia Water Works							x	
• Vilonia Sewer Department						x		
University of Central Arkansas			0					
• Assistant Vice- President of Contracts and Housing Services								x
• Conway Corporation						x	x	
Central Baptist College			0					
• President								x
• Conway Corporation						x	x	
Hendrix University			0					
• President								x
• Conway Corporation						x	x	

0 indicates governmental entity; does not administer building code.

Source: Websites from each jurisdiction (when available); and interviews with local officials.

The planning function is imbedded in departments within the larger cities and the County. Most jurisdictions administer zoning. Most jurisdictions issue building permits; although the County doesn't issue building permits for the unincorporated area and neither do the small cities of Damascus, Enola, Guy, Holland, Mt. Vernon, Twin Groves and Wooster. Technically all development in the State of Arkansas must comply with the 2012 International Building Code even in jurisdictions where building permits are not issued. In instances where building permits are not issued, it is assumed that contractors are knowledgeable of the building code; therefore, assumed that they will build to the code. Also, it was mentioned that the financial institutions providing mortgages would not approve such mortgages unless the residential or commercial structure was built to the 2012 Building Code. With the exception of Guy, Mt. Vernon and Twin Groves, all jurisdictions have adopted and administer a floodplain ordinance. The City of Guy is working to get back into the program.

In addition to Faulkner County and the eleven municipalities, there are six Public Schools or School Districts, one Private School and three Universities. They include: Conway Public Schools, Guy-Perkins Public Schools, Greenbrier School District, Mayflower School District, Mt. Vernon/Enola School District, St. Joseph's Catholic School, Vilonia School District, University of Central Arkansas, Central Baptist College and Hendrix University. Each district and University has staff that are involved in emergency management- school safety and facilities operations. All school districts have critical incident management plans which describe how each will manage various types of disaster events.

The County, and its participating cities have the ability to join the NFIP and adopt ordinances and policies that help deter the exposure to flood hazards. Each NFIP participating jurisdiction that is a participant on this plan has adopted a two foot freeboard when building in the floodplain. Several of the participants have conducted Community Assistance Visits (CAV) and Community Assistance Contacts (CAC). The State NFIP Coordinator has confirmed that all participating communities are complaint and in good standing. The jurisdictions are aware of the CRS program, and will attempting to join the program in the future. In regards to NFIP compliance, here is a list of communities and their current NFIP Status:

- Faulkner County (unincorporated areas): Participating. They have a floodplain manager, and have passed an ordinance that regulates development within a Special Flood Hazard Area. They have The County floodplain manager stays in contact with the cities and towns in order to work together to resolve their floodplain issues. A CAV, CAC, and a workshop has been conducted during the plan update. There are 273 policies in force insuring over \$42 million in property.
- City of Conway: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV, CAC, and a workshop has been conducted during the plan update. There are 296 policies in force insuring over \$69 million in property.
- City of Damascus: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV, CAC, and a workshop has been conducted during the plan update. There are currently 0 policies in force.
- City of Greenbrier: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV, CAC, and a workshop has been conducted during the plan update. There are 8 policies in force insuring over \$1 million in property.
- City of Enola: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV, CAC, and a workshop has been conducted during the plan update. There are 0 insurance policies in force.

- City of Holland: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV and a CAC has been conducted during the plan update. There are 0 insurance policies in force.
- City of Mayflower: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV, CAC, and a workshop has been conducted during the plan update. There are 125 policies in force insuring over \$17 million in property.
- City of Vilonia: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV, CAC, and a workshop has been conducted during the plan update. There are 25 policies in force insuring over \$5 million in property.
- City of Wooster: Participating. They have a floodplain manager. They have passed regulations regarding development within the floodplain. A CAV, CAC, and a workshop has been conducted during the plan update. There are 3 policies in force insuring over \$600,000 in property.
- The cities of Mt. Vernon, Guy, and Twin Groves are currently not participating.

The general public was also given questionnaires to fill out and return to CAPDD or the Faulkner County OEM. They were used as a tool for engaging the community regarding hazard mitigation and will be kept on file for potential use in the future. . They were kept out of the main body of this plan in order to decrease amount of pages in the Mitigation Plan.

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## SECTION 2. PLAN ADOPTION

### 2.1. Multi-Jurisdictional Plan Adoption

IFR REQUIREMENT 201.6(c)(5):	[The plan shall include...] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).
Explanation:	Adoption by the local governing body demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in the plan. Adoption legitimizes the plan and authorizes responsible agencies to execute their responsibilities. The plan shall include a copy of the resolution adopting the plan.

Formal adoption and implementation of a hazard mitigation plan presents many benefits to Faulkner County and its residents. The County and each jurisdiction will adopt this plan in its entirety upon final approval from FEMA. The Faulkner County Hazard Mitigation Plan was reviewed and approved by the following Promulgation Authorities:



**RESOLUTION NO. \_\_\_\_\_**

**(upon approval each jurisdiction will adopt and sign the resolution)**

**A RESOLUTION ADOPTING THE HAZARD MITIGATION PLAN FOR (City/County),  
ARKANSAS**

WHEREAS, certain areas of \_\_\_\_\_ **County/City** Arkansas, are subject to periodic flooding and other natural and man-caused hazards with the potential to cause damages to people’s properties within the area; and

WHEREAS, \_\_\_\_\_ **County/City** desires to prepare and mitigate for such circumstances; and

WHEREAS, under the Disaster Mitigation Act of 2000, the United States Federal Emergency Management Agency (FEMA) required that local jurisdictions have in place a FEMA- approved Hazard Mitigation Action Plan as a condition of receipt of certain future Federal mitigation funding after November 1, 2004; and

WHEREAS, to assist cities and counties in meeting this requirement, the (**County**) with the assistance of Central Arkansas Planning and Development District, has initiated development of a county wide, multi-jurisdiction Hazard Mitigation Plan the county and all jurisdictions in the county, specifically the cities and school districts;

NOW, THEREFORE, BE IT RESOLVED BY THE **City Council/Quorum Court**, OF THE  
**County/City**, Arkansas:

That \_\_\_\_\_ **County/City**, Arkansas hereby adopts those portions of the Plan relating to and protecting its jurisdictional area against all hazards, and

Appoints the Emergency Management Director to assure that the Hazard Mitigation Plan be reviewed at least annually and that any needed adjustment to the Hazard Mitigation Plan be developed and presented to the governing board for consideration; and

Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the Hazard Mitigation Plan.

APPROVED and ADOPTED on this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

APPROVED:

\_\_\_\_\_  
County Judge                      Mayor                      School Superintendent

ATTEST:

\_\_\_\_\_  
Secretary/Clerk

## 2.2 Multi-Jurisdictional Plan Adoption

In addition to unincorporated Saline County, the five cities, six (6) public schools, and three (3) universities within Faulkner County are included in this plan. The cities are Conway, Enola, Greenbrier, Guy, Mayflower, Mt. Vernon, Vilonia, Wooster, Twin Groves, Damascus, and Holland. The Public Schools are Conway, Guy-Perkins, Greenbrier, Mayflower, Vilonia, Mount Vernon/Enola. The Universities are: University of Central Arkansas, Central Baptist College, Hendrix University. The signatories for each of these jurisdictions are listed below.

The Faulkner County Hazard Mitigation Plan was reviewed and approved by the following Promulgation Authorities:

### APPROVED BY:

Name: The Honorable Jim Baker

Title: County Judge

Organization: Faulkner County

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Tab Townsell

Title: Mayor

Organization: City of Conway

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Rick Goodnight

Title: Mayor

Organization: City of Enola

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Sammy Hartwick

Title: Mayor

Organization: City of Greenbrier

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Sam Higdon

Title: Mayor

Organization: City of Guy

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Randy Holland  
Title: Mayor  
Organization: City of Mayflower

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Ricky Pearce  
Title: Mayor  
Organization: City of Mt. Vernon

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable James Firestone  
Title: Mayor  
Organization: City of Vilonia

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Terry Robinson  
Title: Mayor  
Organization: City of Wooster

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Norman Goff  
Title: Mayor  
Organization: City of Twin Groves

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Leon Pavatt  
Title: Mayor  
Organization: City of Damascus

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Ronnie McGaha  
Title: Mayor  
Organization: City of Holland

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: The Honorable Terry Robinson

Title: Mayor

Organization: City of Wooster

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. Greg Murry

Title: Superintendent

Organization: Conway School District

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. David Stephens

Title: Superintendent

Organization: Vilonia School District

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Mr. Scott Spainhour

Title: Superintendent

Organization: Greenbrier School District

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. John Gray

Title: Superintendent

Organization: Mayflower School District

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. Brian Cossey

Title: Superintendent

Organization: Guy-Perkins School District

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. Larry Walters

Title: Superintendent

Organization: Mt. Vernon/Enola School District

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Matt Mallett

Title: Business Manager

Organization: St. Joseph School

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. Tom Courtway

Title: President

Organization: University of Central Arkansas

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. William Tsutsui

Title: President

Organization: Hendrix University

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Dr. Terry Kimbrow

Title: President

Organization: Central Baptist College

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## 2.3 Contacts for Multi-Jurisdictional Plan

The Point of Contact listed below is the Chairperson and Director of the Planning Committee:

**Josh Rogers**

Planner

Central Arkansas Planning & Dev.

P.O. Box 300

902 North Center St.

Lonoke, AR 72086

501-676-2721 (Office)

501-676-5020 (Fax)

josh.rogers@arkansas.gov

**Secondary Point of Contact**

Amanda Adaire

501-676-2721

Central Arkansas Planning & Dev.

**Faulkner County** – The Point of Contact for information regarding this Jurisdiction is:

Judge Jim Baker

Faulkner County Courthouse

801 Locust Street

Conway, AR 72032

501-450-4900

**City of Conway**– The Point of Contact for information regarding this Jurisdiction is:

Mayor Tab Townsell

1201 Oak Street

Conway, AR 72032

501-450-6110

**City of Enola** – The Point of Contact for information regarding this Jurisdiction is:

Mayor Rick Goodnight

P.O. Box 97

Enola, AR 72047

501-849-2391

**City of Greenbrier** – The Point of Contact for information regarding this Jurisdiction is:

Mayor Sammy Hartwick

P. O. Box 415

Greenbrier, AR 72047

501-679-2422

**City of Guy** – The Point of Contact for information regarding this Jurisdiction is:

Mayor Sam Higdon

P.O. Box 12

Guy, AR 72061

**City of Mayflower** – The Point of Contact for information regarding this Jurisdiction is:  
Mayor Randy Holland  
P. O. Box 69  
Mayflower, AR 72106

**City of Mt. Vernon** – The Point of Contact for information regarding this Jurisdiction is:  
Mayor Ricky Pearce  
P. O. Box 126  
Mt. Vernon, AR 72111

**City of Vilonia** – The Point of Contact for information regarding this Jurisdiction is:  
Mayor James Firestone  
City Hall, Box 188  
Vilonia, AR 72173

**City of Wooster** – The Point of Contact for information regarding this Jurisdiction is:  
Mayor Terry Robinson  
P. O. Box 43  
Wooster, AR 72181  
501-679-2048

**City of Twin Groves** – The Point of Contact for information regarding this Jurisdiction is:  
Mayor Norman Goff  
10 Twin Grove Lane  
Twin Groves, AR 72039  
501-335-7733

**City of Damascus** – The Point of Contact for information regarding this Jurisdiction is:  
Mayor Leon Pavatt  
Hwy. 65 South  
Box 309  
Damascus, AR 72039  
501-335-7321

**City of Holland** – The Point of Contact for information regarding this Jurisdiction is:  
Mayor Ronnie McGaha  
P. O. Box 1117  
Greenbrier, AR 72058  
501-450-4935

**Conway Public Schools** - The Point of Contact for information regarding this Jurisdiction is:  
Superintendent, Mr. Greg Murry  
2220 Prince Street  
Conway, AR 72034  
501-450-4800

**Guy-Perkins Public Schools** - The Point of Contact for information regarding this Jurisdiction is:  
Superintendent, Dr. Brian Cossey  
492 Highway 25 North  
Guy, AR 72061  
501-679-3509

**Greenbrier Public Schools** - The Point of Contact for information regarding this Jurisdiction is:  
Superintendent, Scott Spainhour  
4 School Drive  
Greenbrier, AR 72058  
501-679-4808

**Mayflower Public Schools** - The Point of Contact for information regarding this Jurisdiction is:  
Superintendent, Mr. John Gray  
15 Old Sandy Road  
Mayflower, AR 72106  
501-470-0506

**Mount Vernon/Enola Public Schools** - The Point of Contact for information regarding this Jurisdiction is:  
Superintendent, Dr. Larry Walters  
38 Garland Springs Road  
Mt. Vernon, AR 72111  
501-849-2220

**Vilonia Public Schools** - The Point of Contact for information regarding this Jurisdiction is:  
Superintendent, Dr. David Stephens  
11 Eagle Street  
P. O. Box 160  
Vilonia, AR 72173  
501-796-2113

**St. Joseph School** - The Point of Contact for information regarding this Jurisdiction is:  
Business Manager, Mr. Matt Mallett  
502 Front St.  
Conway AR 72032  
501-327-5528



**University of Central Arkansas** - The Point of Contact for information regarding this Jurisdiction is:

Rick McCollum, Assistant Vice President  
201 Donaghey Ave.  
UCA P. O. Box 4994  
Conway, AR 72035-4994  
501-450-5932

**Central Baptist College** - The Point of Contact for information regarding this Jurisdiction is:

Sancy Faulk, Vice President for Student Services  
1501 College Avenue  
Conway, AR 72034  
501-329-6872, ext. 169

**Hendrix University** - The Point of Contact for information regarding this Jurisdiction is:

Rick Sublett, Chief of Public Safety  
501-450-7711

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## SECTION 3. PLANNING PROCESS

### 3.1. Multi-Jurisdictional Planning Participation

<i>IFR REQUIREMENT</i> 201.6(a)(3):	Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process ... Statewide plans will not be accepted as multi-jurisdictional plans.
<i>Explanation:</i>	A multi-jurisdictional plan, as prepared by regional planning and development authorities (e.g., watershed/river basin commission), is acceptable as a Local Mitigation Plan under DMA 2000. However, those jurisdictions within the planning area that do not participate in its development will not be eligible for future mitigation project grant assistance from FEMA. Therefore, the plan <b>must</b> document how each jurisdiction requesting FEMA recognition of the plan participated in the planning process.

This Hazard Mitigation Plan is multi-jurisdictional with a planning area that includes all of unincorporated Faulkner County and eleven municipalities within the County including the City of Conway, City of Enola, City of Guy, City of Greenbrier, City of Mayflower, City of Mt. Vernon, City of Vilonia, City of Wooster, City of Twin Groves, City of Damascus and City of Holland. The following public school districts in Faulkner County are also included in this plan: Conway School District, Vilonia School District, Greenbrier School District, Guy-Perkins School District and Mayflower School District. The plan also has one (1) private school: St. Joseph School. The participating universities are University of Central Arkansas (UCA), Hendrix University and Central Baptist College.

All 22 jurisdictions listed above actively participated in the planning process from its inception. Each jurisdiction provided at least one representative to participate on the planning team, with some jurisdictions providing more members. Planning team members actively participated in meetings, reviewed draft plans, solicited input from members of their communities, and ensured that all jurisdiction information was reflected in the plan. A description of the planning process, including a list of planning team members from each jurisdiction, is provided in Section 3.2. The following chart contains a table summarizing the types of participation for each jurisdiction.

#### Summarization of How Each Jurisdiction Participated in the Planning Process

Jurisdiction	Nature of Participation/Involvement
Faulkner County	Attended planning meeting; historical data submission, Completed City Assessment Forms, distributed Household Natural Hazard Preparedness Questionnaires to citizens, mitigation action review and submission, participated in conference calls with CAPDD and received minutes from mitigation planning meetings as well as opportunities to provide comments.

City of Conway (unincorporated)	Attended planning meetings; provided historical data, completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens.
City of Enola	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, mitigation action review and submission, participated in conference calls with CAPD..
City of Guy	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, mitigation action review and submission.
City of Greenbrier	Attended planning meetings on; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
City of Mayflower	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD , mitigation action review and submission.
City of Mt. Vernon	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD , mitigation action review and submission.
City of Vilonia	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
City of Wooster	Attended planning meeting; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
City of Twin Groves	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
City of Damascus	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
City of Holland	Attended planning meetings; historical data submission, Completed City Assessment Forms, passed out Household Natural Hazard Preparedness Questionnaires to citizens,

	participated in conference calls with CAPDD, mitigation action review and submission.
Conway School District	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
Vilonia School District	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
Greenbrier School District	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
Guy-Perkins School District	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
Mayflower School District	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
Mount Vernon/Enola School District	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
University of Central Arkansas	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
Hendrix University	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
Central Arkansas Baptist College	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.
St. Joseph School	Attended planning meetings; distributed Household Natural Hazard Preparedness Questionnaires to citizens, participated in conference calls with CAPDD, mitigation action review and submission.

### 3.2. Documentation of the Planning Process

#### *IFR REQUIREMENTS*

201.6(b) and  
201.6(c)(1):

An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

#### *Explanation:*

The description of the planning process **shall**:

- Indicate how the public (residents, businesses, and other interested parties) was given the opportunity to comment on the plan during the drafting stage and prior to plan approval (e.g., public meetings, Web pages, storefronts, toll-free telephone lines, etc.).
- Include a discussion of the opportunity provided for neighboring communities, agencies involved in hazard mitigation, and businesses, academia, and other relevant private and non-profit interests to be involved.
- Describe the review of any existing plans, studies, reports, and technical information and how these are incorporated into the plan.

The plan **shall** document how the plan was prepared (e.g., the time period to complete the plan, the type and outcome of meetings), who was involved in the planning process (e.g., the composition of the planning team), and how the public was involved.

The plan *should* also document how the planning team was formed and how each party represented contributed to the process. Ideally, the local mitigation planning team is composed of local, State, and Federal agency representatives, as well as community representatives, local business leaders, and educators.

The Faulkner County Hazard Mitigation Plan was developed in accordance with Section 322 local planning requirements of the Disaster Mitigation Act of 2000 as well as additional guidance provided by FEMA and the Arkansas Department of Emergency Management (ADEM). Plan

development closely followed the methodology described in the FEMA Mitigation “How To” Series (FEMA 386 Series) publications. Faulkner County’s mitigation planning update process was initiated in April 2014, when the County, through the efforts of the Faulkner County Office of Emergency Management (OEM), negotiated a contract with Central Arkansas Planning and Development District to facilitate their mitigation planning efforts. Central Arkansas Planning and Development District led the planning effort.

The Faulkner County Hazard Mitigation Plan was approved by FEMA on April 29, 2009, and therefore expired on April 29, 2014. Before the plan expired, Faulkner County did seek HMA grant funding to do the update, but were unsuccessful. So on March 1, 2014 Faulkner County entered into a contract with Central Arkansas Planning and Development District to be paid out of pocket to update the plan.

Once participating cities, school districts, and Universities for which the Faulkner County OEM is responsible formally agreed to participate, an initial planning team comprised of representatives from Faulkner County and each participating jurisdiction was organized. This initial team was instructed to solicit interested persons from their community to participate on the planning team. This solicitation led to the addition of several additional planning team members. The planning team members include representatives from county government, local city governments, public works officials, emergency management officials, fire districts, school districts and Central Arkansas Planning and Development District, Inc. staff. All participating jurisdictions actively participated in the planning process through soliciting input from their communities and participation in meetings. In all, three formal planning team meetings were held on August 6, 2014, October 7, 2014 and January 14, 2015. All meetings were held at the Faulkner County Office of Emergency Management.

Each of the meetings covered a different section of the plan update, and therefore required solicitation from each participant of different kinds of information for each meeting. In some cases, participants were asked to fill out questionnaires or forms either during the meeting or to return at their leisure if they needed more time. For those participants who might have missed a meeting, the information was requested via mail or email. In other cases, the planning team was broken into groups and CAPDD staff asked questions and took note on their responses for incorporation into the plan. If a city or school district could not attend a meeting, all materials were mailed out to the jurisdiction. Cities such as Damascus and Twin Groves participated in conference calls before and after mitigation meetings since they were not always available to attend meetings. The Conway School District, Vilonia School District, Greenbrier School District, Guy-Perkins School District, Mayflower School District, and St. Joseph School discussed mitigation actions, projects, and past hazard occurrences with CAPDD during conference calls. The County requested assistance from the community. Each jurisdiction was personally invited to attend. The newspapers were sent a news release, and some of the plan participants included information on their websites for each of the meetings inviting the public to be included in the planning process. Additional input was requested through the Questionnaires. The public’s participation through information regarding past disasters and areas of need for mitigation project was very beneficial to the planning process. There were over 60 participants from the general public.

A list of planning team members is provided below.

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Planning Role/Responsibility</b>
Jim Baker	County Judge	Faulkner County	County Government; Mitigation Objectives
Tab Townsell	Mayor of Conway	City of Conway	Executive Administrator; Floodplain Mitigation; Existing Plan Consultant; Planning and Zoning Issues related to Conway
Rick Goodnight	Mayor of Enola	City of Enola	Executive Administrator; Floodplain Mitigation; Existing Plan Consultant; Planning and Zoning Issues related to Enola;
Melton Cotton	Mayor of Greenbrier	City of Greenbrier	Executive Administrator; Floodplain Mitigation; Existing Plan Consultant; Planning and Zoning Issues related to Greenbrier;
Sam Higdon	Mayor of Guy	City of Guy	Executive Administrator; Floodplain Mitigation; Existing Plan Consultant; Planning and Zoning Issues related to Guy
Randy Holland	Mayor of Mayflower	City of Mayflower	Executive Administrator; Floodplain Mitigation; Existing Plan Consultant; Planning and Zoning Issues related to Mayflower
Ricky Pearce	Mayor of Mt. Vernon	City of Mt. Vernon	Executive Administrator; Floodplain Mitigation; Existing Plan Consultant; Planning and Zoning Issues related to Mt. Vernon
James Firestone	Mayor of Vilonia	City of Vilonia	Executive Administrator; Existing Plan Consultant; Planning and Zoning Issues related to Vilonia
Arch Jones	Vice President	UCA	Hazards research; Mitigation, Liaison with other Universities/Colleges
Terry Robinson	Mayor of Wooster	City of Wooster	Executive Administrator; Existing Plan Consultant; Planning and Zoning Issues related to Wooster
Norman Goff	Mayor of Twin Groves	City of Twin Groves	Executive Administrator; Floodplain Mitigation; planning and zoning issues related to Twin Groves
Leon Pavatt	Mayor of Damascus	City of Damascus	Executive Administrator; Floodplain Mitigation; planning and zoning issues related to Damascus
Ronnie McGaha	Mayor of Holland	City of Holland	Executive Administrator; Floodplain Mitigation; Existing Plan Consultant; Planning and Zoning Issues related to Holland;
Shelia Bellot	OEM Director	Faulkner County	Consultant on existing plans, Research assistance and hazards research
Dr. Greg Murry	Superintendent	Conway School District	Hazards Research; Mitigation Measures for school; Public Awareness
Dr. David Stephens	Superintendent	Vilonia School District	Hazards Research; Mitigation Measures for school; Public Awareness



Mr. Scott Spainhour	Superintendent	Greenbrier School District	Hazards Research; Mitigation Measures for school; Public Awareness
Mr. Brian Cossey	Superintendent	Guy-Perkins School District	Hazards Research; Mitigation Measures for school; Public Awareness
Mr. John Gray	Superintendent	Mayflower School District	Hazards Research; Mitigation Measures for school; Public Awareness
Josh Rogers	Program Manager	Central Arkansas Planning & Development District, Inc.	Planning Team Leader and Planning Coordinator; Mitigation Grants Administrator, Writing Plan, Hazards Research, Risk Assessment
Amanda Adaire	Program Manager	Central Arkansas Planning & Development District, Inc.	Planning Team Leader and Planning Coordinator; Writing Plan, Hazards Research, Risk Assessment, GIS Specialist
Marie Wilson	Floodplain Manager	City of Wooster	Existing Documents; Floodplain mitigation
Raymond E. Akin	Street Superintendent	City of Greenbrier	Hazards Research; Mitigation, Preparedness and Response Planning; Code Enforcement, Floodplain Management for Greenbrier
Brian Tatum	Fire Department	City of Damascus	Hazards Research; Mitigation, Preparedness and Response Planning; Code Enforcement, Floodplain Management for Greenbrier
Randy Nicholson	Public Works Director	Damascus	Hazards Research; Mitigation, Preparedness and Response Planning; Code Enforcement, Floodplain Management for Damascus
Danny Mahan	Fire Chief	Damascus Fire Department	Hazards Research; Mitigation, Preparedness and Response Planning; Code Enforcement for Damascus
Sgt. Jeremy Crabb	Commanding Officer	University of Central Arkansas	Hazards Research; Mitigation Preparedness and Response Planning; Code Enforcement
Mr. Rick Sublett	Chief of Public Safety	Hendrix University	Hazards Research; Mitigation Preparedness and Response Planning; Code Enforcement
Ms. Sancy Faulk	Vice President for Student Services	Central Baptist College	Hazards Research; Mitigation Preparedness and Response Planning
Mr. Matt Mallett	Business Manager	St. Joseph School	Hazards Research; Mitigation Preparedness and Response Planning
Larry Walters	Superintendent	Mt. Vernon/Enola School District	Hazards Research; Mitigation Measures for school; Public Awareness

The Central Arkansas Planning and Development District (CAPDD) also used technical assistance provided by the Arkansas Department of Emergency Management (ADEM) by attending mitigation planning workshops provided by ADEM. Both workshops were official FEMA G318 Local Mitigation Planning Workshops. The first workshop was May 7 & 8, 2014 at the Star City Office of Emergency Management. This workshop lasted until September 19<sup>th</sup> and meeting instructors included: David Reiff (FEMA), Mary Love (FEMA), Prince Aryee

(FEMA), and Jennifer Oakley (ADEM). The second training that Central Arkansas Planning and Development attended was on November 18, 19, & 20, 2014. CAPDD employees that attended the workshop on both occasions were Josh Rogers, & Amanda Adaire.

Planning meetings were held throughout the planning process. For each meeting, the public was notified by posting the meeting details on the County's website and through their Facebook page. Household Natural Hazards Preparedness Questionnaires were solicited to the public through the County's website and the planning team. These meetings provided the general public, (from Faulkner County and neighboring communities), local and regional agencies, businesses, academia, nonprofits input at the beginning, first draft and final stages of the planning process.

**FAULKNER COUNTY  
HAZARD MITIGATION PLAN  
PLANNING MEETINGS AND ANNOUNCEMENTS**

August 6, 2014      Planning Meeting: Faulkner County OEM Office  
October 7, 2014      Planning Meeting: Faulkner County OEM Office  
January 15, 2015      Planning Meeting: Faulkner County OEM Office

The following “News Release” was distributed before each meeting. Each date on the following news release would be changed to reflect each meeting. There is a sign-in sheet for each of the meetings. CAPDD has these documents on file and will be made available upon request of the reviewer.

**NEWS RELEASE**

The Faulkner County Mitigation Committee will be meeting to discuss the Faulkner County Multi-Jurisdictional Pre-Disaster Mitigation Plan. All members of the public, local and regional agencies, businesses, academia, nonprofits and all other interested parties are encouraged to attend. Your input is valuable for the success of this Plan.

The meeting will be held at:

Faulkner County OEM, #57 Acklin Gap Road, Conway, AR 72032  
at 10:00 AM  
on October 7, 2014.

Should you have any questions or need information regarding the meeting, please contact Josh Rogers at 501-676-2721.

In addition to the Faulkner County Hazard Mitigation Planning meetings, other meetings with members of the planning team were held (not all members were asked to attend all meetings as many meetings focused on issues relevant to only certain jurisdictions or topics). These meetings were mostly held one on one and sign-in sheets were not acquired, and intended to obtain information specific to that entity/jurisdiction relevant to the plan. These were held especially for those participating school districts that were not able to send participants to every planning meeting. Email correspondence was also used to obtain planning information from plan participants.

Although the degree of participation varied, all jurisdictions participated in the planning process through soliciting input from their communities, reviewing plan drafts, and participation in meetings. The smallest jurisdictions included in this plan, Damascus and Twin Groves, were not able to attend the hazard mitigation meetings on a regular basis because of limited human resources. They were, however, kept up to date, provided copies of minutes and consulted on a regular basis by Central Arkansas Planning and Development District, Inc. staff to keep them abreast of the developing plan. These Cities contributed and were involved in the development of this hazard mitigation plan to the extent that their resources allowed. The Faulkner County OEM Director provided vital information regarding the unincorporated areas of the county as well as assisted with acquiring data for the county as a whole including the other jurisdictions.

#### **Local stakeholders invited to become part of the planning process:**

Jack Bell, City of Conway, spoke with local businesses and development boards regarding the mitigation planning process. Mr. Bell invited the Lee Washington, Conway Planning and Development Commission to the mitigation meetings, as well as join the planning team. Mr. Bell also spoke with citizens before regular city council meetings inviting them to join the planning process.

Shelia Bellott, Faulkner County OEM, made it a point when meeting with private businesses and local entities to invite them to the planning meetings. Ms. Bellott explained the importance of community resiliency and that each citizen and business has a vested interest in the planning process.

As Central Arkansas Planning and Development District was involved in developing the plan, they covered any interested on behalf of the neighboring county of Pulaski County. CAPDD also emailed a link to a draft of the plan to OEM offices of the surrounding counties of Pulaski, Perry, Conway, Van Buren, Cleburne and White asking if they had any input since they are all affected by similar hazards, and may be partners in hazard mitigation and response activities.

On September 4, 2014, Faulkner County held a Mitigation meeting with ADEM, FEMA, local governments, boards, private businesses, and citizens to discuss mitigation planning throughout the County. Local zoning board and regulatory commission members were invited via the County OEM as well as through city employees involved in the disaster recovery efforts from the April 27, 2014 tornado.

Technical assistance was also obtained from the following:

<b>Name</b>	<b>Title</b>	<b>Agency</b>	<b>Type of Information Provided</b>
Daniel Smith	Ecologist, US Army Engineer Waterways Experiment Station	US Army Corps of Engineers	Dam Failure information
Veronica Villalobos-Pogue	Program Coordinator, Dam Safety & Floodplain Management Section	Arkansas Natural Resources Commission	SRL, RL and Flood Insurance information
Scott Ausbrooks		Arkansas Geological Survey	Expansive Soils Information
David Johnston		Arkansas Geological Survey	Landslide and Land Subsidence Information
Lacye Blake	State Hazard Mitigation Officer	Arkansas Department of Emergency Management	Assistance with technical requirements
David Reiff	Mitigation Plan Reviewer	FEMA, Region VI	Assistance with technical requirements

Existing plans, studies, reports and technical information relevant to mitigation planning were collected and reviewed by planning team members. This information was used to identify existing, planned and potential mitigation initiatives designed to reduce Faulkner County’s vulnerability to natural hazards and to identify plans/ ordinance in place for the incorporation of any proposed hazard mitigation requirements as a means to implement the requirements. A list of the documents reviewed is included below.

- State of Arkansas Hazard Mitigation Plan
- Faulkner County Emergency Operations Plan
- Flood Insurance Study, Faulkner County Arkansas
- City of Conway Zoning, Land Use, Floodplain Management Ordinances, Building Codes
- City of Greenbrier Zoning, Land Use, Floodplain Management Ordinances, Building Codes
- City of Vilonia Zoning, Land Use, Floodplain Management Ordinances, Building Codes
- City of Mayflower Land Use, Floodplain Management Ordinances, Building Codes
- City of Enola, Damascus, Guy, Mt. Vernon, Wooster and Holland’s Floodplain Management Ordinances

Of the documents reviewed, those with existing, planned and potential mitigation initiatives include the State of Arkansas Hazard Mitigation Plan and the various zoning, land use/development plans, ordinances and building codes of Conway, Greenbrier, Vilonia and Mayflower. During the planning process, planning team members carefully considered these existing mitigation initiatives to avoid duplication of effort and ensure efficiency in implementation of these measures. These existing initiatives were incorporated into the Faulkner County Hazard Mitigation Plan where appropriate. The planning team was particularly cognizant of the mitigation priorities outlined in the State Mitigation Plan.

In summary, the planning process consisted of the following items:

- County appointed a planning committee consisting of mayors and city personnel, school personnel, fire department members, emergency workers, planning and development district employees, and LEPC members.
- County engaged Central Arkansas Planning and Development District (CAPDD), 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 planning processes and steps required, including organizing resources, assess hazards, develop a mitigation plan, and implement the plan and monitor progress.
- Central Arkansas Planning and Development District staff attended two workshops presented by ADEM and FEMA on updating mitigation plans.
- Central Arkansas Planning and Development District staff also had numerous subsequent discussions about the planning process with ADEM staff. The CAPDD staff also discussed planning process issues with others in the state that were involved in the preparation of other hazard mitigation plans such as UALR which prepared the State Hazard Mitigation Plan, other Planning and Development Districts.

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## SECTION 4 - RISK ASSESSMENT

Risk Assessment as defined by FEMA, is the process of measuring the potential loss of life, personal injury, economic injury, and property damage resulting from hazards by assessing the vulnerability of people, buildings, and infrastructure to natural hazards. It identifies the characteristics and potential consequences of hazards, how much of the community could be affected by a hazard, and the impact on community assets. An Assessment Risk consists of three components: hazard identification, vulnerability analysis and risk analysis. Technically, these are three different items but the terms are sometimes used interchangeably. Assessment of risk for this plan followed the methodology described in FEMA publication 386-2 – “*Understanding Your Risks – Identifying Hazards and Estimating Losses.*” This publication outlines a four-step process that was followed in this planning process: (1) Identifying Hazards, (2) Profile Hazard Events, (3) Inventory Assets, (4) Estimated Losses.

Risk Assessment provides the foundation for the rest of the mitigation planning process. The risk assessment process focuses attention on areas most in need by evaluating which population and facilities are most vulnerable to natural hazards and to what extent injuries and damages may occur. It tells you:

- The hazards to which your state or community is susceptible;
- What these hazards can do to physical, social, and economic assets;
- Which areas are most vulnerable to damage from these hazards; and
- The resulting cost of damages or costs avoided through future mitigation projects.

In addition to benefiting mitigation planning, risk assessment information also allows emergency management personnel to establish early response priorities by identifying potential hazards and vulnerable assets.

The goal of mitigation is to reduce the future impacts of a hazard including property damage, disruption to local and regional economies, and the amount of public and private funds spent to assist with recovery. However, mitigation should be based on the risk assessment.

### 4.1 Hazard Identification

<i>IFR REQUIREMENT</i> 201.6(c)(2)(i):	[The risk assessment shall include a] description of the type ... of all natural hazards that can affect the jurisdiction.
<i>Explanation:</i>	The local risk assessment <b>shall</b> identify and describe the hazards likely to affect the area. It is critical that the plan identify all the natural hazards that can affect the jurisdiction, because the hazard identification is the foundation for the plan’s risk assessment, which in turn is the factual basis for the mitigation strategy. If the hazard identification omits (without explanation) any hazards commonly recognized as threats to the jurisdiction, this part of the plan cannot receive a “Satisfactory” score.



While not required by the Rule, the plan *should* describe the sources used to identify hazards, and provide an explanation for eliminating any hazards from consideration. The process for identifying hazards could involve the following:

- Reviewing the State hazard mitigation plan, reports, plans, flood ordinances, and land use regulations, among others;
- Talking to experts from Federal, State, and local agencies and universities;
- Searching the Internet and newspapers; and interviewing long-time residents.

Hazard Identification is the first step that must be taken in the risk assessment process. Every hazard that may threaten a given area must be identified in order to assess the risk posed by such threat.

Faulkner County identified several such natural hazards that represent a significant risk to the health and property of the citizens of Faulkner County. These hazards were identified through an extensive process that utilized input from the Planning Team members, public input, research of newspapers and other historical records, review of existing plans and reports, discussions with hazard experts, internet research, the State mitigation Plan, and information provided by FEMA and ADEM.

There have not been any changes to the list of hazards that will not be addressed in this plan. Experts from the respective agencies were contacted and they confirmed that the information below is still up to date, and therefore not profiled due to lack of risk:

Expansive Soils – Per Scott Ausbrooks for the Arkansas Geological Survey, to date, there have been no known reports of damage resulting from expansive soils in Faulkner County. According to the USGS map there is less than 50 percent of the area underlain by soils with clays of slight to moderate swelling potential.

Landslide – David Johnston from the Arkansas Geological Survey was contacted and he said that they have no record of information for Faulkner County. There was information on the Arkansas Geological Survey website for other areas in Arkansas but not for Faulkner County. This was addressed in the planning meeting and Faulkner County is not at high risk area for landslides.

Land Subsidence - David Johnston from the Arkansas Geological Survey was contacted and he said that they have no record of information for Faulkner County. Further research shows that data and past occurrences are not available therefore Land Subsidence will be omitted from this Plan.

A complete profile and local risk assessment for each of these identified hazards has been completed, which will serve as the foundation for the plan's risk assessment, and that will

ultimately be utilized as the factual basis for the County's mitigation strategy. To develop the proper profile and risk assessment, each identified hazard has been rated utilizing the *criteria* and *methods* described and outlined in the rating charts below.

**Table 4.1.2. Identified Hazards in Faulkner County.**

<b>Hazard</b>	<b>How Identified</b>	<b>Why Identified</b>
<b>Earthquake</b>	<ul style="list-style-type: none"> <li>• Research by the United State Geological Survey (USGS)</li> <li>• Modified Mercalli Scale and PGA (Peak Ground Acceleration).</li> </ul>	<ul style="list-style-type: none"> <li>• This event is likely in Faulkner County being the epicenter for the Enola Swarm and it's proximity to the New Madrid Seismic Fault Zone.</li> <li>• Faulkner County has experienced several recorded earthquakes during the update period. With an earthquake of Richter Magnitude 7.0 to 8.9, 100% of Faulkner County's population would feel the effect.</li> </ul>
<b>Flood</b>	<ul style="list-style-type: none"> <li>• Review of past disaster declarations</li> <li>• Review of FIRM's</li> <li>• Input from County floodplain manager</li> <li>• Public Input</li> </ul>	<ul style="list-style-type: none"> <li>• Faulkner County is affected by flooding every year</li> <li>• Floods have caused extensive damage and loss of life and property in the County in the past</li> </ul>
<b>Severe Thunderstorm (includes, lightning and hailstorms)</b>	<ul style="list-style-type: none"> <li>• Review of NCDC Severe Storms Database</li> <li>• National Weather Service input and data</li> <li>• Public input</li> </ul>	<ul style="list-style-type: none"> <li>• Faulkner County is affected by severe storms every year that bring heavy rains, hail, lightning, and high winds.</li> <li>• Severe thunderstorms have caused extensive damage to the county</li> </ul>
<b>Tornado</b>	<ul style="list-style-type: none"> <li>• Review of past disaster declarations</li> <li>• Review of NCDC Severe Storms Database</li> <li>• National Weather Service input and data</li> <li>• Public input</li> </ul>	<ul style="list-style-type: none"> <li>• Faulkner County experiences a tornado event nearly every year</li> <li>• Tornadoes have caused extensive damage and loss of life to County residents</li> </ul>
<b>Winter Storm (includes Ice Storms)</b>	<ul style="list-style-type: none"> <li>• Review of past disaster declarations</li> <li>• Review of NCDC Severe Storms Database</li> <li>• National Weather Service Input and data</li> <li>• Public input</li> </ul>	<ul style="list-style-type: none"> <li>• Faulkner County is affected by severe winter storms every few years</li> <li>• Severe ice storms have caused extensive damage to the county</li> <li>• Hailstorms cause damage to property and crops in the county</li> </ul>
<b>Wildfire</b>	<ul style="list-style-type: none"> <li>• Arkansas Forestry Commission statistics and input</li> <li>• Public input</li> </ul>	<ul style="list-style-type: none"> <li>• Wildfires can cause damage to all jurisdictions, forest lands, crops and structures.</li> </ul>

<b>Drought</b>	<ul style="list-style-type: none"> <li>• Review of past disaster declarations</li> <li>• Review of NCDC Severe Storms Database</li> <li>• National Weather Service Input and data</li> <li>• Public input</li> </ul>	<ul style="list-style-type: none"> <li>• Faulkner County has experienced several drought events.</li> <li>• Drought has a major impact on crops in the agriculture areas of Faulkner County</li> </ul>
<b>Dam Failure</b>	<ul style="list-style-type: none"> <li>• National Inventory of Dams</li> <li>• Arkansas Natural Resource Commission</li> </ul>	<ul style="list-style-type: none"> <li>• No previous incidents of Dam Failure, but there is one High Risk dam on the County border</li> </ul>
<b>High Wind</b>	<ul style="list-style-type: none"> <li>• Review of NCDC Severe Storms Database</li> <li>• National Weather Service input and data</li> <li>• Public input</li> </ul>	<ul style="list-style-type: none"> <li>• The County experiences several severe high wind events annually.</li> <li>• Some events have caused damage to structures and less commonly loss of life.</li> </ul>
<b>Extreme Heat</b>	<ul style="list-style-type: none"> <li>• Review of past disaster declarations</li> <li>• Review of NCDC Severe Storms Database</li> <li>• National Weather Service Input and data</li> <li>• Public input</li> </ul>	<ul style="list-style-type: none"> <li>• Faulkner County experiences temperatures in excess of 100 degrees annually.</li> </ul>

**4.2 Profiling Hazards**

For each hazard identified for Faulkner County in this plan, (Section 4.1 Hazard Identification) a profile has been developed outlining the location or geographical areas within the County, the magnitude or severity of the potential event and the probability or frequency of the hazard event. This outline was developed utilizing information collected from records of previous occurrences of the identified hazard events and on the probability of future hazard events.

One method used to assess these hazard events and which serves as a predictive indicator was the calculation of the “Critical Priority Risk Index (CPRI) for each type event. Utilization of the CPRI provided a means to compare and rank hazards types, which is outlined in the following chart.

**Probability**

A “Probability Rating” for each identified hazard event for Faulkner County was developed utilizing the “Characteristics” as defined in the following chart. Using the definitions outlined, the likelihood of future such events has been "Quantified" thereby assigning a “range classification” of 4-Highly Likely, 3-Likely, 2-Possible, 1-Unlikely, for every identified hazard event for Faulkner County based upon previous occurrences.

<b>Probability</b>	<b>Characteristics</b>
<i>4 - Highly Likely</i>	Event is probable within the calendar year. Event has up to 1 in 1 year chance of occurring (1/1=100%) History of events is greater than 33% likely per year. Event is "Highly Likely" to occur
<i>3 - Likely</i>	Event is probable within the next three years. Event has up to 1 in 3 years chance of occurring (1/3=33%) History of events is greater than 20% but less than or equal to 33% likely per year. Event is "Likely" to occur
<i>2 - Possible</i>	Event is probable within the next five years. Event has up to 1 in 5 years chance of occurring (1/5=20%) History of events is greater than 10% but less than or equal to 20% likely per year Event could "Possibly" occur
<i>1 - Unlikely</i>	Event is possible within the next ten years Event has up to 1 in 10 years chance of occurring (1/10=10%) History of events is less than or equal to 10% likely per year Event is "Unlikely" but is possible of occurring

### **Magnitude/Severity**

The rating of the identified hazard events “Magnitude/Severity” is an attempt to measure the events impact in terms the land area affected and the in terms of potential for loss of life and property relative to that of other identified hazard events. This following chart outlines classifications of Magnitude / Severity defined as 4-Catastrophic, 3-Critical, 2-Limited, 1-Negligible.

<b>Magnitude / Severity</b>	<b>Characteristics</b>
<i>4 - Catastrophic</i>	<ul style="list-style-type: none"> <li>▪ Multiple deaths</li> <li>▪ Complete shutdown of facilities for 30 or more days</li> <li>▪ More than 50% of property is severely damaged</li> </ul>
<i>3 - Critical</i>	<ul style="list-style-type: none"> <li>▪ Injuries and/or illnesses result in permanent disability</li> <li>▪ Complete shutdown of critical facilities for at least two weeks</li> <li>▪ More than 25% of property is severely damaged</li> </ul>
<i>2 - Limited</i>	<ul style="list-style-type: none"> <li>▪ Injuries and/or illnesses do not result in permanent disability</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Complete shutdown of critical facilities for more than one week</li> <li>▪ More than 10% of property is severely damaged</li> </ul>
<i>1 - Negligible</i>	<ul style="list-style-type: none"> <li>▪ Injuries and/or illnesses are treatable with first aid</li> <li>▪ Minor quality of life lost</li> <li>▪ Shutdown of critical facilities and services for 24 hours or less</li> <li>▪ Less than 10% of property is severely damaged</li> </ul>

**Warning time and duration** are given four ranges each, as shown in the following table. Also indicated is the "Weighting" factor for each of the four parts of the Calculated Priority Risk Index. The Probability factor is "Weighted" at .45, Magnitude / Severity at .30, Warning Time at .15, and Duration at .10. These "Weights" of significance are used to assign relative importance to each of these factors when combined to generate the Calculated Priority Risk Index value.

<b>Calculated Priority Risk Index</b>			
<b>.45 Probability</b>	<b>.30 Magnitude / Severity</b>	<b>.15 Warning Time</b>	<b>.10 Duration</b>
4 - Highly Likely	4 - Catastrophic	4 - Less Than 6 Hours	4 - More Than 1 Week
3 - Likely	3 - Critical	3 - 6-12 Hours	3 - Less Than 1 Week
2 - Possible	2 - Limited	2 - 12-24 Hours	2 - Less Than 1 Day
1 - Unlikely	1 - Negligible	1 - 24+ Hours	1 - Less Than 6 Hours

The CPRI factors the elements of risk: Probability (P), Magnitude/Severity (M), Warning Time (WT) and Duration to create an index, which allows for the prioritization of mitigation activities based on the level of risk. Thus, Probability (.45 x Value) + Magnitude (.15 x Value) + Severity (.25 x Value) + Warning Time (.15 x Value) = CPRI

The following hazards are listed with its respective CPRI score.

Wildfire	Highly Likely	Limited	Less than 6 hours	Less than 1 week	3.3
Flood	Highly Likely	Critical	6-12 Hours	Less than 1 week	3.45
Tornado	Likely	Catastrophic	Less than 6 hours	Less than 1 day	3.25
High Wind	Highly Likely	Negligible	Less than 6 hours	Less than 6 hours	2.80
Dam Failure	Possible	Critical	Less than 6 hours	More than 1 week	2.80
Earthquake	Likely	Limited	Less Than 6 Hours	Less than one day	2.75
Severe Thunderstorm	Highly Likely	Limited	6-12 Hours	Less than 1 day	2.75
Winter Storms	Likely	Limited	24+ Hours	Less than 6 hours	2.2
Drought	Possible	Limited	24 + Hours	More than 1 week	2.05
Extreme Heat	Possible	Limited	24 + Hours	Less than a day	1.85

## 4.2.1 Earthquake Profile Hazard

An earthquake is the shaking or vibration of the earth caused by the sudden release of energy, usually as a result of rupture and movement of rocks along a fault. The rupture and slippage processes generate seismic waves that radiate from the fault surface in all directions. If the energy of the seismic waves is strong enough, people and structures along the earth's surface will be affected. The focus of an earthquake is the point within the earth where the initial rupture of the rock occurs in the earth and where the seismic waves are first released. The epicenter of an earthquake is the point on the ground surface directly above the focus.

Most earthquakes such as those occurring in California, Alaska, and Japan occur along the boundaries between rigid tectonic plates that are in slow but constant motion near the surface of the earth. Much less commonly, earthquake zones develop within the rigid plate itself resulting in "intraplate" seismicity. Such intraplate earthquakes must arise from a more localized system of forces perhaps associated with structural complexities from earlier geological conditions or from variation in strength of the complexities from earlier geological conditions or from variation in strength of the lithosphere. The New Madrid Seismic Zone (NMSZ), an area of high seismic activity within the central United States including northeastern Arkansas), is the most important example intraplate seismicity in North America.

The size of Earthquakes: Two scales usually express the size of an earthquake. One scale measures the cause, which is known as the magnitude of the earthquake. A second scale measures the effects and is known as the intensity of the earthquake. Magnitude is a measure of the energy released from the source beneath the earth's surface where a fault has suddenly ruptured. The magnitude scale is objective, measured by instruments at various distances and directions from the epicenter of an earthquake. A single magnitude value can be calculated for any given earthquake from seismograph readings at stations near and far from the source, even though the amplitudes of the measured waves usually diminish with distance. Magnitude scales are expressed in Arabic numbers to one decimal place. Because the magnitude classification is based on a logarithmic scale, a magnitude 8 earthquake is not twice as big as a magnitude 4 earthquake, but rather, 10,000 times larger. The amplitude of ground motion for any scale unit (e.g., 5.0) is ten times larger than the unit before it (4.0). In terms of energy, each unit on the magnitude scale represents approximately 32 times more energy released at the source than the next lower unit. Hence, a magnitude 6.5 earthquake is actually 32 times larger than a magnitude 5.5. At present, at least four different magnitude scales are in common use for classifying earthquakes.

Earthquake *Intensity* is a measure of severity of the ground shaking as reflected in the degree of damage to man-made structures, the amount of disturbance to the surface of the ground, and the reactions of animals to the shaking. Intensity is measured in the United State by the Modified Mercalli Scale (Table 4.2.1.1). This scale, composed of 12 increasing levels of intensity that range from imperceptible shaking to catastrophic destruction, is designated by Roman numerals. This particular scale does not have a



mathematical basis; instead it is an arbitrary ranking based on observed effects. Although earthquakes have only one magnitude, they have variable intensities that generally decrease with increasing distance away from the source. However, other factors such as local geology, shallow ground water, and building type may affect the intensities for earthquakes at a specific location. For example, greater intensities are associated with poorly consolidated alluvial soils, high ground water levels and poor construction practices such as un-reinforced masonry structures.

Roman numerals inside each band are predicted levels of damage described using the Modified Mercalli Intensity Scale (see below).

**MODIFIED MERCALLI SCALE TABLE 4.2.1.1**

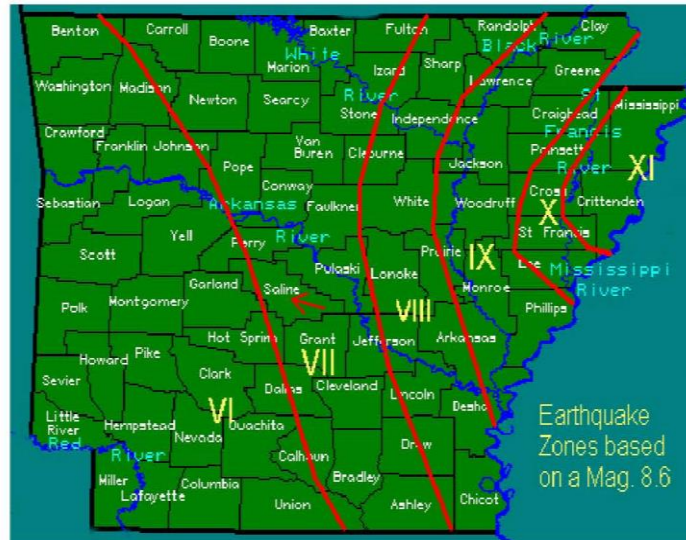
Intensity	Shaking	Description/Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

## **Geographic Area Affected by Earthquakes**

The geographic area affected by Earthquakes in Arkansas have an uneven distribution of earthquakes and that not all counties have experienced a felt or recorded earthquake during the time period between 1811 and 2014. This earthquake distribution can be misleading because, unlike other hazards, the event does not require to occur in a specific jurisdiction for that jurisdiction to be impacted. For example, a large earthquake in the New Madrid Seismic Zone of northeastern Arkansas can cause damage in Faulkner County; in fact, damage could be expected in Faulkner County. Below you will find the Earthquake Epicenters.

Faulkner County is known for a seismically active area known as the “Enola swarm area.” The first seismic event recorded here was a 1.2 magnitude earthquake that occurred on January 12, 1982. Over 40,000 seismic events have occurred in the Enola swarm area since 1982, making it possibly the largest seismic swarm ever recorded in the central United States (Chiu et al., 1984). Most of the seismic events are microquakes, but numerous felt events have been experienced. During the first year of seismic activity, at least 93 earthquakes were felt in the Enola swarm area by at least one person. Between 2009 and through 2013, the number of recorded earthquakes increased dramatically. With only 11 events from 200-2009, there were 1,396 events from 2009 through June 30 2014. Three of which were 4.0 or greater, and 44 events of a magnitude of 3.0-3.9.

## Arkansas Earthquake Hazard Zones for an 8.6 Earthquake on the New Madrid Fault System



Source: [Arkansas Department of Emergency Management](#)

Roman numerals inside each band are predicted levels of damage described using the [Modified Mercalli Intensity scale](#).

### Previous Earthquake Occurrences

Faulkner County has experienced 1,396 earthquakes between 1/1/2009 and 6/30/2014. This information provided by the Arkansas Geological Survey. Below is a listing of earthquakes by year and Scale rating:

- **2009** – 8 events
  - 4.0+ - 0 events
  - 3.0-3.9 – 1 event
  - 2.0-2.9 – 7 events
  - 0.0-1.9 – 0 events
- **2010** – 671 events.
  - 4.0+ - 1 event,
  - 3.0-3.9 - 9 events
  - 2.0-2.9 - 241 events
  - 0.0-1.9 - 420 events

- 
- **+2011** – 702 events
  - 4.0+ - 2 events,
  - 3.0-3.9- 33 events
  - 2.0-2.9- 451 events
  - 0.0-1.9- 216 events
- **2012** – 13 events
  - 4.0+ - 0 events,
  - 3.0-3.9- 1 event
  - 2.0-2.9- 9 events
  - 0.0-1.9- 3 events
- **2013** – 2 events.
  - 2.0-2.9- 2 events

**New Madrid Earthquakes:** The New Madrid Seismic Zone, located in the northern part of the Mississippi Embayment, is a seismically active region in eastern North America. The 1811-1812 series of earthquakes, commonly known as the New Madrid earthquakes, produced damaging intensities over areas far greater than any historical earthquake in the conterminous United States. These and other historical earthquakes, as well as recent seismic activity, indicate that the New Madrid seismic zone has high potential for generating damaging earthquakes. Considering the isoseismal map for the 1811-1812 earthquake sequence, a conclusion is easily drawn that with the current distribution population and infrastructure within the region, a repetition of the sequence similar that in 1811-1812 could be expected to cause destruction of property and loss of life in Faulkner County. Isoseismal Map of the 1811 Earthquake is locate below.

### **Probability of Future Earthquake Events**

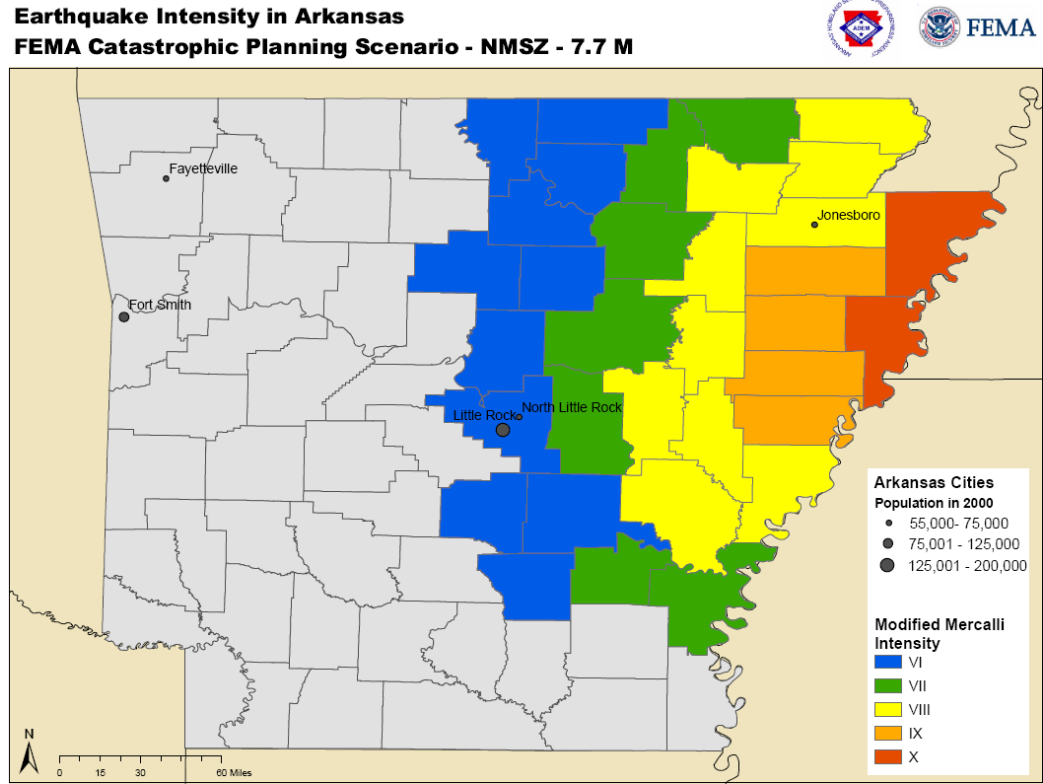
Earth Scientists attempt to forecast earthquakes in terms of “probability” of an earthquake occurring in a specific time interval. These scientists generally accept the theory that earthquakes will occur in the future as frequently as they have occurred in the recent past.

In the final analysis, while a damaging earthquake is unlikely; such an event is Highly Likely to occur in or near Faulkner County. Using the historical data from the Arkansas Geological survey to calculate probability (132 earthquakes in 203 years), there is an 853% of an earthquake occurring. However, if you view the

Enola Swarm history, the activity is on a severe downturn after a severe spike in activity. For this reason a “Likely” probability will be assigned.

**Magnitude/Severity of an Earthquake Event**

Faulkner County is located in the VI Zone of the New Madrid Seismic Zone (NMSZ). Based upon the Maximum predicted Earthquake Intensities Map, Faulkner County will experience considerable damage during an approximate 7.6R earthquake occurrence within the NMSZ. Great (magnitude 8 or greater) and/or major (magnitude 7.0 to 7.9), while unlikely to occur in Faulkner County, have occurred within the NMSZ, thereby creating the possibility of such a hazard event for Faulkner County. Refer to MODIFIED MERCALLI SCALE TABLE 4.2.1.1 for potential damages and impact.



**Calculated Priority Risk Index**

The CPRI for the Earthquake hazard for Faulkner County and each local jurisdiction is

Probability: **Likely**  
Magnitude/Severity: **Limited**

Warning Time:       **Less Than 6 Hours**  
Duration:           **Less Than One Day**

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$3 \times .45 + 2 \times .30 + 4 \times .15 + 2 \times .10 = 2.75$$

#### 4.2.2 Flood Hazard Profile

**Riverine and Flash Flooding:** Flooding is defined as the accumulation of water within a water body and overflow of excess water onto the adjacent floodplain, causing land that is normally dry to be inundated. Flooding is a natural process of overbank flow. Floods may result from many causes. Most floods are caused by heavy rainfall from storms or thunderstorms that generate excessive runoff. A **riverine flood** caused by precipitation, runoff or snowmelt over a relatively large watershed causing flooding over wide areas and cresting in over 8 hours. A **flash flood** is a flood caused by heavy precipitation or snowmelt over a limited watershed (typically less than 50 square miles), crests in eight hours or less, and generally occurs in hilly terrain. Riverine floods have relatively low velocity, cover a large area of land, and take longer to recede, whereas flash floods have a higher velocity and may recede quickly. Flash flood can occur when extreme amounts of precipitation fall on any terrain if the precipitation accumulates more rapidly than the terrain can allow runoff.

Flash floods pose more significant safety risks than other riverine floods because of the rapid onset, the high velocity of water, the potential for channel scour, and the debris load. Debris carried by floods can damage or destroy structures in its path. In addition, more than one flood crest may result from a series of fast moving storms. Sudden destruction of structures and the washout of access routes may result in the loss of life.

Flood damage is proportional to the volume and the velocity of the water. Floods are extremely dangerous because they destroy through inundation and soaking as well as the incredible force of moving water. High volumes of water can move heavy objects and undermine roads and bridges. Floods often occur without local precipitation as a result of precipitation upstream. Although rural flooding is dangerous to fewer people and may be less costly than urban flooding, it can cause great damage to agricultural operations..

A **floodplain** is the normally dry, flat area of land adjoining the channel of a stream, watercourse or other water body such as a lake or reservoir that is susceptible to inundation by flood water and stream-borne sediments. Floodplains can be managed to mitigate against damage from floodwaters. The floodplain is for overflow of floodwaters, and zoning regulations commonly prohibit development in this area. The **floodway** is the channel of a watercourse and those portions of the adjoining floodplain providing the passage of the 100-year flood

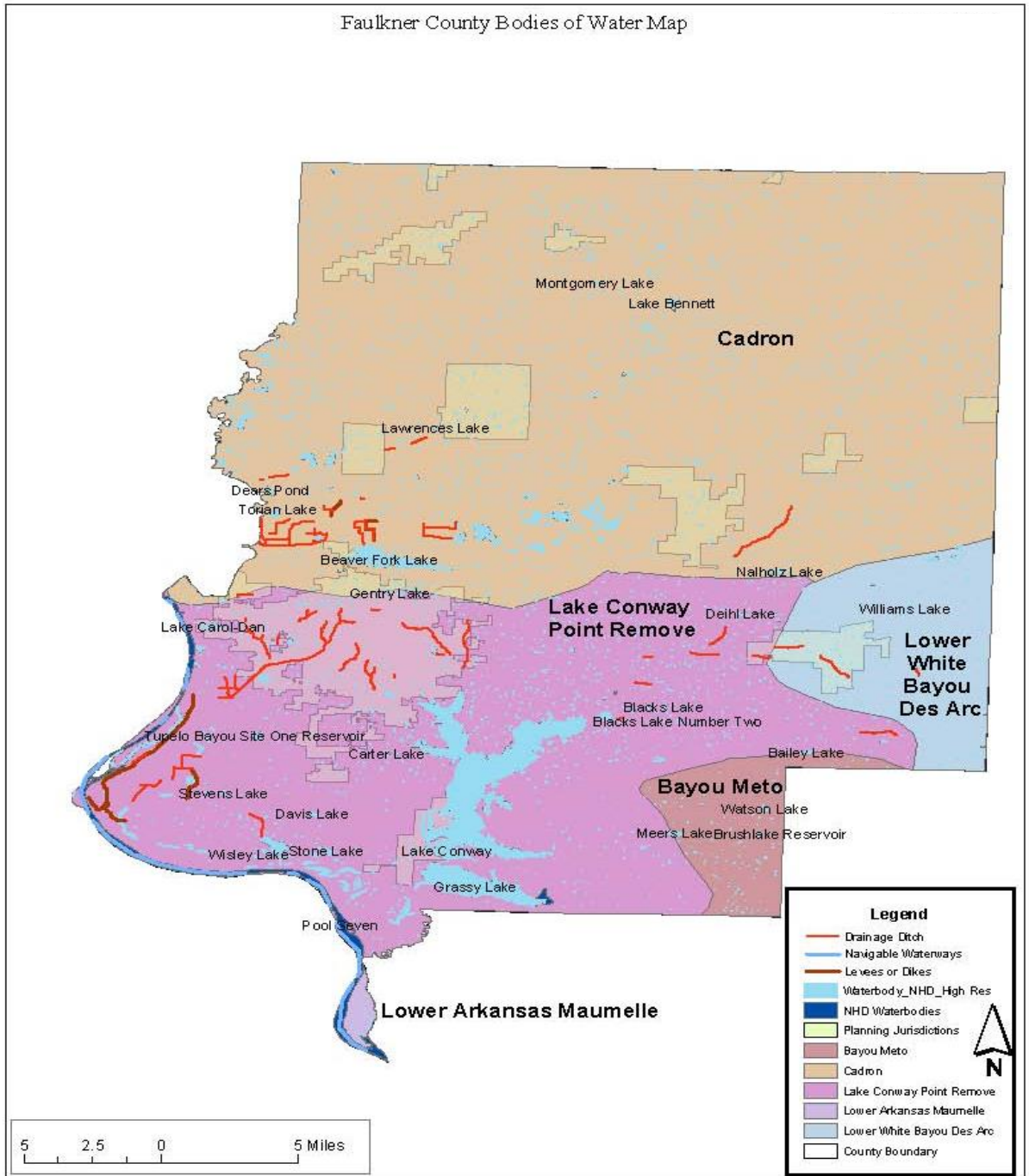
stage waters. The **floodway fringe** is the portion of the floodplain where complete development will cause significant rise (typically one-foot) in 100-year floodplain. **Flood stage** is water elevation at which damage to personal property is significant. Damage from flooding depends on the amount of cultural development. Locally heavy precipitation may produce flooding in areas other than delineated floodplains or along recognized drainage channels. If local conditions cannot accommodate intense precipitation through a combination of infiltration and surface runoff, water may accumulate and cause flooding problems.

**Flash Flooding:** The terrain found throughout the County is very diverse with low relief flat land with flat, broad floodplains interspersed with rivers, oxbow lakes, bayous and wet lands. There are also mountainous regions in Faulkner County. This type terrain, combined with the alluvial soils of the area, tend to slow and hold the runoff of during periods of heavy rain creating areas of standing water with essentially “no place to go”. This scenario is especially prevalent during periods of heavy rains and the ground has become saturated. There is also the challenge of the many lakes, rivers and creeks that flow through Faulkner County. The runoff from the mountainous areas quickly fills the rivers and creeks sometimes overflowing the banks. For example, in the past ten (10) years, the National Climate Data Center has recorded fifteen (15) flash floods in Faulkner County.

**Riverine Flooding:** Riverine flooding is usually caused by extensive rainfall over a period of several days or longer within the drainage area surrounding Faulkner County and along the Arkansas River. The Arkansas River at Toad Suck Lock and Dam has been above its flood stage of 275 feet at least 13 times with its highest crest in 1990 of 282.9 feet.

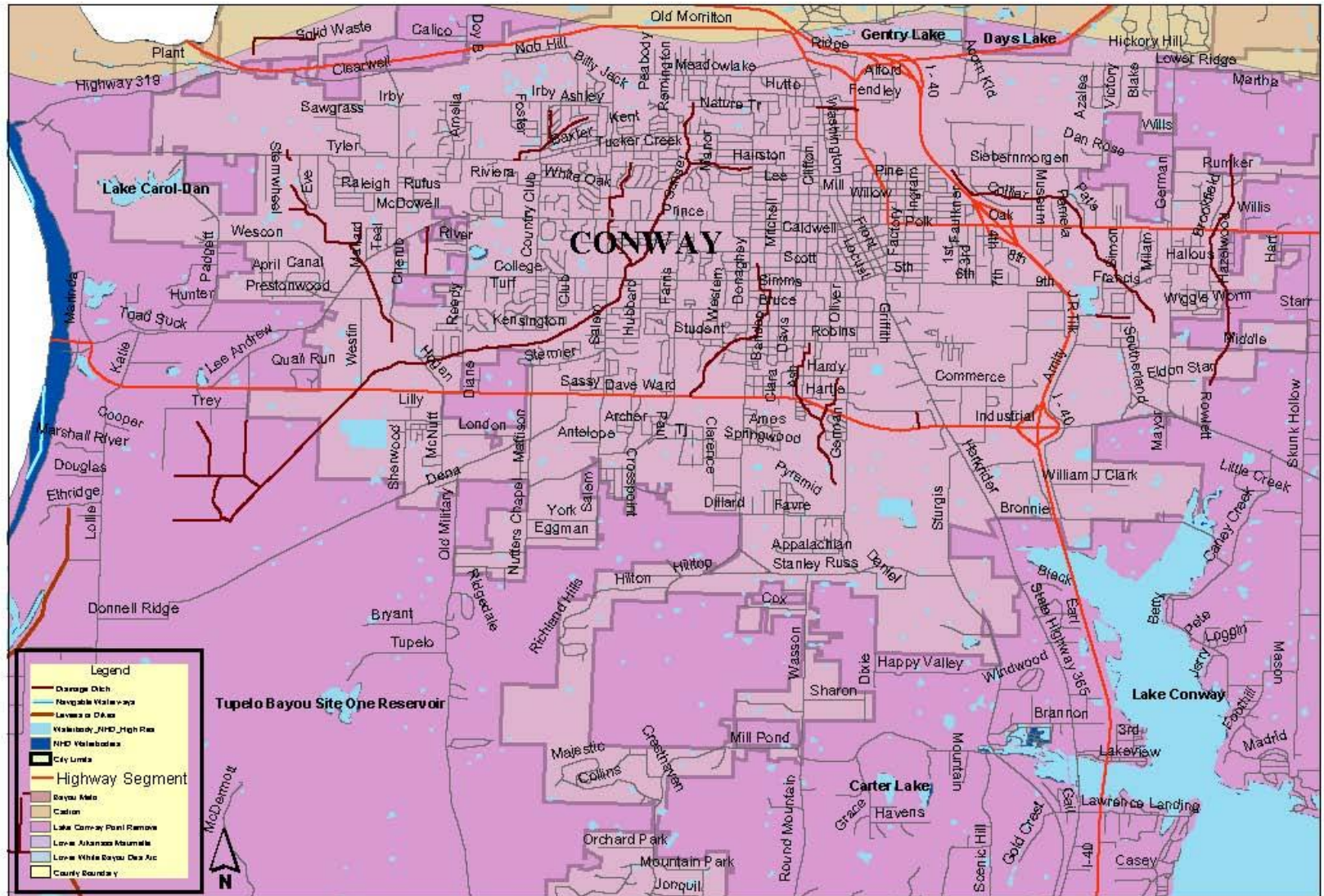
The Bodies of Water located in Faulkner County are shown below.

Faulkner County Bodies of Water Map

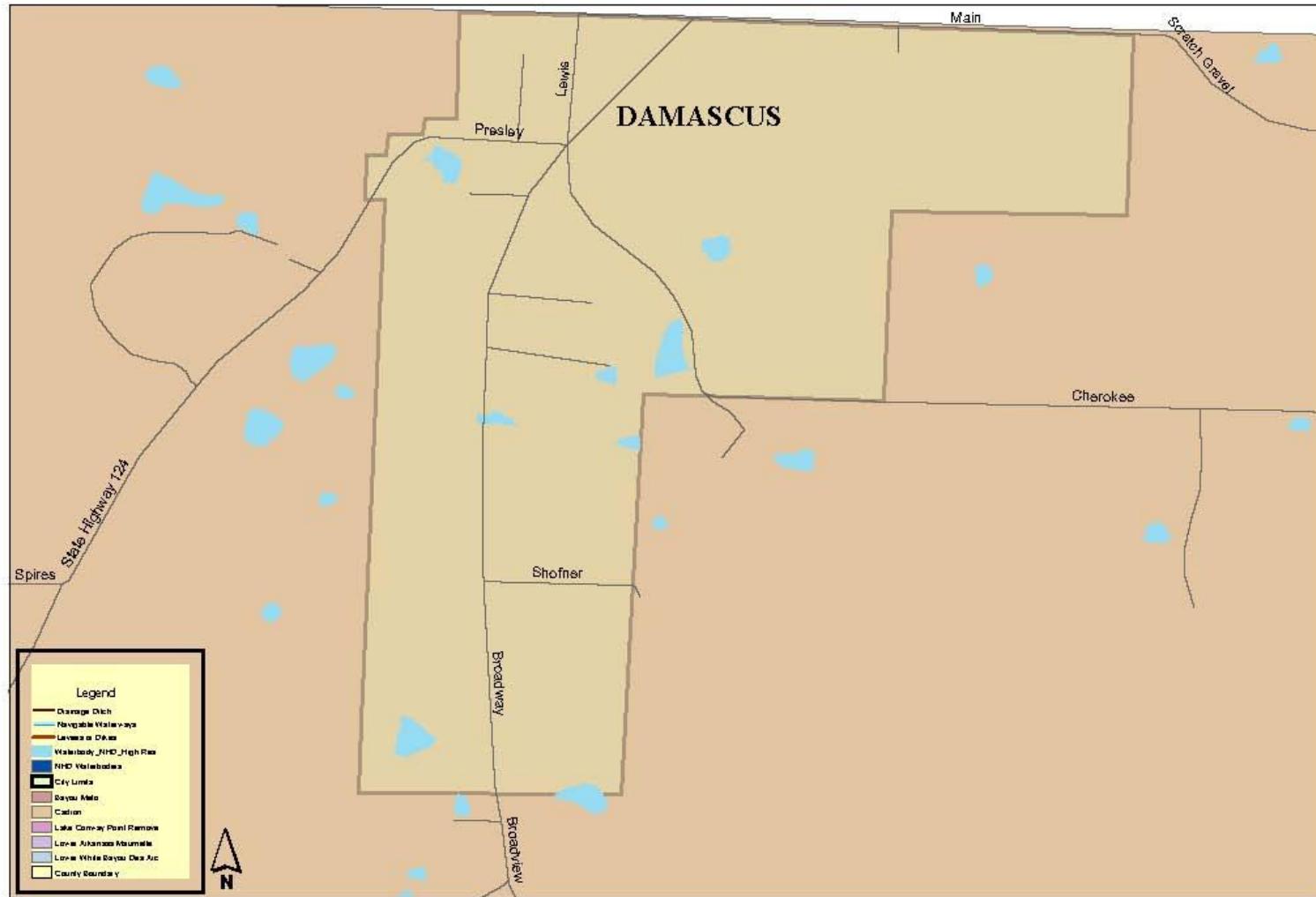




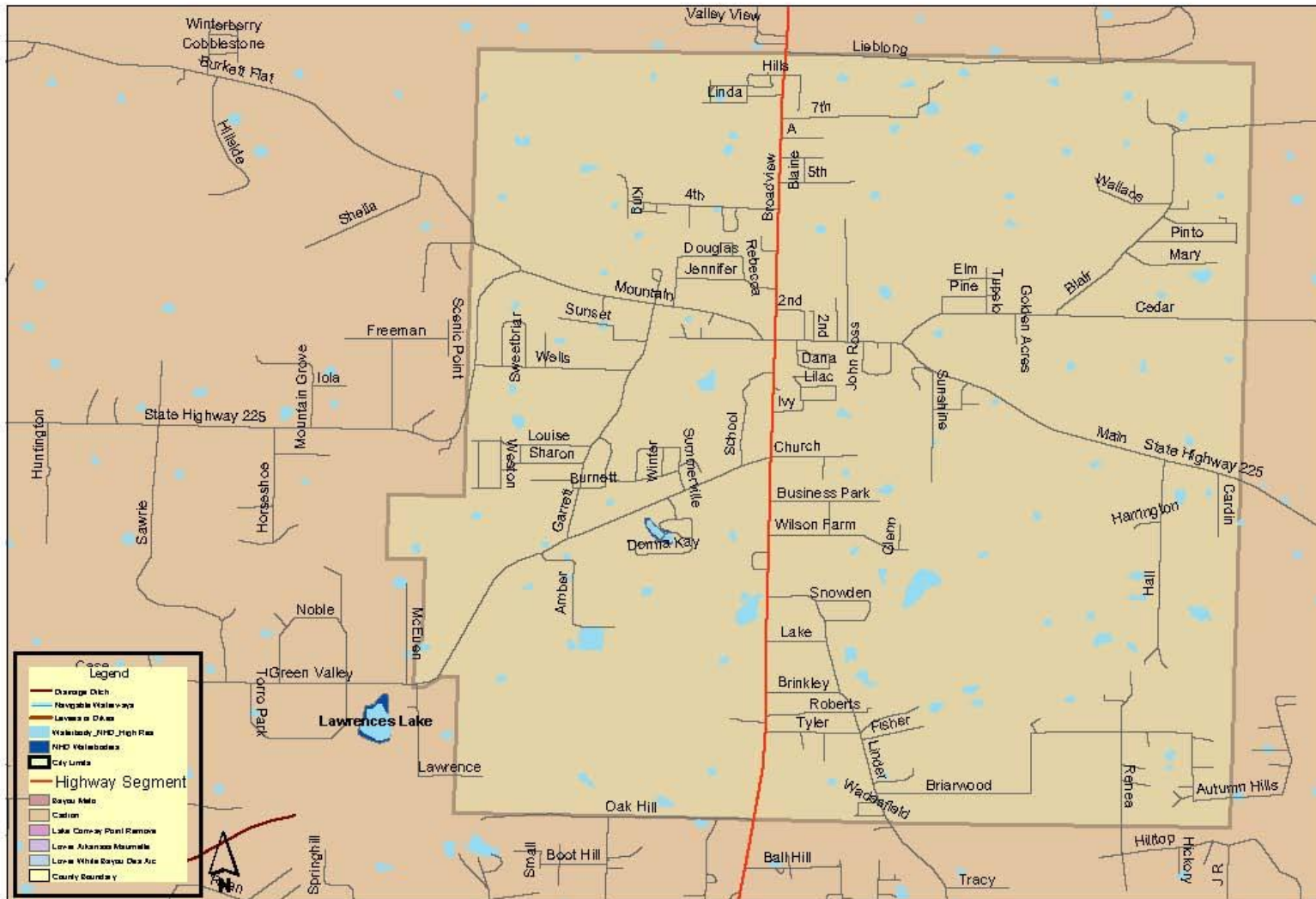
## Faulkner County (City of Conway) Bodies of Water Map



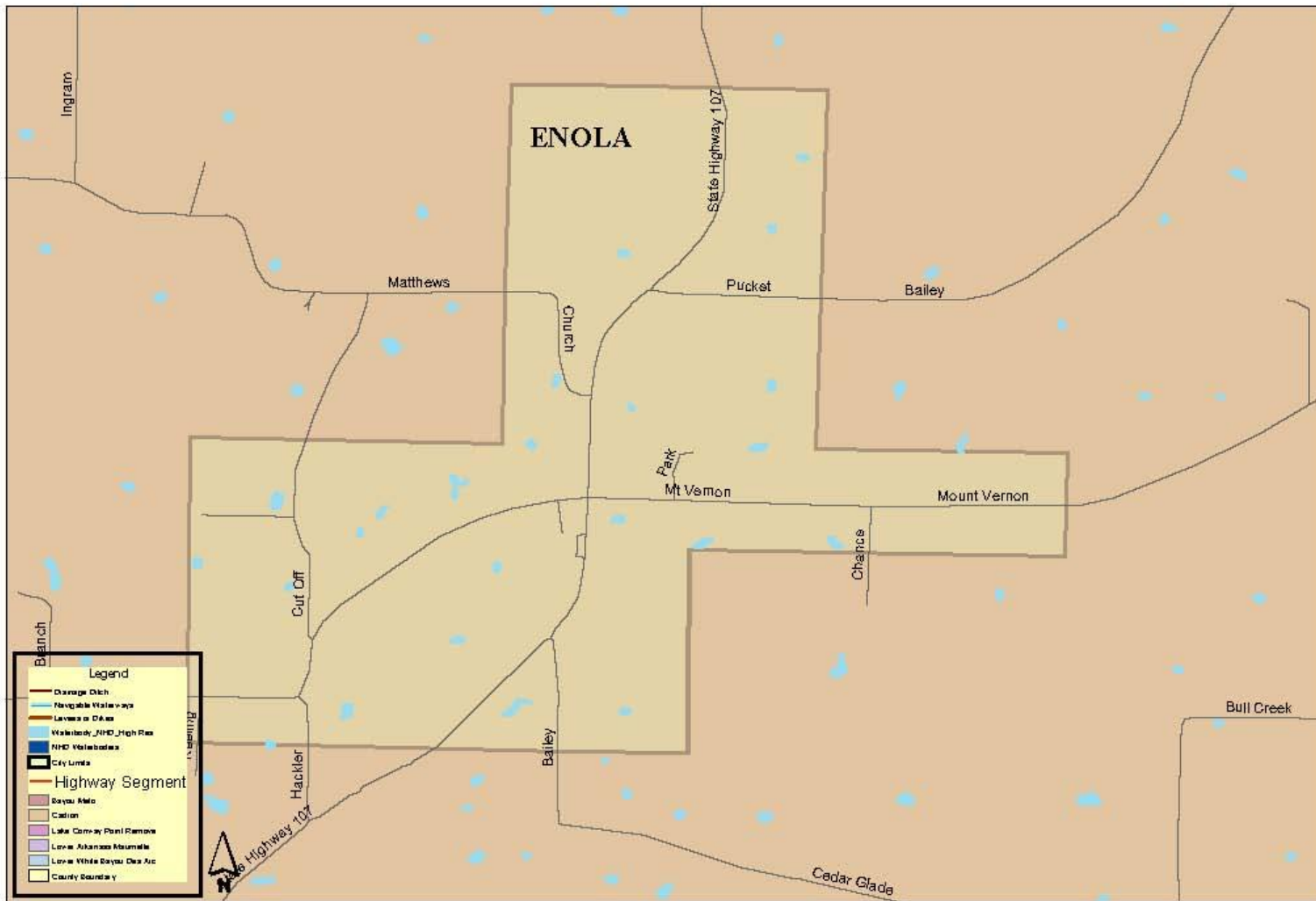
### Faulkner County (City of Damascus) Bodies of Water Map



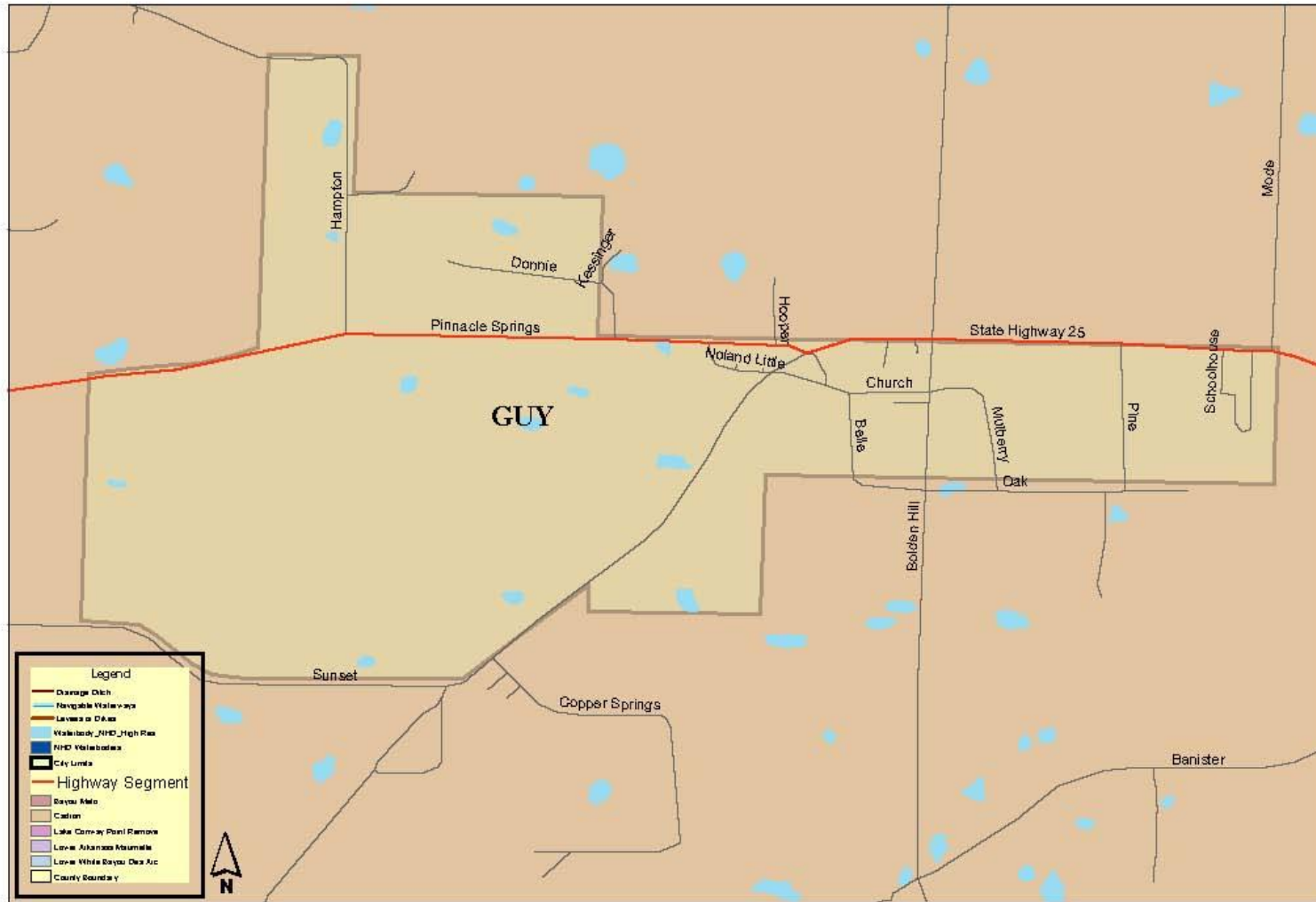
## Faulkner County (City of Greenbrier) Bodies of Water Map



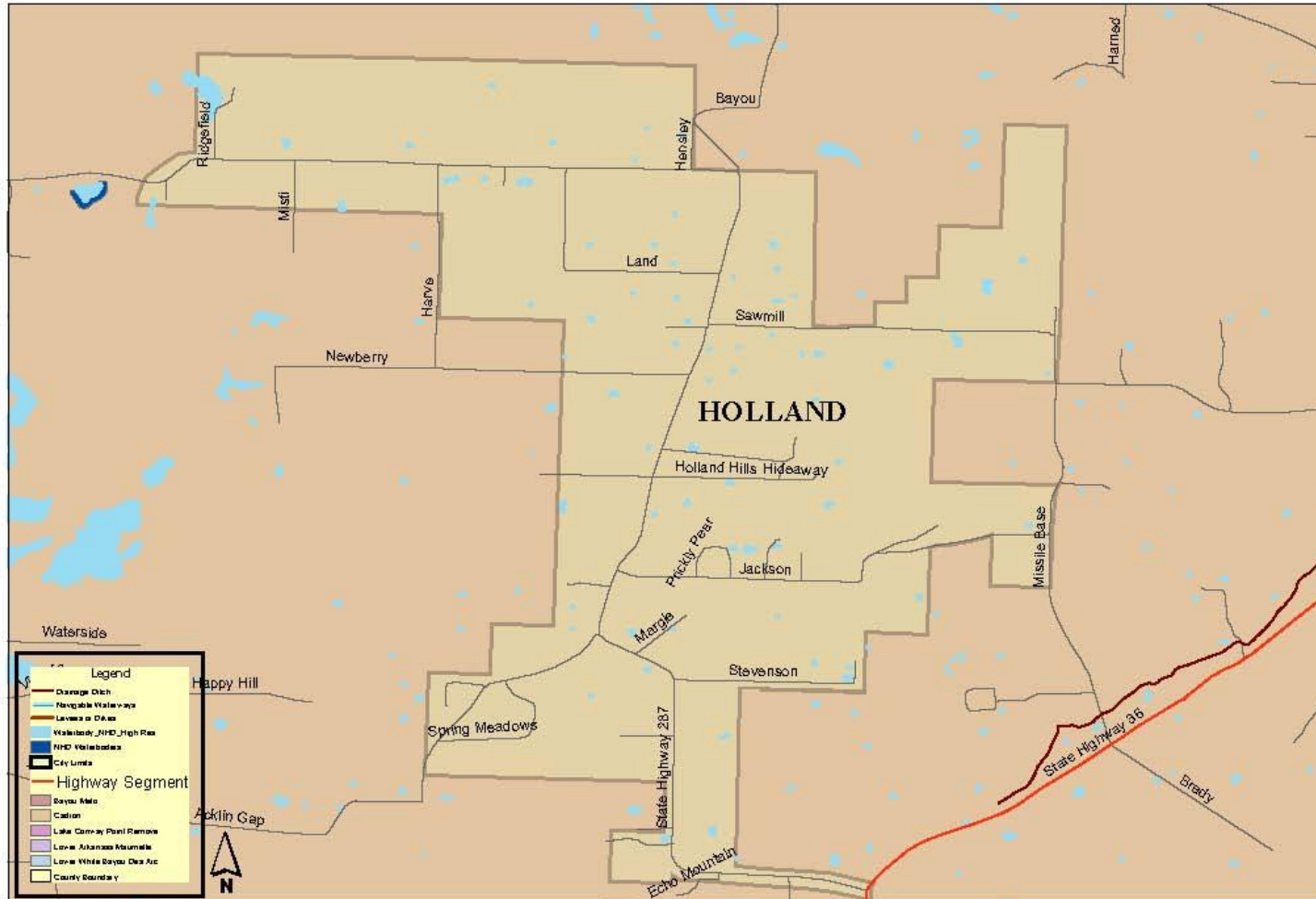
### Faulkner County (City of Enola) Bodies of Water Map



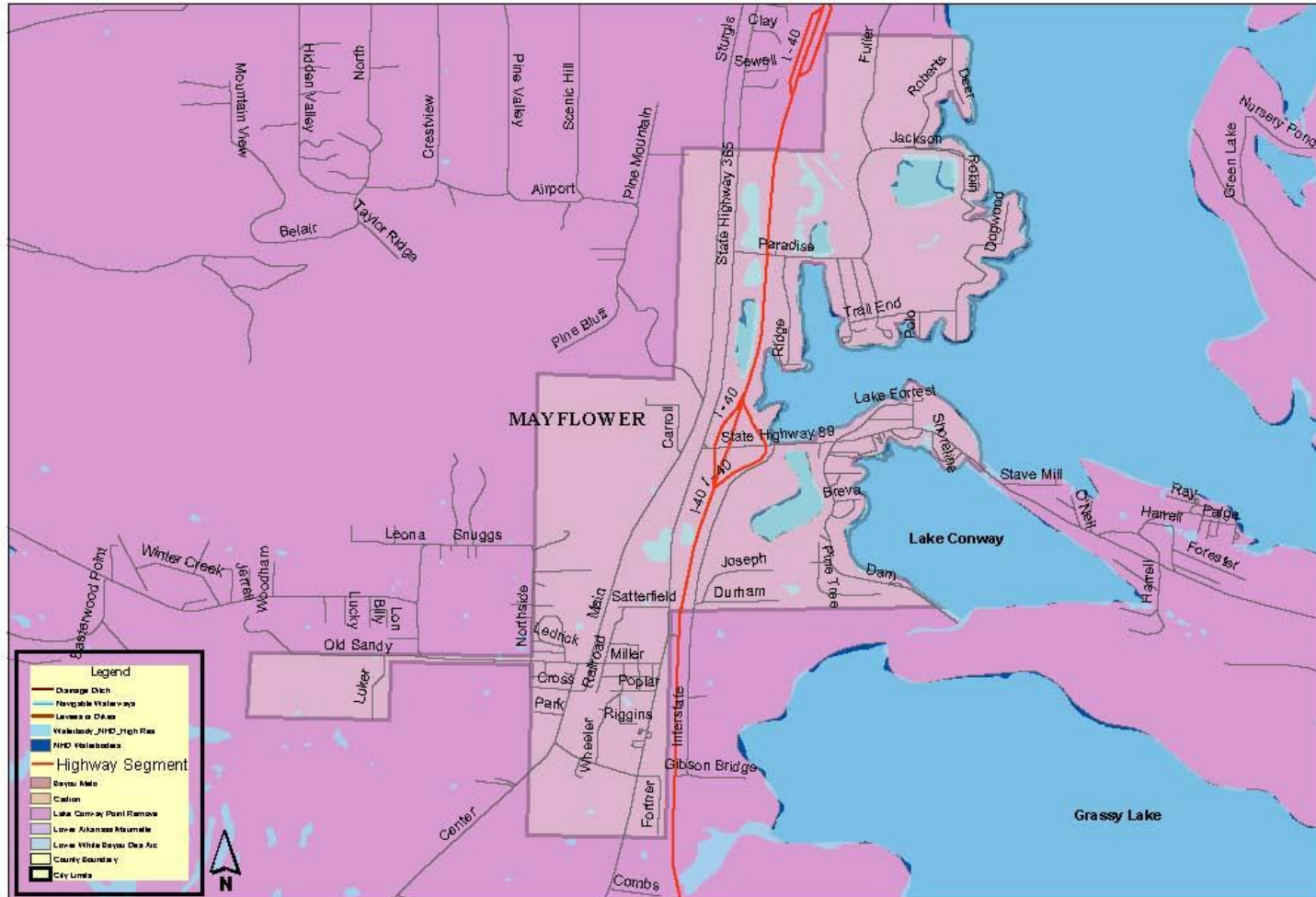
### Faulkner County (City of Guy) Bodies of Water Map



## Faulkner County (City of Holland) Bodies of Water Map



### Faulkner County (City of Mayflower) Bodies of Water Map

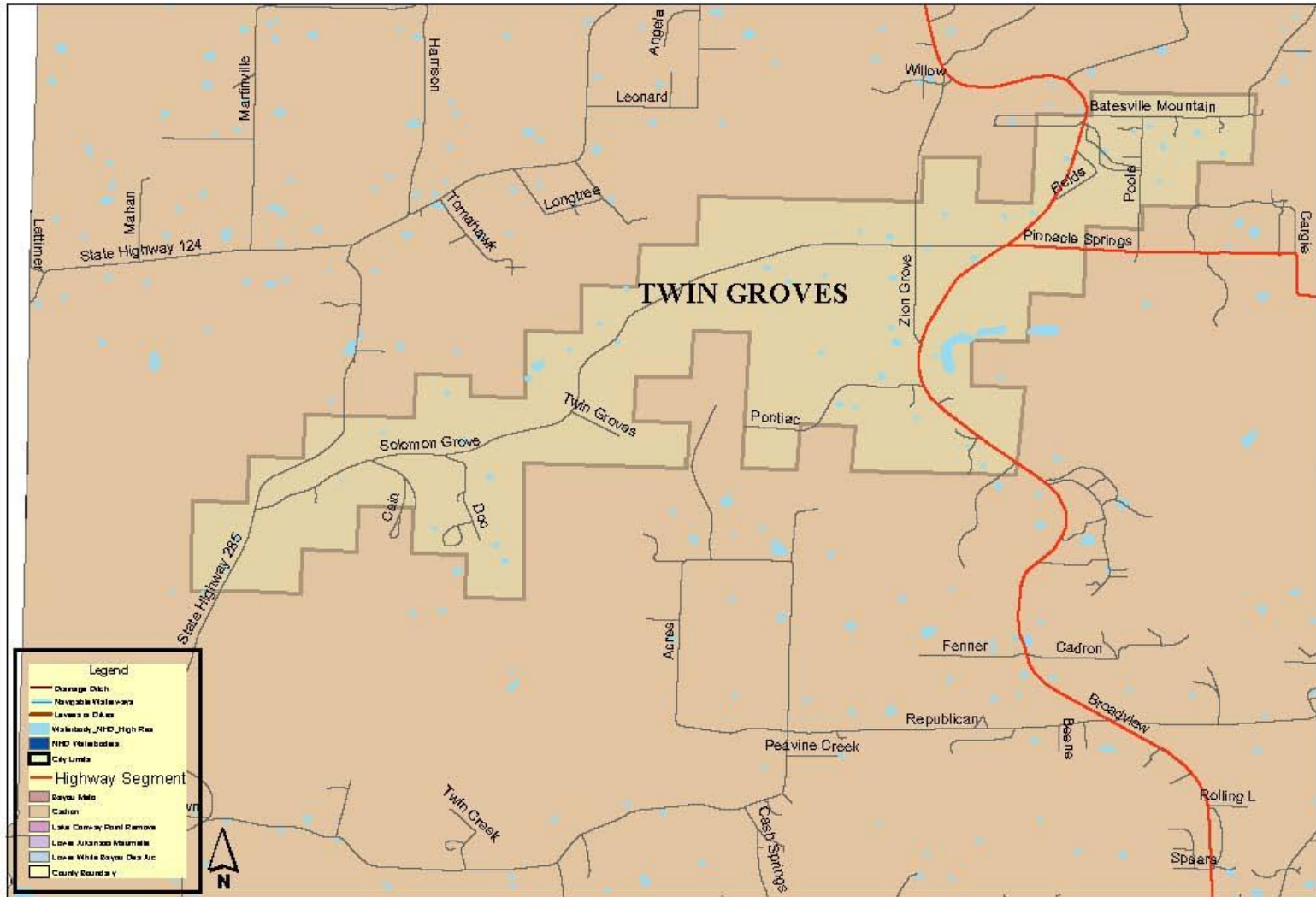


### Faulkner County (City of Mt. Vernon) Bodies of Water Map

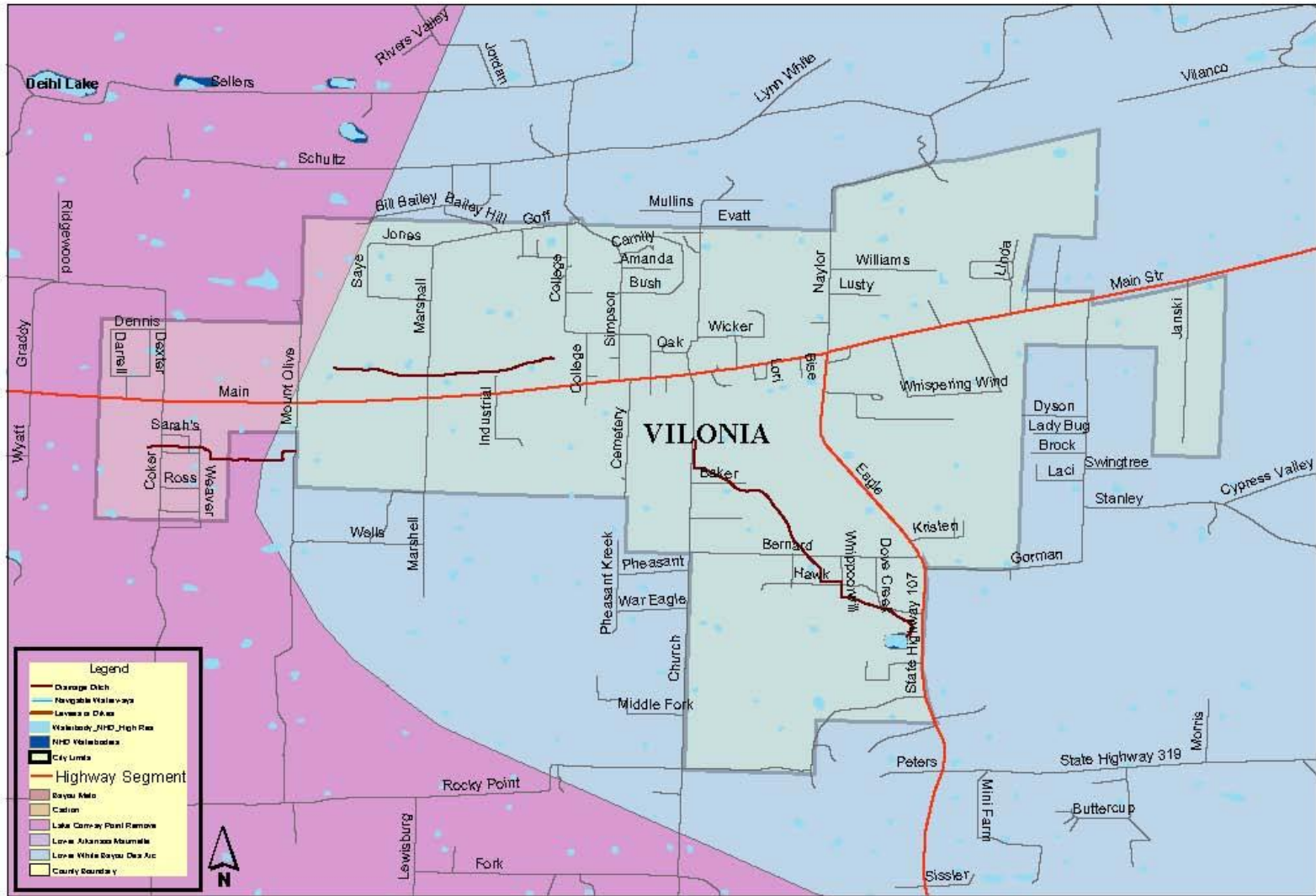




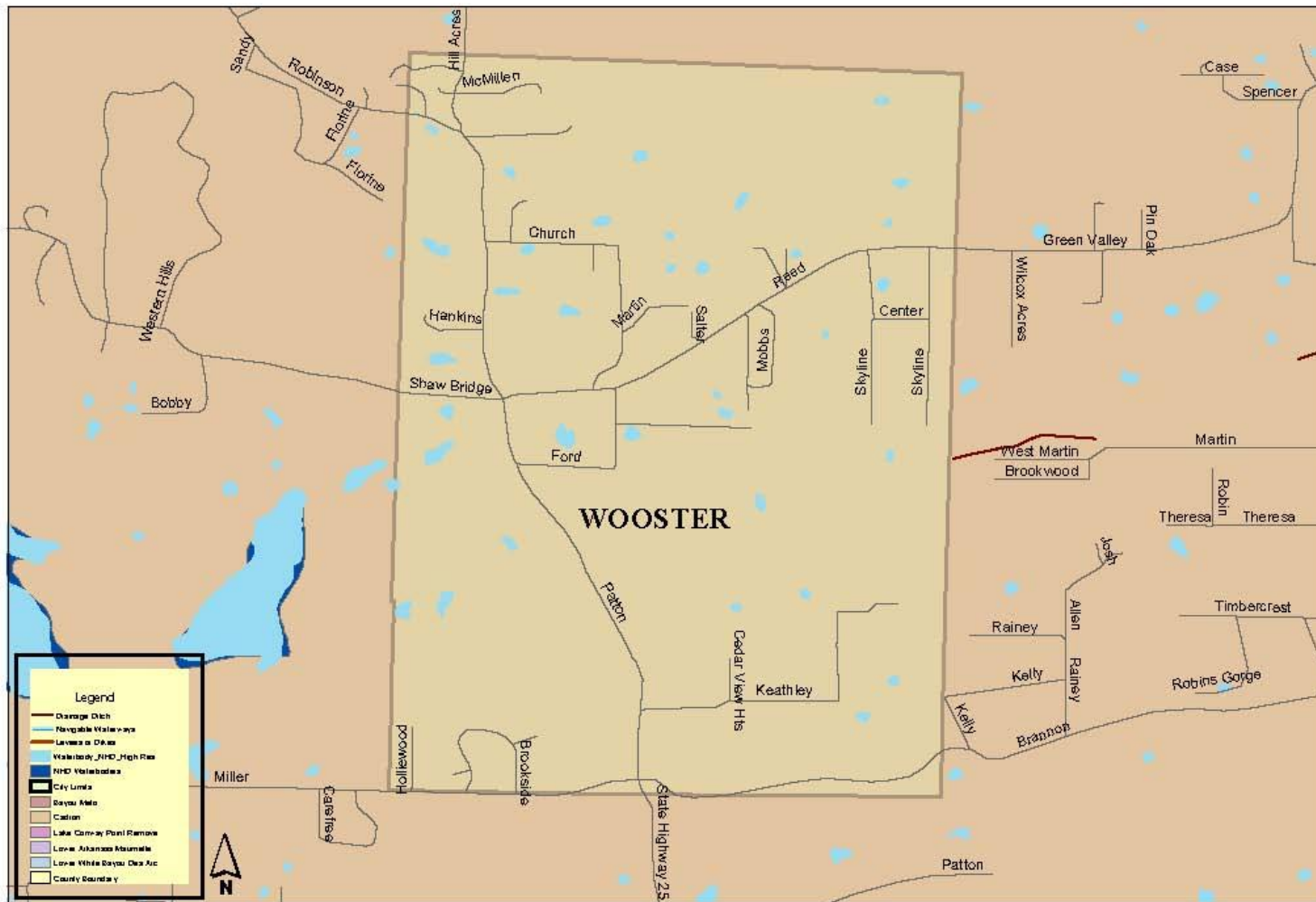
### Faulkner County (City of Twin Groves) Bodies of Water Map



### Faulkner County (City of Vilonia) Bodies of Water Map



### Faulkner County (City of Wooster) Bodies of Water Map



### **Geographic Area Affected by Flooding:**

Faulkner County, which is considered to be a part of the Gulf Coastal and Ouachita Mountain Ecoregion, is subject to riverine, flash, and dam-failure flooding. A variety of factors affect the type and severity of flooding within Faulkner County, including topography, geology, urban development and infrastructure. Serious flooding in the mountainous areas is unusual because streams tend to be faster flowing and flood waters drain quickly. Also, the mountainous areas of the county are generally less populated and flooding that does occur is not as likely to threaten property or lives. Most of the county's flooding and drainage problems are found in communities in the less hilly, Arkansas River Valley. Flash floods are most common in this area due to this area exhibiting high to moderate relief, steep to moderate slopes, and bedrock with low permeability. All factors facilitate rapid runoff and the consequent potential for flash floods. Urban development in this part of the county exacerbates the flash flooding problem. Intense rainfall events, often accompanying the large thunderstorms that occur in Faulkner County several times a year, may result in water flowing rapidly from high elevations into valleys, collecting in, and sometimes overtopping the valley streams. There have also been issues with the maintenance and clearing of drainage channels in this area that have resulted in obstructions restricting the flow of water during a storm. The Hazard Mitigation Planning team has reviewed Faulkner County's Flood Insurance Rate Maps (FIRMs) and has worked with the County and City Floodplain Administrators to compile a profile of the flooding hazards in the Jurisdictions. Research on flooding history in the County newspaper accounts of major floods, data collected from the National Climatic Data Center and the interviews with individual County residents.

### **FEMA Flood Zone Designations**

<b>Zone</b>	<b>Description</b>
A	Areas of 100-year Flood; Base flood elevations and flood hazard factors not determined
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundations are shown, but no flood hazard factors are determined.
AE	Base flood elevations determined.
AH	Areas of 100 year shallow flooding where depths are between one (1) and three (3) feet; Base Flood Elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100 year flood; Base Flood Elevations and Flood Hazard Factors determined.

A-99	Areas of 100 year flood to be protected by flood protection system under construction; Base Flood Elevations and Flood Hazard Factors not determined.
AR	The base floodplain that results from the de-certification of a previously accredited flood protection system that is in the process of being restored to provide a 100 year or greater level of flood protection.
V	The coastal area subject to a velocity hazard (wave action) where BFE's are not determined on the FIRM.
VE	The coastal area subject to a velocity hazard (wave action) where BFE's are provided on the FIRM.
B & X	Areas of moderate flood hazard, usually the area between the limits of the 100 year and 500 year floods. B zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from the 100 year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
Shaded	
C & X	Areas of minimal flood hazard, usually depicted on FIRMs as exceeding in 500 year flood level. Zone C may have ponding and local drainage problems that do not warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500 year flood.
Unshaded	
D	Areas of undetermined but possible flood hazards.

### **Moderate to Low Risk Areas**

In communities that participate in the NFIP, flood insurance is available to all property owners and renters with moderate to low risk.

### **Zones B, C, and X**

Areas outside the 1-percent annual chance floodplain, areas of 1% annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1% annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1% annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones.

### **High Risk Areas**

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all A zones.

### **Zone A**

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.

### **Zone AE and A1-A30**

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the

life of a 30-year mortgage. In most instances, base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

**Zone AH**

Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

**Zone AO**

River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.

**Zone AR**

Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.

**Zone A99**

Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.

**High Risk - Coastal Areas**

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all V zones.

**Zone V**

Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.

**Zone VE and V1 - 30**

Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

**Undetermined Risk Areas**

**Zone D**

Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

[www.Floodsmart.gov](http://www.Floodsmart.gov)

The updated FIRM maps have been attached to the appendix of the plan.

### **Previous Flood Occurrences:**

**Riverine Flooding:** The flood events on the Arkansas River in Faulkner County are well documented by the National Weather Service Advanced Hydrologic Prediction Service. With the flood stage set at 275 feet, the highest historical “Crest” of the Arkansas River on May 1990 the levees in Toad Suck community overtopped. Toad Suck one-stop store was affected. This was the worst of 10 recoded crest dates ranging from 1974 until 2002.

The impact of flood stage river levels on the Arkansas River clearly impact all other rivers, streams, bayous and oxbow lakes in Faulkner County as each one’s flow toward and into the Faulkner River. For example, when the Faulkner River is at flood stage (275 feet), water begins backing up along the many creeks throughout the county putting many structures in danger.

**2014 Update:** 8 flood event(s) were reported between 01/01/2009 and 6/31/2014. Below is a description of each event:

**2009-** Flash flooding which began on the 29th became widespread areal flooding on the 30th.

Flash flooding which developed early on the morning of the 24th became widespread areal flooding later in the morning and continued into the morning of the 25th. Arkansas Highway 85 was closed by flooding. Palarm Creek washed away part of Saltillo Rd. Roads that were under water included Wilson Bottoms Rd., Springfield Rd., Mallet Town Rd., Shaw Bridge Rd., Ridge Dr., Bayou Rd., Beryl Rd., and Otto Rd. The driver of a tank truck had to be rescued from high water on Wilson Bottoms Rd. In Conway, Trey Lane and Centennial Soccer Park flooded, causing the cancellation of the Holiday Festival of Lights.

**2011-** Widespread areal flooding occurred. Several rounds of very heavy rainfall during the latter half of April caused many rivers across Arkansas to rise above flood stage. Rainfall amounts of 5 inches to well over 10 inches were seen, with much of that rain falling in a period of less than a week. Additionally, water from heavy rains in Missouri began flowing down into Arkansas. Thus began the Great Flood of 2011. In many cases, at least moderate flood levels were reached on area rivers, with several rivers rising into the major flood stage category. There were even some rivers that reached all-time record levels. Thousands of acres of farm land were inundated, destroying millions of dollars of crops. Countless homes and business were flooded. Roads became impassable for several days and even weeks. Much of the flooding persisted into the month of May.

Many roads around Lake Conway were closed due to flooding, including a portion of Arkansas Highway 89.

**2012-** Flash flooding earlier in the day became widespread areal flooding as creeks flooded.

Heavy rain in late March caused Toad Suck Lock and Dam along the Arkansas River to rise above flood stage for several hours on the 23rd.

**2014-** Street flooding occurred around Greenbrier and Springhill.

**Flash Flooding:** Pre 2009, The National Climatic Data Center (NCDC) has recorded fifteen (15) flash flooding events in Faulkner County since 1997. Three (3) of these events were declared countywide. The other six (6) events were declared for Conway, Vilonia, Greenbrier, Wooster and southern portions of the county. There were no deaths or injuries associated with these flood events.

**2014 Update:** 16 flash flood event(s) were reported between 01/01/2009 and 6/30/2014. Here is a description of each event:

**2009-** Arkansas Highway 124 was covered in water. Vehicles were unable to drive through.

The Conway Street Department reported that streets were barricaded in downtown Conway, including Oak Street between Court and Front Streets, Prairie Street between the railroad tracks and Locust, and Parkway between Prairie and Oak.

Water was a foot deep over Cato Road.

Flooding occurred at Arkansas Highways 107 and 225.

All low water crossings around Damascus were under water.

Flooding was reported on Arkansas Highway 365 and King Road. Many county roads were damaged by flooding. Ridge Road and Grassy Lake Road were closed.

Widespread heavy rain resulted in the development of flash flooding early on the 24th.

**2010-** Several streets flooded in downtown Conway. Cars stalled in the high water, and water entered a few businesses.

Street flooding occurred in Greenbrier.

**2011-** Water was over several roads in Greenbrier.

A car was swept off the Springfield Bridge. Both occupants of the car were rescued.



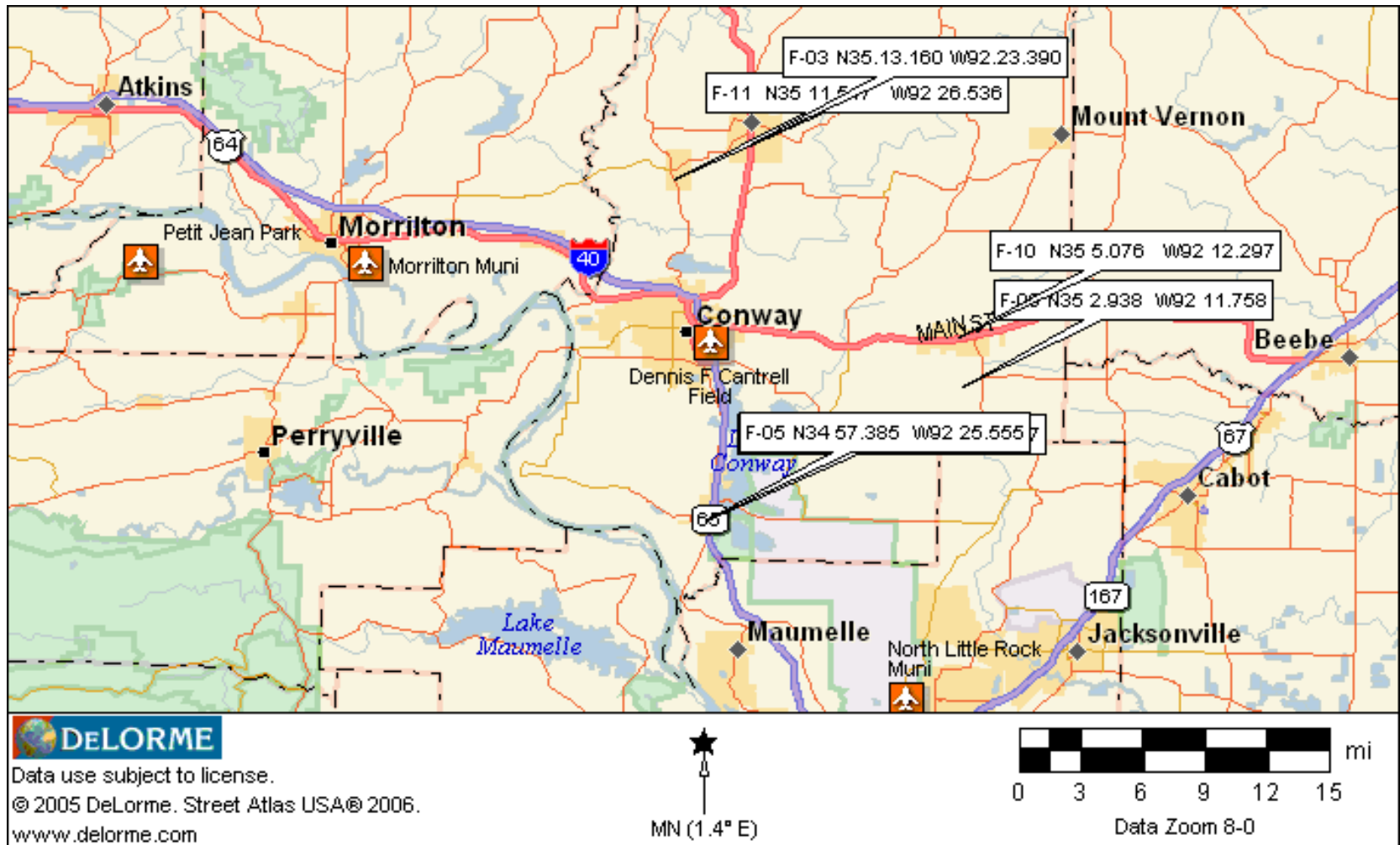
At 1:08 AM CDT, water was approaching the doorstep of houses in Mayflower. Around 1:20 AM CDT, an SUV went into flood waters on North Main St. in Mayflower and ended up in a ditch. The water was rising so rapidly that the vehicle was completely submerged by the time rescuers arrived. The 57 year-old driver of the SUV drowned. At 12:08 AM CDT, Numerous roads flooded around Vilonia; swift-water rescues became necessary by 1:00 AM CDT. A total of 29 people had to be evacuated from the Vilonia and Mayflower areas.

**2012-** Numerous county roads were flooded. Four homes in the Liberty community and one home in Greenbrier were evacuated due to rising creeks.

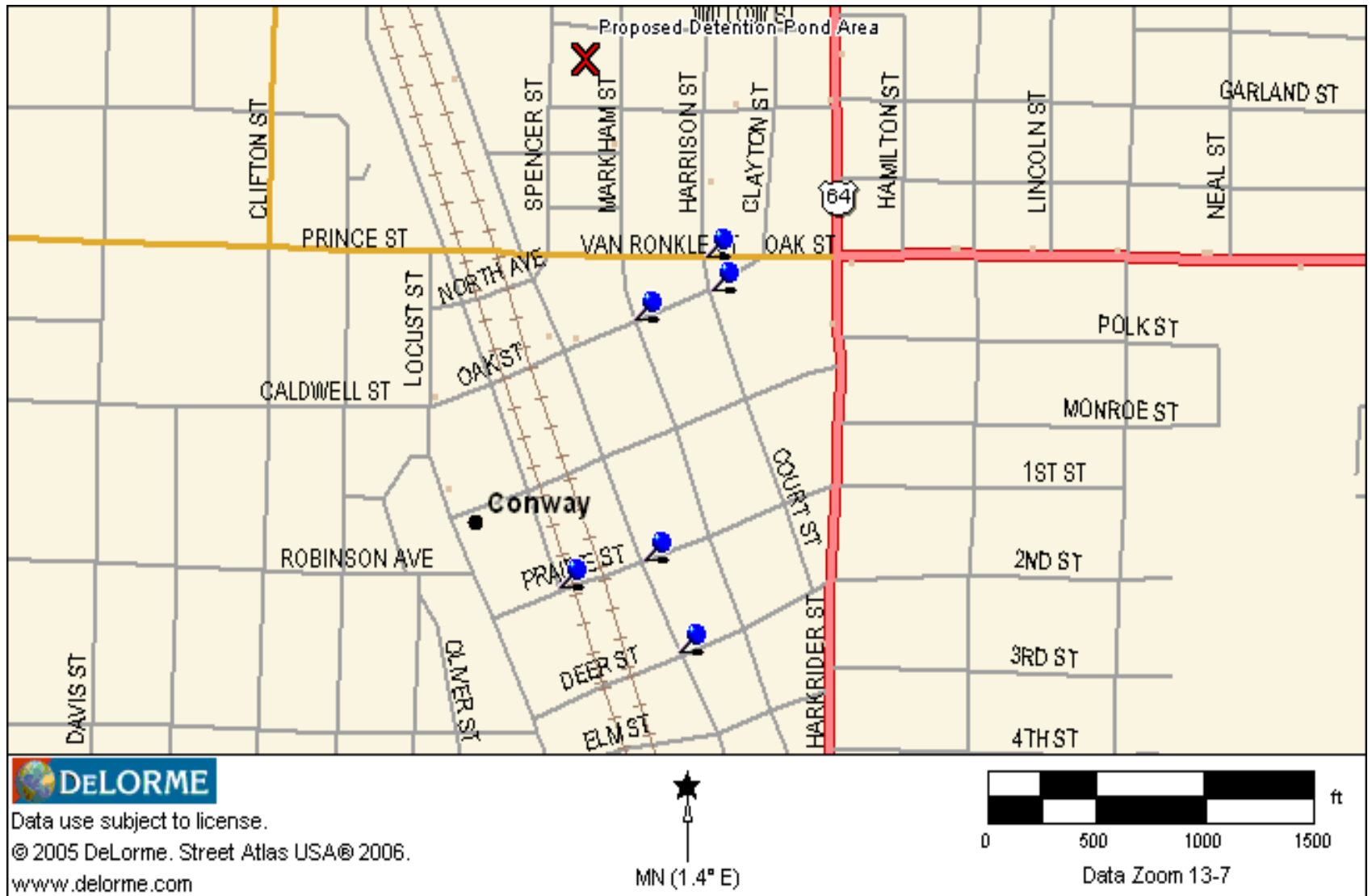
**2013-** Roads were flooded and barricaded several places in Faulkner County. Water entered two apartments in Mayflower.

A number of roads were flooded. For the 24-hour period ending at 7 AM on the 31st, Conway measured 3.77 inches of rain.

Previous Flood Occurrences are indicated on the map below. Frequent flooding areas are noted and numbered to tie into the Mitigation Actions listed in Section 5.

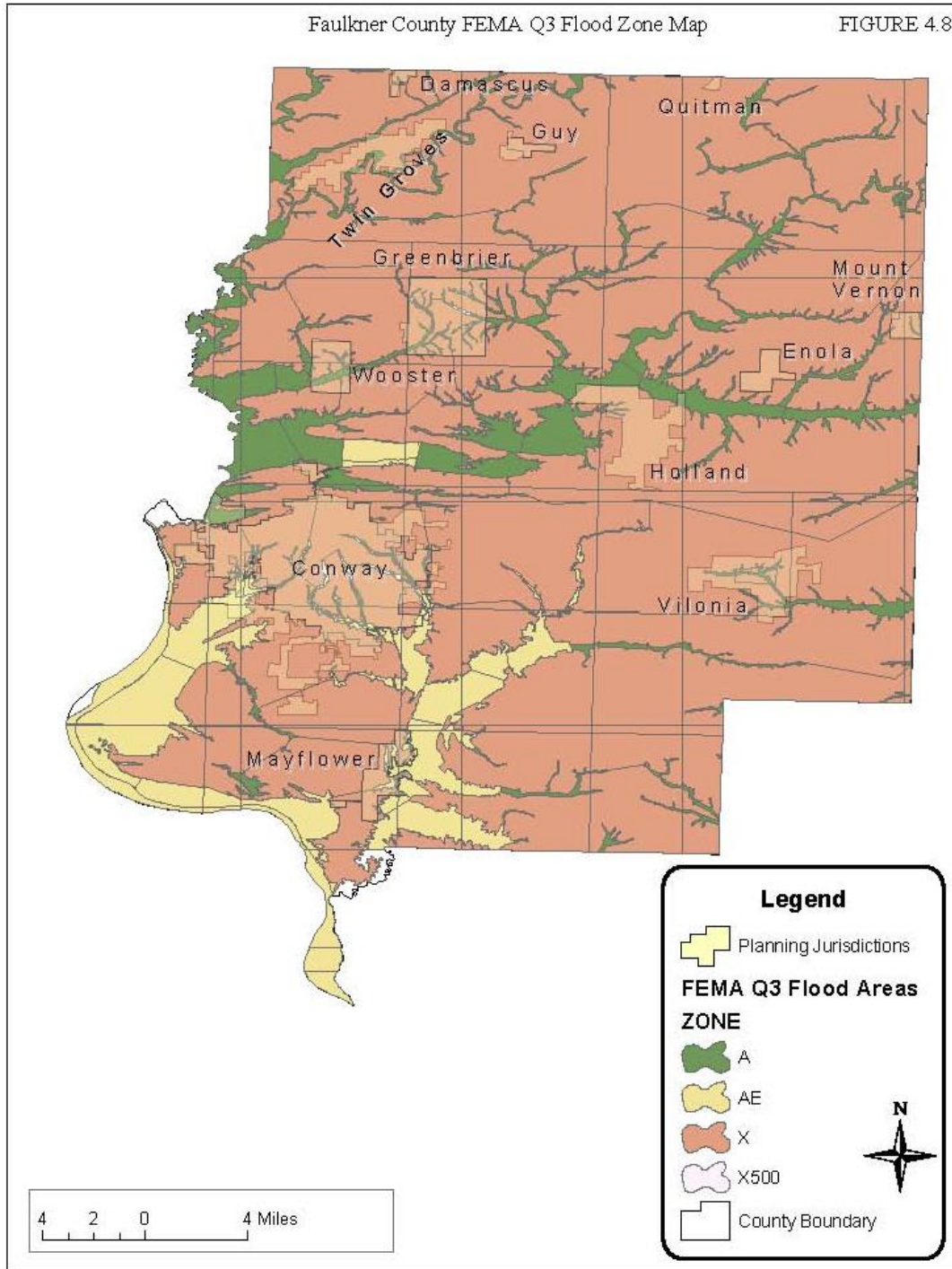


F-01 Frequent Flooding areas in the City of Conway that would be affected by the proposed Detention pond upstream.



Faulkner County FEMA Q3 Flood Zone Map

FIGURE 4.8





## Probability of Future Flood Events

**Riverine Flooding and Flash Flooding:** The probability of a flood event occurring in a region or area is expressed as the percent chance that a flood of a specific magnitude will occur in any given year. These percentages are calculated as follows:

### Flood Probability of Occurrence

Flood Return Intervals	Chance of Occurrence in a given year
10-year	10%
50-year	2%
100-year	1%
500-year	0.2%

The Arkansas River has been at flood stage 13 times since 1974. From these figures one could assume that the Arkansas River reaches flood stage at the Toad Suck Lock and Dam once every 3.25 years. Since 1996 (beginning of NCDC flash flood data), Faulkner County has recorded a total of 33 flash floods or an average of 1.8 flash floods a year. There has not been any record of a dam failure flood in Faulkner County and one should not be expected.

However, the history of riverine and flash floods in Faulkner County suggests that these events will likely continue to occur as the record of experience and the given chance of occurrence in any given year.

## Magnitude/Severity of the Flood Hazard

In Faulkner County, riverine floods can be slow or fast rising but generally develop over a period of days as is evidenced by the Arkansas River exceeding flood stage an average of once every three years. The “crest” does not signal the flood is over, but may take just as long a period of time for the river to recede to normal flow. In Faulkner County, flash floods usually occur in low areas where drainage is poor, when rainfall tabulations exceed the ability of the soil to carry water away. Flash floods can quickly inundate large areas with standing water, leaving residents or motorists stranded and endangering life and property as is evidenced by fifteen (15) flash floods in Faulkner County in eight years.

In Faulkner County, the southwest portion of the County is in the direct vicinity of the Dams classified as a “High Hazard” due to the risk to life and property if failure of the dam were to occur. Flash Flood Occurrence Map is shown below.

## Severity Flood Categories

Terms defined for each forecast point which describe or categorize the severity of flood impacts in the corresponding river/stream reach. Each flood category is bounded by an upper and lower stage. The severity of flooding at a given stage is not necessarily the same at all locations along a river reach due to varying channel/bank characteristics or presence of levees on portions of

the reach. Therefore, the upper and lower stages for a given flood category are usually associated with water levels corresponding to the most significant flood impacts somewhere in the reach. The flood categories used in the NWS are: \*Minor Flooding\* - minimal or no property damage, but possibly some public threat. \*Moderate Flooding\* - some inundation of structures and roads near stream. Some evacuations of people and/or transfer of property to higher elevations. \*Major Flooding\* - extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations. \*Record Flooding\* - flooding which equals or exceeds the highest stage or discharge at a given site during the period of record keeping. Note: all three of the lower flood categories (minor, moderate, major) do not necessarily exist for a given forecast point. For example, at the level where a river reaches flood stage, it may be considered moderate flooding. However, at least one of these three flood categories must start at flood stage.

### Flash Flood Guidance for Arkansas

This information was retrieved from the NWS “Flash Flood Guidance” for Arkansas, and Faulkner County.

INCHES OF RAINFALL FOR SPECIFIED DURATIONS REQUIRED TO PRODUCE FLASH FLOODING IN FORECAST ZONES. LOWER AMOUNTS MAY CAUSE FLASH FLOODING IN URBAN OR MOUNTAINOUS AREAS.

ID	NAME	1-HR	3-HR	6-HR
ARZ032	FAULKNER	2.9	3.6	4.6

### Calculated Priority Risk Index

The CPRI for the Floods hazard is

Probability: **Highly Likely**  
 Magnitude/Severity: **Critical**  
 Warning Time: **6-12 Hours**  
 Duration: **Less Than One Week**

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$4 \times .45 + 3 \times .30 + 3 \times .15 + 3 \times .10 = 3.45$$

### 4.2.3 Severe Thunder Storm Hazard Profile

Severe thunderstorm events are generated by atmospheric imbalance and turbulence due to the combination of conditions of unstable warm air rising rapidly into the atmosphere, sufficient moisture to form clouds and rain, and upward lifts of air currents caused by colliding weather fronts (cold and warm), sea breezes, or mountains. A severe thunderstorm is an electrical storm accompanied with heavy rain and in some cases hail. The NWS classifies a thunderstorm as severe if its winds reach or exceed 58 Mph, produces a tornado, or drops surface hail at least 0.75 inches in diameter.

The National Weather Service (NWS) estimates that over 100,000 thunderstorms occur each year in the United States. Out of this 100,000, 10% are severe thunderstorms. Thunderstorms can produce tornados, hail, high winds, lightning, and flash floods. Thunderstorms spawn as many as 1,000 tornados each year. Thunderstorm events in Faulkner County since 1956 have caused over 176 thousand dollars in property damage and at least eleven (11) noted human injuries, according to the NOAA Satellite and Information Service.

**Hailstorm Hazard:** A hailstorm is an outgrowth of a severe thunderstorm in which irregularly shaped lumps of ice greater than 0.75 inches in diameter fall with rain. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to warm air rising rapidly into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate upon these ice crystals until, having developed sufficient weigh that the prevailing updraft can no longer support such weight and the ice crystals fall as precipitation

The sizes of a hailstone are a direct function of the severity and size the thunderstorm from which the hailstone is generated. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth's surface. Higher temperature gradients relative to elevation above the surface result in increased suspension time and hailstone size.

Hailstorms cause nearly \$1 billion in property and crop damage annually, as peak activity coincides with the peak agricultural season throughout the United States. Long-stemmed vegetation is particularly vulnerable to damage by hail impact and accompanying winds. Severe hailstorms also cause considerable damage to buildings and automobiles, but rarely result in loss of life.

**Lightning:** As the ice particles within a cloud (called hydrometeors) grow and interact, they collide, fracture and break apart. It is thought that the smaller particles tend to acquire positive charge, while the larger particles acquire more negative charge. These particles tend to separate under the influences of updrafts and gravity until the upper portion of the cloud acquires a net positive charge and the lower portion of the cloud becomes negatively charged. This separation of charge produces enormous electrical potential both within the cloud and between the cloud and ground. This can amount to millions of volts, and eventually the electrical resistance in the air breaks down and a



flash begins. Lightning, then, is an electrical discharge between positive and negative regions of a thunderstorm.

A lightning flash is composed of a series of strokes with an average of about four. The length and duration of each lightning stroke vary, but typically average about 30 microseconds. (The average peak power per stroke is about 1012 watts.)

### Geographic Area Affected by Severe Thunder Storm Hazard

All areas with Faulkner County are equally likely to experience a severe Thunder Storm event. Documentation reviewed from the NOAA Satellite and information Service clearly document that all areas within Faulkner County have and will continue to experience Severe Thunder Storms on a recurring basis. Thunder Storm occurrences were too numerous and widespread to include a map.

### Previous Severe Thunder Storm Hazard Occurrences

#### Thunderstorm Hazard:

**52 THUNDERSTORM & HIGH WINDS** event(s) were reported in **Faulkner County, Arkansas** between **01/01/2009** and **06/30/2014**.

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

*Click on **Location** or **County** to display Details.*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<b>Totals:</b>								1	0	2.397M	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	02/11/2009	02:05	CST-6	Thunderstorm Wind	51 kts. EG	0	0	0.00K	0.00K
<a href="#">GUY</a>	FAULKNER CO.	AR	02/11/2009	02:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	100.00K	0.00K
<a href="#">CATO</a>	FAULKNER CO.	AR	02/26/2009	22:40	CST-6	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
<a href="#">GUY</a>	FAULKNER CO.	AR	04/09/2009	20:45	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
<a href="#">GREENBRIER</a>	FAULKNER CO.	AR	04/09/2009	20:52	CST-6	Thunderstorm Wind	50 kts. EG	0	0	25.00K	0.00K
<a href="#">PICKLES GAP</a>	FAULKNER CO.	AR	05/05/2009	22:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	25.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	05/14/2009	02:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	40.00K	0.00K
<a href="#">GLEASON</a>	FAULKNER CO.	AR	06/12/2009	13:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	150.00K	0.00K
<a href="#">REPUBLICAN</a>	FAULKNER CO.	AR	06/12/2009	13:27	CST-6	Thunderstorm Wind	52 kts. EG	0	0	15.00K	0.00K

<a href="#">SKUNK HOLLOW</a>	FAULKNER CO.	AR	06/12/2009	13:28	CST-6	Thunderstorm Wind	70 kts. EG	0	0	1.500M	0.00K
<a href="#">GUY</a>	FAULKNER CO.	AR	06/12/2009	13:35	CST-6	Thunderstorm Wind	65 kts. EG	0	0	20.00K	0.00K
<a href="#">WOOSTER</a>	FAULKNER CO.	AR	06/30/2009	15:50	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">CONWAY MUNI ARPT</a>	FAULKNER CO.	AR	06/30/2009	16:04	CST-6	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
<a href="#">CATO</a>	FAULKNER CO.	AR	07/14/2009	00:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.50K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	09/21/2009	22:50	CST-6	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
<a href="#">MAYFLOWER</a>	FAULKNER CO.	AR	05/16/2010	14:09	CST-6	Thunderstorm Wind	52 kts. EG	0	0	20.00K	0.00K
<a href="#">FUNSTON</a>	FAULKNER CO.	AR	05/20/2010	02:44	CST-6	Thunderstorm Wind	52 kts. EG	0	0	75.00K	0.00K
<a href="#">ENOLA</a>	FAULKNER CO.	AR	05/27/2010	15:01	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">GREENBRIER</a>	FAULKNER CO.	AR	06/03/2010	17:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">MCGINTYTOWN</a>	FAULKNER CO.	AR	06/26/2010	13:08	CST-6	Thunderstorm Wind	52 kts. EG	0	0	20.00K	0.00K
<a href="#">CANEY</a>	FAULKNER CO.	AR	04/11/2011	04:40	CST-6	Thunderstorm Wind	55 kts. EG	0	0	50.00K	0.00K
<a href="#">GREENBRIER</a>	FAULKNER CO.	AR	04/15/2011	00:34	CST-6	Thunderstorm Wind	52 kts. EG	0	0	20.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	08/10/2011	06:10	CST-6	Thunderstorm Wind	52 kts. EG	0	0	50.00K	0.00K
<a href="#">GREENBRIER</a>	FAULKNER CO.	AR	08/10/2011	06:11	CST-6	Thunderstorm Wind	61 kts. EG	0	0	0.00K	0.00K
<a href="#">VILONIA</a>	FAULKNER CO.	AR	08/10/2011	06:30	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	08/12/2011	20:12	CST-6	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
<a href="#">ENOLA</a>	FAULKNER CO.	AR	09/14/2011	15:15	CST-6	Thunderstorm Wind	52 kts. EG	0	0	1.00K	0.00K
<a href="#">LAKE CONWAY</a>	FAULKNER CO.	AR	02/29/2012	07:00	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">MAYFLOWER</a>	FAULKNER CO.	AR	06/03/2012	20:10	CST-6	Thunderstorm Wind	52 kts. EG	0	0	1.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	06/11/2012	15:03	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">DAMASCUS</a>	FAULKNER CO.	AR	07/08/2012	13:11	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	08/08/2012	16:40	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	08/13/2012	02:04	CST-6	Thunderstorm Wind	56 kts. EG	0	0	25.00K	0.00K

<a href="#">MAYFLOWER</a>	FAULKNER CO.	AR	08/13/2012	02:05	CST-6	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
<a href="#">VILONIA</a>	FAULKNER CO.	AR	09/01/2012	15:11	CST-6	Thunderstorm Wind	60 kts. EG	0	0	20.00K	0.00K
<a href="#">HAMLET</a>	FAULKNER CO.	AR	09/01/2012	15:58	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	09/01/2012	15:58	CST-6	Thunderstorm Wind	52 kts. EG	0	0	25.00K	0.00K
<a href="#">GREENBRIER</a>	FAULKNER CO.	AR	12/09/2012	16:02	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">SALEM</a>	FAULKNER CO.	AR	12/20/2012	00:33	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
<a href="#">BONO</a>	FAULKNER CO.	AR	01/29/2013	19:34	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">HAMLET</a>	FAULKNER CO.	AR	04/10/2013	16:58	CST-6	Thunderstorm Wind	60 kts. EG	0	0	20.00K	0.00K
<a href="#">VILONIA</a>	FAULKNER CO.	AR	05/20/2013	22:55	CST-6	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
<a href="#">DAMASCUS</a>	FAULKNER CO.	AR	06/09/2013	17:05	CST-6	Thunderstorm Wind	52 kts. EG	0	0	7.00K	0.00K
<a href="#">DAMASCUS</a>	FAULKNER CO.	AR	06/09/2013	17:10	CST-6	Thunderstorm Wind	52 kts. MG	0	0	0.00K	0.00K
<a href="#">CATO</a>	FAULKNER CO.	AR	07/22/2013	17:30	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	07/23/2013	16:00	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
<a href="#">BELK CORNER</a>	FAULKNER CO.	AR	09/01/2013	16:05	CST-6	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
<a href="#">BERYL</a>	FAULKNER CO.	AR	09/12/2013	14:30	CST-6	Thunderstorm Wind	52 kts. EG	0	0	1.00K	0.00K
<a href="#">BONO</a>	FAULKNER CO.	AR	04/03/2014	23:42	CST-6	Thunderstorm Wind	61 kts. EG	0	0	40.00K	0.00K
<a href="#">PICKLES GAP</a>	FAULKNER CO.	AR	06/06/2014	12:26	CST-6	Thunderstorm Wind	56 kts. EG	1	0	0.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	06/06/2014	12:30	CST-6	Thunderstorm Wind	52 kts. EG	0	0	25.00K	0.00K
<a href="#">MAYFLOWER</a>	FAULKNER CO.	AR	06/06/2014	12:30	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
<b>Totals:</b>								1	0	2.397M	0.00K

**6 LIGHTNING** event(s) were reported in **Faulkner County, Arkansas** between **01/01/2009** and **06/30/2015**.

*Click on **Location** or **County** to display Details.*

**Mag:** Magnitude

**Dth:** Deaths

**Inj:** Injuries

**PrD:** Property Damage  
**CrD:** Crop Damage

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<b>Totals:</b>								0	6	140.00K	0.00K
<a href="#">CONWAY</a>	FAULKNER CO.	AR	06/03/2009	13:50	CST-6	Lightning		0	0	15.00K	0.00K
<a href="#">GREENBRIER</a>	FAULKNER CO.	AR	08/05/2009	03:00	CST-6	Lightning		0	0	10.00K	0.00K
<a href="#">ENOLA</a>	FAULKNER CO.	AR	07/11/2010	13:26	CST-6	Lightning		0	0	50.00K	0.00K
<a href="#">SALTILLO</a>	FAULKNER CO.	AR	07/11/2010	14:35	CST-6	Lightning		0	0	50.00K	0.00K
<a href="#">MAYFLOWER</a>	FAULKNER CO.	AR	07/22/2013	15:44	CST-6	Lightning		0	0	15.00K	0.00K
<a href="#">ENDERS</a>	FAULKNER CO.	AR	04/24/2014	13:58	CST-6	Lightning		0	6	0.00K	0.00K
<b>Totals:</b>								0	6	140.00K	0.00K

**Hailstorm Hazard:** Faulkner County has experienced one hundred sixty-two (162) hailstorm events since 1955, in which, the hailstones measured at least 0.75 inches in diameter with the storm on June 21, 1990 producing 4 ½ inch hail stones. The average size of the hailstones in these 162 storms measures 1.75 inches.

Over the past ten years, every municipal jurisdiction as well as the many smaller communities in Faulkner County has experienced a combined total of seventy-seven (77) hailstorms or, on average, approximately three hailstorms events in Faulkner County every year.

### **Probability of Future Severe Thunderstorm Events**

The probability that such an event will occur in Faulkner County is highly likely. Because of the terrain of the county and the historic documentation obtained from the NOAA Satellite and information Service on thunderstorm events, the county and each jurisdiction within the county will always be vulnerable to Severe Thunderstorms.

### **Magnitude/Severity of the Severe Thunderstorm Hazard**

According to FEMA about 10 percent of thunderstorms are classified as severe – one that produces hail at least three-quarters of an inch in diameter, has winds of 58 miles per hour or higher, or produces a tornado. For wind speeds and damage refer to Section 4.2.10 Windstorm/Highwinds Beaufort Wind Scale.

### Types of Thunderstorms

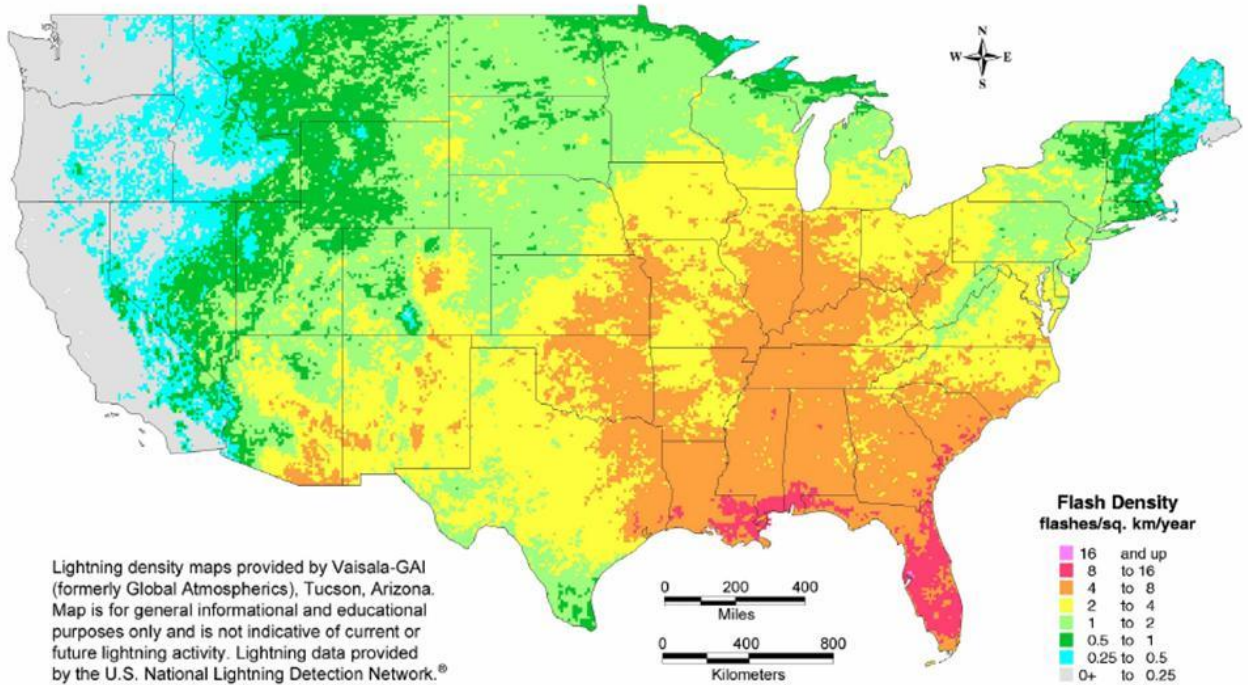
- **Single Cell** (pulse storms). Typically last 20-30 minutes. Pulse storms can produce severe weather elements such as downbursts, hail, some heavy rainfall and occasionally weak tornados. This storm is light to moderately dangerous to the public and moderately to highly dangerous to aviation.
- **Multicell Cluster**. These storms consist of a cluster of storms in varying stages of development. Multicell storms can produce moderate size hail, flash floods and weak tornados. This storm is moderately dangerous to the public and moderately to highly dangerous to aviation.
- **Multicell Line**. Multicell line storms consist of a line of storms with a continuous, well-developed gust front at the leading edge of the line. Also known as squall lines, these storms can produce small to moderate size hail, occasional flash floods and weak tornados. This storm is moderately dangerous to the public and moderately to highly dangerous to aviation.
- **Supercell**. Even though it is the most rare of storm types, the supercell is the most dangerous because of the extreme weather generated. Defined as a thunderstorm with a rotating updraft, these storms can produce strong downbursts, large hail, occasional flash floods and weak to violent tornados. This storm is extremely dangerous to the public and aviation.

The average lightning bolt is 6-8 miles long and can easily travel 25 to 40 miles horizontally prior to turning downward toward the ground. Lightning can travel over the surface of the ground and through the ground. The ground surface can be lethal for up to 60 feet radius or more from the point of contact. In water, the lethal radius is about 600 feet from point of contact. A lightning flash is composed of a series of strokes with an average of about four. The length and duration of each lightning stroke vary, but typically average about 30 microseconds. (The average peak power per stroke is about 1012 watts.) The temperature of lightning's return stroke is (5) five times hotter than the surface of the sun. It can reach about 55,000 degrees Fahrenheit in contrast to about 10,000 degrees Fahrenheit for the surface of the sun. This high temperature will immediately turn water or water vapor into high pressure superheated steam. This high pressure steam can explode the clothes off your body, explode the bark from a tree, explode concrete, drywall, wood or any material containing even small amounts of moisture.

The Lightning Density Scale is included below. This is still the most current map to be found (2014).



5-year Flash Density Map — U.S.  
(1996–2000)



### Modified NOAA/TORRO Hailstorm Intensity Scale

Size Code	Intensity Category	Typical Hail Diameter (inches)	Approximate Size	Typical Damage Impacts
H0	Hard Hail	up to 0.33	Pea	No damage
H1	Potentially Damaging	0.33-0.60	Marble or Mothball	Slight damage to plants, crops
H2	Potentially Damaging	0.60-0.80	Dime or grape	Significant damage to fruit, crops, vegetation

H3	Severe	0.80-1.20	Nickel to Quarter	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	1.2-1.6	Half Dollar to Ping Pong Ball	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.6-2.0	Silver dollar to Golf Ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	2.0-2.4	Egg	Aircraft bodywork dented, brick walls pitted
H7	Very destructive	2.4-3.0	Tennis ball	Severe roof damage, risk of serious injuries
H8	Very destructive	3.0-3.5	Baseball to Orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.5-4.0	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	4+	Softball and up	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

### Calculated Priority Risk Index

The CPRI for the Severe Thunder Storm hazard for Faulkner County is

Probability: **Highly Likely**  
 Magnitude/Severity: **Limited**  
 Warning Time: **6-12 hours**  
 Duration: **Less Than One Day**

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$4 \times .45 + 2 \times .30 + 3 \times .15 + 2 \times .10 = 2.75$$

#### **4.2.4 Tornado Hazard Profile**

A Tornado is a violently rotating column of air extending to the ground, usually accompanied by a funnel shaped downward extension of a cumulonimbus cloud and having a vortex several hundred yards in diameter, whirling destructively at speeds up to 300 miles per hour. A tornado is a rapidly rotating vortex or funnel of air extending from a cumulonimbus cloud to the ground. It is usually spawned by a thunderstorm and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. Often, vortices remain suspended in the atmosphere as funnel clouds. When the lower tip of a vortex touches the ground, it becomes a tornado and a force of destruction.

Tornadoes can cause several kinds of damage to buildings. Tornadoes have been known to lift and move objects weighing more than 300 tons a distance of 30 ft., toss homes more than 300 ft. from their foundations, and siphon millions of tons of water from water bodies. However, the less spectacular damage is much more common. Houses and other obstructions in the path of the wind cause the wind to change direction. This change in wind direction increases pressure on parts of the building. The combination of increased pressures and fluctuating wind speeds creates stress on the building that frequently causes connections between building components (e.g., roof, siding, windows, etc.) to fail.

Tornadoes also generate a tremendous amount of flying debris or “missiles”, which often becomes airborne shrapnel that causes additional damage. If wind speeds are high enough, missiles can be thrown at a building with enough force to penetrate windows, roofs, and walls.

#### **Geographic Area Affected by Tornadoes**

Tornadoes in Arkansas are most common along an elongated zone extending from Clark County northeastward to Mississippi County. There appears to be an area from Hope to Jonesboro (approximately along I-30 and U.S. 67) that is slightly more at risk to tornadoes than other parts of Arkansas, especially in a major outbreak.

This I-30/US 67 corridor lies along the northeast-trending mountain front of the Ouachita Mountains, Arkansas Valley, and Ozark Highlands (the interior Highlands). This higher elevation region may force warm moist air from the low-lying Gulf Coastal Plain and Mississippi Alluvial Plain to the southeast upwards assisting in tornado initiation, and then guide the storms along the base of the northeast-trending highlands front.

I-40 flows through Faulkner County north to south. It is typical for tornadoes to travel along I 40 through the state, thereby placing the entire County at a slightly higher risk for tornadoes than most parts of Arkansas, especially in a major storm event. For example, since 1996, tornadoes have hit throughout Faulkner County impacting the communities of

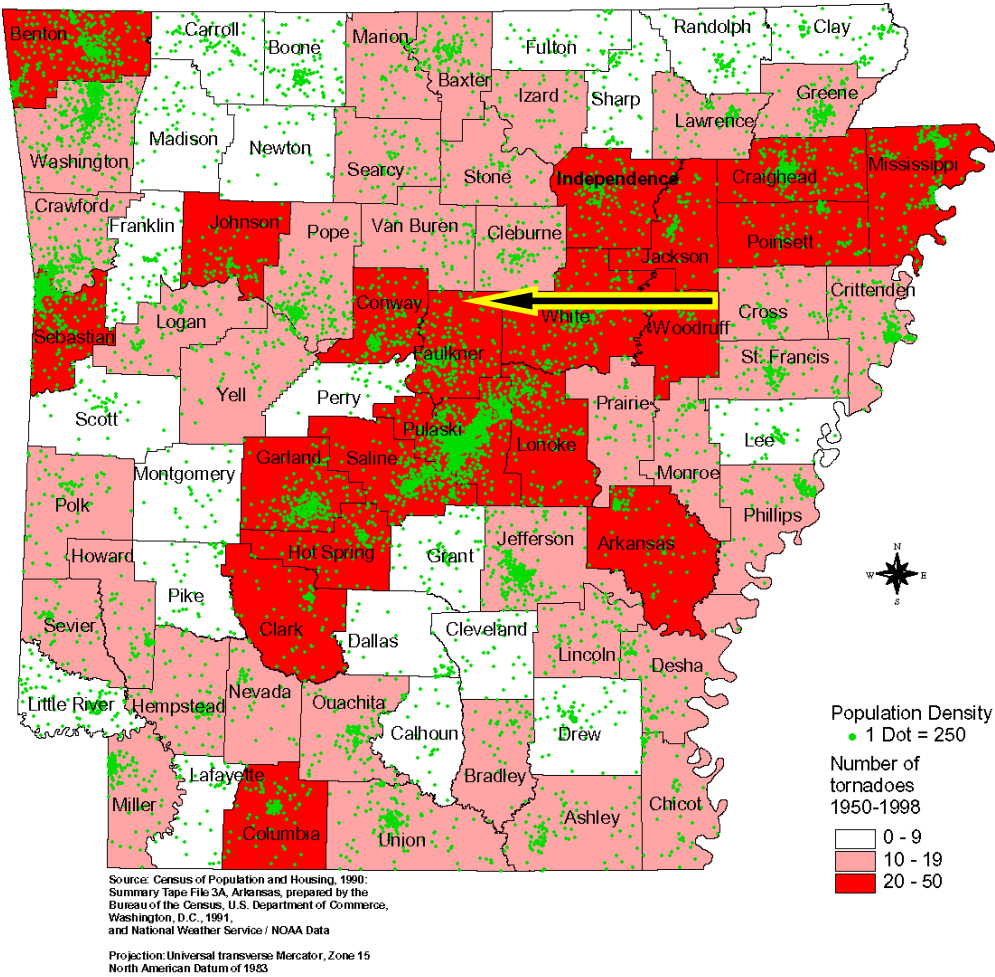


Naylor, Otto, Mayflower, Damascus, Vilonia, Enola, Hamlet, Mt. Vernon, Guy, Wooster, Saltillo, Greenbrier and Barney.

For the purposes of this plan, the entire area and all local jurisdictions are considered equally likely to experience a tornado event. This is proven to be the case in tornadoes that have occurred in a wide variety of areas throughout Faulkner County.

Tornado Map showing Population Density and Occurrence in Arkansas is located below.

**Population Density and Tornado Occurrence in Arkansas**



**Previous Tornado Occurrences**

Faulkner County has experienced at least 55 tornado events that have been recorded by the NCDC since 1950. Seven of those tornadoes were during the

2014 update period. There were 1 F-4 tornado; 12 F-3; 17 F-2; 15 F-1 and 2 F-0 tornadoes all previous to January 1 2009.. The F-2 and greater events beginning in 1999 are listed below with a description of the area impacted, property damage and unfortunately the number of fatalities recorded.

**DECLARED DISASTER: DR 99-07, DR999-14, DR 99-12, DR 99-01, DR 00-17: \$3,575,200.00 – Tornadoes and Severe storms that occurred on January 21, 1999 caused great damage to private property and public facilities.**

**Naylor F2: January 21, 1999, 3:57 pm**

**Hamlet F3: December 18, 2002, 3:35 pm**

**Guy F2: May 4, 2003, 6:34 pm Saltillo F3: May 4, 2003, 7:09 pm DECLARED DISASTER: DR 03-22, DR 03-32: \$730,000 – Severe Storms, tornadoes and flooding that began May 16, 2003 have caused great damage to private property and public facilities.**

**Damascus F2: November 27, 2005**

**Mayflower & Vilonia EF0: July 22, 2009**

**Palarm & Wooser EF1: April 25, 2011**

**Mayflower & Vilonia EF2: April 25, 2011**

**Naylor EF1: April 25, 2011**

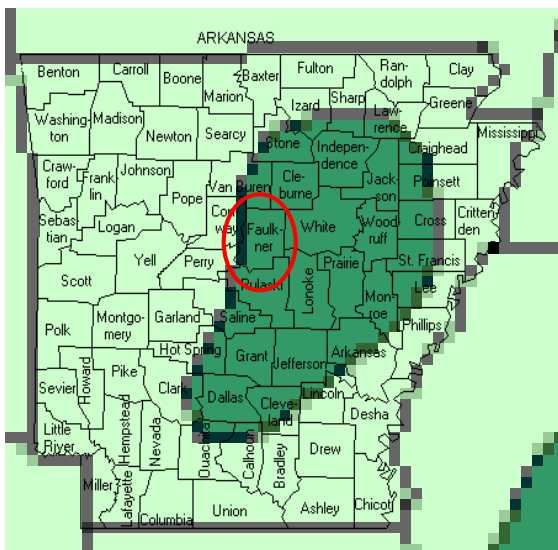
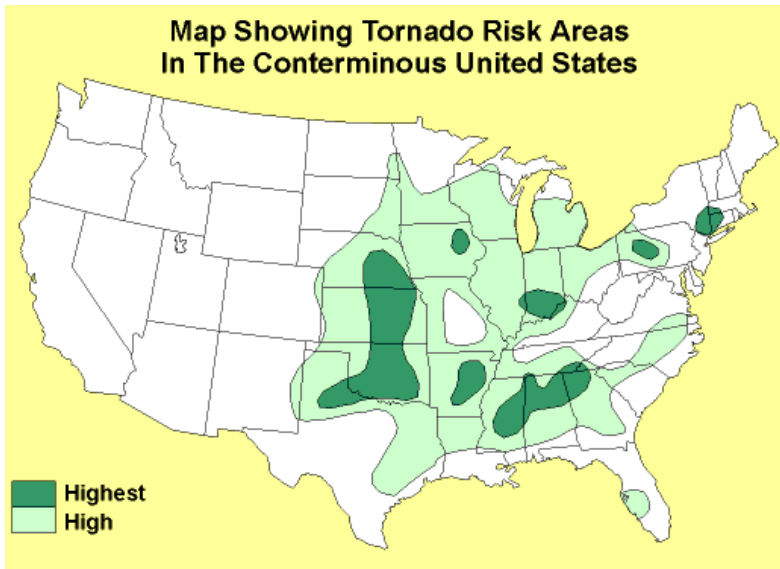
**Disaster Declaration DR-1975-AR- Severe Storms, Tornadoes, and flooding between April 14 and June 14, 2011.**

**Vilonia & Mayflower EF4: April 27, 2014**

**Disaster Declaration DR-4174-AR- Severe Storms, Tornadoes, and flooding between April 27 and April 28, 2014.**

### **Probability of Future Tornado Events**

These previously mentioned numbers (55 tornadoes in 64 years) indicate that Faulkner County has an 86% chance of having a tornado event each year. This is down from 1.19 tornadoes per year from the previous version of this plan.



Faulkner County falls within the area of highest risk.

### **Magnitude/Severity of the Tornado Hazard**

The magnitude and severity is different for all tornado events. (See Enhanced Fujita Scale) The time a tornado is on the ground can range from an instant to several hours. Movement can range from virtually stationary to more than 60 miles per hour. The typical "median" tornado's damage path is about one or two miles, with a width of about 50 yards. The largest tornado path widths can exceed one mile and the smallest widths can be less than 10 yards. Widths can vary considerably during a single tornado, because the size of the tornado can change considerably during its lifetime. Path lengths can vary from what is basically a single point to more than 100 miles.

The characteristics of tornadoes described above clearly indicate that tornado events typically do not directly strike large proportions of a particular area's population, but can and often do damage critical facilities affecting greater areas of a community. For example, a tornado striking small cities and communities in rural counties like Faulkner County could damage critical facilities affecting every person living in the community, and, in fact, could totally destroy small rural communities.

The Enhanced Fujita Tornado Scale measures tornado-damage severity. The Enhanced Fujita Scale assigns a numerical value based on wind speeds and categorizes tornadoes from F0 to F5. Scale values above F5 are not used because wind speeds above 318 mph are unlikely. Table 4.2.4.1 depicts the Enhanced Fujita Scale values, wind speeds, and damage descriptions.

Most tornadoes are in the F0-F2 class. Building to modern wind standards provides significant protection from these hazard events; however, a community in the direct path of a violent tornado may experience extensive damages. Designing buildings to extreme wind speeds, such as those associated with an F3 or greater tornado is beyond the scope of current building codes.

**Extent/Range:** Faulkner County has experienced tornadoes ranging from EF0-EF4, but an EF5 is possible with the right conditions.

## Enhanced Fujita Scale for measuring tornadoes

EF Rating	Wind Speeds	Expected Damage		
<b>EF-0</b>	65-85 mph	'Minor' damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.		
<b>EF-1</b>	86-110 mph	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.		
<b>EF-2</b>	111-135 mph	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.		
<b>EF-3</b>	136-165 mph	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.		
<b>EF-4</b>	166-200 mph	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.		
<b>EF-5</b>	> 200 mph	'Massive/incredible' damage: Well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.		

**\*\*\* IMPORTANT NOTE ABOUT ENHANCED F-SCALE WINDS:** *The Enhanced F-scale still is a set of wind estimates (not measurements) based on damage.* Its uses three-second gusts estimated at the point of damage based on a judgment of 8 levels of damage to the 28 indicators listed below. These estimates vary with height and exposure. **Important:** The 3 second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures, using a directly measured, "one minute mile"

### Calculated Priority Risk Index

The CPRI for the tornado hazard for Faulkner County and each local jurisdiction is determined by the following formula:

Probability:	<b>Likely</b>
Magnitude/Severity:	<b>Catastrophic</b>
Warning Time:	<b>Less Than 6 Hours</b>
Duration:	<b>Less Than One Day</b>

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$3 \times .45 + 4 \times .30 + 4 \times .15 + 2 \times .10 = 3.25$$

#### 4.2.5 Severe Winter Storm Profile

Winter storms occur when a heavy deposit of snow covers a large area. This may or may not be accompanied with extremely cold winds; blowing snow; freezing rain or sleet, cold temperatures, and possibly low visibility and drifting snow.

The storms often make roads impassable. Residents, travelers and livestock may become isolated or stranded without adequate food, water and fuel supplies short. The conditions may overwhelm the capabilities of local jurisdictions in a rural County with isolated small municipalities, i.e., Faulkner County.

Winter storms are considered deceptive killers as they indirectly cause transportation accidents, and injury and death resulting from exhaustion/overexertion, hypothermia and frostbite from wind chill, and asphyxiation; house fires occur more frequently in the winter due to lack of proper safety precautions.

As a hazardous winter weather phenomena, the National Weather Service (NWS) defines snow as a steady fall of snow for several hours or more. Heavy snow is defined as either a snowfall accumulating to 4 inches in depth in 12 hours or less, or snowfall accumulation to 6 inches or more in depth in 24 hours or less. In states such as Arkansas, where lesser accumulations can cause significant impacts, lower thresholds may be used. A blizzard means that the following conditions prevail for a period of three hours or longer: 1) sustained wind or frequent gusts to 35 miles an hour or greater; and 2) considerable falling and/or blowing snow (i.e., reducing visibility to less than 1/4 mile). Sleet is defined as pellets of ice composed of frozen or mostly frozen raindrops or refrozen partially melted snowflakes. These pellets of ice usually bounce after hitting the ground or other hard surfaces. Heavy sleet is a relatively rare event defined as the accumulation of ice pellets covering the ground to a depth of 0.5 inch or more.

Freezing rain or freezing drizzle occurs when rain or drizzle freezes on surfaces such as the ground, trees, power lines, vehicles, streets, highways, etc. Small accumulations of ice can cause driving and walking difficulties while heavy accumulations produce extremely dangerous and damaging conditions. The term “ice storm” describes occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice make walking and driving extremely dangerous. Significant ice accumulations are usually accumulations of 0.25 inches or greater.

A combination of severe winter weather types occurring over a wide area is usually called a winter storm. Winter-storm formation requires below freezing temperatures, moisture, and lift to raise the moist air to form the clouds and cause precipitation. Lift is

commonly provided by warm air colliding with cold air along a weather front. Various causes exist for winter storms in the United States. Winter storms in Midwestern and plains states typically develop over southeast Colorado on the east side of the Rockies. These storms move east or northeast and use both the southward plunge of cold air from Canada and the northward flow of moisture from the Gulf of Mexico to produce ice, snow, and sometimes blizzard conditions. These fronts may push deep into the interior regions, sometimes as far south as Florida.

The occurrence of severe winter weather has a substantial impact on communities, utilities, transportation systems, and agriculture, and often results in loss of life due to accidents or hypothermia. Severe winter weather hazards include snowstorms, ice storms, storms with strong winds, and extreme cold. Heavy snow from a snowstorm can immobilize a region and paralyze a city, stranding commuters, stopping the flow of supplies, and disrupting emergency and medical services. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. The cost of snow removal, repairing damages, and loss of business can have large economic impacts on cities and towns.

Heavy accumulations of ice or snow commonly result in collapse of structural damage to buildings. The damage may be caused directly by the excessive weight of the ice/snow accumulation, or by ice-laden trees or branches falling on structures. Homes, business, as well as weaker nonresidential structures commonly sustain structural damage. Poultry houses in Arkansas are particularly at risk. Additional agricultural revenues are lost because of the time it takes to rebuild the poultry houses.

Heavy accumulations of ice from ice storms or heavy snow can also bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days while utility companies work to repair the damage. Power and communications disruptions are common consequences of ice storms and heavy snow in Faulkner County. The monetary cost of power and communications losses to businesses is significant but difficult to estimate.

Accumulations of ice and snow may also cause extreme hazards to motorists. Motorists in Faulkner County are generally unaccustomed to driving on slick roads resulting in an increase in traffic accidents, some of which may result in fatalities. Travel is hampered by ice or heavy snow because the state lacks sufficient snow removal equipment and road treatments (sand, salt) because of the infrequent occurrence of severe winter weather events. The cost of the numerous traffic accidents, as well as the cost of business and school closings that occur due to hazardous travel conditions, are difficult to estimate.

Winter storms are sometimes accompanied by strong winds creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chill. Strong winds with these intense storms and cold fronts can knock down trees, utility poles, and power lines. These conditions are rare in Faulkner County.

## **Geographic Area Affected by Severe Winter Storm**

All parts of Faulkner County are equally susceptible to severe winter storms. For example, since 1994, Faulkner County has experienced 15 severe winter storms defined by the NOAA Satellite and Information Service as heavy snow events, ice storms and winter storms. The identified severe winter storms throughout Faulkner County also recorded 2 deaths and approximately 10 million dollars in property damage.

Faulkner County's location within the State of Arkansas could be described as the southwest corner of central Arkansas. This location places Faulkner County on the dividing line between which counties comprise the parts of Arkansas described in Severe Winter Storms reports as north and central Arkansas. Compared to the rest of the State of Arkansas, Faulkner County does not experience severe winter storms as often as the Northwest section of the State, but does experience such events about twice the rate of southern Arkansas.

## **Previous Severe Winter Storm Occurrences**

Faulkner County has experienced a total of fourteen (22) severe winter storms since 1994. That is an average of 1.1 severe winter storms per year. Of these storms, defined by the NOAA Satellite and Information Service, eight (12) were classified as "Winter Storms", five (7) were classified as "Ice Storms" and one (3) such storm was classified as a "Heavy Snow" event. These events are not isolated to Faulkner County; as such storms by their very nature generally impact many counties and the State as a whole. The descriptions of these individual storms are outlined below.

**DECLARED DISASTER: 02/19/91 – As a result of destructive winter storms and flooding during December 12-31, 1990 a disaster emergency was proclaimed on January 4, 1991.**

**Winter Storm 16 Jan 1994:** Faulkner County was impacted by a severe winter storm on January 16, 1994, without any reported fatalities or injuries, but recorded property damage at \$5.0M across the impacted area. A combination of snow, sleet and freezing rain fell over parts of northern and central Arkansas on the 16th and early on the 17th. The areas hardest hit by the storm were across areas of north central and northeast Arkansas in and around Faulkner County.

**Winter Storm 08 Mar 1994:** Faulkner County was impacted by this severe winter storm on March 8, 1994, without causing any reported fatalities or injuries, but property damage was estimated at \$5.0M across the impacted area. A mixture of snow, sleet, and freezing rain fell over parts of northern and central Arkansas beginning early on the 8th and continuing into the afternoon hours on the 9th.



Northern parts of Arkansas were hardest hit where snow accumulated up to 18 inches at some locations.

**Winter Storm 08 Jan 1997:** Faulkner County was impacted by this severe winter storm on January 8, 1997, without causing any reported fatalities, injuries, or property damage. A combination of snow, sleet and freezing rain fell across parts of North-Central and Central Arkansas beginning on the morning of the 8th and continuing into the morning hours on the 9th.. Sleet and freezing rain fell across West-Central and Central Arkansas where the precipitation accumulated on mainly trees and grassy areas.. Numerous traffic accidents occurred as a result of the wintry weather.

**Heavy Snow 13 Feb 1997:** Faulkner County was impacted by this heavy snow event without any fatalities, injuries, or property damage. Heavy wet snow fell across parts of Central and Northern Arkansas during the early morning hours of the 13th. Many areas saw accumulations generally between 3 and 6 inches. However, some of the higher elevations received 8 to 10 inches. A number of trees and power lines were knocked down by the weight of the snow. Numerous traffic accidents resulted from the heavy snow as well.

**Ice Storm 22 Dec 1998: Faulkner County was impacted by this ice storm on December 22, 1998,** with one (1) fatality due to a car crash on Hwy 38, no other injuries or property damage were reported. The impact of the storm in Faulkner mirrors the description as follows for the State of Arkansas. A major ice storm affected about the southern three-quarters of Arkansas as Christmas Day approached. Freezing rain and sleet developed across southern Arkansas during the evening of the 22nd and spread north. Precipitation finally ended in southeast sections of the state during the early evening hours of the 24th. A tenth of an inch of ice or more was common south of Mena, Conway and Osceola, with up to eight tenths of an inch in parts of southeast Arkansas.

**Ice Storm 01 Jan 1999:** Faulkner County was impacted by the ice storm without any report of fatality, injuries or property damage. A major ice storm developed over northern and central Arkansas during the morning of January 1st and lasted through the evening hours. The icing was found mainly north of Clarksville, Perryville, Little Rock and Hazen in Faulkner County.

**Ice Storm 08 Jan 1999: Faulkner County was impacted by an ice storm on January 8, 1999** without the report of any fatalities, injuries, or property damage. An ice storm developed over central and northeast Arkansas during the morning of January 8th. Showers and thundershowers began forming in southwest sections of the state shortly after 12am on the 8th...and were moving northeast into areas

where subfreezing air existed at the surface. Icy conditions developed from Benton, Little Rock and Cabot northeastward into areas mainly along Highway 67/167 into Faulkner County.

**DECLARED DISASTER – DR00-21, DR 01-01, DR01-02, DR01-05, DR01-07, DR01-11, DR03-33: \$1,338,000 – Severe winter weather that began December 12, 2000 has continued to cause great damage to private property and public facilities.**

**Winter Storm 27 Jan 2000:** Faulkner County was impacted by a winter storm without the report of any fatalities, injuries or property damage. A major Winter Storm brought mostly heavy snow to Arkansas on January 27th and early on the 28th. Heavy snow began in southern and western sections of the state during the morning of the 27th, and gradually spread north and east. By the time the storm was over, 4 to 8 inches of snow had accumulated in about the northern half of the state and along the southern border. In much of the southern half of the state, 8 to 14 inches of snow was common with isolated reports of 20 inches. It was the most widespread, heavy snow to affect Arkansas since 1988.

**Proclamations # DR00-18, DR00-19, DR01-01, DR01-05, DR01-07, DR01-11 and DR03-33: Federally Declared Disaster began December 12,200 caused great damage to private property and public facilities. Total amount of federal assistance was \$2,625,000.00**

**Winter Storm 13 Dec 2000:** Faulkner County was impacted by a winter storm without the report of any fatalities, injuries or property damage. A major Winter Storm developed in Arkansas late on December 12, 2000, and lasted through the evening of December 13, 2000. Heavy snow and sleet fell across northern and western sections of the state and freezing rain and sleet in central and southern sections. More specifically, 3 to 6 inches of snow fell across the extreme north before mixing with sleet with 2 to 4 inches of snow and sleet across much of the north and west.

**Ice Storm 25 Dec 2000:** Faulkner County was impacted by an ice storm on December 25, 2000 without the report of any fatalities, injuries or property damage. After a major Winter Storm on December 12 and 13, 2000, a long term Ice Storm developed during the morning of December 25, 2000, and continued through the early morning hours of December 27, 2000.

Mostly freezing rain and sleet were noted, with one and a half to 3 inches of ice in western sections of the state and one half to 2 inches of ice elsewhere. The icing was devastating, with about 300,000 customers losing power. Many people were without power for several days.

**As a result of these two severe winter storm events, a Presidential Disaster Declaration was made on December 29, 2000, due to the severe winter weather that began December 12, 2000, and which continued to cause great damage to private property and public facilities. Faulkner County was eligible for was included as an eligible government under this declaration.**

**Winter Storm 05 Feb 2002:** Faulkner County was impacted by a severe winter storm on February 5, 2002 without any report of fatalities, injuries or property damage. A mixture of snow and sleet started falling on the morning of the 5th over parts of western and southwest Arkansas. The precipitation gradually overspread the Faulkner County area later in the day and continued well into the day on the 6th. The precipitation changed over to snow during the overnight hours on the 5th before ending on the 6th. Snow accumulations between 2 and 5 inches were common across the area. Some localized amounts up to 6 and 7 inches were reported across the higher elevations of west central and north-central Arkansas.

**Winter Storm 24 Feb 2003:** Faulkner County was impacted by a severe winter storm on February 24, 2003 without any reported fatalities, injuries or property damage. Precipitation began moving into western Arkansas late in the afternoon on the 24th, overspread Faulkner County and ended early in the morning on the 25th.

**Ice Storm 26 Feb 2003:** Faulkner County was impacted by an ice storm on February 26, 2003 without any reported fatalities, injuries or property damage. Freezing rain overspread Faulkner County from the southwest during the evening of the 25th and continued into the morning hours of the 26th. Freezing rain amounts of 1/4 to 1/3 inch were common, but isolated totals reached 1/2 to 2/3 of an inch.

**Winter Storm 22 Dec 2004:** Faulkner County was impacted by a winter storm on December 22, 2004, without any reported fatalities, injuries or property damage. A winter storm produced a mixture of sleet and snow across much of northern, western and central Arkansas during the day and early evening hours of the 22nd. Snowfall totals across the affected area generally ranged from 2 to 4 inches. However, scattered amounts between 4 and 6 inches were reported in the higher elevations of west central and north central Arkansas. The accumulation of snow on area roadways made travel conditions very hazardous, resulting in numerous traffic accidents. Portions of Interstate 40, which dissects Faulkner County in central Arkansas, were shut down for almost 2 days after the storm ended due to significant ice accumulation on the roadway and a number of vehicles still stranded along the highway. Since temperatures remained below freezing over much of Arkansas through Christmas, many secondary roads remained ice covered and treacherous for travel.

**2014 Update:** There have been 19 Winter Weather events during the update period.

### **Probability of Future Winter Storm Events**

Faulkner County has experience 22 recorded severe winter storm events since 1994, thereby averaging such an event 1.1 times per year. It is important to note that it does not occur every year. Some years will have multiple events, and others have none. For this reason we will give a probability rating of “Likely.”

### **Magnitude/Severity/Extent of the Winter Storm Hazard**

Faulkner County experiences a severe winter storm event, on average, once a year. Snow accumulations in Faulkner County during heavy snow events typically range from one (1) inch up to eight (8) inches per event;. Although the City of Calico Rock (50 miles north of Faulkner County), recorded 26 inches of snowfall in 1918. The extent to expect from Winter weather would be 0 to 20 inches of snowfall . Accumulations during a typical ice storm in Faulkner County usually range from 1/10 of one inch to ½ of an inch, although neighboring counties to the north have received 1 to 2 inches of ice. Staying within the realm of possibility, a reasonable extent for ice accumulation would be 0 to 1 inches. Only one severe winter storm event, the December 2000 Severe Winter Storm (FEMA 1354-DR), has resulted in a Presidential Disaster Declaration in Faulkner County.

The occurrence of severe winter weather has a substantial impact on communities, utilities, transportation systems, and agriculture, and often results in loss of life due to accidents or hypothermia. Severe winter weather hazards include snowstorms, ice storms, storms with strong winds, and extreme cold. Heavy snow from a snowstorm can immobilize a region and paralyze a city, stranding commuters, stopping the flow of supplies, and disrupting emergency and medical services. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. The cost of snow removal, repairing damages, and loss of business can have large economic impacts on cities and towns.

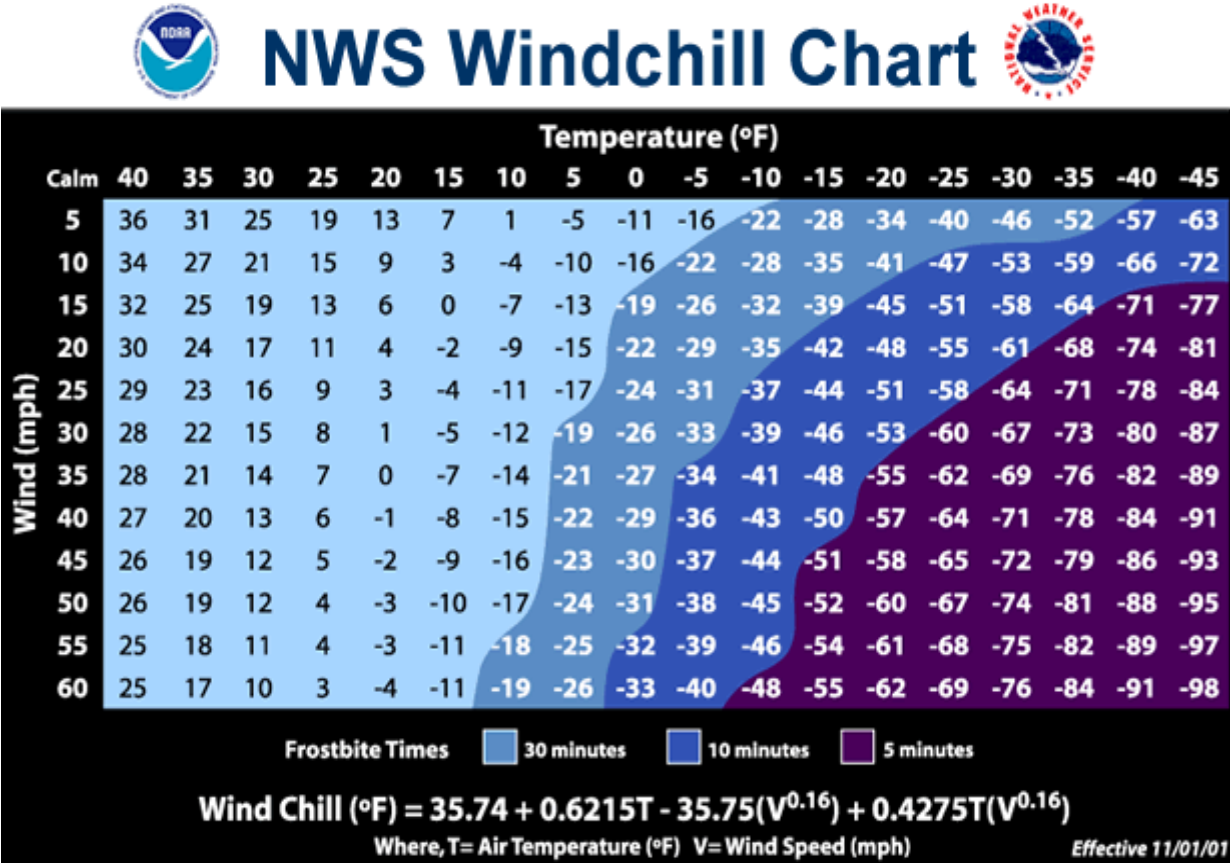
Heavy accumulations of ice or snow commonly result in collapse of structural damage to buildings. The damage may be caused directly by the excessive weight of the ice/snow accumulation, or by ice-laden trees or branches falling on structures. Homes, business, as well as weaker nonresidential structures commonly sustain structural damage. Poultry houses in Arkansas are particularly at risk. Additional agricultural revenues are lost because of the time it takes to rebuild the poultry houses.

Heavy accumulations of ice from ice storms or heavy snow can also bring down trees, electrical wires, telephone poles and lines, and communication towers.

Communications and power can be disrupted for days while utility companies work to repair the damage. Power and communications disruptions are common consequences of ice storms and heavy snow in Faulkner County. The monetary cost of power and communications losses to businesses is significant but difficult to estimate.

Accumulations of ice and snow may also cause extreme hazards to motorists. Motorists in Faulkner County are generally unaccustomed to driving on slick roads resulting in an increase in traffic accidents, some of which may result in fatalities. Travel is hampered by ice or heavy snow because the state lacks sufficient snow removal equipment and road treatments (sand, salt) because of the infrequent occurrence of severe winter weather events. The cost of the numerous traffic accidents, as well as the cost of business and school closings that occur due to hazardous travel conditions, are difficult to estimate.

Winter storms are sometimes accompanied by strong winds creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chill. Strong winds with these intense storms and cold fronts can knock down trees, utility poles, and power lines. These conditions are rare in Faulkner County.



**WINTER STORM WATCH:**

Severe winter conditions, such as heavy snow and/or ice, are possible within the next day or two.

**WINTER STORM WARNING:**

Severe winter conditions have begun or are about to begin in your area. Stay indoors!

**BLIZZARD WARNING:**

Snow and strong winds will combine to produce a blinding snow (near zero visibility), deep drifts, and life-threatening wind chill. Seek refuge immediately!

**WINTER WEATHER ADVISORY:**

Winter weather conditions are expected to cause significant inconveniences and may be hazardous. If caution is exercised, these situations should not become life-threatening. The greatest hazard is often to motorists.

**FROST/FREEZE WARNING:**

Below freezing temperatures are expected and may cause significant damage to plants, crops, or fruit trees. In areas unaccustomed to freezing temperatures, people who have homes without heat need to take added precautions.

**Calculated Priority Risk Index**

The CPRI for the Winter Storms hazard is

Probability:	<b>Likely</b>
Magnitude/Severity:	<b>Limited</b>
Warning Time:	<b>24+ Hours</b>
Duration:	<b>Less Than 6 Hours</b>

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$3 \times .45 + 2 \times .30 + 1 \times .15 + 1 \times .10 = 2.2$$

**4.2.6 Wildfire Hazard Profile**

A “wildfire” is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. They often begin unnoticed and spread quickly and are usually signaled by dense smoke that fills the area for miles around. Naturally occurring and non-native species of grasses, brush, and trees fuel wildfires. A wildland fire is a wildfire in an area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities. A Wildland-Urban Interface (WUI) fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wild land or vegetative fuels. Areas with a large amount of wooded, brush and grassy areas are at highest risk of wildfires. Additionally, areas anywhere that have experienced prolonged droughts or are excessively dry are also at risk of wildfires.

Short-term loss caused by a wildland fire can include the destruction of timber, wildlife habitat, scenic vistas, and watersheds. Vulnerability to flooding increases due to the destruction of watersheds.. Long-term effects include smaller timber harvests, reduced access to affected recreational areas, and destruction of cultural and economic resources and community infrastructure.

Wildfire behavior is based on three primary factors: fuel, topography, and weather. The type, and amount of fuel, as well as its burning qualities and level of moisture affect wildfire potential and behavior. The continuity of fuels, expressed in both horizontal and vertical components is also a factor, in that it expresses the pattern of vegetative growth and open areas. Topography is important because it affects the movement of air (and thus the fire) over the ground surface. The slope and shape of terrain can change the rate of speed at which the fire travels. Weather affects the probability of wildfire and has a significant effect on its behavior. Temperature, humidity and wind (both short and long term) affect the severity and duration of wildfires.

The Arkansas Forestry Commission completes a fire report on each fire its Rangers and Foresters suppress. Information on a fire report includes the location of the fire, what caused the fire, whose land it was on, and how large it was. The Forestry Commission classifies fire origins into one of nine causes (see Table 4.2.7.1). Based on statewide data from 1992 through 2003, it was found that the majority of fires in Arkansas are defined as “incendiary”. Almost 44% of fires and nearly 58% of acres burned over this twelve-year period were maliciously set. The next most common cause of fires was debris burning which caused 28% of the fires and almost 23% of acres burned. Lighting was the cause of only 3.6% of the fires in Arkansas.

Table 4.2.6.1 The below table shows the Causes of fires and acres burned in Arkansas based on data collected from the Arkansas Forestry Commission. This was historical data for Faulkner County gathered beginning 1992 until the 2014 update began. Please note that the Forestry Commission only considered 833 of the below chart to be “Wildfires.”

<b>Fire Cause</b>	<b># of Fires</b>	<b>%</b>	<b>Acres Burned</b>	<b>%</b>
Incendiary	10,150	43.8%	169,857	55.7%
Debris Burning	6,509	28.1%	69,310	22.7%
Smokers	548	2.4%	4,529	1.5%
Railroad	433	1.9%	3,960	1.3%
Campfires	248	1.1%	2,852	0.9%
Equipment Use	1,403	6.0%	10,731	3.52%
Children	393	1.7%	2,459	0.8%
Lightning	837	3.6%	9,763	3.2%
Miscellaneous	2,644	11.4%	31,528	10.3%

**2014 Update: The below table shows the number of fires and acres-burned by year in Faulkner County.**

Wildfires in Faulkner County		
Year	Fires	Acres Burned
2009	15	187
2010	52	897
2011	32	389
2012	45	695
2013	13	138
2014	27	495
<b>totals</b>	<b>184</b>	<b>2801</b>

### Geographic Area Affected by Wildfire

Using the Southern Wildfire Risk Assessment Portal, maps have been made to show the location and extent of the planning areas located within Faulkner County. They are located in the Appendix of this plan.

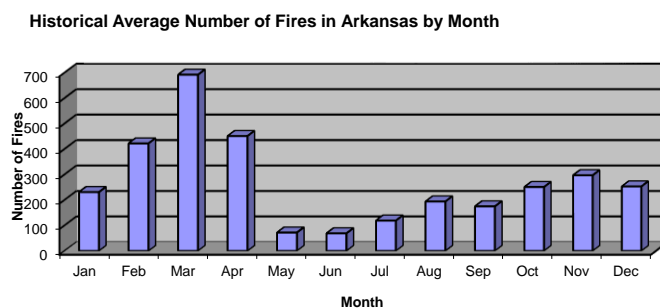
### Previous Wildfire Occurrences

Faulkner County has had a fairly high incidence of wildfires, which require suppression and have been reported through the Arkansas Forestry Commission. According to published reports by the Arkansas Forestry Commission, Faulkner County experienced 1,017 such wildfires for the years 1994 through 2014 (184 of these were during the 2014 update period)..

### Probability of Future Wildfire Events

The Arkansas Forestry Commission data from 1994 – 2014 indicates that 1,017 wildfires occurred in Faulkner County during that for an average of 50 per year. The average number of acres burned by wildfire in Faulkner County each year is approximately 388. Therefore, Faulkner County residents can expect about 50 wildfires per year and that burn approximately four 388acres.

Although wildfires may occur at any time of the year throughout Arkansas, February through April has been documented as being the “peak season” with March having the largest average number of fires. The chart below depicts the number of fires by month.





## Magnitude/Severity/Extent of the Wildfire Hazard

Faulkner County has had a total of 7,757 acres burned by wildfire according to the Arkansas Forestry Commission data for the years 1994 through 2014. With an average of 388 acres burned per year. Since the historical data shows very little impact on a County-wide scale, the Magnitude will be assigned a “Limited” classification.

### Extent: Burn Severity

From a landscape perspective, burn severity is defined as the degree of environmental change caused by fire. Heterogeneity in burn severity is a result of the spatial variation of factors such as fire intensity, topography and vegetation type. Burn severity can be broken down into several categories, useful in gauging post burn ecological responses:

- Unburned
- Low Severity Burn
- Medium Low Severity Burn
- Medium High Severity Burn
- High Severity Burn

Rank	Burn Severity	Description	Characteristics
0	Unburned	Fire extinguished before reaching microsite	<ul style="list-style-type: none"> <li>• Leaf litter from previous years intact and uncharred</li> <li>• No evidence of char around base of trees and shrubs</li> <li>• Pre-burn seedlings and herbaceous vegetation present.</li> </ul>
1	Low Severity Burn	Surface fire which consumes litter yet has little effect on trees and understory vegetation.	<ul style="list-style-type: none"> <li>• Burned with partially consumed litter present</li> <li>• Evidence of low flame heights around base of trees and shrubs (&lt;0.5 m)</li> <li>• No significant decreases in overstory &amp; understory basal area, diversity or species richness from pre-burn assessments</li> <li>• Usually burning below 80 ° C</li> </ul>
2	Medium-Low Severity Burn	No significant differences in overstory density and basal area, & no significant differences in species richness. However, understory density, basal area, and species richness declined.	<ul style="list-style-type: none"> <li>• No litter present and 100% of the area covered by duff</li> <li>• Flame lengths &lt; 2 m</li> <li>• Understory mortality present, little or no overstory mortality</li> </ul>
3	Medium-High	Flames that were slightly taller than those of Medium-low intensity fires, but these fires had occasional hot	<ul style="list-style-type: none"> <li>• Soil exposure on 1-50% of the area</li> <li>• Flame lengths &lt;6m</li> </ul>

	Severity Burn	spots that killed large trees, With significant reduction in the understory	<ul style="list-style-type: none"> <li>• High understory mortality with some overstory trees affected</li> </ul>
4	High Severity Burn	Crown fires, usually a stand replacing burn with relatively high overstory mortality	<ul style="list-style-type: none"> <li>• Soil exposure &gt;50%</li> <li>• Flame lengths &gt;6m</li> <li>• Higher overstory mortality &gt;20%</li> <li>• Usually burning above 800 ° C</li> </ul>

Southern Appalachian Forest Coalition <http://www.safc.org/index.php>

### Calculated Priority Risk Index

The CPRI for the Wildfire Hazard for Faulkner County and each local jurisdiction is

Probability: **Highly Likely**  
 Magnitude/Severity: **Limited**  
 Warning Time: **Less than 6 hours**  
 Duration: **Less than a week**

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$4 \times .45 + 2 \times .30 + 4 \times .15 + 3 \times .10 = 3.3$$

#### 4.2.7 Drought Hazard Profile

Drought is a normal, recurrent feature of climate. In the most general sense, drought originates from a deficiency of precipitation over an extended period of time, resulting in a water shortage for some activity, group or environmental sector. Drought is a temporary aberration: it differs from aridity, which is restricted to low rainfall regions and is a permanent feature of climate.

Drought should be considered relative to some long-term average condition of balance between precipitation and evapotranspiration (i.e., evaporation + transpiration) in a particular area, a condition often perceived as “normal”. Conditions of drought is also related to the timing (i.e., principal season of occurrence, delays in the start of the rainy season, occurrence of rains in relation to principal crop growth stages) and the effectiveness (i.e., rainfall intensity, number of rainfall events) of the rains. Other climatic factors such as high temperature, high wind, and low relative humidity are often associated with it in many regions of the world and can significantly aggravate the severity of a drought.

When drought begins, the agricultural sector is usually the first to be affected because of its heavy dependence on stored soil water. Soil water can be rapidly depleted during extended dry periods. If precipitation deficiencies continue, then people dependent on other sources of water will begin to feel the effects of the shortage. Those who rely on

surface water (i.e., reservoirs and lakes) and subsurface water (i.e., ground water), for example, are usually the last to be affected. A short-term drought that persist for 3 to 6 months may have little impact on these sectors, depending on the characteristics of the hydrologic system and water use requirements.

In 1965, W.C. Palmer developed an index to measure the departure of the moisture supply (Palmer, 1965). Palmer based his index on the supply-and-demand concept of the water balance equation, taking into account more than just the precipitation deficit at specific locations. The objective of the Palmer Drought Severity Index (PDSI), as this index is now called, was to provide measurements of moisture conditions that were standardized so that comparisons using the index could be made between locations and between months (Palmer 1965).

The Palmer Index is most effective for determining long-term drought, which occurs over several months, and is less effective for short-term forecasts, which occur over a matter of weeks. The index is based on a scale, which indicates “normal conditions” as “0” and drought conditions as “minus” numbers. For example, minus 2 (-2) would represent a moderate drought, a minus 3 (-3) would represent a severe drought, and minus 4 (-4) would represent an extreme drought as depicted on the Palmer Drought Severity Index (PDSI)

### **Geographic Area Affected by Drought**

Faulkner County has been affected by drought numerous times over the past three hundred years (1700-2014) according to historical Palmer Drought Severity Indices reconstructed through the study of tree rings between for the years between 1700 and 1895, when instrumental records begin to be kept. These composite PDSI reconstructions and recordings, clearly depict that the central and eastern portions of the State of Arkansas is less likely to experience severe and extreme drought less often than western Arkansas. However, all portions of Faulkner County are equally likely to experience drought as indicated by the historical map of the following Palmer Drought Severity Index shown on the following page.

### **Previous Drought Occurrences**

**The Dust Bowl Drought:** Faulkner County, along with the rest of the State of Arkansas experienced the “Dust Bowl Drought”, a prolonged drought during the 1930’s that resulted in dust storms and much economic misery to go along with the depression. Many summers from 1930 through 1939 were hot and dry. The worst dust storms in Arkansas came during 1934.

**The Droughts of 1953 and 1954:** Faulkner County, along with the rest of the State of Arkansas experienced droughts in 1953 and 1954. In 1953, a statewide drought during the summer and fall of 1953 with 100-degree weather experienced through the month of September and even into early October in some areas. In

1954, the drought conditions were combined with a heat wave, which began June 7<sup>th</sup> and extended through September 10<sup>th</sup>.

**The Summer of 1980:** Faulkner County, along with the remainder of the State of Arkansas experienced drought conditions during a heat wave which lasted between June 22<sup>nd</sup> and September 17, 1980.

**Late Summer Heat Wave and Drought of 2000:** Faulkner County, along with the remainder of the State of Arkansas began experiencing a long-term drought period in the spring of 1998. In 2000, an extended dry period and heat wave intensified with record setting in August with widespread 100-degree temperatures across the state through early September. As a result of this period of drought across the State of Arkansas, the Governor declared all 75 counties in Arkansas “agricultural disaster areas”.

**2014 Update:** 13 droughts were reported between 01/01/2009 and 6/30/2014 according to the Nation Climatic Data Center. A vast majority of the droughts began in the northern part of the county, and if conditions persisted, it would spread to southward. There were a few instances where drought began in the southern sections of the County. A detailed list of the droughts can be found on the Faulkner County’s Second meeting PowerPoint presentation.

### **Probability of Future Drought Events**

The Palmer Drought Severity Index data for the period of 1895-1995, indicates that Faulkner County has experienced severe to extreme drought conditions less than 5 years within that 100-year period. The PDSI maps from 1730-1995, developed by the NOAA Paleoclimatology program, indicate that Faulkner County experienced moderate to extreme drought conditions (PDSI>-2.5) a total of seventeen (17) times over this 265-year period.. **2014 Update:** 13 droughts were experienced within the update timeframe. Severe droughts were experienced during the Summer, Fall, and Winter seasons. A detailed list of the droughts can be found on the Faulkner County’s Second meeting PowerPoint presentation. 17 droughts until 1995, one drought in 2000, and 13 since 2009, equals 31 total events in a 284 year period. This is a historically 10.9% chance of occurring each year.

### **Magnitude/Severity of the Drought Hazard**

The area of Faulkner County, Arkansas, since 1730, has experienced extreme drought conditions (PDSI values of –5 to –6) only in 1954. Severe Drought conditions (PDSI values of –3.5 to –4.5) were experienced in Faulkner County in 1936. However, Faulkner County has experienced periods of moderate to severe drought conditions (PSDI –2.5 to –3.5) a total of 15 times since 1730. **2014 Update:** There was one occurrence of exceptional drought, three additional occurrences of severe drought, and three additional occurrences of moderate

drought from January 2009- June 2014. This information was gathered from the Palmer Drought Severity Index Maps available on their website at <http://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/>. The exceptional drought was recorded in 2012 and available on NOAAs NWS climate data at <http://www.srh.noaa.gov/lzk/?n=drought2012yr.htm>. For this plan update, Drought Magnitude/Severity will be classified as “Limited.” According to the CPRI, injuries do not result in permanent disability, but we do not expect critical facilities to shut down for more than one week. The reason why it is not classified as “Negligible” is because drought situations can bring significant impacts to the agricultural industry as well as utilities. Drought impacts to agriculture require farmers to consider alternative irrigation measures for their crops and livestock. This increases the cost of doing business and an increased risk to losing crops and livestock. This also can put a strain on public water supplies to the area. Local jurisdictions could possibly have to seek outside sources for water, causing an unnecessary cost to the locals as a result of a result of a risk to public health.

**Drought Severity Classification**

Source: U.S. National Drought Mitigation Center.

**D0-D4:** The Drought Monitor summary map identifies general drought areas, labeling droughts by intensity, with D1 being the least intense and D4 being the most intense. D0, drought watch areas, are either drying out and possibly heading for drought, or are recovering from drought but not yet back to normal, suffering long-term impacts such as low reservoir levels.

Faulkner County, and participating jurisdictions, should expect the impacts of drought conditions to be within the “Possible Impacts” of the corresponding up to the D4 “Category” in the below table.

<b>Drought Severity Classification</b>								
		<b>RANGES</b>						
Category	Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Percent of Normal Precip	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	-2.0 to -2.9	11-20	11-20	<70% for 3 months	-0.8 to -1.2	26-35

		water shortages developing or imminent, voluntary water use restrictions requested						
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

## Calculated Priority Risk Index for a Drought Hazard

The CPRI for the Drought Hazard for Faulkner County and each local jurisdiction is determined by the following formula

$$\text{Probability} + \text{Magnitude/Severity} + \text{Warning Time} + \text{Duration} = \text{CPRI}$$

Probability: **Possible**  
Magnitude/Severity: **Limited**  
Warning Time: **24 + Hours**  
Duration: **More than a week**

The CPRI for the Drought hazard for Faulkner County is

$$2 \times .45 + 2 \times .30 + 1 \times .15 + 4 \times .10 = 2.05$$

### 4.2.8 Dam Failure Hazard Profile

A dam impounds water in the upstream area creating a “reservoir”. The amount of water impounded is measured in acre-feet. An acre-foot of water is the volume that even a very small dam may impound or detain many acre-feet of water. As defined by NOAA, a Dam Failure is a catastrophic event characterized by the sudden, rapid, and uncontrolled release of impounded water. Dam failures are not routine, but the results can be devastating. Two factors influence the potential severity of full or partial dam failure: the amount of water impounded, and density, type and value of development downstream. In hydrologic terms, a dam is any artificial barrier which impounds or diverts water. The dam is generally hydrologically significant if it is:

- 1.) 25 feet or more in height from the natural bed of the stream and has a storage of at least 15 acre-feet.
- 2.) Or has an impounding capacity of 50 acre-feet or more and is at least six feet above the natural bed of the stream.

The National Inventory of Dams categorizes the dams according to the following primary functions:

- Recreation (31.3 percent)



- Fire and farm ponds (17.0 percent)
- Flood control (14.6 percent)
- Irrigation (13.7 percent)
- Water supply (9.8 percent)
- Tailings and other (8.1 percent)
- Hydroelectric (2.9 percent), Undetermined (2.3 percent )
- Navigation (0.3 percent)

Each dam listed in the National Inventory of Dams is assigned a high, significant, or low hazard classification based on potential of loss of life and property should the dam fail. Hazard classification is updated continually based on development and changing demographics both upstream and downstream of the dam site. The hazard classification is not an indicator of the adequacy of a dam or its physical integrity.

Dam failures can result from any one or a combination of causes. Prolonged periods of rainfall and flooding cause most failures. Other possible mechanisms of failure include: Inadequate spillway capacity resulting in excess overtopping flows; Internal erosion caused by embankment or foundation leakage or piping; Improper maintenance, including failure to remove trees, repair internal seepage problems, failure to replace lost material from the cross Section of the dam and abutments; Improper design, including the use of improper construction materials and construction practices; negligent operation , including failure to remove or open gates or valves during high flow periods; Failure of upstream dams on the same waterway; High winds, which can cause significant wave action and result in substantial erosion; and Earthquakes, which typically cause longitudinal cracks at the tops of embankments that weaken entire structures.

Jurisdiction/Powers of Department - The Arkansas Soil and Water Conservation Commission has the power to:

- Promulgate rules, regulations, and orders as needed to perform its duties (A.C.A. S.15-22-205);
- Require a permit for construction and operation of all dams which exceed 25 feet in height and impound at least 50 acre-feet of water except those owned by the US government (A.C.A. S.15-22-210 and S.15-22-214);
- Require, upon appeal by a downstream riparian, a permit for dams of any size whose failure would endanger lives or property (A.C.A. S.15-22-214);
- Enter property at any time to inspect the dam or site before, during or after construction (A.C.A. S. 15-22-2);
- Direct dam owners to make repairs necessary to protect the safety of the dam (A.C.A. S.22-210[2]);
- Remove dams or perform necessary repairs to protect safety of dams if the owner fails to perform the same in a timely manner. Costs of such work shall be a lien against the property (A.C.A. S.15-22-210[2]);

1 Compiled by the Association of State Dam Safety Officials, July 2000 Arkansas

- Issue subpoenas for any witness to require his attendance and testimony before the commission, and to require the production of any records determined to be material to the question before the commission (A.C.A. S.15-22-208).

Source: FEMA 333; Federal Guidelines for Dam Safety, Hazard Potential Classifications for Dams, October 1998

Signs of Potential Dam Failure	
<b>Seepage</b>	The appearance of seepage on the downstream slope, abutments, or downstream area is cause for concern. If the water is muddy and is coming from a well-defined hole, material is probably being eroded from inside the embankment and a potentially dangerous situation can develop.
<b>Erosion</b>	Erosion on the dam and spillway is one of the most evident signs of danger. The size of erosion channels and gullies can increase greatly with slight amounts of rainfall.
<b>Cracks</b>	Cracks are of two types: traverse and longitudinal. Traverse cracks appear perpendicular to the axis of the dam and indicate settlement of the dam. Longitudinal cracks run parallel to the axis of the dam and may be the signal for a slide, or slump, on either face of the dam.
<b>Slides and Slumps</b>	A massive slide can mean catastrophic failure of the dam. Slides occur for many reasons and their occurrence can mean a major reconstruction effort.
<b>Subsidence</b>	Subsidence is the vertical movement of the foundation materials due to failure of consolidation. Rate of subsidence may be so slow that it can go unnoticed without proper inspection. Foundation settlement is the result of placing the dam and reservoir on an area not having suitable strength or over collapsed caves or mines.
<b>Structural</b>	Conduit separations or ruptures can result in water leaking into the embankment and the subsequent weakening of the dam. Pipe collapse can result in hydraulic failures due to diminished capacity.
<b>Vegetation</b>	A prominent danger signal is the appearance of "wet environment" types of vegetation such as cattails, reeds, mosses and other wet area vegetation. These types of vegetation can be a sign of seepage.
<b>Boils</b>	Boils indicate seepage water exiting under some pressure and typically occur in areas downstream of the dam.
<b>Animal Burrows</b>	Animal burrows are a potential danger since such activity can undermine the structural integrity of the dam.
<b>Debris</b>	Debris on dams and spillways can reduce the function of spillways, damage structures and valves and destroy vegetative cover.

## Geographic Area

## The National Inventory of Dams

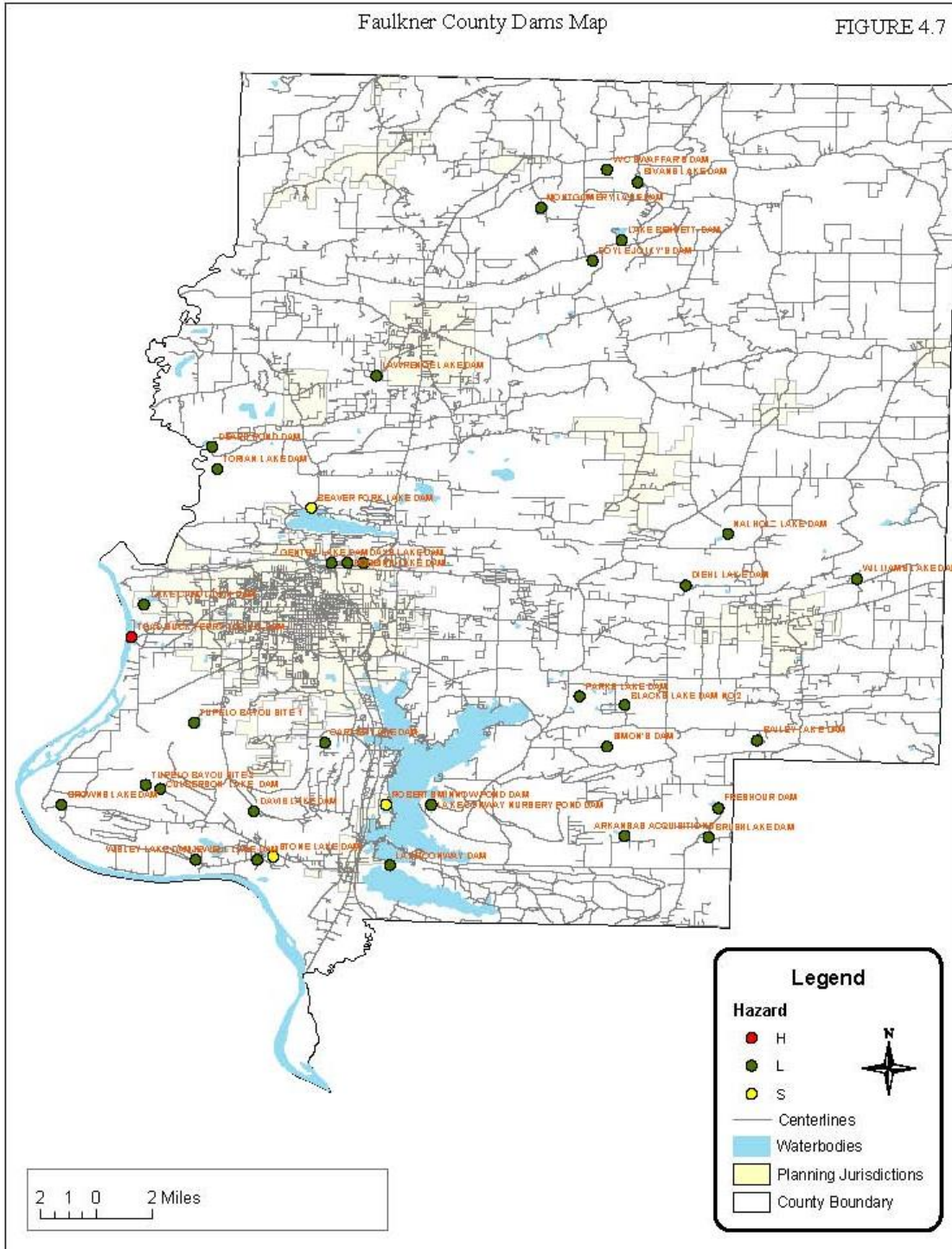
Record	Dam Name	NID ID	River	NID Height	NID Storage	Year Completed	Drainage Area	Hazard	County
1548	<a href="#">GENTRY LAKE DAM</a>	<a href="#">AR00045</a>	CYPRESS CREEK	15.00	107.00	1949	0.00	L	FAULKNE
1549	<a href="#">DIEHL LAKE DAM</a>	<a href="#">AR00047</a>	PALARM CREEK	18.00	128.00	1952	0.00	L	FAULKNE
1550	<a href="#">WILLIAMS LAKE DAM</a>	<a href="#">AR00048</a>	LITTLE CYPRESS CREEK TRIBUTARY	29.00	233.00	1957	0.44	L	FAULKNE
1551	<a href="#">LAKE CAROL-DAN DAM</a>	<a href="#">AR00049</a>	ARKANSAS RIVER-TR	22.00	690.00	1963	0.00	L	FAULKNE
1552	<a href="#">PARKS LAKE DAM</a>	<a href="#">AR00051</a>	LITTLE CYPRESS CREEK-OS	15.00	83.00	1959	0.00	L	FAULKNE
1554	<a href="#">BLACKS LAKE KAM</a>	<a href="#">AR00053</a>	LITTLE CYPRESS CREEK OFFSTREAM	12.00	90.00	1952	0.14	L	FAULKNE
1555	<a href="#">BLACKS LAKE DAM NO 2</a>	<a href="#">AR00054</a>	LITTLE CYPRESS CREEK	22.00	86.00	1952	0.00	L	FAULKNE
1556	<a href="#">LAKE ELIZABETH DAM</a>	<a href="#">AR00055</a>	LITTLE CYPRESS CREEK-TR	30.00	222.00	1948	0.13	L	FAULKNE
1539	<a href="#">BIVANS LAKE DAM</a>	<a href="#">AR00036</a>	FAIRVIEW CREEK	15.00	114.00	1945	0.00	L	FAULKNE
1540	<a href="#">MONTGOMERY LAKE DAM</a>	<a href="#">AR00037</a>	MILL CREEK-TR	22.00	87.00	1936	0.00	L	FAULKNE
1541	<a href="#">LAKE BENNETT DAM</a>	<a href="#">AR00038</a>	BLACK FORK CREEK	41.00	486.00	1940	3.30	L	FAULKNE
1542	<a href="#">LAWRENCE LAKE DAM</a>	<a href="#">AR00039</a>	GREENBRIER CREEK	11.00	117.00	1950	0.00	L	FAULKNE
1543	<a href="#">DEARS POND DAM</a>	<a href="#">AR00040</a>	EAST CADRON CREEK	11.00	53.00	1954	0.00	L	FAULKNE
1544	<a href="#">TORIAN LAKE DAM</a>	<a href="#">AR00041</a>	EAST CADRON CREEK-TR	18.00	303.00	1962	0.00	L	FAULKNE
1545	<a href="#">BEAVER FORK LAKE DAM</a>	<a href="#">AR00042</a>	BEAVER FORK	34.00	19514.00	1956	11.00	S	FAULKNE
1546	<a href="#">DAYS LAKE DAM</a>	<a href="#">AR00043</a>	CYPRESS CREEK	20.00	190.00	1958	0.00	L	FAULKNE
1547	<a href="#">ROBBINS LAKE DAM</a>	<a href="#">AR00044</a>	CYPRESS CREEK	18.00	198.00	1958	0.00	L	FAULKNE
1559	<a href="#">LAKE CONWAY NURSERY POND DAM</a>	<a href="#">AR00058</a>	CHADWICK CREEK	22.00	298.00	1968	0.00	L	FAULKNE
1560	<a href="#">DAVIS LAKE DAM</a>	<a href="#">AR00059</a>	TUPELLO BAYOU	36.00	269.00	1960	0.69	L	FAULKNE
1561	<a href="#">BROWNS LAKE DAM</a>	<a href="#">AR00060</a>	TUPELLO BAYOU OS	10.00	108.00	1966	0.00	L	FAULKNE
1562	<a href="#">WISLEY LAKE DAM</a>	<a href="#">AR00061</a>	ARKANSAS RIVER-TR	17.00	104.00	1954	0.00	L	FAULKNE
1563	<a href="#">JEWELL LAKE DAM</a>	<a href="#">AR00062</a>	BEAVER CREEK-OS	16.00	90.00	1966	0.00	L	FAULKNE
1564	<a href="#">STONE LAKE DAM</a>	<a href="#">AR00063</a>	BEAVER CREEK-OS	16.00	659.00	1961	0.00	S	FAULKNE
1565	<a href="#">LAKE CONWAY DAM</a>	<a href="#">AR00064</a>	PALARM CREEK	16.00	40200.00	1950	0.00	L	FAULKNE
1662	<a href="#">TOAD SUCK FERRY LOCK &amp; DAM</a>	<a href="#">AR00170</a>	ARKANSAS	58.00	37300.00	1969	156386.00	H	FAULKNE
2510	<a href="#">ARKANSAS ACQUISITIONS</a>	<a href="#">AR01238</a>	BRIDGE CREEK-TR	25.00	230.00	1976	0.30	L	FAULKNE
2511	<a href="#">CULBERSON LAKE DAM</a>	<a href="#">AR01239</a>	TUPELO BAYOU-TR	27.00	130.00	1976	0.34	L	FAULKNE

2512	<a href="#">ROBERTS MINNOW POND DAM</a>	<a href="#">AR01240</a>	PALARM CREEK-TR	17.00	340.00	1968	0.00	S	FAULKNE
2513	<a href="#">BRUSHLAKE DAM</a>	<a href="#">AR01241</a>	BRIDGE CREEK-OS	20.00	80.00	1965	0.00	L	FAULKNE
2514	<a href="#">FRESHOUR DAM</a>	<a href="#">AR01242</a>	LITTLE RIVER	46.00	400.00	1967	0.70	L	FAULKNE
2515	<a href="#">CARTER LAKE DAM</a>	<a href="#">AR01243</a>	GOLD CREEK-TRIB	26.00	125.00	1968	0.23	L	FAULKNE
2533	<a href="#">TUPELO BAYOU SITE 1</a>	<a href="#">AR01261</a>	TUPELO BAYOU	48.00	4242.00	1974	10.20	L	FAULKNE
2534	<a href="#">TUPELO BAYOU SITE 2</a>	<a href="#">AR01262</a>	TUPELO BAYOU-TR	34.50	1191.00	1974	2.40	L	FAULKNE
2535	<a href="#">NALHOLZ LAKE DAM</a>	<a href="#">AR01263</a>	WHITE OAK BRANCH-TE	23.00	74.00	1976	0.00	L	FAULKNE
2659	<a href="#">DOYLE JOLLY S DAM</a>	<a href="#">AR01483</a>	BLACK FORK CREEK-TR	20.00	170.00	1987	0.60	L	FAULKNE
2660	<a href="#">SIMON S DAM</a>	<a href="#">AR01484</a>	LITTLE CYPRESS CK-TR	25.00	142.00	1987	0.30	L	FAULKNE
2661	<a href="#">W C SWAFFAR S DAM</a>	<a href="#">AR01485</a>	MILL CREEK	18.00	100.00	1987	0.30	L	FAULKNE
2711	<a href="#">WIEDOWER DAM</a>	<a href="#">AR01538</a>	CADRON CREEK TRIB.	40.00	448.00	2000	0.67	S	FAULKNE

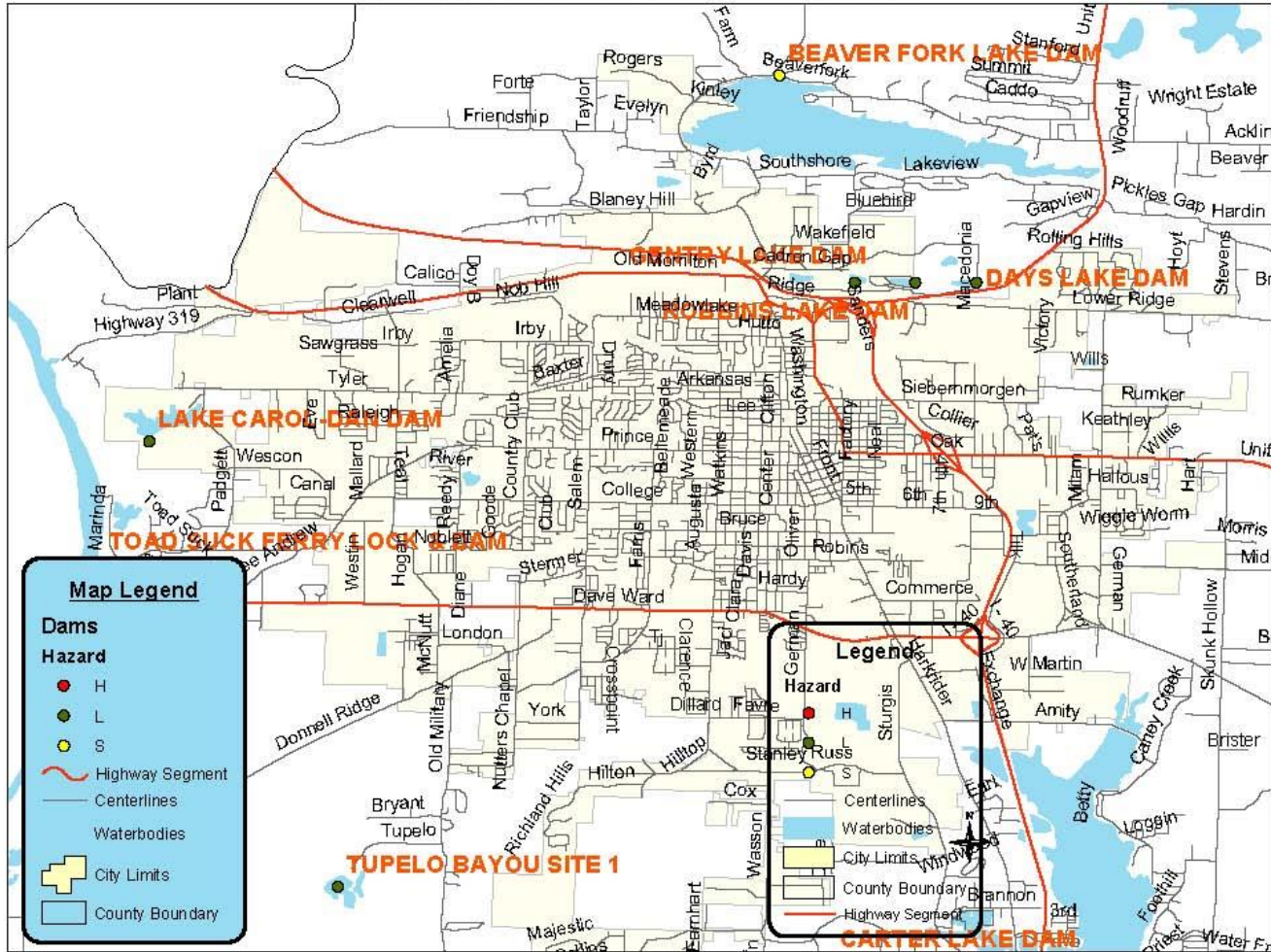
Location maps for the dams are shown below

Faulkner County Dams Map

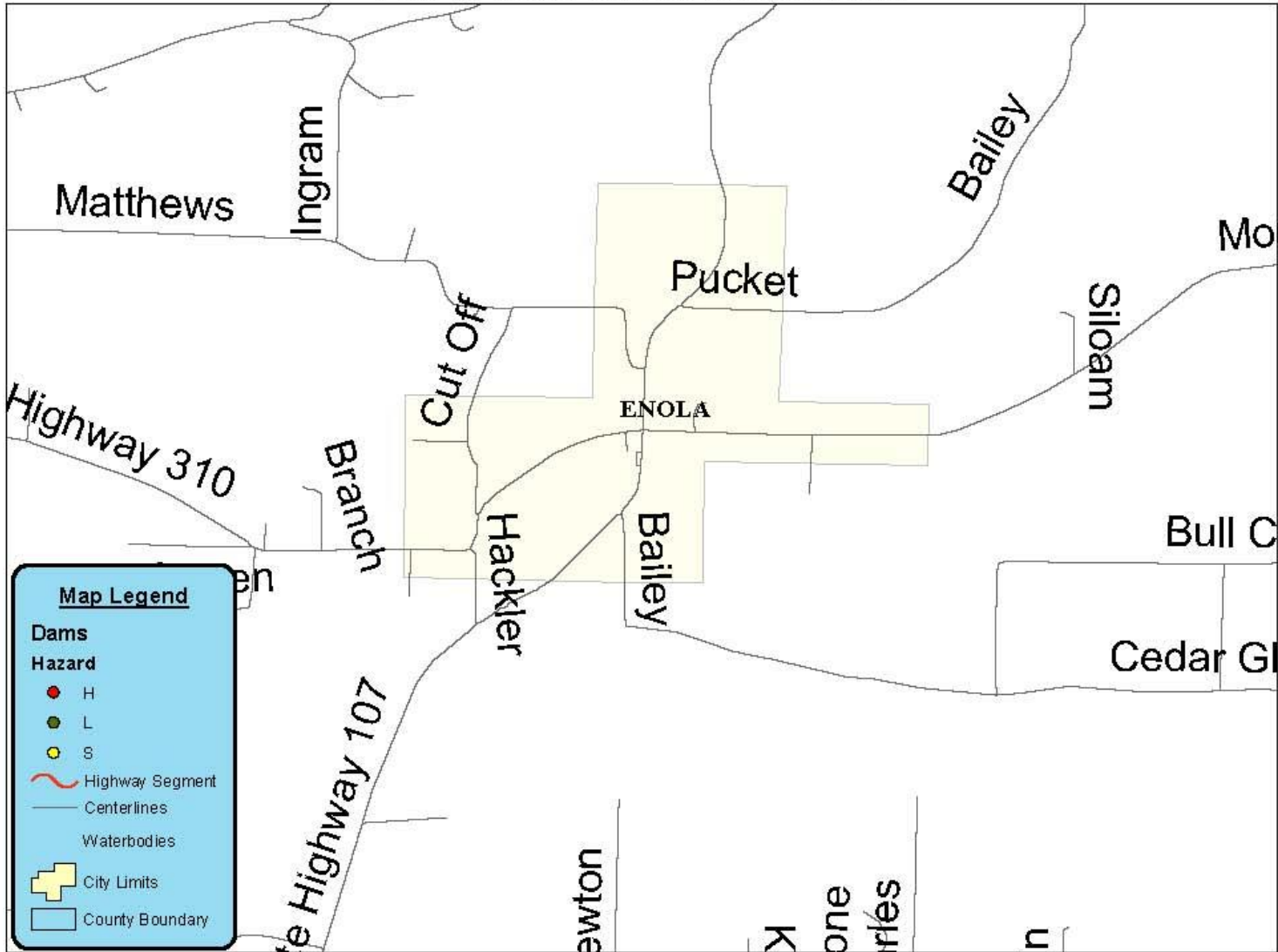
FIGURE 4.7



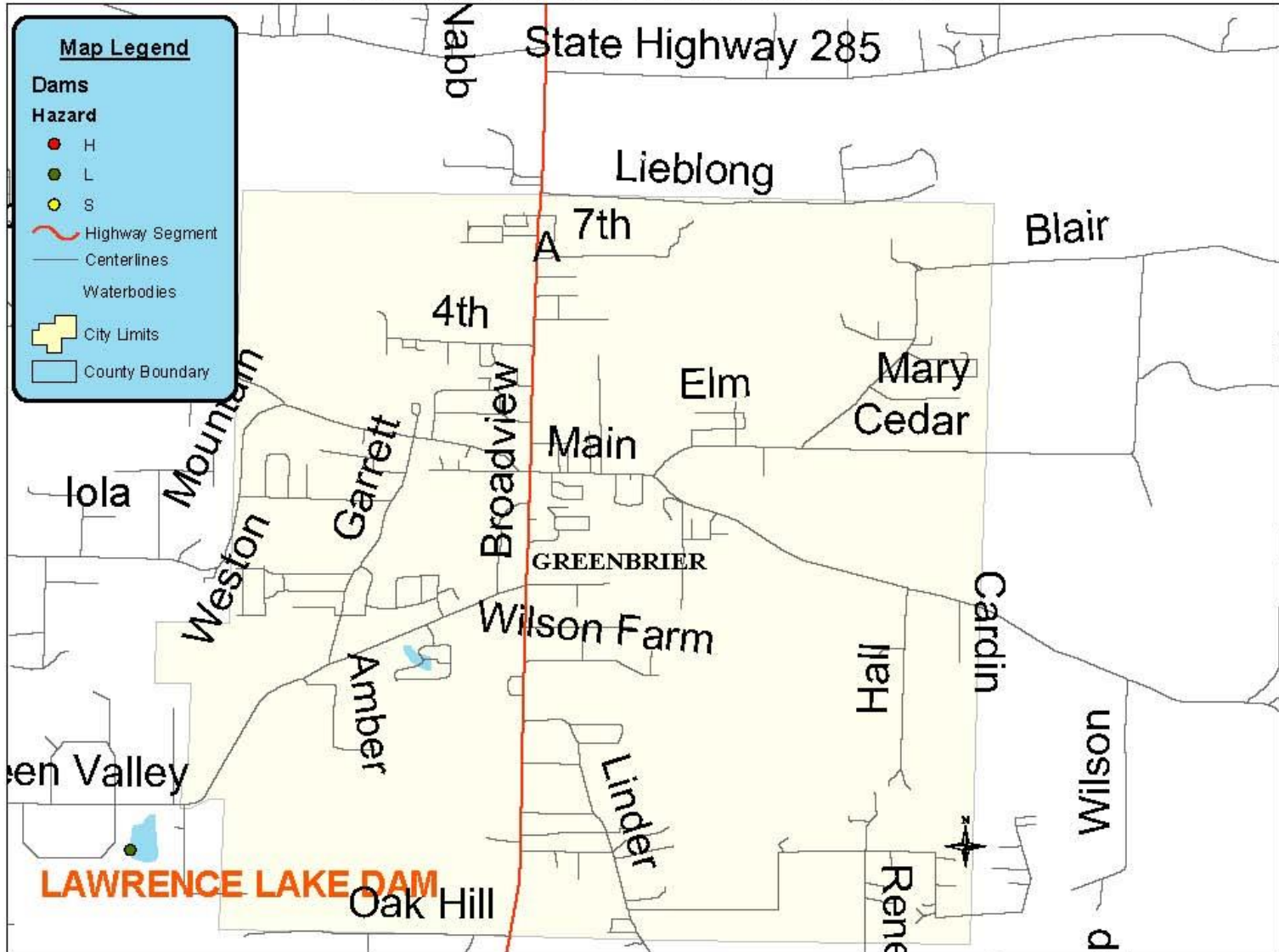
Faulkner County (City of Conway) Dams Map



Faulkner County (City of Enola) Dams Map

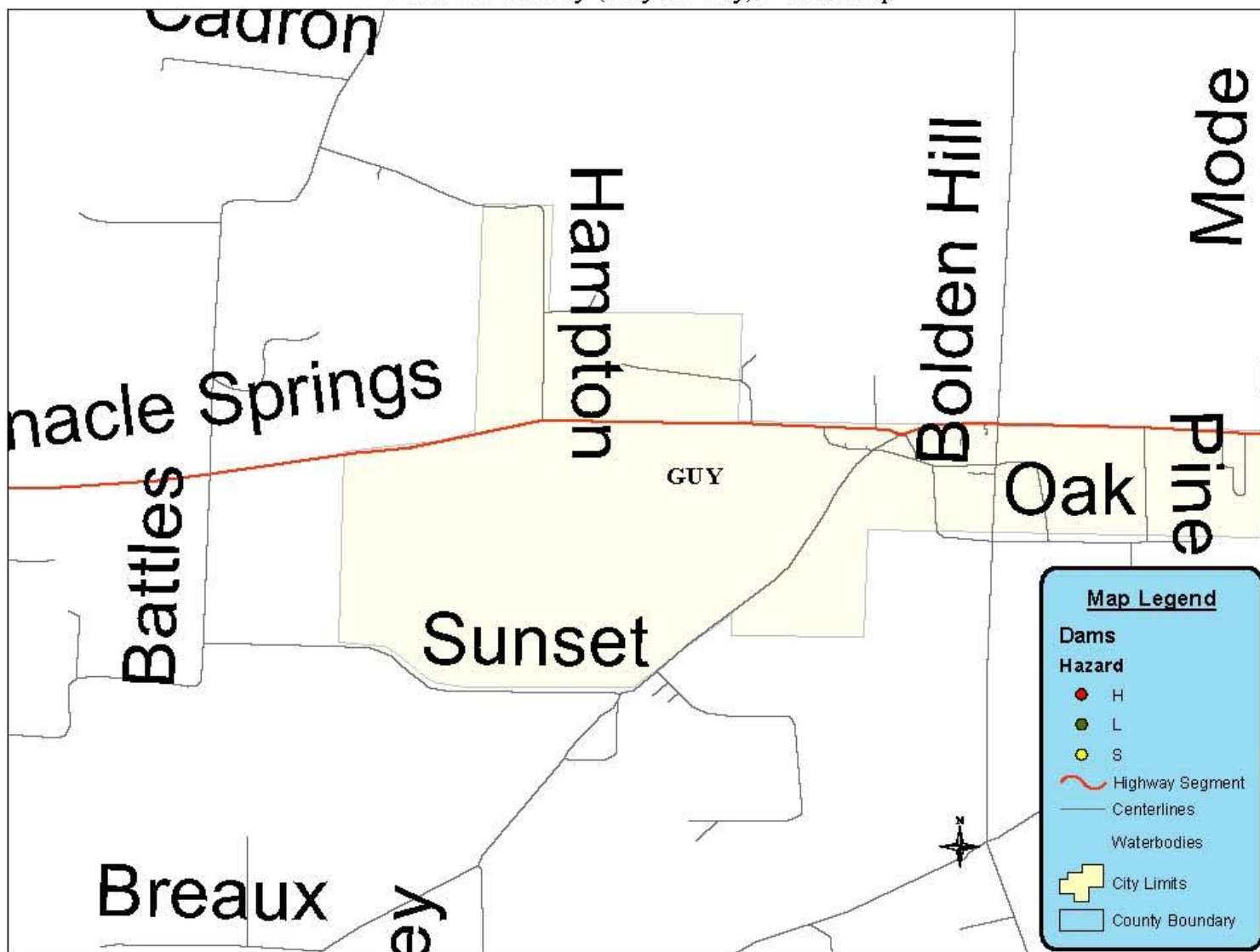


Faulkner County (City of Greenbrier) Dams Map

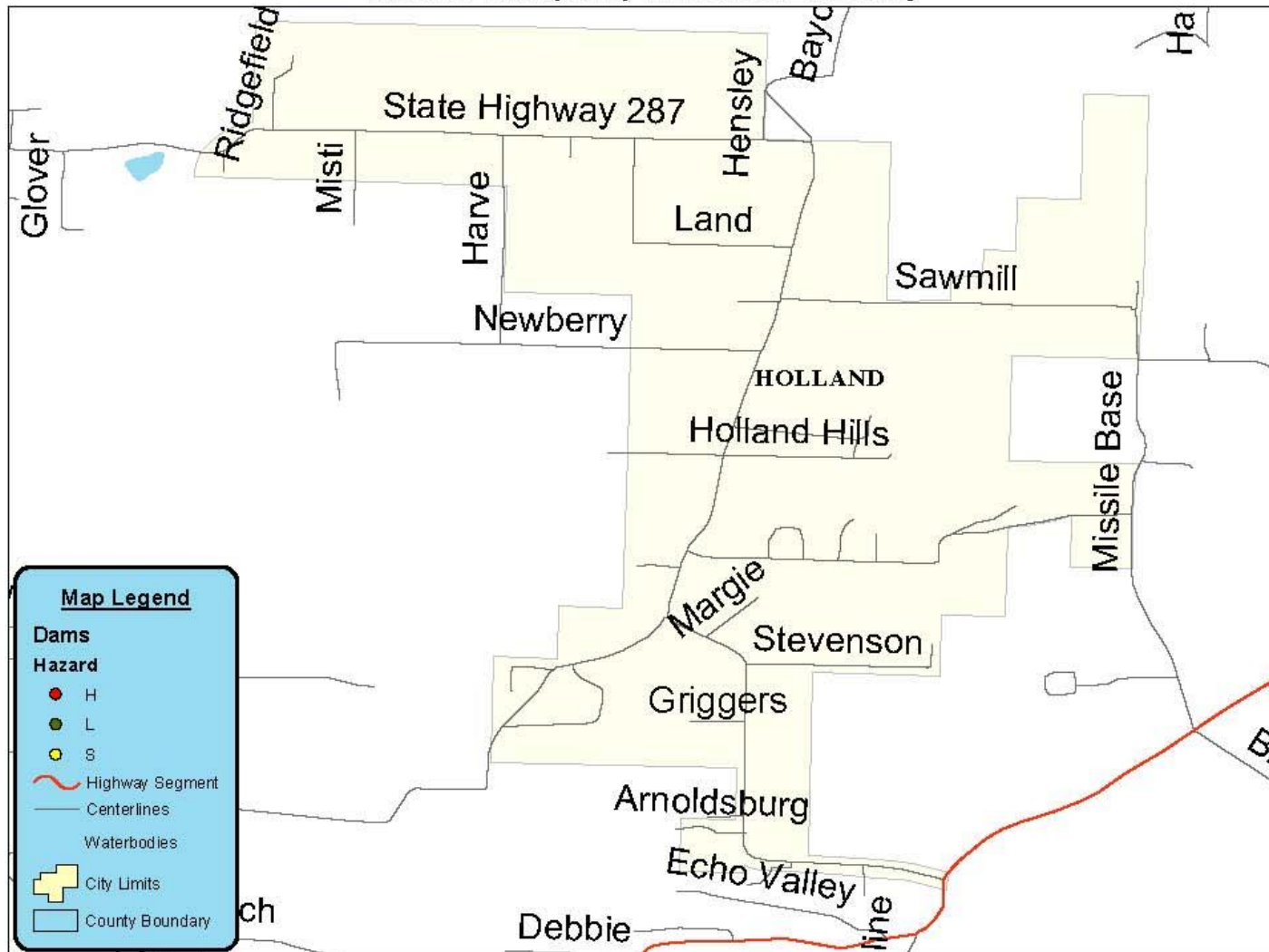




Faulkner County (City of Guy) Dams Map



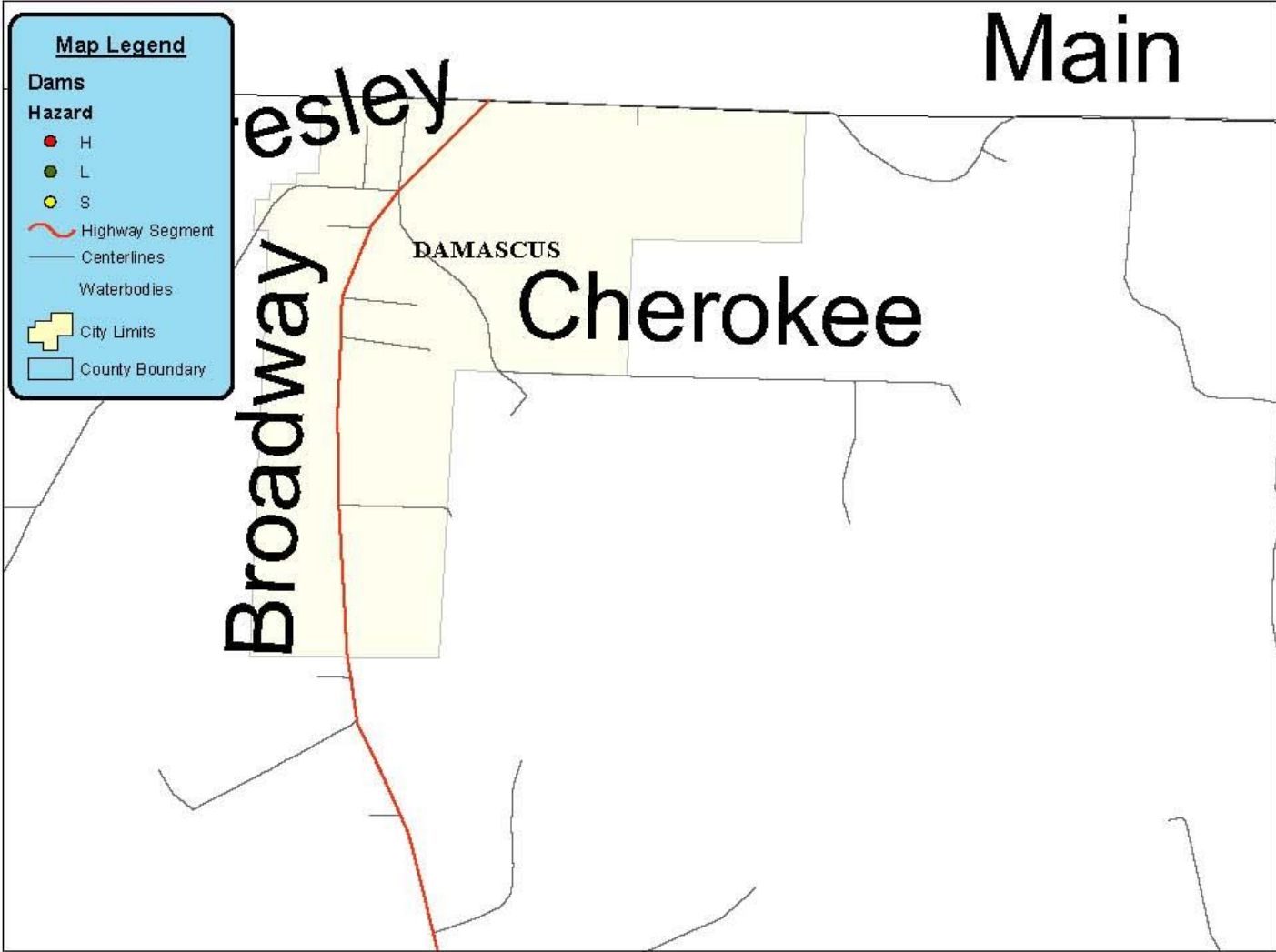
Faulkner County (City of Holland) Dams Map



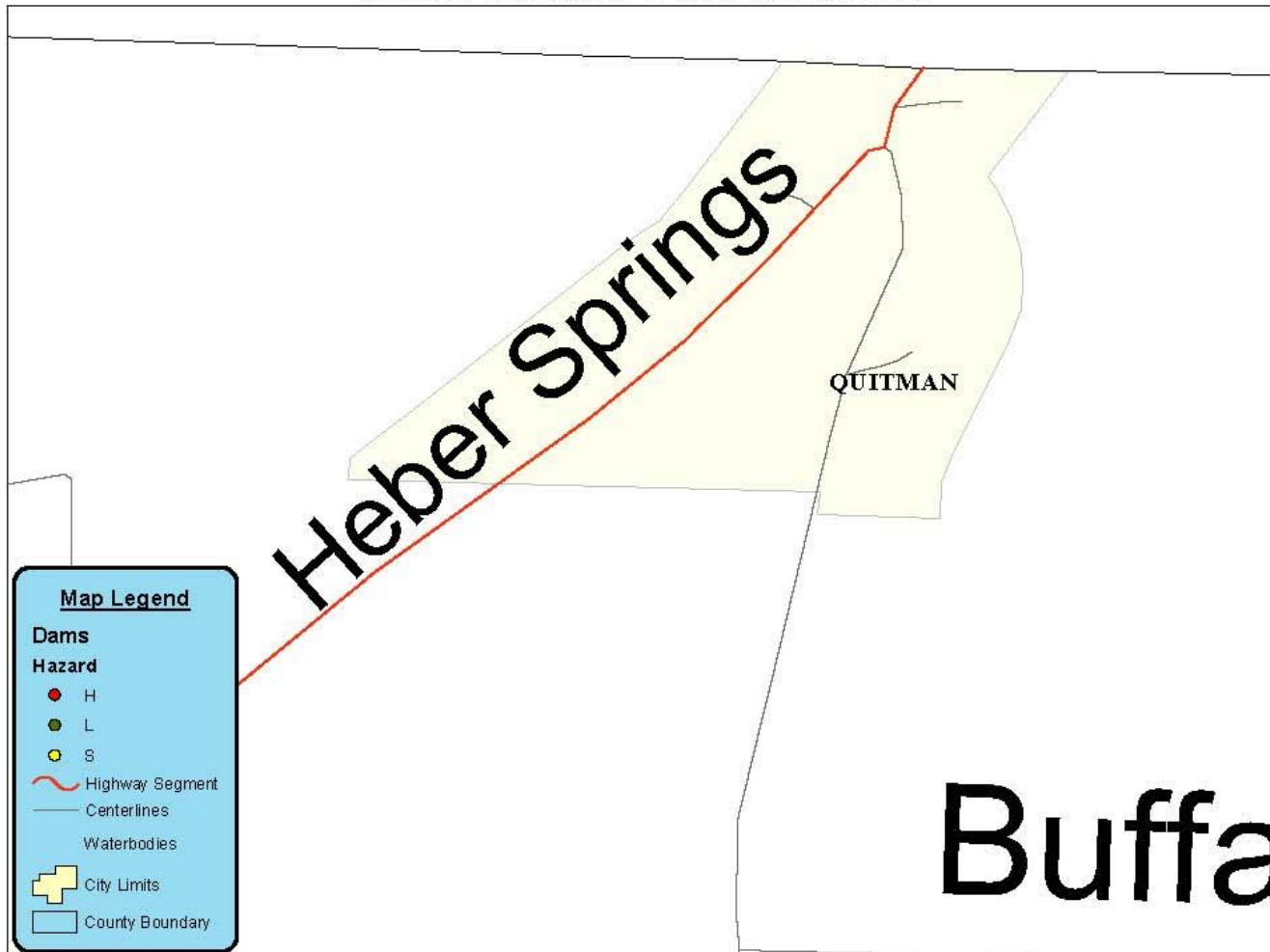
Faulkner County (City of Mayflower) Dams Map



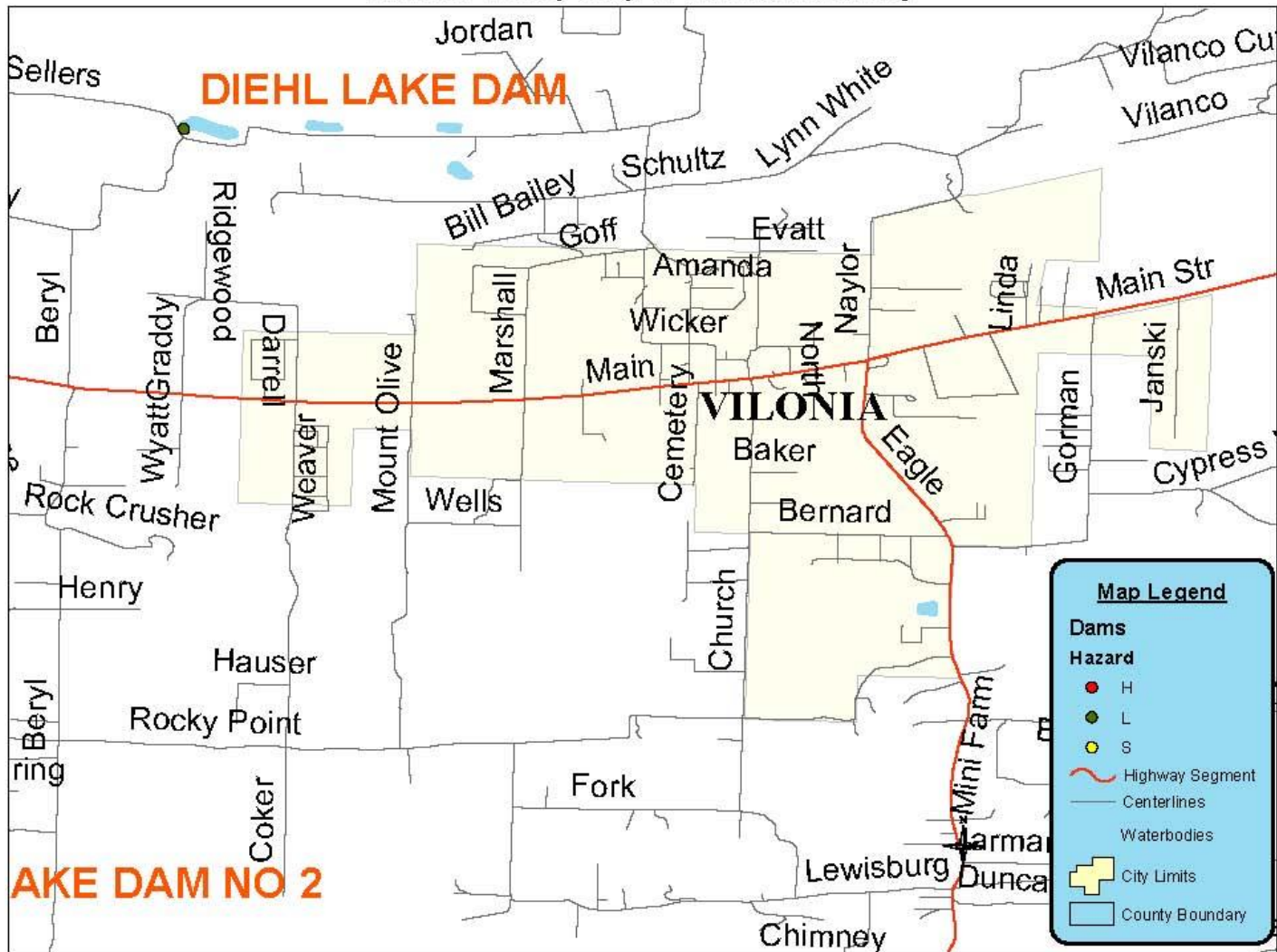
Faulkner County (City of Damascus) Dams Map



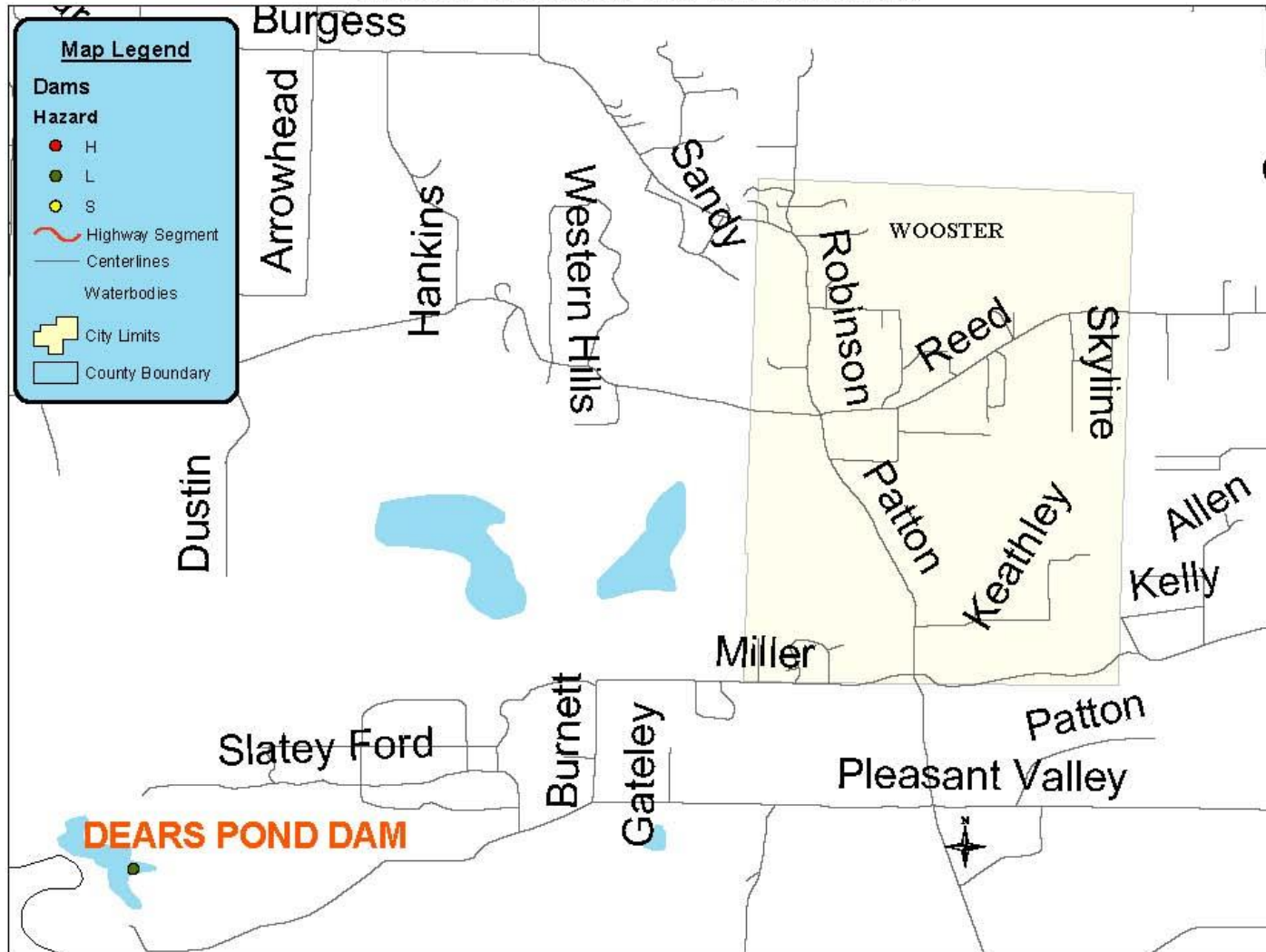
Faulkner County (City of Quitman) Dams Map



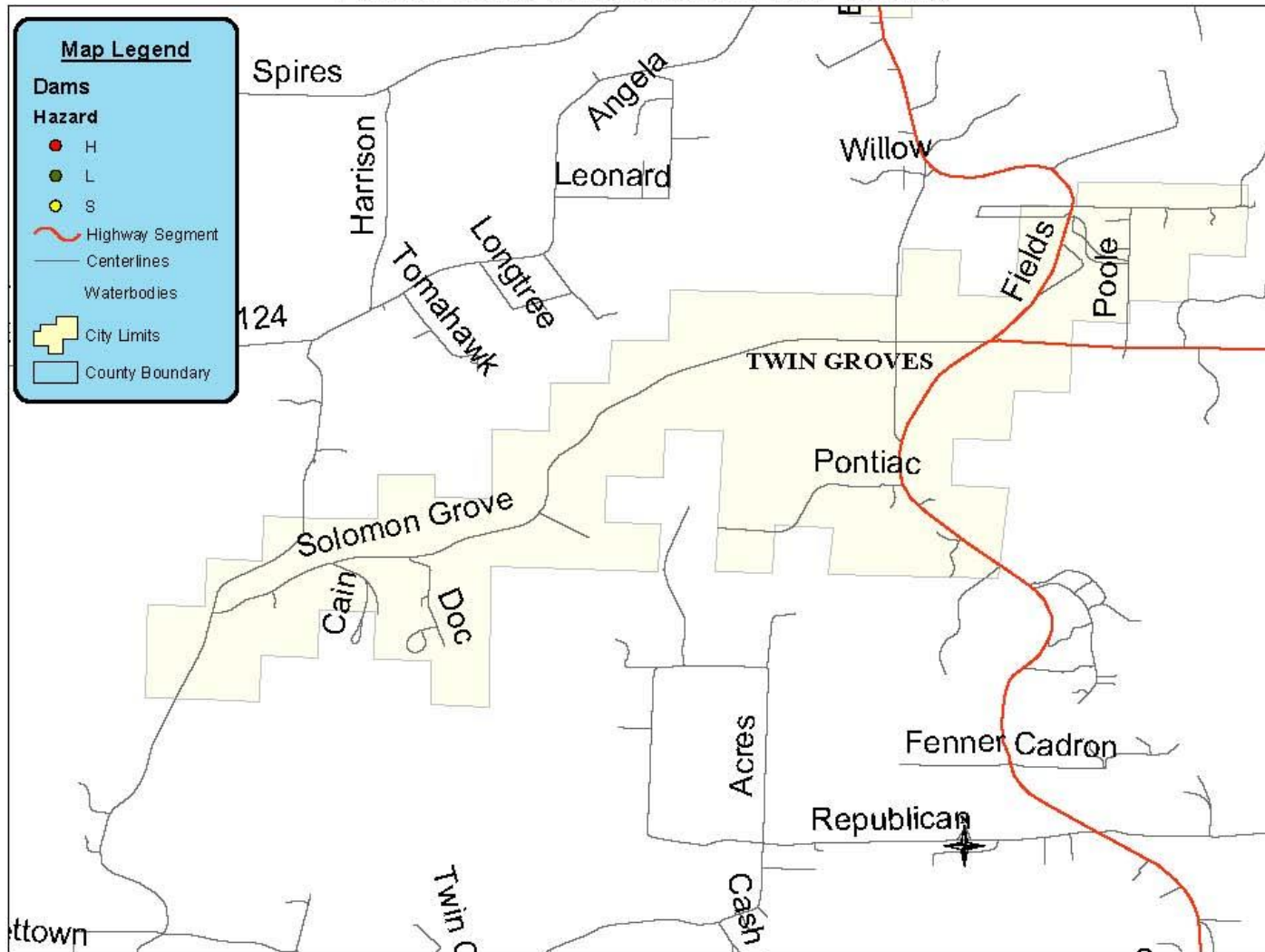
Faulkner County (City of Vilonia) Dams Map



Faulkner County (City of Wooster) Dams Map



### Faulkner County (City of Twin Groves) Dams Map





The following maps show and up-close view of the High Risk Dam: Toad Suck Ferry Lock and Dam. The map shows projected inundation area. Most of the flooding would occur in Conway County. The topo map shows a ridge along the Faulkner County border of the Arkansas River. Apparent flooding would affect recreation areas along the south west side of the dam. The FIRM map is not very helpful due to the limitation of Faulkner County area being show only. Seamless maps are needed.





## Previous Occurrences

There have not been any dam failure events to include on this plan update.

## Probability of Future Events

In Faulkner County, the Toad Suck Dam located Lat -92.5383 Long 35.0767 located outside the west side of Conway along the Arkansas River on the Perry and Faulkner County line. This is the Dam that has been rated as a “High Hazard Classification”. Failure of the Toad Suck Dam and resultant flooding would directly threaten and/or business associated structures, plus one communications tower. Failure of the Toad Suck Dam would create a very high risk to human life and excessive economic loss in excess of \$500,000. Specific data for these damages is not available. Failure of small, non-permitted dams, levees and/or dikes may occur, but the impact would not threaten life or property in a significant manner.

**Magnitude/Severity of the Hazard**

<b>STATE = AR</b>	
<b>COUNTY = Faulkner</b>	
<b>Hazard Categories for Dam</b>	<b>Number of Dams</b>
High	1
Significant	4
Low	33
Undetermined	0
<b>Total</b>	<b>38</b>

U. S Army Corp of Engineers Report

ER 1110-2-1155

The National Interagency Committee on Dam Safety defines extent by the dam storage capacity. The capacity is measured in acre-feet. See the below table.

<b>STATE = AR</b>	
<b>COUNTY = Faulkner</b>	
<b>Hazard Categories for Dam</b>	<b>Extent/Range</b>
High	More than 100,000 acre-feet
Significant	Between 10,000 and 100,000 acre-feet
Low	Less than 10,000 acre-feet
Undetermined	Between 0 and 10,000 acre-feet

TABLE E-1: HAZARD POTENTIAL CLASSIFICATION FOR CIVIL WORKS PROJECTS

<b>CATEGORY <sup>1</sup></b>	<b>LOW</b>	<b>SIGNIFICANT</b>	<b>HIGH</b>
Direct Loss of Life <sup>2</sup>	None expected (due to rural location with no permanent structures for human habitation)	Uncertain (rural location with few residences and only transient or industrial development)	Certain (one or more extensive residential, commercial or industrial development)

Lifeline Losses <sup>3</sup>	No disruption of services – repairs are cosmetic or rapidly repairable damage	Disruption of essential facilities and access	Disruption of critical facilities and access
Property Losses <sup>4</sup>	Private agricultural lands, equipment and isolated buildings	Major public and private facilities	Extensive public and private facilities
Environmental Losses <sup>5</sup>	Minimal incremental damage	Major mitigation required	Extensive mitigation cost or impossible to mitigate

Notes:

1. Categories are based upon project performance and do not apply to individual structures within a project.
2. Loss of life potential based upon inundation mapping of area downstream of the project. Analyses of loss of life potential should take into account the extent of development and associated population at risk, time of flood wave travel and warning time.
3. Indirect threats to life caused by the interruption of lifeline services due to project failure, or operation, i.e., direct loss of (or access to) critical medical facilities or loss of water or power supply, communications, power supply, etc.
4. Direct economic impact of value of property damages to project facilities and downstream property and indirect economic impact due to loss of project services, i.e., impact on navigation industry of the loss of a dam and navigation pool, or impact upon a community of the loss of water or power supply.
5. Environmental impact downstream caused by the incremental flood wave produced by the project failure, beyond which would normally be expected for the magnitude flood event under a without project conditions.

### Calculated Priority Risk Index for Dam failure Hazard

The CPRI for the Dam Failure hazard for Faulkner County and each jurisdiction is

Probability: **Possible**

Magnitude/Severity: **Critical**

Warning Time: **Less than 6 hours**

Duration: **More than a week**

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$2 \times .45 + 3 \times .30 + 4 \times .15 + 4 \times .10 = 2.80$$

#### 4.2.9 WindStorm/High winds

**Straight-Line Wind Hazard:** A straight-line wind hazard, also referred to as high wind, is not associated with rotation and its velocity is measured at or above fifty knots (50 kt). This term is used mainly to differentiate thunderstorm winds from tornado winds. These high-speed winds originate as a downdraft of rain-cooled air, which reaches the ground and spreads out rapidly, producing a potentially damaging gust of wind up to and sometimes over 100 mph. One type of straight-line wind, the downburst, can cause damage equivalent to a strong tornado and can be extremely dangerous to aviation. A “dry microburst” is a downburst that occurs with little or no rain. In recent years, there have been several occasions in Arkansas on which winds greater than 100 mph have been measured.

#### Geographic Area Affected by Hazard

All areas within Faulkner County are equally likely to experience straight-line wind events. Documentation reviewed from the NOAA Satellite and Information Service clearly document that all areas within Faulkner County have and will continue to experience straight-line winds on a recurring basis.

#### Previous Severe Hazard Occurrences

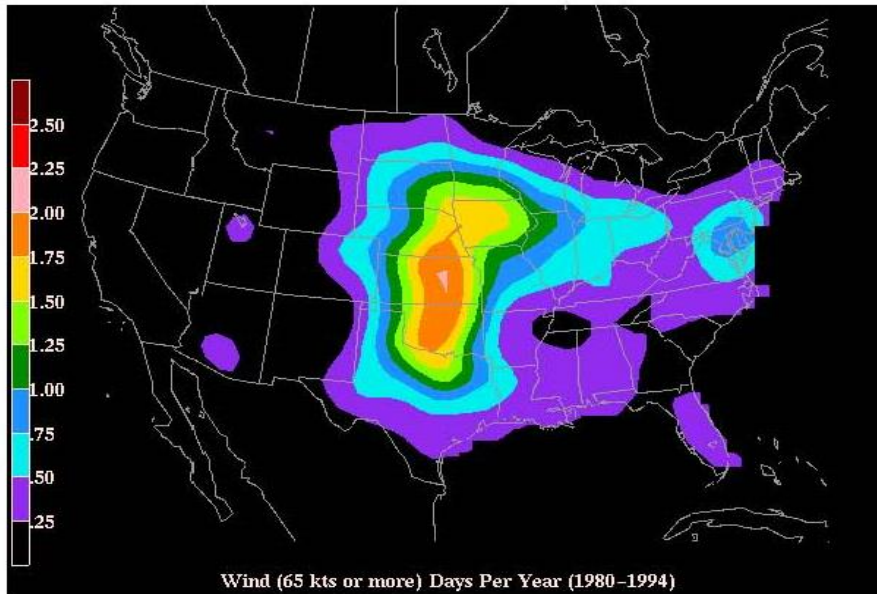
Faulkner County has experienced 259 thunderstorm/high wind events since 1950 (52 between 1-1-2009 and 6-30-2014) as recorded by the NOAA Satellite and Information Service. The extent of the straight-line winds met or exceeded the 50-knot velocity threshold with the highest wind speed recorded at Conway in Faulkner County on July 26, 1999, with a top speed of 70 knots.

The National Oceanographic and Atmospheric Association’s (NOAA) National Severe Storms Laboratory (NSSL) addressed the total annual threat of high winds in the United States. The mean number of days per year with one or more >50 knot (>58 mph) events within 25 miles of a point is shown below. Note that the Faulkner County borders the six (6) – seven (7) wind days per year interval. The county can expect between 0.25 wind days per year when the mean number of days per year with one or more >65 knots.

Though the state and the county have occasional high wind events – more often than not associated with thunderstorms – this data indicate the likelihood of it being severe is low compared to other areas of the country. Thus, seriously damaging, high wind events are considered possible, but not likely.

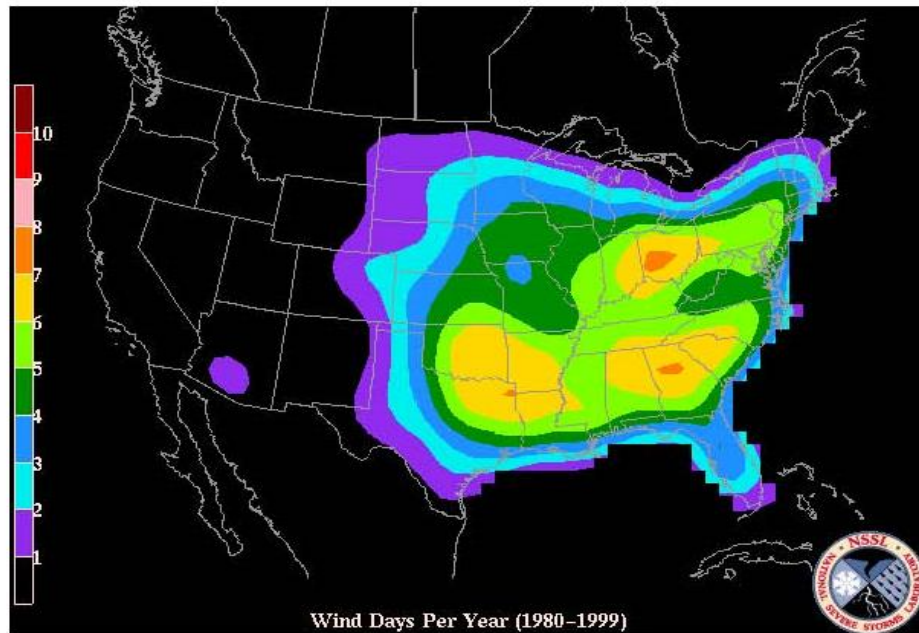
The following map shows the total annual threat of high or thunderstorm winds in the U.S. based on NOAA NSSL data between 1980 and 1999. The mean number of days per year with one or more >50-knot (>58 mph) wind events within 25

miles of a point are shown.



The following map shows the total annual threat of high or thunderstorm winds in the U.S. based on more >65 knots (>79mph) events within 25 miles of a point are shown.

Annual Threat of High or Thunderstorm Winds



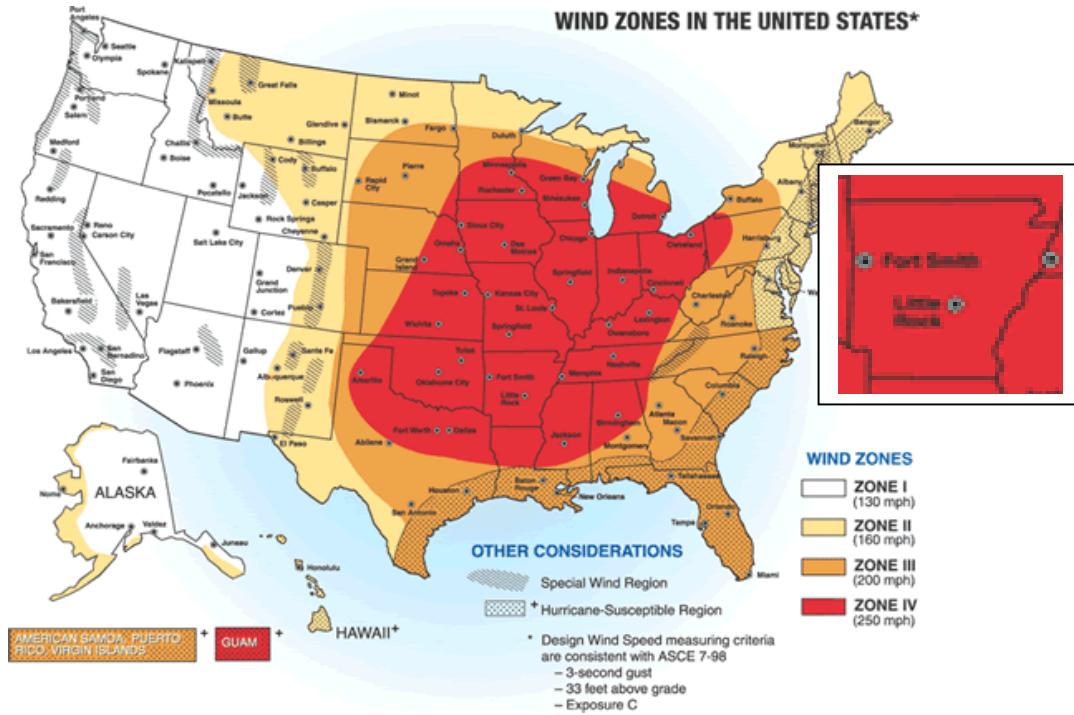
### Probability of Future Events

The county's history of thunderstorm/high wind events also indicates that the probability is high for the county to have several events yearly. The NOAA NCDC has recorded over 259 Thunderstorm wind events since 1950 (52 since Jan 1 2009); on average the county has experienced 4 events per year. Thus, the probability of high wind events in the county is considered highly likely.

WIND SPEED	STRAIGHT-LINE WIND GUST ESTIMATES
30-44 MPH	Trees in motion. Light-weight loose objects (e.g., lawn furniture) tossed or toppled.
45-57 MPH <i>Non severe</i>	Large trees bend; twigs, small limbs break, and a few larger dead or weak branches may break. Old/weak structures (e.g., sheds, barns) may sustain minor damage (roof, doors). A few loose shingles removed from houses.
58-74 MPH <i>Severe</i>	Large limbs break; shallow rooted trees pushed over. Semi-trucks overturned. More significant damage to old / weak structures. Shingles, awnings removed from houses; damage to chimneys and antennas; mobile homes, carports incur minor structural damage; large billboard signs may be toppled.
75-89 MPH <i>Hurricane Force</i>	Widespread tree damage (trees either broken or uprooted). Mobile homes may incur more significant structural damage; be pushed off foundations or overturned. Roofs may be partially peeled off industrial/commercial/warehouse buildings. Some minor roof damage to homes. Weak or open structures (e.g. farm buildings, airplane hangars) may be severely damaged.
90+ MPH <i>Significant Severe</i>	Groves of trees flattened. Mobile homes severely damaged; moderate roof damage to homes. Roofs partially peeled off homes and buildings. Barns and sheds completely demolished.
All references to trees are for trees with foliage. Significantly higher winds may be required to cause similar damage to trees without foliage. Also, very wet soil conditions may allow weaker winds of 30-57 MPH to uproot trees. <a href="http://www.mke-skywarn.org/hail_wind.htm">http://www.mke-skywarn.org/hail_wind.htm</a>	
<b>Milwaukee Area Skywarn Association</b>	

**Magnitude/Severity of the Hazard**

Since 1950, 259 thunderstorm/wind events have had enough impact on Faulkner County to have been logged into the NCDC database. 52 events have resulted in a total damage amount of \$2.585 million, 1 death, and 8 injuries. The Beaufort Wind Scale, shown below measures winds other than those associated with hurricane and tornado. All of Arkansas falls within Zone 4 as established by the American Society of Civil Engineers (ASCE 7-95) and as such facilities must be built to meet certain design wind speed codes.



<b>Zone IV</b> (250 mph)	Mid US including all of Iowa, Missouri, Arkansas, Illinois, Indiana, and Ohio and parts of adjoining states of Minnesota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia, Tennessee, Kentucky, Pennsylvania, Michigan, and Wisconsin. Guam.
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## The Beaufort Scale for use on land

Beaufort Force	Description	Effects on land	Speed		
			knots	km/h	mph
0	Calm	Smoke rises vertically.	Less than 1	Less than 1	Less than 1
1	Light Air	Direction of wind shown by smoke drift, but not by wind vanes.	1 - 3	1 - 5	1 - 3
2	Light breeze	Wind felt on face; leaves rustle; ordinary vanes moved by wind.	4 - 6	6 - 11	4 - 7
3	Gentle breeze	Leaves and small twigs in constant motion; wind extends light flag.	7 - 10	12 - 19	8 - 12
4	Moderate breeze	Raises dust and loose paper; small branches are moved.	11 - 16	20 - 29	13 - 18
5	Fresh breeze	Small trees in leaf begin to sway; crested wavelets form on inland waters.	17 - 21	30 - 39	19 - 24
6	Strong breeze	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.	22 - 27	40 - 50	25 - 31
7	Near gale	Whole trees in motion; inconvenience felt when walking against the wind.	28 - 33	51 - 61	32 - 38
8	Gale	Breaks twigs off trees; generally impedes progress.	34 - 40	62 - 74	39 - 46
9	Strong gale	Slight structural damage occurs (chimney-pots and slates removed).	41 - 47	75 - 87	47 - 54
10	Storm	Seldom experienced inland; trees uprooted; considerable structural damage occurs.	48 - 55	88 - 101	55 - 63
11	Violent storm	Very rarely experienced; accompanied by wide-spread damage.	56 - 63	102 - 117	64 - 73
12	Hurricane	Whole hangars disappear.	>64	>119	>74

## Calculated Priority Risk Index for Windstorms/High Wind Hazard

The CPRI for the High Wind hazard for Faulkner County is and each jurisdiction is

Probability: **Highly Likely**

Magnitude/Severity: **Negligible**

Warning Time: **Less than 6 hours**

Duration: **Less than 6 hours**

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$4 \times .45 + 1 \times .30 + 4 \times .15 + 1 \times .10 = 2.80$$

### 4.2.10 Profile for Extreme Heat Hazard

Extreme heat is characterized by a combination of very high temperatures and exceptionally humid conditions. When persisting over a period of time, it is called a heat wave. Many areas of the United States are susceptible to heat waves and Arkansas is certainly one of these.

The major threat of **extreme heat or heat waves** is heatstroke, a medical emergency that can be fatal. Most at risk are outdoor laborers, the elderly, children, and people in poor physical health. The combined effects of high temperature and high humidity are more intense in urban centers than in rural areas. Arkansas is one of the states with a higher degree of exposure to this hazard. According to the NWS, Arkansas is one of the few states located within the second-highest heat index tier, as shown by the following thematic map. This shows that for the state there is a 5 percent chance of experiencing a heat index range of 115 to 120 degrees in any given year.

The magnitude or intensity of an extreme heat event is measured according to temperature in relation to the percentage of humidity. According to the National Oceanic Atmosphere Administration (NOAA) this relationship is referred to as the “Heat Index” which is shown below. The Heat Index measures how hot it feels outside when humidity is combined with high temperatures.

## NOAA's National Weather Service

### Heat Index Temperature (°F)

	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

#### Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution     
  Extreme Caution     
  Danger     
  Extreme Danger

IMPORTANT: Since heat index values were devised for shady, light wind conditions, exposure to full sunshine can increase heat index values by up to 15°F. Also, strong winds, particularly with very hot, dry air, can be extremely hazardous.

The Heat Index Chart shaded zone above 105°F (orange or red) shows a level that may cause increasingly severe heat disorders with continued exposure or physical activity.

The colored zones indicate varying symptoms or disorders that could occur depending on the magnitude or intensity of the event.

	Caution- is the first level of intensity where fatigue due to heat exposure is possible
	Extreme Caution- indicates that sunstroke, muscle cramps or heat exhaustion are possible
	Danger- indicates that sunstroke, muscle cramps or heat exhaustion are likely
	Extreme Danger- indicates that heat stroke is likely

Based on the latest research findings, the National Weather Service has devised the “Heat Index” (HI), (sometimes referred to as the “apparent temperature”). The HI, given in degrees F, is an accurate measure of how hot it really feels when relative humidity (RH) is added to the actual air temperature.

To find the HI, look at the Heat Index Chart. As an example, if the air temperature is 95°F (found on the top of the table) and the RH is 55% (found at the left side of the table), the HI-or how hot it really feels-is 110°F. This is at the intersection of the 95° row and the 55% column.

IMPORTANT: Since HI values were devised for shady, light wind conditions, EXPOSURE TO FULL SUNSHINE CAN INCREASE HI VALUES BY UP TO 15°F. Also, STRONG WINDS, PARTICULARLY WITH VERY HOT, DRY AIR, CAN BE EXTREMELY HAZARDOUS.

**Heat Index/Heat Disorders:** Possible heat disorders for people in higher risk groups.

Heat Index of 130° OR Higher: HEATSTROKE/SUNSTROKE HIGHLY HIGHER LIKELY WITH CONTINUED EXPOSURE,

Heat Index of 105°- 130°: SUNSTROKE, HEAT CRAMPS OR HEAT EXHAUSTION LIKELY, AND HEATSTROKE POSSIBLE WITH PROLONGED EXPOSURE AND/OR PHYSICAL ACTIVITY.

Heat Index of 90°- 105°: SUNSTROKE, HEAT CRAMPS AND HEAT EXHAUSTION POSSIBLE WITH PROLONGED EXPOSURE AND/OR PHYSICAL ACTIVITY.

Heat Index of 80° - 90°: FATIGUE POSSIBLE WITH PROLONGED EXPOSURE AND/OR PHYSICAL ACTIVITY

Note on the HI chart the shaded zone above 105°F. This corresponds to a level of HI that may cause increasingly severe heat disorders with continued exposure and/or physical activity.

The “Heat Index vs. Heat Disorder” table (next to the HI chart) relates ranges of HI with specific disorders, particularly for people in higher risk groups.

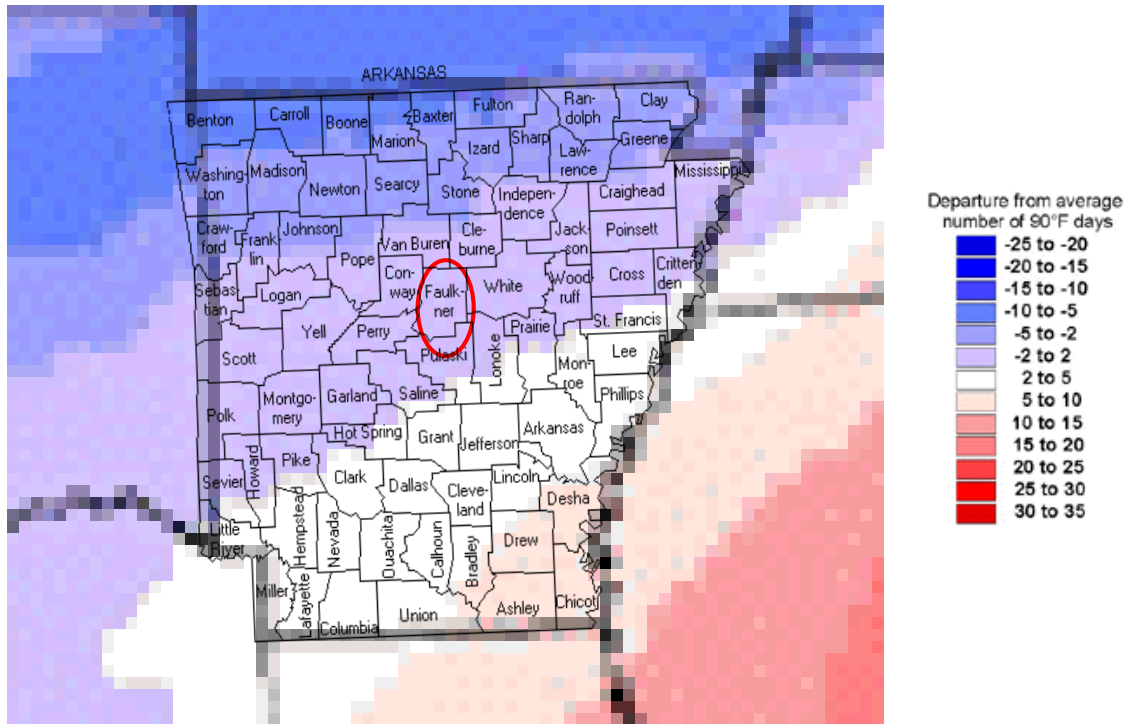
Condition	Symptoms
Sunburn	Skin redness and pain, possible swelling, blisters, fever, headaches
Heat Cramps	Painful spasms, usually in leg and abdominal muscles; heavy sweating
Heat Exhaustion	Heavy sweating but skin may be cool, pale, or flushed. Weak pulse. Normal body temperature is possible, but temperature will likely rise. Fainting or dizziness, nausea, vomiting, exhaustion, and headaches are possible.
Heat Stroke ( a severe medical emergency)	High body temperature (105+); hot, red, dry skin; rapid, weak pulse; and rapid shallow breathing. Victim will probably not sweat unless victim was sweating from recent strenuous activity. Possible unconsciousness.

### Geographic Area Affected by Extreme Heat

There is no defined geographic hazard boundary for extreme heat. Extreme heat generally affects people rather than property. All areas within \_Faulkner County are equally likely to experience an extreme heat event.



**Departure from 1961-90 average number of days with maximum temperature greater than or equal to 90°F**



### Previous Extreme Heat Occurrences

There is only one reported event in the NCDC database records;

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
<b>Totals:</b>								1	0	0.00K	0.00K
<a href="#">FAULKNER (ZONE)</a>	FAULKNER (ZONE)	AR	08/02/2010	03:00	CST-6	Excessive Heat		1	0	0.00K	0.00K
<b>Totals:</b>								1	0	0.00K	0.00K

- August 2, 2010- A 66 year-old woman died from the heat in Mayflower on August 4th. According to the Faulkner County coroner, the woman went grocery shopping and fell in her driveway when she returned home. Due to recent ill health, she was unable to get up after the fall. She was discovered several hours later, having already succumbed to the heat.

According to the National Weather Service, the entire State of Arkansas has experienced higher than normal temperatures 98% of the time since January 1, 2005.

M2 PRESSWIRE-19 October 1999-USDA: Glickman designates Arkansas agriculture disaster area (C)1994-99 M2 COMMUNICATIONS LTD RDATE:181099

WASHINGTON -- Agriculture Secretary Dan Glickman has declared all 75 Arkansas counties as agricultural disaster areas due to a losses caused by the 1999 drought. The designation makes low-interest USDA loans available to farmers in these counties as well as contiguous counties in adjacent states, to cover losses from **excessive heat** and drought.

The Associated Press AP Online 08-06-1999  
Death Toll From Heat Wave

The state-by-state breakdown of 282 deaths blamed on heat since July 19:  
Arkansas, 4

### **Probability of Future Extreme Heat Events**

Based on historical records for the county and the region's location within one of the country's highest exposures to an extreme heat index, it is possible Faulkner County will sometime in the near future, face extreme heat conditions.

### **Magnitude / Severity of Extreme Heat Hazard**

Residents, medical practitioners, and human service agencies in the area are well aware of the risk of heatstroke and sunstroke. Because of this awareness, people generally anticipate and avoid the problem, no doubt contributing to the lack of known fatalities. Nonetheless, heat waves, which commonly occur during the summer months, pose a serious threat to people's lives, and most susceptible seem to be the elderly who live alone and don't have air conditioning. But despite the occasionally threatening conditions, though uncomfortable, extreme heat's severity (i.e., potential for loss of life and property damage) is limited and its magnitude (i.e., capacity to affect large proportions of the population and property in extremely negative ways) is negligible.

In a normal year, approximately 175 Americans die from extreme heat. As a method of informing the public to the dangers of extreme heat, the National Weather Service (NWS) devised the "Heat Index (HI)" and initiates alert procedures when the HI is expected to exceed 105-110 degrees.

According to data available from the National Oceanic and Atmospheric Administration, National Centers for Environmental Information, a summary of the Monthly Normals from 1981-2010 indicates the maximum *average* temperatures reach 92 degrees in the summer months. That same data indicates that almost on a yearly basis, the temperature can reach 107 degrees during the peak of the summer."

The fact that extreme heat is possible within the next 5 years, and that there was a related death to this hazard, gives it a "Limited" classification for magnitude/severity. It will probably not affect a large amount of people, but necessary treatment above the common first aid can be expected. Extreme heat can also increase the impacts of Drought, by losing water from increased use/consumption along with evaporation. Cooling shelter may need to be made available to the public during extreme heat events. This makes some local personnel and resources sacrifice their time from their normal responsibilities.

### Calculated Priority Risk Index (CPRI)

The CPRI for the Extreme Heat hazard for Faulkner County and each jurisdiction is

Probability: **Possible**

Magnitude/Severity: **Limited**

Warning Time: **24 + Hours**

Duration: **Less than a day**

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$2 \times .45 + 2 \times .30 + 1 \times .15 + 2 \times .10 = 1.85$$

## 4.3 Vulnerability Assessment

### 4.3.1 Assessing Vulnerability: Overview

<i>IFR REQUIREMENT</i> 201.6(c)(2)(ii):	[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.
<i>Explanation:</i>	<p>An overview of the community's vulnerability assessment is a summary of the hazard's impact to the community's vulnerable structures. This summary <b>shall</b> include, by type of hazard, a general description of the types of structures (e.g., buildings, infrastructure, and critical facilities) affected by the hazard.</p> <p>The overview <b>shall</b> also include a general description of the extent of the hazard's impact to the vulnerable structures. This information can be presented in terms of dollar value or percentages of damage. The Plan <i>should</i> note any data limitations and identify and include in the mitigation strategy actions for obtaining the data necessary to complete and improve future vulnerability assessments.</p>

This section of the plan attempts to present a determination of the County's vulnerability to the hazards described in the earlier sections of the plan. Specifically, it is a summary of the hazards' impacts to the area's vulnerable structures. Where information is available, this section will include by hazard type a general description of the types of structures (buildings, infrastructure, and critical facilities) affected by the hazard and the extent of each hazard's impact to the vulnerable structures.

These hazards were identified through an extensive process that utilized input from planning team members, public input, research of newspapers and other historical records, review of existing plans and reports, discussions with hazard experts, internet research, the State Mitigation Plan, the County Hazard Mitigation Plan, and information provided by FEMA and ADEM.



**Table 4.3.1.1 Overview**

<b>Hazard</b>	<b>Probability</b>	<b>Magnitude/ Severity</b>	<b>Warning Time</b>	<b>Duration</b>	<b>Priority Risk Index</b>
Earthquake	2 Possible	2 Limited	4 less than 6 Hours	2 Less than One Day	2.3
Floods including Dam Failure	4 Highly Likely	3 Critical	3 6-12 Hours	3 Less than One Week	3.45
Thunderstorm (Hail, High Wind, Lightning)	4 Highly Likely	3 Critical	3 6-12 Hours	1 Less than 6 Hours	3.25
Tornados	3 Likely	4 Catastrophic	4 Less than 6 Hours	2 Less than One Day	3.35
Winter Storms	3 Likely	2 Limited	1 24+ Hours	1 Less than 6 Hours	2.2
Wildfires	4 Highly Likely	3 Critical	4 Less than 6 Hours	3 Less than one week	3.6
Drought	2 Possible	2 Limited	1 24+ Hours	4 More than Wk	2.05
Dam Failure	2 Possible	3 Critical	4 Less than 6 Hours	4 More than Wk	2.80
Windstorm	4 Highly Likely	1 Negligible	4 Less than 6 hours	1 Less than 6 hours	2.80
Extreme Heat	2 Possible	2 Limited	1 24+ Hours	2 Less than a day	1.85

<b>Magnitude / Severity</b>	<b>Characteristics</b>
<i>4 - Catastrophic</i>	<ul style="list-style-type: none"> <li>▪ Multiple deaths</li> <li>▪ Complete shutdown of facilities for 30 or more days</li> <li>▪ More than 50% of property is severely damaged</li> </ul>
<i>3 - Critical</i>	<ul style="list-style-type: none"> <li>▪ Injuries and/or illnesses result in permanent disability</li> <li>▪ Complete shutdown of critical facilities for at least two weeks</li> <li>▪ More than 25% of property is severely damaged</li> </ul>
<i>2 - Limited</i>	<ul style="list-style-type: none"> <li>▪ Injuries and/or illnesses do not result in permanent disability</li> <li>▪ Complete shutdown of critical facilities for more than one week</li> <li>▪ More than 10% of property is severely damaged</li> </ul>
<i>1 - Negligible</i>	<ul style="list-style-type: none"> <li>▪ Injuries and/or illnesses are treatable with first aid</li> <li>▪ Minor quality of life lost</li> <li>▪ Shutdown of critical facilities and services for 24 hours or less</li> <li>▪ Less than 10% of property is severely damaged</li> </ul>

## **Data Limitations:**

Although the County's 911 database contains addresses and point feature location of structures within the area, it does not contain an address for un-addressable structures such as bridges, water tanks, pump stations, etc.

The only other limitations on the data received are if the assets have been affected by natural or man-made disasters.

As these data limitations are addressed and remedied, this aspect of the County's plan will improve significantly as information is inserted. For the present report, however, the planning team has utilized the best available data taking into consideration its potential for inaccuracy. This data however stated is not presented in a manner to be misleading or a misrepresentation of what is actually the case in the County.

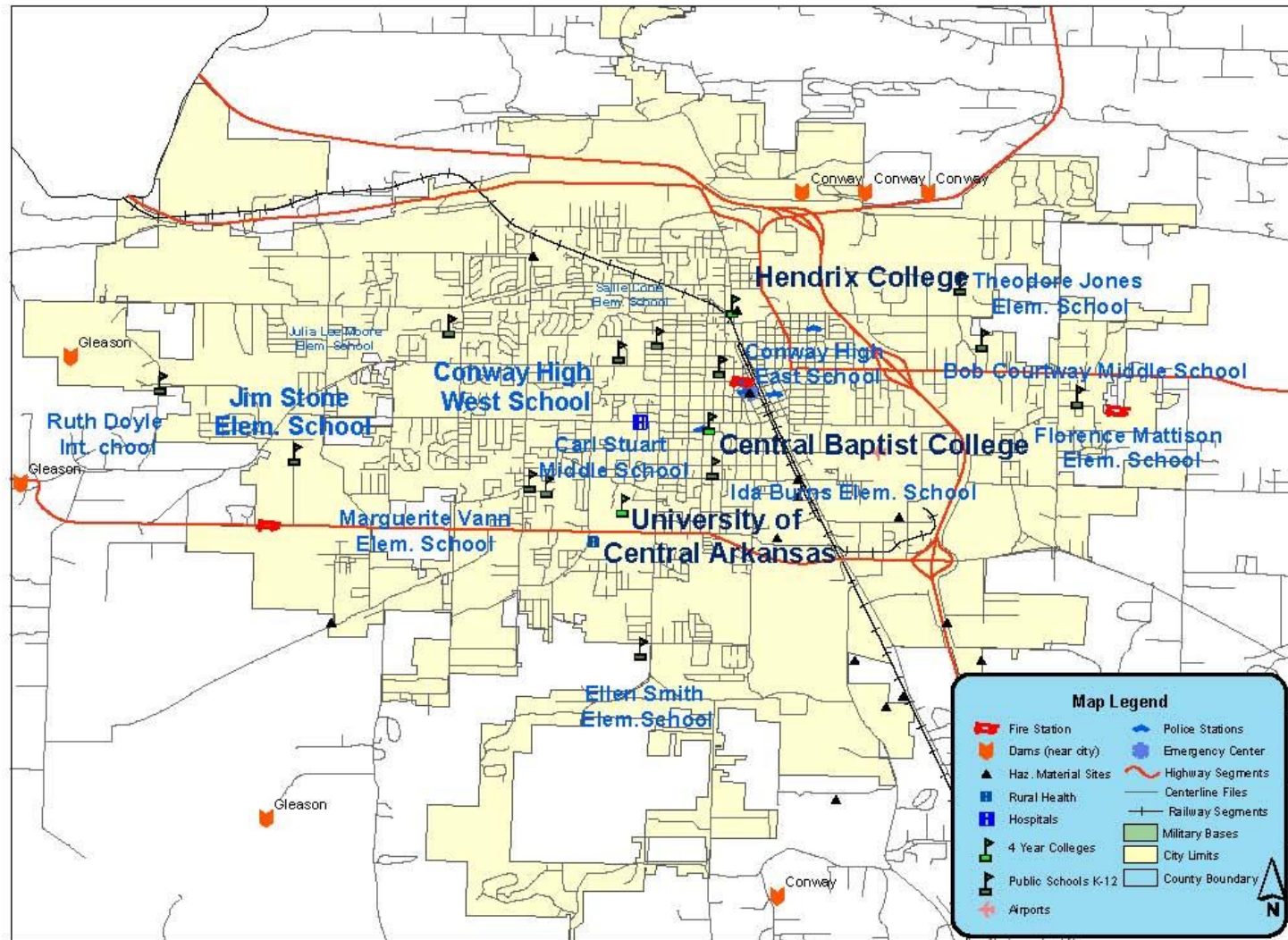
### **4.3.2 Assessing Vulnerability: Identifying Structures**

Exposure Summary for Faulkner County was extracted from the County Assessor's Office and Census tract data, allowing exposure data for structures by sub areas of the county to be evaluated individually. Approximately 99.00 % of the buildings (and 89.00% of the building value) are associated with residential housing.

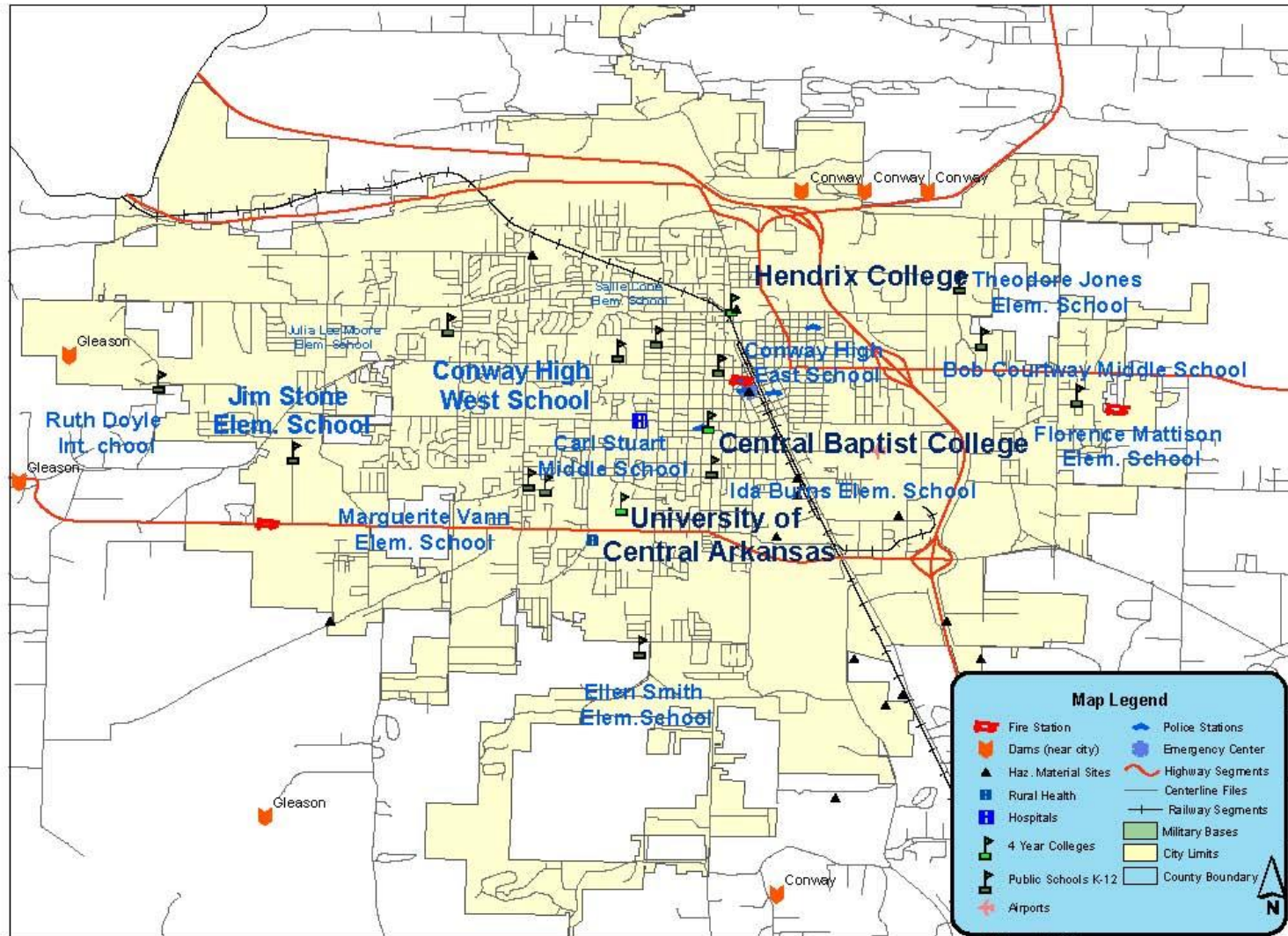
#### Critical Facilities/High Potential Loss Facilities

Based on the data obtained the 911 Database and other sources, within this region there are five (6) Public School Districts consisting of thirty-three (35) School buildings, 1 Private School District consisting of three (3) buildings, twenty-one (21) fire stations, seven(7) City owned police stations, one (1) Sheriff's Office which houses the 911 Dispatch Center and the Office of Emergency Management Services, two (2) ambulance services, eleven (11) City Hall offices and two (2) Courthouse buildings. With respect to high potential loss facilities, there are 38 dams identified within the region. One of these dams is classified as "high hazard". Maps of the critical facilities are shown on the following pages

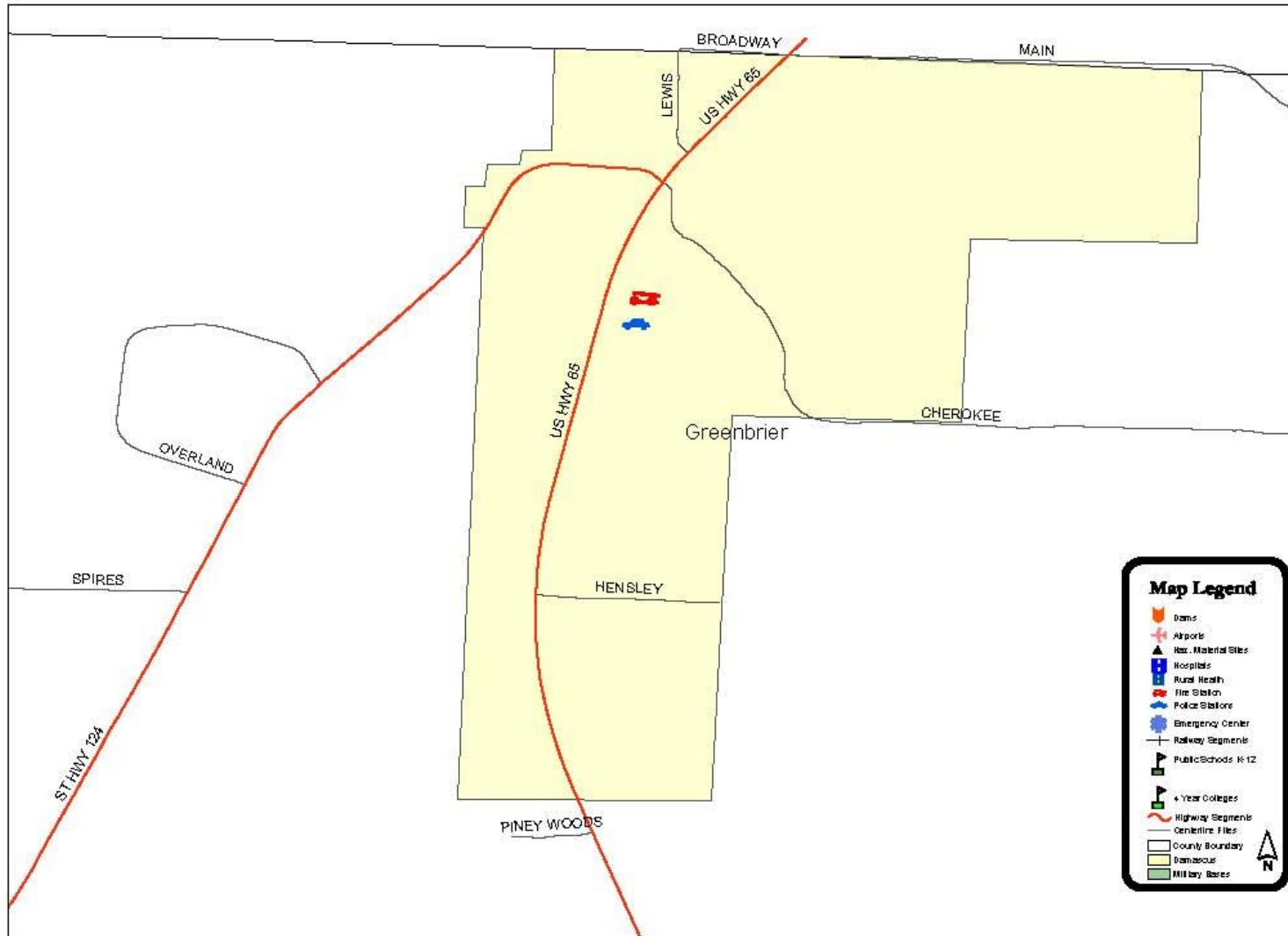
Faulkner County (City of Conway) Critical Facilities Map



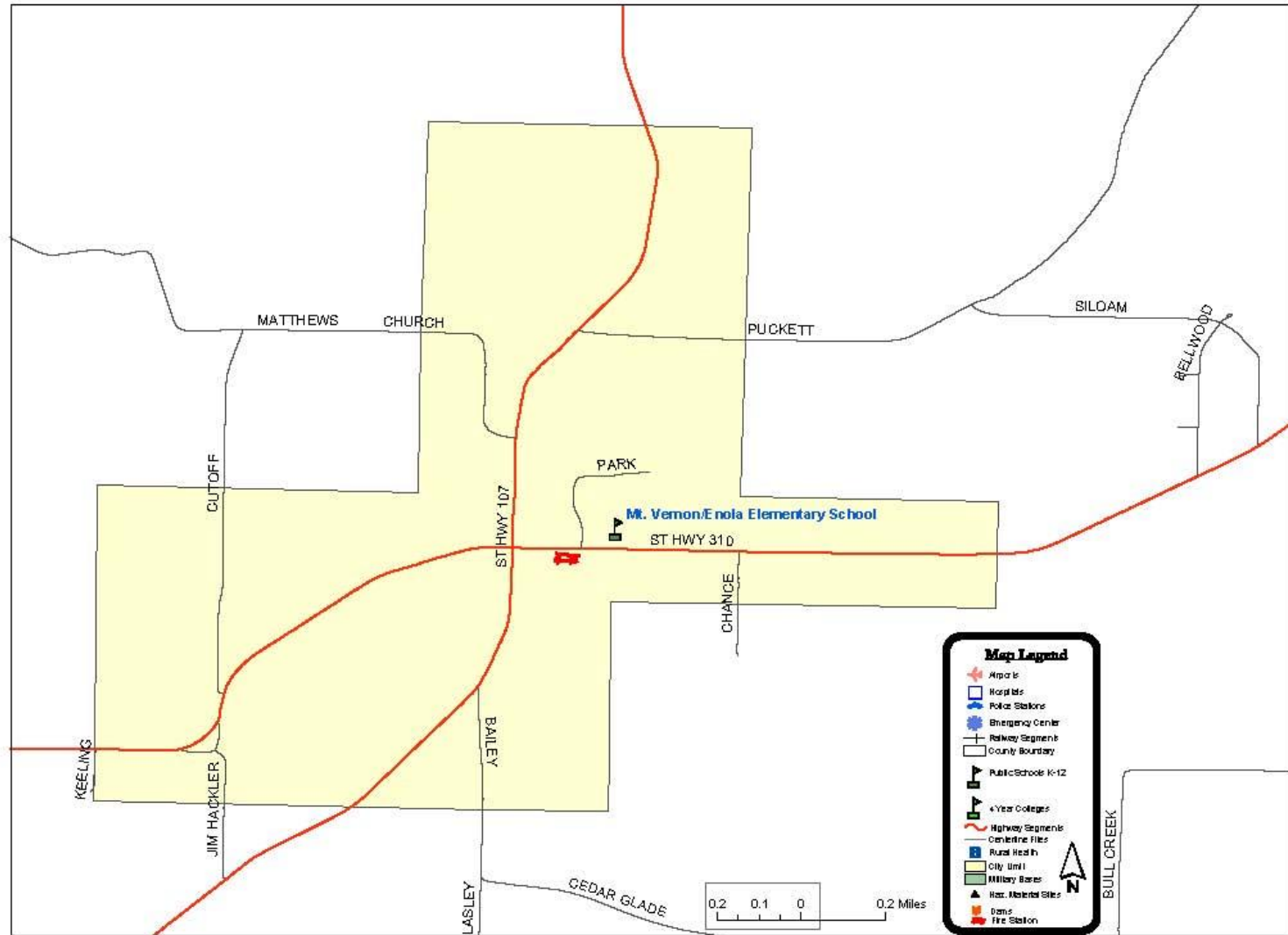
Faulkner County (City of Conway) Critical Facilities Map



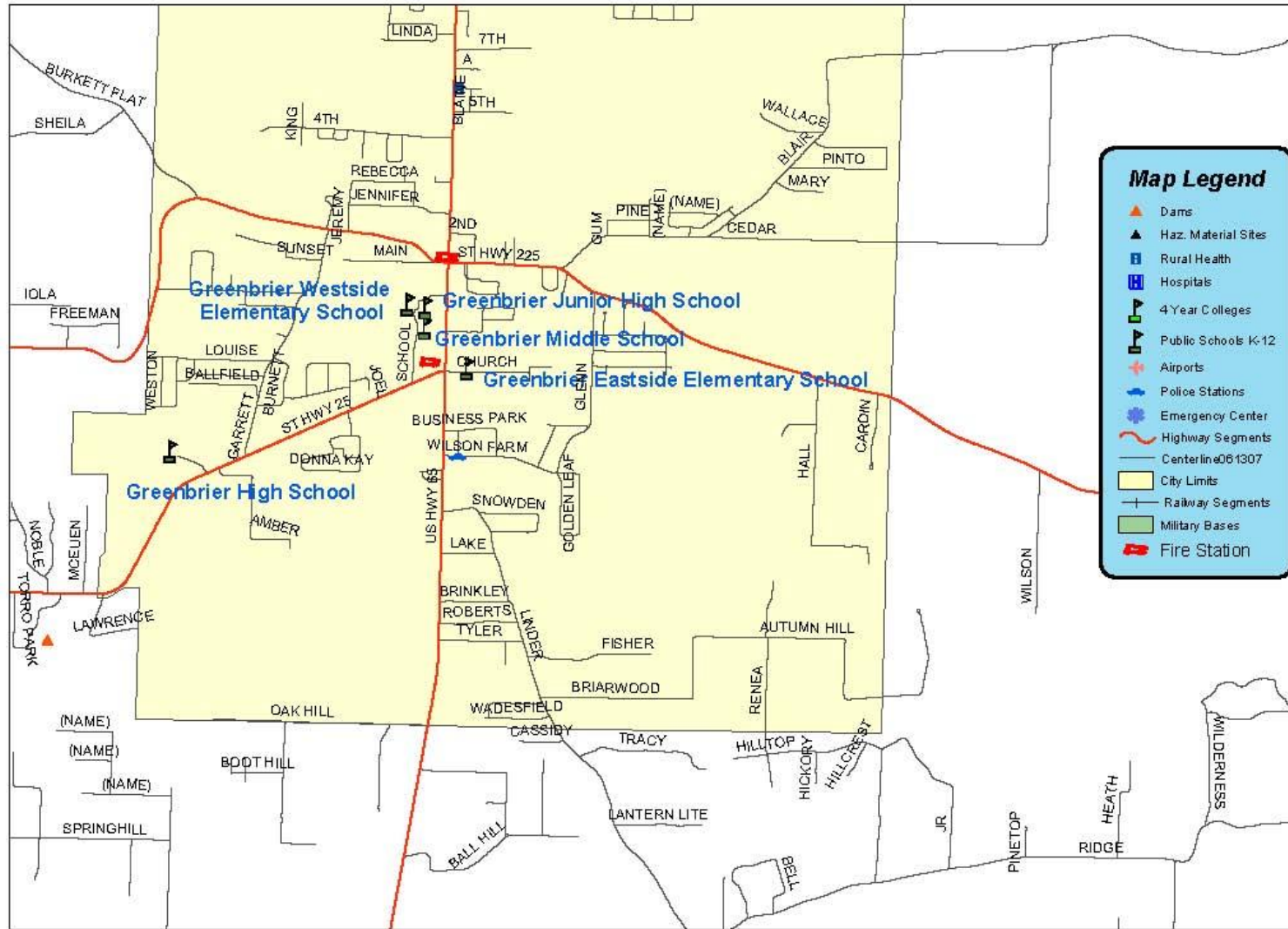
Faulkner County (City of Damascus) Critical Facilities Map



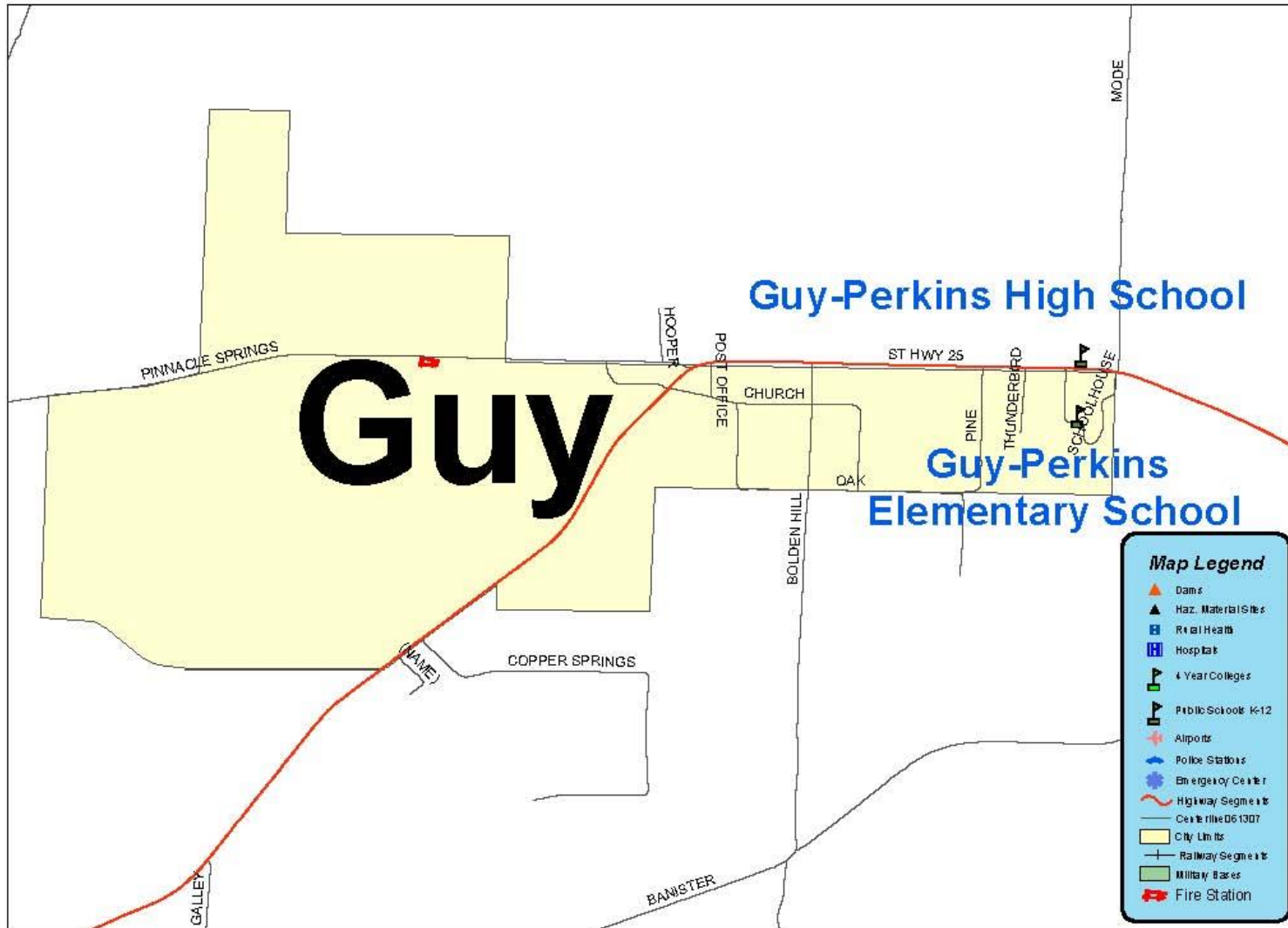
### Faulkner County (City of Enola) Critical Facilities Map



### Faulkner County (City of Greenbrier) Critical Facilities Map

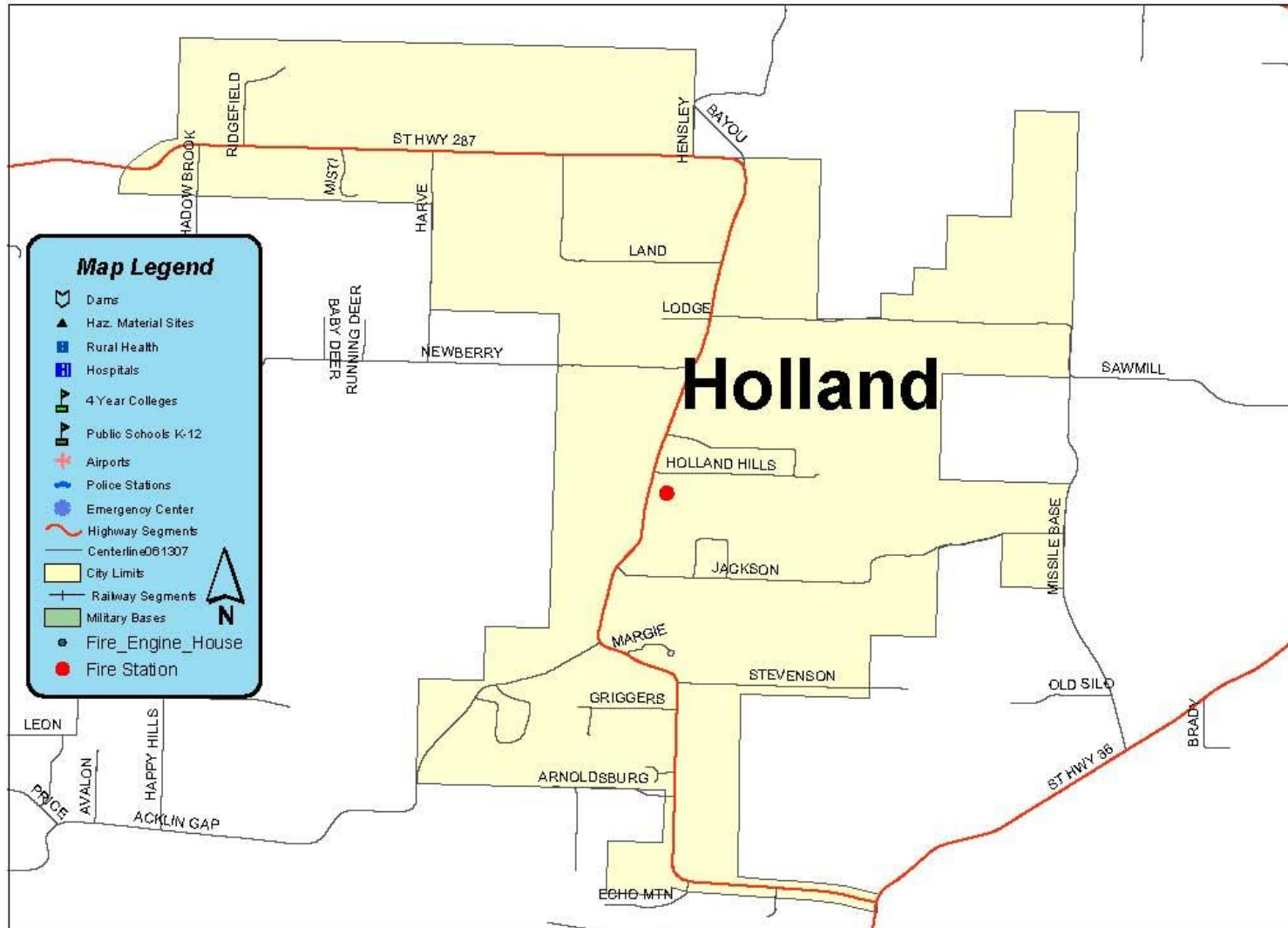


Faulkner County (City of Guy) Critical Facilities Map

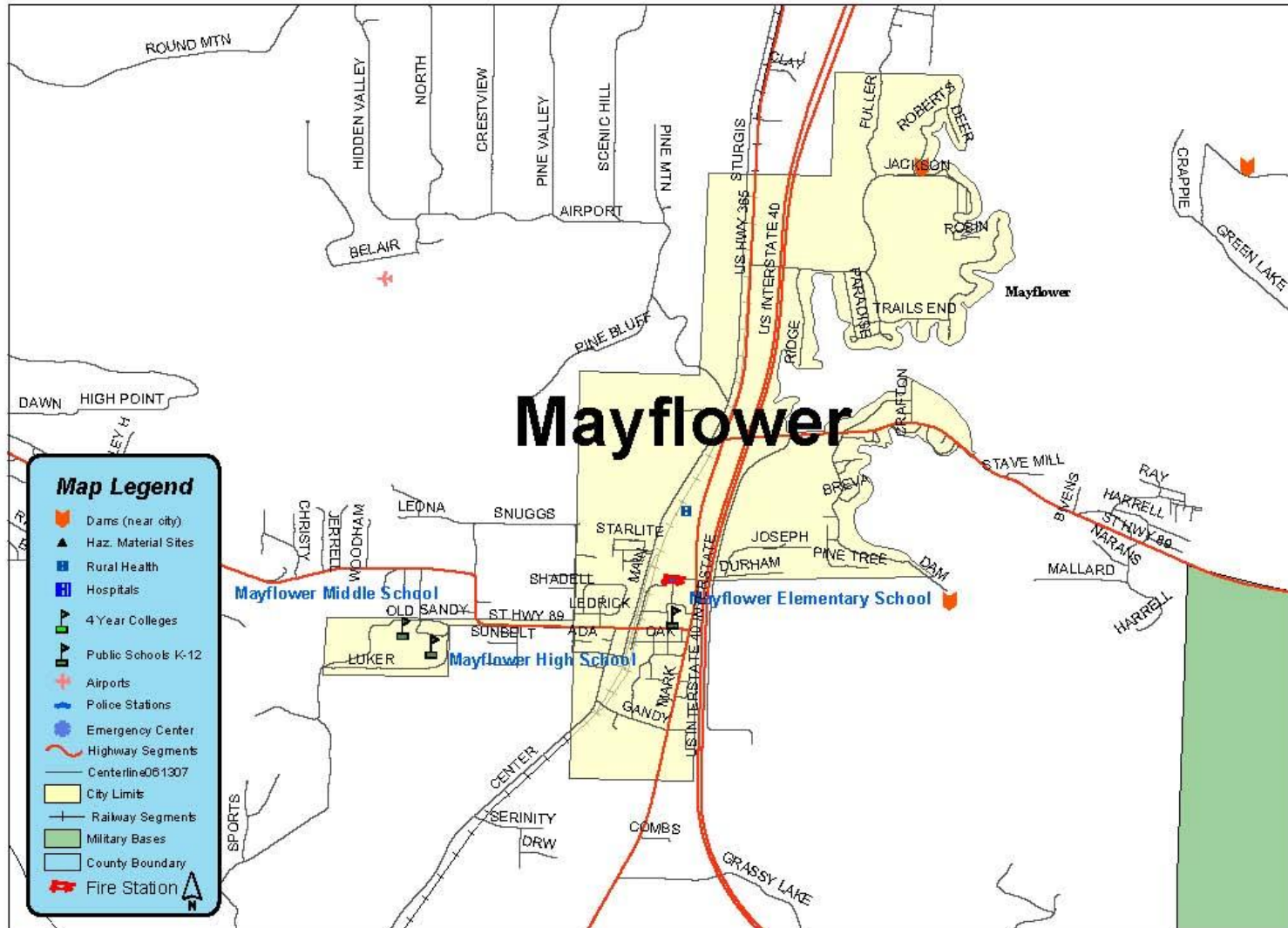




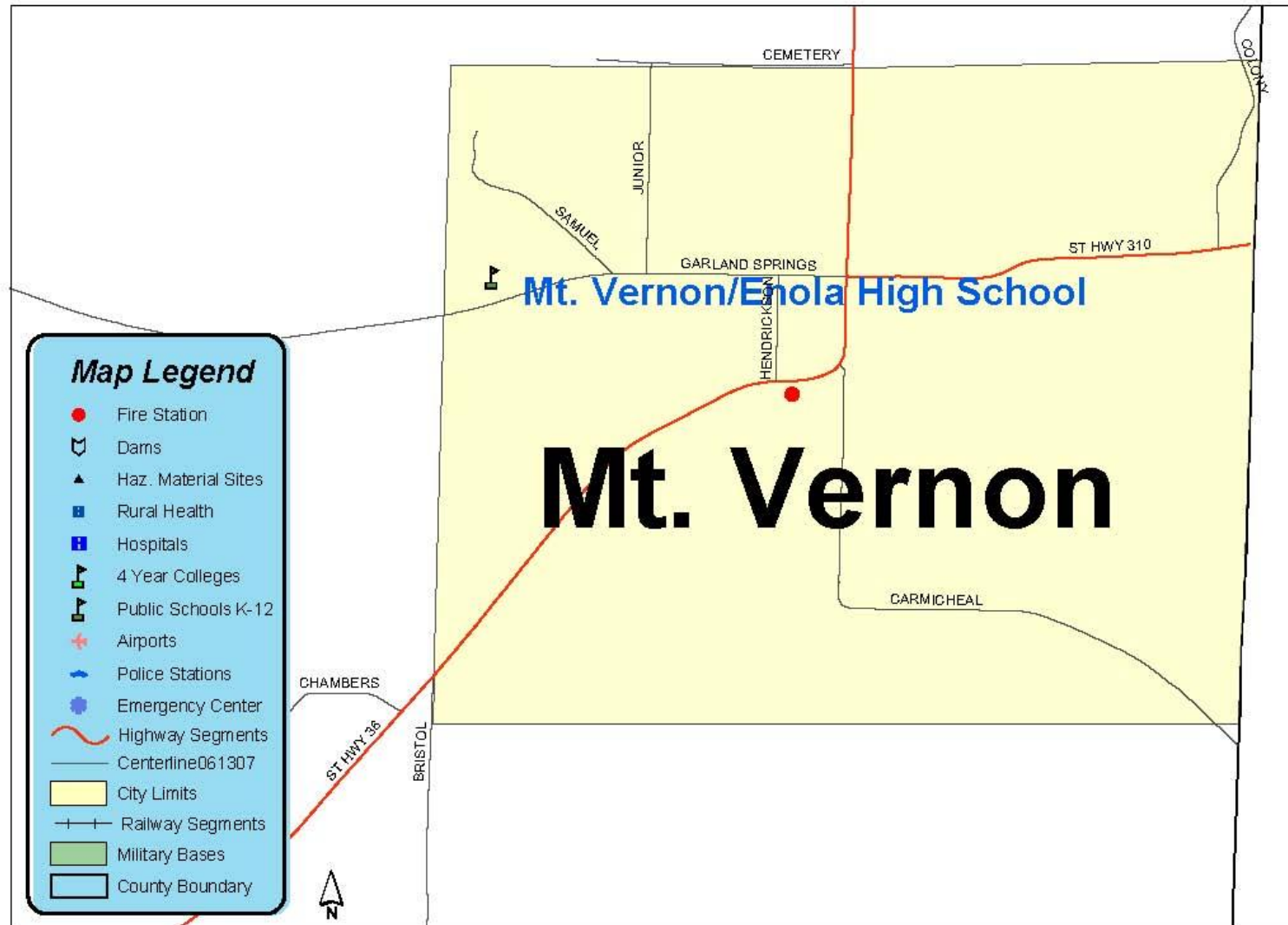
Faulkner County (City of Holland) Critical Facilities Map



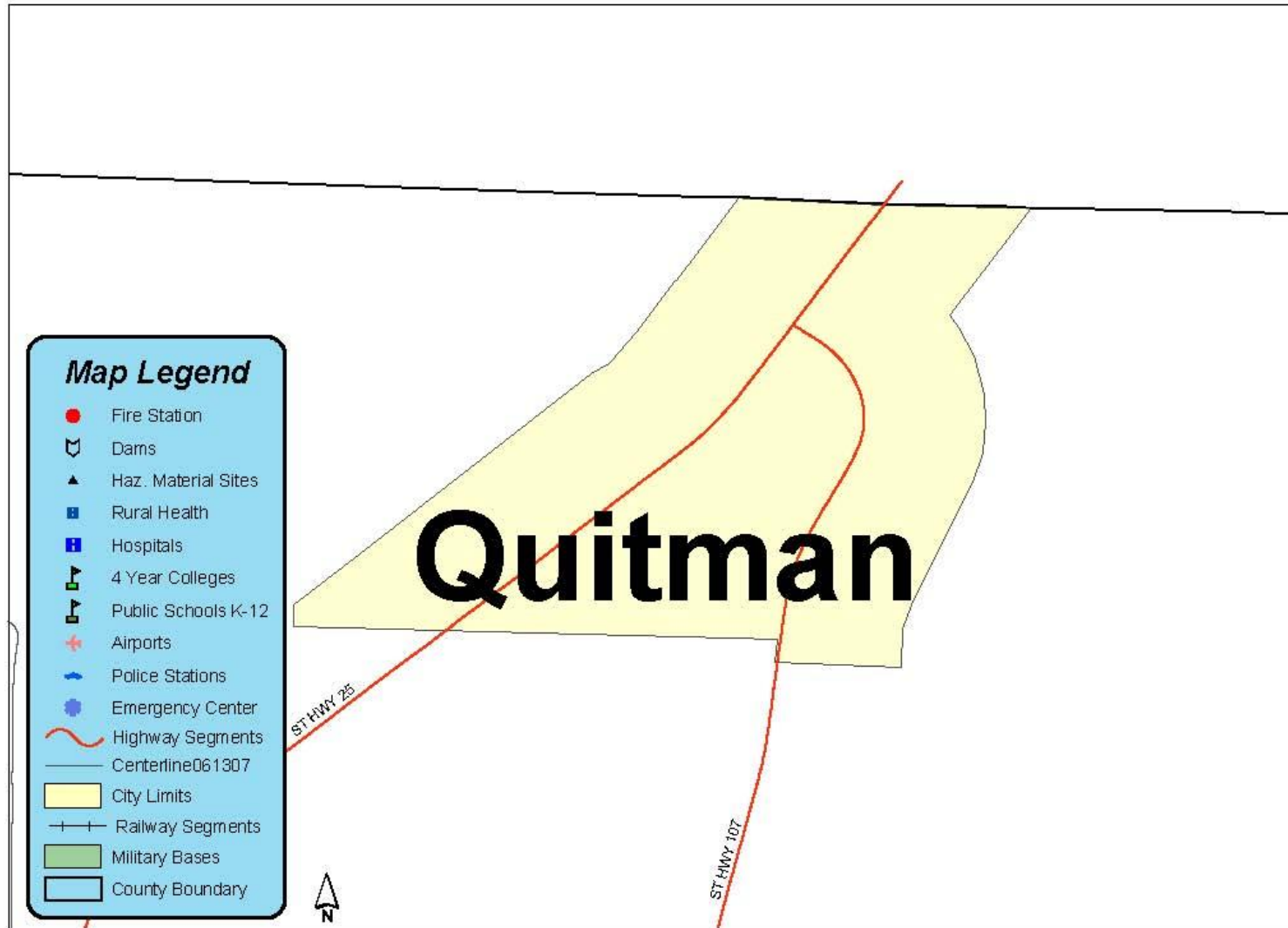
Faulkner County (City of Mayflower) Critical Facilities Map



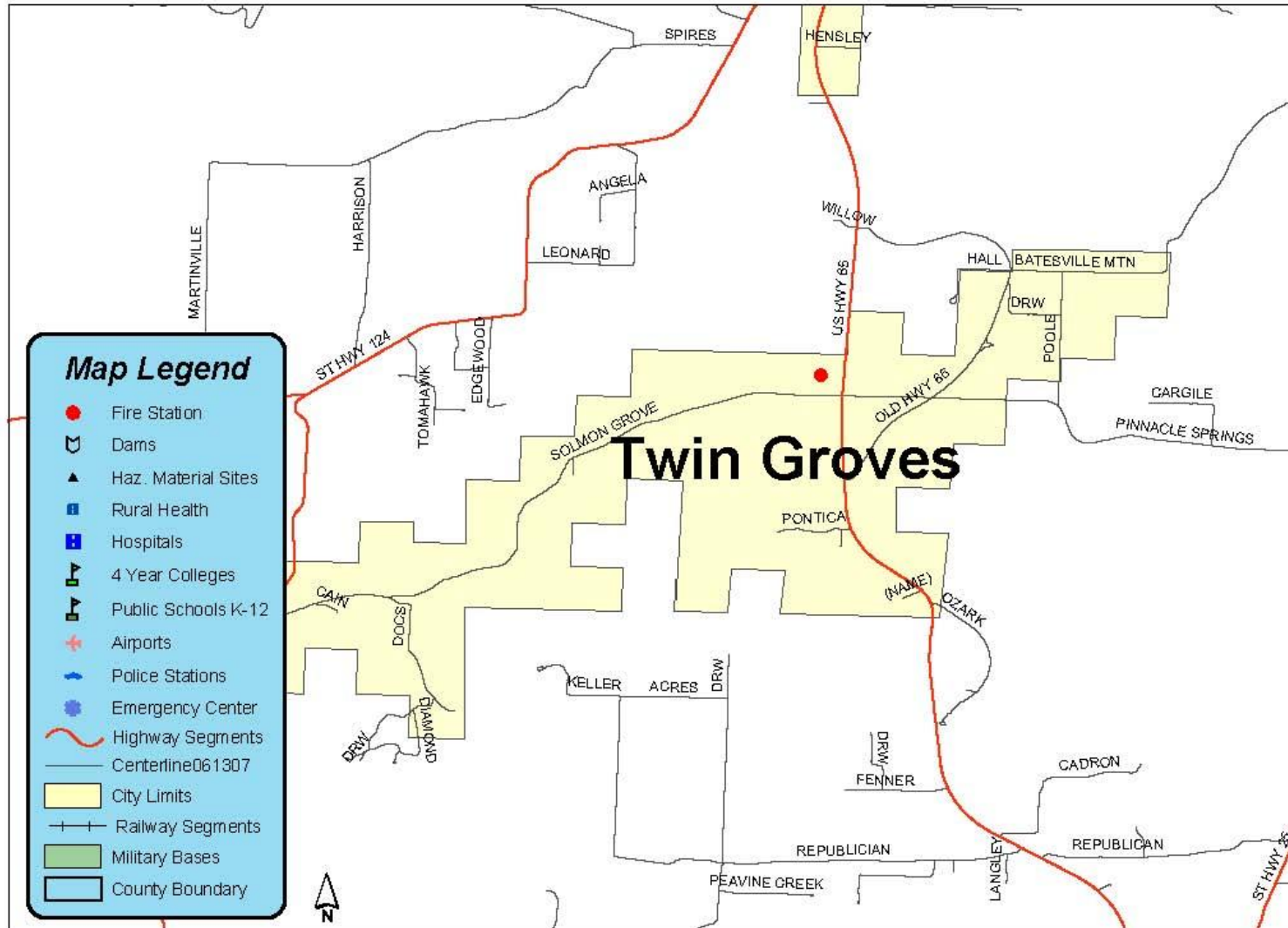
Faulkner County (City of Mt. Vernon) Critical Facilities Map



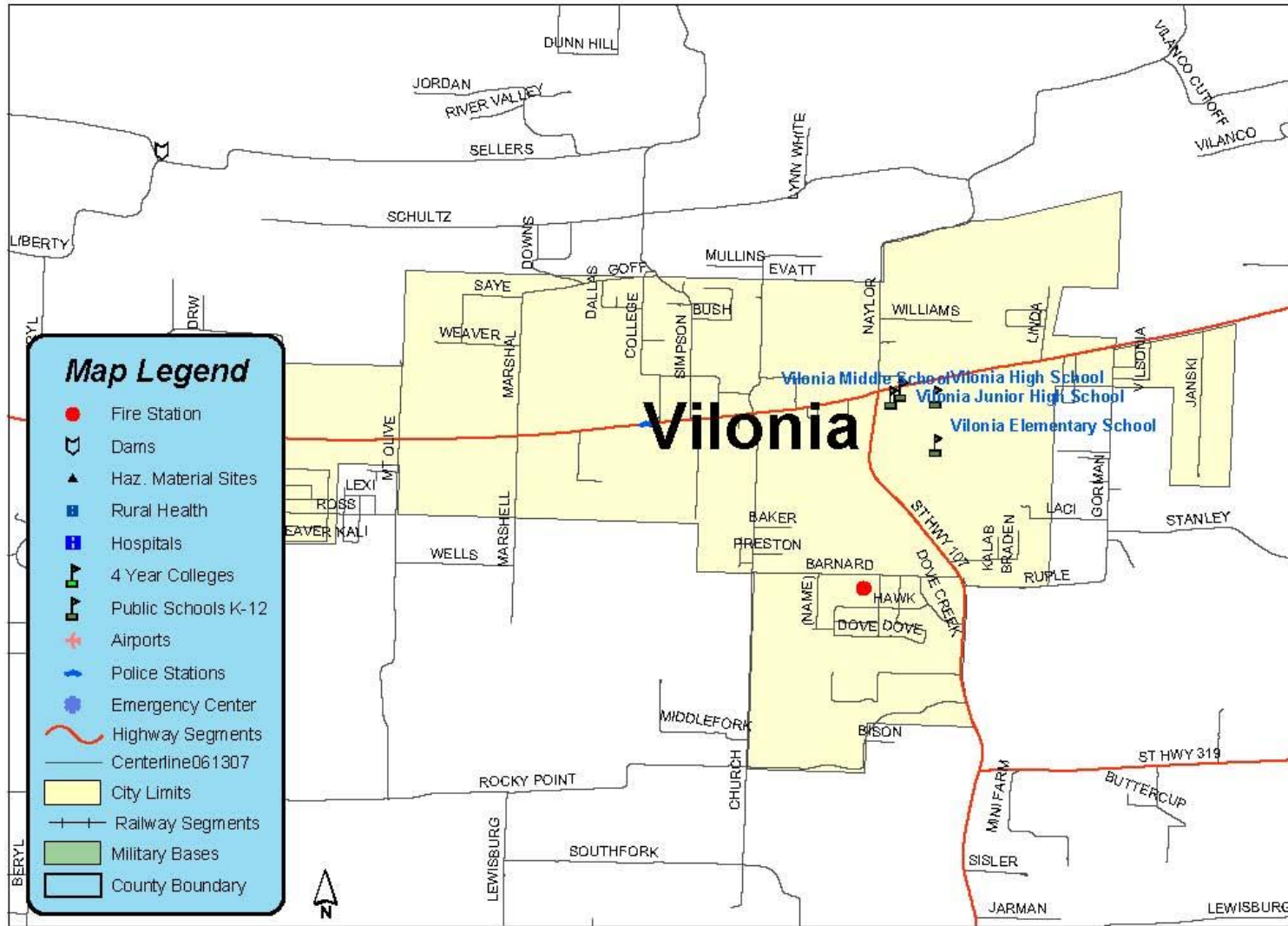
Faulkner County (City of Quitman) Critical Facilities Map



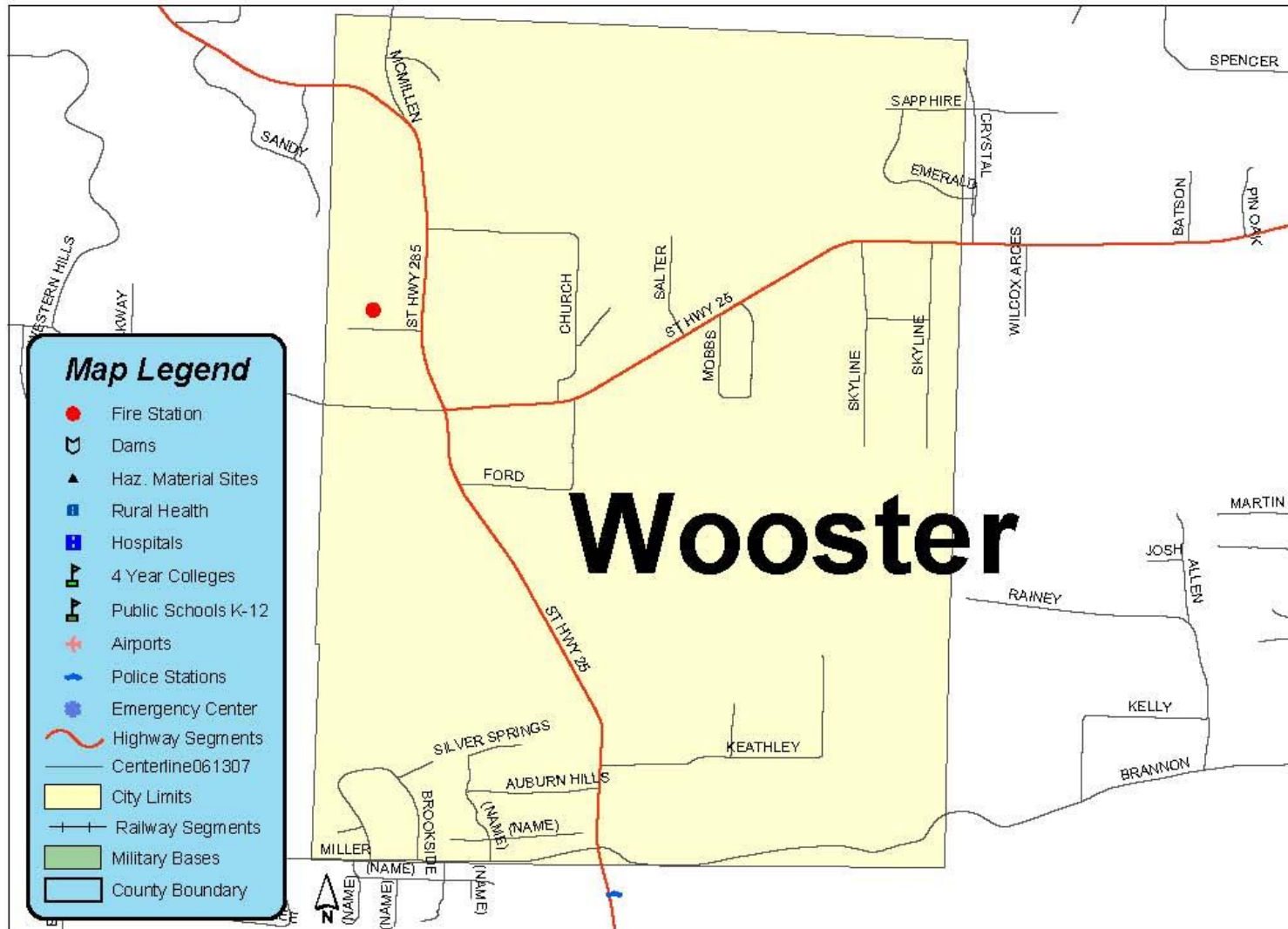
Faulkner County (City of Twin Groves) Critical Facilities Map



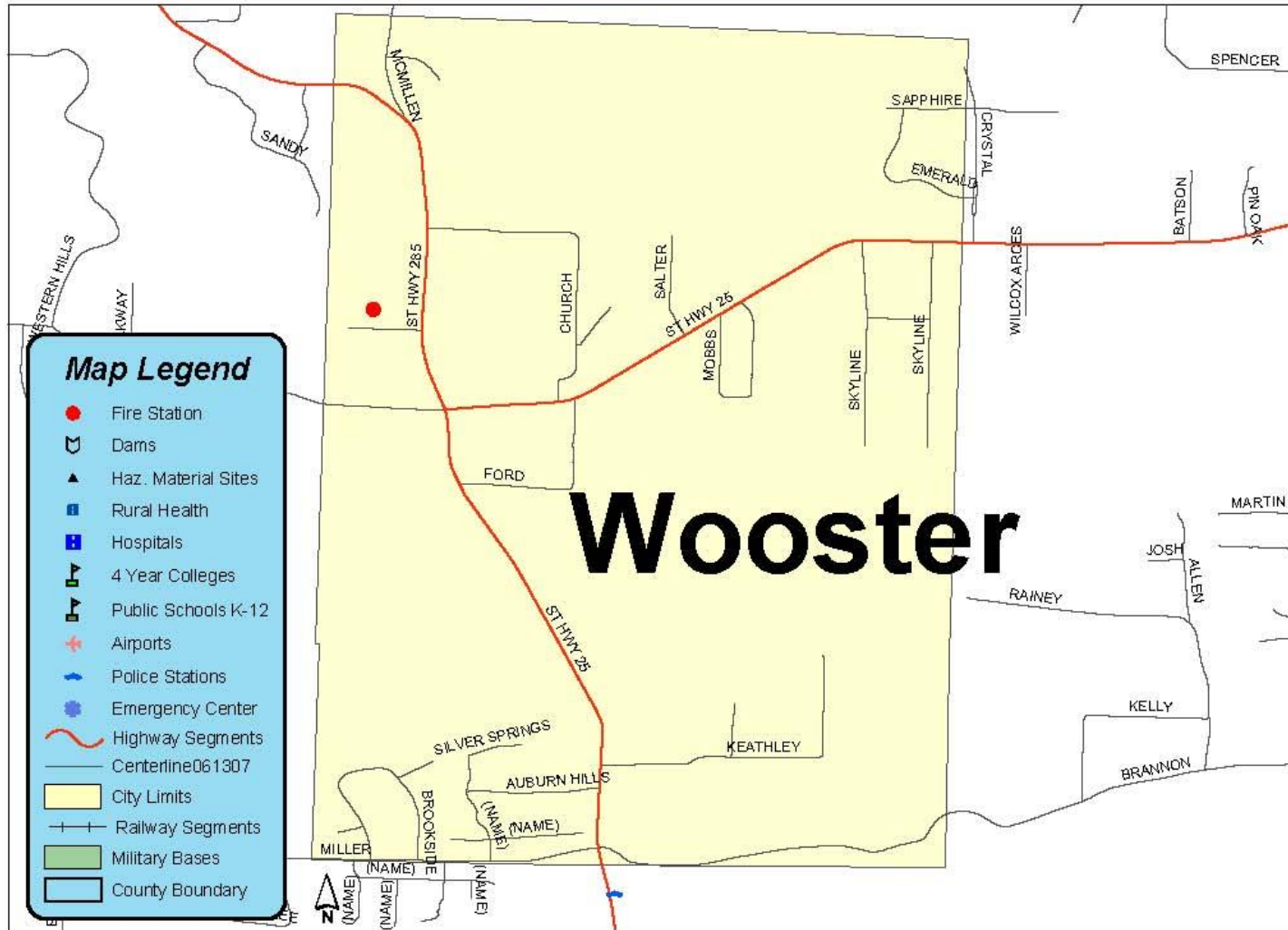
Faulkner County (City of Vilonia) Critical Facilities Map



Faulkner County (City of Wooster) Critical Facilities Map

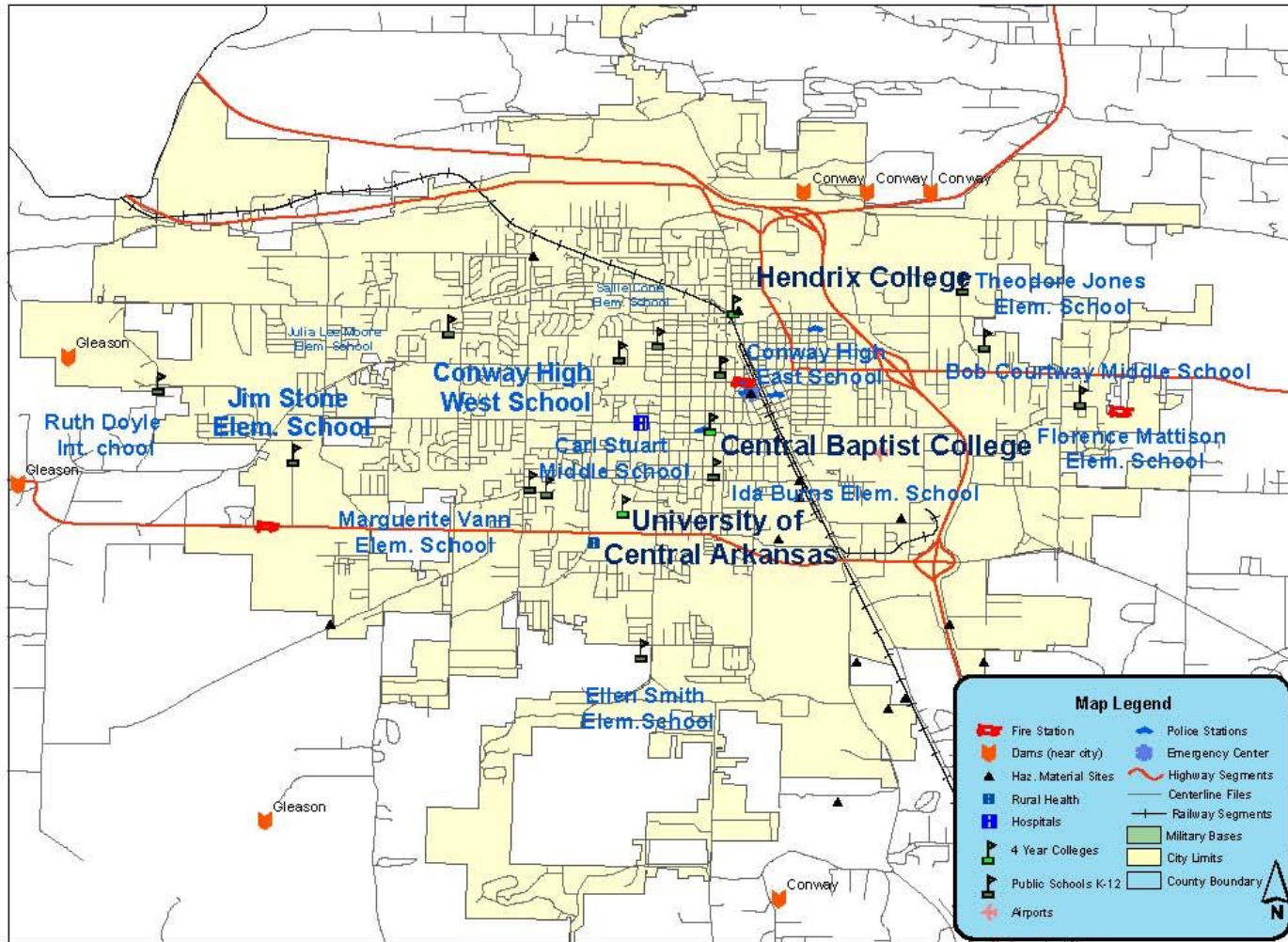


Faulkner County (City of Wooster) Critical Facilities Map

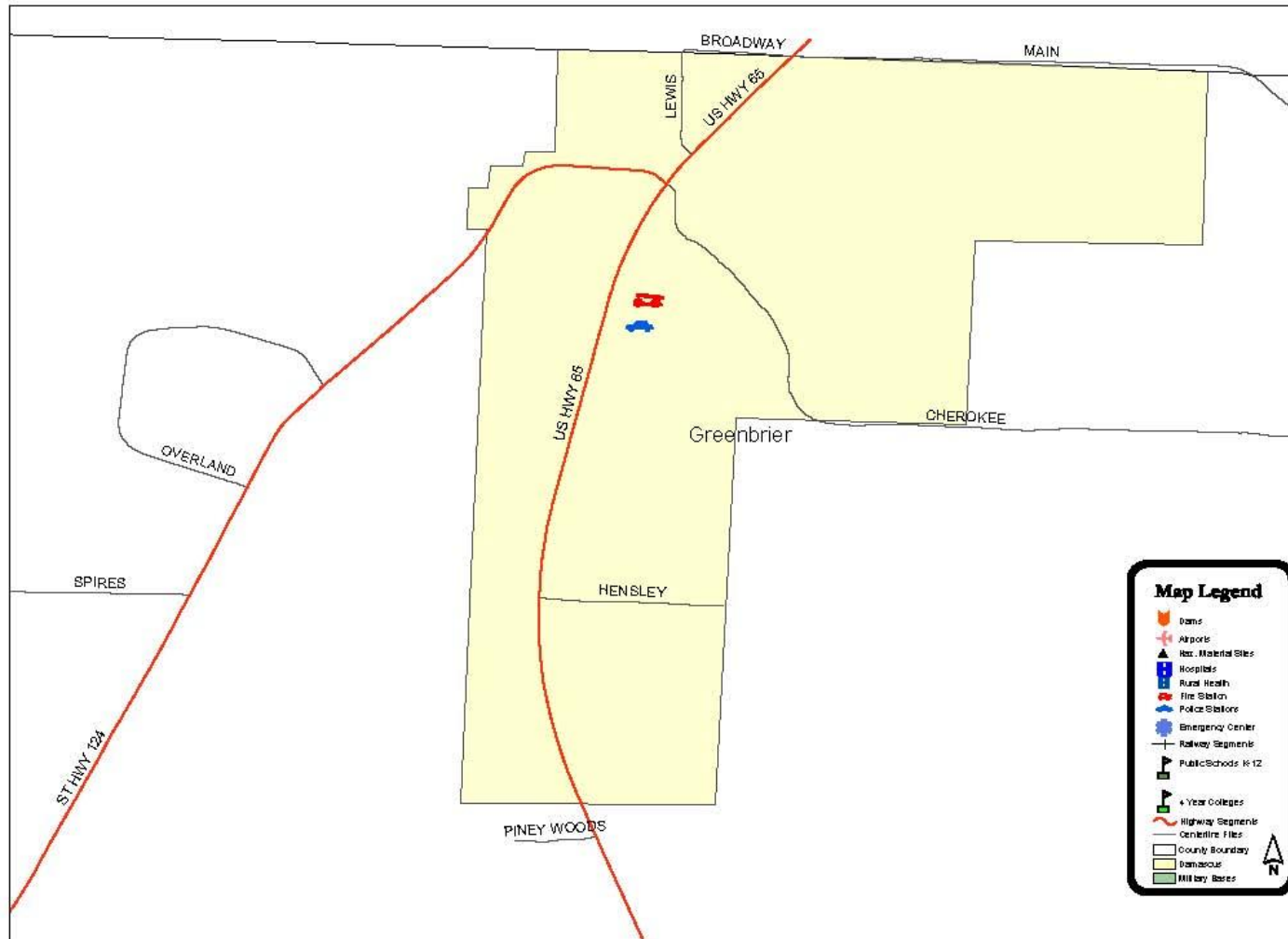




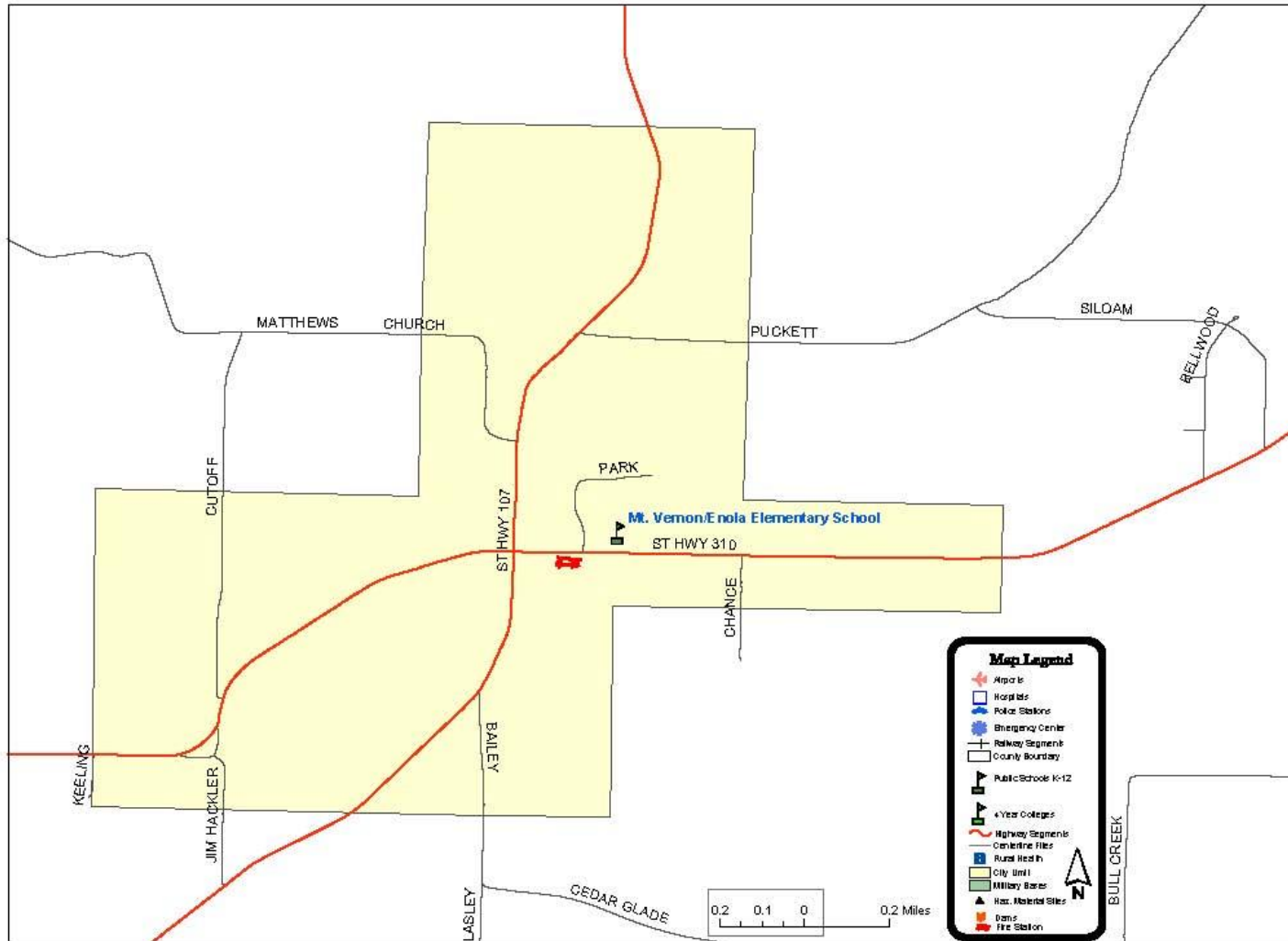
Faulkner County (City of Conway) Critical Facilities Map



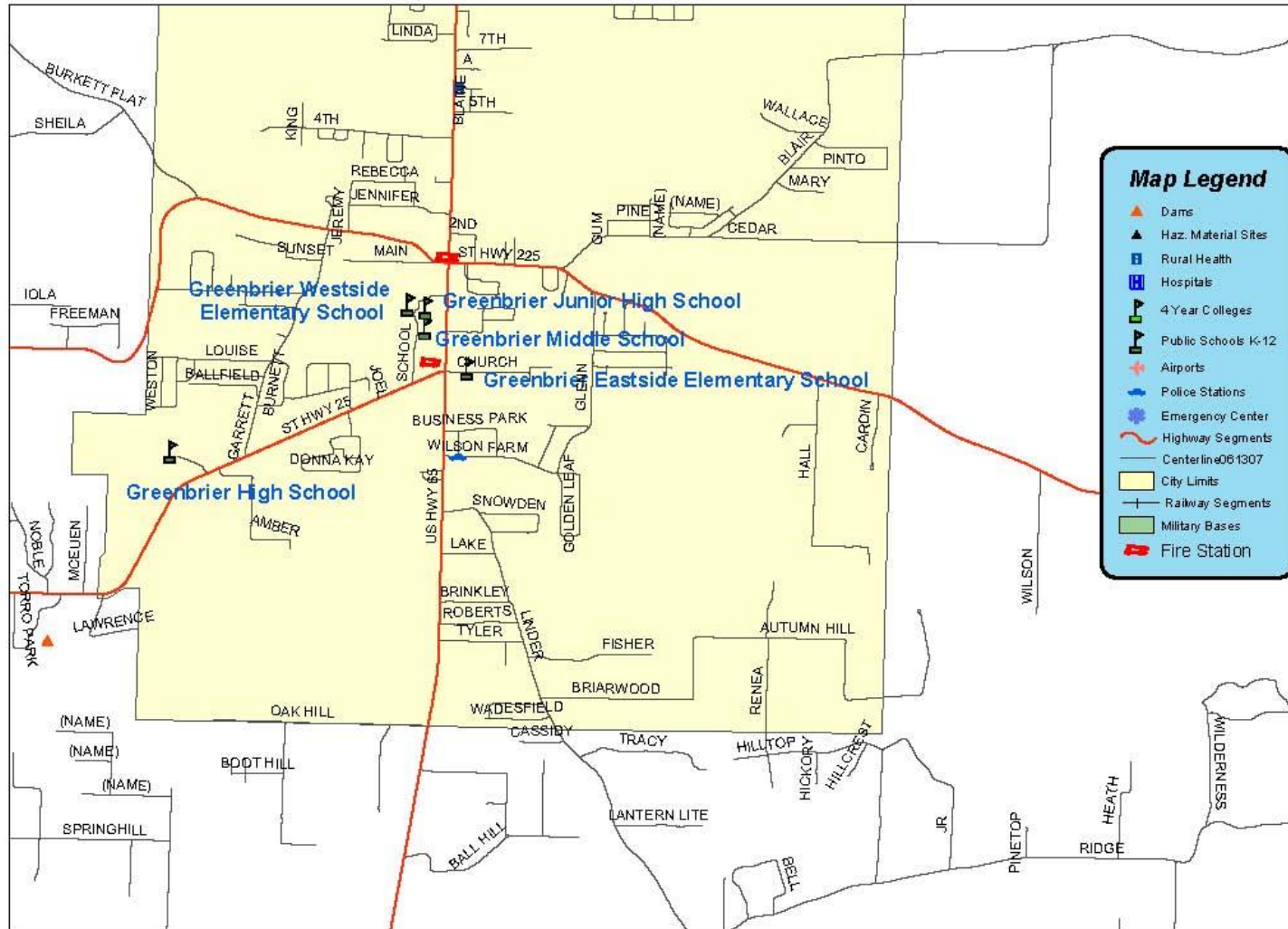
Faulkner County (City of Damascus) Critical Facilities Map



### Faulkner County (City of Enola) Critical Facilities Map



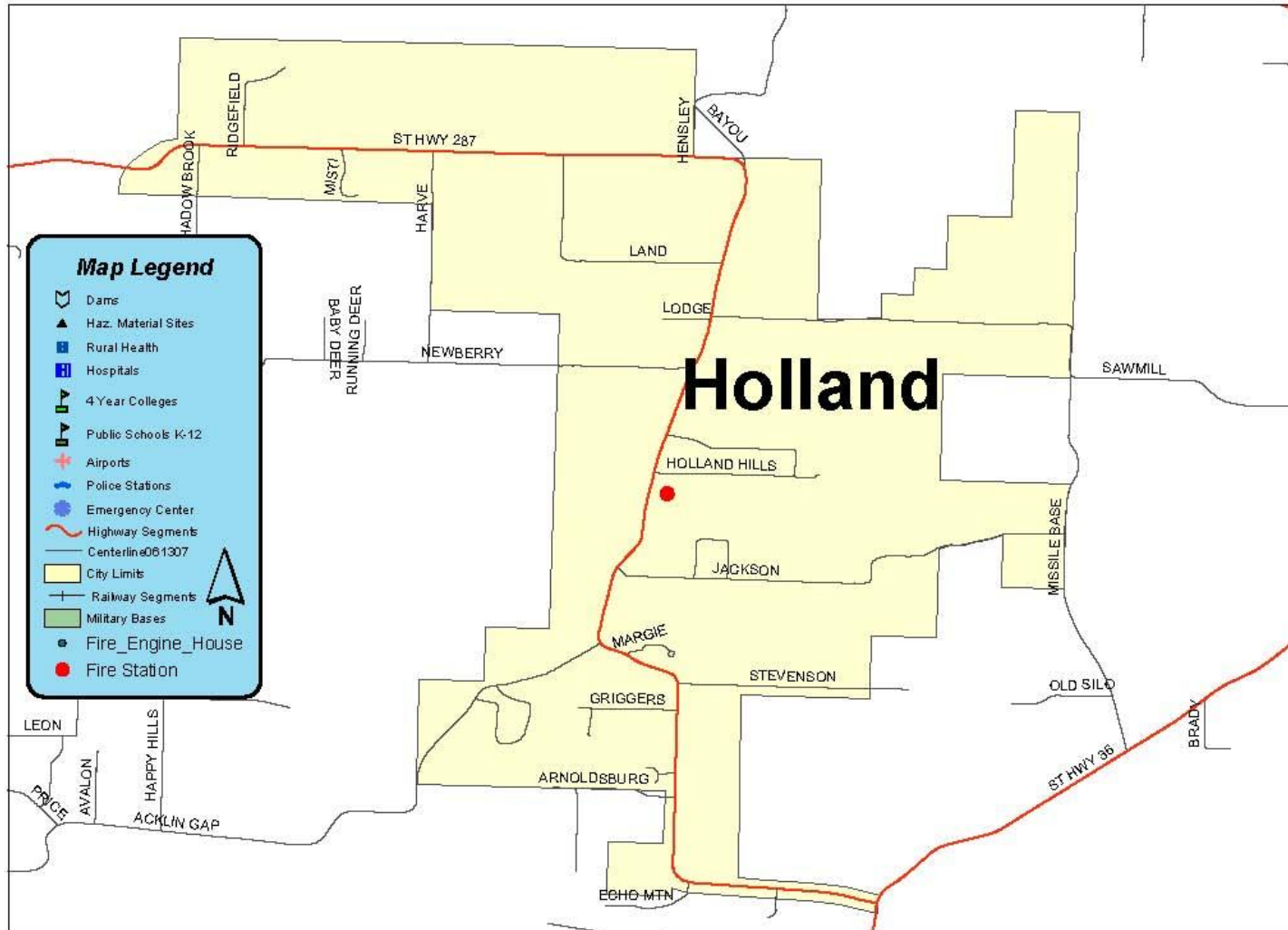
Faulkner County (City of Greenbrier) Critical Facilities Map



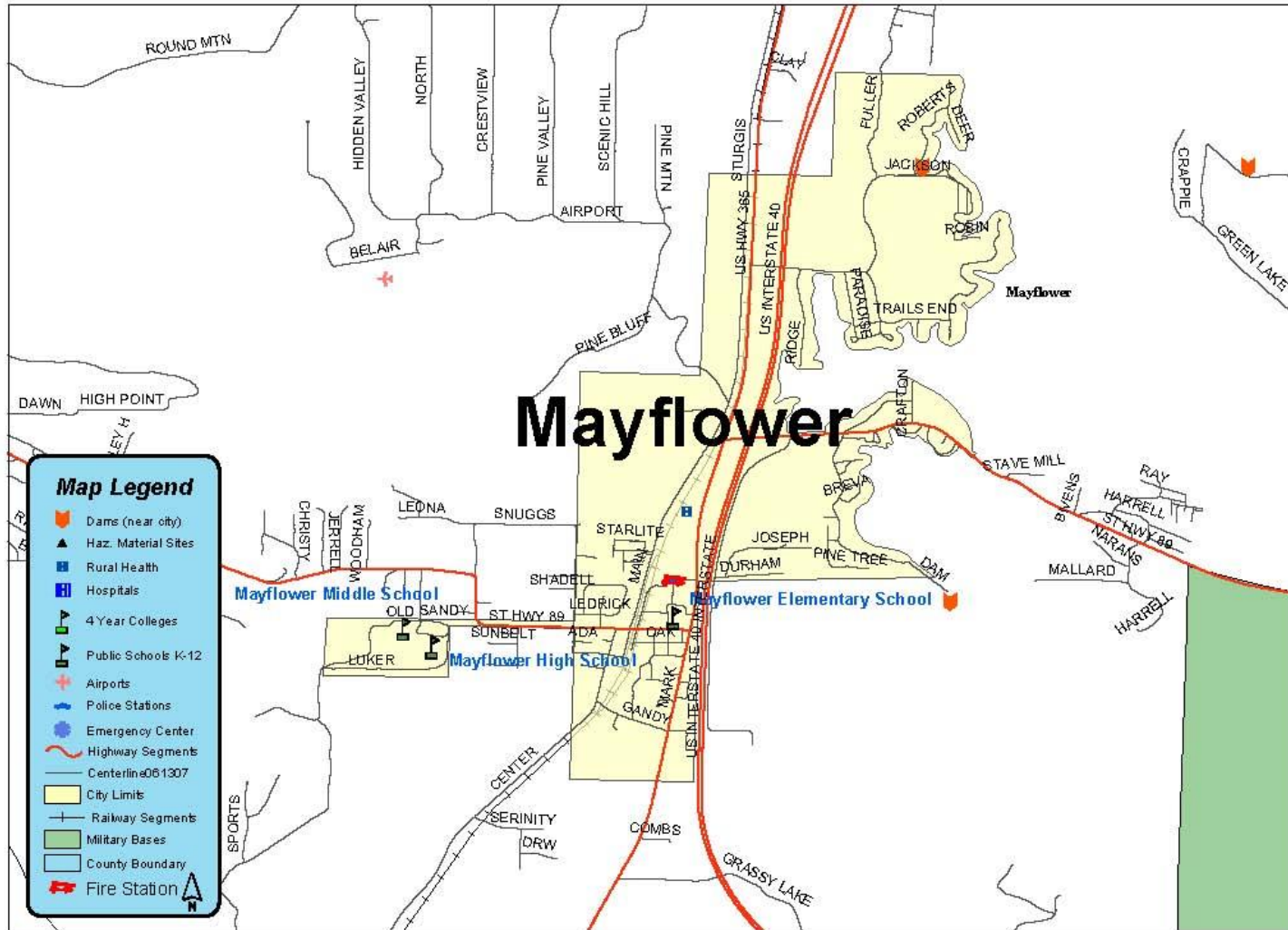
Faulkner County (City of Guy) Critical Facilities Map



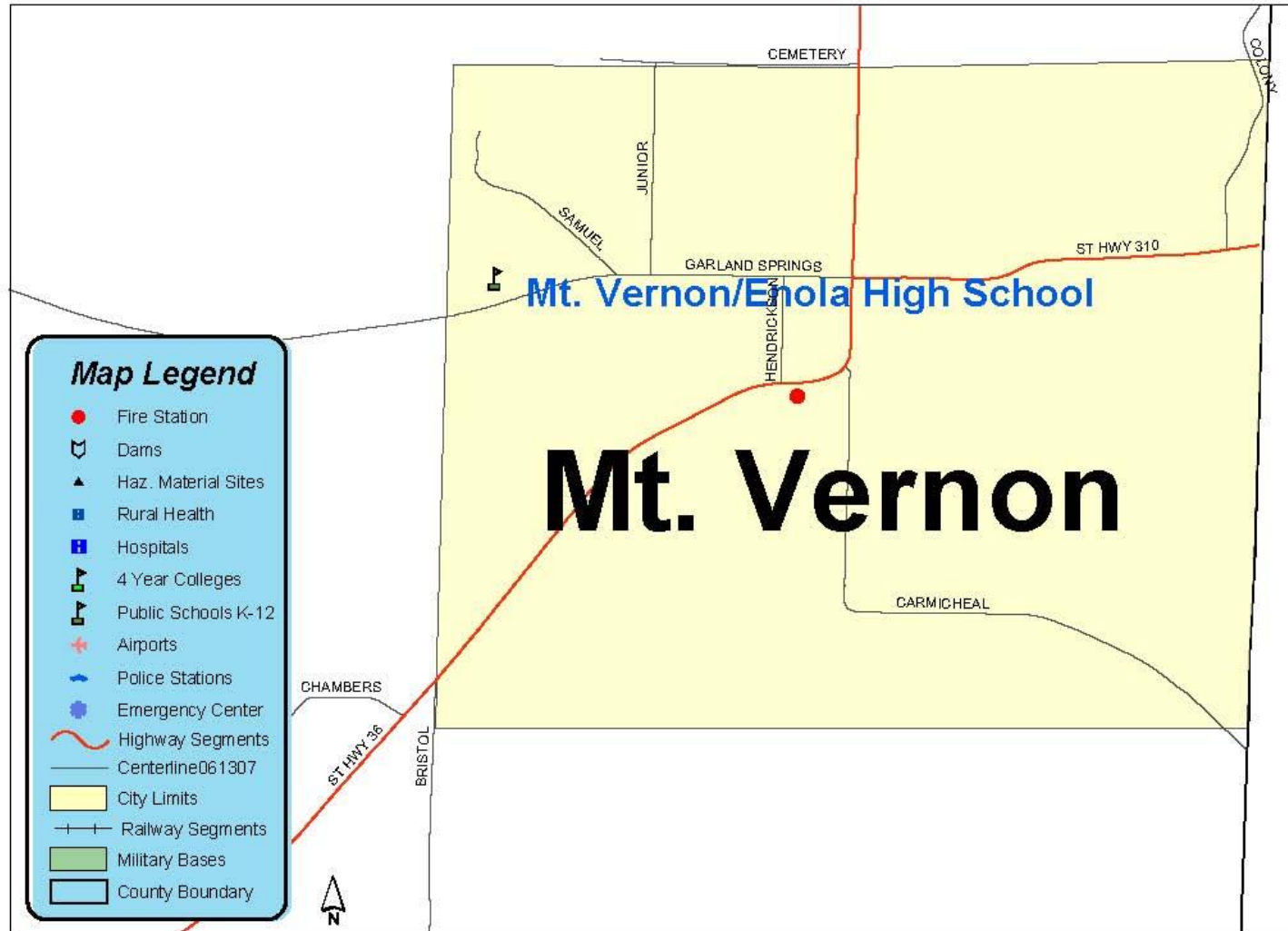
Faulkner County (City of Holland) Critical Facilities Map



Faulkner County (City of Mayflower) Critical Facilities Map

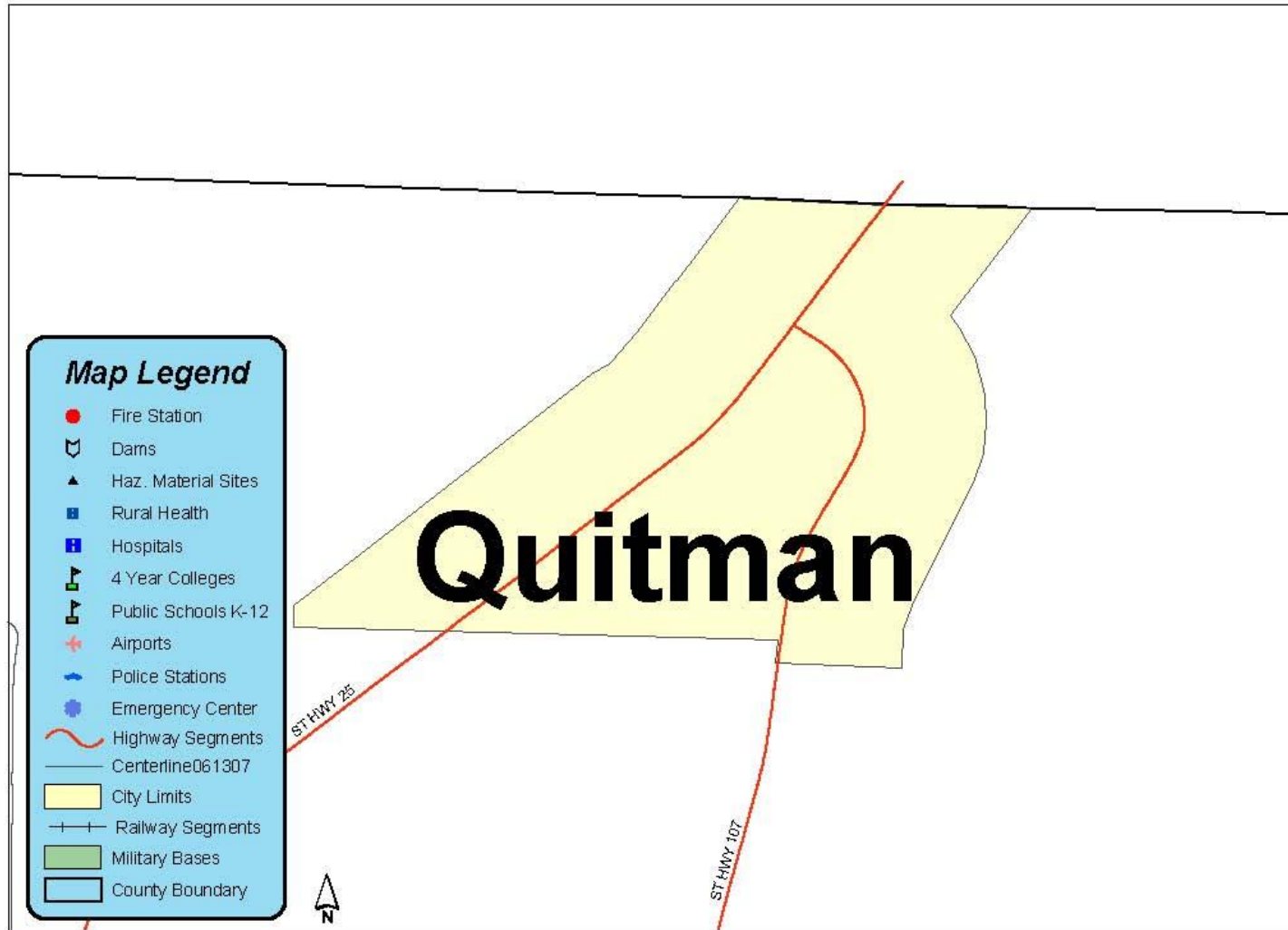


Faulkner County (City of Mt. Vernon) Critical Facilities Map

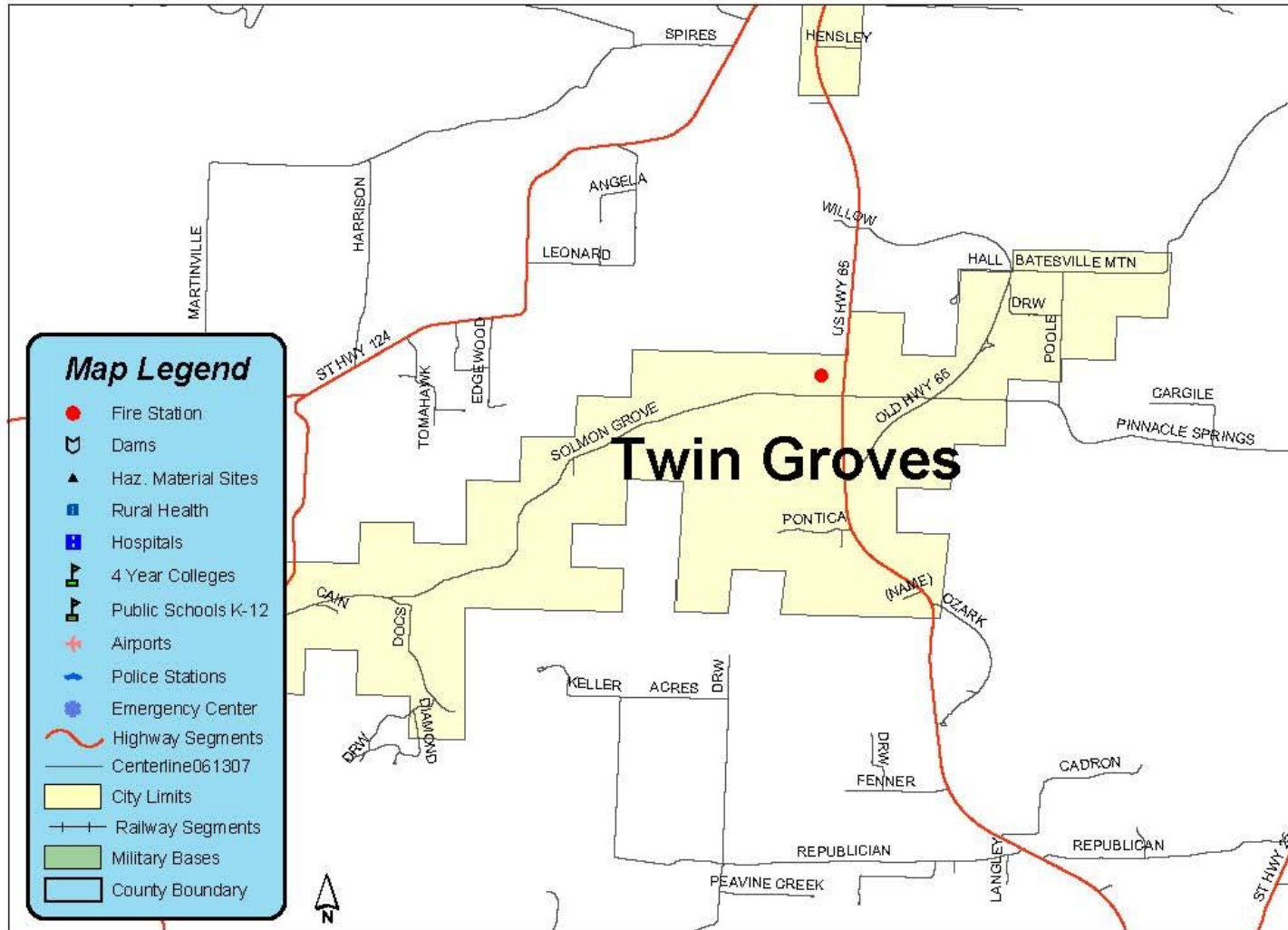




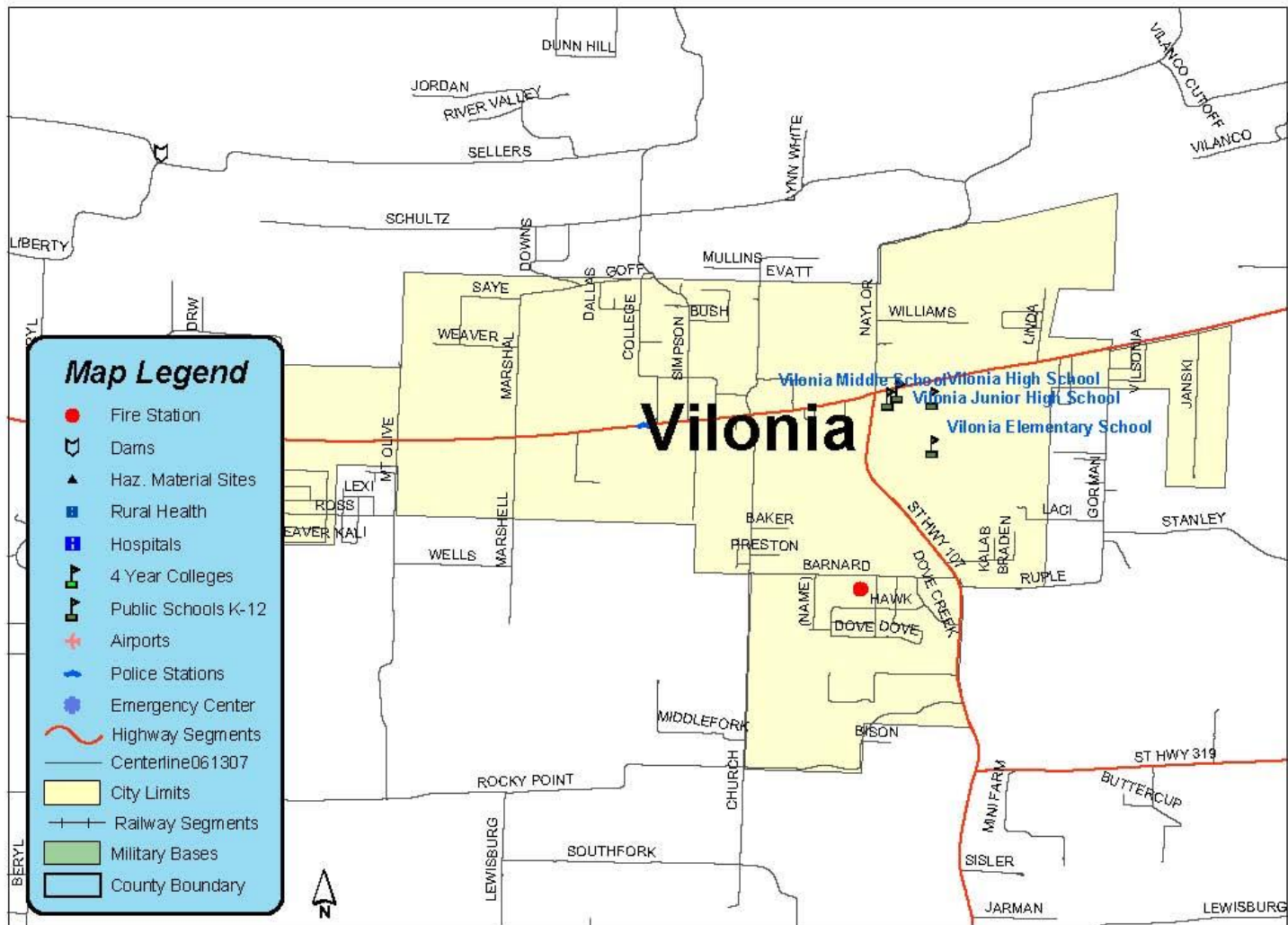
Faulkner County (City of Quitman) Critical Facilities Map



Faulkner County (City of Twin Groves) Critical Facilities Map



Faulkner County (City of Vilonia) Critical Facilities Map



\*The loss estimates provided were produced using Census Tract data, County Assessor’s data, and historical events. All loss estimations have inherent uncertainties, and the actual impacts could be significantly different.

4.3.2.1 Summary of Critical Facilities by jurisdiction in the Faulkner County mitigation planning area.

		Conway	Damascus	Enola	Greenbrier	Guy	Holland	Mayflower	Mt. Vernon	Twin Groves	Vilonia	Wooster	St. Joseph School	Faulkner County	Planning Area Total
<b>Vulnerable Populations</b>	<b>Schools</b>	16	0	2	6	2	0	3	2	0	4	0	3	0	<b>38</b>
	<b>Child Care</b>	17	1	0	5	0	0	0	0	0	1	0	0	0	<b>24</b>
	<b>Retirement, Nursing, Convalescent Homes</b>	5	0	0	1	0	0	0	0	0	0	0	0	0	<b>6</b>
<b>Emergency Response / Medical</b>	<b>Police Stations / Sheriff Offices</b>	2	1	0	1	1	0	1	0	0	1	0	0	1	<b>8</b>
	<b>Fire Stations (Volunteer)</b>	1	1	1	1	1	1	1	1	1	1	1	0	10	<b>21</b>
	<b>Emergency Operations Centers</b>	1	0	0	0	0	0	0	0	0	0	0	0	1	<b>2</b>
	<b>Hospitals / Emergency Medical Clinics</b>	7	0	0	2	0	0	1	0	0	1	0	0	0	<b>11</b>
<b>Other at Risk Properties</b>	<b>Tier II (HAZMAT) Locations</b>	75	0	0	1	0	0	0	0	0	1	1	0	0	<b>78</b>
	<b>Water Treatment Plants</b>	1	1	0	1	1	0	1	0	1	1	1	0	0	<b>8</b>
	<b>Waste Water Treatment Plants</b>	1	1	0	1	0	0	1	0	0	1	0	0	2	<b>7</b>
	<b>Historic Properties</b>	26	2	0	5	3	0	0	0	4	0	1	0	10	<b>51</b>
<b>Total Critical Facilities</b>		<b>149</b>	<b>7</b>	<b>2</b>	<b>23</b>	<b>8</b>	<b>1</b>	<b>8</b>	<b>2</b>	<b>12</b>	<b>11</b>	<b>4</b>	<b>3</b>	<b>24</b>	<b>254</b>

Table. 4.3.2.2 Building Stock: Number of Buildings by General Occupancy

Building stock exposure by general occupancy in the Faulkner County planning area. The number of structures in each jurisdiction is shown. Data from Faulkner County Assessor’s Office and Census Tract data. Most of the structures are residential. A summary of the building stock exposure by general occupancy per Census Tract is provided in below

<b>Planning Jurisdiction</b>	<b>Total Number of Structures</b>	<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Agriculture</b>	<b>Religion</b>	<b>Government</b>	<b>Education</b>
<b>Conway</b>	14,987	14,698	174	69	0	8	5	38
<b>Damascus</b>	59	59	0	0	0	0	1	0
<b>Enola</b>	84	84	0	0	0	0	1	0
<b>Greenbrier</b>	1,317	1,298	16	1	0	2	1	0
<b>Guy</b>	102	101	0	1	0	0	1	0
<b>Holland</b>	251	251	0	0	0	0	0	0
<b>Mayflower</b>	891	888	2	1	0	0	1	0
<b>Mt. Vernon</b>	84	84	0	0	0	0	1	0
<b>Quitman</b>	123	120	2	0	0	1	1	0
<b>Twin Groves</b>	12	12	0	0	0	0	1	0
<b>Vilonia</b>	906	902	4	0	0	0	1	0
<b>Wooster</b>	230	230	0	0	0	0	1	0
<b>Unincorporated Faulkner County</b>	13,949	13,891	39	14	0	4	3	0
<b>Totals</b>	<b>32,995</b>	<b>32,616</b>	<b>237</b>	<b>86</b>	<b>0</b>	<b>15</b>	<b>18</b>	<b>38</b>

Table 4.3.2.3 Building Stock: Exposure by General Occupancy

The value of structures based upon type (x \$1000) each Census Tract is shown.  
 Building stock exposure by general occupancy in the Faulkner County planning area.  
 The value of structures (x \$1000) in each jurisdiction is shown.

<b>Planning Jurisdiction</b>	<b>Total Value of Structures</b>	<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Agriculture</b>	<b>Religion</b>	<b>Government</b>	<b>Education</b>
<b>Conway</b>	\$5,260,361	\$4,507,564	\$339,013	\$182,698	\$2,577	\$26,150	\$4,927	\$197,432
<b>Damascus</b>	\$6,576	\$6,120	\$456	\$0	\$0	\$0	\$0	\$0
<b>Enola</b>	\$8,787	\$8,577	\$210	\$0	\$0	\$0	\$0	\$0
<b>Greenbrier</b>	\$190,856	\$162,128	\$21,538	\$3,797	\$279	\$3,114	\$0	\$0
<b>Guy</b>	\$17,849	\$10,686	\$744	\$2,175	\$266	\$0	\$0	\$3,796
<b>Holland</b>	\$26,711	\$26,611	\$100	\$0	\$0	\$0	\$0	\$0
<b>Mayflower</b>	\$96,835	\$86,640	\$6,925	\$3,140	\$130	\$0	\$0	\$0
<b>Mt. Vernon</b>	\$7,821	\$7,821	\$0	\$0	\$0	\$0	\$0	\$0
<b>Quitman</b>	\$27,657	\$12,375	\$12,527	\$317	\$780	\$1,380	\$0	\$278
<b>Twin Groves</b>	\$1,209	\$1,209	\$0	\$0	\$0	\$0	\$0	\$0
<b>Vilonia</b>	\$133,625	\$118,100	\$7,956	\$2,303	\$693	\$1,187	\$0	\$3,396
<b>Wooster</b>	\$27,069	\$26,280	\$789	\$0	\$0	\$0	\$0	\$0
<b>Unincorporated Faulkner County</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Totals</b>	\$7,594,754	\$6,612,249	\$485,134	\$234,306	\$8,302	\$41,186	\$7,817	\$206,220

Table 4. 3.2.4: Building stock exposure by construction type. Data from Faulkner County Assessor’s Office and Census Tract data.

The number of structures in each jurisdiction is shown.

<b>Planning Jurisdiction</b>	<b>Total Number of Structures</b>	<b>Wood Structures</b>	<b>Steel Structures</b>	<b>Concrete Structures</b>	<b>Masonry Structures</b>	<b>Manufactured Housing</b>
<b>Conway</b>	29,530	22,555	150	195	3,815	2,814
<b>Damascus</b>	269	160	0	0	27	82
<b>Enola</b>	143	83	0	0	0	49
<b>Greenbrier</b>	2,009	1,320	6	6	205	472
<b>Guy</b>	299	196	0	3	26	73
<b>Holland</b>	243	145	0	0	25	73
<b>Mayflower</b>	1,074	571	1	1	87	413
<b>Mt. Vernon</b>	73	37	0	0	4	31
<b>Quitman</b>	454	279	0	0	41	134
<b>Twin Groves</b>	153	89	0	0	0	5
<b>Vilonia</b>	1,409	977	0	2	146	285
<b>Wooster</b>	303	44	0	0	24	104
<b>Unincorporated Faulkner County</b>	13,878	8,773	9	14	1,313	3,823
<b>Totals</b>	49,837	35,231	166.0	220.8	5,714	8,359

Table 4.3.2.5: Building stock exposure by construction type in the Faulkner County planning area. Data from Faulkner County Assessor’s Office and Census Tract data. Value of structures in each jurisdiction is shown.

<b>Planning Jurisdiction</b>	<b>Total Value of Structures</b>	<b>Wood Structures</b>	<b>Steel Structures</b>	<b>Concrete Structures</b>	<b>Masonry Structures</b>	<b>Manufactured Housing</b>
<b>Conway</b>	\$3,077,353,810.00	\$2,350,482,840.08	\$15,608,584.71	\$20,332,230.49	\$397,606,421.67	\$293,274,895.45
<b>Damascus</b>	\$12,890,700.00	\$7,647,025.44			\$1,310,918.71	\$3,932,755.99
<b>Enola</b>	\$10,142,450.00	\$5,916,429.13				\$3,501,560.07
<b>Greenbrier</b>	\$221,610,575.00	\$145,634,556.18	\$664,997.97	\$664,997.97	\$22,609,931.05	\$52,036,091.49
<b>Guy</b>	\$27,796,650.00	\$18,258,583.68		\$272,516.17	\$2,452,645.59	\$6,812,904.16
<b>Holland</b>	\$14,060,300.00	\$8,402,568.85			\$1,456,445.31	\$4,201,284.86
<b>Mayflower</b>	\$16,284,600.00	\$8,663,187.86	\$18,276.77	\$18,276.77	\$1,315,927.27	\$6,268,931.31
<b>Mt. Vernon</b>	\$3,154,600.00	\$1,614,854.76			\$187,773.81	\$1,351,971.43
<b>Quitman</b>	\$15,624,150.00	\$9,605,010.27			\$1,408,734.77	\$4,610,404.96
<b>Twin Groves</b>	\$7,775,250.00	\$4,535,562.47				\$3,239,687.53
<b>Vilonia</b>	\$143,148,400.00	\$99,224,276.85		\$158,000.05	\$14,852,041.59	\$28,914,080.08
<b>Wooster</b>	\$37,282,200.00	\$5,472,994.15			\$2,917,737.41	\$12,805,625.18
<b>Unincorporated Faulkner County</b>	\$1,677,934,535.00	\$1,060,709,017.77	\$1,088,157.33	\$1,692,683.58	\$158,749,671.61	\$462,223,931.89
<b>Totals</b>	\$5,265,058,220.00	\$3,726,166,907.50	\$17,380,016.78	\$23,138,705.03	\$604,868,248.78	\$883,174,124.38



Table 4.3.2.6 Transportation Systems

System	Component	Number of Locations / Segments	Replacement Value (Millions of Dollars)
<b>Highway</b>	Segments	38	\$78.00
	Bridges	90	\$614.80
		<b>Subtotal</b>	<b>\$692.90</b>
<b>Railway</b>	Segments	13	\$23.90
	Bridges	0	\$0.00
	Facilities	1	\$1.90
		<b>Subtotal</b>	<b>\$25.80</b>
<b>Bus</b>	Facilities	0	\$0.00
		<b>Subtotal</b>	<b>\$0.00</b>
<b>Ferry</b>	Facilities	0	\$0.00
		<b>Subtotal</b>	<b>\$0.00</b>
<b>Port</b>	Facilities	1	\$1.90
		<b>Subtotal</b>	<b>\$1.90</b>
<b>Airport</b>	Facilities	7	\$33.20
	Runways	8	\$216.30
		<b>Subtotal</b>	<b>\$249.50</b>
<b>Total</b>			<b>\$970.00</b>

Using available Census data, between 2000 and 2010, the total planning area’s population has increased by a total of 35%, and the total housing units have increased by 38%. The population density went from 288.43 persons per square mile to 439.14 persons per square mile; an increase of 52% per square mile on average. Holland is the only jurisdiction that has seen a population decline from 2000 to 2010 with a 3% population loss.

	2000 Census Population	2010 Census Population	% Difference	2000 Census Pop Density (Persons per sq. mile)	2010 Census Population Density (Persons per sq. mile)	% Difference	2000 housing units	2010 housing units	% difference
Conway	43167	58908	36%	1231.7	1299.2	5%	17289	24402	41%
Damascus	306	382	25%	158.6	197.9	25%	157	185	18%
Enola	188	338	80%	123.5	225.3	82%	79	145	84%
Greenbrier	3042	4706	55%	392.6	594.3	51%	1247	1867	50%
Guy	202	708	250%	99.9	786.7	687%	92	290	215%
Holland	577	557	-3%	34.2	80.7	136%	235	243	3%
Mayflower	1631	2234	37%	556.8	770.3	38%	872	1078	24%
Mt. Vernon	144	145	1%	143.9	145.0	1%	68	69	1%
Twin Groves	276	335	21%	58.8	71.3	21%	113	147	30%
Vilonia	2106	3815	81%	327.6	593.3	81%	785	1327	69%
Wooster	516	860	67%	200.7	330.8	65%	214	317	48%
Unincorporated	86014	113237	32%	132.9	174.8	32%	34546	46612	35%
<b>Total</b>	<b>138,169</b>	<b>186,225</b>	<b>35%</b>	<b>288.43</b>	<b>439.14</b>	<b>52%</b>	<b>55,697</b>	<b>76,682</b>	<b>38%</b>
AVERAGE			57%			102%			52%

Each local jurisdiction’s planning and growth management departments should take into account location-specific hazard risk when determining building permits or zoning changes. This process will ensure growth does not continue in vulnerable areas and reduce location-specific hazard levels overtime. With an increase in population and development, all jurisdictions have an increased vulnerability due to the fact there are more people and property exposed to the hazard events listed in this plan.

### **4.3.3 Hazard Summary – Vulnerability/Impact**

According to information obtained from the Assessor's Office and Census tract data: An estimated 67.30% of the county's structures are wood frame. 22.04% are manufactured housing, which is the next most common construction method. Un-reinforced masonry comprises of 10.26% of the county's building types. The remaining consists of concrete (.01%), precast (.06%), reinforced masonry (.02%), steel (.31%).

\*The loss estimates provided were produced using Census Tract data, County Assessor's data, and historical events. All loss estimations have inherent uncertainties, and the actual impacts could be significantly different.

#### **4.3.3.1 Earthquake**

A profile of the Earthquake hazard in Faulkner County is provided in Section 4.2.1. The most vulnerable building types are un-reinforced masonry (UFA), tilt up concrete, and pre- 1972 non-ductile concrete frame buildings.

The impact of future structures would be the same. It is possible some buildings may totally collapse, sustain substantial damage (over 50% of its value), or be only slightly damaged. While well-constructed structures are expected to have no significant damage, poorly constructed structures are. The trend of building wood homes will continue and Commercial and Shops and barns will typically be constructed of steel.

Earthquakes associated with the Enola swarm have caused minor structural damage, including cracked walls.

Infrastructure most vulnerable to earthquakes includes all utility distribution lines (water, wastewater, natural gas) and facilities. Transportation infrastructure most vulnerable to earthquakes includes highway bridges and railway bridges. Other factors affecting the vulnerability of a structure to earthquakes include proximity to the earthquake epicenter and the underlying soil or bedrock characteristics. Based on the CPRI index results for Magnitude/Severity being "Limited," it is estimated that impacts will be equivalent to those description/damages listed between I and VI intensity on the Modified Mercalli Scale Table 4.2.1.1.

#### **4.3.3.2 Flood**

A profile of the flood hazard in Faulkner County is provided in Section 4.2.2. Throughout the county there are several hundred structures located within designated floodplains, most having been constructed many years ago, prior to establishment of FEMA's National Flood Insurance Program, or their community's participation in the program. Though flooding to these structures is rare, through the local flood-plain management programs, the county and the cities

are discouraging the construction of improvements and new structures in flood-prone areas.

All types of structures can be vulnerable and become unstable when flooded. Manufactured housing is more easily washed off of their foundations in flood events. Future installation of manufactured homes should always include hurricane straps. Future construction must meet new and improved building codes and floodplain permitting requirements.

Six inches of fast-moving water can knock you off your feet. Water 24 inches deep can carry away most automobiles. Nearly half of all flash flood deaths occur in automobiles as they are swept downstream. Most of these deaths take place when people drive into flooded highway dips of low drainage areas. Flash floods can roll boulders, tear out trees, destroy buildings, and obliterate bridges. Walls of water can reach heights of 10 to 20 feet and generally are accompanied by a deadly cargo of debris.

Direct costs are closely connected to a flood event and the resulting physical damage. In addition to immediate losses and repair costs they include short-term costs stemming directly from the flood event, such as flood fighting, temporary housing, and administrative assistance. By contrast, indirect costs are incurred in an extended time period following a flood. They include loss of business and personal income (including permanent loss of employment), reduction in property values, increased insurance costs, loss of tax revenue, psychological trauma, and disturbance to ecosystems. They tend to be more difficult to account for than direct costs.

The most vulnerable structures in the Faulkner County Planning Area are repetitive loss structures. Repetitive Loss properties are identified by FEMA's National Flood Insurance Program (NFIP). Repetitive Loss properties are those for which two or more losses of at least \$1,000 each have been paid under the NFIP within any 10-year period since 1978. There are no Severe Repetitive Loss structures in the planning area, but the NFIP defines those as NFIP-enrolled residential or commercial properties that have at least : 1) Four NFIP claim payments (including building and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or 2) for which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion in such claims exceeding the market value of the building.

According to the Arkansas Natural Resources Commission, there are some properties in the planning area on the Repetitive Loss List for the planning area, and no properties on the Severe Repetitive Loss List. Please refer to table below. The Faulkner County Office of Emergency Management, and local floodplain managers work closely with these property owners to educate them, and mitigating these properties in included on the mitigation actions table. The floodplain managers of the NFIP participating jurisdictions that attend the annual Spring Workshop and Fall Conference for the Arkansas Floodplain Management

Association (AFMA) are encouraged often to join the Community Rating System (CRS), but CAPDD plans to work more closely with these floodplain managers to further encourage enrollment in the program before the next plan update.

NFIP communities in the planning area will continue compliance with NFIP regulations by attending trainings such as those offered by FEMA and AFMA.

Jurisdiction	Losses (Building and Contents)	Total Number of Properties	Total Number of Claims
Faulkner County	\$579,681.80	8	18
Conway	\$168,612.85	4	13
Greenbrier	\$171,295.01	1	4
Mayflower	\$312,268.71	6	14
Vilonia	\$67,241.59	1	2
<b>TOTAL</b>	<b>\$1,299,099.96</b>	<b>20</b>	<b>51</b>

The Faulkner County Office of Emergency Management, and local floodplain managers work closely with these property owners to educate them, and mitigating these properties in included on the mitigation actions table.

Data is available for the City of Conway and Mayflower due to a FEMA Flood Risk Study in conjunction with the locals. HAZUS was used to gather estimated vulnerabilities and loss for each town.

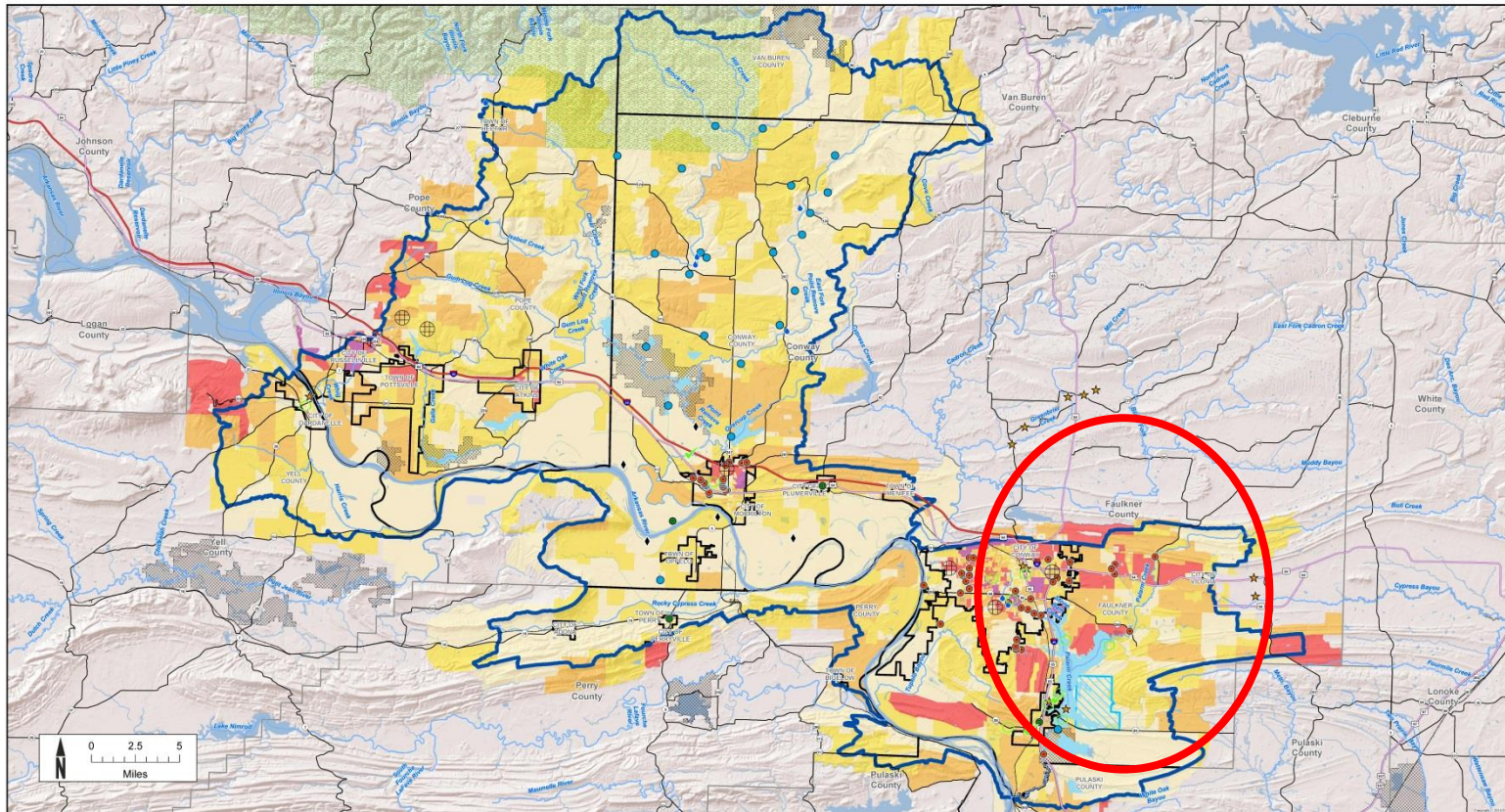
Data deficiency: The remaining participating jurisdictions do not have this type of data, but could be acquired through a flood study or a HAZUS run. The planning team will seek to gather this information for the next plan update.

Data is available from a HAZUS run for those parts of the planning area that are in the Lake Conway-Point Remove Watershed in FEMA’s Flood Risk Report for the Lake Conway-Point Remove Watershed Published 09/01/2015. The watershed includes: Faulkner County, Conway, Mayflower and Vilonia.

The below map from that report indicates areas of “very low”, “low”, “medium”, “high” and “very high” flood risk within the watershed and planning area, but does not give an indication of what the impacts are for each of those categories.

Flood vulnerability data for the planning area outside the Lake Conway Point Remove Watershed is not currently available. The planning team will work to remedy this deficiency before the next plan update.

# Flood Risk Map: Lake Conway - Point Remove Watershed, 11110203



## MAP SYMBOLOLOGY

Base Data	Flood Data	Flood Risk	Areas of Mitigation Interest
<ul style="list-style-type: none"> <li>Interstate</li> <li>US Highway</li> <li>State Highway</li> <li>Corporate Limits</li> <li>County Boundary</li> <li>Wildlife Management Area</li> <li>Special Use Area</li> <li>Lake / Pond</li> <li>National Forest</li> </ul>	<ul style="list-style-type: none"> <li>Rivers and Streams</li> <li>Restudy Area</li> </ul>	<ul style="list-style-type: none"> <li>Very Low</li> <li>Low</li> <li>Medium</li> <li>High</li> <li>Very High</li> </ul>	<ul style="list-style-type: none"> <li>Accredited Levees</li> <li>Non-Accredited Levees</li> <li>Dams</li> <li>Stream Flow Constrictions</li> <li>Past Claims Hot Spot</li> <li>Routes Overtopped During Frequent Flooding Events</li> <li>At-Risk Essential Facilities</li> <li>Other</li> <li>Individual Assistance (IA) &amp; Public Assistance (PA) Data</li> <li>Significant Land Use Changes (within the past 5 years and looking forward 5 years)</li> <li>Areas of Significant Riverine Erosion</li> <li>Non-L-vee Embankments</li> <li>Other Flood Risk Areas (Community Identified)</li> <li>Areas of Mitigation Success</li> </ul>

## WATERSHED LOCATOR



## Risk Mapping, Assessment, and Planning (Risk MAP)

FRM FLOOD RISK MAP  
LAKE CONWAY - POINT REMOVE WATERSHED



For more information of data used for this non-regulatory map, please consult the Lake Conway - Point Remove Watershed USA Flood Risk Database and Flood Risk Report.

HUC-8 Code  
**11110203**  
RELEASE DATE  
**8/31/2015**

Results of the HAZUS run for Conway and Mayflower are below. Although the report did include a HAZUS run for Vilonia, it showed zeros for all categories, so it was not included in this plan.

The report also says “The flood risk incorporates results from a FEMA-performed Hazus analysis which account for average annualized los (ALL) within the watershed. Potential losses were estimated as well as potential loss ratios for multiple scenarios.”

	City of Conway Estimated Potential Losses for Flood Event Scenarios											
	Total Inventory		10% (10-yr)		2% (50-yr)		1% (100-yr)		0.2% (500-yr)		Annualized (\$/yr)	
	Estimated Value	% of Total	Dollar Losses <sup>5</sup>	Loss Ratio <sup>5,6</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>5,6</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>5,6</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>5,6</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>5,6</sup>
Residential Building/Contents	\$7,700,000	< 1%	\$900,000	< 1%	\$1,300,000	< 1%	\$1,400,000	< 1%	\$2,100,000	< 1%	\$100,000	< 1%
Commercial Building/Contents	\$2,500,000	< 1%	\$200,000	< 1%	\$400,000	< 1%	\$400,000	< 1%	\$800,000	< 1%	\$30,000	< 1%
Other Building/Contents	\$6,300,000	< 1%	\$500,000	< 1%	\$900,000	< 1%	\$1,100,000	< 1%	\$1,900,000	< 1%	\$80,000	< 1%
Total Building/Contents <sup>2</sup>	\$16,700,000	< 1%	\$1,700,000	< 1%	\$2,600,000	< 1%	\$3,000,000	< 1%	\$4,800,000	< 1%	\$200,000	< 1%
Business Disruption <sup>3</sup>	\$1,200,000	N/A	\$100,000	N/A	\$100,000	N/A	\$200,000	N/A	\$400,000	N/A	\$10,000	N/A
<b>TOTAL<sup>4</sup></b>	<b>\$17,900,000</b>	<b>&lt; 1%</b>	<b>\$1,800,000</b>	<b>N/A</b>	<b>\$2,700,000</b>	<b>N/A</b>	<b>\$3,100,000</b>	<b>N/A</b>	<b>\$5,200,000</b>	<b>N/A</b>	<b>\$200,000</b>	<b>N/A</b>

Source: Hazus analysis results stored as the Flood Risk Assessment Dataset in the Flood Risk Database.

<sup>1</sup> Loss ratio = Dollar Losses / Estimated Value

<sup>2</sup> Total Building/Contents Loss = Residential Building/Contents Loss + Commercial Building/Contents Loss + Other Building/Contents Loss.

<sup>3</sup> Business Disruption = Inventory Loss + Relocation Cost + Income Loss + Rental Income Loss + Wage Loss + Direct Output Loss.

<sup>4</sup> Total Loss = Total Building/Contents + Business Disruption

<sup>5</sup> Losses shown are rounded to nearest \$10,000 for values under \$100,000 and to the nearest \$100,000 for values over \$100,000.

<sup>6</sup> Loss Ratios rounded to nearest integer percent.

	City of Mayflower Estimated Potential Losses for Flood Event Scenarios											
	Total Inventory		10% (10-yr)		2% (50-yr)		1% (100-yr)		0.2% (500-yr)		Annualized (\$/yr)	
	Estimated Value	% of Total	Dollar Losses <sup>5</sup>	Loss Ratio <sup>1,4</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>1,4</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>1,4</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>1,4</sup>	Dollar Losses <sup>5</sup>	Loss Ratio <sup>1,4</sup>
Residential Building/Contents	\$11,800,000	7%	\$500,000	< 1%	\$2,000,000	1%	\$2,700,000	2%	\$3,300,000	2%	\$100,000	< 1%
Commercial Building/Contents	\$3,500,000	11%	\$200,000	1%	\$600,000	2%	\$800,000	2%	\$1,000,000	3%	\$30,000	< 1%
Other Building/Contents	\$700,000	3%	\$60,000	< 1%	\$100,000	< 1%	\$100,000	1%	\$200,000	1%	\$10,000	< 1%
Total Building/Contents <sup>2</sup>	\$15,900,000	7%	\$800,000	< 1%	\$2,700,000	1%	\$3,600,000	2%	\$4,500,000	2%	\$100,000	< 1%
Business Disruption <sup>3</sup>	\$300,000	N/A	\$10,000	N/A	\$40,000	N/A	\$60,000	N/A	\$90,000	N/A	\$0	N/A
TOTAL <sup>4</sup>	\$16,200,000	7%	\$800,000	N/A	\$2,700,000	N/A	\$3,600,000	N/A	\$4,600,000	N/A	\$100,000	N/A

Source: Hazus analysis results stored as the Flood Risk Assessment Dataset in the Flood Risk Database.  
<sup>1</sup>Loss ratio = Dollar Losses / Estimated Value  
<sup>2</sup>Total Building/Contents Loss = Residential Building/Contents Loss + Commercial Building/Contents Loss + Other Building/Contents Loss.  
<sup>3</sup>Business Disruption = Inventory Loss + Relocation Cost + Income Loss + Rental Income Loss + Wage Loss + Direct Output Loss.  
<sup>4</sup>Total Loss = Total Building/Contents + Business Disruption  
<sup>5</sup>Losses shown are rounded to nearest \$10,000 for values under \$100,000 and to the nearest \$100,000 for values over \$100,000.  
<sup>6</sup>Loss Ratios rounded to nearest integer percent.

### 4.3.3.3 Severe Thunderstorm

A profile of the Severe Thunderstorm hazards in Faulkner County is provided in Section 4.2.3. All structures within Faulkner County are vulnerable to Severe Thunderstorm making the residents within the county just as vulnerable. The most vulnerable to thunderstorms are wood structures and manufactured homes. An estimated 67% of structures within the County’s mitigation planning area are wood frame. The remaining 33% is a combination of structure types to include manufactured homes. Utilities most vulnerable to thunderstorms and Lightning strikes include those identified in table 4.3.2.6 Most transportation systems are not highly vulnerable to tornadoes. All of the critical facilities are vulnerable as well. Due to the fact that these facilities are the ones responsible for first response in emergency situations, they should be a priority for disaster mitigation planning and mitigation measures. All structures in the county and their contents are vulnerable to damage by thunderstorms. Of most concern and the most likely to occur due to thunderstorms, are damages to electrical devices and electrical outages affecting the operations of critical facilities (hospitals, emergency service operations, emergency communications systems, etc.). Particularly prone to lightning strikes are communications towers and antenna, which, though most always well grounded, can be damaged by the high voltage. Over the last fifty years, over one million in lightning damage has been known to occur, but this figure is thought to considerably understate the actual amount. Based on available records, thunderstorms are a prevalent activity in Faulkner County. On average the county



has experienced two events per year. These events resulted in property damage estimated at \$176,000.

Future installation of manufactured homes should always include hurricane straps. Future construction must meet new and improved building codes.

#### **4.3.3.4 Tornado**

A profile of the tornado hazard in Faulkner County is provided in Section 4.2.4. All structures within Faulkner County are vulnerable to tornadoes making the residents within the county just as vulnerable. The most vulnerable to tornadoes are wood structures and manufactured homes. An estimated 67% of structures within the County's mitigation planning area are wood frame. The remaining 33% is a combination of structure types to include manufactured homes. Utilities most vulnerable to tornado winds include those identified in table 4.3.2.6. Most transportation systems are not highly vulnerable to tornadoes. All of the critical facilities are vulnerable as well. Due to the fact that these facilities are the ones responsible for first response in emergency situations, they should be a priority for disaster mitigation planning and mitigation measures. The impact of the tornado hazard can be estimated using data acquired from the National Climatic Data Center Severe Storm Database for the years of 1950 to 2014. Based upon this data, the total damage in dollars over this 64-year period was \$301 million from the result of 55 tornadoes.

#### **4.3.3.5 Winter Storm**

A profile of the severe winter storm hazard in Faulkner County is provided in Section 4.2.5. The occurrence of severe winter storms can have a substantial impact on Faulkner County. 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. Experiences from past storms indicate that poultry houses are particularly vulnerable. An estimated twenty to thirty structures might be impacted in any given year by severe winter storm events, resulting typically in only minor damage to the structures, mainly due to limbs breaking and falling on roofs. Heavy accumulations of ice or heavy snow can also bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days or weeks while utility companies work to repair the damage. Power and communications disruptions are common consequences of ice storms and heavy snow in Faulkner County.

Faulkner County's transportation systems are also vulnerable to severe winter storms. Although the storms rarely result in hazardous structural damage, accumulations of ice and snow may cause extreme hazards to motorists. Travel is hampered by ice or heavy snow because the County lacks sufficient snow removal equipment and road treatments (sand, salt) because of the infrequent occurrence of severe winter storm events.

Severe winter storm events typically affect the entire the county. Even when portions may not be hit as bad as others, when major road networks are affected, it can affect travel flow and the availability of essential services throughout the county.

#### 4.3.3.6 Wildfire

A profile of the wildfire hazard in Faulkner County is provided in Section 4.2.6. Structure location is the primary control on vulnerability to wildfire. All structures within Faulkner County are vulnerable to Wildfires making the residents within the county just as vulnerable. The most vulnerable to wildfires are wood structures and manufactured homes. An estimated 67% of structures within the County’s mitigation planning area are wood frame. The remaining 33% is a combination of structure types to include manufactured homes. Structures most vulnerable to wildfire are those located within the wild land-urban interface and wild land-urban intermix such is the case is most of Faulkner County. These are areas where structures and other human development meet or intermix with undeveloped wild land. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. Its expansion in recent years has increased the likelihood that wildfires will threaten structures and people.

Based on Statewide data from the period of 1992 to 2003, the Arkansas Forestry Commission found that the majority of fires in Arkansas were the result of incendiary means. Almost 44% of fires and nearly 58% of acres burned over this twelve-year period were maliciously set. 28% of the fires were from debris burning causing almost 23% of acres burned. Refer to Burn Severity Table.

Wildfires can also impact water quality (e.g., drinking water intakes). During fire suppression activities some areas may need coordinated efforts to protect water resource values from negative impact. Wildfire smoke may also have adverse effects on air quality health standards and visibility, as well as creating nuisance situations. Strategies to limit smoke from active wildfires are limited, but interagency programs exist to alert the public of potential smoke impact areas where hazardous driving or health conditions may occur.

Based on the statistical data, the number of square miles in each county in Arkansas determined to be WUI was calculated. This analysis found that Faulkner County had a total of 1,676.7 square miles

High Density Interface	2.8
High Density Intermix	0.4
Low Density Interface	121.7
Low Density Intermix	434.8
Medium Density Interface	30.9
Medium Density Intermix	30.8
Non-WUI	1055.3
TOTAL	1873.5

#### **4.3.3.7 Drought**

A profile of the Drought Hazards in Faulkner County is provided in Section 4.2.8. Although Faulkner County has experienced numerous droughts over the past years, typically drought events have no significant impact on structures. However, reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitat are a few examples of direct impacts. The consequences of these impacts illustrate indirect impacts. For example, a reduction in crop, rangeland, and forest productivity may result in reduced income for farmers and agribusiness, increased prices for food and timber, unemployment, reduced tax revenues because of reduced expenditures, increased crime, foreclosures on bank loans to farmers and businesses, migration, and disaster relief programs

#### **4.3.3.8 Dam Failure**

A profile of Dam Failure in Faulkner County is provided in Section 4.2.9. In Faulkner County, the Toad Suck Dam, located outside the City of Conway is the only permitted Dam that has been rated as a “High Hazard Classification”. The Corps of Engineer’s dam failure evaluation for Toad Suck lock and dam was conducted for low flow periods. During low flow periods, Toad Suck Dam’s Navigational Pool Elevation is at 265 feet, and next lock and dam downstream is Murray lock and dam which is 30.5 miles downstream. Murray’s Navigational Pool Elevation at low flow is 249 feet. This is a difference of 16 feet elevation between the dams. If the Toad Suck dam were to fail, inundated areas a result of the failure would occur up to 10 miles downstream. During high flow periods, the difference between the each dam’s pool elevation is significantly less, and there would already be areas inundated to due to the high river levels. During high flow levels, the effects of a dam failure at Toad Suck would be minimally felt, because areas along the river are already inundated, and there would be an insignificant increase in water level as a result of the dam failure. Failure of small, non-permitted dams, levees and/or dikes may occur, but the impact would not threaten life or property in a significant manner. Typically these are levees to ponds or small creeks that would flood farm land. Due to security restrictions, the inundation descriptions of the areas that would flood downstream are unavailable to the planning team. For the next update, the team will seek to find the data it needs to help satisfy the requirement of how wide, deep, or to a certain elevation the flooding will be.

#### **4.3.3.9 Windstorm/High Winds**

A profile of the Windstorm/High Winds Hazards in Faulkner County is provided in Section 4.2.10. All of Arkansas falls within Zone 4 as established by the American Society of Civil Engineers (ASCE 7-95) and as such facilities must be built to meet certain design wind speed codes. The most vulnerable to windstorm/high winds are wood structures and manufactured homes. An estimated 67% of structures within the County’s mitigation planning area are wood frame. The remaining 33% is a combination of structure types to include

manufactured homes. Tree branches falling on cars or houses produce a significant amount of damage in high wind events. They may down trees and power lines, overturn mobile homes, and cause damage to well-built structures. Refer to the Beaufort Wind scale for damages.

#### **4.3.3.10 Extreme Heat**

A profile of the Extreme Heat Hazards in Faulkner County is provided in Section 4.2.11. There is virtually no impact to structures due to extreme heat. Extreme heat generally affects people rather than property. Heat waves often lead to electricity spikes due to increased air conditioning use, which can create power outages, exacerbating the problem. During the 2006 North American heat wave, thousands of homes and businesses went without power, electrical transformers failed, leaving thousands without power for as long as five days. Severe heat waves can lead to deaths from hyperthermia, also known as heat stroke. Older adults, very young children, and those who are sick or overweight are at a higher risk for heat-related illness. Heat waves are the most lethal type of weather phenomenon, overall. Between 1992 and 2001, deaths from excessive heat in the United States numbered 2,190, compared with 880 deaths from floods and 150 from hurricanes. One public health measure taken during heat waves is the setting-up of air-conditioned public cooling centers.

School and University buildings are included in the above assessments, and are just as vulnerable as the rest of the buildings throughout the County, especially those constructed before 1975. However, the public and private schools also accommodate small children, so there are potential impacts on that more vulnerable population from some of the hazards. For example, small children are more susceptible to dehydration during extreme heat events, so schools will (and do) regulate exposure to the outdoors if temperatures exceed 92 degrees. The schools also will be impacted if any building damage occurs as a result of a hazard, as they might have to determine alternate placing for children who normally use the damaged building.

For most of the communities in the plan, the schools are one of the major hubs, and can be used for disaster recovery like in the case of the Mayflower School District. Following the April 27, 2014 tornado, the Mayflower School allowed use of their facilities as a disaster recovery center allowing FEMA, other Federal partners, State and local entities as well as volunteer organizations like the American Red Cross to set up.

Schools and Universities could also be used for heating and cool centers in times of extreme heat and winter weather, respectively. Faulkner County and the eleven communities within maintain close relationships with each other and each are usually willing to help when they can, especially in times of disaster. Obviously, the schools and universities are more available for use during times when school is not in session, but the largest impact on schools will be use of their facilities by the community at all stages of a disaster. For this reason, mitigation comes into play. It is important to make sure these schools are resilient as they are vital to the citizens. That is why schools like Vilonia and Mayflower are working toward constructing (and have constructed) safe rooms at their campuses, as an example.

### 4.3.4 Assessing Vulnerability – Estimating Potential Losses (All jurisdictions)

#### 4.3.4.1 Earthquake

Faulkner County, Arkansas

Population: 113,237

Buildings: 32,995

	Richter Magnitude	
	7.0 - 7.9	8.0 - 8.9
<b>Effects on People</b>		
Percentage Feeling Quake	100%	100%
Serious Injury (night/day)	0 / 12	0 / 60
Fatalities (night/day)	0 / 0	0 / 12
Displaced	600	6,001
<b>Effects on Buildings</b>		
Damage to Contents	50%	80%
Architectural Damage	25%	70%
Slight Structural Damage	5%	45%
Moderate Structural Damage	0.1%	5%
Severe Structural Damage	0%	0.1%
Collapsed Buildings	0%	0%
<b>Effects on Lifelines</b>		
Electric Outage	Possible	Probable
Telephone Outage	Possible	Probable

Source: "Damage Estimates From An Earthquake in the New Madrid Seismic Zone", Arkansas Office of Emergency Services, 1992

Methodology for loss estimation - This loss estimation is from research and analysis completed by ADEM.

#### 4.3.4.2 Flood

Flooding losses as recorded by the NCDC records estimate damages at 737K property damages and 150K crop damages.

Methodology for loss estimation – All estimates above are based on NCDC database historical records.

#### **4.3.4.3 Severe Thunderstorm**

Faulkner County can expect \$1,000 damage from Thunderstorms annual. Crop damages and property damages from Hailstorms and Lightening are not included in the NCDC database for Faulkner County.

1 injury roughly every 10 years can be expected to occur, and one death every 46 years.

Methodology for loss estimation- All estimates above are based on NCDC database historical records.

#### **4.3.4.4 Tornado**

Faulkner County averages \$766,000 in property damage annually. There will average 6 injuries annually and one death every 5 years.

Methodology for loss estimation - According to the NCDC database, there have been 39.838 Million dollars' worth of property damage in the last 52 years. There was no crop damage reported.

#### **4.3.4.5 Winter Storm**

Winter storms in Faulkner County can cause considerable damage. Ice can create many different forms off problems from electricity loss to actual physical damage. Potential loss estimations in dollars are not available at this time for Faulkner County.

#### **4.3.4.6 Wildfire**

Data is not available at this time to estimate potential losses to vulnerable structures in Faulkner County.

#### **4.3.4.7 Drought**

Data is not available at this time to estimate potential dollar losses to vulnerable structures in Faulkner County due to drought conditions. Crops are the most vulnerable.

#### **4.3.4.8 Dam Failure**

We do not have Estimated Potential Losses for dam failure in Faulkner County for several reasons.

1. Rural and recreation areas below dams.
2. A Swash Zone analysis has not been conducted for Faulkner County and the Toad Suck Ferry Lock and Dam.
3. The Planning team will research to find the information for the next plan update.

#### **4.3.4.9 Windstorm/High Winds**

Faulkner County averages \$766,000 in property damage annually. There will average 6 injuries annually and one death every 5 years.

Methodology for loss estimation - According to the NCDC database, there have been 39.838 Million dollars' worth of property damage in the last 52 years. There was no crop damage reported.

#### **4.3.4.10 Extreme Heat**

No displaces, deaths, crop or building damage has been recorded in Faulkner County from Extreme Heat since 1950. Therefore, there is no basis to predict potential losses from an extreme heat event.

Methodology for loss estimation – Loss estimation from extreme heat is impossible to determine without a viable historical record for the region. Secondary hazard from Extreme Heat such as wildfire and drought can give a more recordable record. Both Wildfires and Drought are covered the Faulkner County Plan.

### **4.3.5 Assessing Vulnerability: Analyzing Development Trends**

#### **4.3.5.1 Earthquake**

Faulkner County is very diverse in its make up. The City of Conway is a rapidly growing city with a great deal of industry, colleges and the majority of the county's population is in Conway. Cities near the Little Rock area are growing as "bedroom communities." The cities of Mayflower and Vilonia are seeing an increase of housing development. The rest of Faulkner County is rural with farm fields, livestock and small towns. Most residents enjoy the area having the advantages of having a larger city and living in rural areas.

Most incorporated areas have adopted building codes which take into consideration seismic zoning.

#### **4.3.5.2 Flood**

As the cities in Faulkner County continue to grow, drainage has become a problem. Typically older subdivisions are impacted by new construction causing flooding to areas never before seen flooding. Better planning and proper floodplain management will deter this problem.

#### **4.3.5.3 Severe Thunderstorms**

The development trends in Faulkner County will not be affected by Severe Thunderstorms.

#### **4.3.5.4 Tornadoes**

Faulkner County will continue to grow. Schools are encouraged to install safe rooms in new and existing facilities. There has been an increase in homeowners installing safe rooms and storm shelters over the past ten years.

#### **4.3.5.5 Winter Storm**

Infrastructure is a challenge in the ever growing communities of Faulkner County. Land Use and development trends need to recognize the damage incurred in Faulkner County

from the 2000 ice storm and incorporate zoning restrictions on new construction to mitigate against future ice storm damage.

#### 4.3.5.6 Wildfire

Most Faulkner County new development is created on the outside perimeter of established urban zones. These new developments are surrounded by farm fields or wooded areas. These developments are at risk for Wildfire damage.

#### 4.3.5.7 Drought

Faulkner County is growing. Expansion of Urban areas in the county would actually reduce the Drought Exposure in Faulkner County.

#### 4.3.5.8 Dam Failure

The area around the Toad Suck Ferry Lock and Dam is a state recreational park owned by the Corp. of Engineers limiting development of residential or commercial. The Faulkner County side of the river is the high, or “bluff” side, and the inundation are is located on the opposing side of the river, which is not in Faulkner County.

#### 4.3.5.9 Windstorm/High Winds

Faulkner County continues to be affected by frequent wind storms. Safe rooms and storm shelters will help to protect people. There has been an increase in the installation of these shelters in recent years. Since 2009, Vilonia, Mayflower, and Conway School Districts have constructed safe rooms at some of their campuses.

#### 4.3.5.10 Extreme Heat

Development trends in Faulkner County that involve new construction will create working and living environments that are extreme heat resistant. Updated HV/AC systems as well as modern water control structures will ease the potential effects of extreme heat.

### 4.3.6 Multi-Jurisdictional Risk Assessment

<i>IFR REQUIREMENT</i> 201.6©(2)(iii):	For multi-jurisdictional plans, the risk assessment must assess each jurisdiction’s risks where they vary from the risks facing the entire planning area.
<i>Explanation:</i>	The multi-jurisdictional plan <b>must</b> present information for the general planning area as a whole as described in the previous paragraphs. However, where hazards and associated losses occur in only part of the planning area, this information <b>must</b> be attributed to the particular jurisdiction in which they occur. Further, where unique construction characteristics occur, they <i>should</i> be indicated on the plan so that appropriate mitigation actions are considered.

Not all parts of Faulkner County are equally at risk to each hazard. The following table shows which hazard each jurisdiction is susceptible to. A summary of how each hazard affects each jurisdiction follows.



	Unincorp. Faulkner County	Conway	Damascus	Enola	Greenbrier	Guy	Holland	Mayflower	Mt. Vernon	Twin Groves	Vilonia	Wooster	Conway School	Guy-Perkins School	Greenbrier Schools	Mayflower School	Mt. Vernon/Enola Schools	Vilonia Schools	University of Central Ark	Central Baptist College	Hendrix University
Earthquake	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flood	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Severe Thunder Storm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tornado	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Winter Storm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wildfire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drought	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dam Failure	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Windstorm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extreme Heat	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

#### **4.3.6.1 Multi-Jurisdictional Assessment for Earthquake**

The threat of an earthquake in Faulkner County and the jurisdictional areas is minimal. In order for there to be significant damage, it would have to be a large scale earthquake event; with the exception of Enola. Over 40,000 seismic events have occurred in the Enola swarm area since 1982, making it possibly the largest seismic swarm ever recorded in the central United States (Chiu et al., 1984).

#### **4.3.6.2 Multi-Jurisdictional Assessment for Flood**

Flooding in Faulkner County is a hazard that has been documented as being County wide in some instances. The only jurisdictional areas that have been noted as having a flooding occurrence have been in Conway, Greenbrier, Vilonia, and Wooster. There has in the past been flooding events causing damage to roads and bridges in the county, principally along county-maintained roads.

#### **4.3.6.3 Multi-Jurisdictional Assessment for Severe Thunderstorm**

The threat of severe thunderstorm occurrences does not seem to be unique to any particular area of the county. The threat is countywide and with no significant variation at the county or jurisdictional levels. Within the other jurisdictional areas, the cities of Conway, Greenbrier and Vilonia have experienced more thunderstorms than the other jurisdictions this may be simply due to the size of the land that encompasses those jurisdictions. .

#### **4.3.6.4 Multi-Jurisdictional Assessment for Tornado**

The risks of tornados extend throughout the County. There is not an area that can be declared “immune” from the impact of this hazard. Nor can there be an area that is more or less vulnerable. However, in regard to construction type, a vulnerability analysis can be determined. Manufactured homes have proven to be the most vulnerable construction type. When in concentrated areas of the county, which is usually in the unincorporated areas, they tend to experience more damage. Unfortunately, with the absence of building codes and a building permit process, it is difficult to influence the anchoring of the manufactured homes.

#### **4.3.6.5 Multi-Jurisdictional Assessment for Winter Storm**

Severe Winter Storms do not seem to be unique to any particular area in Faulkner County. The threat is considered to be countywide with no significant variation at the county or jurisdictional level.

#### **4.3.6.6 Multi-Jurisdictional Assessment for Wildfire**

The threat of wildfire in Faulkner County and the jurisdictional areas give reason for concern. The Ouachita National Forest is in part of the county and increases the probability for a large scale wild fire. Faulkner County had a total of 308 fires over a 12 year period and ranked 31<sup>st</sup> in the state for the most fires reported.

#### **4.3.6.7 Multi-Jurisdictional Assessment for Drought**

Droughts are not unique to any particular area in Faulkner County. The threat is considered to be countywide with no significant variation at the county or jurisdictional level.

#### **4.3.6.8 Multi-Jurisdictional Assessment for Dam Failure**

Failure of the Toadsuck Dam located outside the City of Conway and resultant flooding would directly threaten many structures. Data is not available to say what type or how many structures. Failure of the Toad Suck Dam would create a very high risk to human life and excessive economic loss. Failure of small, non-permitted dams, levees and/or dikes may occur, but the impact would not threaten life or property in a significant manner.

#### **4.3.6.9 Multi-Jurisdictional Assessment for Windstorm/High Winds**

The threat of High Wind occurrences does not seem to be unique to any particular area of the county. The threat is countywide and with no significant variation at the county or jurisdictional levels. Within the other jurisdictional areas, the cities of Conway and Greenbrier have experienced more than one High Wind occurrence per a given year.

#### **4.3.6.10 Multi-Jurisdictional Assessment for Extreme Heat**

The threat of Extreme Heat occurrences does not seem to be unique to any particular area of the county. The threat is countywide and with no significant variation at the county or jurisdictional levels. Typically Extreme Heat affects the elderly and outside laborers and animals that can experience heat stroke.

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## SECTION 5. MITIGATION STRATEGY

### 5.1. Local Hazard Mitigation Goals

<i>IFR REQUIREMENT</i> 201.6(c)(3)(i):	[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
<i>Explanation:</i>	<p>The community’s hazard reduction goals, as described in the plan, along with any corresponding objectives, guide the development and implementation of mitigation actions. This section <b>shall</b> list the goals intended to reduce or avoid the effects of the identified hazards addressed in the risk assessment.</p> <p>The description <i>should</i> include how goals were developed. The goals could be developed early in the planning process and refined based on the risk assessment findings, or developed entirely after the risk assessment is completed. They <i>should</i> also be compatible with the goals of the community as expressed in other community plan documents.</p> <p>Although the Rule does not require a description of objectives, communities are highly encouraged to include objectives developed to achieve the goals so that reviewers understand the connection between goals, objectives, and activities.</p> <p>The goals and objectives <i>should</i>:</p> <ul style="list-style-type: none"><li>▪ Be based on the findings of the local and State risk assessments; and</li></ul> <p>Represent a long-term vision for hazard reduction or enhancement of mitigation capabilities.</p>

Based upon the results of the risk assessment, the Faulkner County Hazard Mitigation Planning Team, with input from local jurisdictions, approved to keep previously developed goals and objectives and selected those that were determined to be of greatest benefit in hazard reduction to the County. The goals and objectives are as follows:

**Goal 1. Reduce the potential for loss of life, injury and economic damage created by exposure to natural hazards for residents of Faulkner County.**

**Objective 1** Enhance and maintain county capability to implement a comprehensive countywide hazard loss reduction strategy

**Objective 1.1** Integrate overall mitigation strategies into the community's current and future capital improvements program and planning efforts to ensure that new projects have a minimal associated risk.

**Objective 1.2** Formulate strategies using state of the art knowledge to reduce vulnerability to natural hazards

**Objective 1.3** Identify Mitigation grant opportunities for Faulkner County and city governments, non-profit agencies, and the general public, and provide effective technical support in pursuit of grants for hazard mitigation measures.

**Objective 2** Implement public education initiatives to improve understanding of natural hazards and hazard mitigation.

**Objective 2.1** Design mitigation website for Faulkner County with link to public view of the Faulkner County Mitigation Plan and mitigation strategies.

**Objective 2.2** Faulkner County and all jurisdictions included in the mitigation plan should participate in the National Flood Insurance Program (NFIP), the Community Rating System (CRS), the Firewise Communities/USA program, the National Weather Service StormReady Program, Disaster Resistant Community Council and FEMA's Cooperating Technical Partners (CTP) program (participation in the above programs is part of the State ranking criteria for funding mitigation proposals).

**Objective 2.3** Educate the public about the risks associated with natural hazards and the steps they can take to be prepared.

**Objective 2.4** Initiate programs to promote on-going partnerships within the community to address mitigation and emergency management.

**Objective 3** Implement public works projects that improve the protection of important developed areas in the community.

**Objective 3.1** Implement voluntary and regulated programs to ensure the continued improvement to building structures, locations and on-going emergency planning initiatives that improve the protection of critical infrastructure and county emergency management facilities.

**Objective 3.2** Create a Community Assets Database of all County properties and all properties owned or managed by communities in the multi-jurisdictional mitigation plan.

**Objective 3.3** Continually assess and evaluate the requirements for new structural projects that aid in the reduction of risk to the community.

## 5.2. Identification and Analysis of Mitigation Actions

<p><i>IFR REQUIREMENT</i> 201.6(c)(3)(ii):</p>	<p>[The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.</p>
<p><i>Explanation:</i></p>	<p>The local jurisdiction <b>shall</b> list potential loss reduction actions it has identified in its planning process and evaluate various actions that achieve the community’s goals and objectives to reduce or avoid the effects of the identified hazards. Mitigation actions <b>shall</b> address <b>existing</b> and <b>new</b> buildings and infrastructure.</p> <p>Not all of the mitigation actions identified may ultimately be included in the community’s plan due to limited capabilities, prohibitive costs, low benefit/cost ratio, or other concerns. The process by which the community decides on particular mitigation actions <i>should</i> be described. This description can include who participated in the evaluation and selection of actions. The information will also be valuable as part of the alternative analysis for the National Environmental Policy Act (NEPA) review required if projects are Federally funded.</p>

### Mitigation Actions

The Faulkner County Hazard Mitigation Planning Team has identified **65** mitigation actions to reduce long term due to exposure natural hazards. Of these **32** have been identified as multi-hazard actions. The remaining **33** actions are aimed at reducing loss of life and property due to a specific hazard and are identified and explained again in the table as they refer to each hazard assessed.

The mitigation actions are prioritized based upon their effect on the overall risk to life and property, ease of implementation, community and agency support, and ease of obtaining funding. The County has used the STAPLEE method to prioritize mitigation action. Considerations are summarized in the following table.

Prioritization and Review Criteria

Evaluation Category	Sources of Information
Social	<p>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 FCLEPC</p> <p>Existing community plans will be used wherever possible. Members of the Media were contacted and invited to all attend all FCHMPT meetings.</p>
Technical	<p>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 Departments, 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. All of these had their comments and suggestions incorporated.</p>
Administrative	<p>Staffing for proper implementation of the plan currently will rely on existing members of the various agencies involved. It is the opinion of the FCHMPT that insufficient staff is available due to budget constraints, as the staff has been cut to a minimum and many agencies have staff members that are overloaded. Technical assistance is available from various state agencies. Some local jurisdictions have incorporated Hazard Mitigation efforts into their Capital Improvement Plans. Operations Costs are under discussion by the relevant department heads.</p>
Political	<p>The Faulkner 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.</p>
Legal	<p>Members of the FCHMPT discussed legal issues with the County Commissioners, and it was their opinion that no significant legal issues were involved in the projects that were selected by the FCHMPT.</p>
Economic	<p>Economic issues were the predominant issues discussed by all concerned. Each entity felt that the projects selected would have a positive effect, in that the projects would attract business and recreation to the areas and help the community be better prepared for a disaster. Funding for the various projects was a major concern as local budgets were not capable of fulfilling the needs due to the economic down turn. Outside grants will be relied on heavily for completion of projects.</p>
Environmental	<p>The Arkansas Geological Commission, 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 governments are currently considering zoning of environmentally sensitive areas.</p>



In the table of mitigation actions that follows, the explanation of how the criterion outlined above was used by the FCHMPT to prioritize each action is presented in a column with each action. Very High priority actions were those deemed both very necessary to meeting the goals agreed upon and listed at the head of each subsection of mitigation actions, as well as those that fit well with the criteria listed in the STAPLEE table above. High Priority actions were those deemed very necessary to meeting the listed goals, but not meeting all of the STAPLEE, particularly technical feasibility or cost effectiveness. Medium Priority actions are those that are deemed important to meeting the mitigation goals, and may be of questionable economic feasibility or technically difficult to implement. All of the actions have been deemed environmentally sound. Actions are not sequential; each high priority action is an ongoing effort by PCOEM to meet each of the broad Mitigation Goals.

The identified mitigation actions and initiatives in this section are not in a 1-2-3 priority order. Availability of funding, weather conditions, county matching, outside agency assistance, and changing economic and development trends may cause some actions to begin before others. But it is considered important that all very high priority actions should begin as soon as possible. The following table summarizes the actions by priority.

Each of the below actions meet the STAPLEE Criteria.

### 5.3. Implementation of Mitigation Actions

#### *IFR REQUIREMENT*

201.6(c)(3)(iii):

[The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

#### *Explanation:*

After outlining the mitigation actions to be included in the mitigation strategy, the local jurisdiction **shall** describe the method for prioritizing the order in which actions will be implemented. Considerations that may be used to prioritize actions include: social impact, technical feasibility, administrative capabilities, and political and legal effects, as well as environmental issues.

When prioritizing mitigation actions, local jurisdictions **shall** consider the benefits that would result from the mitigation actions (including projects) versus the cost of those actions. Note that the Rule **does not require** a cost-benefit analysis for actions. However, an economic evaluation is essential for selecting one or more actions from among many competing ones. This (and other considerations) *should* be debated and discussed as part of the planning team’s and/or larger community’s decision-making process. A possible result of these local discussions *could* be the decision to complete a formal cost-benefit evaluation of the various mitigation approaches that are technically appropriate for the situation. However, this is not required to be included in the plan. The requirement of 44 CFR 201.6 (c)(3)(iii) is met as long as the economic considerations are summarized in the plan as part of the community’s analysis of “the comprehensive range of specific mitigation actions and projects being considered ... .” Among ways to address this requirement are:

- Assessing the economic impact of one action compared to another.
- Showing how one type of action costs more than another to achieve the same benefit.
- Showing that funding is available for one type of action but not another.
- Demonstrating that the economic goals of your community are better served by one action instead of another.

This section **shall** also include how actions will be implemented and administered. The plan **shall** include the agency or personnel responsible for carrying out the actions, the funding sources, and the implementation timeline. This section can also include a cost estimate or budget for each action, when available.

The table below provides a comprehensive list of mitigation actions considered by the County and local jurisdictions by the FCLEPC. The table includes information on STAPLEE criteria listed in the table in the previous section, as well as the responsible agencies, timelines for implementation, rationale for action, and contribution to mitigation objectives. The FCOEM shall be responsible for evaluating actions among competing actions listed in the table below. No cost estimates or cost-benefit analyses are available at present. The FCOEM shall evaluate actions using cost-benefit review, comparative value to mitigation objectives, and consideration of economic benefits and environmental concerns of the communities. Where actions were included on the original Faulkner County Hazard Mitigation Plan, the status of that action’s implementation is also described in the below table.

Those actions listed as “Deferred to 2014 Plan update” were all deferred due to lack of funding.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
D-01	Work with Arkansas Soil and Water Conservation Commission to determine losses in Faulkner County due to drought	Medium	FCOEM, ANRC Director of FCOEM	2 years	Faulkner County and local resources PDM	Improves understanding of risk from drought	Seeks to protect citizens and property and improve risk assessment	Faulkner County	None
D-02	Educate the public on xeriscaping techniques to be implemented in order to reduce water usage in a time of drought	Very High	Director of FCOEM, FCLEPC, ADEM	1 year	Existing: County, Cities, Schools, universities and local resources	Reduces the risk of drought	Links mitigation with preparedness	Faulkner County and all participating jurisdictions	

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
F-01	City of Conway – Install a Storm water detention area upstream of downtown Conway area to reduce the frequent flooding which occurs downtown. The flooding also hampers the emergency service traffic route.	Very High	FCOEM, FCLEPC, City of Conway Community Development Director	2 years	Existing: County and local resources, PDM, City of Conway	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Conway	Deferred to 2014 Plan
F-02	City of Conway – Construct additional drainage capacity to accommodate storm water from downtown.	Very High	FCOEM, FCLEPC, City of Conway Community Development Director	2 years	Existing: County, City of Conway and local resources, PDM	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Conway	Deferred to 2014 Plan
F-03	City of Wooster – Acquire/Demolish flood prone properties on west end of Linder Lane to mitigate areas of repetitive flooding.	Very High	FCOEM, FCLEPC, City of Wooster Mayor	2 years	Existing: County, City of Wooster and local resources, PDM	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Greenbrier	None
F-04	City of Mayflower- Reroute canals and improve overall drainage capacity to mitigate flooding on Poplar Street south of Highway 89 in the Franklin T. Booher Community.	High	FCOEM, FCLEPC, City of Mayflower Mayor	3 years	Faulkner County, City of Mayflower and local resources, FMA	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Mayflower	City met with engineers about redesigning drainage systems. There was one death due to flooding in 2011.
F-05	City of Mayflower – Perform drainage improvements to mitigate flooding on Cross Street.	High	FCOEM, FCLEPC, City of Mayflower Mayor	3 years	Faulkner County, City of Mayflower and local	Prevent repetitive flood damage to new	Seeks to protect citizens and property	Faulkner County and City of Mayflower	City met with engineers about redesigning drainage

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
					resources, FMA	and existing buildings			systems. There was one death due to flooding in 2011.
F-06	City of Vilonia- Mitigate flooding on South Church Street that occurs when North Fork Cypress Creek overflows its banks.	High	FCOEM, FSCLEPC, ADEM, City of Vilonia Mayor	2 years	Faulkner County, City of Vilonia and local resources, FMA	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Vilonia	None
F-07	Educate and engage property owners to about Beaver control projects.	High	FCOEM, FCLEPC, All governing bodies	Ongoing	Faulkner County, Cities and local resources, FMA	Prevent repetitive flood damage	Seeks to protect citizens and property	Faulkner County and participating Cities	Local officials have, and will, continue to speak with property owners regarding projects such as trapping, and beaver eradication. Greenbrier and Wooster budget each year for this.
F-08	Provide support for structural and non-structural mitigation measures for properties in the 1%-annual-chance floodplain.	High	FCOEM, FCLEPC	Ongoing	Faulkner County, Cities and local resources, FMA	Prevent repetitive flood damage	Seeks to protect citizens and property	Faulkner County and participating Cities	County-wide ordinance in 2012 set a 2 foot freeboard for the unincorporated areas. There are active floodplain managers within the communities. There are ordinances and floodplain
F-08a	Provide support and education in the form of technical assistance or pamphlets for structural and non-structural	High	FCOEM, FCLEPC, local floodplain managers	Ongoing	Faulkner County, Cities and local resources, FMA	Prevent repetitive flood damage	Seeks to protect citizens and property	Faulkner County and participating Cities	Continued education and support for persons who own property in

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
	mitigation measures for properties in the 1%-annual-chance floodplain.								a floodplain should be continuous as ownership can change, and people need to be refreshed from time to time.
F-09	Universities – Conduct a Flood Study of University Campuses to identify the proper drainage project needed to alleviate flooding.	High	FCOEM, FCLEPC	Complete	Faulkner County, Schools and local resources, FMA	Prevent repetitive flood damage	Seeks to protect citizens and property and improve risk assessment	Faulkner County and Schools	UCA has conducted a flood study for this purpose.
F-09a	Universities – Conduct a Flood Study of University and School Campuses to determine areas prone to flooding and what corrective measures are necessary.	High	FCOEM, FCLEPC, Presidents of Central Baptist College and Hendrix Universities	Ongoing	Faulkner County, Schools and local resources, FMA	Prevent repetitive flood damage	Seeks to protect citizens and property and improve risk assessment	Central Baptist College, Hendrix University and Schools	
F-10	City of Vilonia – Elevate the bridge and the road to mitigate flooding on Elizabeth, Church, Simpson and Marshal Streets caused by Fork Cypress Creek overflow.	Medium	FCOEM, FCLEPC, PDM, Mayor of Vilonia	3 years	Faulkner County, City of Vilonia and local resources, FMA	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Vilonia	None
F-11	City of Wooster – Increase drainage capacity under Arkansas State Highway 25 to the south of Wooster.	Medium	FCOEM, FCLEPC, AHTD, Mayor of Wooster	Ongoing	Faulkner County, City of Wooster, Arkansas Highway and Transportation Department and local resources, FMA	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Wooster	Property owners are encouraged to engage in beaver control projects.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
F-12	City of Wooster – 2 small tributaries of Greenbrier Creek, coming off of Horseshoe Mountain, on the North side of town will flood over Arkansas State Highway 25. The highway department would need to review and make improvements.	Medium	FCOEM, FCLEPC, AHTD, Mayor of Wooster	Ongoing	Faulkner County, City of Wooster and local resources, FMA	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and City of Wooster	Property owners are encouraged to engage in beaver control projects.
F-13	County and local governments will evaluate current zoning laws and floodplain development regulations and will adopt new laws and regulations as deemed necessary.	Medium	FCOEM, FCLEPC	Complete	Faulkner County, Cities and local resources, FMA	Prevent repetitive flood damage to new and existing buildings	Seeks to protect citizens and property	Faulkner County and participating cities	The County adopted a 2 foot freeboard ordinance for rural areas. Cities have adopted are already have a 2 ft. freeboard. It requires an elevation certificate and floodplain permit in order to get a 911 address and utilities. New ordinances may be considered in the future.
F-14	Inventory repetitive loss structures for removal or retrofiting	Medium	FCOEM, FCLEPC	Ongoing	Faulkner County, Cities and local resources, FMA	Prevent repetitive flood damage to new or existing buildings	Seeks to protect citizens and property	Faulkner County and participating cities	The County maintains the list of repetitive loss structures. This list is also provided by ANRC
F-15	Conway School District- Increase drainage capacity for underground drainage at Middle	Medium	Conway School District Assistant Superintendent	3 years	School and local resources, FMA	To prevent flood damage	Seeks to protect citizens and property	Conway School District	

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
	School and High School Campuses								
F-16	City of Mayflower- Increase drainage under Paradise Road which overtops during heavy rain events	High	City of Mayflower Mayor	3 years	Local resources, HMA	Overtopping of the road makes the road impassable and cuts of access for a large portion of the City's population	Seeks to protect citizens and property	City of Mayflower	
F-17	Conduct a Study or Analysis for areas of the planning area not in the Lake Conway Point Remove Watershed to correct data deficiency	High	FCOEM, FCLEPC, FEMA, Mayors and Judge	3 years	Local resources, FEMA	Accurate data leads to an accurate risk assessment	Seeks to protect citizens and property	County, Damascus, Enola, Greenbrier, Guy, Holland, Mt. Vernon, Twin Groves, Wooster, and school districts residing in the cities listed.	
F-18	Acquire/demolish, acquire/relocate or elevate repetitive loss structures	High	Faulkner County Judge, Mayors of Conway, Greenbrier, Mayflower and Vilonia	5 years	Local resources and HMA	To prevent flood damage and flood claims through the NFIP	Seeks to protect citizens and property	Faulkner County, Cities of Conway, Greenbrier, Mayflower and Vilonia	



Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
MH-01 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	Upgrade emergency communication equipment such as Mobile Data Transmitter for patrol cars.	Very High	FCOEM, FCLEPC, all governing bodies	Ongoing	Existing: County, Cities and local resources, FMA,	First responders protect property and life	Provides access for response and mitigation activities	Faulkner County and participating cities	All jurisdictions, except the city of Conway, have migrated their primary communications from VHF system to the state AWIN system. The City of Conway departments and other jurisdictions have at least one AWIN radio. AWIN repeaters have been increased from 3 to 5 in the County, and the City of Conway has increased their system from five to seven. Fire Departments have also upgraded to narrow band.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
MH-02 (Earthquake, Floods, Thunderstorm, High Wind, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	Develop brochures, a website, educational programs, and public services announcements to increase public awareness of hazards to which Faulkner County residents are exposed and potential mitigation measures that may be undertaken.	Very High	Director of FCOEM, FCLEPC, ADEM	Ongoing	Existing: County, Cities, Schools and local resources	LEPCs are all involved in local mitigation planning; awareness of opportunities important first step of mitigation	Links Mitigation with preparedness	All participating jurisdictions	Faulkner County - The OEM office pushes hazard awareness messages via their website, Facebook, and booth at local events.
MH-02a (Earthquake, Floods, Thunderstorm, High Wind, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	Develop brochures, a website, educational programs, and public services announcements to increase public awareness of hazards to which Faulkner County residents and students are exposed and potential mitigation measures that may be undertaken.	Very High	Director of FCOEM, FCLEPC, ADEM	Ongoing	Existing: County, Cities, Schools, universities and local resources	LEPCs are all involved in local mitigation planning; awareness of opportunities important first step of mitigation	Links Mitigation with preparedness	All participating jurisdictions	

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
MH-03 (Earthquake, Floods, Thunderstorm, High Wind, Tornadoes, Winter Storms, Wildfires, Dam Failure, Extreme Heat, Drought)	Acquire generators for all Faulkner County shelters, city halls, emergency operations centers, private and public school facilities and other critical facilities that do not presently have them. To maintain power and water during disaster (protect against further damages)	Very High	FCOEM, FCLEPC, ADEM, Governor's Office, Mayor's, & School Superintendents	Ongoing	Existing: County, cities, schools, and local resources, PDM, state grants	First responders protect property and life	Provides access for response and for mitigation activities	Faulkner County and participating jurisdictions	2 backup generators were obtained for 2 wastewater treatment plants within the county.
MH-04 (Earthquake, Floods, Tornadoes, Winter Storms, Wildfires, Dam Failure)	Faulkner County and Damascus – Need special Excavation and Trenching Rescue Equipment and training. This is unique to this area due to the recent growth of Natural Gas drilling.	Very High	FCOEM, FCLEPC	Ongoing	Faulkner County, City of Damascus, local resources; PDM, DHS	First responders protect property and life	Seeks to protect citizens and property and improve risk assessment	Faulkner County and City of Damascus	Deferred to 2014 plan The County and Damascus have had training on the mentioned equipment, but have not been able to make the proper equipment purchases.
MH-05 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Dam Failure, Extreme Heat)	City of Conway needs a mobile command center for use during Tornadoes, Severe Winter Storms, Earthquakes and other natural disasters.	Very High	FCOEM, FCLEPC	Ongoing/ 1 year	Faulkner County, cities, schools and local resources; PDM, DHS, Forestry Commission	First responders protect property and life	Seeks to protect citizens and property and improve risk assessment	All participating jurisdictions	The Sheriff's Office, OEM, UCA, and the cities of Mayflower, Enola, and Damascus all now have mobile command centers.
MH-06 (Tornado, High Winds, Earthquakes)	Obtain funding for safe room construction in Schools, Cities and County facilities.	Very High	FCOEM, FCLEPC, ADEM, Governor's Office	1 year	HMGP, Faulkner County, Cities, and Schools	Tornado damage and loss of life important hazard and loss of life	Safe rooms save lives	All participating jurisdictions	Progress has been made: Safe rooms constructed at: Conway Ruth Doyle

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
						important hazard			Intermediate School, Conway Simon Intermediate School, Vilonia High School, Vilonia Primary School, Mayflower Middle School. Five total safe rooms have been built at campuses in Conway (2), Vilonia (2), and Mayflower (1) Schools.
MH-06a (Tornado, High Winds, Earthquakes)	Construct safe-rooms in Schools, Cities and County facilities.	Very High	FCOEM, FCLEPC, ADEM, Governor's Office, Mayor's, Superintendents and Board Members for each jurisdiction	Ongoing	HMGP, Faulkner County, Cities, and Schools	Tornado damage and loss of life important hazard and loss of life important hazard	Safe rooms save lives	All participating jurisdictions	There are still 33 campuses that are in need including others at Conway, Vilonia and Mayflower Schools. All jurisdictions still have a need for safe room construction.
MH-07 (Tornado, High Winds, Earthquakes)	Provide education about the use of clips and anchors in new construction and retrofitting existing structures.	Very High	FCOEM, FCLEPC	Complete	Faulkner County, Cities, school and local resources	Lessen or eliminate damage from earthquakes and tornadoes	Seeks to protect citizens and property	All participating jurisdictions	The cities of Mayflower and Conway have since passed codes for new development to include clips and anchors to their structures.
<b>MH-07a</b> (Tornado, High	Adopt building codes that require the use of clips	Very High	FCOEM, FCLEPC, ADEM, Governor's	Ongoing	Faulkner County,	Lessen or eliminate	Seeks to protect	All participating jurisdictions	None

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
Winds, Earthquakes)	and anchors in new construction and retrofitting existing structures.		Office, Mayor's, & School Superintendents		Cities, school and local resources	damage from earthquakes and tornadoes	citizens and property	except Mayflower and Conway	
MH-08 (Earthquake, Floods, Thunderstorm, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Dam Failure, Extreme Heat)	Universities – Ensure all building administrators have severe weather action plans	Very High	FCOEM, FCLEPC	Complete	Faulkner County, Cities, schools and local resources	GIS best technology for risk identification and assessment	Current use by County of GIS information should be standardized	All participating jurisdictions	This is a requirement for all schools, and they currently have them.
MH-09 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	The FCLEPC will promote the acquisition of all-hazard radios for all schools, city halls, large businesses, churches, and other locations where large numbers of people congregate. Provide information to public on importance of having and how to acquire.	High	FCOEM, FCLEPC, ADEM	Ongoing	Faulkner County, Cities, Schools and local resources, PDM	Involves encouragement of participation at all public and private levels	All hazard radios essential warning tool	All participating jurisdictions	Faulkner County is now a Storm Ready Community. The County also has a Code Red alert system that will notify residents of impending hazards via phone. All schools and universities have NOAA weather radios, as well as all city halls.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
MH-10 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	Ensure proposed mitigation projects are in conformance with the State of Arkansas Hazard Mitigation Plan and State mitigation priorities.	High	FCOEM, FCLEPC, ADEM	Ongoing	Faulkner County, Cities, Schools and local resources	ADEM grantor of all mitigation grant programs	Provides legal underpinning for mitigation activities	All Participating Jurisdictions	None
MH-11 (Earthquake, Thunderstorm, High Wind, Tornadoes,)	Educate the public on the benefits of installing a safe room/shelter at his/her residence.	High	Director of FCOEM, FCLEPC, ADEM	Ongoing	Faulkner County, Cities, Schools and local resources	Tornado damage and loss of life important hazard and loss of life important hazard	Safe rooms save lives	All participating jurisdictions	New
MH-12 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	Ensure that the current version of the Faulkner County Hazard Mitigation Plan is easily accessible to the general public (e.g., online, in local libraries) for public input on Plan updates.	High	Director of FCOEM, FCLEPC, Program Manager at CAPDD	Ongoing	Faulkner County, Cities, Schools and local resources	Involves encouragement of participation at all public and private levels	Involves ongoing efforts on mitigation	All participating jurisdictions	The current version has been made available online one Faulkner County's website oem911.net, and at www.capdd.org
MH-13 (Earthquake, Floods, Thunderstorm, High Wind, Lightning, Tornadoes, Winter Storms,	Faulkner County – SDS sheet to let emergency personnel know what is being stored in the area. Large concern of the amount of chemicals being stored in the area.	High	Director of FCOEM, FCLEPC	1 year	Faulkner County, Cities and local resources	Involves encouragement of participation at all public and private levels	Seeks to protect citizens and property	Faulkner County and participating cities	FCOEM inventories all Tier I reports for chemicals. The County notifies each city on Tier II chemicals located within their boundaries.

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Wildfires, Dam Failure)									
MH-14 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	Use GIS mapping to identify past hazard locations and identify emergency response lifelines that are to be protected.	High	Director of FCOEM, FCLEPC, governing bodies	Ongoing	Faulkner County, Cities and local resources, FMA, PDM	Lifelines essential to maintain adequate response	Encourage assistance from all stakeholders	Faulkner County and participating cities	The County has received GIS in 2010.
MH-15 (Earthquake, Floods, Tornadoes, Winter Storms, Wildfires, Dam Failure)	Universities – Establish locations suitable for use as long-term shelters and plan for providing emergency power, climate control and ventilation, cots, food and potable water, linens and emergency medical supplies.	High	President of each University	ongoing	Faulkner County, schools and local resources PDM	Disaster Preparedness	Seeks to protect citizens and property	Faulkner County and schools	St. Joe is a designated Red Cross Shelter. The other schools also have structures that can be used for sheltering.
MH-16 (Earthquake, Floods, Thunderstorm, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure)	Identify and maintain outside water sources in neighborhoods (small ponds, cisterns, wells, pools, hydrants, etc.) for approved use during disasters.	High	FCOEM, FCLEPC, ADEM	Complete	PDM, Faulkner County and Cities	Continuation of water service essential for response and mitigation	Encourage assistance from non-profits	Faulkner County and participating cities	Fire Departments have maps of locations of these locations as a result from an ISO study. Some of these locations are maintained on a database at ADEQ.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
MH-17 (Earthquake, Floods, Thunderstorm, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Dam Failure)	The FCLEPC will encourage adoption of building codes to ensure safe construction.	High	FCOEM, FCLEPC, Planning and Zoning Directors	Ongoing	Faulkner County, Cities and local resources	Tornado and earthquake damage and loss of life important hazard	Safe rooms save lives	Faulkner County and participating cities	None
MH-18 (Earthquake, Floods, Thunderstorm, Tornadoes, Winter Storms, Wildfires, Dam Failure)	Faulkner County – Additional search and rescue equipment is needed such as skid for the helicopter, Fleeer system and search light; also 4 wheel drive all-terrain vehicles.	High	Director of FCOEM	Complete	Faulkner County and local resources PDM	First responders protect property and save lives	Seeks to protect citizens and property	Faulkner County	This equipment has been acquired.
MH-19 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Dam Failure, Extreme Heat)	Upgrade Sirens. Many areas have an inadequate number of sirens but most need new updated versions.	High	FCOEM, FCLEPC	Complete	Faulkner County, cities and local resources, ADEM, DHS	Save lives with quick response the disasters	Sirens are essential warning tools	Faulkner County and participating cities	Sirens have been upgraded in Vilonia (added 1), Mayflower (added 2), Guy (add 1), and Wooster (adding 2).
MH-20 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure, Extreme Heat)	Include mitigation awareness efforts in all FCLEPC meetings.	High	Director of FCOEM, FCLEPC, ADEM	Ongoing	Faulkner County, cities, school, PDM	Disaster Preparedness	Encourage assistance from non-profits	All participating jurisdictions	None



Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
MH-21 (Earthquake, Floods, Thunderstorm, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Dam Failure)	Increase road-clearing capabilities	High	Director of FCOEM, Mayors of each City	Ongoing- 1 yr.	Faulkner County, Cities and local resources PDM	Lessen or eliminate problems with emergency response and business interruptions	Seeks to protect citizens and property	Faulkner County and participating cities	Faulkner County has purchased necessary implements and equipment to accomplish this action for Faulkner County. Guy still needs snow clearing vehicles.
MH-22 (Tornado, High Winds, Earthquake)	Adopt manufactured home and portable building regulations to ensure use of tie-downs and anchoring in new buildings and existing mobile structures.	High	FCOEM, FCLEPC, ADEM, Governing Bodies	Ongoing	Faulkner County, Cities, schools and local resources	Lessen or eliminate damage from earthquakes and tornadoes	Seeks to protect citizens and property	All participating jurisdictions	All cities, besides Conway, have relative codes. The County requires anchors if the structure is being put in the floodplain. Schools and Universities follow the regulations for which they are located, so the 2 Universities would be part of Conway; and the Conway School District and St. Joseph Schools would be affected.
MH-23 (Earthquake, Floods, Thunderstorm, Tornadoes, Winter Storms,	Universities - Establish an emergency notification system capable of delivering immediately to the campus community any	Medium	FCOEM, FCLEPC, ADEM, University Presidents	Complete	Faulkner County, Schools and local resources	LEPCs are all involved in local mitigation planning; awareness of opportunities	Links Mitigation with preparedness	Faulkner County and schools	All schools have completed this and currently use this capability. The notifications

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
Wildfires, Dam Failure)	emergency messages or safety information.					important first step of mitigation			are sent via text, phone, or email.
MH-24 (Earthquake, Floods, Tornadoes, Winter Storms, Wildfires, , Dam Failure)	City of Conway - Additional rescue equipment is needed: heavy rescue, water rescue and saws and hand tools.	Medium	FCOEM, FCLEPC	Complete	Faulkner County, Conway and local resources, PDM	First responders protect property and life	Seeks to protect citizens and property	Faulkner County and City of Conway	Equipment has been acquired. Will continue to upgrade
MH-25 (Earthquake, Floods, Tornadoes, Winter Storms, Wildfires, Dam Failure, Extreme Heat)	City of Conway - Shelter equipment and supplies are needed for facilities designated as shelters.	Medium	FCOEM, Conway Mayor	Ongoing	Faulkner County, City of Conway and local resources PDM	Disaster Preparedness	Seeks to protect citizens and property	Faulkner County and City of Conway	FCOEM has a list of shelters which is maintained by the Red Cross.
MH-26 (Earthquake, Floods, Thunderstorm, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Dam Failure)	City of Conway- Haz-mat equipment is needed for spills and ruptures from chemical facilities and/or natural gas wells, as well as for monitoring these sorts of emergencies. This would benefit all areas in Faulkner County	Medium	FCOEM, FCLEPC, Conway Mayor	1 Year	Faulkner County, City of Conway and local resources, PDM	First responders protect property and life	Provides access for response and for mitigation activities	Faulkner County and City of Conway	The County increased its Hydrogen Sulfide monitoring capabilities. Some equipment has been made with purchases from a donation from Exxon Mobil to the County and Mayflower.
MH-27 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes,	Damascus – The City needs area to house Emergency Vehicles.	Medium	FCOEM, FCLEPC, Mayor of Damascus	1 Year	Faulkner County, City of Damascus and local resources, PDM	First responders protect property and life	Provides access for response and for mitigation activities	Faulkner County and City of Damascus	None

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
Winter Storms, Wildfires, Dam Failure)									
MH-28 (Earthquake, Floods, , Tornadoes, Winter Storms, Wildfires, Dam Failure)	Faulkner County – Second Chance Body Armor	Medium	FCOEM, FCLEPC	Complete	Faulkner County and local resources, PDM	First responders protect property and life	Provides access for response and for mitigation activities	Faulkner County	Faulkner County has acquired the Body Armour.
MH-29 (Earthquake, Floods, Tornadoes, Winter Storms, Wildfires, Dam Failure)	Universities – Identify routes and transportation methods for campus evacuation and relocation.	Medium	FCOEM, FCLEPC, ADEM	Complete	Faulkner County, schools and local resources	Disaster Preparedness	Seeks to protect citizens and save lives	Faulkner County and schools	The County and all schools have Disaster Recovery Plans that address these issues
MH-30 (Earthquake, Floods, Thunderstorm, Hail, High Wind, Lightning, Tornadoes, Winter Storms, Wildfires, Drought, Dam Failure)	Faulkner County – Two ACIC computers are needed for the command post. Update 911 communication terminals.	Medium	FCOEM, FCLEPC	Complete	Faulkner County and local resources, PDM	First responders protect property and life	Provides access for response and for mitigation activities	Faulkner County	The computers have been acquired.
MH-31 (Tornado, High Winds, Earthquake)	The FCLEPC will study efficacy of tornado warning sirens and continually monitor siren status.	Medium	Director of FCOEM, FCLEPC	Ongoing	Faulkner County, Cities and local resources	GIS best technology for risk identification and assessment	Current use by County of GIS information should be standardized	Faulkner County and participating cities	Tests are run for the sirens every Wednesday.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
MH-32 (Tornado, High Winds, Earthquake, Winter Storms)	Bury or otherwise protect electric and other utility lines.	Medium	FCLEPC, Mayors of each city	Ongoing	Faulkner County, Cities, Electric Cooperatives HMGP, PDM	Eliminate need to replace lines after tornado or severe winter weather	Seeks to protect citizens and property	Faulkner County and participating cities	UCA is currently burying utility lines along Donaghy Street. Conway Schools are burying lines in new buildings & high school campus.
SW-01	Ensure public facilities have severe weather action plans.	High	Director of FCOEM, FCLEPC, ADEM, City Mayors and University Presidents	Ongoing	Faulkner County, Cities and local resources PDM	Lessen or eliminate problems with emergency response and business interruptions	Plans before disaster lessen response time and protect life and property	Faulkner County and participating cities	FCOEM works with the governments to help develop these plans.
SW-02	Universities - Acquire adequate studded snow tires/chains for emergency and service vehicles and other equipment needed on campus for road clearing	High	FCOEM, University Presidents	2 years	Faulkner County, Cities and local resources PDM, DHS	Lessen or eliminate problems with emergency response	Seeks to protect citizens and property	Faulkner County and participating cities	UCA has purchased the equipment for its campus.
SW-03	Faulkner County – Studded tires for vehicles during ice storms.	High	Director of FCOEM	2 years	Faulkner County, Cities and local resources PDM, DHS	Lessen or eliminate problems with emergency response	Seeks to protect citizens and property	Faulkner County and participating Cities	Faulkner County has this capability now, but the Planning Team has decided this is not a necessary action item.
WF-01	There is a need to upgrade existing firefighting equipment including such things as chainsaws.	Very High	FCOEM, FCLEPC, all governing bodies	Ongoing	Faulkner County, Cities; PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property and improve risk assessment	Faulkner County and participating Cities	Each department has made purchases to update and/or upgrade its capabilities. However, there will be a need for upgrades in the future.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
WF-02	Work with Arkansas Forestry Commission to improve risk assessment by determining losses due to wildland fires in the County	Very High	FCOEM, AFC	2 years	Faulkner County, Cities and local resources PDM	Improves understanding of risk from wildland fires	Seeks to protect citizens and property and improve risk assessment	Faulkner County and participating Cities	Faulkner County has become a Firewise Community.
WF-03	Enact codes to require homeowners to clear dead vegetation which can fuel wildfires.	Very High	Director of FCOEM, FCLEPC	Ongoing	Faulkner County, Cities and local resources, PDM	Lessen or eliminate damage from wildland fires	Seeks to protect citizens and property	Faulkner County and participating Cities	Some, but not all, cities have enacted codes regarding high grassy areas, trash, and dead vegetation.
WF-04	Damascus – Fire Fighting Equipment for “Flammable Gases and Liquids”. With the Natural Gas Drilling operations, there are many gallons of fuels stored and transported in the area. Firefighters need Fire Fighting Apparatus with Foam Capabilities.	Very High	FCOEM, FCLEPC, Mayor of Damascus	Complete	Faulkner County, City of Damascus, Existing local resources; PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property	Faulkner County and participating Cities	Firefighters have since acquired the equipment
WF-05	Damascus- Pumper and Pumper/Tanker vehicles are needed to improve fire protections.	High	FCOEM, FCLEPC, Forestry Commission, Mayor of Damascus	Complete	Faulkner County, City of Damascus, local resources; PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property and improve risk assessment	Faulkner County, City of Damascus	Damascus has since acquired the needed vehicles.
WF-06	Universities – Train volunteers in firefighting techniques and acquire basic firefighting equipment.	High	FCOEM, FCLEPC, University Presidents	Ongoing	Faulkner County, schools, PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property and improve risk assessment	Faulkner County and schools	CERT Trainings are held on campuses where volunteers use a fire extinguisher to put out flames.

Action #	Actions	Priority Level	Responsible Agency and Title	Projected Timeline	Projected Resources	Rationale for Action	Contribution to Mitigation Objective	Responsible Jurisdiction	2014 Update Status
WF-07	Encourage formation of neighborhood wildfire safety coalitions.	High	FCOEM, FCLEPC, ADEM, all governing bodies	Ongoing	Faulkner County, Cities and local resources, FMA, PDM	Involves encouragement of participation at all public and private levels	Seeks to protect citizens and property	Faulkner County and participating Cities	None
WF-08	Encourage installation of smoke detectors fire extinguishers, and fire alarms.	High	Director of FCOEM, FCLEPC	1 year	Faulkner County, Cities, Schools; PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property and improve risk assessment	All participating jurisdictions	All jurisdictions currently have these in their facilities.
WF-09	City of Conway needs a tanker fire apparatus for firefighting and water supply during disasters in the absence of municipal water supply.	Medium	FCOEM, FCLEPC, Conway Mayor	Ongoing	Faulkner County, City of Conway, Existing local resources; PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property and improve risk assessment	Faulkner County and City of Conway	Faulkner County- 3 tankers have been upgraded. This has also helped lower the City's ISO rating. City of Conway still has a need.
WF-10	Mayflower – Needs to upgrade tanker truck	Medium	FCOEM, FCLEPC, Mayor of Mayflower	1 year	Faulkner County, City of Mayflower, Existing local resources; PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property and improve risk assessment	Faulkner County and City of Mayflower	None
WF-11	Mayflower – Needs an additional fire substation on Hwy. 89 North.	Medium	FCOEM, FCLEPC, Mayor of Mayflower	Complete	Faulkner County, City of Mayflower, Existing local resources; PDM, DHS, Forestry Commission	Lessen or eliminate damage from Wildfires	Seeks to protect citizens and property and improve risk assessment	Faulkner County and City of Mayflower	New station was finished in 2011.
WF-12	Join and maintain membership in Fire Wise program at firewise.org.	Medium	Director of FCOEM, FCLEPC, ADEM,	Ongoing	Faulkner County, Cities,	Lessen or eliminate	Seeks to protect	All participating jurisdictions	Faulkner County is Firewise, as well as Vilonia

<b>Action #</b>	<b>Actions</b>	<b>Priority Level</b>	<b>Responsible Agency and Title</b>	<b>Projected Timeline</b>	<b>Projected Resources</b>	<b>Rationale for Action</b>	<b>Contribution to Mitigation Objective</b>	<b>Responsible Jurisdiction</b>	<b>2014 Update Status</b>
			Arkansas Forestry Commission		Schools, Existing County and local resources	damage from wildland fires	citizens and property		and the community of Holland.

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## SECTION 6. PLAN MAINTENANCE PROCESS

### 6.1. Monitoring, Evaluating, and Updating the Plan

<p><i>IFR REQUIREMENT</i> 201.6(c)(4)(i):</p>	<p>[The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.</p>
<p><i>Explanation:</i></p>	<p>The local jurisdiction <b>shall</b> describe the how, when, and by whom the plan will be <b>monitored</b>. Monitoring may include periodic reports by agencies involved in implementing projects or activities; site visits, phone calls, and meetings conducted by the person responsible for overseeing the plan; and the preparation of an annual report that captures the highlights of the previously mentioned activities.</p> <p>The plan <b>shall</b> also include a description of how, when, and by whom the plan will be <b>evaluated</b>, and <i>should</i> include the criteria used to evaluate the plan. The evaluation <i>should</i> assess, among other things, whether:</p> <ul style="list-style-type: none"><li>▪ The goals and objectives address current and expected conditions.</li><li>▪ The nature, magnitude, and/or type of risks has changed.</li><li>▪ The current resources are appropriate for implementing the plan.</li><li>▪ There are implementation problems, such as technical, political, legal, or coordination issues with other agencies.</li><li>▪ The outcomes have occurred as expected.</li><li>▪ The agencies and other partners participated as originally proposed.</li></ul> <p>The plan <b>shall</b> describe how, when, and by whom the plan will be <b>updated</b>. The Rule requires that the plan be updated within five years from the date of FEMA approval. FEMA recommends that the plan be reviewed and updated on an annual basis to determine the effectiveness of programs, and to reflect changes in land development or programs that may affect mitigation priorities.</p>

FEMA regulations require a plan update within five years, Faulkner County has developed a method to ensure that monitoring, evaluation, and updating of the Faulkner County Hazard Mitigation Plan occurs annually. The County will form a Hazard Mitigation Plan Evaluation Sub-Committee of the existing Faulkner County Local Emergency Planning Committee (LEPC). The LEPC consists of approximately 50 members from fire service, health officials, emergency

management, law enforcement, community groups, transportation, emergency medical personnel, elected officials, and owners and operators of covered facilities. The Director of the Faulkner County Office of Emergency Management will be the initial Chair of the sub-committee. Hazard Mitigation Plan Evaluation Sub-Committee members will be responsible for monitoring and evaluating the progress of the mitigation strategies in the plan. The Sub-committee will monitor the plan by providing a mitigation planning update at the annual meeting. Each participating jurisdiction will bring updates for their area with them and present them to the committee. During the August 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 Faulkner County, as well as changes in State or Federal policy, and to ensure that they are addressing current and expected conditions. 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 (identified in Section 5) will report on the status of their projects and will evaluate which implementation processes worked well, any difficulties encountered, how coordination efforts were proceeding, and which strategies should be revised.

The public will be given opportunities to comment and participate in committee meetings at each step of evaluation and will be kept informed via newspaper announcements and posting of notices at the courthouses and city halls. Every effort will be made to maintain public participation during the monitoring and evaluation processes.

The Faulkner County Office of Emergency Management will then have three months to update and make changes to the plan 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, Faulkner County other plans that will be considered and integrated into the Faulkner County Hazard Mitigation Plan as they undergo their regular updates:

- Faulkner County Emergency Operations Plan
- Faulkner County LEPC All Hazards Plan

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

The Hazard Mitigation Plan Evaluation Sub-Committee of the Faulkner County LEPC, which meets quarterly, will provide a mechanism for ensuring that the actions identified in the plans are incorporated into ongoing County planning activities.

## 6.2. Incorporation into Existing Planning Mechanisms

<p><i>IFR REQUIREMENT</i> 201.6(c)(4)(ii):</p>	<p>[The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.</p>
<p><i>Explanation:</i></p>	<p>Jurisdictions <b>shall</b> indicate how mitigation recommendations will be incorporated into comprehensive plans, capital improvement plans, zoning and building codes, site reviews, permitting, job descriptions, staff training, and other planning tools, where such tools are the appropriate vehicles for implementation.</p> <p>Communities that do not have a comprehensive plan, or other similar planning mechanisms, <i>should</i> explain how the mitigation recommendations would be implemented. Further, for certain mitigation actions that may use other means of implementation, these other tools <i>should</i> be described.</p>

After the County officially adopts the Hazard Mitigation Plan, the Planning Board will be responsible for ensuring that mitigation goals, objectives, and strategies are incorporated in all future County planning activities.

After adoption of the Mitigation Plan, the County will require that participating jurisdictions address hazards in their comprehensive plans and land use regulations. The Faulkner County Planning Department will conduct periodic reviews of the jurisdiction’s comprehensive plans and land use policies, analyze any plan amendments, and provide technical assistance to other local municipalities in implementing these requirements.

All participants will follow local laws and guidelines when incorporating the Hazard Mitigation Plan in their existing plans. Any participant without previous plans will be encouraged to develop zoning plans and other land ordinances. Participants incorporating the Faulkner County Hazard Mitigation Plan into their existing plans will set up meetings to discuss which areas pertain to them. After these discussions, each incorporating mechanism will follow their local laws or guidelines necessary for implementation through open forum public meetings. After each update of the Faulkner County Hazard Mitigation Plan, participating jurisdictions will be informed of the changes so they can reflect these changes in their plans also. More specifically, the Faulkner County Hazard Mitigation Plan will be incorporated into the State of Arkansas Hazard Mitigation Plan. The risk assessment and mitigation strategies will be incorporated into the State Hazard Mitigation Plan during their updating process every three years. Faulkner County will be incorporating the Hazard Mitigation Plan into the County Emergency Operations Plan and county land use ordinances and/or plans by following the laws set forth by the county government.

Within one year of the formal adoption of the Faulkner County Hazard Mitigation Plan, the policies listed above will be incorporated into the process of existing planning mechanisms.

### 6.3. Continued Public Involvement

<i>IFR REQUIREMENT</i> 201.6(c)(4)(iii):	[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.
<i>Explanation:</i>	The plan <b>shall</b> describe what opportunities the broader public (i.e., stakeholders who are not part of the planning team) would have during the plan’s periodic review to comment on the progress made to date and the proposed plan revisions. Plans <i>should</i> describe the mechanisms for keeping the public involved (e.g., holding strategic meetings, posting the proposed changes to the plan on the Web, etc.).

Faulkner County is dedicated to involving the public directly in the continual reshaping and updating of the Faulkner 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 plan will be catalogued and kept on hand at all of the public libraries in Faulkner County. Contained in the plan are the address, phone number, and e-mail of the Director of the Faulkner County Office of Emergency Management, the primary point of contact for the plan. In addition, copies of the plan and any proposed changes will be posted on the Faulkner County Government Website. This site will also contain an e-mail address and phone number to which people can direct their comments or concerns.

A public announcement inviting all interested parties will be made prior to each quarterly LEPC meeting, including the August 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 Faulkner County Office of Emergency Management and the Faulkner 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.

### 6.4 Plan Review, Evaluation and Implementation

<i>IFR REQUIREMENT</i> 201.6(d)(3)	A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit for approval within 5 years in order to continue to be eligible for mitigation project grant funding.
<i>Explanation:</i>	In order to continue to be an effective representation of the jurisdiction’s overall strategy for reducing its risks from natural hazards, the mitigation plan must reflect <u>current</u> conditions. This will require an assessment of the current development patterns and development pressures as well as an evaluation of any new

hazard or risk information. The plan update is an opportunity for the jurisdiction to assess its previous goals and action plan, evaluation progress in implementing hazard mitigation actions, and adjust its actions to address the current realities.

Where conditions of growth and revisions in priorities may have changed very little in a community, much of the text in the updated plan may be unchanged. This is acceptable as long as it still fits the priorities of their community, and it reflects current conditions. The key for plan readers to recognize a good plan update is documentation of the community's progress or changes in their hazard mitigation program, along with the community's continued engagement in the mitigation planning process.

The 2015 Hazard Mitigation Plan Update allows for all the new FEMA requirements to be incorporated and ensure greater multi-jurisdictional coordination for mitigation planning efforts. The Hazard Mitigation Plan Update was developed to assess the ongoing natural hazard mitigation activities in Faulkner County, to evaluate additional mitigation actions and projects, and to outline a strategy for better implementation of mitigation actions and projects over the next five years. Formal adoption and implementation of the plan will provide many benefits to Faulkner County, its residents, and the business community. By identifying potential hazard risks and associated hazard mitigation actions in advance of a disaster, Faulkner County and participating jurisdictions will be in more advantageous position to obtain pre- and post-disaster funding.

Since the previous version of this plan was completed, the school districts of Vilonia, Conway, and Mayflower, as well as the city of Mayflower has implemented this plan by using it as a reference of how to better protect their citizens during a tornado event. Safe room grants funds were applied for, and resulted in safe room construction. The remaining jurisdictions that were not able to implement actions, will seek to use this version of the plan as a reference for identified projects and initiatives for mitigation.

The Planning Team's priorities have remained the same from the original plan development to this update: 1) Reduce the loss of life and decrease property losses in Faulkner County due to natural disasters, and 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.

## **SECTION 7. APPENDICES**

Appendix I: Glossary

Appendix II: Acronyms

Appendix III: Floodplain Maps

Appendix IV: Wildfire Maps

## Glossary

**CONSEQUENCES** - the damages (full or partial), injuries, and losses of life, property, environment, and business, that can be quantified by some unit of measure, often in economic or financial terms.

**DEMOGRAPHICS** – the characteristics of human populations and population segments.

**DROUGHT** - a normal, reoccurring feature of climate that originates from a lack of precipitation over an extended period of time, usually a season or more. Droughts can occur in virtually all climates. The precise definition depends on the region, but the definition is often determined by comparing recent precipitation to a 30-year average. In some areas, precipitation that is only 75% of a 30-year average is considered a drought.

**EARTHQUAKE** - a natural event that involves the moving or shaking of the earth's crust and is believed to be caused by the release of stresses accumulated as a result of rock ruptures along opposing fault planes in the earth's outer crust.

**EXPANSIVE SOIL** - soils or soft bedrock that increase in volume as they get wet and shrink as they dry out. They are also commonly known as bentonite, swelling, or montmorillinitic soils.

**EXPOSURE** - the number, types, qualities, and monetary values of property or infrastructure and life that may be subject to an undesirable or injurious hazard event).

**FLOOD** – the overflow of excess water from a body of water (i.e., river, stream, lake, reservoir, etc.) onto land that is normally dry.

**FLASH FLOOD** - a flood caused by heavy precipitation or snowmelt over a limited watershed (typically less than 50 square miles), crests in eight hours or less, and generally occurs in hilly terrain.

**FLOOD CONTROL** - keeping flood waters away from specific developments or populated areas by the construction of various structural mitigation measures (i.e., levees, floodwalls).

**FLOODPLAIN** - any normally dry land area that is susceptible to being inundated by water from any natural source.

**FLOODPLAIN MANAGEMENT** - a comprehensive approach to reduction of the effects of floods, preservation and enhancement of natural values, and provision from optimal use of land and water resources within the floodplain. The goal is to strike a balance between the values obtainable from the use of floodplains and the potential losses to individuals and society arising from such use.

**FLOODPROOFING** - modifying a building to reduce or eliminate damages from flood waters. Dry floodproofing involves use of sealants, barriers, and elevation, as techniques of keeping water out of a building. Wet floodproofing is to modify a building with the use of water-resistant materials and allowing the water to flow through the building. Wet floodproofing is not appropriate for residential structures.

**FLOODWAY** - the channel of a watercourse and those portions of the adjoining floodplain required to provide the passage of the 1% chance flood.

**HAZARD** - event or physical condition that has the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, or other types of harm or loss.

**HAZARD IDENTIFICATION** - the process of defining and describing a hazard, including its physical characteristics, magnitude and severity, probability and frequency, causative factors, and locations/areas affected.

**HAZARD MITIGATION** - a plan to alleviate by softening and making less severe the effect of a disaster event or emergency and of future disasters in the affected areas, including reduction or avoidance.

**HAZARD MITIGATION PLAN** – the plan resulting from a systematic evaluation of the nature and extent of vulnerability to the effects of natural and man-made hazards present, and includes the actions needed to minimize future vulnerability to those hazards.

**HAZARDOUS MATERIAL** – any solid, liquid, or gas that, because of its quantity, concentration, physical, chemical, toxicological, or persistence properties, may cause acute to chronic impacts on human health or the environment.

**HEAVY SNOW** - either a snowfall accumulating to 4 inches in depth in 12 hours or less, or snowfall accumulation to 6 inches or more in depth in 24 hours or less. In states such as Arkansas, where lesser accumulations can cause significant impacts, lower thresholds may be used.

**ICE STORM** - occasions when damaging accumulations of ice are expected during freezing rain situations.

**LANDSLIDE** – an event that encompasses many phenomena involving lateral and downslope movement of earth materials such as rock, soil, and/or artificial fill.

**MITIGATION** - sustained action taken to reduce or eliminate long-term risk to people and property from hazards and their effects. Mitigation distinguishes actions that have a long-term impact from those that are more closely associated with preparedness for, immediate response to, and short-term recovery from a specific event.

**NON-STRUCTURAL MITIGATION MEASURES** - those measures employed to modify the exposure of people and property to hazards, i.e., floodproofing, land use planning, zoning ordinances, NFIP program, and Public Information.

**1% CHANCE FLOOD** - A flood having a 1% chance of being equaled or exceeded in any given year; often called the 100-year flood.

**PROBABILITY AND FREQUENCY** - measure of how often an event is likely to occur. Frequency can be expressed as the average time between occurrences or exceedances (non-exceedances) of an event or the percent chance or probability of the event occurring or being exceeded (not exceeded) in a given year or a longer time period.

**PROJECT** - a mitigation measure or action proposed to reduce the risk of future damage, hardship, loss or suffering from disasters.



**RISK** - potential losses associated with a hazard, defined in terms of expected probability, and frequency, exposure, and consequences.

**RISK ASSESSMENT** - a process or method for evaluation risk associated with a specific hazard and defined in terms of probability and frequency of occurrence, magnitude and severity, exposure, and consequences.

**RIVERINE** - relating to, formed by, or resembling a river (including tributaries), streams, brooks, etc.

**RIVERINE FLOOD** - a flood caused by precipitation, runoff or snowmelt over a relatively large watershed causing flooding over wide areas and cresting in over 8 hours.

**SEVERE WINTER WEATHER** – severe weather that may include extreme cold, heavy snowfall, ice storms, winter storms, and/or strong winds.

**STRAIGHT-LINE WINDS** - Straight-line wind is any wind that is not associated with rotation. This term is used mainly to differentiate thunderstorm winds from tornadic winds. Winds of 58 mph (50 knots) or more are considered severe.

**STRUCTURAL MITIGATION MEASURES** - those physical or engineering measures employed to modify the way a hazard will impact people, e.g., dams, dikes, levees, channel enlargements, etc.

**TORNADO** - a violently rotating column of air that descends from a thunderstorm cloud system and is in contact with the ground.

**WINTER STORM** - a combination of severe winter weather types occurring over a wide area.

**WILDFIRE** - an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

**WILDLAND FIRE** - a wildfire in an area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities.

**WILDLAND-URBAN INTERFACE FIRE** - a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

### Acronyms

ADEM -	Arkansas Department of Emergency Management
ADEQ -	Arkansas Department of Environmental Quality
ADH -	Arkansas Department of Health
AFC -	Arkansas Forestry Commission
AGC -	Arkansas Geological Commission
AGF&C -	Arkansas Game and Fish Commission
AHTD -	Arkansas Highway and Transportation Department
AIDC -	Arkansas Industrial Development Commission
AMHC -	Arkansas Manufactured Home Commission
ANRC -	Arkansas Natural Resources Commission
ARC -	American Red Cross
ASWCC -	Arkansas Soil and Water Conservation Commission
BFE -	Base Flood Elevation
CAW -	Central Arkansas Water
CERI -	Center for Earthquake Resources and Information
CDL -	Community Disaster Loan
CDBG -	Community Development Block Grant
CERT -	Community Emergency Response Team
CFS -	Cubic Feet Per Second
CRS -	Community Rating System
CTP -	Cooperating Technical Partners
CUSEC -	Central United States Earthquake Consortium
EOP-	Emergency Operations Plan
EPA -	Environmental Protection Agency
FCLEPC -	Faulkner County Local Emergency Planning Committee
FCMPT -	Faulkner County Mitigation Planning Team
FCOEM -	Faulkner County Office of Emergency Management
FEMA -	Federal Emergency Management Agency
FHBM -	Flood Hazard Boundary Maps
FIRM -	Flood Insurance Rate Map
FIS -	Flood Insurance Study
FMA -	Flood Mitigation Assistance

GIS -	Geographic Information System
HAZMAT -	Hazardous Materials
HMGP -	Hazard Mitigation Grant Program
LEPC -	Local Emergency Planning Committee
NCDC -	National Climatic Data Center
NFIP -	National Flood Insurance Program
NIMS -	National Incident Management System
NMSZ -	New Madrid Seismic Zone
NOAA -	National Oceanographic and Atmospheric Administration
NRCS -	Natural Resource Conservation Service
NSSL -	National Severe Storms Laboratory
NWS -	National Weather Service
OEM -	Office of Emergency Management
OSHA -	Occupational Safety and Health Administration
PDM -	Pre-Disaster Mitigation
PGA -	Peak Ground Acceleration
POC -	Point of Contact
SBDC -	Small Business Development Center
SHELDUS -	Spatial Hazard Events and Losses Database for the United States
SFHA -	Special Flood Hazard Area
STAPLEE -	Social, Technical, Administrative, Political, Legal, Economic, Environmental
STATSGO -	State Soil Geographic
UALR -	University of Arkansas at Little Rock
USACOE -	U.S. Army Corps of Engineers
USDA-	United States Department of Agriculture
USEPA -	United States Environmental Protection Agency
USGS -	United States Geological Survey
VOAD -	Volunteers Active in Disasters
WUI -	Wildland-Urban Interface

