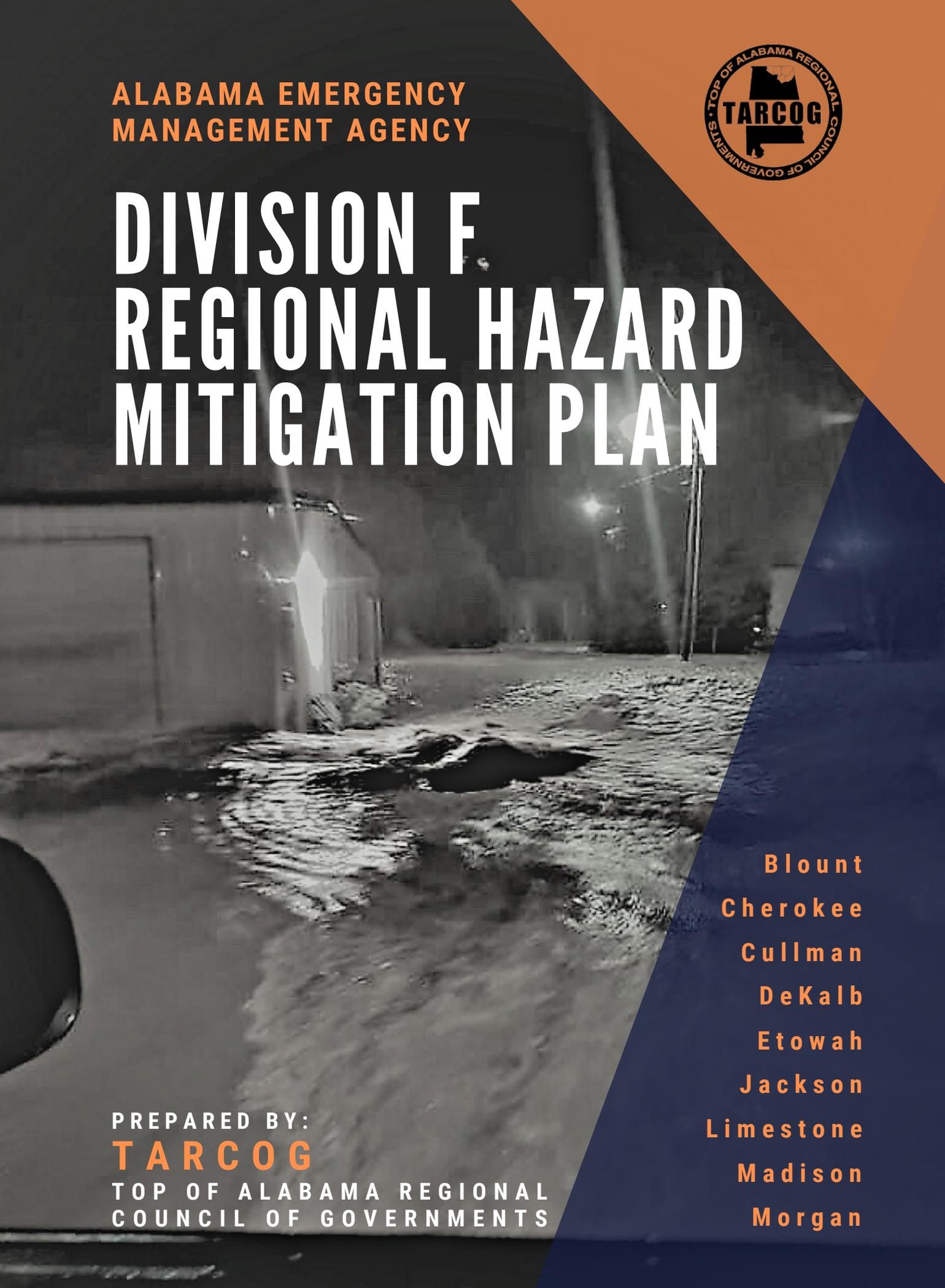


**ALABAMA EMERGENCY
MANAGEMENT AGENCY**



DIVISION F REGIONAL HAZARD MITIGATION PLAN



PREPARED BY:

TARCOG

TOP OF ALABAMA REGIONAL
COUNCIL OF GOVERNMENTS

**Blount
Cherokee
Cullman
DeKalb
Etowah
Jackson
Limestone
Madison
Morgan**

Alabama EMA Division F Regional Hazard Mitigation Plan

BLOUNT | CHEROKEE | CULLMAN | DEKALB
ETOWAH | JACKSON | LIMESTONE | MADISON | MORGAN



PREPARED BY:

TOP OF ALABAMA REGIONAL COUNCIL OF GOVERNMENTS (TARCOG)

PLAN APPROVED
PHASE I | MARCH 17, 2021 - PHASE II | JUNE 8, 2022

TABLE OF CONTENTS

Section 1. Hazard Mitigation Plan Introduction

1.1 Plan Scope	1-1
1.2 Authority	1-1
1.3 Funding	1-1
1.4 Purpose	1-3
1.5 Plan Layout	1-3

Section 2. Regional Profile

2.1 Blount County Profile	2-3
2.2 Cherokee County Profile	2-9
2.3 Cullman County Profile	2-15
2.4 DeKalb County Profile	2-21
2.5 Etowah County Profile	2-27
2.6 Jackson County Profile	2-33
2.7 Limestone County Profile	2-39
2.8 Madison County Profile	2-45
2.9 Morgan County Profile	2-51
2.10 Division F Regional Snapshot	2-57

Section 3. Planning Process

3.1 Hazard Mitigation Planning Process	3-1
3.2 Multi-Jurisdictional Planning Participation	3-4
3.3 Public and Other Stakeholder Involvement	3-9
3.4 Integration with Existing Plans	3-10
3.5 Multi-Jurisdictional Plan Adoption	3-11

Section 4. Hazard Profiles

4.1 Natural Hazards Overview	4-2
4.2 Hazard Profiles Overview	4-2
4.3 Federally-Declared Disasters	4-3
4.4 Drought & Excessive Heat Profile	4-9
4.5 Earthquakes Profile	4-16
4.6 Flooding Profile	4-26
4.7 Dam/Levee Failure Profile	4-73
4.8 High Wind Events Profile	4-92
4.9 Winter Storms/Winter Weather	4-110
4.10 Wildfires	4-124

Section 4. Hazard Profiles

4.11 Hail	4-133
4.12 Lightning	4-145
4.13 Land Subsidence + Sinkholes	4-159
4.14 Landslides	4-173

Section 5. Vulnerability

5.1 Jurisdictional Vulnerability Overview - Blount	5-2
5.2 Jurisdictional Vulnerability Overview - Cherokee	5-22
5.3 Jurisdictional Vulnerability Overview - Cullman	5-34
5.4 Jurisdictional Vulnerability Overview - DeKalb	5-58
5.5 Jurisdictional Vulnerability Overview - Etowah	5-81
5.6 Jurisdictional Vulnerability Overview - Jackson	5-104
5.7 Jurisdictional Vulnerability Overview - Limestone	5-121
5.8 Jurisdictional Vulnerability Overview - Madison	5-140
5.9 Jurisdictional Vulnerability Overview - Morgan	5-154

Section 6. Plan Maintenance Process

6.1 Mitigation Planning Process	6-2
6.2 Capabilities Assessment for Local Jurisdictions	6-2
6.3 Regional Mitigation Goals	6-10
6.4 Regional Mitigation Strategies	6-10
6.5 Jurisdictional Mitigation Action Plans	6-13
Councils of Government Mitigation Actions	6-15
Blount County Mitigation Actions	6-136
Cherokee County Mitigation Actions	6-19
Cullman County Mitigation Actions	6-33
DeKalb County Mitigation Actions	6-58
Etowah County Mitigation Actions	6-96
Jackson County Mitigation Actions	6-220
Limestone County Mitigation Actions	6-338
Madison County Mitigation Actions	6-356
Morgan County Mitigation Actions	6-413

Section 7. Plan Maintenance Process

7.1 Phase II Division F Regional Hazard Mitigation Plan	7-2
7.2 Hazard Mitigation Monitoring, Evaluation, and Update Process	7-3
7.3 Public Awareness and Participation	7-4

Appendices

Section 1 - Background + Introduction

SECTION 1 | BACKGROUND & INTRODUCTION

1.1 Introduction & Plan Scope

The Division F Regional Hazard Mitigation Plan details the multitude of hazards that impact the Alabama Emergency Management Agency (AEMA) Division F area. There are **seven** AEMA emergency management divisions in the State of Alabama (Figure 1.1). AEMA Division F spans the North-Central and Northeastern sector of the State. This area includes *Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, Marshall, and Morgan Counties* and over **100** jurisdictions within those counties including local municipalities, utility providers, school districts, institutions of higher education, and other participating stakeholders (Figures 1.2, 1.2- A).

The Division F regional hazard mitigation planning process is being conducted in two phases. (Figure 1.3) The first phase includes a detailed update of hazard information for Cherokee, Cullman, DeKalb, and Etowah Counties. The second phase includes the updates of Blount, Jackson, Limestone, Madison, and Morgan Counties and culminates in a comprehensive regional hazard mitigation plan for the Division F region. While Marshall County is also a part of AEMA's Division F, it was not involved in this planning process. Marshall County recently completed an extensive county hazard mitigation plan update; therefore, it was determined that Marshall County did not need to be included in the regional plan until the plan's next update in 2025.

Each of the nine counties participating in this plan have an existing multi-jurisdictional hazard mitigation plan. This Plan updates, consolidates, and coordinates information from those existing plans and documents the update process and incorporation of regional hazard mitigation objectives across the Division F region. AEMA Division F has a diversity of economic and physical development, but many of the identified hazards have similar impacts throughout the Division F region. A regionally focused hazard mitigation plan encapsulates these similarities in risk and vulnerability impact and enables regional stakeholders to assess and coordinate mitigation techniques for these related impacts across jurisdictional boundaries.

This Plan fulfills the requirements set forth by the Disaster Mitigation Act of 2000 (DMA 2000). *DMA 2000* requires counties and local jurisdictions to formulate a hazard mitigation plan to be eligible for mitigation grants made available by the Federal Emergency Management Agency (FEMA).

1.2 Legal Authority

The authority for this Regional Hazard Mitigation Plan lies within the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). Section 409 of the Stafford Act (Public Law 93-228, as amended), Title 44 Code of Federal Regulations, as amended by Part 201 of the Disaster Mitigation Act of 2000, requires that all state and local governments develop a hazard mitigation plan as a condition of receiving federal disaster assistance. These plans should be approved by FEMA and updated every five years.

1.3 Funding

Phase I of the Division F Regional Hazard Mitigation Plan was completed with FEMA funding through the Hazard Mitigation Grant Program (HMGP), under Disaster Recovery Declaration 4406 (DR-4406). Local matching funds were provided by participating County Emergency Management Agency (EMA) staff and other jurisdictional participants through in-kind contributions.

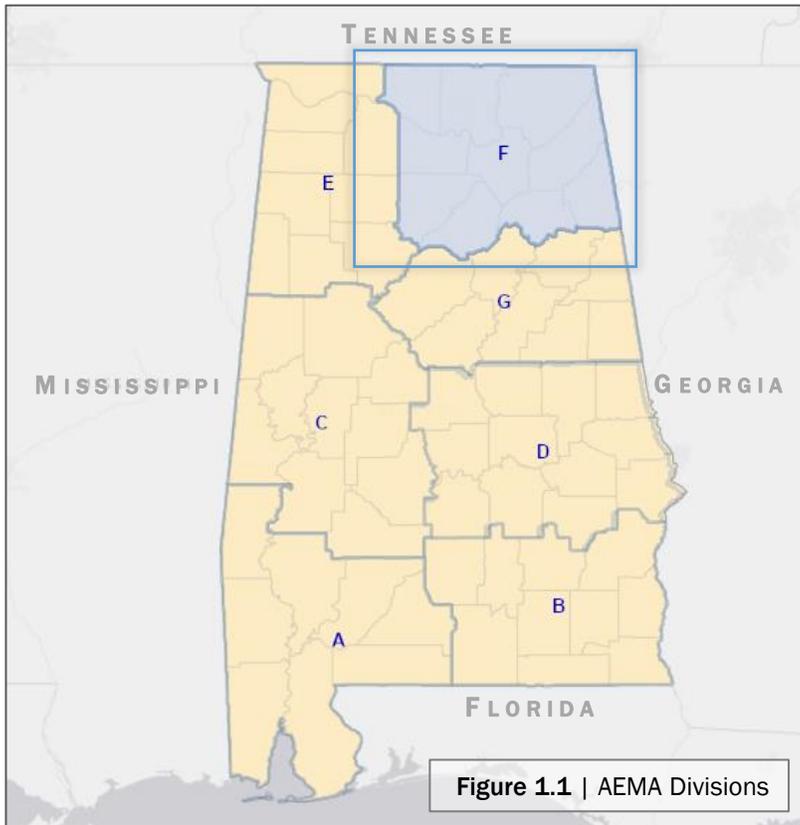


Figure 1.1 | AEMA Divisions

ALABAMA EMERGENCY MANAGEMENT AGENCY (AEMA) DIVISIONS

For the purposes of emergency management, the state of Alabama is divided into seven geographical divisions, ranging from eight to twelve counties, respectively. The Emergency Management Divisions provide the structure for coordinating State and Federal multi-agency for catastrophic and non-catastrophic disasters or emergencies. Emergency Management Divisions provide the structure for coordinating State and Federal multi-agency for catastrophic and non-catastrophic disasters or emergencies. Emergency Support Function (ESF) Coordinators provide the mechanisms for interagency coordination during all phases of incident management. Some departments and agencies provide resources for response, support, and program implementation during the early state of an event, while others are more prominent in the recovery phase. The Divisions represent the operational response structure for the State.

Source: Alabama Emergency Management Agency – Alabama EMA Divisions

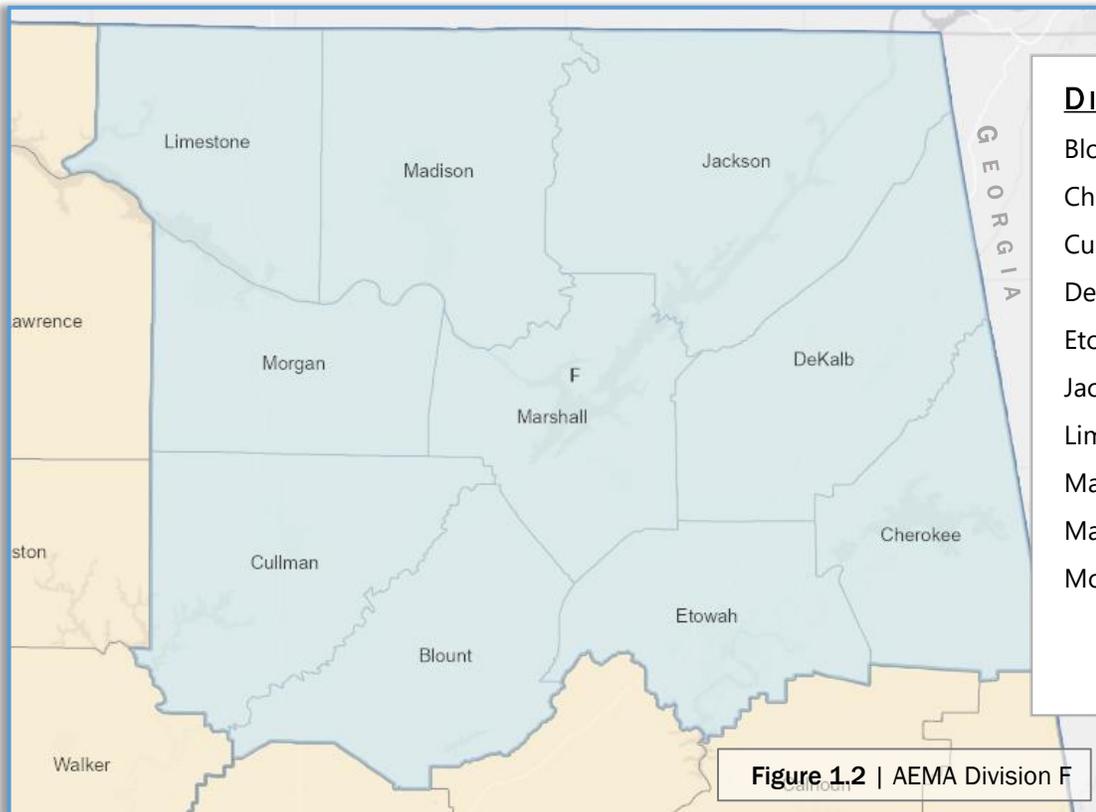
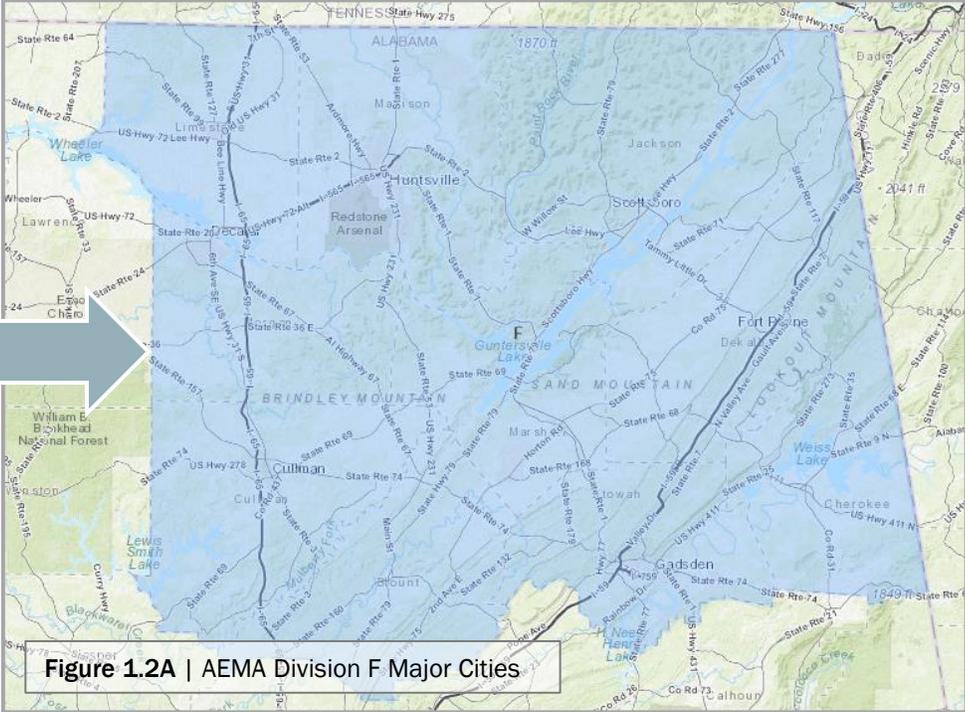


Figure 1.2 | AEMA Division F

<u>DIVISION F POPULATION</u>	
Blount County:	59,134
Cherokee County:	24,971
Cullman County:	87,866
DeKalb County:	71,608
Etowah County:	103,436
Jackson County:	52,579
Limestone County:	103,570
Madison County:	388,153
Marshall County:	97,712
Morgan County:	123,122
ESTIMATED TOTAL (2020):	1,112,151

MAJOR CITIES POPULATION (2020)	
Albertville:	22,836
Athens:	25,406
Boaz:	10,107
Centre:	3,587
Cullman:	18,213
Decatur:	57,938
Fort Payne:	14,877
Gadsden:	33,945
Guntersville:	8,553
Huntsville:	215,006
Madison:	56,933
Oneonta:	6,938
Scottsboro:	15,578



1.4 Purpose

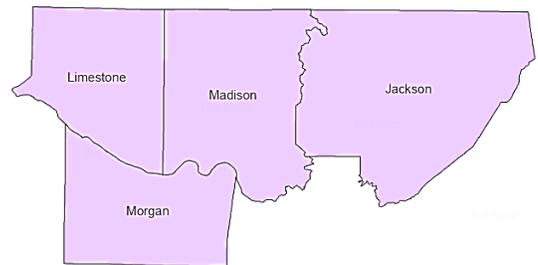
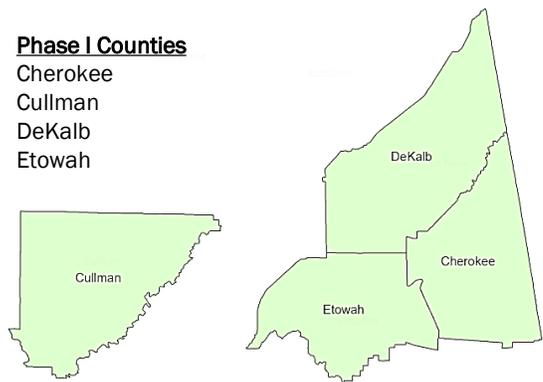
The Division F Regional Hazard Mitigation Plan evaluates and identifies all prioritized hazards which may affect AEMA Division F. The Plan presents mitigation strategies that address the identified hazards for each participating jurisdiction. This Plan provides the foundation upon which participating jurisdictions in the Division F region can develop and implement further mitigation efforts to protect the welfare of residents by achieving a safer environment for its residents.

1.5 Plan Layout

The contents of each section of the Plan are as follows: **Section 2** provides regional profiles of each Division F county. **Section 3** discusses the planning process including jurisdiction participation and public involvement. **Section 4** comprehensively analyzes the natural hazards that impact the Division F Region. **Section 5** breaks down the risks and vulnerabilities associated with each identified natural hazard. **Section 6** displays the mitigation planning process including regional goals and jurisdictional-specific actions. **Section 7** discusses the plan maintenance process and **Section 8** includes relevant attachments and appendices.

Phase I Counties

- Cherokee
- Cullman
- DeKalb
- Etowah



Phase II Counties

- Blount
- Jackson
- Limestone
- Madison
- Morgan

Figure 1.3 | Division F Subregion I (Green) and Subregion II (Purple)

Section 2 - Regional Profiles

SECTION 2 | REGIONAL PROFILES

2.1 Blount County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

2.2 Cherokee County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

2.3 Cullman County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

2.4 DeKalb County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

2.5 Etowah County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

SECTION 2 | REGIONAL PROFILES

2.6 Jackson County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

2.7 Limestone County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

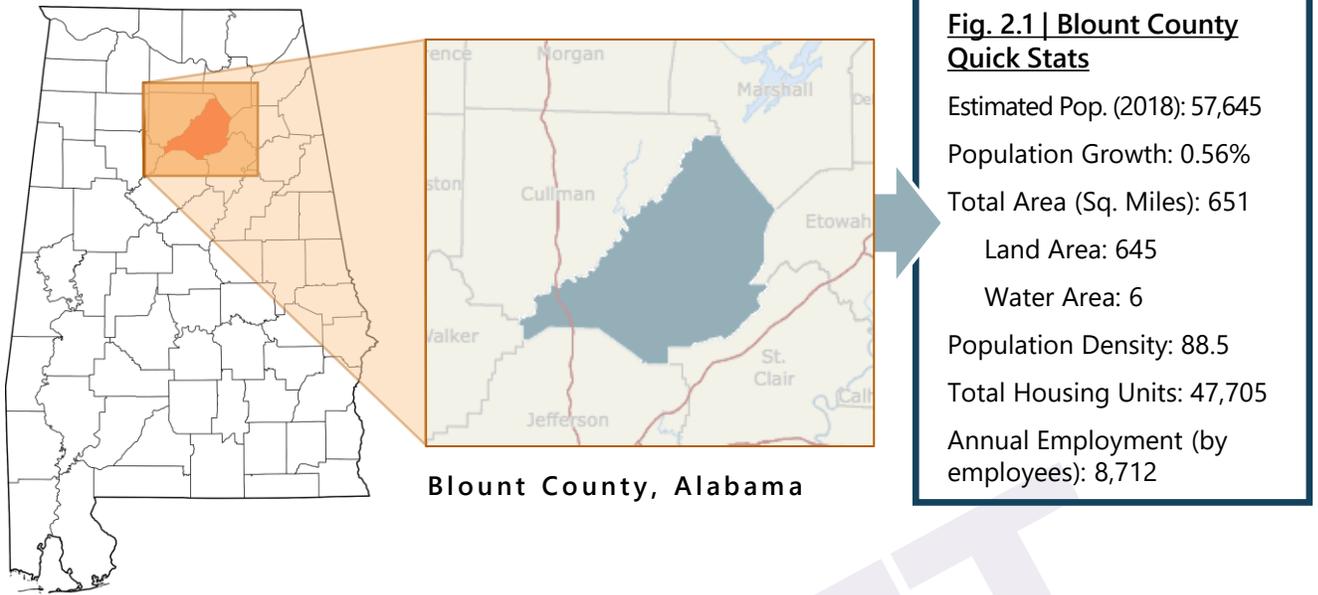
2.8 Madison County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

2.9 Morgan County Profile

- General Characteristics (Location, Land Mass, Municipalities, Local Roads, Utilities)
- General Physiography
- Growth Trends (Population, Employment, Unemployment, Labor Force)
- Business & Industry (Major Employers, Major Manufacturers)
- Housing (Total Housing, Year Built, Structure)

Section 2.1 | Blount County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Blount County is in the north-central portion of Alabama in an area known as the mineral region. The counties of Marshall, Etowah, and St. Clair lay to the northeast and east, Jefferson County is to the south, and to the west and northwest are Walker and Cullman Counties. The County has **645** square miles of land area and approximately **6** square miles of water, totaling **651** square miles. Current figures estimate there are **89** persons per square mile. Blount County is home to **11** municipalities: the Town of Allgood; the Town of Blountsville; the Town of Cleveland; the Town of Hayden; the town of Highland Lake; the Town of Locust Fork; the Town of Nectar; the City of Oneonta; the Town of Rosa; the town of Snead; and the Town of Susan Moore. Other municipalities that partially lie within Blount County include the Town of Altoona; the Town of County Line; the Town of Garden City; and the City of Warrior.

Interstate 65 connecting Chicago, Illinois and Mobile, Alabama runs through the extreme western tip of the county near the community of Smoke Rise. U.S. Highways 31, 231, and 278 cross at various locations. State Highways 79 and 75 run lengthwise through the county in a north/south direction. An extensive county road system serves the unincorporated areas. Six freight carriers operate from various locations. Rail transportation is provided by CSX Transportation and Cheney Railroad. Robins Field in Oneonta, containing a lighted, 4,500-foot runway, is the only public airport. Birmingham International Airport, located approximately 35 miles away, offer direct flights to major cities.

General Physiography

All of Blount County is in the Cumberland Plateau mountain range. Due to its location in the foothills of the Appalachians, topographical and therefore hydrological features are oriented in a southwest to northeast direction. The southeastern one-third of the county contains the highest elevations. Most of the county is drained by Mulberry Fork and Locust Fork, which later combine to form the Black Warrior River. The dominant variety of trees in Blount County forests is the oak pine, a fast-growing pine tree, generally harvested for lumber.

Source: 2016 Blount County, Alabama Multi-Hazard Mitigation Plan

Section 2.4 | Blount County, Alabama

Growth Trends

Population

Blount County’s population has increased **0.56%** since 2010 according to 2010 Decennial Census data and 2018 ACS 5-Year Estimates. As shown in Table 2.2 below, the Town of Hayden experienced the most population growth, with an estimated increase of **181.9%** since 2010. Table 2.3 depicts how the County’s overall population is expected to increase by **8.3%** by 2040, a gain of approximately **4,773** persons.

Table 2.2 | Blount County Jurisdiction Population 2000 - 2010 and 2018

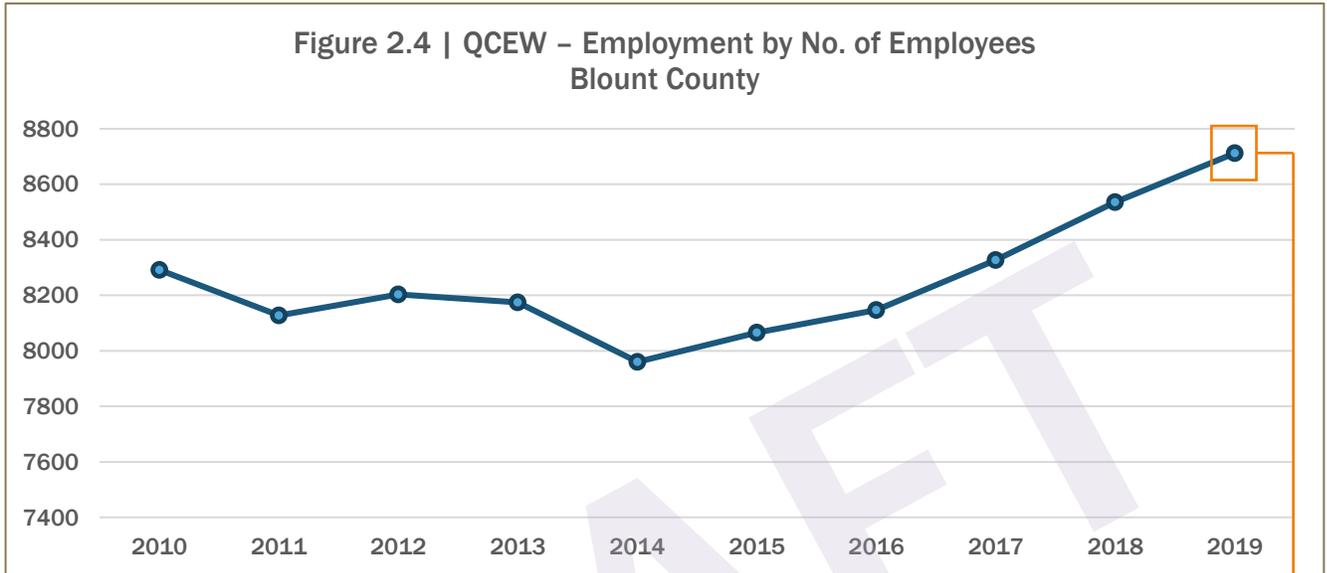
Jursidiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Blount County	51,024	57,322	57,645	0.56
Allgood	629	622	674	8.36
Blountsville	1,767	1,684	1,838	9.14
Cleveland	1,241	1,303	1,167	-10.44
Hayden	470	444	1,252	181.98
Highland Lake	408	412	360	-12.62
Locust Fork	1,016	1,186	1,631	37.52
Nectar	372	345	330	-4.35
Oneonta	5,576	6,567	6,575	0.12
Rosa	313	316	400	26.58
Snead	748	835	702	-15.93
Susan Moore	712	763	700	-8.26
Incorporated Area Pop.	13,252	14,477	14,929	3.12
Unincorporated Area Pop	37,772	42,845	42,716	-0.30

Table 2.3 | Division F Regional Population 2000 - 2010 and Projections 2020 - 2040 (By County)

								2018 Series	
	Census	Census						Change 2010 - 2040	
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Employment + Unemployment

The U.S. Bureau of Labor Statistics (BLS) reported that Blount’s employment increased by **1.3%** since 2009. By 2014, the County’s workforce declined to its lowest point in the 10-year study period (7,960 employees). Growth from there steadily increased over the next five years, growing by **9.4%** or 752 employees.



	Labor Force	Employment	Unemployment	Rate Unemployment (%)
Alabama	2,195,843	2,030,073	165,770	6.6
Blount County	23,046	21,538	1,508	4.3

Total Employees:
8,712 (P)*
 Number of Establishments:
787 (P)
 Average Annual Pay:
\$35,853 (P)

The labor force participation rate for the working age population in Blount County was **48.6%** in 2018. The most active age groups in the County’s labor force were persons aged 25- to 29- years old. This cohort is followed by the 35- to 44-year-old population, with an estimated participation rate of **71.9%**. The area’s unemployment rate in 2018 was **4.1%**, Unemployment increased as high as **9.1%** by April 2020 as the COVID-19 virus devastated communities across the nation.

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed September 2020.

Section 2.1 | Blount County, Alabama

Business + Industry

Tables 2.6 lists Blount County’s major employers. According to this data, manufacturing and health care services are the major services the county contributes to the Division F region. St. Vincent’s Blount, the only hospital in Blount County, is licensed for **25** beds. Services include med/surg and ICU units, a 24/7 emergency room, and inpatient and outpatient surgical services, including a GI lab. St. Vincent’s Blount also has transitional care, infusion therapy, a sleep disorders center, and a seniors’ day program for individuals coping with behavioral concerns.

Table 2.6 Major Employers - Blount County, Alabama		
Name	Product	No. of Employees
Tyson Foods, Inc.	Manufacturing, Food/Chicken Processing	650
Blount County Commission	Government, County Administration	221
St. Vincent's Blount (Blount only)	Health Care Services, Hospital	220
Blount County Commission	Administration	215
Oneonta City Schools	Government, Public Education	140
Diversicare Healthcare Services In	Health Care Services, Nursing Homes	120
TLC Nursing Home	Health Care Services, Nursing Homes	120
OTELCO	Telecommunications, Wired Telecommunications Carrier	84
Snead Ag Supplies A&M Sales	Wholesale Distribution, Farm, Garden Machinery, Equipment	82

Source: Birmingham Business Alliance | Blount County Profile

OTELCO – Oneonta, AL

In January 2021, OTELCO announced that Gigabit service will be available to all Lightwave fiber eligible locations in Alabama. These network upgrades made Gigabit* service available to approximately **8,000** locations in North Alabama. Additionally, a DOCSIS (service transmitted via cable) plant upgrade resulted in approximately **6,000** Cable Network locations in Oneonta and Altoona, Alabama receiving access to faster speeds. With the assistance of a **\$619,500** grant from the Alabama Department of Economic and Community Advancement (ADECA) Broadband Accessibility Fund, OTELCO committed to investing an additional **\$1,150,500** to construct 59 route miles of fiber to serve symmetrical gigabit internet speeds to approximately **1,650** locations in Morgan City. Also known as New Rescue, Morgan city is an unincorporated community in Morgan and Marshall Counties. It is included in the Huntsville-Decatur Combined Statistical Area and the Decatur Metropolitan Area.

*Gigabit Internet service transmits data up to 1 Gigabit per second (Gbps) – or 1,000 megabits per second.

Source: “OTELCO announces Gigabit service to fiber locations in Alabama; upgrades Cable Network locations to faster speeds.” January 8, 2021. Otelco.com/news

Section 2.1 | Blount County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **24,222** total housing units in Blount County as of 2018. This is a **14.5%** increase from 2000 and a **1.4%** projected increase since 2010. Occupied housing units accounted for **85.0%** (**20,600**) of total housing units in Blount; single-family detached units made up **68.9%** of total units while mobile homes composed **25.2%**. ACS data further estimates that approximately **81.5%** of local housing units were constructed between 1960 and 2009.

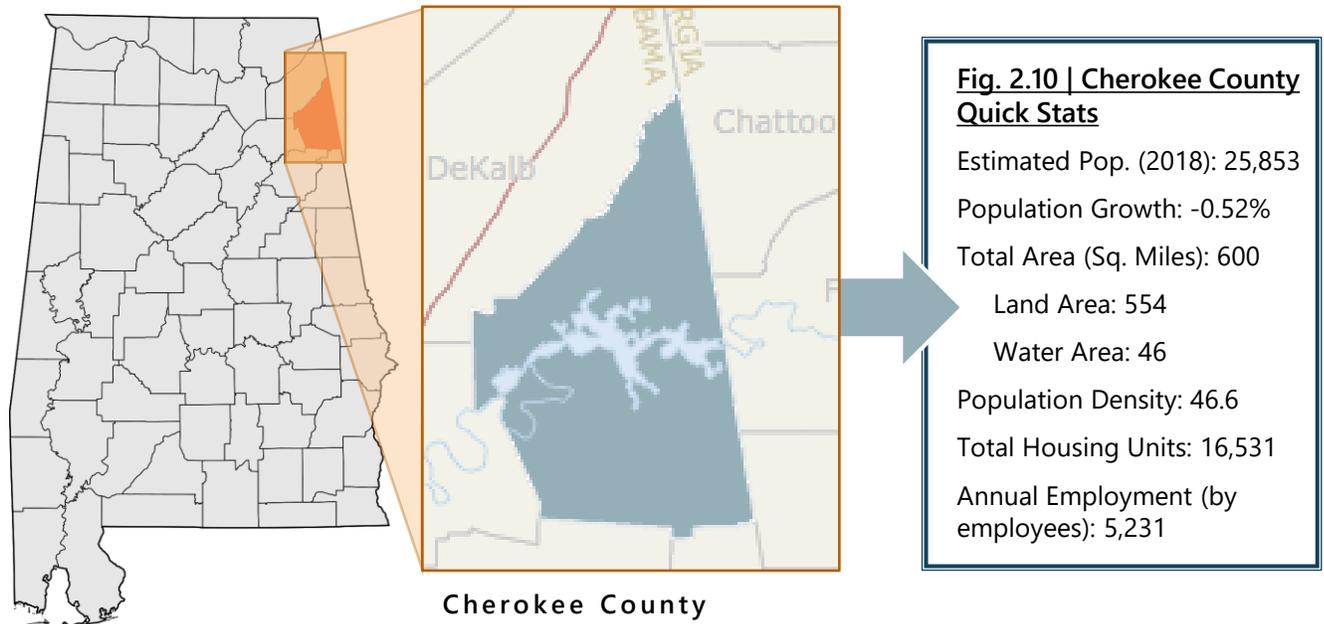
Table 2.7 Estimated Total Housing Units (2000, 2010-2018)					
Blount County	Year				
	2000	2010	2011	2012	2013
	21,158	23,887	23,728	23,761	23,767
	2014	2015	2016	2017	2018
23,868	23,860	23,850	24,161	24,222	

Table 2.8 Housing Units by Year Structure Built	
Total Units	24,222
Built 2014 or later	306
Built 2010 to 2013	570
Built 2000 to 2009	4,850
Built 1990 to 1999	5,422
Built 1980 to 1989	3,293
Built 1970 to 1979	4,111
Built 1960 to 1969	2,065
Built 1950 to 1959	1,345
Built 1940 to 1949	1,101
Built 1939 or earlier	1,159

Table 2.9 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	24,222	100
1-Unit, Detached	16,688	68.90
1-Unit, Attached	192	0.79
2 Units	423	1.75
3 or 4 Units	228	0.94
5 to 9 Units	336	1.39
10 to 19 Units	113	0.47
20 or More Units	98	0.40
Mobile Home	6,108	25.22
Boat, RV, etc.	36	0.15

Of the total number of occupied housing units estimated in 2018, **16,197 (78.6%)** of those units were owner-occupied and **4,403 (21.4%)** were renter-occupied units. The average household size of owner-occupied units was **2.85**; the figure for renter-occupied units was **2.48**.

Section 2.2 | Cherokee County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Cherokee County is in rural northeast Alabama. The County adjoins the State of Georgia on the east, Cleburne and Calhoun on the south, and Etowah and DeKalb Counties on the west and north, respectively. Cherokee County has **554** square miles of land area and approximately **46** square miles of water for a total of **600** total square miles. There are **47** persons per square mile as reported by the 2010 Census. The county contains five municipalities: the Town of Cedar Bluff, the City of Centre, the Town of Gaylesville, the Town of Leesburg, and the Town of Sand Rock.

Cherokee County is served by U.S. Highways 411 and 278, and State Highways 9, 35, 68, and 273. The county has one airport, located in Centre, that provides service to small private and commercial aircraft. There are no major railroads or navigable waterways within the county. Cherokee Electric Cooperative provides electrical service and gas is supplied by DeKalb/Cherokee Gas Company and Ferrell Gas Company. Water and sewer service is provided by Cherokee County Water and Sewer, Centre Waterworks and Sewer Board, and Cedar Bluff Waterworks and Sewer.

General Physiography

Cherokee County is in the Valley and Ridge physiographic province in northeastern Alabama. The Valley and Ridge province consists of a series of subparallel ridges and valleys trending generally northeast to southwest. This characteristic topography is developed on folded and thrust-faulted sedimentary rocks. The ridges are formed by sandstone and chert beds that are resistant to erosion; valleys are underlain by less resistant shale and carbonate rocks. The northwestern half of the province has well-developed Valley and Ridge topography. The southeastern part of the province is characterized by a wide plain of varied relief containing irregularly spaced parallel ridges and valleys. In the extreme northeastern part of the province, mountainous terrain is developed on faulted and folded sandstone and quartzite.

Source: Cherokee County Hazard Mitigation Plan | 2015 Plan Update; GSA Alabama Stratigraphy, Geological Survey of Alabama – Circular 140

Section 2.2 | Cherokee County, Alabama

Growth Trends

Population

Cherokee County’s population has decreased approximately **0.52%** since 2010 according to 2010 Decennial Census data and 2018 American Community Survey (ACS) 5-Year estimates. However, the population is estimated to have grown less than **1%** since 2000. As shown in Table 2.11 below, the Town of Gaylesville experienced the most significant population growth, with an estimated growth of 32.6% since 2010. Table 2.12 shows projections depicting how the County’s population will decline by **1.6%** by 2040, which equates to a loss of approximately 416 persons overall. It should be noted that these figures may change once the 2020 Census data has been tabulated and distributed by the U.S. Census Bureau.

Table 2.11 Cherokee County Jurisdiction Population 2000 - 2010 and 2018				
Jursidiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Cherokee County	23,990	25,989	25,853	-0.52
Cedar Bluff	1,607	1,820	2,067	13.57
Centre	3,245	3,489	3,505	0.46
Gaylesville	142	144	191	32.64
Leesburg	895	1,027	1,092	6.33
Sand Rock	458	560	471	-15.89
Incorporated Area Pop.	6,347	7,040	7,326	4.06
Unincorporated Area Pop.	17,643	18,949	18,527	-2.23

Table 2.12 Division F Regional Population 2000-2010 and Projections 2020 - 2040									
								2018 Series	
	Census 2000	Census 2010	2020	2025	2030	2035	2040	Change 2010 - 2040	
								Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Section 2.2 | Cherokee County, Alabama

Employment + Unemployment

According to the U.S. Bureau of Labor Statistics (BLS), the Quarterly Census of Employment and Wages (QCEW), an employment database reports employment in Cherokee County has risen approximately 7.4% since 2009. The lowest figure of employees (4,816) was reported in 2012, a period when the economy was still recovering from the negative effects of the 2008-2009 deep recession.

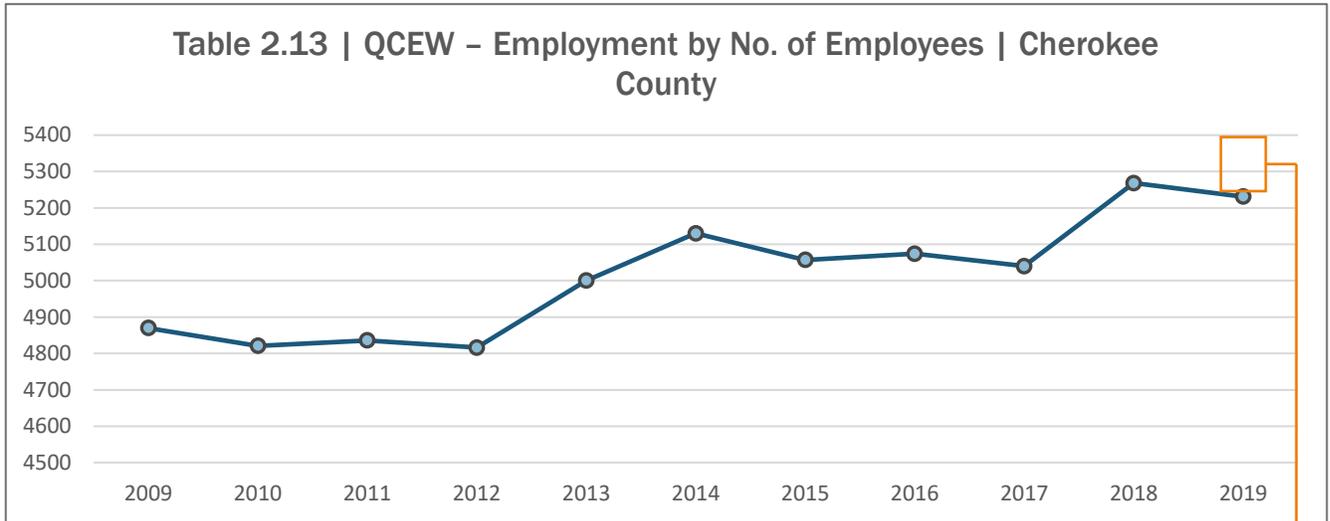


Table 2.14 | County Civilian Labor Force Employment Estimates (2020)

	Labor Force	Employment	Unemployment	Rate Unemployment* (%)
Alabama	2,220,034	2,096,396	123,638	9.6
Cherokee County	11,892	10,990	902	7.6

Total Employees: 5,231 (P)*
 Number of Establishments: 412 (P)
 Average Annual Pay: \$35,133 (P)

Source: Alabama Department of Labor – Labor Market Information Division

In 2018, the American Community Survey (ACS) estimated that **48.6%** the population aged 16 years and older participated in the County’s labor force. The most active cohorts were the 25 to 29 age group and the 30 to 34 age group. The unemployment rate for Cherokee County the same year was an estimated **5.6%**; a figure that is estimated to have increased by **4.0%** in 2020 according to estimates prepared by the Alabama Department of Labor.** The sharp increase in unemployment reflects how substantially the COVID-19 virus has impacted area labor forces throughout Alabama.

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed May 2020.

Section 2.2 | Cherokee County, Alabama

Business + Industry

Tables 2.15 and 2.16 list the County's major employers and major manufacturers. According to this data, education and metal framing are the two prominent products Cherokee County offers to the region. Centre, the county seat, is home to the Cherokee County Board of Education, Cherokee County Health and Rehabilitation, and several other employers listed below.

Table 2.15 Major Employers – Cherokee County, Alabama		
Name	Product	No. of Employees
Cherokee Board of Education	Education	510
KTH Leesburg Products	Metal Framing	464
Cherokee County Health and Rehabilitation	Nursing Home/Assisted Living	354
Wal-Mart	Retail	250
American Apparel	Military Outerwear	228
Parkdale	Cotton Yarn	187
Floyd Cherokee Medical Center	Hospital	165
Cherokee County Commission	Government	126
Prince Minerals	Porcelain & Enamel Frits	85
Dixie Green	Wholesale Greenhouse	47

Table 2.16 Major Manufacturers – Cherokee County, Alabama		
Name	Product	No. of Employees
KTH Leesburg Products	Metal Framing	464
American Apparel	Military Outfitter	228
Parkdale	Cotton Yarn	187
Prince Minerals	Porcelain & Enamel Frits	85
Dixie Green	Wholesale Greenhouse	47
VaDo Fabrics, Inc.	Mattress Binding	30
Model Tee's	Embroidery	30
Sawyer Nursery	Wholesale Greenhouse	23
Weiss Lake Egg	Egg Processing	17
Cherokee Milling	Grain Processing	15

Source: Cherokee County Industrial Development Authority

Section 2.2 | Cherokee County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **16,531** total housing units in Cherokee County as of 2018. This is a **17.9%** jump from 2000 and a **3.8%** projected increase since 2010. Occupied housing units accounted for **64.2%** (10,606) of total housing units in Cherokee; single-family detached units made up **65.4%** of these units while mobile homes composed **29.2%**. ACS data further estimates that nearly **85%** of local housing units were constructed between 1960 and 2009.

Table 2.17 Estimated Total Housing Units (2000, 2010-2018)					
Cherokee County	Year				
	2000	2010	2011	2012	2013
	14,025	15,932	16,116	16,168	16,180
	2014	2015	2016	2017	2018
	16,254	16,242	16,260	16,466	16,531

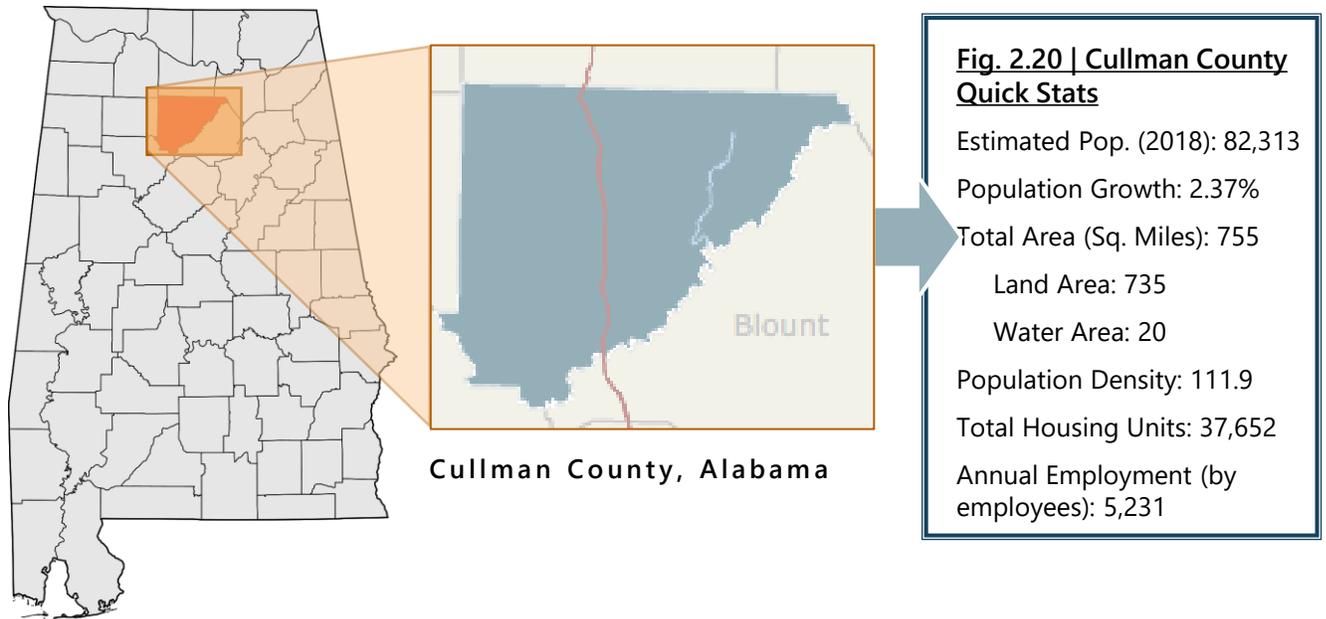
Table 2.18 Housing Units by Year Structure Built	
Total Units	16,531
Built 2014 or later	142
Built 2010 to 2013	428
Built 2000 to 2009	3,464
Built 1990 to 1999	3,695
Built 1980 to 1989	2,419
Built 1970 to 1979	2,924
Built 1960 to 1969	1,535
Built 1950 to 1959	928
Built 1940 to 1949	387
Built 1939 or earlier	609

Table 2.19 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	16,531	100
1-Unit, Detached	10,806	65.37
1-Unit, Attached	38	0.23
2 Units	207	1.25
3 or 4 Units	140	0.85
5 to 9 Units	111	0.67
10 to 19 Units	129	0.78
20 or More Units	202	1.22
Mobile Home	4,825	29.19
Boat, RV, etc.	73	0.44

Of the total number of occupied housing units estimated in 2018, **8,374 (79%)** of those units were owner occupied and **2,232 (21%)** were renter-occupied units. The average household size of owner-occupied units was **2.44**; the figure for renter-occupied units was **2.30**.

Source: American Community Survey (ACS) Selected Housing Characteristics

Section 2.3 | Cullman County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Cullman County is a mostly rural county in northeast Alabama. The county adjoins Morgan County on the north, Marshall County on the northeast, Blount County on the southeast, Walker County on the southwest and Winston County on the west. The county has **735** square miles of land area and approximately **20** square miles of water for a total of **755** total square miles. There are an estimated **109** persons per square mile. Cullman County contains twelve municipalities: the Town of Baileyton; the Town of Colony; the City of Cullman; the Town of Dodge City; the Town of Fairview; The Town of Garden City; The City of Good Hope; The City of Hanceville; the Town of Holly Pond; The Town of South Vinemont; and the Town of West Point. The Town of Berlin, incorporated in 2018, is the most recent municipality established in Cullman County.

Cullman County is served by Interstate 65; U.S. Highways 31, 231 and 278; and State Highways 67, 69, 91, and 157. CSX Transportation (north/south) serves the County's rail service needs. Air transportation is provided by the Huntsville International Airport and Folsom Field, a smaller non-commercial airport. The sources of electric power are the Tennessee Valley Authority and Alabama Power. The power is distributed through several local Electric Departments, and power companies operating within the County's rural areas. Natural gas is furnished by Cullman-Jefferson Gas and Marshall County Gas Districts. Several L.P gas companies operate within Cullman County, supplying areas not reached by natural gas.

General Physiography

Cullman County is located within the Cumberland Plateau physiographic region. Most of Cullman County is drained by the Black Warrior River. In southwestern Cullman County, a **21,000**-acre man-made lake (Smith Lake) is now a predominant natural feature. Additionally, most of the eastern boundary is formed by the Mulberry Fork of the Warrior River. The topography varies from a fertile river valley to gently rolling pasture and timberlands, to hilly and mountainous. Elevations range from **556** feet above sea level at the Tennessee River to **300** feet above sea level in south Cullman County.

Source: Cullman County Hazard Mitigation Plan | 2015 Plan Update

Section 2.3 | Cullman County, Alabama

Growth Trends

Population

Cullman County’s population has increased **2.37%** since 2010 according to 2010 Decennial Census data and 2018 American Community Survey (ACS) 5-Year estimates. As shown in Table 2.21 below, the Town of Colony experienced the most population growth, with an estimated increase of **61.9%** since 2010. Table 2.22 shows how the County’s population is expected to grow by **7.4%** by 2040, which equates to a gain of approximately **5,944** persons overall.

Table 2.21 Cullman County Jurisdiction Population 2000 - 2010 and 2018				
Jursidiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Cullman County	77,483	80,406	82,313	2.37
Baileyton	684	610	810	32.79
Berlin	--	--	--	
Colony	385	268	434	61.94
Cullman	13,995	14,775	15,558	5.30
Dodge City	612	593	554	-6.58
Fairview	522	446	497	11.43
Garden City	564	492	553	12.40
Good Hope	1,936	2,264	2,793	23.37
Hanceville	2,951	2,982	3,340	12.01
Holly Pond	645	798	953	19.42
South Vinemont	425	749	630	-15.89
West Point	295	586	593	1.19
Incorporated Area Pop.	23014	24563	26715	8.76
Unincorporated Area Pop.	54,469	55,843	55,598	-0.44

Table 2.22 Division F Regional Population 2000-2010 and Projections 2020 - 2040									
								2018 Series	
	Census							Change 2010 - 2040	
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Division F Regional Hazard Mitigation Plan
Section 2.3 | Cullman County, Alabama

Employment + Unemployment

According to the U.S. Bureau of Labor Statistics (BLS), the Quarterly Census of Employment and Wages (QCEW) reports employment in Cullman County has increased **13.4%** since 2009. The lowest figure of employees (**25,050**) was reported in 2011.

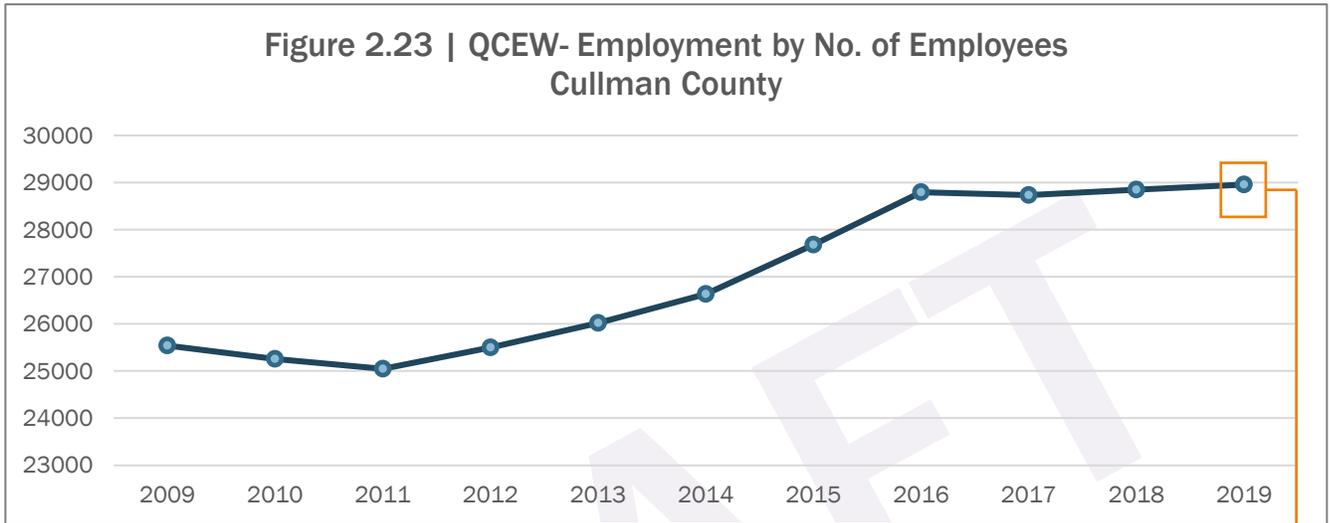


Table 2.24 | County Civilian Labor Force Employment Estimates (2020)

	Labor Force	Employment	Unemployment	Rate Unemployment* (%)
Alabama	2,220,034	2,096,396	123,638	9.6
Cullman County	39,295	36,392	2,903	7.4

Total
Employees:
28,959 (P)*
Number of
Establishments:
1864 (P)
Average Annual
Pay:
\$39,973 (P)

The labor force participation rate for persons aged 16 years and older was **56.2%** in, 2018 according to ACS estimates. The most active age groups in the County’s labor force were persons aged between 20 and 30-years old, with a combined average participation rate of **82.3%**. The unemployment rate was **4.3%** that same year; a **3.1%** difference from the May 2020 figure of **7.4%**. The upsurge in unemployment is yet another symptom of the COVID-19 pandemic’s influence.**

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed May 2020.

Section 2.3 | Cullman County, Alabama

Business + Industry

Tables 2.25 and 2.26 list the County's major employers and manufacturers. According to this data, medical services and education are the two most prominent goods Cullman County contributes to the Division F region. The City of Cullman is the county seat and home to the Cullman Regional Medical Center, Topre America Corporation, and Wallace State Community College. This institution currently offers degrees and certificates in sixteen (16) fields including Health Professions and Related Programs and Mechanic and Repair Technologies/Technicians.

Table 2.25 | Major Employers – Cullman County, Alabama

Name	Product	No. of Employees
Cullman Regional Medical Center	Medical	1385
Cullman County Schools	Education	1211
Wal-Mart Distribution	Retail	1100
Topre America Cooperation	Automotive Metal Stamping	715
Wal-Mart Stores	Retail	695
City of Cullman	Government	569
REHAU Incorporated	Auto Exterior Moldings	500
Cullman County Commission	Government	447
Alabama Cullman Yutaka Technologies	Auto Parts for American Honda Motor	461
Reliance Worldwide	Pressure Regulating Valves	380

Table 2.26 | Major Manufacturers – Cullman County, Alabama

Name	Product	No. of Employees
Topre America Corporation	Automotive Metal Stamping	715
REHAU Incorporated	Auto Exterior Moldings	500
Alabama Cullman Yutaka Technologies	Automotive Exhaust Systems	461
Rusken Packaging	Corrugated Boxes	420
Reliance Worldwide	Pressure Regulating Valves	380
River Valley Ingredients	Poultry Meal	270
Royal Technologies Corporation	Plastic Injection Molding	208
General Dynamics	Precision Machining	200
Inland Buildings/Schulte	Pre-Engineered Buildings	192
WestRock Packaging	Corrugated Packaging	185

Source: Cullman County Industrial Development Authority

Cullman's Automotive Industry

In 2018, auto supplier Topre America Corp. announced plans to expand at its Cullman location, which is the company's North America headquarters. At the time, this was the company's fifth large expansion. As noted in Table 2.5, Cullman County's three largest manufacturers are all Tier 1 auto suppliers – Topre America Corporation, REHAU, and Yukata Technologies. Cullman is also home to Tier 2 auto suppliers such as Royal Technologies and NAFCO.

Section 2.3 | Cullman County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **37,652** total housing units in Cullman County as of 2018. This is a **6.86%** increase from 2000 and a **2.1%** projected increase since 2010. Occupied housing units accounted for **79.7%** (**30,323**) of total housing units in Cullman; single-family detached units made up **69.9%** of these units while mobile homes composed **21.5%**. ACS data further estimates that nearly **85%** of local housing units were constructed between 1960 and 2009.

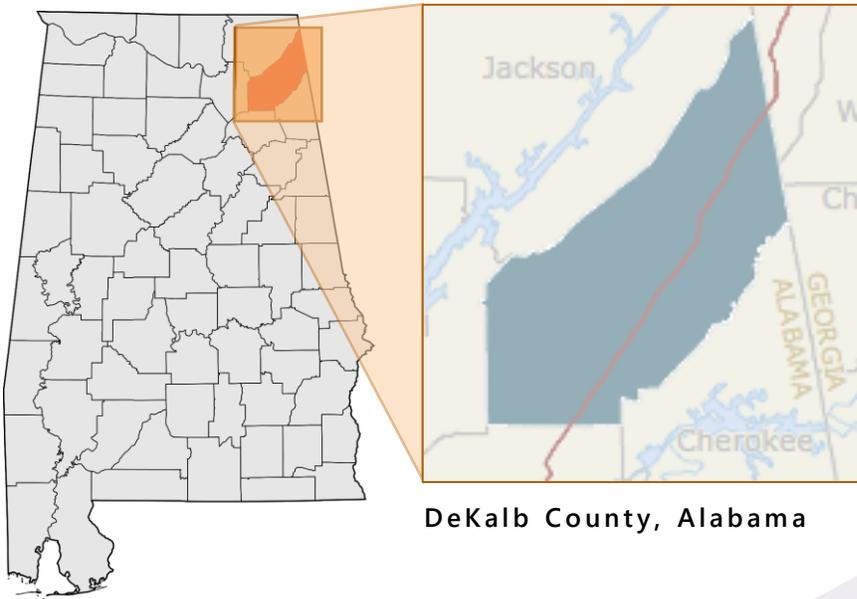
Table 2.27 Estimated Total Housing Units (2000, 2010 - 2018)					
Cullman County	Year				
	2000	2010	2011	2012	2013
	35,233	36,889	36,994	37,026	36,941
	2014	2015	2016	2017	2018
	37,084	37,103	37,150	37,524	37,652

Table 2.28 Housing Units by Year Structure Built	
Total Units	37,652
Built 2014 or later	642
Built 2010 to 2013	1,107
Built 2000 to 2009	5,570
Built 1990 to 1999	8,179
Built 1980 to 1989	5,480
Built 1970 to 1979	6,207
Built 1960 to 1969	4,619
Built 1950 to 1959	2,406
Built 1940 to 1949	1,541
Built 1939 or earlier	1,901

Table 2.29 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	37,652	100
1-Unit, Detached	25,520	67.78
1-Unit, Attached	302	0.80
2 Units	640	1.70
3 or 4 Units	435	1.16
5 to 9 Units	1,142	3.03
10 to 19 Units	514	1.37
20 or More Units	445	1.18
Mobile Home	8,615	22.88
Boat, RV, etc.	39	0.10

Of the total number of occupied housing units estimated in 2018, **22,919 (74.6%)** of those units were owner-occupied and **7,811 (25.4%)** were renter-occupied units. The average household size of owner-occupied units was **2.67**; the figure for renter-occupied units was **2.56**.

Section 2.4 | DeKalb County, Alabama



DeKalb County, Alabama

Fig. 2.30 | DeKalb County Quick Stats

- Estimated Pop. (2018): 71,200
- Population Growth: 0.13%
- Total Area (Sq. Miles): 777
 - Land Area: 779
 - Water Area: 2
- Population Density: 91.6
- Total Housing Units: 31,462
- Annual Employment (by employees): 22,379

General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

DeKalb County, known as the “Alabama Gateway to the Appalachian Mountains,” is in the northeast corner of Alabama bordering the State of Georgia. It is bordered by, clockwise from the east, Dade, Walker and Chattooga counties in Georgia, and by Cherokee, Etowah, Marshall and Jackson counties in Alabama. DeKalb County has **777** square miles of land area and approximately **2** square miles of water are for a total of **779** total square miles. Current figures estimate that there are **92** persons per square mile. The County contains sixteen (**16**) municipalities: the Town of Collinsville; the Town of Crossville; the City of Fort Payne; the Town of Fyffe; the Town of Geraldine; the Town of Hammondville; the City of Henagar; the Town of Ider; the Town of Lakeview; the Town of Mentone; the Town of Pine Ridge; the Town of Powell; the City of Rainsville; the Town of Shiloh; the Town of Sylvania; and the Town of Valley Head.

The major highways in DeKalb County are Interstate 59 and U.S. Highway 11 that run parallel northeast and southwest, connecting the areas to Birmingham to the southwest and to Chattanooga to the northeast. Alabama Highway 35 connects the County to Scottsboro and west to Huntsville. The primary railroad in DeKalb County is the Norfolk Southern Railroad that runs through Big Wills Valley area of the county. There is one airport and airstrip in the County - Isbell Field Airport at Fort Payne is in the northwest section of Fort Payne in the central section of DeKalb County near Interstate 59. Cloudmont Airpark is a recreational airstrip neat the town of Mentone. Utilities for the county are provided by various boards and co-ops.

General Physiography

The land in DeKalb County is characterized by extremes of topography. Landforms within the county generally trend northeast and southwest following the parallel mountains of Sand Mountain to the west and Lookout Mountain to the east with Big Wills Valley running between them. Sand Mountain is a sandstone plateau, while Lookout Mountain is distinguished by high bluffs. Little River flows along the top of Lookout Mountain, forming Little River Canyon before it empties into Weiss Lake. Elevations rise to just over approximately **1,900** feet above sea level in the north portions of the county on Lookout Mountain and Fox Mountain.

Source: DeKalb County Hazard Mitigation Plan | 2015 Final Plan

Division F Regional Hazard Mitigation Plan
Section 2.4 | DeKalb County, Alabama

Growth Trends

Population

DeKalb County's population has increased **0.13%** since 2010 according to 2010 Decennial Census data and 2018 American Community Survey (ACS) 5-Year estimates. As shown in Table 2.31 below, the Town of Fyffe experienced the most population growth, with an estimated increase of **33.3%** since 2010. Table 2.32 shows how the County's population is expected to grow by **8.8%** by 2040, which equates to a gain of approximately **6,235** persons overall.

Jursidiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
DeKalb County	64,452	71,109	71,200	0.13
Collinsville	1,636	1,983	2,074	4.59
Crossville	1,431	1,862	1,945	4.46
Fort Payne	12,938	14,012	14,006	-0.04
Fyffe	971	1,018	1,357	33.30
Geraldine	786	896	929	3.68
Hammondville	486	488	526	7.79
Henagar	2,400	2,344	2,059	-12.16
Ider	664	723	644	-10.93
Lakeview	163	143	154	7.69
Mentone	451	360	305	-15.28
Pine Ridge	243	282	287	1.77
Powell	926	955	1,089	14.03
Rainsville	4,499	4,948	5,018	1.41
Shiloh	289	274	321	17.15
Sylvania	1,186	1,837	2,413	31.36
Valley Head	611	558	660	18.28
Incorporated Area Pop.	29,680	32,683	33,787	3.38
Unincorporated Area Pop.	34,772	38,426	37,413	-2.64

								2018 Series	
	Census	Census						Change 2010 - 2040	
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Phase I Counties									
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1

Employment + Unemployment

The U.S. Bureau of Labor Statistics (BLS) reported that DeKalb’s employment increased by **9.5%** since 2009. The lowest figure of employees (**19,756**) was reported in 2012. County employment since then has been steadily increasing.

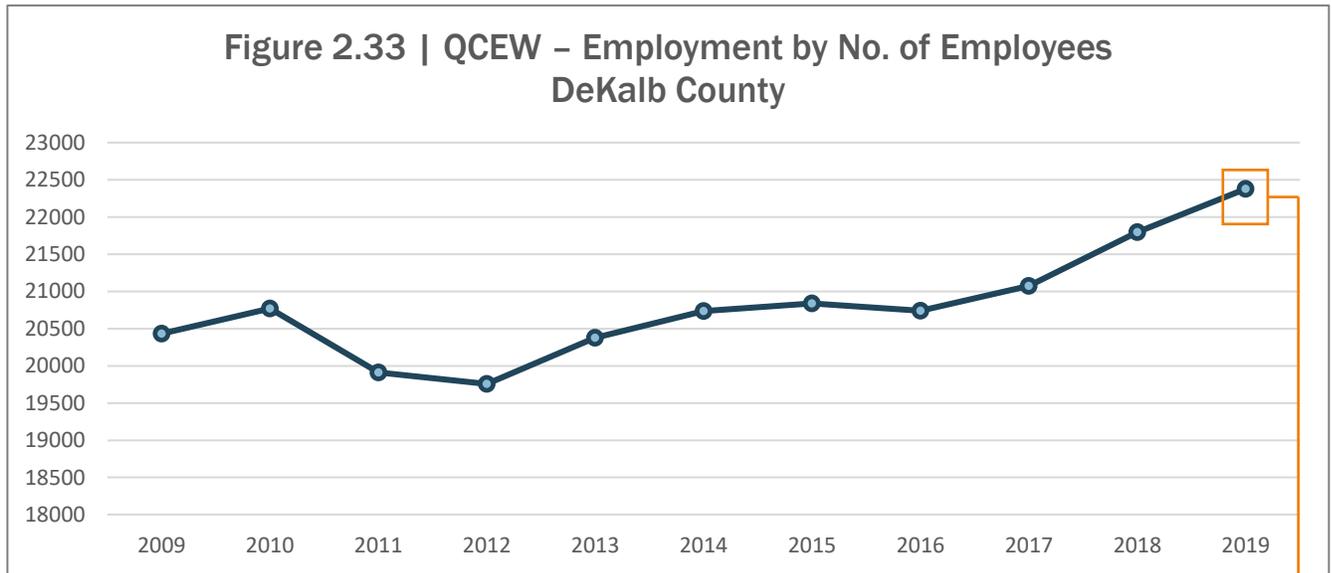


Table 2.34 | County Civilian Labor Force Employment Estimates (2020)

	Labor Force	Employment	Unemployment	Rate Unemployment* (%)
Alabama	2,220,034	2,096,396	123,638	9.6
DeKalb County	31,383	29,148	2,235	7.1

Total
 Employees:
 22,379 (P)*
 Number of
 Establishments:
 1208 (P)
 Average Annual
 Pay:
 \$38,219 (P)

Five- year ACS estimates project that DeKalb County had the second lowest labor force participation rate among the four counties composing Subregion I in 2018. The labor force participation rate for the working age population was **53.6%**, a steep decline from the 2010 ACS five-year estimate of **58.1%**. The most active age groups in the County’s labor force were persons aged 30 to 34 years old. The cohort is closely followed by the 35-44 population, with an estimated participation rate of **76.7%**. Additionally, the unemployment rate by the end of 2018 stood at **4.5%**. However, local unemployment has spiked to **7.1%** due to layoffs attributed to the global pandemic.

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed May 2020.

Business + Industry

Table 2.35 below lists the County’s major employers. According to data provided by the DeKalb County Economic Development Authority (DCEDA), warehouse/distribution services and manufacturing are the two most prominent goods the County contributes to the Division F region. The City of Fort Payne is the county seat and home to The Children’s Place Distribution Center, PlayCore’s Southern Fulfillment Center, and Vulcraft, Inc.

Table 2.35 Major Employers – DeKalb County, Alabama		
Name	Product	No. of Employees
The Children's Place	Distribution Center	1548
Heil Environmental	Garbage Truck Bodies	853
Koch Foods, Inc.	Poultry Processing	850
Renfro Corporation	Hosiery	650
Rainsville Technology, Inc. (RTI)	Injected Plastic Automotive Parts	436
GameTime (Playcore)	Playground & Park Equipment	412
GH Metal Solutions, Inc.	Plate/Sheet Metal Fabrication	400
Plasman Corp	Injected Plastic Automotive Parts	337
Vulcraft, Inc. (NUCOR)	Steel Joists	307
Polymer Corp	Industrial Plastics	280
Heritage Wire Harness	Wire Harness	255
Siemens Energy, Inc.	Electric Coils	238
D&F Equipment Sales, Inc.	Equipment Manufacturing	183
BlueScope North America	Structural Frames	154
Ferguson Distribution	Distribution Center	140

Heil Environmental

Heil Environmental, which is headquartered in Chattanooga, Tennessee, has its flagship manufacturing plant in Fort Payne, Alabama. It is the world’s largest manufacturer of refuse collection vehicles. The company was founded in Wisconsin in 1901, and since then has become a “progressive leader in the heavy equipment industry.” The Joseph F. Heil, Jr. Customer Education Center in Fort Payne was added to better support their customers through professional training. Customers receive hands-on instruction from field experts, who are the same designers and builders of Heil products. This facility includes amenities such as comprehensive hydraulic and electrical labs and multimedia classrooms, all located adjacent to Heil Parts Central and in proximity of Heil’s flagship manufacturing, R&D, and test lab facilities in Fort Payne.

Sources: DeKalb County Economic Development Authority; The City of Fort Payne

Section 2.4 | DeKalb County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **31,462** total housing units in DeKalb County as of 2018. This is a **12.2%** increase from 2000 and a **2.5%** projected increase since 2010. Occupied housing units accounted for **83.1%** (**26,132**) of total housing units in DeKalb; single-family detached units made up **68.6%** of these units while mobile homes composed **23.9%**. ACS data further estimates that approximately **80.3%** of local housing units were constructed between 1960 and 2009.

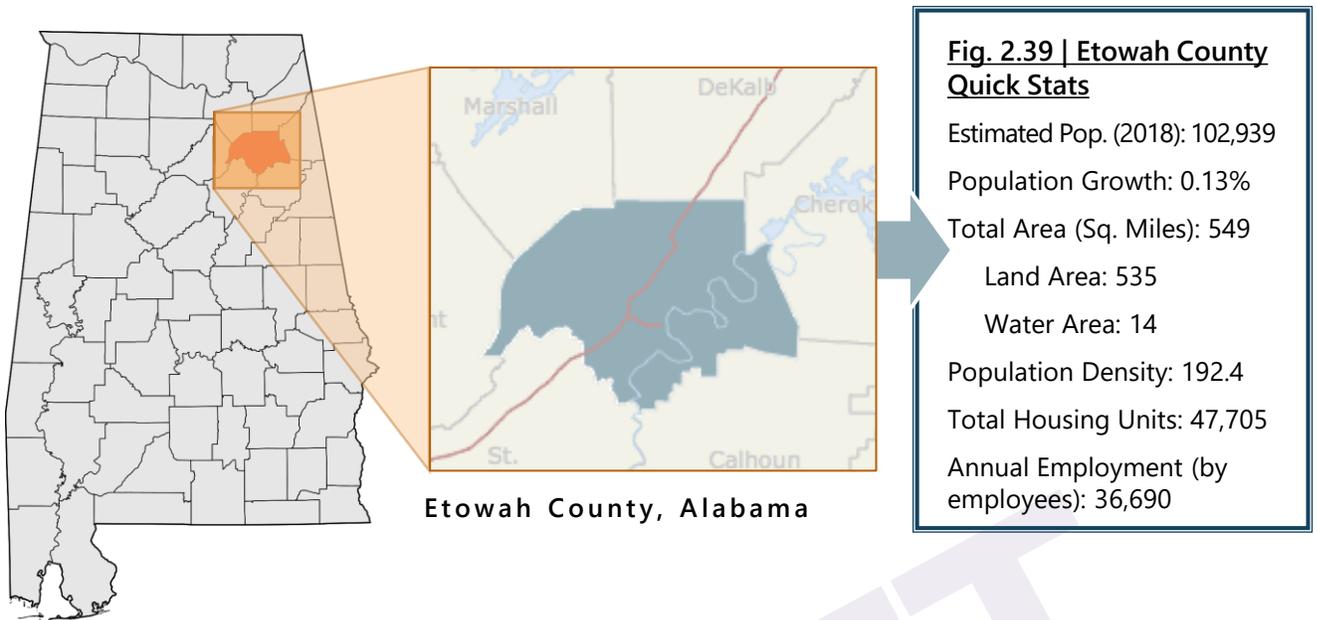
Table 2.36 Estimated Total Housing Units (2000, 2010-2018)					
DeKalb County	Year				
	2000	2010	2011	2012	2013
	28,051	30,706	30,942	30,974	30,969
	2014	2015	2016	2017	2018
	31,043	31,058	31,068	31,384	31,462

Table 2.37 Housing Units by Year Structure Built	
Total Units	31,462
Built 2014 or later	342
Built 2010 to 2013	785
Built 2000 to 2009	4,642
Built 1990 to 1999	6,688
Built 1980 to 1989	5,227
Built 1970 to 1979	5,793
Built 1960 to 1969	2,924
Built 1950 to 1959	1,549
Built 1940 to 1949	1,431
Built 1939 or earlier	2,081

Table 2.38 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	31,462	100
1-Unit, Detached	21,588	68.62
1-Unit, Attached	115	0.37
2 Units	616	1.96
3 or 4 Units	694	2.21
5 to 9 Units	554	1.76
10 to 19 Units	224	0.71
20 or More Units	109	0.35
Mobile Home	7,508	23.86
Boat, RV, etc.	54	0.17

Of the total number of occupied housing units estimated in 2018, **18,604 (71.2%)** of those units were owner-occupied and **7,528 (28.8%)** were renter-occupied units. The average household size of owner-occupied units was **2.68**; the figure for renter-occupied units was **2.70**.

Section 2.5 | Etowah County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Etowah County is in the northeastern portion of Alabama. It is bordered by Marshall County on the northwest, DeKalb County on the north, Cherokee County on the east, Calhoun County on the southeast, St. Clair County on the southwest, and Blount County on the west. The County has **535** square miles of land area and approximately **14** square miles of water, totaling **549** square miles. Current figures estimate there are **192** persons per square mile. Etowah County is home to **11** municipalities: the Town of Altoona; the City of Attalla; the City of Gadsden; the City of Glencoe; the City of Hokes Bluff; the City of Rainbow City; the Town of Reece City; the Town of Ridgeville; The Town of Sardis City; the City of Southside; and the Town of Walnut Grove.

The major roadways in Etowah County are Interstate 59, Interstate 759, U.S. Highway 11, U.S. Highway 278, U.S. Highway 411, and U.S. Highway 431. The Alabama and Tennessee River and Norfolk Southern Railways are the two main railroads in the County. The County is also served by Northeast Alabama Regional Airport in Gadsden, AL. Utility providers for Etowah include Alabama Power, Christian Electric Service, Mayer Electric Supply Company, Inc., Boaz Gas Board, City of Attalla Water Works Board, Gadsden Steam Plant, Spire Alabama, Inc. and the Water Works and Sewer Board of Gadsden.

General Physiography

Etowah county lies in two major land resource areas. The eastern and southern portions of the county lay within the Southern Appalachian Ridge and Valley Land Resource Area. The northern and western parts of the county are located within the Sand Mountain Land Resource Area, which is a portion of the Cumberland Plateau. The soils in this resource area have steep, rocky side slopes with numerous gorges and bluffs and are smooth on top. The Southern Appalachian Ridge and Valley Land Resource Area has a generally smooth valley and is known as “flatwoods” because of the flat shale area within these parts of the county. Elevations range from **500** feet to approximately **1,500** feet above sea level.

Source: Etowah County Five-Year Multi-jurisdictional Hazard Mitigation Plan | 2015-2020

Section 2.5 | Etowah County, Alabama

Growth Trends

Population

Etowah County’s population has decreased **1.43%** since 2010 according to 2010 Decennial Census data and 2018 ACS 5-Year Estimates. As shown in Table 2.40 below, the Town of Walnut Grove experienced the most population growth, with an estimated increase of **31.4%** since 2010. Table 2.41 depicts how the County’s overall population is expected to decline by **4.1%** by 2040, a loss of approximately **4,303** persons.

Table 2.40 Etowah County Jurisdiction Population 2000 - 2010 and 2018				
Jurisdiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Etowah County	103,459	104,430	102,939	-1.43
Altoona	984	933	890	-4.61
Attalla	6,592	6,048	5,847	-3.32
Gadsden	38,978	36,856	35,624	-3.34
Glencoe	5,152	5,160	5,120	-0.78
Hokes Bluff	4,149	4,286	4,271	-0.35
Rainbow City	8,428	9,602	9,581	-0.22
Reece City	634	653	729	11.64
Ridgeville	158	112	118	5.36
Sardis City	1,438	1,704	1,763	3.46
Southside	7,036	8,412	8,788	4.47
Walnut Grove	710	698	917	31.38
Incorporated Area Pop.	74,259	74,464	73,648	-1.10
Unincorporated Area Pop.	29,200	29,966	29,291	-2.25

Table 2.41 Division F Regional Population 2000-2010 and Projections 2020 - 2040									
								2018 Series	
	Census							Change 2010 - 2040	
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Employment + Unemployment

The U.S. Bureau of Labor Statistics (BLS) reported that Etowah’s employment increased by **5.9%** since 2009. The County’s workforce experienced steady growth up until 2016. Growth from there was slow, eventually declining close to 2015 levels. It is unclear what caused this decline, however, employment continued to drop well into 2020.

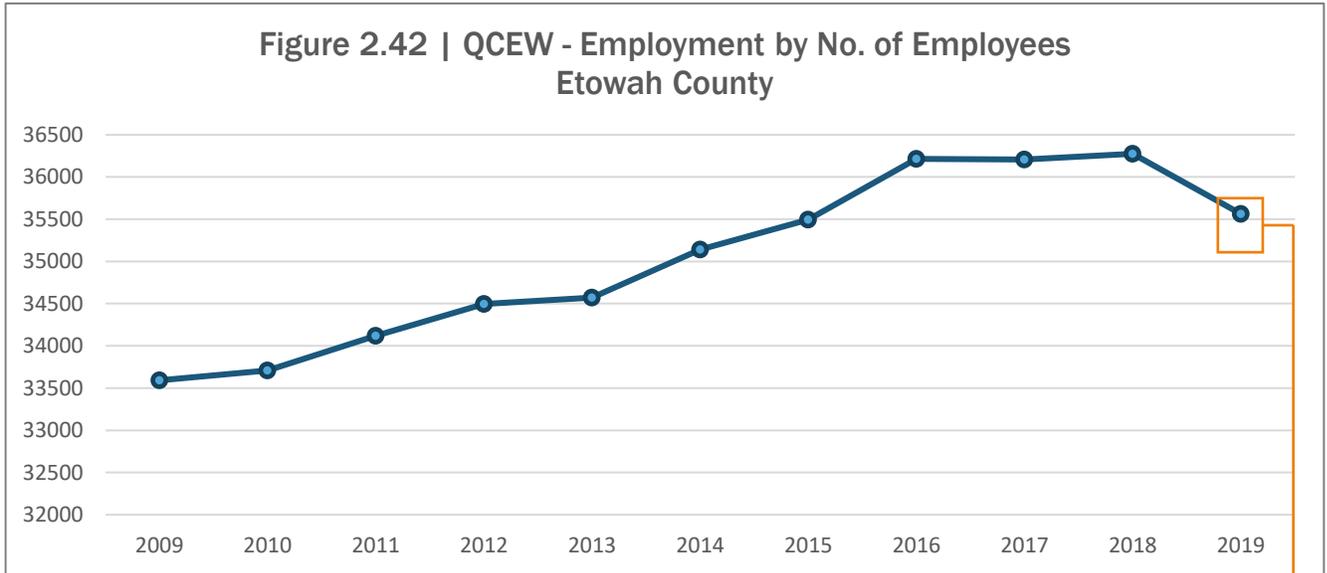


Table 2.43 | County Civilian Labor Force Employment Estimates (2020)

	Labor Force	Employment	Unemployment	Rate Unemployment* (%)
Alabama	2,220,034	2,096,396	123,638	9.6
Etowah County	41,743	36,690	5,053	12.1

Total
 Employees:
 35,561 (P)*
 Number of
 Establishments:
 2111 (P)
 Average Annual
 Pay:
 \$37,737 (P)

The labor force participation rate for the working age population in Etowah County was **56.4%** in 2018. The most active age groups in the County’s labor force were persons aged 30 to 34 years old. This cohort is closely followed by the 25-29 population, with an estimated participation rate of **77.1%**. The area’s unemployment rate in 2018 was **7.8%**, the highest in the four-county subregion. Unemployment eventually increased to **12.1%** as the communities across the nation are heavily impacted by COVID-19.

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed May 2020.

Section 2.5 | Etowah County, Alabama

Business + Industry

Tables 2.44 and 2.45 list the County's major employers and manufacturers. According to this data, medical services and education are the two major goods Etowah County contributes to the Division F region. Gadsden Regional Medical Center is a 346-licensed bed acute care facility with complete inpatient and outpatient care. It staffs nearly 2,000 healthcare professionals, 230 total physicians. In addition to cardiology and neurology, the hospital also specializes in obstetrics, orthopedics, pediatrics, radiology, urology, and oncology.

Table 2.44 Top Employers – Etowah County, Alabama		
Name	Product	No. of Employees
Gadsden Regional Medical Center	Medical	1297
Etowah County Board of Education	Education	1275
Koch Foods	Primary Poultry Processing	970
Riveview Regional Medical Center	Medical	793
Wal-Mart (Two Locations)	Retail	750
Gadsden City School System	Education	740
Gadsden State Community College	Education	609
Keystone Foods	Secondary Poultry Processing	512
City of Gadsden	Government	508
Fehrer Automotive	Automotive Seat Pads	440
Goodyear Tire & Rubber Company, Inc.	Tires	411

Table 2.45 Top Manufacturers – Etowah County, Alabama		
Name	Product	No. of Employees
Koch Foods	Primary Poultry Processing	970
Keystone Foods	Secondary Poultry Processing	512
Fehrer Automotive	Automotive Seat Pads	440
Goodyear Tire & Rubber Co.	Tires	411
Prince Metal Stamping	Stamping	385
Choice Fabricators	Stamping	252
McCartney Construction Co.	Construction/Asphalt	175
Koller-Craft South	Plastic Injection Molding	160
Inteva	Plastic Injection Molding	130
Max Packaging	Plastic Tableware	130

Source: Gadsden Etowah County Industrial Development Authority

Fehrer Automotive

In 2016, Fehrer North America announced plans to expand its Gadsden plant. The \$12 million venture included adding a line to the existing building – a project that added 150 jobs to the area's economy. The German-owned company manufactures seats for cars; serving automobile manufacturers, such as Volkswagen, CVG, Ford, Mercedes Benz, Chrysler, and Tesla. The expansion was slated for completion in 2017.

Section 2.5 | Etowah County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **47,705** total housing units in Etowah County as of 2018. This is a **3.8%** increase from 2000 and a **0.53%** projected increase since 2010. Occupied housing units accounted for **81.3%** (**38,777**) of total housing units in Etowah; single-family detached units made up **77.6%** of these units while mobile homes composed **11.0%**. ACS data further estimates that approximately **65.7%** of local housing units were constructed between 1960 and 2009.

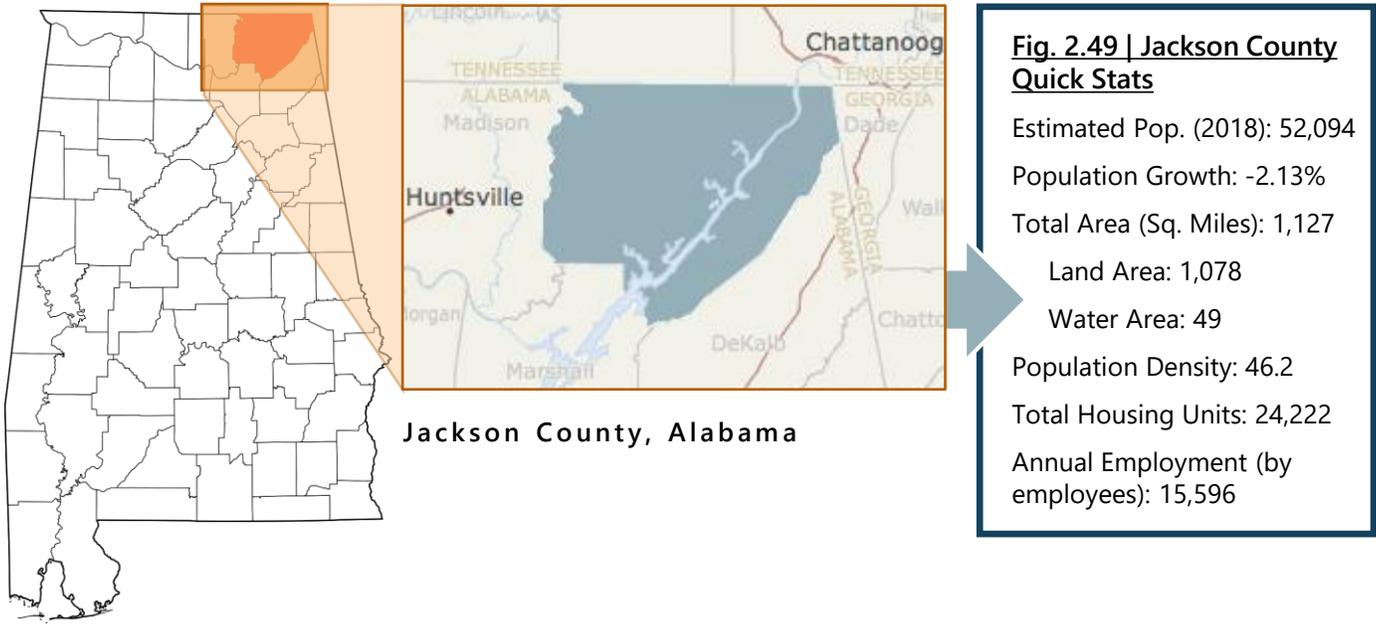
Table 2.46 Estimated Total Housing Units (2000, 2010-2018)					
Etowah County	Year				
	2000	2010	2011	2012	2013
	45,959	47,454	47,440	47,491	47,419
	2014	2015	2016	2017	2018
	47,507	47,500	47,504	47,639	47,705

Table 2.47 Housing Units by Year Structure Built	
Total Units	47,705
Built 2014 or later	363
Built 2010 to 2013	912
Built 2000 to 2009	5,024
Built 1990 to 1999	6,267
Built 1980 to 1989	5,964
Built 1970 to 1979	7,404
Built 1960 to 1969	6,675
Built 1950 to 1959	6,240
Built 1940 to 1949	4,034
Built 1939 or earlier	4,822

Table 2.48 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	47,705	100
1-Unit, Detached	36,997	77.55
1-Unit, Attached	259	0.69
2 Units	927	2.46
3 or 4 Units	1,147	3.05
5 to 9 Units	1,627	4.32
10 to 19 Units	728	1.93
20 or More Units	756	2.01
Mobile Home	5,228	13.89
Boat, RV, etc.	36	0.10

Of the total number of occupied housing units estimated in 2018, **27,882 (71.9%)** of those units were owner-occupied and **10,895 (28.1%)** were renter-occupied units. The average household size of owner-occupied units was **2.62**; the figure for renter-occupied units was **2.63**.

Section 2.6 | Jackson County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Jackson County is in the northeast corner of the State of Alabama bordering the states of Tennessee and Georgia. It is the fifth largest county in geographical size in the State of Alabama. It is situated along U.S. Highway 72 midway between the cities of Huntsville and Chattanooga. Locationally, it is bordered by, clockwise from the east, Dade County in Georgia, DeKalb, Marshall and Madison counties in Alabama and Franklin and Marion Counties in Tennessee. Jackson County has a total area of **1,127** square miles consisting of **1,078** square miles of land and **49** square miles of water.

The major highway in Jackson County is U.S. Highway 72 that runs northeast and southwest through the middle of the county and connects the area to Huntsville to the west and to Chattanooga to the east. Alabama Highway 35 connects the Scottsboro area of the county to Interstate 59 that runs just east of the county through DeKalb County and connects Chattanooga to Birmingham. Highway mileage in Jackson County consists of **242** state miles and **929** county miles of highways.

General Physiography

The land in Jackson County consists of three general physiographic divisions. First are the sandstone plateaus, that is, Sand Mountain in the eastern and southeastern portion of the county and the Cumberland Plateau in the north central portion of the county. Elevations in the Cumberland Plateau are the highest in the county and rise to about 1,700 feet above sea level. Second are the limestone valleys that lie along the Tennessee River Valley, the Paint Rock Valley, and along numerous smaller streams throughout the county. The lowest elevation in the county is where the Pain Rock River leaves the county at 560 feet. Third are the steep and rocky, rough mountain slopes that lie between the sandstone plateaus and the limestone valleys.

Source: Jackson County, Alabama Natural Hazard Mitigation Plan (2016)

Section 2.6 | Jackson County, Alabama

Growth Trends

Population

Jackson County’s population has decreased approximately **2.13%** since 2010 according to 2010 Decennial Census data and 2018 American Community Survey (ACS) 5-Year estimates. The population is estimated to have declined by **3.4%** since 2000. As shown in Table 2.50 below, the Town of Dutton experienced the most significant population growth with an estimated growth of **30.5%** since 2010. Table 2.51 shows projections depicting how the County’s population will decline by **7.2%** by 2040, which equates to a loss of approximately **3,843** persons overall. It should be noted that these figures may change once the 2020 Census data has been tabulated and distributed by the U.S. Census Bureau.

Jurisdiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Jackson County	53,926	53,227	52,094	-2.13
Bridgeport	2,728	2,418	2,303	-4.76
Dutton	310	315	411	30.48
Hollywood	950	1,000	1,088	8.80
Hytov	150	354	394	11.30
Langston	254	270	216	-20.00
Paint Rock	185	210	184	-12.38
Pisgah	706	722	761	5.40
Pleasant Groves	447	420	416	-0.95
Scottsboro	14,746	14,770	14,527	-1.65
Section	769	770	959	24.55
Skyline	828	851	939	10.34
Stevenson	1,770	2,046	1,847	-9.73
Woodville	761	1,428	821	-42.51
Incorporated Area Pop.	24,604	25,574	24,866	-2.77
Unincorporated Area Pop.	29,322	27,653	27,228	-1.54

								2018 Series	
	Census	Census					Change 2010 - 2040		
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Employment + Unemployment

According to the U.S. Bureau of Labor Statistics (BLS), the Quarterly Census of Employment and Wages (QCEW), an employment database reports employment in Jackson County has risen approximately 1.3% since 2009. The lowest figure of employees (7,960) was reported in 2014, a period when the economy was still recovering from the negative effects of the 2008-2009 deep recession.

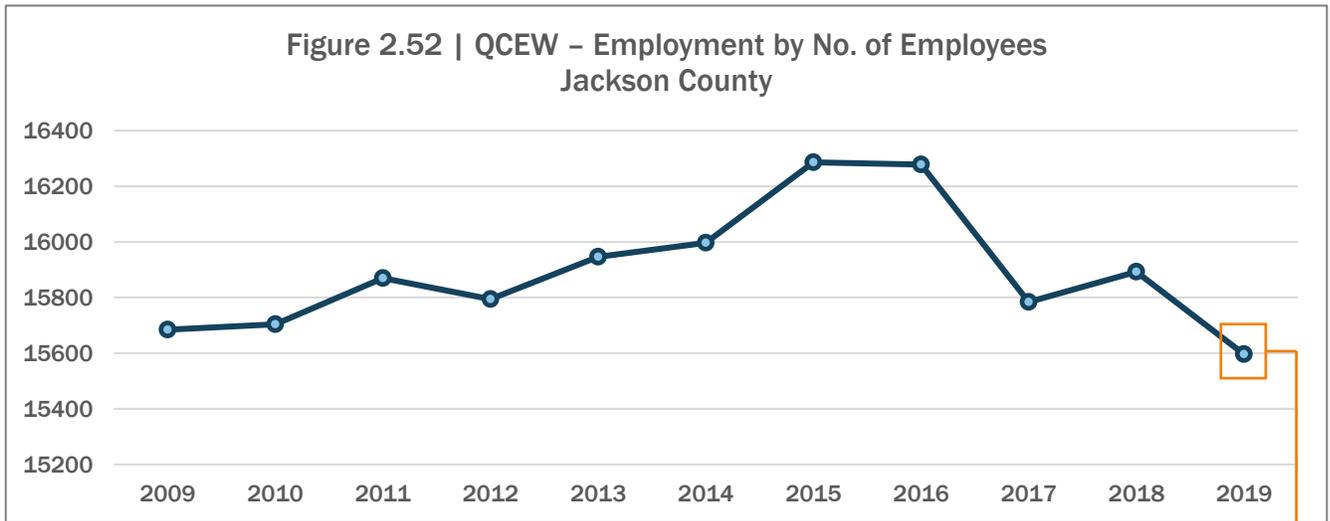


Table 2.53 | County Civilian Labor Force Employment Estimates (2020)

	Labor Force	Employment	Unemployment	Rate Unemployment (%)
Alabama	2,195,843	2,030,073	165,770	6.6
Jackson County	23,046	21,538	1,508	6.5

Total
Employees:
15,596 (P)*
Number of
Establishments:
1,003 (P)
Average Annual
Pay:
\$37,071 (P)

Source: Alabama Department of Labor – Labor Market Information Division

In 2018, the American Community Survey (ACS) estimated that **50.8%** the population aged 16 years and older participated in the County’s labor force. The most active cohorts were the 35 to 44 age group and the 45 to 54 age group. The unemployment rate for Jackson County the same year was an estimated **5.1%**; a figure that is estimated to have increased to **6.5%** in 2020 according to estimates prepared by the Alabama Department of Labor.**

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed September 2020.

Section 2.6 | Jackson County, Alabama

Business + Industry

Tables 2.54 and 2.55 list the County’s major manufacturers and non-manufacturers. According to this data, home décor and refrigeration units are the two prominent products Jackson County offers to the region and communities abroad. Scottsboro, the county seat, is home to the Jackson County Board of Education, Maples Industries, Highland Medical Center, and several other employers listed below.

Table 2.54 Major Manufacturers - Jackson County, Alabama		
Name	Product	No. of Employees
Maples Industries, Inc	Scatter Rugs & Bath Sets	1,600
HTPG, Inc.	Commercial Refrigeration Units	464
Lozier Corporation	Store Fixtures	444
WestRock Company	Corrugated Medium Paperboard	417
Sanoh America, Inc.	Automotive Fluid Handling Systems	314
Engineered Floors	Staple Fiber, Primary + Secondary Carpet Backings	250
Universal Truckload, Inc.	Trucking	200
Polymer Industries	Industrial Plastics	200
Storey Trucking Company	Trucking-Long Haul Refrigeration	150
United States Stove Company, Inc.	Wood & Coal Heaters	150

Table 2.55 Major Non-Manufacturers - Jackson County, Alabama		
Jackson County Board of Education	Education	745
Highlands Medical Center	Health Care	731
Scottsboro City Board of Education	Education	385
Jackson County Commission	Local Government	256

Source: North Alabama Industrial Development Association, Jackson County Economic Development Authority

Housing

American Community Survey (ACS) data projected an estimated **25,106** total housing units in Jackson County as of 2018. This is a **3.9%** jump from 2000 and a **1.3%** projected increase since 2010. Occupied housing units accounted for **82.2%** (20,626) of total housing units in Jackson; single-family detached units made up **71.4%** of these units while mobile homes composed **19.6%**. ACS data further estimates that **98%** of local housing units were constructed between 1960 and 2009.

Table 2.56 Estimated Total Housing Units (2000, 2010-2018)					
Jackson County	Year				
	2000	2010	2011	2012	2013
	24,168	24,778	24,794	24,798	24,709
	2014	2015	2016	2017	2018
	24,770	24,758	24,773	25,019	25,106

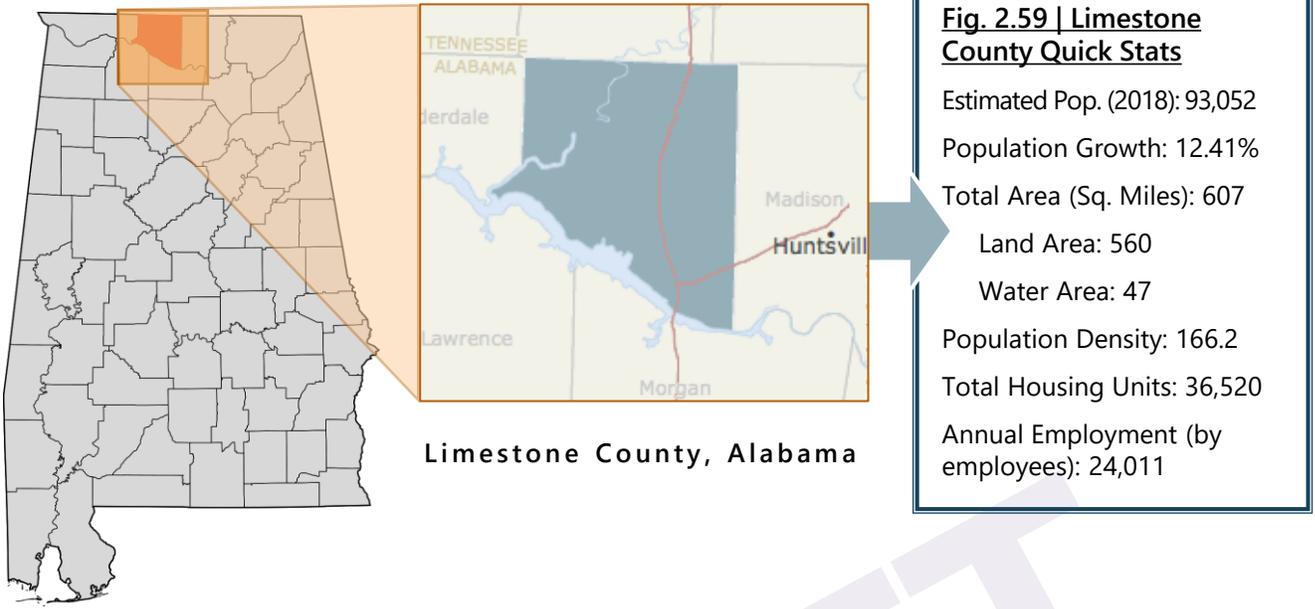
Table 2.57 Housing Units by Year Structure Built	
Total Units	25,106
Built 2014 or later	209
Built 2010 to 2013	318
Built 2000 to 2009	2,448
Built 1990 to 1999	4,664
Built 1980 to 1989	4,307
Built 1970 to 1979	5,793
Built 1960 to 1969	3,122
Built 1950 to 1959	1,731
Built 1940 to 1949	1,213
Built 1939 or earlier	1,301

Source: American Community Survey (ACS) Selected Housing Characteristics

Table 2.58 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	25,106	100
1-Unit, Detached	17,924	71.39
1-Unit, Attached	228	0.91
2 Units	717	2.86
3 or 4 Units	215	0.86
5 to 9 Units	698	2.78
10 to 19 Units	295	1.18
20 or More Units	59	0.24
Mobile Home	4,912	19.57
Boat, RV, etc.	58	0.23

Of the total number of occupied housing units estimated in 2018, **15,282 (74%)** of those units were owner occupied and **5,344 (26%)** were renter-occupied units. The average household size of owner-occupied units was **2.53**; the figure for renter-occupied units was **2.40**.

Section 2.7 | Limestone County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Limestone County is in the north central portion of Alabama. It is bordered by Madison County on the east, Lauderdale County on the west, Lawrence County to the southwest, Morgan County to the south, and the state of Tennessee to the north. The County has **560** square miles of land area and approximately **47** square miles of water, totaling **607** square miles. Current figures estimate there are **166.2** persons per square mile. Limestone County is home to **8** municipalities: the City of Athens and the City of Decatur, with portions of the Cities of Huntsville and Madison; the Town of Ardmore; the Town of Elkmont; the Town of Lester; and the Town of Mooresville.

The major roadways in Limestone County are Interstate 65, Interstate 565, U.S. Highway 72 and U.S. Highway 31. CSX Transportation and Norfolk Southern Railway are the County's two major rail lines. Limestone County is served by Ardmore Airport and Pryor Field Regional Airport. The County is also served by Huntsville International Airport in the City of Huntsville. Athens Utilities, owned by the City of Athens, provides electricity, gas, and water/wastewater services covering the County's 607 square miles.

General Physiography

The major geologic units in Limestone County include:

Silurian Formations, including Decatur Limestone, Brownsport Group (Lobelville Formation, Bob Limestone, Beech River Formation), Wayne Group (Dixon Formation, Lego Formation, Waldron Shale, Laurel Limestone, Osgood Formation) and Brassfield Limestone (Silurian) at surface, covers 4% of this area – lithology: limestone, shale, and mudstone.

Alluvial deposits (Quaternary) at surface, covers 4% of this area – lithology: sand, silt, clay or mud, and gravel.

Ordovician (units) including Richmond Group, the Maysville Group, the Eden Group, and the Nashville Group (which includes Catheys Formation)(Ordovician) at surface, covers 4% of this area – lithology: shale and limestone.

Source: Limestone County, Alabama Natural Hazards Mitigation Plan | 2015

Section 2.7 | Limestone County, Alabama

Growth Trends

Population

Limestone County’s population has increased **12.41%** since 2010 according to 2010 Decennial Census data and 2018 ACS 5-Year Estimates. As shown in Table 2.60 below, the Town of Lester experienced the most population growth, with an estimated increase of **71.17%** since 2010. Table 2.61 depicts how the County’s overall population is expected to increase by **56.6%** by 2040, an increase of approximately **46,835** persons.

Table 2.60 Limestone County Jurisdiction Population 2000 - 2010 and 2018				
Jursidiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Limestone County	65,676	82,782	93,052	12.41
Ardmore	1,034	1,194	1,305	9.30
Athens	18,967	21,897	25,176	14.97
Elkmont	470	434	490	12.90
Lester	107	111	190	71.17
Mooresville	59	53	89	67.92
Incorporated Area Pop.	20,637	23,689	27,250	15.03
Unincorporated Area Pop.	45,039	59,093	65,802	11.35

Table 2.61 Division F Regional Population 2000-2010 and Projections 2020 - 2040									
								2018 Series	
	Census							Change 2010 - 2040	
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Section 2.7 | Limestone County, Alabama

Employment + Unemployment

The U.S. Bureau of Labor Statistics (BLS) reported that Limestone’s employment increased by **18.7%** since 2009. The County’s workforce grew consistently every year since then. Given how Limestone’s population is expected to grow by **56.6%** by 2040, it is highly probable that the workforce will grow and become more diverse in the process.

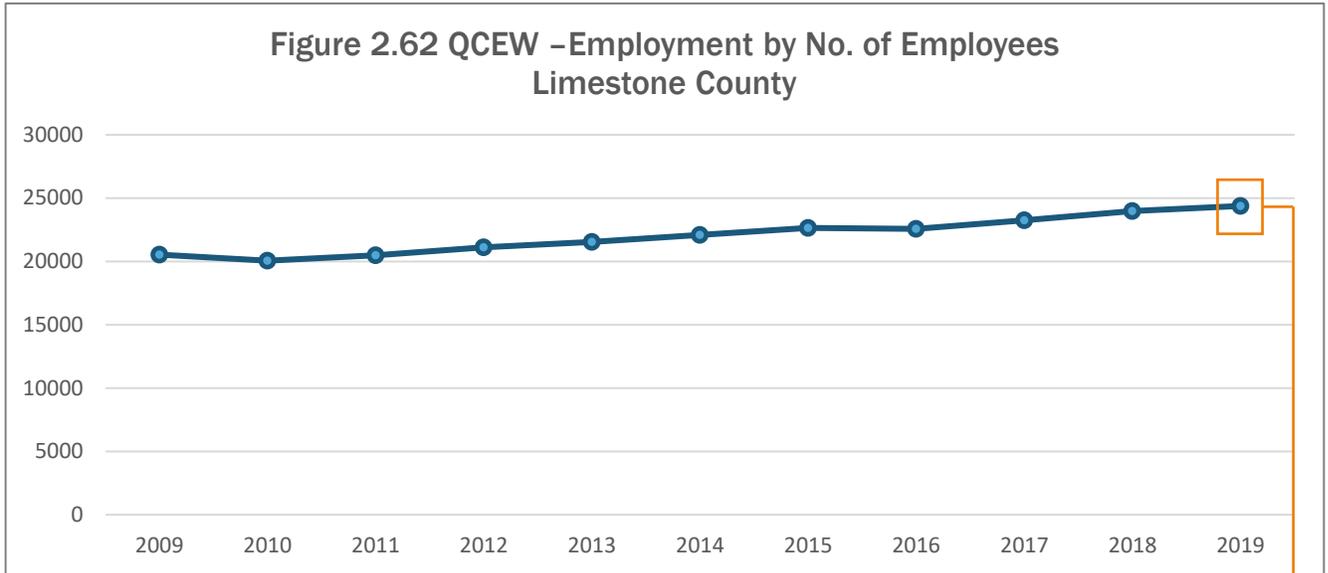


Table 2.63 | County Civilian Labor Force Employment Estimates (2020)

	Labor Force	Employment	Unemployment	Rate Unemployment* (%)
Alabama	2,195,843	2,030,073	165,770	6.6
Limestone County	43,195	40,881	2,314	5.4

Total
Employees:
24,368*
Number of
Establishments:
1,495*
Average Annual
Pay:
\$49,587*

The labor force participation rate for the working age population in Limestone County was **57.4%** in 2018. The most active age groups in the County’s labor force were persons aged **20 to 24** years old, with a participation rate of **77.3%**. This cohort is followed by the **35 to 44** population, with an estimated participation rate of **75.6%**. The area’s unemployment rate in 2018 was **6.9%**. Unemployment eventually increased to **5.4%** as communities across the nation were heavily impacted by COVID-19.

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed September 2020.

Section 2.7 | Limestone County, Alabama

Business + Industry

Tables 2.64 and 2.65 list the County’s major employers and manufacturers. According to this data, distribution services and off-road vehicles are the two major goods Limestone County contributes to the Division F region. Target Distribution and

Table 2.64 Top Employers – Limestone County, Alabama		
Name	Product	No. of Employees
Target Distribution	Distribution	2,000
Polaris	Off-Road Vehicles	1,996
TVA	Nuclear Power	1,500
Limestone County Schools	Education	1,100
Steelecase	Office Furniture	975
Athens Limestone Hospital	Medical Services	924
Mazda Toyota Manufacturing	Automotive	850
Athens City Schools	Education	466
HDT Global	Military Shelters	385
Athens State University	Education	382

Table 2.65 Top Manufacturers – Limestone County, Alabama		
Name	Product	No. of Employees
Polaris	Distribution	1,996
Steelcase	Office Furniture	975
Madza Toyota Manufacturing	Automotive	850
HDT Global	Military Shelters	350
Aviagen - North America	Poultry Breeders	254
InTech Medical	Medical Implants	220
Carpenter Technology Corp.	Specialty Allow Steel	200
Indorama Venture Sustainable Solutions	Recycling	176
GE Aviation	Silicon Caride Ceramic Fiber	150

Source: Limestone County Economic Development Authority

Browns Ferry Nuclear Plant

Browns Ferry is TVA’s first and largest site with three boiling water reactors producing about **10 percent** of TVA’s total generation capacity. In 2014, Browns Ferry was the second-largest power producer in the United States. Located on **840** acres beside Wheeler Reservoir near Athens, AL, the Browns Ferry Nuclear Plants is one of the most powerful in TVA’s generating portfolio. When the plant opened in 1974, its three boiling-water reactors were the first in the world capable of producing more than **1,000** megawatts – or **1 billion** watts of power. The three units combined can produce **3,400** NW, powering almost **two million** homes.

Source: Browns Ferry Nuclear Plant – Tennessee Valley Authority

Section 2.7 | Limestone County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **36,069** total housing units in Limestone County as of 2018. This is a **34.1%** increase from 2000 and an **7.8%** projected increase since 2010. Occupied housing units accounted for **89.1%** (**32,126**) of total housing units in Limestone; single-family detached units made up **77.6%** of these units while mobile homes composed **12.6%**. ACS data further estimates that approximately **65.7%** of local housing units were constructed between 1960 and 2009.

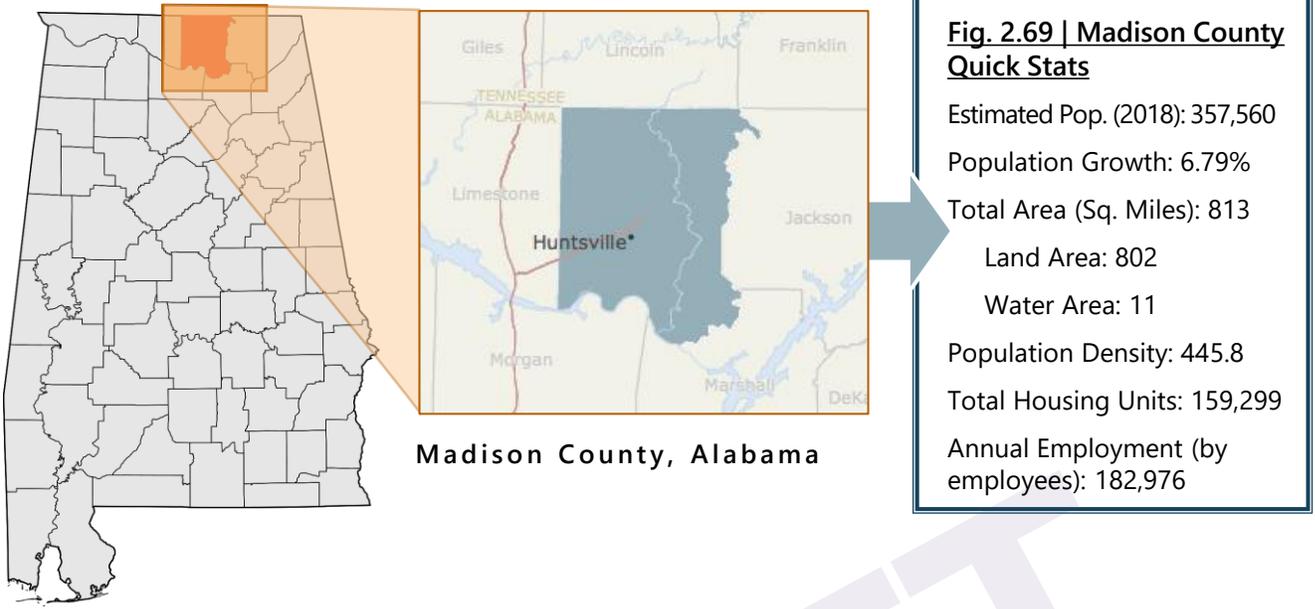
Table 2.66 Estimated Total Housing Units (2000, 2010-2018)					
Limestone County	Year				
	2000	2010	2011	2012	2013
	26,897	33,454	34,329	34,658	34,959
	2014	2015	2016	2017	2018
	35,241	35,357	35,515	35,859	36,069

Table 2.67 Housing Units by Year Structure Built	
Total Units	36,069
Built 2014 or later	936
Built 2010 to 2013	3,119
Built 2000 to 2009	8,721
Built 1990 to 1999	6,280
Built 1980 to 1989	4,991
Built 1970 to 1979	5,179
Built 1960 to 1969	3,513
Built 1950 to 1959	1,735
Built 1940 to 1949	617
Built 1939 or earlier	978

Table 2.68 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	36,069	100
1-Unit, Detached	27,990	77.60
1-Unit, Attached	516	1.37
2 Units	460	1.22
3 or 4 Units	372	0.99
5 to 9 Units	858	2.28
10 to 19 Units	501	1.33
20 or More Units	796	2.11
Mobile Home	4,536	12.05
Boat, RV, etc.	40	0.11

Of the total number of occupied housing units estimated in 2018, **25,064 (78.0%)** of those units were owner-occupied and **7,062 (22.0%)** were renter-occupied units. The average household size of owner-occupied units was **2.80**; the figure for renter-occupied units was **2.85**.

Section 2.8 | Madison County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Madison County is in the north central portion of Alabama. It is bordered by Limestone County on the west, Jackson County on the east, Marshall County to the southeast, Morgan County to the southwest, and the state of Tennessee to the north. The County has **802** square miles of land area and approximately **11** square miles of water, totaling **813** square miles. Current figures estimate there are **445.8** persons per square mile. Madison County is home to **6** municipalities: the City of Huntsville; the City of Madison; the City of New Hope; the Town of Owens Cross Roads; the Town of Gurley; and the Town of Triana.

The major roadways in Madison County are Interstate 65, Interstate 565, U.S. Highway 72 and U.S. Highway 53. The CSX Railway is the main railroad in the County. The County is also served by Huntsville International Airport in the City of Huntsville and Huntsville Executive Airport in Meridian. Huntsville Utilities, owned by the City of Huntsville, provides gas, water and electric service to Madison County residents. The company is governed by three separate boards appointed by the Huntsville City Council. They operate in conjunction with most of the Madison County water systems, city and county sanitation departments, and the City Water Pollution Control Department. By sharing management and combining services on a single bill, utilities are provided at the lowest possible cost.

General Physiography

Eastern and Southeastern Madison County have many mountainous regions. Approximately one-third of the county is forested, mostly on these mountainous slopes. Western Madison County consists of broad, rolling hills of slight to moderate relief with elevations ranging from **600** to **800** feet.

The Flint River flows southerly through the county through broad, agricultural valleys. It drains a total of **568** square miles and includes most of north-central, northeastern and east-central Madison County. Other drainage basins include Brier Fork, Beaverdam Creek, Indian Creek, Aldridge Creek, Huntsville Spring Branch, Pinhook Creek, Fagan Creek, Dallas Branch and Brogfan Branch.

Madison County’s soils are derived primarily from sedimentary rocks and are moderately well to extremely well-drained. The City of Huntsville is located in the Highland Rim region and has primarily a rolling topography consisting of limestone soils. Surface drainage in Huntsville is dendritic, flowing southward to the Tennessee River.

Source: Madison County Natural Hazard Mitigation Plan | 2016-2021

Division F Regional Hazard Mitigation Plan
Section 2.8 | Madison County, Alabama

Growth Trends

Population

Madison County’s population has increased **6.79%** since 2010 according to 2010 Decennial Census data and 2018 ACS 5-Year Estimates. As shown in Table 2.70 below, the Town of Triana experienced the most population growth, with an estimated increase of **38.31%** since 2010. Table 2.71 depicts how the County’s overall population is expected to increase by **34.7%** by 2040, an increase of approximately **116,232** persons.

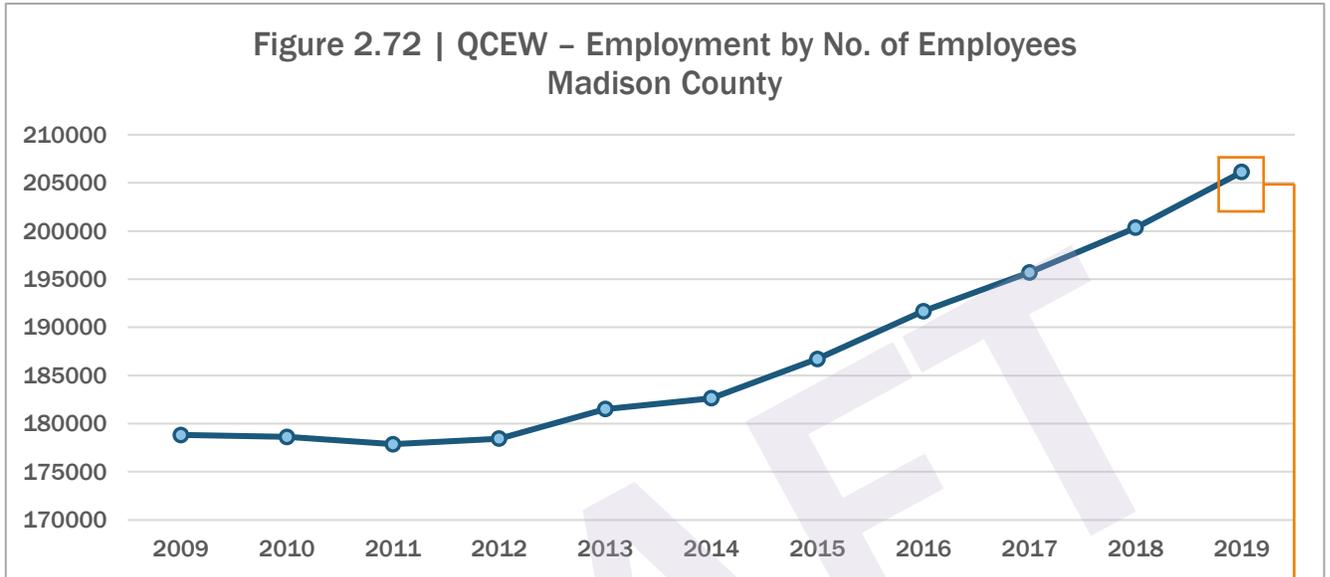
Table 2.70 Madison County Jurisdiction Population 2000 - 2010 and 2018				
Jursidiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Madison County	276,700	334,811	357,560	6.79
Gurley	876	801	738	-7.87
Huntsville	158,216	180,105	193,663	7.53
Madison	29,329	42,938	48,275	12.43
New Hope	2,539	2,810	2,856	1.64
Owens Cross Roads	1,124	1,521	2,029	33.40
Triana	458	496	686	38.31
Incorporated Area Pop.	192,542	228,671	248,247	8.56
Unincorporated Area Pop.	84,158	106,140	109,313	2.99

Table 2.71 Division F Regional Population 2000-2010 and Projections 2020 - 2040									
								2018 Series	
	Census							Change 2010 - 2040	
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Section 2.8 | Madison County, Alabama

Employment + Unemployment

The U.S. Bureau of Labor Statistics (BLS) reported that Madison’s employment increased by **15.3%** since 2009. The County’s workforce experienced steady growth up until 2016. Growth from there was slow, eventually declining close to 2015 levels. It is unclear what caused this decline, however, employment continued to drop well into 2020.



	Labor Force	Employment	Unemployment	Rate Unemployment* (%)
Alabama	2,195,843	2,030,073	165,770	6.6
Madison County	182,637	172,920	9,717	5.3

Total Employees: 206,133*
 Number of Establishments: 9,977*
 Average Annual Pay: \$62,193*

The labor force participation rate for the working age population in Madison County was **64.0%** in 2018. The most active age groups in the County’s labor force were persons aged **35 to 44** years old, with a participation rate of 83.3%. This cohort is closely followed by the **30 to 34** population, with an estimated participation rate of **83.1%**. The area’s unemployment rate in 2018 was **3.4%**. Unemployment eventually increased to **4.8%** as the communities across the nation are heavily impacted by COVID-19.

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed September 2020.

Section 2.8 | Madison County, Alabama

Business + Industry

Tables 2.74 lists the County’s major employers and manufacturers. According to this data, government and healthcare are the two major services Madison County contributes to the Division F region. Redstone Arsenal is a United States Army Post and a garrison for various tenants across the Department of Defense, Department of Justice, and NASA. It provides nearly **38,000** jobs within Huntsville/Madison County and the surrounding region.

Table 2.74 Top Employers – Madison County, Alabama		
Name	Product	No. of Employees
U.S. Army/ Redstone Arsenal	Government	38,000
Huntsville Hospital	Health Care	9,352
NASA/Marshall Space Flight Center	Government	6,000
Huntsville City Schools	Education	3,000
The Boeing Company	Research + Development	2,900
SAIC	Research + Development	2,746
Dynetics, Inc.	Research + Development	2,551
Madison County Schools	Education	2,389
City of Huntsville	Government	2,206
ADTRAN, Inc.	Telecommunications, Manufacturing	1,925
University of Alabama in Huntsville	Education	1,660
Technicolor	Compact Disc, Manufacturing	1,450
Toyota Motor Manufacturing Alabama, Inc.	Automotive Engine, Manufacturing	1,350
Hexagon US Federal	Software Development	1,325
Madison County Commission	Government	1,242
Alabama A&M University	Education	1,207
Northrop Grumman Corporation	Research + Development	1,100

Source: Huntsville Chamber of Commerce (June 2020)

U.S. Army – Redstone Arsenal

Huntsville, as the capital of Madison County, was a major trading center for North Alabama for a variety of commodities. It was also a major banking center. With major rail lines, the Tennessee River, a plentiful labor supply, and power from the Tennessee Valley Authority dams, it would be exactly what the Army was looking for in early 1941. On July 3, 1941, the U.S. War Department announced that a site on the southwestern edge of Huntsville, Alabama, has been selected as the location for the new chemical munitions manufacturing and storage plant. Not only was this area an inland site, but its numerous mountain ranges afforded additional protection. Moreover, the tract of land selected contained over 30,000 acres – the estimated amount needed to fulfill the needs of the War Department at the time.

Source: The 75th Anniversary of Redstone Arsenal (1941 – 2016) – The U.S. Army Materiel Command, Redstone Arsenal, AL

Section 2.8 | Madison County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **159,299** total housing units in Madison County as of 2018. This is a **32.4%** increase from 2000 and an **8.8%** projected increase since 2010. Occupied housing units accounted for **81.3%** (**38,777**) of total housing units in Madison; single-family detached units made up **77.6%** of these units while mobile homes composed **11.0%**. ACS data further estimates that approximately **65.7%** of local housing units were constructed between 1960 and 2009.

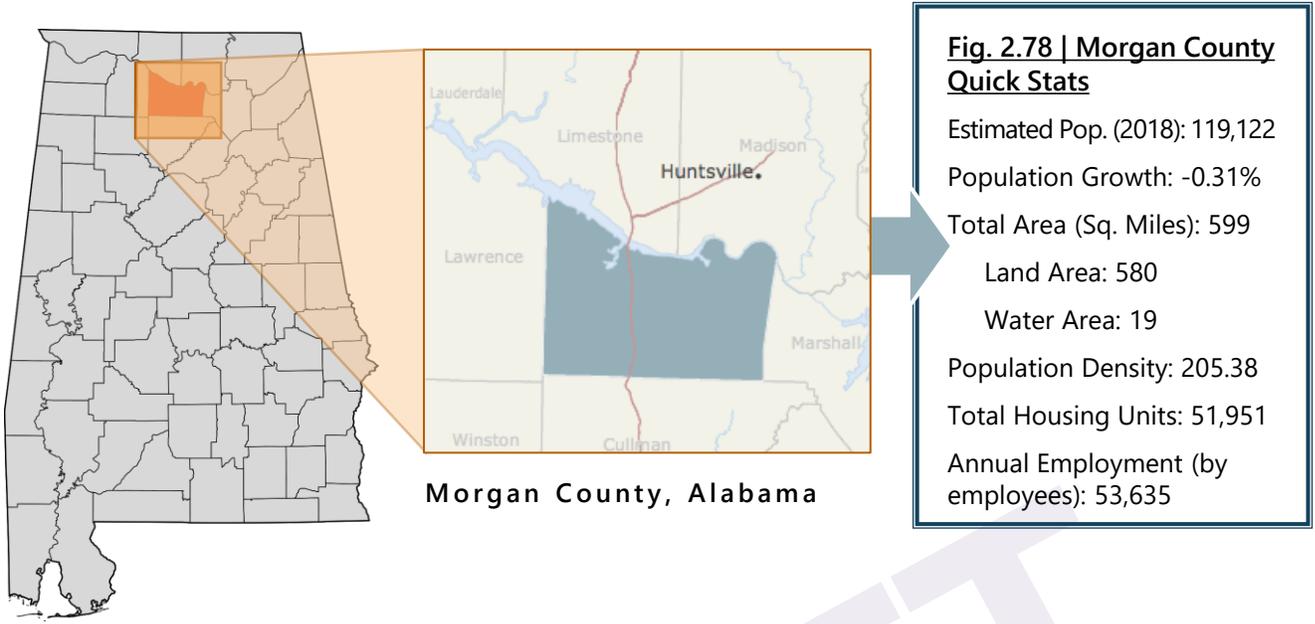
Table 2.75 Estimated Total Housing Units (2000, 2010-2018)					
Madison County	Year				
	2000	2010	2011	2012	2013
	120,288	141,483	144,339	146,628	148,684
	2014	2015	2016	2017	2018
	150,712	152,720	154,710	157,000	159,299

Table 2.76 Housing Units by Year Structure Built	
Total Units	159,299
Built 2014 or later	4,356
Built 2010 to 2013	8,956
Built 2000 to 2009	31,797
Built 1990 to 1999	28,905
Built 1980 to 1989	25,955
Built 1970 to 1979	18,210
Built 1960 to 1969	22,739
Built 1950 to 1959	11,402
Built 1940 to 1949	3,443
Built 1939 or earlier	3,536

Table 2.77 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	159,299	100
1-Unit, Detached	114,160	71.66
1-Unit, Attached	2,729	7.25
2 Units	2,561	6.80
3 or 4 Units	6,275	16.67
5 to 9 Units	10,120	26.88
10 to 19 Units	8,280	21.99
20 or More Units	7,930	21.06
Mobile Home	7,081	18.81
Boat, RV, etc.	163	0.43

Of the total number of occupied housing units estimated in 2018, **97,650 (67.2%)** of those units were owner-occupied and **47,606 (32.8%)** were renter-occupied units. The average household size of owner-occupied units was **2.51**; the figure for renter-occupied units was **2.18**.

Section 2.9 | Morgan County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

Morgan County is in the north central portion of Alabama. It is bordered by Lawrence County on the west, Limestone County on the northwest, Madison County on the northeast, Marshall County on the east, and Cullman County on the south. The County has **580** square miles of land area and approximately **19** square miles of water, totaling **599** square miles. Current figures estimate there are **205** persons per square mile. Morgan County is home to **7** municipalities: the City of Decatur; the City of Hartselle; the Town of Eva; the Town of Falkville; the Town of Priceville; the Town of Somerville; and the Town of Trinity.

The major roadways in Morgan County are Interstate 65, U.S. Highway 31 and Alternative U.S. Highway 72. The Norfolk Southern Railway is the main railroad in the County. The County is also served by Hartselle Airport in Hartselle, AL.

Presently, there are only three cities which offer public sanitary sewage within the county: Decatur, Falkville, and Hartselle. The remaining jurisdictions rely upon various on-site disposal systems, which include any method in which the entire disposal process occurs on the same site as the structure served. Additionally, the West Morgan/East Lawrence Water and Sewer Authority provide water and sewer service to its customers. The Town of Eva currently has a sanitary sewer system under construction.

Natural gas is furnished to the area by the following companies: Northwest Alabama Gas District, Decatur Utilities, Hartselle Utilities and Wheeler Basin Natural Gas. In addition, several L.P. gas companies operate within the county supplying areas not reached by natural gas.

General Physiography

Morgan County is composed of rolling topography filled with prime farmland and forest. The Tennessee River runs adjacent to the norther border. Elevations range from **482** feet to approximately **1,417** feet above sea level.

Source: Morgan County Five-Year Multi-jurisdictional Hazard Mitigation Plan | 2010-2015

Section 2.9 | Morgan County, Alabama

Growth Trends

Population

Morgan County’s population has decreased **0.31%** since 2010 according to 2010 Decennial Census data and 2018 ACS 5-Year Estimates. As shown in Table 2.79 below, the Town of Trinity experienced the most population growth, with an estimated increase of **41.9%** since 2010. Table 2.80 depicts how the County’s overall population is expected to increase by **3.8%** by 2040, a gain of approximately **4,538** persons.

Table 2.79 Morgan County Jurisdiction Population 2000 - 2010 and 2018				
Jursidiction	2000 Census Pop.	2010 Census Pop.	2018 ACS Pop. Est.	2010 - 2018 % Change
Morgan County	111,064	119,490	119,122	-0.31
Decatur	53,929	55,683	54,617	-1.91
Eva	491	519	560	7.90
Falkville	1,202	1,279	1,373	7.35
Hartselle	12,019	14,255	14,405	1.05
Priceville	1,631	2,658	3,318	24.83
Somerville	347	724	534	-26.24
Trinity	1,841	2,095	2,972	41.86
Incorporated Area Pop.	71,460	77,213	77,779	0.73
Unincorporated Area Pop.	39,604	42,277	41,343	-2.21

Table 2.80 Division F Regional Population 2000-2010 and Projections 2020 - 2040									
								2018 Series	
	Census	Census						Change 2010 - 2040	
	2000	2010	2020	2025	2030	2035	2040	Number	Percent
Alabama	4,447,100	4,779,736	4,940,253	5,030,870	5,124,380	5,220,527	5,319,305	539,569	11.3
Blount County	51,024	57,322	58,383	59,154	59,995	61,064	62,095	4,773	8.3
Cherokee County	23,988	25,989	25,835	25,778	25,709	25,637	25,573	-416	-1.6
Cullman County	77,483	80,406	82,904	83,897	84,776	85,636	86,350	5,944	7.4
DeKalb County	64,452	71,109	71,629	72,394	73,615	75,364	77,344	6,235	8.8
Etowah County	103,459	104,430	102,137	101,245	100,612	100,280	100,127	-4,303	-4.1
Jackson County	53,926	52,227	51,736	51,057	50,424	49,836	49,384	-3,843	-7.2
Limestone County	65,676	82,782	99,775	108,021	116,015	122,976	129,617	46,835	56.6
Madison County	276,700	334,811	372,447	392,382	412,126	431,697	451,043	116,232	34.7
Marshall County	82,231	93,019	96,219	98,049	100,136	102,494	105,088	12,069	13.0
Morgan County	111,064	119,490	119,865	120,464	121,344	122,557	124,028	4,538	3.8

Section 2.9 | Morgan County, Alabama

Employment + Unemployment

The U.S. Bureau of Labor Statistics (BLS) reported that Morgan’s employment increased by **10.6%** since 2009. The County’s workforce experienced slow growth from 2009 to 2013. Growth from there was increasingly steady, continuing to increase into 2020.

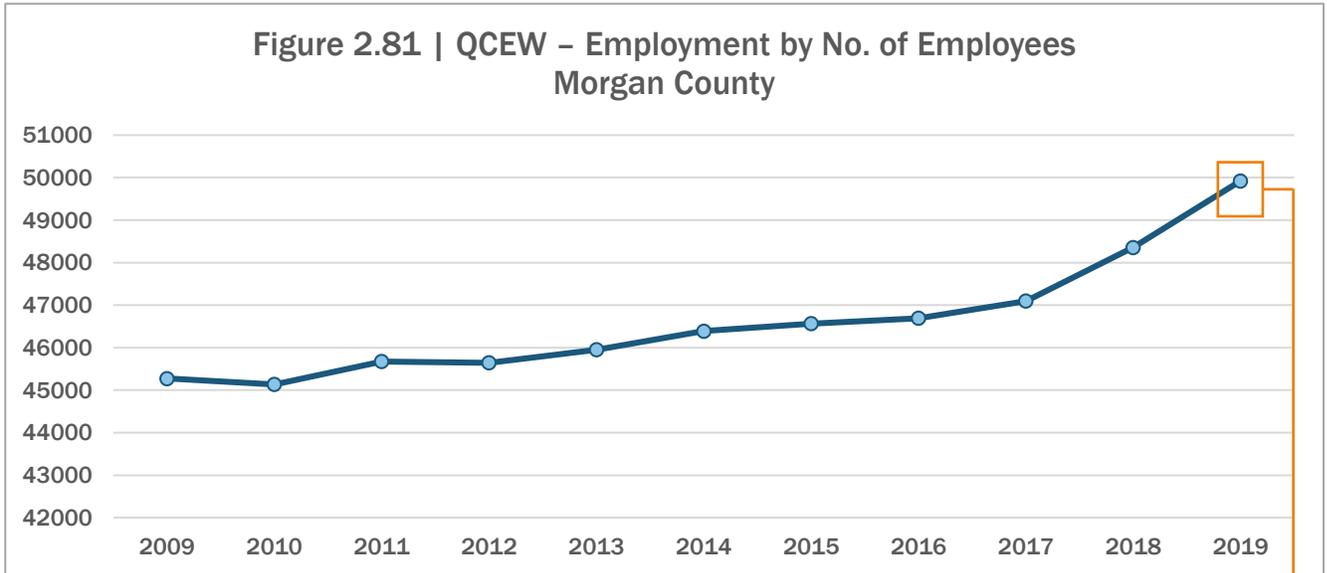


Table 2.82 | County Civilian Labor Force Employment Estimates (2020)

	Labor Force	Employment	Unemployment	Rate Unemployment* (%)
Alabama	2,195,843	2,030,073	165,770	6.6
Morgan County	56,702	53,635	3,037	5.7

Total
Employees:
49,920*
Number of
Establishments:
2,814*
Average Annual
Pay:
\$47,424*

The labor force participation rate for the working age population in Morgan County was **57.6%** in 2018. The most active age groups in the County’s labor force were persons aged **30 to 34** years old, with a participation rate estimated at **81.8%**. This cohort is closely followed by the 25-29 population, with an estimated participation rate of **80.5%**. The area’s unemployment rate in 2018 was **5.1%**. Unemployment gradually increased to **6.2%** as the communities across the nation are heavily impacted by COVID-19.

*(P) - Indication by the U.S. Bureau of Labor Statistics that provided figures are preliminary estimates.

**County Year-to-Date Labor Force Estimates are prepared by the Alabama Department of Labor in cooperation with the Bureau of Labor Statistics. These figures are based on 2019 benchmarks and were accessed September 2020.

Section 2.9 | Morgan County, Alabama

Business + Industry

Tables 2.83 list the County’s major employers and manufacturers. According to this data, manufacturing and poultry processing are the two major goods Morgan County contributes to the Division F region. GE Appliances’ Decatur production operation manufacturers top-freezer refrigerators for home builders and retailers. The plant, on the banks of the Tennessee River, began making refrigerators in 1977 and employs 1,300 people. The Decatur facility is the largest private employer in Morgan County.

Table 2.83 Top Employers – Morgan County, Alabama		
Name	Product	No. of Employees
GE Appliances, a Haier Company	Refrigerators	1681
Wayne Farms Prepared Foods	Poultry Processing	1057
3M Company	Industrial Chemicals/ Plastic Sheets	956
Nucor Steel Decatur, LLC	Steel Mini Mill	720
Wayne Farms Fresh Facility	Poultry Processing	719
United Launch Alliance	Rocket Boosters	665
Gemstone Foods, LLC	Poultry Further Processing	486
Daikin America, Inc.	Fluoropolymers	435
Indorama Ventures Xylenes &PTA, LLC	Terephthalic Acid (PTA)/Plastics/Raw Materials	425
Ascend Performance Materials	Nylon Intermediates /Metallurgical-Grade Coke	391
Sonoco Wood Reels	Wood Reels	329
Turner Industries	Pipe Welding-Equipment Setting	300
Toray Composite Materials America, Inc.	Polyacrylonitrile Fiber	279
Hexcel Corporation	Polyacrylonitrile Fiber	241
Hyosung USA	Nylon Tire Cord Fabric	217
Wolverine Industries	Integrated Aluminum Manufacturing	208
Bunge North America, Inc.	Soybean Oil	205
Hubbard & Drake	Industrial Piping, Concrete	180
Valley Rubber, LLC	Wear Lining for the Mining/Minerals Mkts	178
Alabama Farmers Co-op	Animal Feeds	176
Polyplex USA	Thin Plastic Film used in Food Packaging	171
Mobex Global Hartselle	Machining Contract Work for Auto Industry	161

Source: Morgan County Economic Development Association

United Launch Alliance

United Launch Alliance’s (ULA) program management, engineering, test, and mission support functions are headquartered in Denver, Colorado. Manufacturing, assembly and integration operations are in Decatur, Alabama, and Harlingen, Texas. Launch operations are located at Cape Canaveral Space Force Station, Florida, and Vandenberg Space Force Base, California.

Section 2.9 | Morgan County, Alabama

Housing

American Community Survey (ACS) data projected an estimated **51,951** total housing units in Morgan County as of 2018. This is a **9.6%** increase from 2000 and a **1.4%** projected increase since 2010. Occupied housing units accounted for **87.9%** (**45,646**) of total housing units in Morgan; single-family detached units made up **32.6%** of these units while mobile homes composed **6.9%**. ACS data further estimates that approximately **96.5%** of local housing units were constructed prior to 2009.

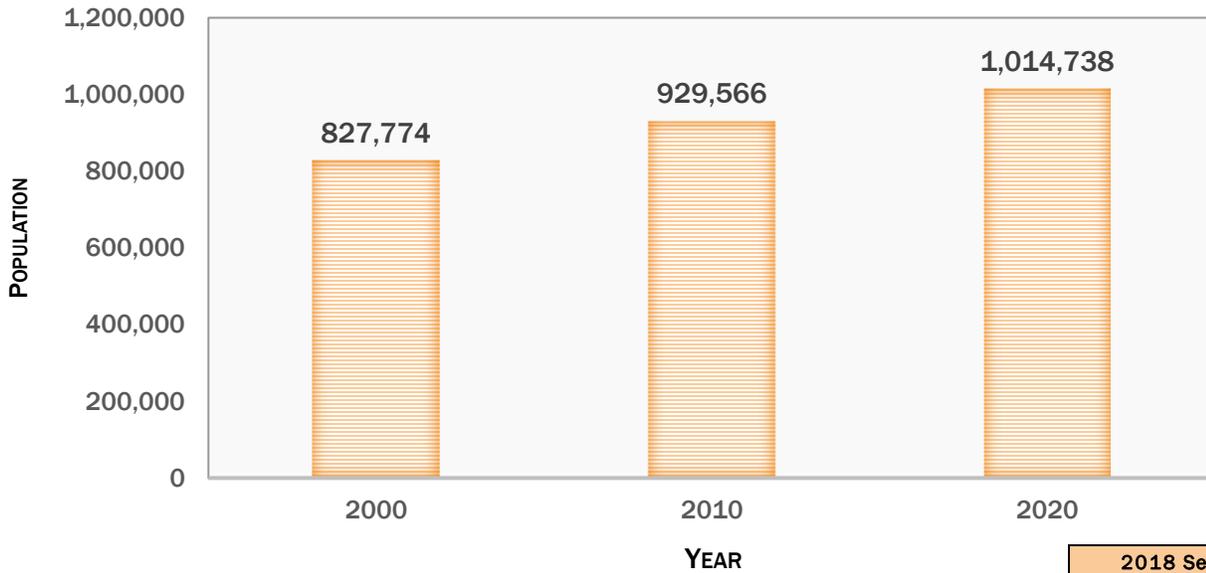
Table 2.84 Estimated Total Housing Units (2000, 2010-2018)					
Morgan County	Year				
	2000	2010	2011	2012	2013
	47,388	51,210	51,026	51,180	51,193
	2014	2015	2016	2017	2018
	51,333	51,411	51,523	51,788	51,951

Table 2.85 Housing Units by Year Structure Built	
Total Units	51,951
Built 2014 or later	747
Built 2010 to 2013	1,063
Built 2000 to 2009	7,048
Built 1990 to 1999	8,728
Built 1980 to 1989	8,735
Built 1970 to 1979	9,776
Built 1960 to 1969	7,601
Built 1950 to 1959	4,147
Built 1940 to 1949	1,838
Built 1939 or earlier	2,268

Table 2.86 Estimated Units in Structure (2018)		
	Units	Total %
Total Housing Units	51,951	100
1-Unit, Detached	51,951	32.61
1-Unit, Attached	36,887	146.93
2 Units	1,299	5.17
3 or 4 Units	729	2.90
5 to 9 Units	1,779	7.09
10 to 19 Units	2,709	10.79
20 or More Units	1,186	4.72
Mobile Home	1,529	6.09
Boat, RV, etc.	5,771	22.99

Of the total number of occupied housing units estimated in 2018, **32,928 (72.1%)** of those units were owner-occupied and **12,718 (27.9%)** were renter-occupied units. The average household size of owner-occupied units was **2.60**; the figure for renter-occupied units was **2.48**.

Fig. 2.87 | DIVISION F DECENNIAL POPULATION (2000-2020)



According to data produced by the U.S. Census Bureau and the Alabama State Data Center, the Division F Region population grew from **827,774** in 2000 to **1,014,738** in 2020. This represents a significant population increase of **22.6%** across the region. Growth estimates produced in 2018 project further estimate that the region will grow by **188,064 (18.5%)** from 2020 to 2040.

	2018 Series	
	Change 2010 - 2040	
	Number	Percent
Blount County	4,773	8.3
Cherokee County	-416	-1.6
Cullman County	5,944	7.4
DeKalb County	6,235	8.8
Etowah County	-4,303	-4.1
Jackson County	-3,843	-7.2
Limestone County	46,835	56.6
Madison County	116,232	34.7
Marshall County	12,069	13.0
Morgan County	4,538	3.8
Division F Region	188,064	18.5

Fig. 2.88 | DIVISION F POPULATION PROJECTIONS (2020-2040)

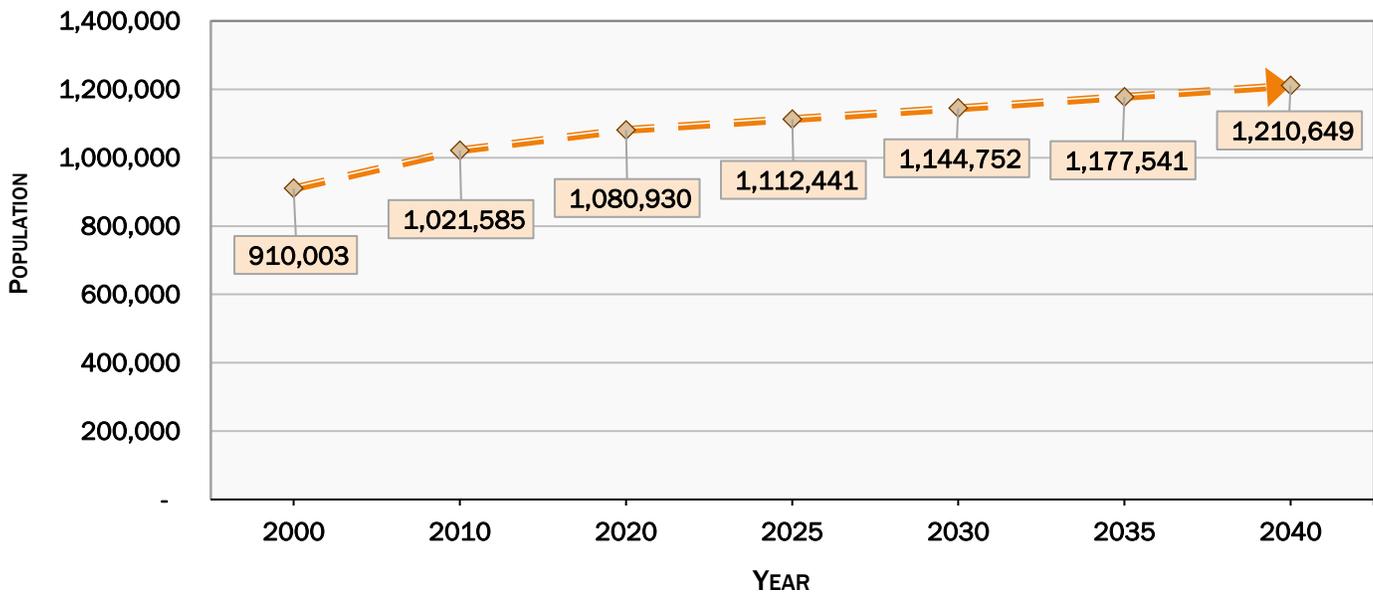


Fig. 2.89 | REGIONAL AREA SQUARE MILEAGE BY COUNTY

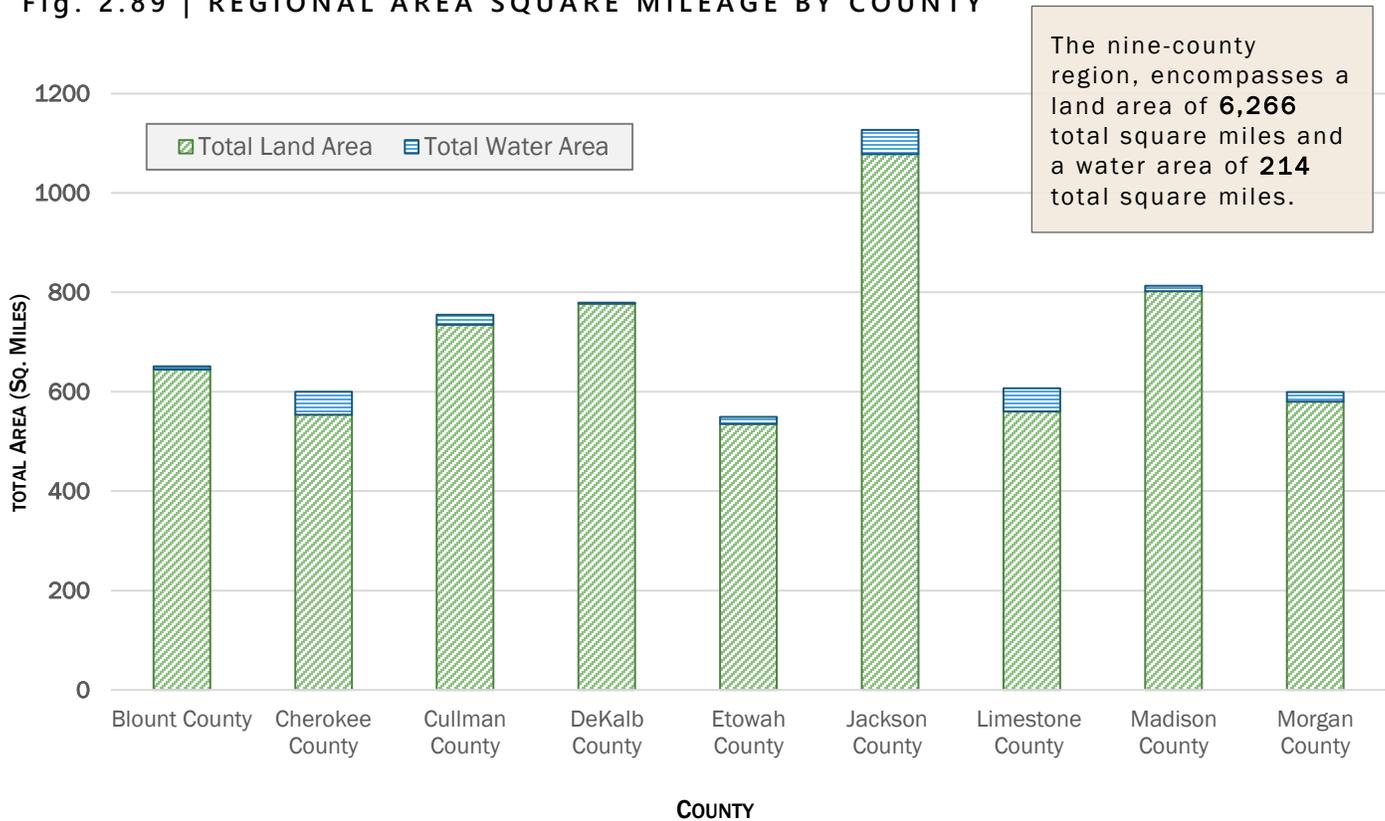


Fig. 2.90 | TOTAL LAND AND WATER AREA BY COUNTY

DIVISION F County	Total Land Area (sq. miles)	Total Water Area (sq. miles)	Total Square Mileage
Blount County	645	6	651
Cherokee County	554	46	600
Cullman County	735	20	755
DeKalb County	777	2	779
Etowah County	535	14	549
Jackson County	1,078	49	1,127
Limestone County	560	47	607
Madison County	802	11	813
Morgan County	580	19	599
Total	6,266	214	6,480

Jackson County is the largest county in the Division by total area. It is also the county with the largest total water area, which is due in large part to Guntersville Lake.

Fig. 2.91 | TOTAL HOUSING UNITS BY COUNTY

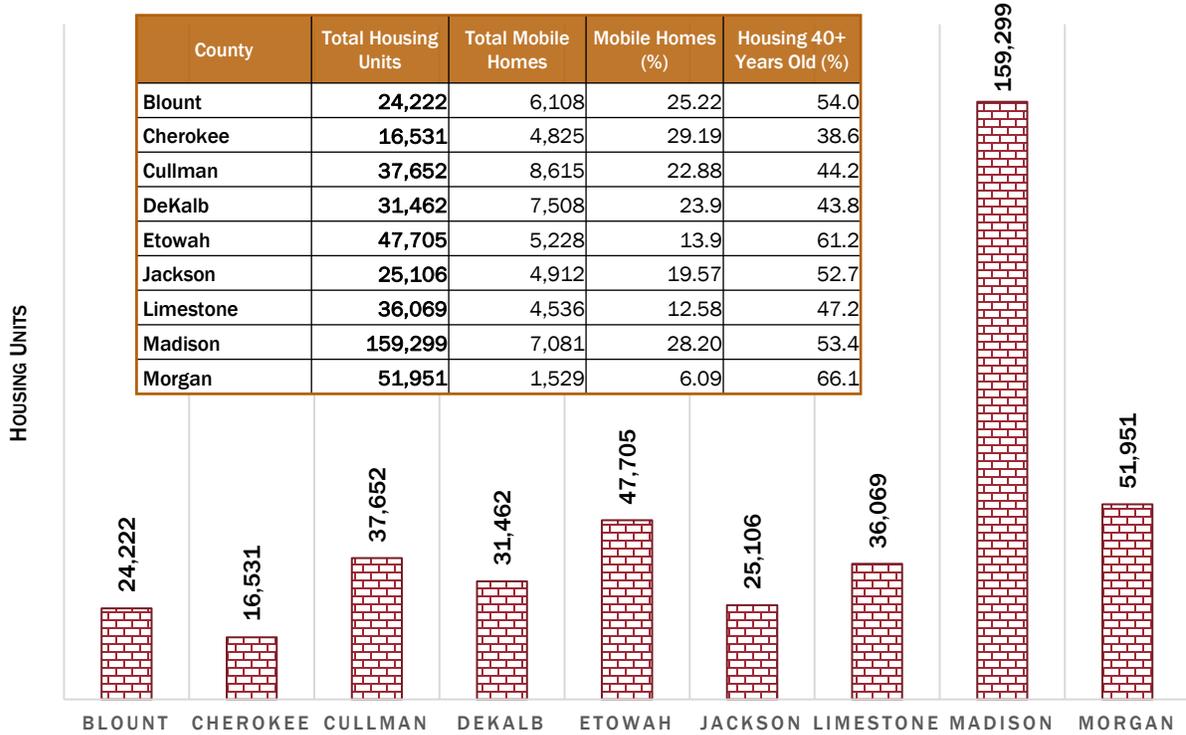
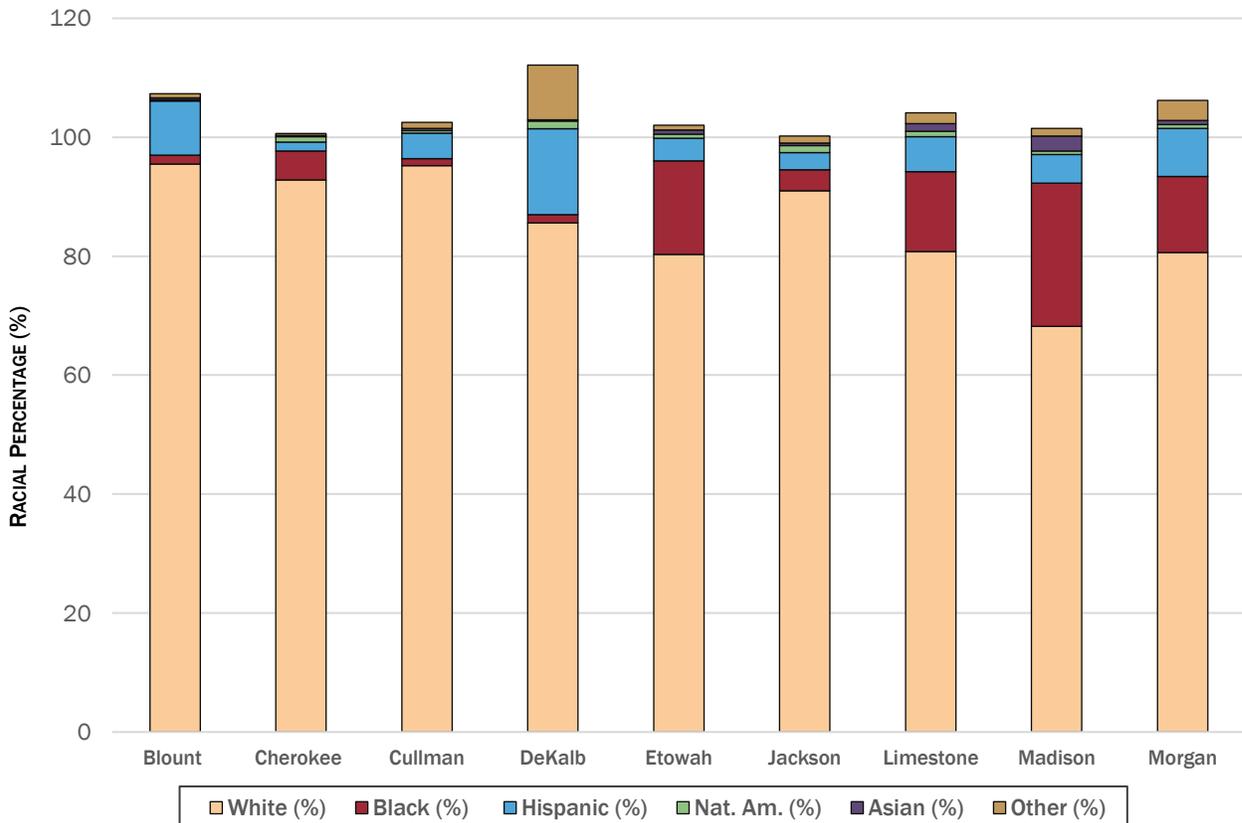


Fig. 2.92 | RACIAL COMPOSITION ESTIMATES BY COUNTY (2018)



Division F Regional Hazard Mitigation Plan
Section 2.5 | Regional Snapshot

Table 2.93 | CIVILIAN LABOR FORCE EMPLOYMENT ESTIMATES BY COUNTY (2020)

	Labor Force	Employment	Unemployment	Unemployment Rate (%)
Alabama	2,263,901	2,158,343	105,558	4.7
Blount County	25,120	24,507	613	2.4
Cherokee County	11,867	11,558	309	2.6
Cullman County	39,743	38,796	947	2.4
DeKalb County	31,495	30,660	835	2.7
Etowah County	40,603	38,788	1815	4.5
Jackson County	23,447	22,750	697	3
Limestone County	45,506	44,364	1142	2.5
Madison County	190,862	185,151	5711	3
Morgan County	59,837	58,151	1686	2.8
Division F	468,480	454,725	13,755	2.9

Table 2.94 | DIVISION F REGION MAJOR EMPLOYERS (2020)

Employer	County	Product	No. of Employees
U.S. Army/Redstone Arsenal	Madison	Government	38,000
Huntsville Hospital	Madison	Health Care	9,352
NASA/Marshall Space Flight Center	Madison	Government	6,000
Huntsville City Schools	Madison	Education	3,000
The Boeing Company	Madison	Research & Development	2,900
SAIC	Madison	Research & Development	2,746
Dynetics, Inc.	Madison	Research & Development	2,551
Madison County Schools	Madison	Education	2,389
City of Huntsville	Madison	Government	2,206
ADTRAN, Inc.	Madison	Telecommunications, Mfg	1,925
GE Appliances, a Haier Company	Morgan	Refrigerators	1,681
University of Alabama in Huntsville	Madison	Education	1,660
Maples Industries, Inc	Jackson	Scatter Rugs & Bath Sets	1,600
The Children's Place	DeKalb	Distribution Center	1,548
Tennessee Valley Authority (TVA)	Limestone	Nuclear Power	1,500
Technicolor	Madison	Compact Disc, Mfg	1,450
Toyota Motor Manufacturing Alabama, Inc.	Madison	Automotive Engine, Mfg	1,350
Hexagon US Federal	Madison	Software Development	1,325
Cullman Regional Medical Center	Cullman	Medical	1,300
Gadsden Regional Medical Center	Etowah	Medical	1,297

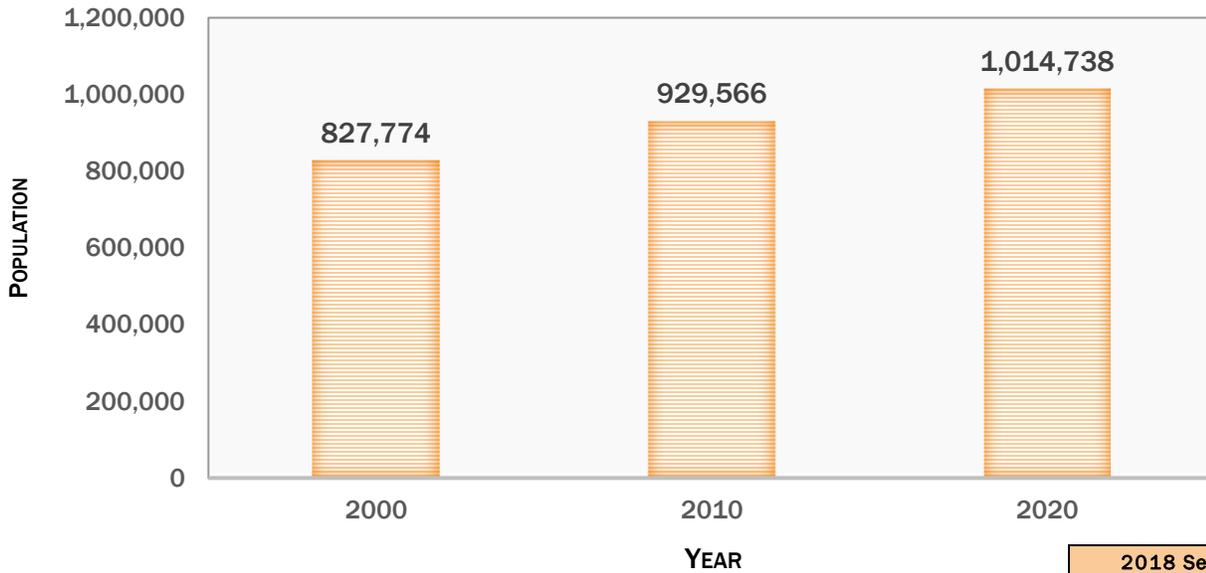
Development's Impact on Vulnerability

As shown in Figure 2.87, the population of the Division F Region showcased in Phase I of the Regional Hazard Mitigation Plan is expected to increase by **18.5%** over the next 20 years. With this growth in population, the diversity of those who reside within the region is expected to become more complex. This includes diversity in age, race, and cultures. This growth and change in the population can bring with it a shift in the demand for types of housing and corresponding amenities. This increase in development to meet future needs, if left unmitigated or unaddressed, will increase the region's vulnerability to natural disasters.

The increase in development as previously mentioned will also require an expansion and improvement of utility services beyond the current service area. Depending on where development spreads, including the expansion of utilities, will determine what hazards the development and supporting infrastructure will be exposed to. Creating or implementing new or refining existing policies to guide development and keep infrastructure out of flood plains, for example, is one way to mitigate the risk of a future increase in population and density. Section 5.2 provides a current understanding of the existing land use planning, zoning regulations, building ordinance enforcement, and NFIP participation status for Division F participating jurisdictions. Each of these regulatory tools aid each jurisdiction in guiding growth and development in responsible ways to ensure future development doesn't increase the region's vulnerability to natural disasters.

Furthermore, this plan will provide a basis from which to begin viewing the counties included in AEMA Division F from a regional perspective. Moving forward, through updates and amendments, this plan will provide a closer look at planning for vulnerable populations, especially the elderly and disabled. Through this regional perspective, this plan will also allow participants and stakeholders to understand the steps that can be taken now, at multiple levels, to diminish the impact on disasters that have yet to happen.

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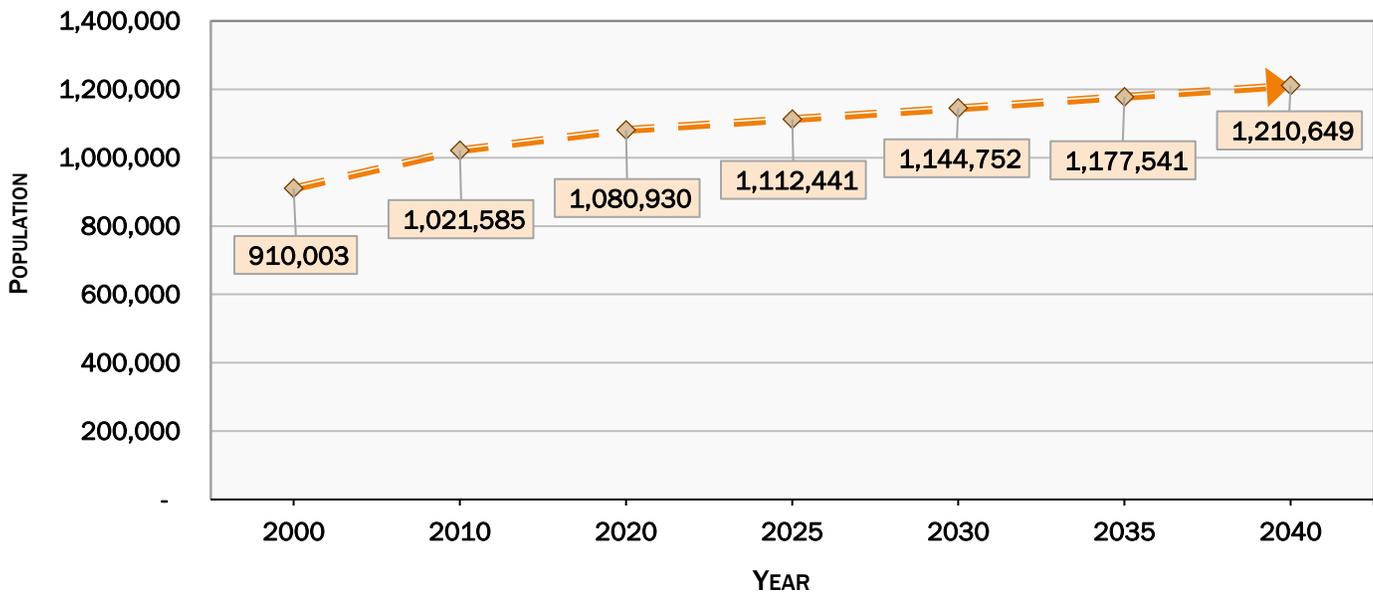


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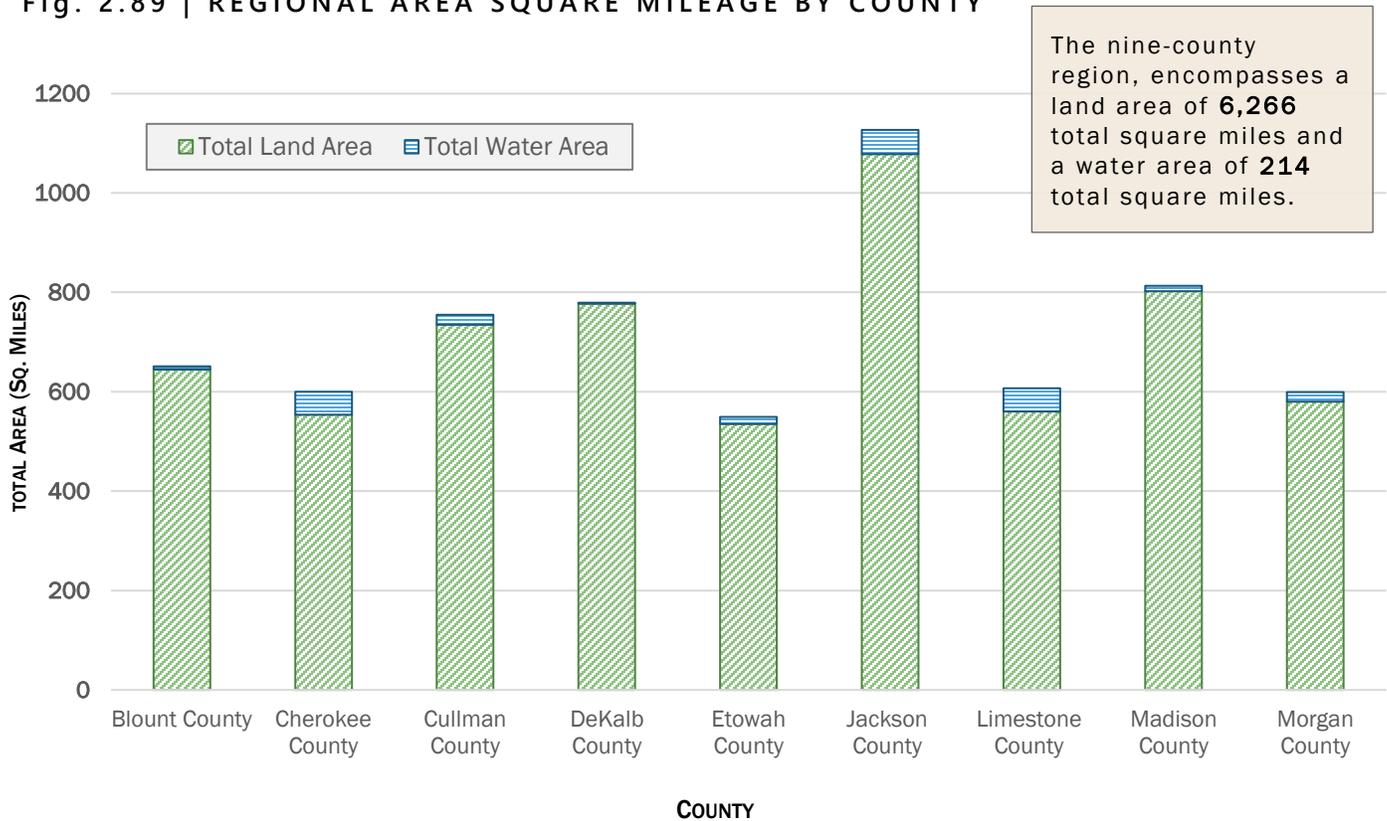


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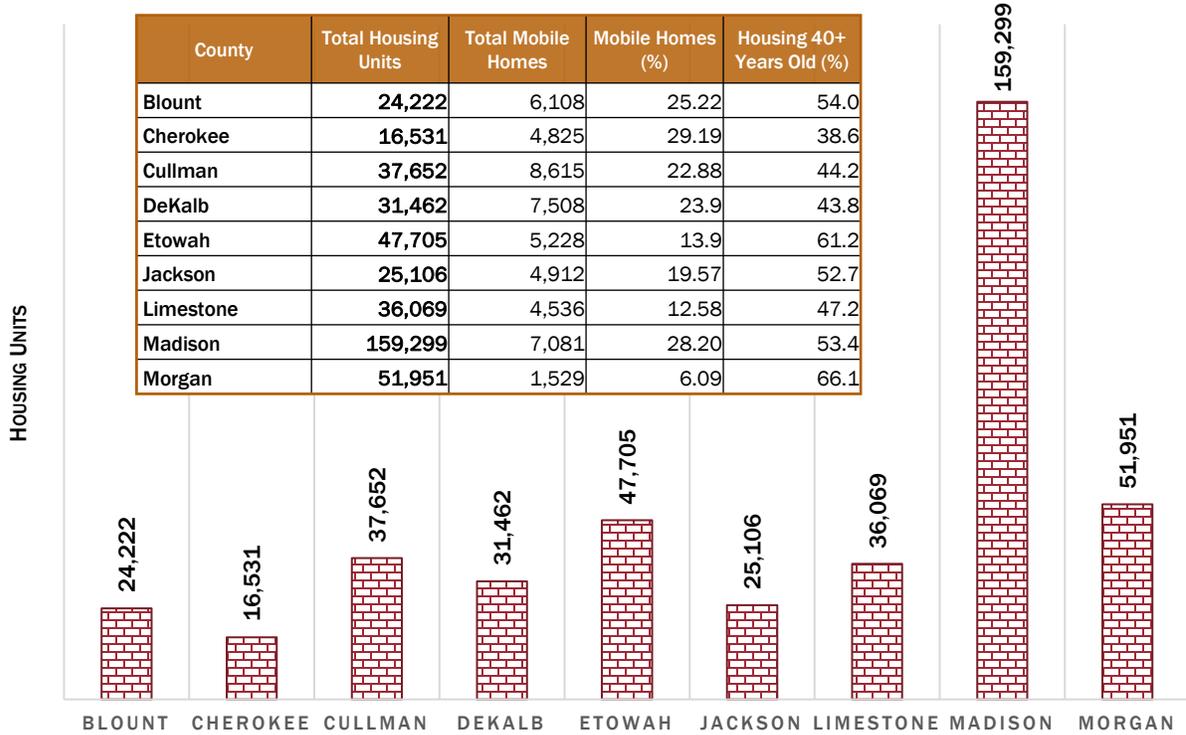
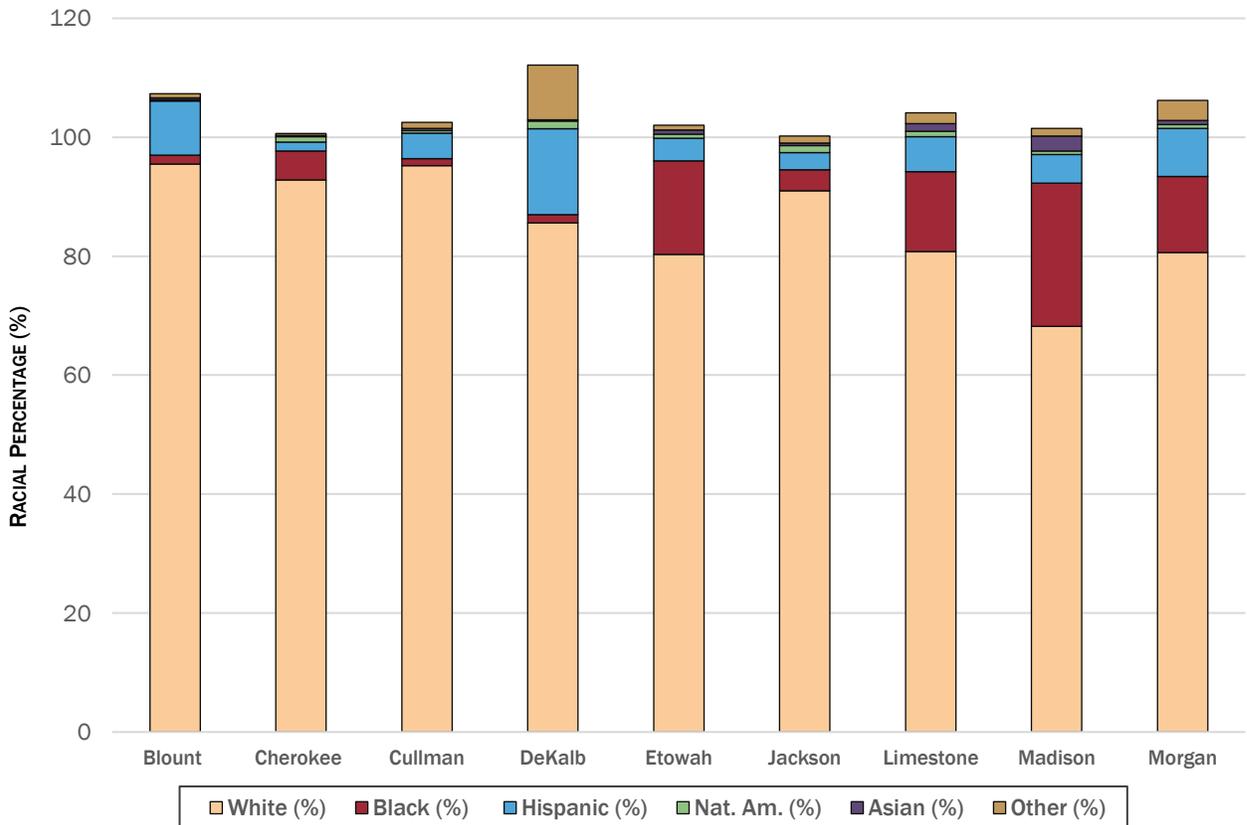


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Section 3 - Planning Process

SECTION 3 | PLANNING PROCESS

3.1 Hazard Mitigation Planning Process

- Planning Committee Structure
- COVID-19 Impacts

3.2 Multi-Jurisdictional Plan Participation

- Division F Subregion I Plan Participants
- Participation Methods

3.3 Public and Other Stakeholder Involvement

- Public Outreach Methods

3.4 Integration with Existing Plans

- Plans reviewed and referenced

3.5 Multi-Jurisdictional Plan Adoption

SECTION 3 | PLANNING PROCESS

3.1 Hazard Mitigation Planning Process

The planning process for the AEMA Division F Regional Hazard Mitigation Plan was conducted in two phases during the height of the COVID-19 pandemic through virtual interaction among AEMA Division F Emergency Management Agency (EMA) Directors and EMA staff, the North Central Alabama Regional Council of Governments (NARCOG), the Regional Planning Commission of Greater Birmingham (RPCGB), and the Top of Alabama Regional Council of Governments (TARCOG). Phase I included updates for Cherokee, Cullman, DeKalb, and Etowah counties while Phase II included updates for Blount, Jackson, Limestone, Madison, and Morgan counties. NARCOG facilitated the planning effort in Cullman County, RPCGB facilitated the planning effort in Blount County, and TARCOG facilitated the planning effort in Cherokee, DeKalb, Etowah, Jackson, Limestone, Madison, and Morgan Counties. The EMA Directors and EMA staff for each of the nine counties and the planning teams from NARCOG, RPCGB, and TARCOG comprised the core Division F Regional Hazard Mitigation Planning Committee (shown in Table 3.1) for the entirety of this regional plan.

Table 3.1 | Division F Regional Hazard Mitigation Planning Committee

Jurisdiction	Primary Participant	Attended Meetings	Virtual Consultation	Provided Written Comments & Review
Blount County	EMA Director	X	X	X
Cherokee County	EMA Director	X	X	X
Cullman County	EMA Director	X	X	X
DeKalb County	EMA Director	X	X	X
Etowah County	EMA Director	X	X	X
Jackson County	EMA Director	X	X	X
Limestone County	EMA Director	X	X	X
Madison County	EMA Director	X	X	X
Morgan County	EMA Director	X	X	X
Regional Planning Commission of Greater Birmingham	Planning Team	X	X	X
North Central Alabama Regional Council of Governments	Planning Team	X	X	X
Top of Alabama Regional Council of Governments	Planning Team	X	X	X

All Division F EMA Directors participated in a virtual plan kick-off meeting to understand the phased planning process and their roles and responsibilities throughout the plan’s two-phased process. The Phase I planning process (Cherokee, Cullman, DeKalb, & Etowah County updates) occurred during spring and summer of 2020 with the first phase of the plan being approved in early 2021. The second phase of the plan (Blount, Jackson, Limestone, Madison, & Morgan County updates) was initiated in early 2021 and sent for FEMA review later that year. While the planning process took place in two phases, all Division F EMA Directors and participating jurisdictions were engaged in the review and update of the plan throughout both phases.

Because this planning process took place during the COVID-19 pandemic, meetings had to be held virtually and the planning team relied heavily upon phone conversations and other forms of virtual communication with county EMA staff, participating jurisdictions, and other regional stakeholders. Because of this, a series of virtual stakeholder engagement sessions took place in early 2021 to inform external stakeholders (entities that are not classified as participating jurisdictions but still impacted by the plan's mitigation actions) of the Regional Hazard Mitigation Plan update process and to gain their input on hazard vulnerability and mitigation issues relevant to them. See *appendix for Stakeholder Engagement Session information and attendee lists*.

Since in-person meetings could not take place, the planning team developed a comprehensive suite of electronic resources that were disseminated to each participating jurisdiction by the respective county lead (EMA Director). These resources included a thorough Community Capability Assessment Worksheet (CCAW), a public participation survey with instructions to post on social media outlets, and a review and assessment of current local mitigation actions. Information received from local jurisdictions including completed CCAWs, responses to the public survey, and updated mitigation actions were incorporated into relevant sections of the Plan.

This suite of electronic resources and virtual engagement strategies were used consistently in both Phase I and Phase II of the Division F Regional Hazard Mitigation Plan to ensure consistency in the development of each county's hazard mitigation update and to establish a truly regional plan that aligns vulnerabilities and mitigation actions/goals across the Division F region. The Division F planning committee worked closely with each County EMA Director to update mitigation actions and ensure that any new mitigation actions were included within this regional update.



Figure 3.2 | Alabama Department of Public Health COVID-19 Statewide Current Risk Status Analysis

3.2 Multi-Jurisdictional Plan Participation

All 104 participating jurisdictions in all Division F counties (listed in Table 3.3 below) provided sufficient input in the development of both the first and second phases of the Division F Regional Hazard Mitigation Plan. Local jurisdictions participated according to the standards set forth by the regional hazard mitigation planning committee which were adapted due to health restrictions required as a result of the COVID-19 pandemic.

Each jurisdiction (Table 3.3) was invited and expected to participate in the plan update process by:

- Attending virtual meetings, or if unable to attend, sending a designee or making themselves available to discuss the agenda through one-on-one phone consultation.
- Representing their jurisdiction’s interests, including gathering information and providing feedback by completing the disseminated CCAW, providing public survey input, and/or editing information on their existing hazard mitigation plan.
- Providing an assessment of prioritized projects that have been completed or are ongoing, and/or changes to prioritization.
- Adopting the approved Phase I Division F Regional Hazard Mitigation Plan.

Table 3.3 | Division F Regional Hazard Mitigation Plan Participating Jurisdictions

Participating Jurisdiction	Contact Position	Attended Meetings*	Written Comments	Virtual Consultation
BLOUNT COUNTY				
Blount County Commission	County Administrator			X
Blount County EMA	EMA Director	X	X	X
Allgood	Mayor/Town Clerk			X
Blountsville	Mayor/Town Clerk			X
Cleveland	Mayor/Town Clerk			X
Hayden	Mayor/Town Clerk			X
Highland Lake	Mayor/Town Clerk			X
Locust Fork	Mayor/Town Clerk			X
Nectar	Mayor/Town Clerk			X
Oneonta	Mayor/City Clerk			X
Rosa	Mayor/Town Clerk			X
Snead	Mayor/Town Clerk			X
Susan Moore	Mayor/Town Clerk			X

Table 3.3 | Division F Regional Hazard Mitigation Plan Participating Jurisdictions (Continued)

Participating Jurisdiction	Contact Position	Attended Meetings*	Written Comments	Virtual Consultation
CHEROKEE COUNTY				
Cherokee County Commission	County Administrator			X
Cherokee County EMA	EMA Director	X	X	X
Cedar Bluff	Mayor/Town Clerk			X
Centre	Mayor/City Clerk			X
Gaylesville	Mayor/Town Clerk			X
Leesburg	Mayor/Town Clerk			X
Sand Rock	Mayor/Town Clerk			X
CULLMAN COUNTY				
Cullman County Commission	County Administrator		X	X
Cullman County EMA	EMA Director	X	X	X
Baileyton	Mayor/Town Clerk		X	X
Berlin	Mayor/Town Clerk	X	X	X
Colony	Mayor/Town Clerk			X
Cullman	Mayor/City Clerk		X	X
Dodge City	Mayor/Town Clerk			X
Fairview	Mayor/Town Clerk		X	X
Garden City	Mayor/Town Clerk		X	X
Good Hope	Mayor/City Clerk		X	X
Hanceville	Mayor/City Clerk		X	X
Holly Pond	Mayor/Town Clerk		X	X
South Vinemont	Mayor/Town Clerk		X	X
West Point	Mayor/Town Clerk			X

*Due to COVID-19 restrictions, public meetings were unable to be conducted.

Table 3.3 | Division F Regional Hazard Mitigation Plan Participating Jurisdictions (Continued)

Participating Jurisdiction	Contact Position	Attended Meetings*	Written Comments	Virtual Consultation
DEKALB COUNTY				
DeKalb County Commission	County Administrator			X
DeKalb County EMA	EMA Director	X	X	X
Collinsville	Mayor/Town Clerk			X
Crossville	Mayor/Town Clerk			X
Fort Payne	Mayor/City Clerk			X
Fyffe	Mayor/Town Clerk			X
Geraldine	Mayor/Town Clerk			X
Hammondville	Mayor/Town Clerk			X
Henagar	Mayor/City Clerk			X
Ider	Mayor/Town Clerk			X
Lakeview	Mayor/Town Clerk			X
Mentone	Mayor/Town Clerk			X
Pine Ridge	Mayor/Town Clerk			X
Powell	Mayor/Town Clerk			X
Rainsville	Mayor/City Clerk			X
Shiloh	Mayor/Town Clerk	X		X
Sylvania	Mayor/Town Clerk	X		X
Valley Head	Mayor/Town Clerk	X	X	X
ETOWAH COUNTY				
Etowah County Commission	County Administrator		X	X
Etowah County EMA	EMA Director	X	X	X
Altoona	Mayor/Town Clerk	X		X
Atalla	Mayor/City Clerk			X
Gadsden	Mayor/City Clerk	X		X
Glencoe	Mayor/City Clerk	X		X

Table 3.3 | Division F Subregion I Regional Hazard Mitigation Plan Participating Jurisdictions (Continued)

Participating Jurisdiction	Contact Position	Attended Meetings*	Written Comments	Virtual Consultation
ETOWAH COUNTY (CONT'D)				
Hokes Bluff	Mayor/City Clerk	X		X
Rainbow City	Mayor/City Clerk	X		X
Reece City	Mayor/Town Clerk			X
Ridgeville	Mayor/Town Clerk	X		X
Sardis City	Mayor/Town Clerk	X		X
Southside	Mayor/City Clerk	X		X
Walnut Grove	Mayor/Town Clerk			X
JACKSON COUNTY				
Jackson County Commission	County Administrator			X
Jackson County EMA	EMA Director	X	X	X
Bridgeport	Mayor/City Clerk			X
Dutton	Mayor/Town Clerk			X
Hollywood	Mayor/Town Clerk			X
Hytov	Mayor/Town Clerk			X
Langston	Mayor/Town Clerk			X
Paint Rock	Mayor/Town Clerk			X
Pisgah	Mayor/Town Clerk			X
Pleasant Grove	Mayor/Town Clerk			X
Scottsboro	Mayor/City Clerk			X
Section	Mayor/Town Clerk			X
Skyline	Mayor/Town Clerk			X
Stevenson	Mayor/City Clerk			X
Woodville	Mayor/Town Clerk			X

Table 3.3 | Division F Regional Hazard Mitigation Plan Participating Jurisdictions (Continued)

Participating Jurisdiction	Contact Position	Attended Meetings*	Written Comments	Virtual Consultation
LIMESTONE COUNTY				
Limestone County Commission	County Administrator			X
Limestone County EMA	EMA Director	X	X	X
Ardmore	Mayor/Town Clerk			X
Athens	Mayor/City Clerk		X	X
Elkmont	Mayor/Town Clerk			X
Lester	Mayor/Town Clerk			X
Mooreville	Mayor/Town Clerk			X
MADISON COUNTY				
Madison County Commission	County Administrator			X
Madison County EMA	EMA Director	X	X	X
Gurley	Mayor/Town Clerk	X		X
Huntsville	Mayor/City Clerk			X
Madison	Mayor/City Clerk			X
New Hope	Mayor/Town Clerk			X
Owens Cross Roads	Mayor/Town Clerk		X	X
Triana	Mayor/Town Clerk			X
MORGAN COUNTY				
Morgan County Commission	County Administrator			X
Morgan County EMA	EMA Director	X	X	X
Decatur	Mayor/City Clerk			X
Eva	Mayor/Town Clerk			X
Falkville	Mayor/Town Clerk			X
Hartselle	Mayor/City Clerk			X
Priceville	Mayor/Town Clerk			X
Somerville	Mayor/Town Clerk			X
Trinity	Mayor/Town Clerk			X

3.3 Public and Other Stakeholder Involvement

Because both Phase I and Phase II of the Division F Regional Hazard Mitigation Plan took place under a condensed timeline during the height of the COVID-19 pandemic (Phase I: May – June 2020, Phase II: January – September 2021) public involvement did not involve traditional planning practices such as invitation to large public meetings, engagement at community events, and other in-person meetings and consultations. Instead, the planning team developed a comprehensive public participation survey which was disseminated to residents in every Division F participating jurisdiction and through social media, electronic newsletters/announcements, County EMA websites, and other virtual/electronic mediums. The same survey tool was disseminated during both Phase I and Phase II of the planning process to ensure consistency in public input responses from all Division F participating jurisdictions. During Phase I, the public input survey was advertised on the Cherokee, Cullman, DeKalb, and Etowah County EMA websites and social media pages. During Phase II, the survey was advertised on websites and/or social media pages of Blount, Jackson, Limestone, Madison, and Morgan County EMAs. The survey was well-received with nearly 700 responses submitted. Those responses were vital to the development of the risk assessment and mitigation sections of this plan. See *appendix for Survey Results*.

The Division F Regional Hazard Mitigation planning team also conducted a series of virtual stakeholder engagement meetings in January – February 2021 targeted to stakeholder groups from each participating Division F county to educate stakeholders about the regional planning effort and to provide them with an opportunity to share insight on hazard mitigation as it relates to their location and efforts. These meetings allowed Division F stakeholders to better understand the two-phased approach to the plan update process, see updated hazard mitigation data, give input on specific vulnerabilities, and allowed the planning team to finetune the Plan in accordance with critical feedback from the multiple organizations present. Because these engagement sessions were conducted in-between Phase I and Phase II plan development, all Division F county stakeholders were invited to participate together. See *appendix for Stakeholder Engagement Session information*.

The final draft of both Phase I and Phase II of the Plan was provided for public comment prior to submission to AEMA and FEMA with the opportunity to review and comment advertised on all County EMA, RPCGB, TARCOG, and NARCOG social media pages linking to the full draft plan. The Final Draft of the Plan was posted on all planning team websites for the two-week comment period with detailed instructions provided on how to provide comments. Phase I Final Draft was posted for public comment on July 28, 2020 and Phase II Final Draft was posted for public comment on January 14, 2022. Requests for review and comment were sent via email to all participating jurisdictions and Division F EMA Directors as well as regional chambers of commerce, school districts and institutes of higher education, health care facilities, and other community-focused organizations. The draft plan was also sent via email to the regional councils of government throughout the state responsible for other AEMA Division regional hazard mitigation plans, with particular emphasis on the neighboring divisions of Division E (Northwest Alabama Council of Local Governments) and Division G (East Alabama Regional Planning and Development Commission). See *appendix for a list of public comment requests*.

3.4. Integration with Existing Plans

Several existing plans were reviewed and consulted throughout the Division F Regional Hazard Mitigation Plan to gauge understanding of the region’s capacity for hazard mitigation. Plans reviewed and referenced throughout the planning process are listed below.

Plans Reviewed

Alabama Emergency Management Agency (AEMA) State Hazard Mitigation Plan (2018)

- The State Hazard Mitigation Plan was reviewed to ensure consistency of information within the regional plan and alignment with state mitigation goals and objectives.

Alabama Department of Economic and Community Affairs (ADECA) Office of Water Resources (OWR) Drought Management Plan (2018)

- The State Drought Management Plan was studied to provide background information of drought impacts on the Division F region.

Division F County Hazard Mitigation Plans (2015, 2016)

- Each Division F county has a current county hazard mitigation plan. As this regional plan serves as an update to those county hazard mitigation plans which were prepared in 2015 and 2016, those existing hazard mitigation plans were relied upon for historical information pertaining to hazard profiles, vulnerability assessments, and progress on county hazard mitigation strategies and actions.

East Alabama Regional Planning and Development Commission (EARPDC) 2018-2022 Comprehensive Economic Development Strategy (CEDS) (2019 Update)

- As Cherokee and Etowah Counties are within the 10-county East Alabama region, the EARPDC CEDS was reviewed for consistency with East Alabama’s economic development priorities relative to potential hazards.

Regional Planning Commission of Greater Birmingham (RPCGB) Comprehensive Economic Development Strategy (CEDS) (2017)

- As Blount County is within the Birmingham-Hoover Metropolitan MSA, the RPCGB CEDS was reviewed for consistency with this Region’s economic development priorities relative to potential hazards.

North Central Alabama Regional Council of Governments (NARCOG) 2018-2022 Comprehensive Economic Development Strategy (CEDS) (2019 Update)

- As Cullman County is within the three-county NARCOG region, the NARCOG CEDS was reviewed to ensure consistency with North Central Alabama’s economic development priorities relative to potential hazards.

Top of Alabama Regional Council of Governments (TARCOG) 2018-2022 Comprehensive Economic Development Strategy (CEDS) (2019 Update)

- As DeKalb County is within the five-county TARCOG region, the TARCOG CEDS was reviewed to ensure consistency with Northeast Alabama’s economic development priorities relative to potential hazards.

County Emergency Operation Plans

- Each county in AEMA Division F has an Emergency Operations Plan (EOP) that is utilized during an emergency. The plans summarize various hazards and provide direction for emergency personnel in immediate disaster response situations. These EOPs complement the regional hazard mitigation plan as mitigation and emergency response and recovery should be aligned according to thorough hazard identification and risk assessment.

3.5. Multi-Jurisdictional Plan Adoption

Each participating jurisdiction will adopt the Division F Regional Hazard Mitigation Plan when it is classified “approvable pending adoption” by the Federal Emergency Management Agency (FEMA). Eligible jurisdictions include regional planning councils and local governing bodies, including municipal councils, county commissions, local school districts, utility boards, and other regional and local stakeholders (Table 3.3).

Phase I of the Division F Regional Hazard Mitigation Plan was designated “approvable pending adoption” by FEMA on March 20, 2021; numerous Phase I communities have subsequently adopted the document since its approval. Once the second phase of the plan (which incorporates hazard mitigation updates for all participating Division F Counties) is approved and ready for adoption, Phase II jurisdictions in Blount, Jackson, Limestone, Madison, and Morgan Counties will adopt the Plan. Phase I communities in Cherokee, Cullman, DeKalb, and Etowah Counties will re-adopt the second and final phase of the Plan, thus ensuring that all participating Division F jurisdictions are operating from the same, unified, regional document.

Section 4 - Hazard Profiles

SECTION 4 | HAZARD PROFILES

4.1 Hazard Overview

4.2 Hazard Profiles Overview

4.3 Presidentially-Declared Disasters

4.4 Drought & Excessive Heat Profile

- Drought & Excessive Heat Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.5 Earthquakes Profile

- Earthquakes Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.6 Flood/Flash Floods Profile

- Flooding Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.7 Dam/Levee Failures Profile

- Flooding Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.8 High Wind Events (Windstorms, Tornadoes, and Severe Thunderstorms) Profile

- High Wind Events Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.9 Winter Storms/Winter Weather

- Winter Storm Events Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.10 Wildfires

- Wildfire Events Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.11 Hail

- Hailstorm Events Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.12 Lightning

- Lightning Events Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.13 Land Subsidence & Sinkholes

- Subsidence Events Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

4.14 Landslides

- Landslide Events Background
- Affected Locations
- Extent
- Previous Occurrences
- Impact
- Probability of Future Events

Natural Hazards: meteorological, environmental, or geological events that create harm or difficulty for a specified area.

Section 4.1 | Natural Hazard Overview

The Disaster Mitigation Act of 2000 (DMA 2000) provides the legal foundation that supports mitigation planning requirements by which governing bodies must abide in order to receive mitigation grant funding. At minimum, current regulations dictate that hazard mitigation plans must include descriptions of type, location, and extent of hazards that affect a given jurisdiction. The plan must also address impact and probability of future occurrences of identified local hazards. Table 4.1 below categorizes examples of natural hazards, some of which will be analyzed extensively in this document. Additionally, it is important to note that while a hazard mitigation plan can also evaluate human-influenced hazards, analysis of this element is not required for plan approval. Thus, the Division F Regional Hazard Mitigation Plan will solely focus on the natural hazards to which the Region is most susceptible.

Table 4.1 | Classifications of Natural Hazards

Types of Natural Hazards	Meteorological	Environmental	Geological
	<i>Hazards related to atmospheric patterns or conditions generally caused by weather factors such as precipitation, temperature, wind speed, and humidity.</i>	<i>Hazards that can cause harm with or without contact, i.e. biological, chemical, hydrologic, or occupational.</i>	<i>Hazards that consist of sudden phenomena and/or slow phenomena such as seismic or mass-movement occurrences.</i>
Cyclones, Hailstorms, Hurricanes, Ice Storms, Severe Winter Storms, Thunderstorms, Tornadoes, Typhoons, Waterspouts, Wildfires	Hydrologic Hazards: Coastal Erosion, Desertification, Droughts, Floods, Soil Erosion	Seismic Hazards: Earthquakes, Tsunamis, Volcanoes	
		Mass-Movement Hazards: Avalanches, Rock Falls, Landslides, Sinkholes	

Source: DHS Lexicon Terms + Definitions, 2017 Edition | National Service Knowledge Network – Online Learning Center

Section 4.2 | Hazard Profiles Overview

The *Hazard Profile and Vulnerability Assessment* section provides data on natural hazards that significantly impact communities within the Division F Region. These hazards were initially identified in previous area hazard mitigation documents; data from these and other documents is used throughout this section to supplement information provided about each hazard. Natural hazards that are not applicable to the planning area, and thus will not be described in this section, are avalanches, cyclones, coastal erosions, tsunamis, typhoons, volcanoes, and waterspouts.

Note: An extensive overview regarding human-influenced events will also be subsequently incorporated into a later update of the Division F Regional Hazard Mitigation Plan.

Section 4.3 | Federally-Declared Disasters

Since the 1970s, Alabama has had ninety (96) total disasters declared at the federal level. Forty-three (43) of these disasters have impacted counties specific to the Division F Region; each of which are moderately detailed in Table 4.2. The entire ten-county planning area is prone to severe storms, flooding, and tornadoes; however, the area is also susceptible to earthquakes and droughts. Further discussion on significant occurrences and future probability of these and other incidents will be covered in subsequent profiles specific to each hazard. It is important to note that certain hazards will be assessed on a regionwide scale or by county. This is due to the difficulty of narrowing the impact of spatially ambiguous hazards such as thunderstorms and tornadoes.

Table 4.2 | AEMA Division F Federally-Declared Disasters

Declaration Date	Disaster No.	Type of Incident	Counties In Division F Affected
03.27.1973	DR-369	Tornadoes, Flooding	Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, Marshall, Morgan
05.29.1973	DR-388	Severe Storms, Flooding	Cullman, DeKalb, Etowah, Jackson, Marshall
04.04.1974	DR-422	Tornadoes	Cherokee, Cullman, Etowah, Jackson, Limestone, Madison, Morgan
03.14.1975	DR-458	Severe Storms, Flooding	Cullman
04.09.1977	DR-532	Severe Storms, Flooding	DeKalb, Etowah, Marshall
04.18.1979	DR-578	Storms, Wind, Flooding	DeKalb, Etowah, Marshall
07.20.1977	EM-3045	Drought	Statewide
11.15.1989	DR-848	Severe Storms, Tornadoes	Jackson, Madison
11.17.1989	DR-848	Severe Storms, Tornadoes	Jackson, Marshall
02.17.1990	DR-856	Flooding, Severe Storm, Tornado	Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Marshall, Morgan
01.04.1991	DR-890	Flooding, Severe Storm	Cullman, Limestone, Madison, Marshall, Morgan
03.15.1993	EM-3096	Severe Snowfall, Winter Storm	Statewide
03.03.1994	DR-1013	Winter Storm, Severe Storm, Freezing, Flooding	Cullman, DeKalb, Etowah, Limestone, Marshall

Hurricane Opal | 1995

Hurricane Opal first formed on Wednesday, September 27, 1995. In one week, the storm intensified to Category 4 status; weakening to Category 3 just before making landfall in Pensacola Beach, FL the morning of October 4th. By 10 am, sources reported the storm as sustaining max winds of 150 mph, which is just under Category 5 intensity. Evacuation efforts caused gridlock on several major highways, including along I-65, one of the major thoroughfares in the State. Overall, Hurricane Opal is estimated to have caused \$2.1 billion in damage and resulted in 2.6 million losing power across Alabama. The National Weather Service in Huntsville measured a local wind gust of 55 mph as the now tropical depression continued moving north-northeast toward Tennessee. The top rainfall in north Alabama was 7.79 inches in Valley Head.

Table 4.2 | AEMA Division F Federally-Declared Disasters (Continued)

Declaration Date	Disaster No.	Type of Incident	Counties In Division F Affected
03.03.1994	DR-1013	Winter Storm, Severe Storm, Freezing, Flooding	Cullman, DeKalb, Etowah, Limestone, Marshall
03.30.1994	DR-1019	Severe Storm, Flooding, Tornado	Cherokee, DeKalb, Marshall
04.21.1995	DR-1047	Severe Storm, Tornadoes, Flooding	Cullman, DeKalb, Marshall
10.04.1995	DR-1070	Hurricane Opal	Cherokee, Cullman, DeKalb, Etowah
02.23.1996	DR-1104	Storms/Flooding	Blount, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, Marshall, Morgan
04.09.1998	DR-1214	Tornadoes and Severe Thunderstorms	Cullman
01.15.1999	DR-1261	Freezing Rain and Ice Storm	Cullman, Limestone, Madison, Morgan
02.18.2000	DR-1317	Winter Storm	Cherokee, DeKalb, Jackson
12.18.2000	DR-1352	Tornadoes	Cherokee, Etowah, Limestone
03.05.2001	DR-1362	Severe Storms and Flooding	Blount
11.20.2001	FSA-2395	Northeast AL Fire Complex	Cherokee, Etowah, Jackson

Table 4.2 | AEMA Division F Federally-Declared Disasters (Continued)

Declaration Date	Disaster No.	Type of Incident	Counties In Division F Affected
11.14.2002	DR-1442	Severe Storms and Tornadoes	Cherokee, Cullman
05.12.2003	DR-1466	Severe Storms, Tornadoes, and Flooding	Regionwide
09.15.2004	DR-1549*	Hurricane Ivan	Statewide
09.10.2005	EM-3237	Hurricane Katrina	Statewide Evacuation
08.30.2008	EM-3292	Hurricane Gustav	Statewide
04.28.2009	DR-1835	Severe Storms, Flooding, Tornadoes, and Straight-line Winds	DeKalb
05.08.2009	DR-1836	Severe Storms, Flooding, Tornadoes, and Straight-line Winds	Cullman, DeKalb, Jackson, Marshall
05.03.2010	DR-1908	Severe Storms, Tornadoes, Straight-line Winds and Flooding	DeKalb, Marshall
04.27.2011	EM-3319	Severe Storms, Tornadoes, and Straight-line Winds	Statewide
04.28.2011	DR-1971*	Severe Storms, Tornadoes, and Straight-line Winds	Statewide
05.02.2014	DR-4176	Severe Storms, Tornadoes, Straight-line Winds and Flooding	Blount, DeKalb, Etowah, Limestone

Table 4.2 | AEMA Division F Federally-Declared Disasters (Continued)

Declaration Date	Disaster No.	Type of Incident	Counties In Division F Affected
01.21.2016	DR-4251*	Severe Storms, Tornadoes, Straight-line Winds and Flooding	Blount, Cherokee, Cullman, DeKalb, Jackson, Marshall
09.11.2017	EM-3389	Hurricane Irma	Statewide
04.26.2018	DR-4362	Severe Storms and Tornadoes	Cullman, Etowah
04.17.2019	DR-4426	Severe Storms, Tornadoes, Straight-line Winds and Flooding	Blount, Cherokee, DeKalb, Jackson, Madison, Morgan
05.21.2020	DR-4546	Severe Storms and Flooding	Blount, Cullman, Limestone
07.10.2020	DR-4555	Severe Thunderstorms	Blount, Cullman, DeKalb, Etowah, Jackson, Marshall
09.14.2020	EM-3545	Hurricane Sally	Statewide
12.10.2020	DR-4573	Hurricane Zeta	Cherokee

*These events accompany FEMA maps that depict counties affected by the noted incident.

FEMA - DR4251 | 2016

January 21 – A major disaster due to severe storms, tornadoes, straight-line winds, and flooding was declared for the State of Alabama. Governor Robert Bentley requested a declaration for Public Assistance for 39 counties (six of which are in the Division F region) and statewide Hazard Mitigation. This declaration made Public Assistance accessible to eligible communities across the state on a cost-sharing basis for emergency work and the repair or replacement of facilities damaged by the hazards. Hazard Mitigation Grant Program (HMGP) assistance was also made available for hazard mitigation measures statewide. Total public assistance grants obligated over \$37 million.

Source: Federal Emergency Management Agency (FEMA) Disaster Information – Declared Disasters for Alabama

There are two types of disaster declarations: ***emergency declarations*** and ***major disaster declarations***. Both declaration types authorize the President to provide supplemental federal disaster assistance. However, the events related to the two different types of declaration and scope and amount of assistance differ.

Emergency declarations supplement State and local or Indian tribal government efforts in providing emergency services, such as the protection of lives, property, public safety, or to lessen or avert the threat of a catastrophe in any part of the US. The State of Alabama and all affected jurisdictions are eligible for assistance for debris removal, emergency services, and critical facility replacement or repair.

The following hazard profiles describe hazards that have significantly impacted the nine counties throughout the Division F Region. Data is provided on *dam/levee failure*, *droughts and excessive heat*, *earthquakes*, *flooding*, *wind events* (tornadoes, thunderstorms, and windstorms), *hailstorms*, *landslides*, *land subsidence/sinkholes*, *lightning*, *wildfires*, and *winter storms*. This data is then analyzed to pinpoint: affected locations; describe hazard extent; approximate probability of future occurrences; and assess community vulnerability to these hazards.

Section 4 | Hazard Profiles

4.4 Drought + Excessive Heat

Hazard [Background]

Defining a drought is commonly done with the intention of describing the impact droughts have on local agriculture. A conceptual definition provided by the National Drought Mitigation Center (NDMC) explains that a drought is a *protracted period of deficient precipitation resulting in extensive damage to crops, and a consequential loss of yield.* Droughts can also be defined “operationally” in terms of how these unpredictable hazards function or operate, i.e. what causes them; what factors determine their severity; and what conditions must be met to end a drought.

Droughts also occur when precipitation and other water resources fall below expectations but the demand for water is not diminished. Low water resources can result from increased demand, such as that resulting from increasing population or industry. These natural hazards can affect any part of the U.S., usually develop gradually, and may go undetected for months or years until a crisis exists. Table 4.3 briefly explains the different types of droughts.

According to the NDMC, to determine the beginning of a drought, operational definitions specify the degree of departure from the average of precipitation, or some other climatic variable, over a designated time period. This is usually done by comparing the current situation to the historical average, often based on a 30-year period of record. For this document, drought data was requested from as far back as 1950. However, NOAA data for this hazard was not provided beyond 2005. Thus, probability and other estimations will be based on a 15-year time period.

Table 4.3 | Types of Drought

Meteorological Drought	(Defined on the degree of dryness); expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
Hydrologic Drought	Related to the effects of precipitation shortfalls on stream-flows and reservoir, lake, and groundwater levels.
Agricultural Drought	Defined principally in terms of soil moisture deficiencies relative to water demands of plant life, usually crops.
Socioeconomic Drought	Occurs when the demand for water exceeds the supply as a result of a weather-related supply shortfall.

Source: National Drought Mitigation Center – University of Nebraska; National Centers for Environmental Information (NOAA)

Affected Locations

The entire Division F planning area is vulnerable to droughts. Previous hazard occurrences were primarily caused by below average rainfall or a complete lack of rainfall. This phenomena was further exacerbated by consecutive streaks of extreme heat and substantially dry air. When combined, these conditions had various substantial impacts on local agriculture, recreation, and utility systems.

Section 4 | Hazard Profiles

4.4 Drought + Excessive Heat

Hazard [Extent]

The extent of droughts is characterized by categories ranging from **D0** to **D4**, with D0 designating ‘abnormally dry’ and D4 designating ‘exceptional drought.’ These descriptions vary by location and represent different sets of impacts depending on the category. And while droughts are widespread hazards, neighboring areas can be assigned the same category but experience an assortment of impacts. Table 4.4 describes drought impacts for Alabama.

Table 4.4 | Drought Impacts by State – Alabama

Category	Impact
D0 Abnormally Dry	Forage crops and pasture are stressed; producers feed livestock early
	Ground is hard
	Agriculture ponds and creeks begin to decline
D1 Moderate Drought	Cash crop growth and yield are low
	National forests implement campfire and firework bans
	Streams and ponds are low
	Fire activity increases
D2 Severe Drought	Crops are damaged, especially dryland corn
	Burn bans begin
	Large cracks appear in foundations of homes
	Large surface water levels drop; agricultural ponds and streams have dried up
	Saltwater intrusion occurs in rivers and bays; saltwater wildlife migrate upstream
	Hydroelectric power decreases; navigation is limited
D3 Extreme Drought	Soybean pods shatter
	Large-scale hay shortages occur; producers sell livestock
	Wildfire count and fire danger continue to increase
	Landscape growth is stunted and needs irrigation; Christmas tree growth is stunted
	Ground has noticeable cracks; road damage has occurred
	Low flow in rivers and lakes affects recreation
	Water mains break daily in large municipalities; water conservation is implemented
	Air quality is poor
D4 Exceptional Drought	Trees and shrubs are defoliated; grass is brown; landscaping projects are delayed
	Wildfire count is very high
	Lakes are extremely low; large municipalities implement water restrictions; water prices increase

Source: The U.S. Drought Monitor – Drought Impacts by State

Section 4 | Hazard Profiles

4.4 Drought + Excessive Heat

Previous Occurrences

According to the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, there have been approximately **283** incidents of drought throughout the nine-county region over the last **15** years. These events occurred over a total **48** days, predominately during the spring, summer, and fall seasons. Most droughts resulted from lingering conditions of previous events or developed from consecutive days of below average precipitation.

Table 4.5 | Division F Drought Incidents (2005-2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Blount	Drought	29	0 / 0	\$0 / \$0
Cherokee	Drought	36	0 / 0	\$0 / \$0
Cullman	Drought	27	0 / 0	\$0 / \$0
DeKalb	Drought	34	0 / 0	\$0 / \$0
Etowah	Drought	29	0 / 0	\$0 / \$0
Jackson	Drought	35	0 / 0	\$0 / \$0
Limestone	Drought	28	0 / 0	\$0 / \$0
Madison	Drought	37	0 / 0	\$0 / \$0
Morgan	Drought	28	0 / 0	\$0 / \$0
Total Drought Events		283	0 / 0	\$0 / \$0

Sources: The U.S. Drought Monitor; the National Drought Mitigation Center (NDMC); the U.S. Department of Agriculture (USDA) and the National Oceanic and Atmospheric Administration (NOAA).

Hazard [Impact]

From July to the first half of September 2006, the planning area experienced a variety of drought conditions that left the area vulnerable to social and economic impacts. By May 2007, the area transitioned from severe (D2) to extreme (D3) drought conditions, and according to the U.S. Drought Monitor, maintained this status for an entire month. Rain deficits continued well into 2008; however, by August consistent rainfall due to Tropical Storm Fay replenished the area. Two years later, the Drought Monitor reported severe drought conditions in Cullman, DeKalb, Jackson, and Marshall Counties during the fall/early winter seasons. Significant traces of drought were not reported again until Summer 2010 when the Drought Monitor reported severe drought conditions for the planning area and neighboring counties. Six years passed before areas of the division would yet again experience both severe and extreme drought conditions. Drought activity drew concern in 2017 and 2018, however, consecutive rainfall prevented circumstances from worsening. Figure 4.6 depicts U.S. Drought Monitor maps from April 2008 and November 2016 showing the widespread nature of droughts that occurred within those respective years.

Local Community Impact

Summer – Fall 2006 | From July to the first half of September 2006, the planning area experienced severe (D2) to extreme (D3) drought conditions. Summer crops were adversely impacted, and many cities implemented water restriction rules due to the hydrologic impact.

Spring 2007 – Spring 2008 | March, which is traditionally the “wettest month of the year,” was one of the driest months on record that year. Total rainfall across the Central Tennessee Valley was less than two inches, less than an inch in some areas. Soil moisture was at historic lows, hovering at or below the first percentile. Local extension agents rated crop conditions as poor to very poor. They also reported that cotton and soybeans were stressed due to lack of soil moisture, greatly straining the local agriculture economy. The Alabama Forestry Commission eventually issued drought emergencies due to a heightened probability of catastrophic fire activity. Extreme drought conditions intensified to exceptional (D4) levels by October and remained in this category through spring the following year. Even though a “significant cold front” moved into the area at the beginning of March, a dry high pressure virtually cut off all rainfall by the end of the month. More than half of the local communities were still in the extreme drought (D3) category.

Fall 2010 | Severe (D2) drought conditions were reported for 40% of the Division F region. D2 conditions are especially detrimental to agriculture. Under this designation, crops are damaged and agricultural ponds and streams dry up. Additionally, short term effects including decreased soil moisture and increased insect activity heighten as drought conditions worsen.

Summer – Fall 2016 | Severe drought conditions were introduced into northeastern Alabama, encompassing much of Jackson, DeKalb, Marshall and Madison Counties. Extreme drought conditions were later reported for sections of the planning area, specifically portions of Jackson and DeKalb Counties. The Drought Monitor sited that the “worst” drought conditions noted in 2016 had been ongoing since the drought in 2007. Rainfall since then had not adequately improved existing dry conditions, further complicating factors centered around farming and water conservation.

Winter 2018 | Much above normal rainfall during the first half of the month of February erased rainfall deficits across all Central Alabama and brought all counties below Severe Drought (D2) status.

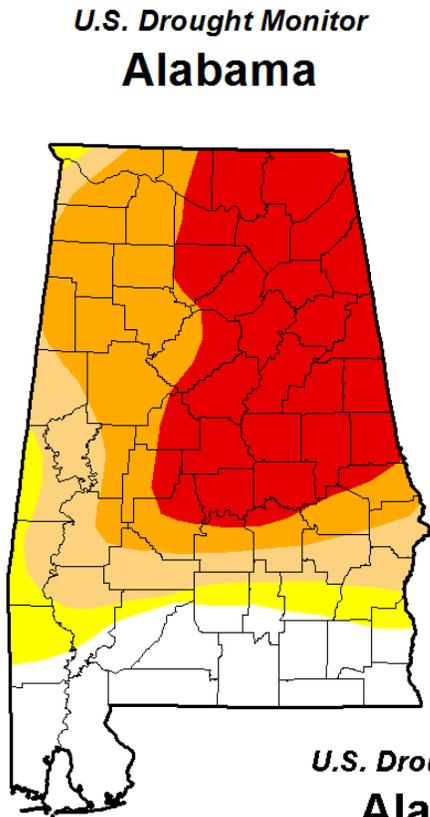
Fall 2019 | D2 drought conditions continued in northeast Alabama from September. Conditions grew to D3 by October 8th and peaked in extent by October 15th. The drought subsided through the end of the month and D2 status was dropped in early November.

Probability of Future Events

The probability of drought and extreme heat activity occurring within the Division F region is substantial. As climates change, heat indexes rise higher each year, and annual rainfall continues to fall short of demand, so increases the likelihood of a drought forming. The mid- to late-2000s were a particularly active period for drought activity in the nine-county planning area. Nearly sixty-three percent (**62.9%**) of all reported drought incidents in the Division occurred between 2006 – 2008. Activity since then has been relatively dispersed, with events occurring every two to four years. Give the occurrence of droughts in this area, probability of future drought activity varies, which indicates that droughts have a relatively significant probability of occurring but not on an annual basis.

Division F Regional Hazard Mitigation Plan
Section 4 | Hazard Profiles
4.4 Drought + Excessive Heat

Figure 4.6 | U.S. Drought Monitor Maps, April 1, 2008 and November 1, 2016



**U.S. Drought Monitor
Alabama**

April 1, 2008
 (Released Thursday, Apr. 3, 2008)
 Valid 7 a.m. EST

Drought Conditions (Percent Area)

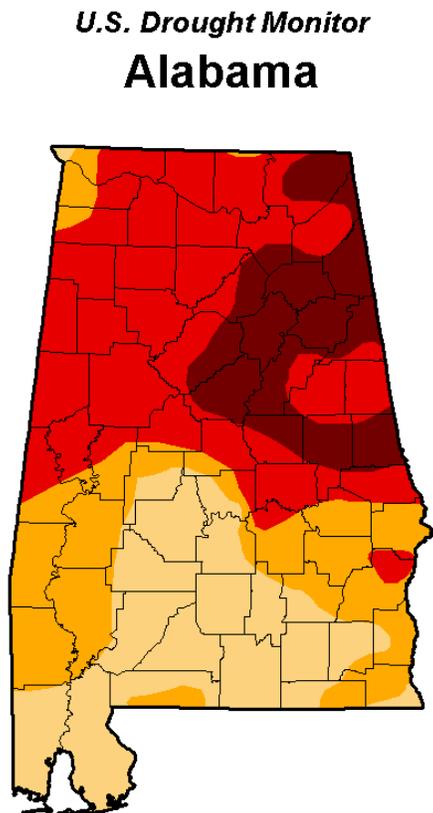
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	20.23	79.77	72.11	57.07	33.89	0.00
Last Week 3/25/2008	21.29	78.71	68.72	57.07	33.93	0.00
3 Months Ago 1/1/2008	9.53	90.47	80.80	66.91	56.48	38.93
Start of Calendar Year 1/1/2008	9.53	90.47	80.80	66.91	56.48	38.93
Start of Water Year 9/25/2007	1.40	98.60	90.18	81.92	71.11	48.72
One Year Ago 4/3/2007	0.00	100.00	81.47	50.47	9.30	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
 Richard Tinker
 CPC/NOAA/NWS/NCEP



**U.S. Drought Monitor
Alabama**

November 1, 2016
 (Released Thursday, Nov. 3, 2016)
 Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	74.76	51.91	14.84
Last Week 10/25/2016	0.00	100.00	100.00	73.14	33.03	9.94
3 Months Ago 8/2/2016	32.44	67.56	40.76	18.33	2.90	0.00
Start of Calendar Year 12/29/2015	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year 9/27/2016	17.15	82.85	47.12	17.94	6.36	0.00
One Year Ago 11/3/2015	63.77	36.23	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
 Deborah Bathke
 National Drought Mitigation Center



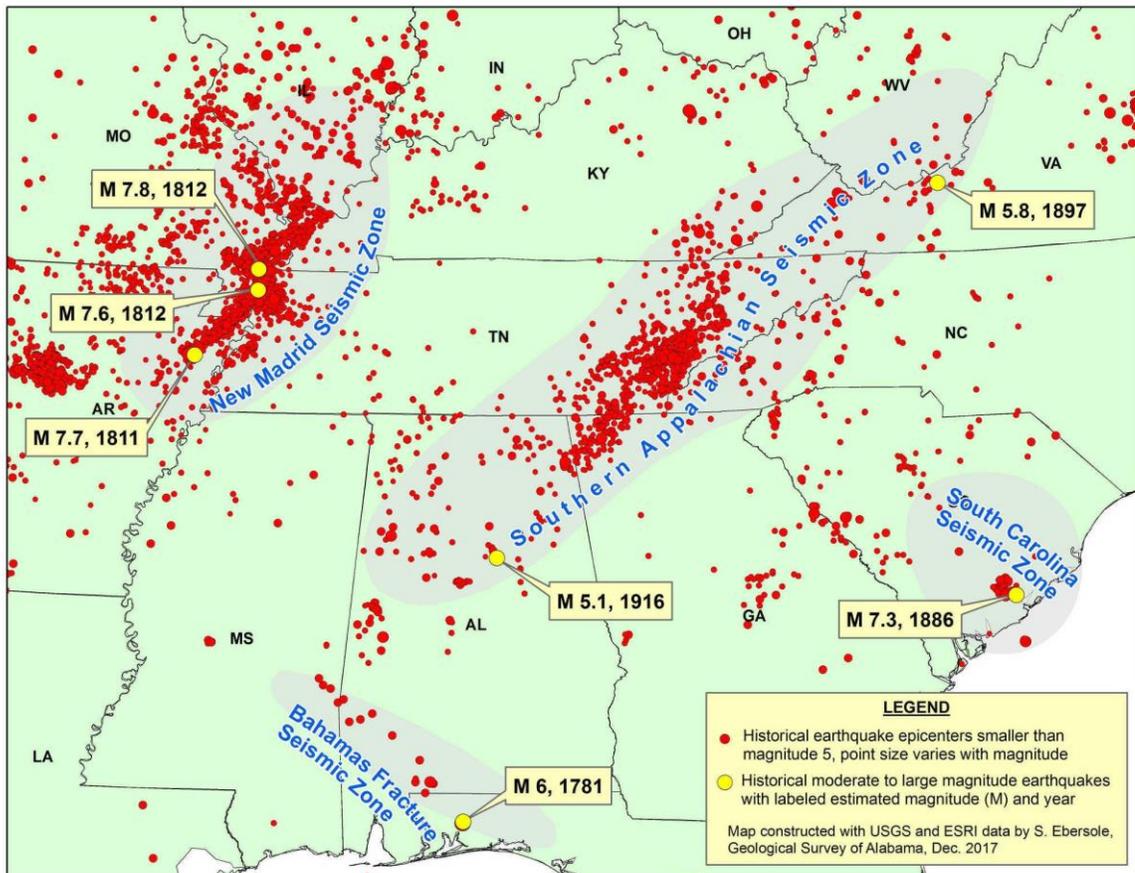
<http://droughtmonitor.unl.edu/>

Hazard [Background]

Earthquakes are *seismic hazards caused by the breaking and shifting of rock beneath the Earth's surface*. They occur without warning and more serious events can trigger other natural hazards such as flash floods, landslides, and tsunamis. According to FEMA, all 50 states and all U.S. territories are vulnerable to these natural hazards; emphasizing that earthquakes can occur in places without previous seismic activity.

The Alabama State Hazard Mitigation Plan notes that although seismic activity predominantly occurs along the Pacific coast in Alaska and California, the eastern and central regions of the country have experienced significant earthquakes. Seismic activity in the State is associated with four seismic zones: the Bahamas Fracture Seismic Zone, the New Madrid Seismic Zone, the South Carolina Seismic Zone, and the Southern Appalachian Seismic Zone.

Figure 4.7 | Seismic Zones of the Southeastern United States (2017)



Source: Dr. Sandy Ebersole, Geologic Investigations Program, Geological Survey of Alabama (GSA).

Affected Locations

According to Geological Survey of Alabama (GSA) data, **374** earthquakes have occurred in the State of Alabama since 1886. As shown in Figure 4.7 above, the entire northeast portion of Alabama falls within the Southern Appalachian Seismic Zone. Over one-third (**33.8%**) of the State's total earthquake incidents struck the Division F region. Therefore, the entire region is susceptible to earthquake activity.

Section 4 | Hazard Profiles

4.5 Earthquakes

Hazard [Extent]

Earthquake activity is measured by magnitude, energy release, and intensity. Magnitude, expressed in whole numbers and decimal fractions, is measured using seismometers. The once commonly used Richter Scale records small, local seismic activities by gauging the short-period surface wave magnitude. Other forms of earthquakes are measured more accurately by moment magnitude scales. Computing an earthquake’s energy is another way to calculate its size. The amount of energy an earthquake radiates is an indication of potential damage to man-made structures. The final way to measure this hazard is through its intensity, rather, the measure of movement at the earthquake’s location. Intensities are expressed by Roman numerals on the Modified Mercalli Intensity (MMI) Scale.

Figure 4.8 depicts the National Seismic Hazard Model (NSHM) that shows a 2018 chance-of-damage map for 100 years. Data attached to the map notes the correlation between population clusters and significant shaking activity. Many populated centers are coincident with areas of higher ground shaking hazard, not only across the western U.S., where most earthquakes occur, but also within the central and eastern U.S. where earthquakes are less common. The shaking activity shown in the map is equivalent to Modified Mercalli Intensity VI (strong) levels.

Previous Occurrences

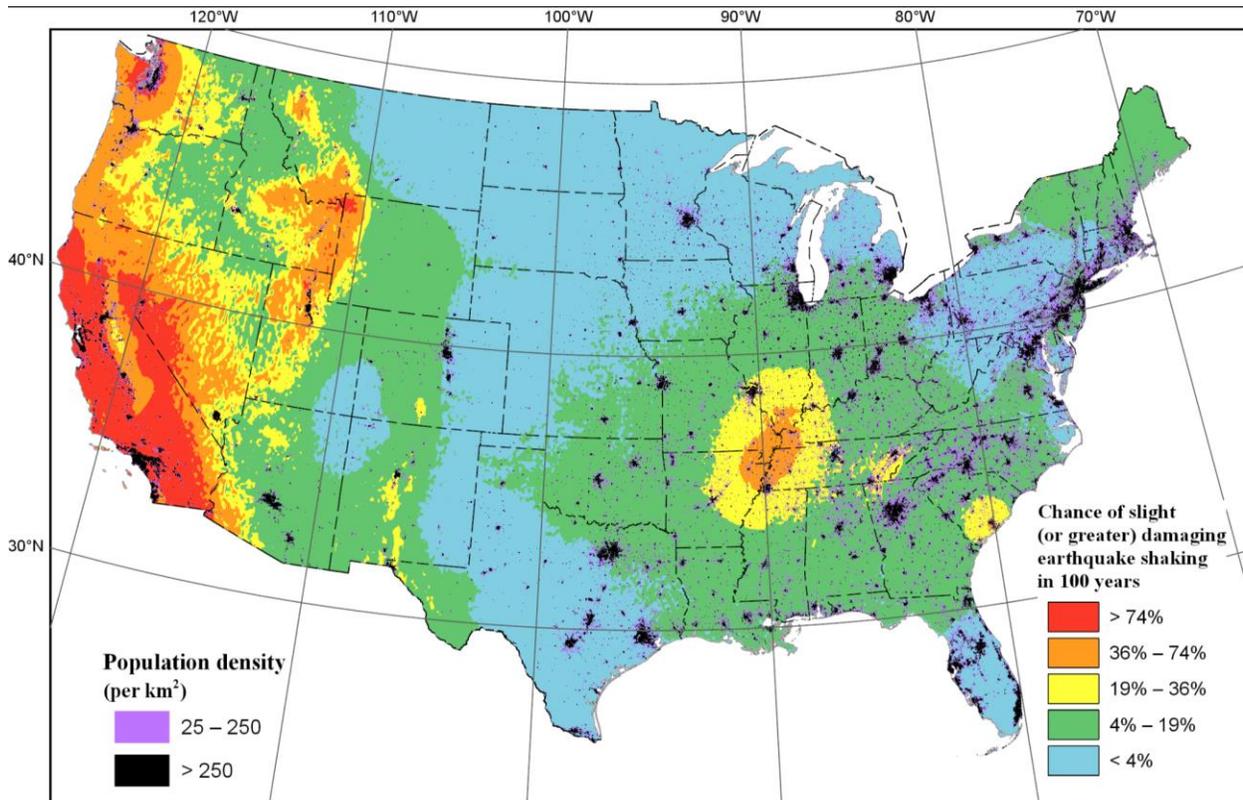
As noted in the *Areas Affected* section of this hazard profile, one-third of Alabama’s total earthquake events have occurred in the Division F region alone. This equates to **184** incidents of seismic activity within in the nine-county area. The first recorded earthquake in the State took place on February 4, 1886 in the Town of Valley Head in DeKalb County. It registered a magnitude of **1.2** and a level III (weak) intensity on the MMI Scale. Since this event, DeKalb County would gradually become a hotspot for future earthquake activity. Table 4.9 provides brief information on each events that’s taken place in the planning area.

Table 4.9 | Division F Earthquake Activity (1886 - Present)

Event Date	Community	County	Magnitude	Depth	MMI
02.02.1886	Valley Head	DeKalb	1.2	--	III
06.16.1927	Scottsboro	Jackson	2.2	--	IV
06.24.1939	Huntsville	Madison	4.2	--	IV
04.23.1957	Farley	Madison	0.2	--	VI
08.29.1975		Blount	3.2	5 km	--
09.28.1975	Cedar Springs	Blount	0.0	--	--
05.07.1981	Cullman	Cullman	2.1	--	--

Source: United States Geological Survey (USGS) – Earthquake Hazards; National Seismic Hazard Model (NSHM)

Figure 4.8 | National Seismic Hazard Model (NSHM) - Chance of Shaking (2018)



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.

Source: United States Geological Survey (USGS) - National Seismic Hazard Model (NSHM); The Modified Mercalli Intensity Scale

Section 4 | Hazard Profiles

4.5 Earthquakes

Table 4.9 | Division F Earthquake Activity (1886 - Present) (Continued)

Event Date	Community	County	Magnitude	Depth	MMI
09.14.1981	Section	Jackson	1.6	14.3 km	--
12.02.1981	Macedonia	Jackson	2.0	10 km	--
12.31.1981	Yucca	Jackson	1.6	6 km	--
08.09.1984	Paint Rock	Jackson	1.0	9 km	--
08.09.1984	Huntsville	Madison	3.0	15.4 km	--
08.24.1984	Huntsville	Madison	1.4	21.6 km	--
08.26.1984	Mud Creek	Jackson	1.3	7.6 km	--
11.18.1984	Huntsville	Madison	2.7	1.3 km	--
02.05.1985	Larkin	Jackson	0.9	9.6 km	--
02.19.1985	Bridgeport	Jackson	1.1	7 km	--
01.28.1986	Hendrix	Blount	0.9	24.3 km	--
03.29.1986	Fullerton	Cherokee	1.5	18.7 km	--
09.03.1986	Fackler	Jackson	1.8	17.1 km	--
11.07.1987	Fort Payne	DeKalb	1.2	--	--
02.03.1987	Hollytree	Jackson	2.4	9.6 km	--
10.13.1988	Broomtown	Cherokee	2.1	13.1 km	--
12.28.1988	Madison	Madison	1.9	14.4 km	--
02.20.1989	Huntsville	Madison	1.3	17.9 km	--
04.23.1989	Jones Chapel	Cullman	1.1	17.3 km	--
06.11.1989	Stevenson	Jackson	0.8	22.4 km	--
08.11.1989	Arkadelphia	Cullman	2.2	3.4 km	--

Section 4 | Hazard Profiles

4.5 Earthquakes

Table 4.9 | Division F Earthquake Activity (1886 - Present) (Continued)

Event Date	Community	County	Magnitude	Depth	MMI
08.26.1989	Lewis Smith Lake	Cullman	1.7	0 km	--
10.16.1989	New Moon	Cherokee	1.6	11.8 km	--
07.27.1990	GA-AL Line	Cherokee	2.1	8.1 km	--
09.20.1990	Athens	Limestone	2.8	3.7 km	--
12.15.1990	Decatur	Morgan	1.8	16.4 km	--
01.21.1991	Guntersville Dam	Marshall	1.9	11 km	--
03.28.1991	Huntsville	Madison	1.8	12.7 km	--
11.04.1991	Cullman	Cullman	2.3	8.9 km	--
11.10.1991	Dugout Valley	DeKalb	1.8	3.9 km	--
11.17.1991	Cullman	Cullman	1.9	16.8 km	--
03.17.1992	Morgan	Morgan	2.0	7.5 km	--
07.02.1992	Hollytree	Jackson	2.1	8.2 km	--
11.06.1993	Elkmont	Limestone	1.5	7.6 km	--
04.20.1994	Blount Springs	Blount	2.3	0 km	--
05.25.1994	Stevenson	Jackson	2.3	8.8 km	--
07.04.1994	Guntersville	Marshall	0.8	15.2 km	--
10.05.1994	Scottsboro	Jackson	1.2	10.6 km	--
08.01.1997	Stevenson	Jackson	1.7	0 km	--
08.20.1997	Scottsboro	Jackson	2.3	0 km	--
09.14.1997	Fort Payne	DeKalb	1.6	2.3 km	--
09.14.1997	Fort Payne	DeKalb	0.8	8.2 km	--

Section 4 | Hazard Profiles

4.5 Earthquakes

Table 4.9 | Division F Earthquake Activity (1886 - Present) (Continued)

Event Date	Community	County	Magnitude	Depth	MMI
09.14.1997	Fort Payne	DeKalb	0.6	10.7 km	--
10.19.1997	Fort Payne	DeKalb	1.7	4 km	--
11.03.1997	Fort Payne	Cherokee	2.4	4 km	--
12.29.1998	Decatur	Morgan	2.0	5 km	--
01.28.1998	Fort Payne	Cherokee	2.5	3 km	--
02.03.1998	Fort Payne	Cherokee	2.1	0 km	--
05.11.1998	Gadsden	Etowah	2.5	8 km	--
07.30.1998	Scottsboro	Jackson	2.0	1 km	--
10.22.1998	Scottsboro	Jackson	1.6	5 km	--
10.11.1999	Oneonta	Blount	2.5	0 km	--
01.02.2000	Athens	Limestone	2.9	10.3 km	--
04.22.2000	Oneonta	Blount	1.9	0 km	--
03.13.2001	Guntersville	Marshall	1.6	16.8 km	--
04.02.2001	Morgan County	Morgan	2.3	25 km	--
05.02.2001	Woodland Hills	Morgan	2.3	3.5 km	--
05.04.2001	Scottsboro	Jackson	1.5	26.4 km	--
06.21.2001	Stevenson	Jackson	2.3	0 km	--
09.10.2001	Guntersville	Marshall	1.7	10.6 km	--
12.08.2001	Pleasant Grove	Jackson	3.9	0 km	--
12.24.2001	Scottsboro	Jackson	2.4	14.8 km	--
01.01.2002	Athens	Limestone	1.8	16.9 km	--

Section 4 | Hazard Profiles

4.5 Earthquakes

Table 4.9 | Division F Earthquake Activity (1886 - Present) (Continued)

Event Date	Community	County	Magnitude	Depth	MMI
02.05.2003	Jackson County	Jackson	1.9	15.4 km	--
04.29.2003	Mentone	DeKalb	Multiple	Multiple	--
04.30.2003	Mentone	DeKalb	1.1	14.21 km	--
05.01.2003	Mentone	DeKalb	0.0	13.93 km	--
05.02.2003	Mentone	DeKalb	Multiple	Multiple	--
05.03.2003	Mentone	DeKalb	Multiple	Multiple	--
06.22.2003	Fort Payne	DeKalb	1.9	3.1 km	--
07.06.2003	Mentone	DeKalb	2.5	1.9 km	--
07.15.2003	Mentone	DeKalb	2.5	12.3 km	--
07.25.2003	Rainsville	DeKalb	2.0	14.8 km	--
08.16.2003	Alpine	DeKalb	2.0	4.47 km	--
12.25.2003	Collinsville	DeKalb	1.9	7.8 km	--
03.14.2004	Cedar Bluff	Cherokee	2.0	10 km	--
06.21.2004	Fort Payne	DeKalb	2.2	4 km	--
11.13.2004	Clubview Heights	Etowah	2.5	5 km	--

Earthquakes in Mentone, AL | 2003

April 29 - A **4.9** magnitude earthquake hit DeKalb County, 10 miles northeast of Fort Payne. GSA data pinpoints the Town of Mentone as the epicenter for the quake. The event, deep enough to suppress significant damage in Fort Payne, was felt in multiple southeastern states, most considerably Georgia and Tennessee. This one earthquake also caused the series of eighteen (**18**) aftershock events that occurred in the area from April 29th - May 3rd. A 2009 *AL.com* article, while discussing the 2003 incident, notes that earthquakes in Alabama are unlikely to reach magnitudes near 7.0 conditions. However, events with magnitudes between 2.0 and 3.0 occur more frequently, averaging one every six weeks during the past three decades. The article also highlights ongoing state-level efforts to respond to these moderate incidents.

Section 4 | Hazard Profiles

4.5 Earthquakes

Table 4.9 | Division F Earthquake Activity (1886 - Present) (Continued)

Event Date	Community	County	Magnitude	Depth	MMI
11.23.2005	Princeton	Jackson	1.0	0 km	--
11.24.2006	Larkinsville	Jackson	1.8	0 km	--
01.05.2007	Jamestown	Cherokee	2.2	4.9 km	--
06.02.2008	Dutton	Jackson	2.2	3.3 km	--
07.18.2008	Francisco	Jackson	2.3	4 km	--
08.02.2008	Lime Rock	Jackson	2.2	3.1 km	--
08.13.2008	Fort Payne	DeKalb	2.2	4 km	--
05.03.2009	Woodville	Jackson	2.2	8.6 km	--
11.16.2009	Fort Payne	DeKalb	1.4	12.5 km	--
02.25.2010	Mentone	DeKalb	1.5	9 km	--
05.06.2010	Crossville	Etowah	3.2	5 km	--
02.09.2011	Southside	Etowah	2.2	0.9 km	--
03.23.2011	Elkmont	Limestone	2.2	0.1 km	--
04.29.2013	Madison	Madison	2.3	13.5 km	--
07.11.2013	Scottsboro	Jackson	1.8	10.0 km	--
05.24.2014	Scottsboro	Jackson	2.2	3.9 km	--
12.20.2014	Henagar	Jackson	2.3	13.7 km	--
10.20.2015	Scottsboro	Jackson	1.9	2.7 km	--
03.07.2017	Fort Payne	DeKalb	2.3	14.5 km	--
06.02.2017	Fort Payne	DeKalb	2.6	13.2 km	--
08.01.2017	Scottsboro	Jackson	1.8	8.0 km	--

Table 4.9 | Division F Earthquake Activity (1886 - Present) (Continued)

Event Date	Community	County	Magnitude	Depth	MMI
08.27.2017	Fort Payne	DeKalb	2.2	12.9 km	--
10.20.2017	Scottsboro	Jackson	2.9	9.1 km	--
11.29.2017	Owens Cross Roads	Madison	2.3	3.0 km	--
12.20.2017	Bridgeport	Jackson	1.8	6.0 km	--
12.20.2017	Scottsboro	Jackson	0.7	7.0 km	--
03.05.2018	New Market	Jackson	1.8	4.5 km	--
03.06.2018	Blountsville	Blount	1.7	8.0 km	--
08.26.2018	Hazel Green	Madison	2.1	5.0 km	--
06.11.2019	Skyline	Jackson	2.4	12.5 km	< II
07.15.2019	Brownsboro	Madison	2.3	5.4	< II

Source: Geological Survey of Alabama (GSA) – Geologic Investigations Program, Catalog of Alabama Earthquakes

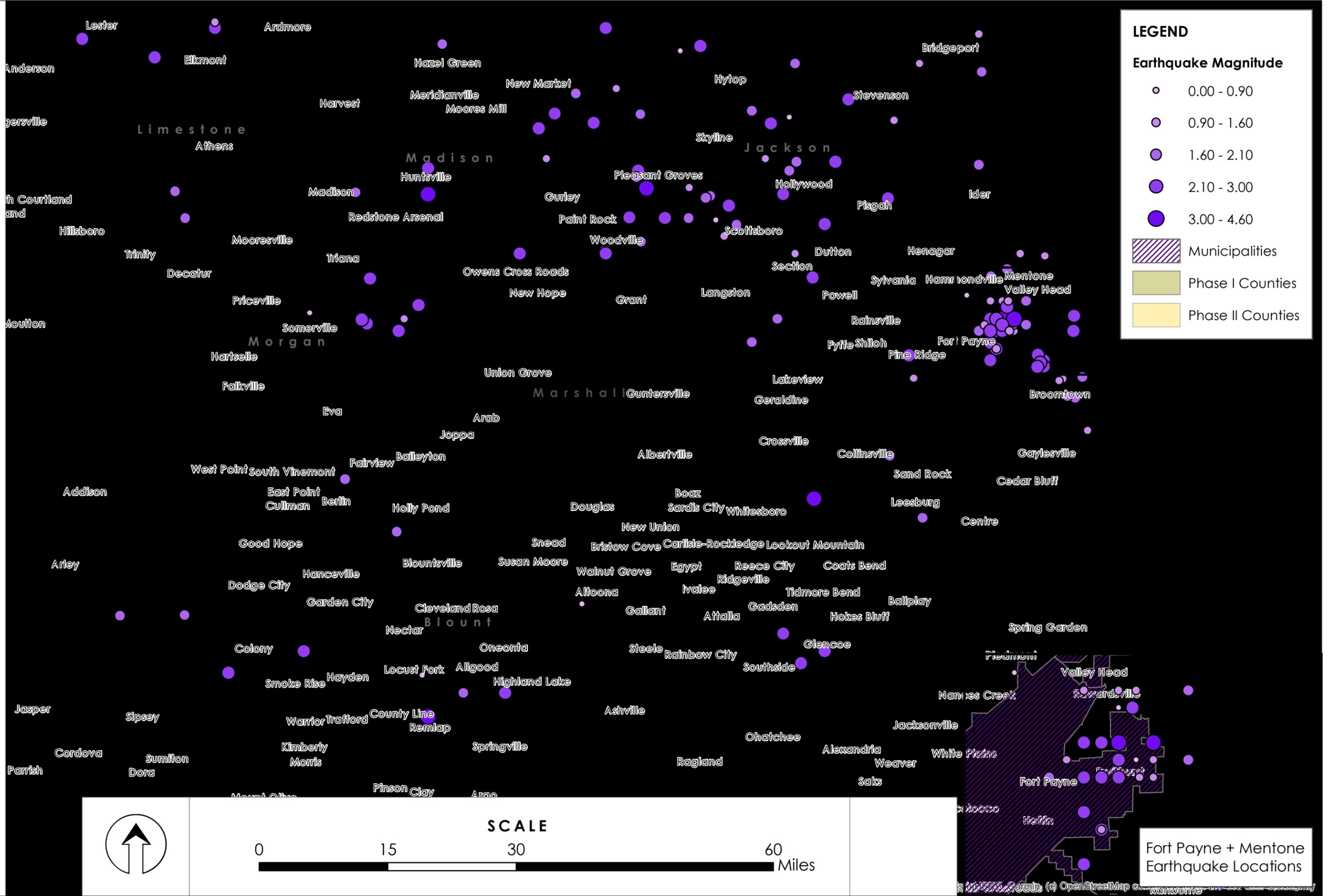
Probability of Future Events

The entire nine-county Division F region is in the South Appalachian Seismic Zone, which is where most of the State's earthquakes occur. While impacts of earthquakes in the region have been minute, recurring activity is one indication that future earthquakes will occur. The region's proximity to the New Madrid Seismic Zone is an additional factor that increases the likelihood of earthquake activity. One substantial quake in the New Madrid zone, which is located northwest of the state, would undoubtedly produce rippling effects across north Alabama. Probability of future events, however, varies across each community.

A HAZUS earthquake scenario was conducted for the Phase I four-county subregion (Cherokee, Cullman, DeKalb, and Etowah Counties) to analyze the potential damage an earthquake event could cause. The estimates of social and economic impacts contained in the generated report were produced using HAZUS loss estimation methodology software. It is important to note that the results of this scenario are based on 2010 Census data. A subsequent scenario will be conducted once 2020 Census figures for the planning area are published. The results of the earthquake scenario can be found in the Appendices.

DIVISION F REGION EARTHQUAKE EVENT LOCATIONS

Blount | Cherokee | Cullman | DeKalb | Etowah | Jackson | Limestone | Madison | Morgan



LEGEND

Earthquake Magnitude

- 0.00 - 0.90
- 0.90 - 1.60
- 1.60 - 2.10
- 2.10 - 3.00
- 3.00 - 4.60

▨ Municipalities

■ Phase I Counties

■ Phase II Counties

↑

SCALE

0 15 30 60 Miles

Fort Payne + Mentone Earthquake Locations

© OpenStreetMap contributors

Hazard [Background]

Floods are the most common natural hazard throughout the country. The Multi-Hazard Identification and Risk Assessment (MHIRA) defines flooding as *the accumulation of water within a water body and the overflow of excess water onto adjacent floodplain lands*. Flood activity typically results from large-scale weather systems generating prolonged rainfall or on-shore winds – thunderstorms, ice jams, and dam failures can also cause floods. Flash floods, characterized by rapid on-set and high velocity waters, can be as deadly and disastrous as regular floods.

Each county throughout Division F is susceptible to floods and flash floods, although data shows that flash floods are the more common events. While heavy rain is the leading cause of nearly all flood incidents in the planning area, the sources of above-average rainfall vary from cold-fronts to tropical storm systems. Moreover, the effects of heavy rainfall across the planning area are diverse, thereby producing different types of flooding activity. Table 4.11 below describes the types of flood activity designates in by FEMA.

Table 4.11 | Types of Potential Flood Activity

Riverine Flooding	Overbank flooding of rivers and streams; Flooding in large rivers that usually results from large-scale weather systems that generate prolonged rainfall over wide areas.
Flash Floods	Characterized by a rapid rise in water level, high velocity, and large amounts of debris; Major factors: intensity and duration of rainfall and the steepness of watershed and stream gradients.
Local Drainage / High Groundwater Levels	Dependent on the ability of local conditions to accommodate intense precipitation through water infiltration and surface runoff; These types of flooding issues generally occur in areas with flat gradients. High groundwater levels can either be seasonal or occur after long periods of above-average rainfall.
Dam-Break Floods	Occur as a result of structural failures (i.e., progressive erosion of embankments or breaching by severe floods; Can cause great loss of life and property damage due to unexpected nature and high velocity floodwater.
Debris Flows	Categorized as a geological hazard; defined as a form of rapid mass movement in which loose soils, rocks, and organic matter, combined with air and water, form a slurry that flows downslope.
Fluctuating Lake Levels	Fluctuations caused by heavy seasonal rainfall for short periods of time.

Sources: Multi-Hazard Identification Risk Assessment (MHIRA) – Subpart B: *Floods*; Subpart C: *Landslides*.

Section 4 | Hazard Profiles

4.6 Flooding

Affected Locations

Information presented in this hazard profile will show that the entire Division F Region is prone to flooding. While flood events may be identified as countywide emergencies, overall impacts of these natural hazards vary and are often based on conditions unique to communities throughout the area. For example, flash flooding activity for the City of Centre in Cherokee County has been historically caused by heavy rain. These incidents have often debilitated county and local road networks. However, a 2007 thunderstorm resulted in flash flood activity in the Henagar community in DeKalb County. This event led to several destructive events around the community: water backed up and flooded several businesses along Highways 11 and 35; substantial damage to residential and commercial property; and extensive damage to, at the time, an ongoing drainage project.

Affected locations around the planning area can be identified by various means, one of which is through documentation of areas continuously distressed by flood activity. The Federal Emergency Management Agency (FEMA) maintains a listing of specific properties that have experienced repetitive losses due to floods over a given 10-year period. This inventory categorizes properties by building occupancy and details the amount of funds paid to claims on National Flood Insurance Program (NFIP) repetitive loss properties. Tables 4.12 and 4.13 provide information for repetitive loss properties areas throughout the Division F planning area by subregion.

Table 4.12-A | Repetitive Loss Properties by Subregion I County

State	County	Occupancy	FMA RL Properties	Insured FMA RL Properties	Total Paid in Claims on FMA RL Properties	NFIP RL Properties	Insured NFIP FL Properties	Total Paid in Claims on NFIP RL Properties
AL	CHEROKEE COUNTY	SINGLE FMLY	-	-	\$ -	1	-	\$133,405
AL	DEKALB COUNTY	OTHER-NONRES	-	-	\$ -	4	-	\$417,385
AL	DEKALB COUNTY	SINGLE FMLY	-	-	\$ -	2	-	\$28,204
AL	ETOWAH COUNTY	OTHER-NONRES	-	-	\$ -	2	-	\$116,362
AL	ETOWAH COUNTY	SINGLE FMLY	-	-	\$ -	8	-	\$138,949
TOTAL								\$834,305

The total paid in claims on National Flood Insurance Program (NFIP) repetitive loss properties in Subregion I, consisting of Cherokee, Cullman, DeKalb, and Etowah Counties, is **\$834,305**. There have been no reported claims on Flood Mitigation Assistance Repetitive Loss (FMA RL) properties for either Subregion I County. Single-family occupied properties are the most common loss claims in the area, however, non-residential properties account for the highest amount in paid NFIP claims. To date, there have been no reported repetitive losses in Cullman County.

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.12-B | Repetitive Loss Properties by Subregion II County

State	County	Occupancy	FMA RL Properties	Insured FMA RL Properties	Total Paid in Claims on FMA RL Properties	NFIP RL Properties	Insured NFIP FL Properties	Total Paid in Claims on NFIP RL Properties
AL	BLOUNT COUNTY	OTHR-NONRES	-	-	\$ -	2	-	\$685,621
AL	JACKSON COUNTY	OTHER-NONRES	-	-	\$ -	-	-	\$73,329
AL	JACKSON COUNTY	SINGLE FMLY	-	-	\$ -	2	-	\$73,212
AL	LIMESTONE COUNTY	OTHER RESID	1	1	\$180,504	-	-	-
AL	LIMESTONE COUNTY	OTHER-NONRES	-	-	\$ -	5	2	\$690,177
AL	LIMESTONE COUNTY	SINGLE FMLY	-	-	-	19	7	\$488,412
AL	MADISON COUNTY	ASSMD CONDO	-	-	-	1	1	\$120,409
AL	MADISON COUNTY	SINGLE FMLY	3	1	\$311,748	20	9	\$1,094,916
AL	MARSHALL COUNTY	SINGLE FMLY	-	-	-	4	1	\$209,805
Total Paid in Claims on FMA RL Properties: \$492,252								
Total Paid in Claims on NFIP FL Properties:								\$3,435,881

Source: Federal Emergency Management Agency (FEMA)

The total paid in claims on Flood Mitigation Assistance Repetitive Loss (FMA RL) properties in Subregion II, consisting of Blount, Jackson, Limestone, Madison, and Morgan Counties, is **\$492,252**. Total claims paid on NFIP properties in these areas totaled **\$3,435,881**.

There have been four (4) reported FMA RL claims in Subregion II – one in Limestone County and three in Madison County. Only two of these properties are noted as insured. NFIP RL property claims are more significant in Subregion II. Excluding Marshall County's four claims, there have been **53** NFIP county-level claims dispersed between Blount, Jackson, Limestone, and Madison Counties. Single-family occupied properties are the most common loss claims throughout the five-county subregion, totaling well over **\$1 million** in property losses.

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.13-A | Repetitive Loss Properties by Subregion I Community

State	County Name	Community Name	Occupancy	FMA RL Properties	Insured FMA RL Properties	Total Paid in Claims on FMA RL Properties	NFIP RL Properties	Insured NFIP RL Properties	Total Paid in Claims on NFIP RL Properties
AL	CHEROKEE COUNTY	CHEROKEE COUNTY*	SINGLE FMLY	-	-	\$ -	1	-	\$ 133,405
AL	DE KALB COUNTY	CITY OF FORT PAYNE	OTHR-NONRES	-	-	\$ -	4	-	\$ 417,385
AL	DE KALB COUNTY	CITY OF FORT PAYNE	SINGLE FMLY	-	-	\$ -	2	-	\$ 28,204
AL	ETOWAH COUNTY	CITY OF ATTALLA	SINGLE FMLY	-	-	\$ -	3	-	\$ 35,964
AL	ETOWAH COUNTY	ETOWAH COUNTY *	SINGLE FMLY	-	-	\$ -	1	1	\$ 14,747
AL	ETOWAH COUNTY	CITY OF GADSDEN	OTHR-NONRES	-	-	\$ -	1	-	\$ 12,890
AL	ETOWAH COUNTY	CITY OF GADSDEN	SINGLE FMLY	-	-	\$ -	1	1	\$ 49,746
AL	ETOWAH COUNTY	CITY OF RAINBOW CITY	OTHR-NONRES	-	-	\$ -	1	-	\$ 103,473
AL	ETOWAH COUNTY	CITY OF RAINBOW CITY	SINGLE FMLY	-	-	\$ -	3	1	\$ 38,493
								TOTAL	\$ 834,305

* Indicates the unincorporated communities of the County

Table 4.13-B | Repetitive Loss Properties by Subregion II Community

State	County Name	Community Name	Occupancy	FMA RL Properties	Insured FMA RL Properties	Total Paid in Claims on FMA RL Properties	NFIP RL Properties	Insured NFIP RL Properties	Total Paid in Claims on NFIP RL Properties
AL	BLOUNT COUNTY	CITY OF ONEONTA	OTHR-NONRES	-	-	\$ -	1	-	\$ 659,774
AL	JACKSON COUNTY	CITY OF SCOTTSBORO	SINGLE FMLY	-	-	\$ -	3	1	\$ 54,817
AL	JACKSON COUNTY	CITY OF STEVENSON	OTHR-NONRES	-	-	\$ -	1	-	\$ 73,329
AL	JACKSON COUNTY	CITY OF STEVENSON	SINGLE FMLY	-	-	\$ -	1	-	\$ 18,395
AL	LIMESTONE COUNTY	TOWN OF ARDMORE	OTHR-NONRES	-	-	\$ -	1	-	\$ 23,452
AL	LIMESTONE COUNTY	CITY OF ATHENS	SINGLE FMLY	-	-	\$ -	2	1	\$ 25,068
AL	LIMESTONE COUNTY	CITY OF DECATUR	OTHR-NONRES	-	-	\$ -	1	1	\$ 3,108
								TOTAL	\$ 857,943

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.13-B | Repetitive Loss Properties by Subregion II Community (Cont'd)

State	County Name	Community Name	Occupancy	FMA RL Properties	Insured FMA RL Properties	Total Paid in Claims on FMA RL Properties	NFIP RL Properties	Insured NFIP RL Properties	Total Paid in Claims on NFIP RL Properties
AL	LIMESTONE COUNTY	CITY OF DECATUR	OTHR-NONRES	-	-	\$ -	1	-	\$ 473,713
AL	LIMESTONE COUNTY	CITY OF DECATUR	SINGLE FMLY	-	-	\$ -	4	3	\$ 204,512
AL	LIMESTONE COUNTY	CITY OF HUNTSVILLE	OTHER RESID	1	1	\$ 180,504	-	-	-
AL	LIMESTONE COUNTY	CITY OF HUNTSVILLE	OTHR-NONRES	-	-	\$ -	1	1	\$ 77,127
AL	LIMESTONE COUNTY	CITY OF HUNTSVILLE	SINGLE FMLY	-	-	\$ -	8	3	\$ 188,866
AL	LIMESTONE COUNTY	CITY OF HUNTSVILLE	SINGLE FMLY	-	-	\$ -	1	-	\$ 30,650
AL	LIMESTONE COUNTY	LIMESTONE COUNTY*	OTHR-NONRES	-	-	\$ -	1	1	\$ 112,777
AL	LIMESTONE COUNTY	LIMESTONE COUNTY*	SINGLE FMLY	-	-	\$ -	3	-	\$ 28,227
AL	LIMESTONE COUNTY	CITY OF MADISON	SINGLE FMLY	-	-	\$ -	1	-	\$ 11,090
AL	MADISON COUNTY	MADISON COUNTY*	ASSMD CONDO	-	-	\$ -	1	1	\$ 120,409
AL	MADISON COUNTY	MADISON COUNTY*	SINGLE FMLY	-	-	\$ -	13	6	\$ 668,393
AL	MADISON COUNTY	MADISON COUNTY*	SINGLE FMLY	1	-	\$ 76,085	-	-	-
AL	MADISON COUNTY	TOWN OF OWENS CROSS ROADS	SINGLE FMLY	-	-	\$ -	3	2	\$ 22,888
AL	MADISON COUNTY	TOWN OF OWENS CROSS ROADS	SINGLE FMLY	2	1	\$ 235,663	4	1	\$ 403,635
AL	MORGAN COUNTY	CITY OF HARTSELLE	OTHR-NONRES	-	-	\$ -	3	-	\$ 64,191
AL	MORGAN COUNTY	CITY OF HARTSELLE	SINGLE FMLY	-	-	\$ -	1	-	\$ 61,881
AL	MORGAN COUNTY	CITY OF HARTSELLE	SINGLE FMLY	3	2	\$ 302,387	2	1	\$ 227,953
AL	MORGAN COUNTY	MORGAN COUNTY*	BUSI-NONRES	-	-	\$ -	1	1	\$ 243,768
AL	MORGAN COUNTY	MORGAN COUNTY*	SINGLE FMLY	-	-	\$ -	3	1	\$ 49,262
AL	MORGAN COUNTY	MORGAN COUNTY*	SINGLE FMLY	2	-	\$ 106,014	1	-	\$ 53,201
Total Paid in Claims - FMA RL Properties: \$900,653						Total Paid in Claims - NFIP Properties:		\$ 3,042,543	

Total claims on both FMA RL properties and NFIP RL properties have been significant. By county, total claims for FMA RL properties across the Division totaled \$492,252 and \$4,270,186 for NFIP RL properties. By community, total claims for FMA RL properties totaled \$900,653 and \$4,734,791 for NFIP properties. Single-family occupied properties accumulated the most claims out of all categories, totaling into the millions in losses between FMA RL and NFIP RL properties.

*Note: These figures do not account for losses in Marshall County. Those figures will be added in a subsequent update of this document.

Hazard [Extent]

Flood activity is described in terms of extent (for example, the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence. Studies of historical flood records are conducted to determine the probability of occurrence for different extents of flooding. Hazard occurrence probability is expressed by percentages as the chance of a flood of a specific extent occurring in any given year. Table 4.14 shows a range of flood recurrence intervals with their probabilities of occurrence and flood zones with descriptions of each zone.

Table 4.14 | Flood Recurrence Intervals + Flood Zone Designations

Annual Probability	Recurrence Interval	Flood Zone	Zone Description
1.0	Annual	V, VE, V#	Coastal high-risk areas
0.5	2-Year	A, AE, A#, AR, A99, AO, AH	High-risk area
0.2	5-Year	B	Moderate-risk area
0.1	10-Year	X (shaded)	Moderate-risk area
0.02	50-Year	C	Low-risk area
0.01	100-Year	X (Unshaded)	Low-risk area
0.002	500-Year	D	Possible but undetermined-risk area

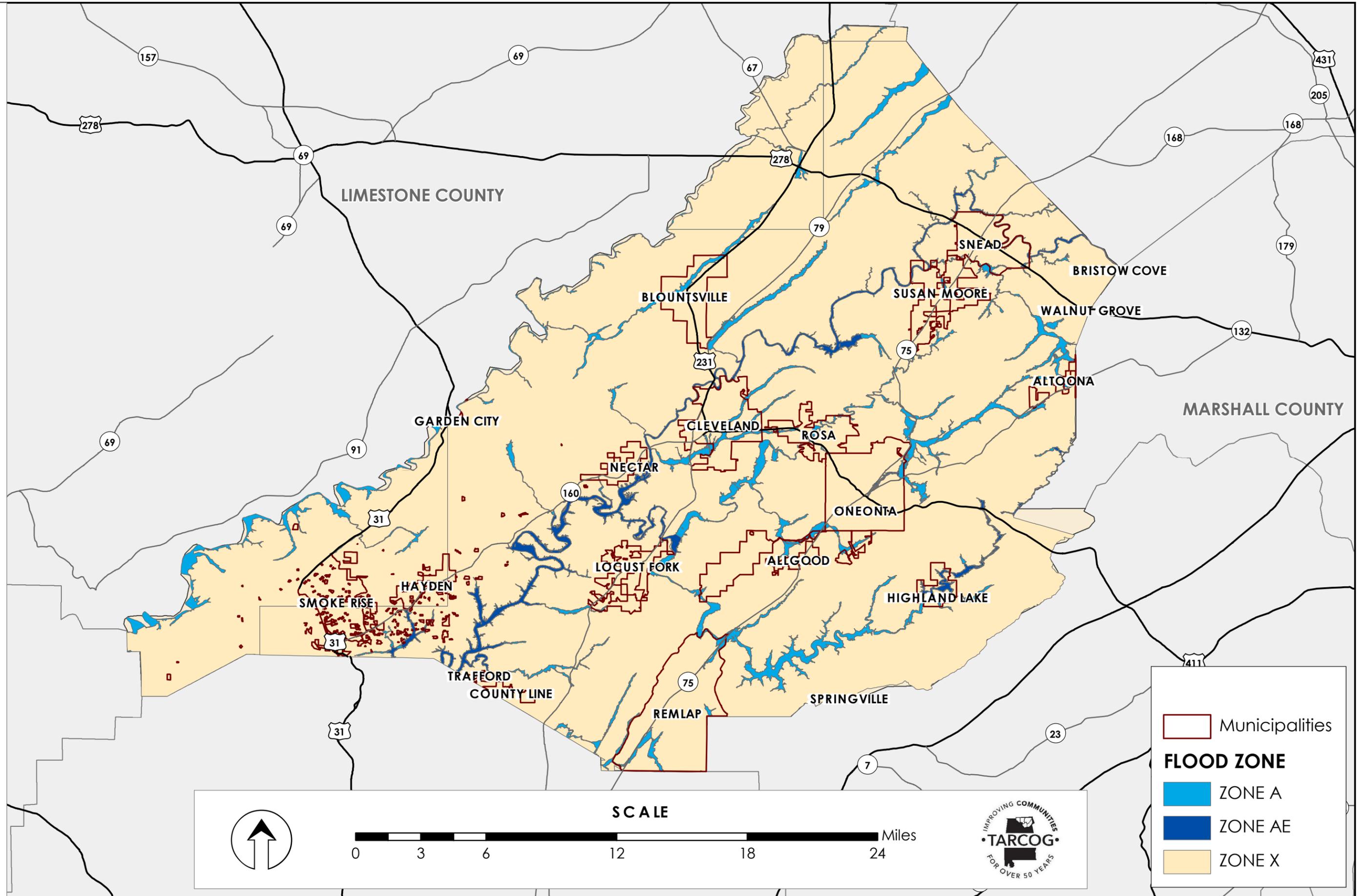
Sources: Cullman County Natural Hazards Mitigation Plan (2015); FEMA Training Document – Chapter 4: Flood Risk Assessment

Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA is defined as **the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year**. The 1-percent annual chance flood is also referred to as the *base flood* or *100-year flood*. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded).

Depth grids are graphic means of conveying the extent of floods. This data visually communicates the variability of flood depths in flood-prone identified areas. Flood depth grids, illustrated in feet above the ground surface, are produced for the 10-percent, 4-percent, 2-percent, 1-percent, 0.2-percent and 1-percent plus annual-chance flood events. Figures 4.15 – 4.23 illustrate flood zone and depth information for each county in the Division F planning area. The full HAZUS Flood Global Risk Report is included in the appendix. Table 4.24 describes flood depths and flood zone conditions existing within each community in the Division F planning area. Depth grid data for Etowah County was provided by the Alabama Department of Community and Economic Affairs (ADCEA) Office of Water Resources through the Alabama Flood Map platform.

BLOUNT COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan



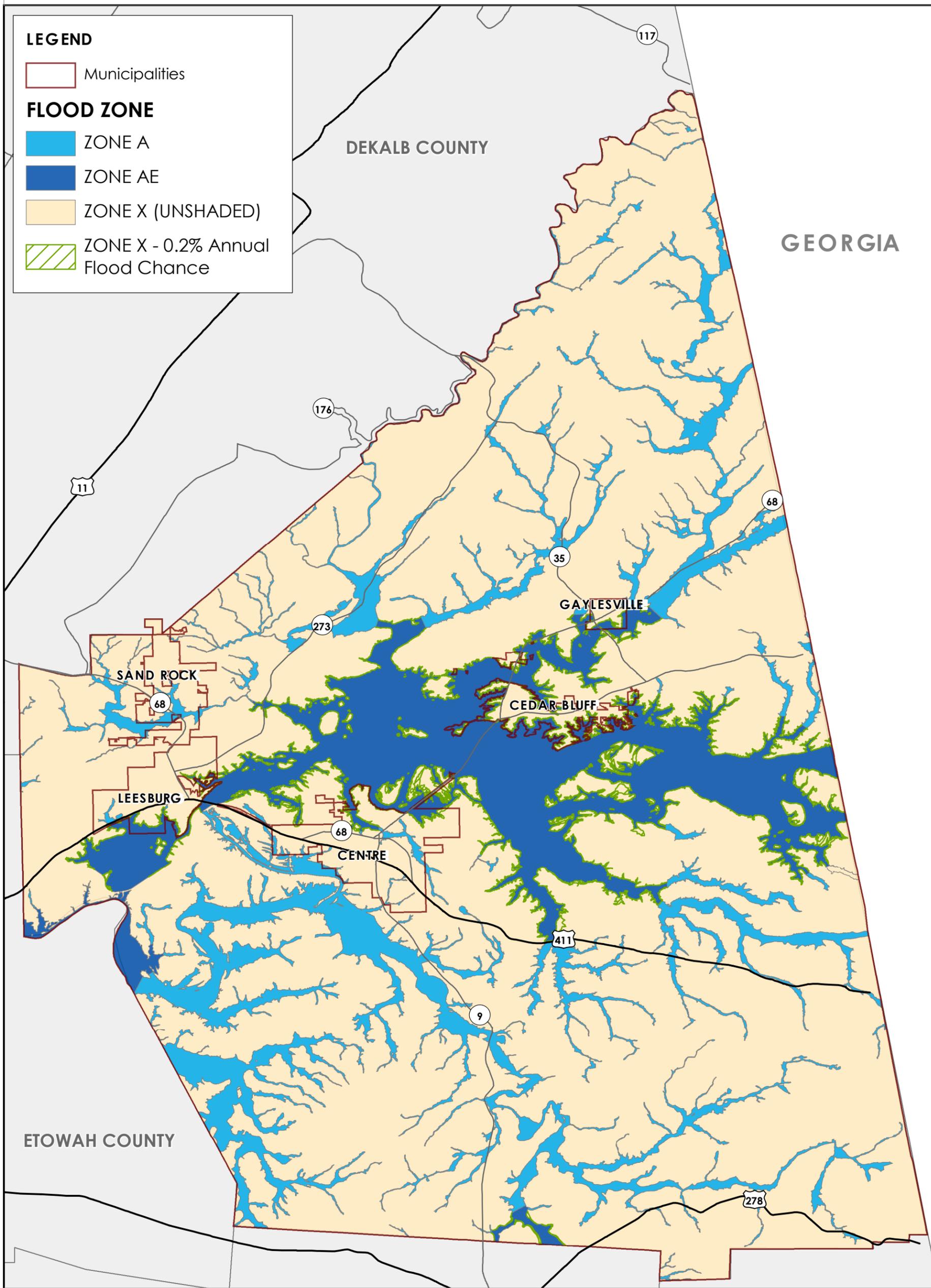
Legend:

- Municipalities (Red outline)
- FLOOD ZONE**
- ZONE A (Light Blue)
- ZONE AE (Dark Blue)
- ZONE X (Yellow)



CHEROKEE COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan



LEGEND

Municipalities

FLOOD ZONE

ZONE A

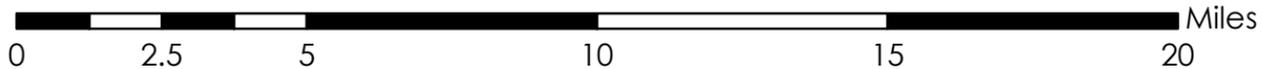
ZONE AE

ZONE X (UNSHADED)

ZONE X - 0.2% Annual Flood Chance

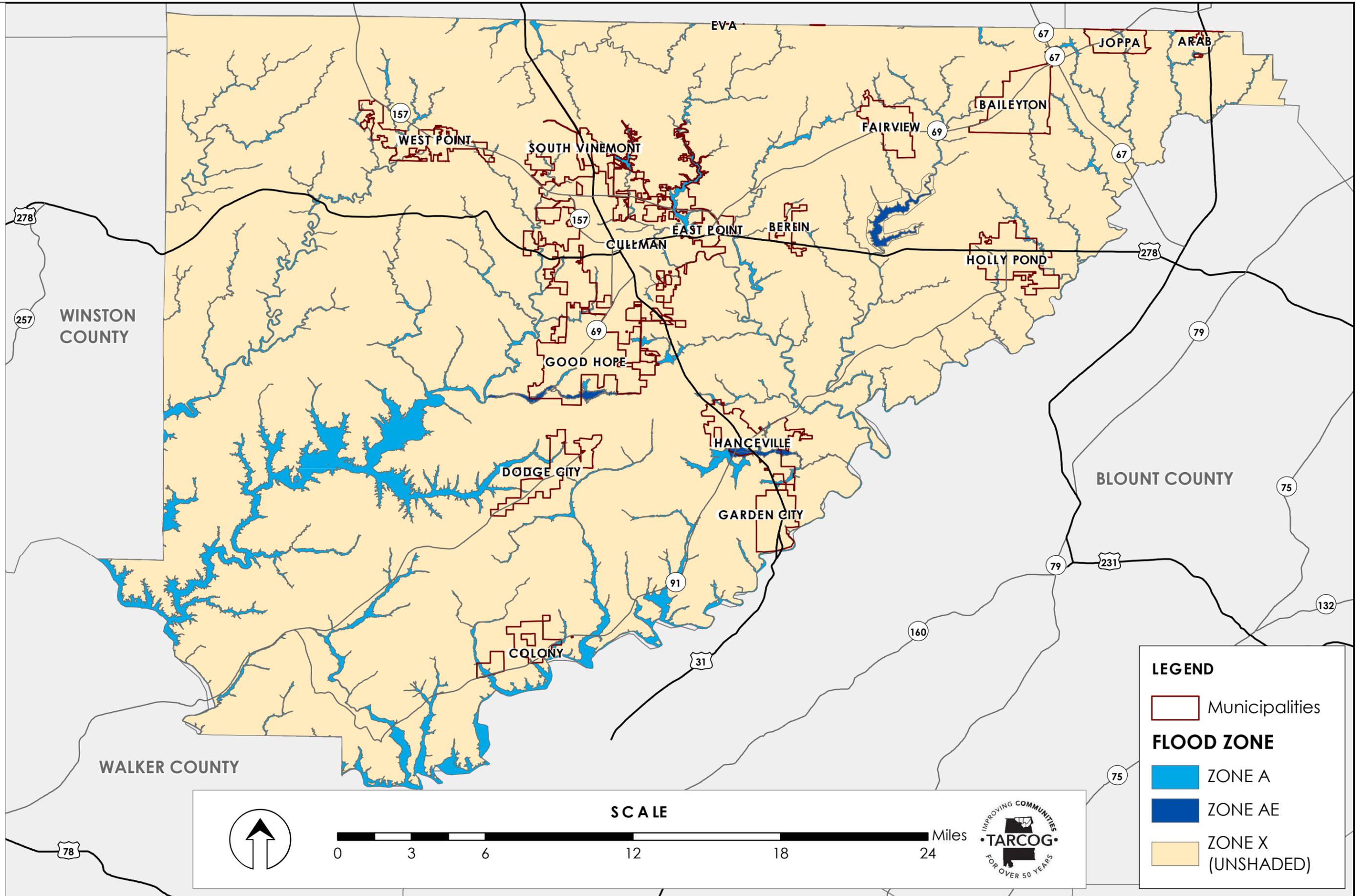


SCALE



CULLMAN COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan



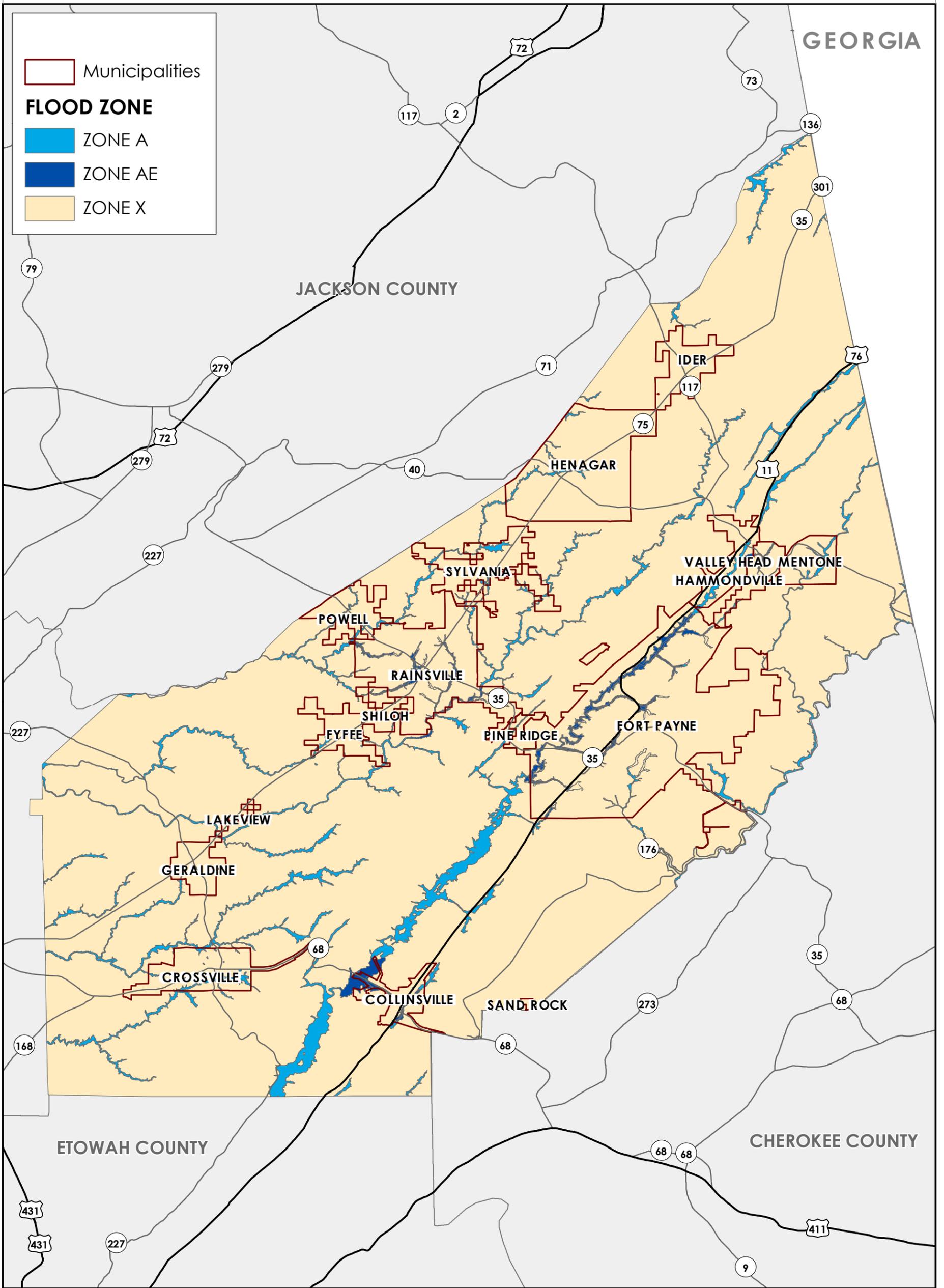
LEGEND

- Municipalities
- FLOOD ZONE**
- ZONE A
- ZONE AE
- ZONE X (UNSHADED)

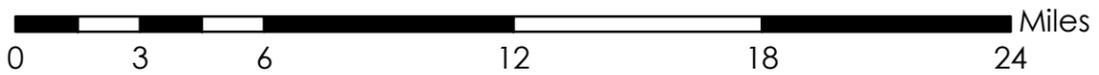


DEKALB COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan

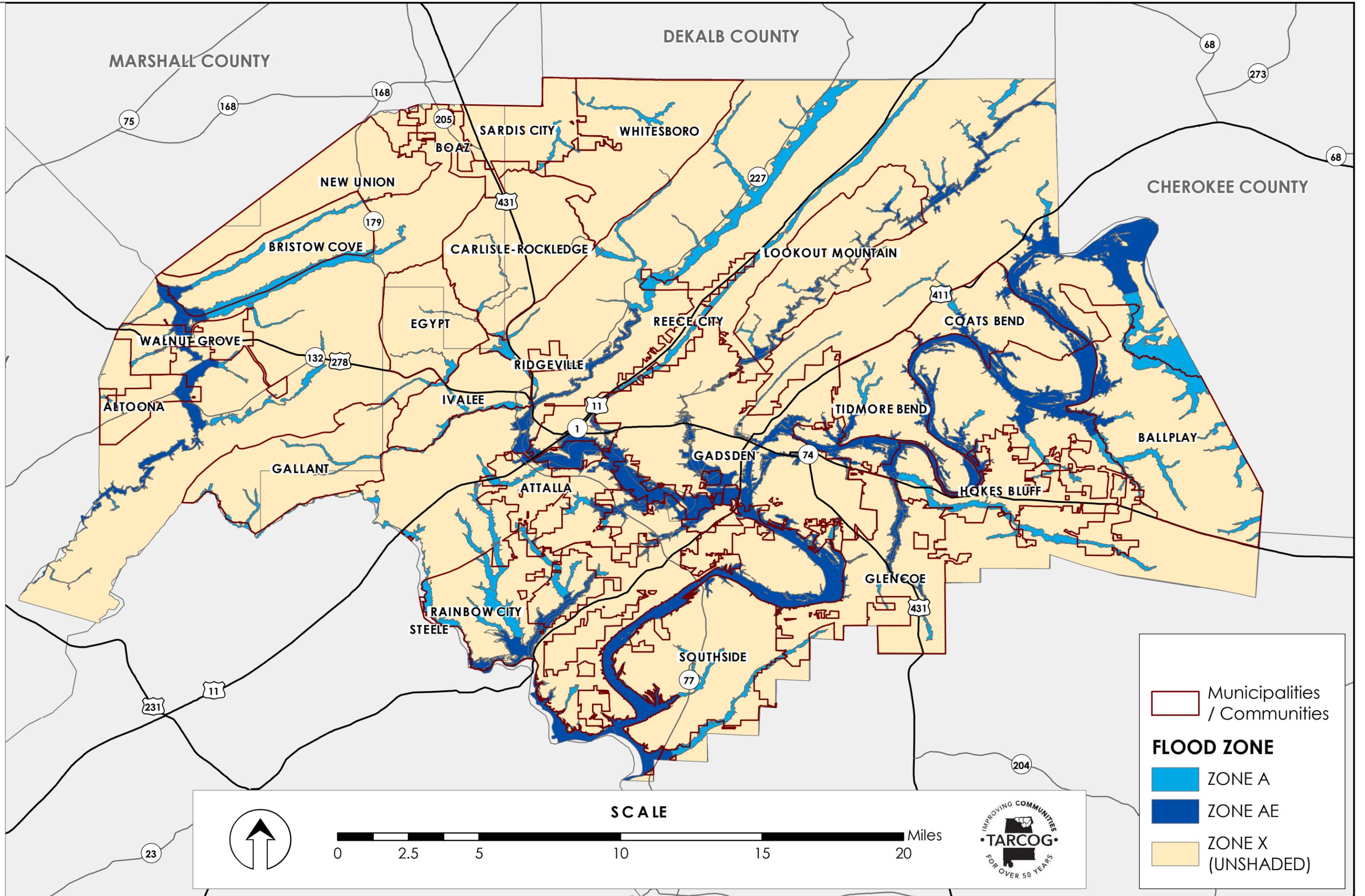


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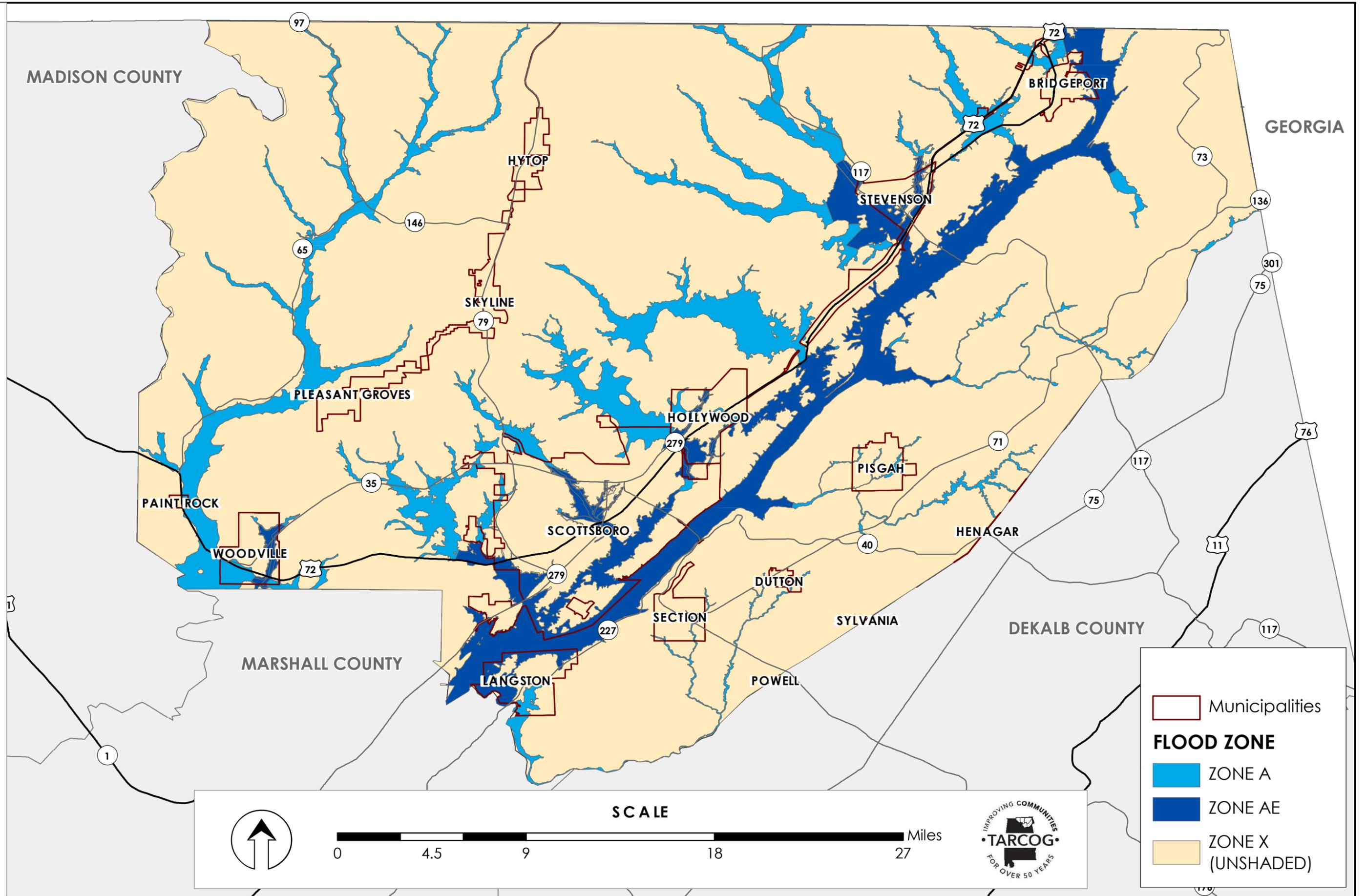
EIOWAH COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan

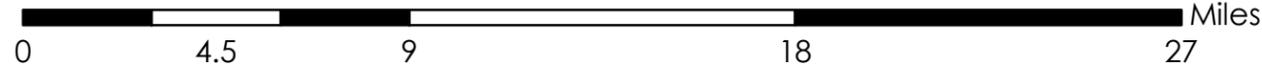


JACKSON COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan

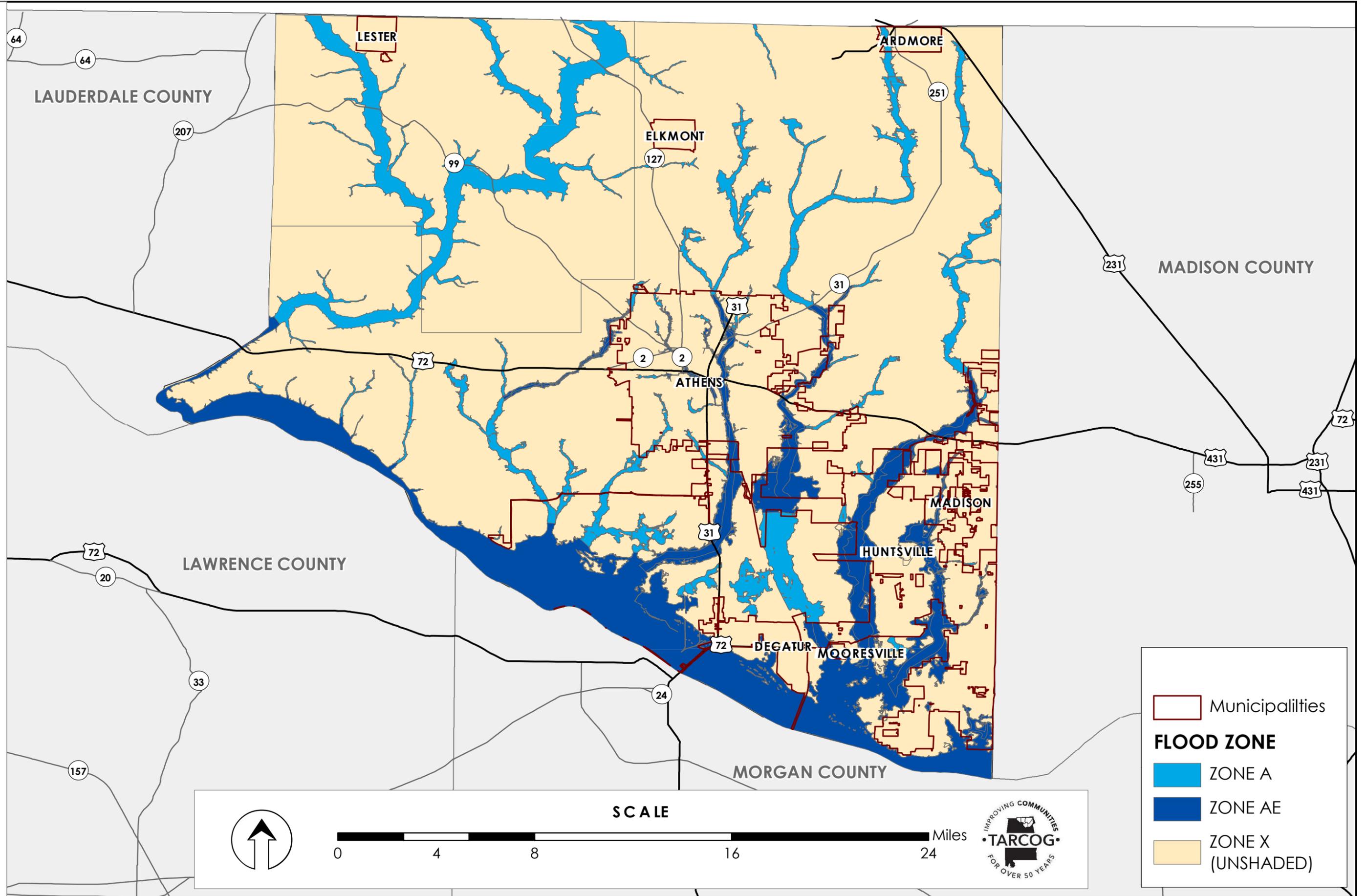


SCALE

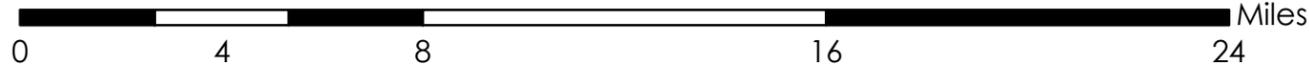


LIMESTONE COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan

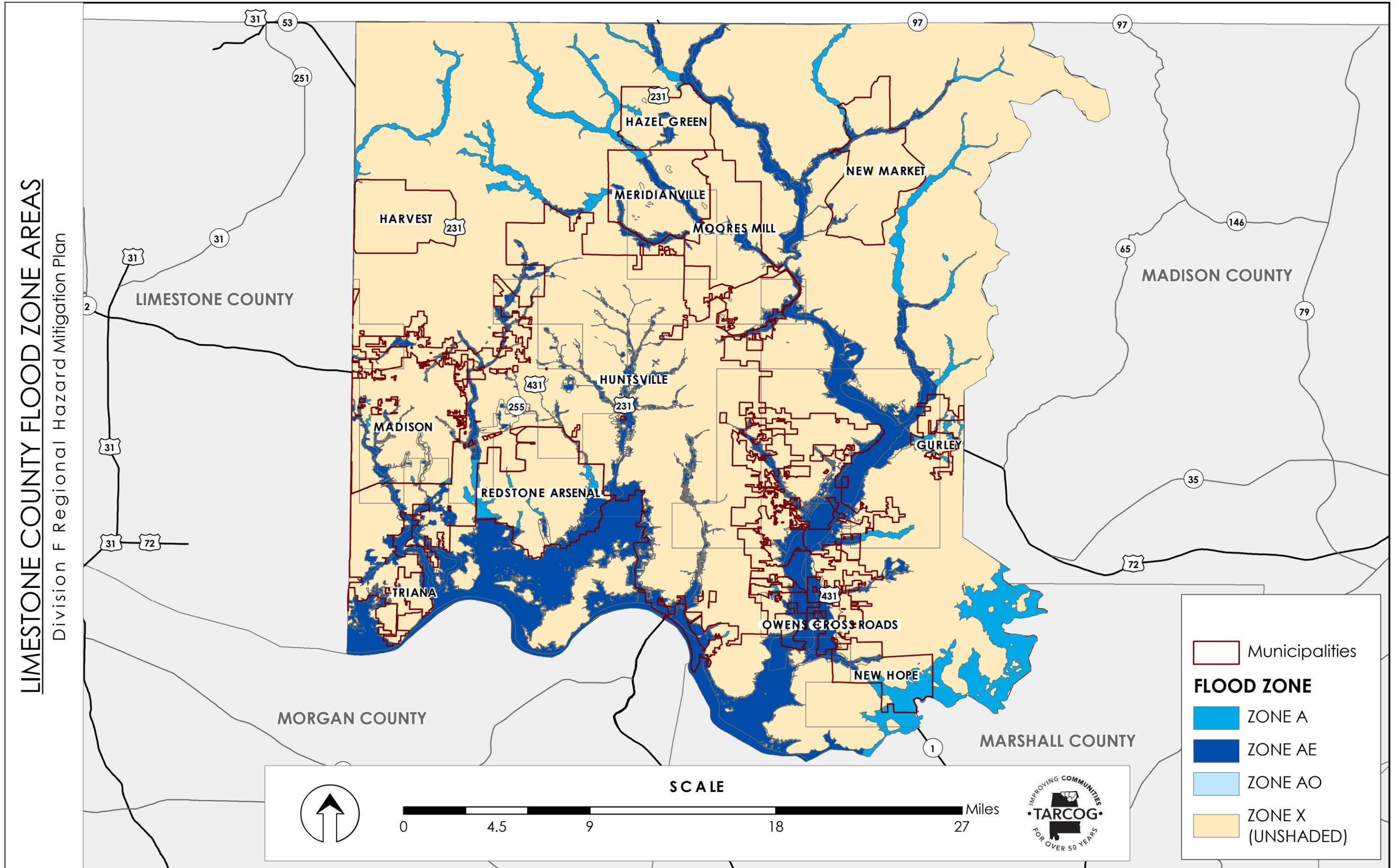


SCALE



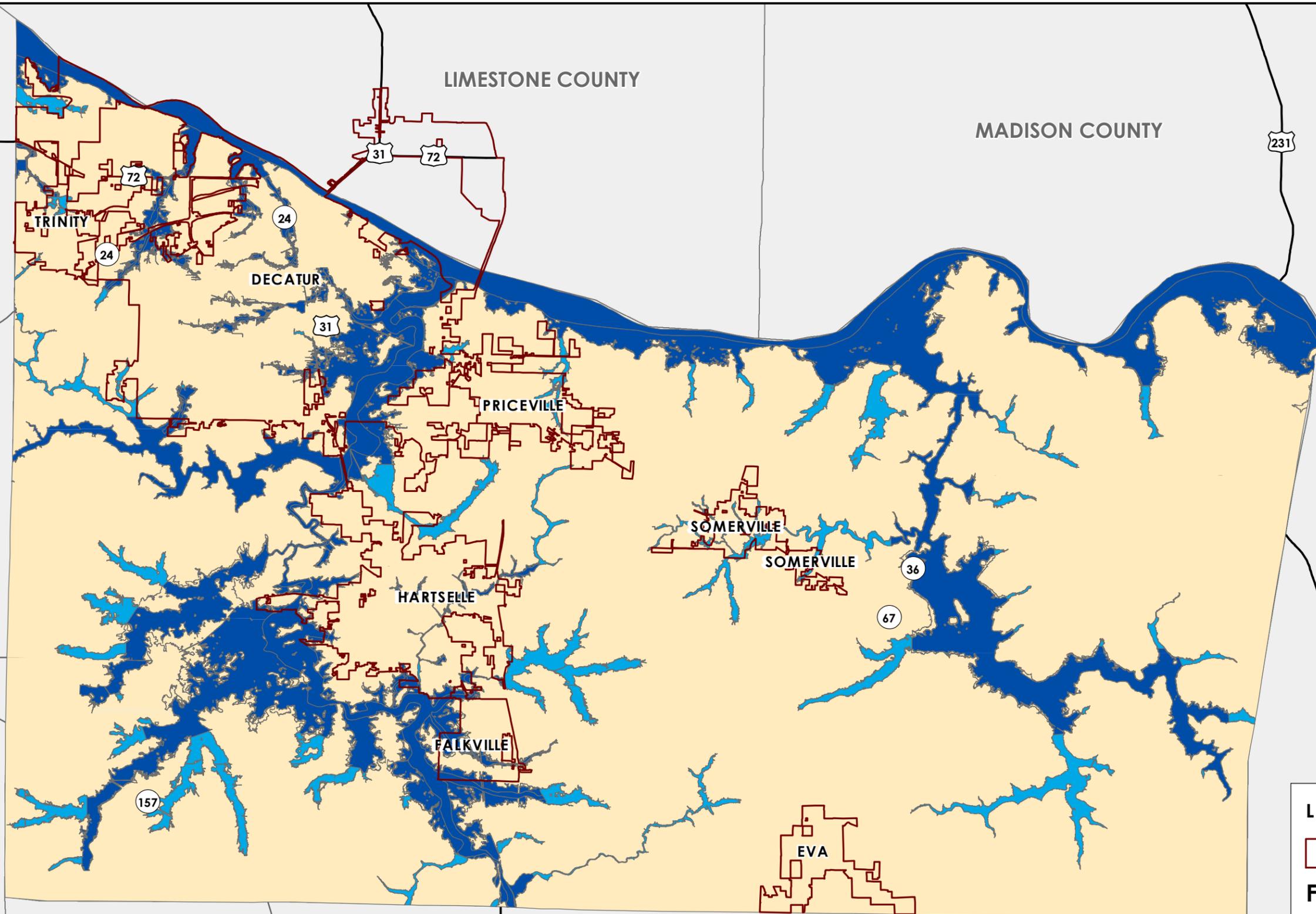
LIMESTONE COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan



MORGAN COUNTY FLOOD ZONE AREAS

Division F Regional Hazard Mitigation Plan



LEGEND

- Municipalities
- FLOOD ZONE**
- ZONE A
- ZONE AE
- ZONE X (UNSHADED)

SCALE

0 2.5 5 10 15 20 Miles



Section 4 | Hazard Profiles

4.6 Flooding

Table 4.24 | Flood Zone and Depths by Division F Community

County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
BLOUNT	Allgood	Southcentral Blount	Black Warrior-Tombigbee	X	1' – 4'+
	Blountsville	Northcentral Blount	Black Warrior-Tombigbee	A, X	1' – 4'+
	Cleveland	Central Blount	Black Warrior-Tombigbee	A, AE, X	1' – 4'+
	Hayden	Western Blount	Black Warrior-Tombigbee	A, AE, X	1' – 4'+
	Highland Lake	Southeastern Blount	Black Warrior-Tombigbee	AE, AE FLOODWAY, X	1' – 4'+
	Locust Fork	Southwestern Blount	Black Warrior-Tombigbee	AE, X	1' – 4'+
	Nectar	Western Blount	Black Warrior-Tombigbee	A, AE, X	1' – 4'+
	Oneonta	Eastern Blount	Black Warrior-Tombigbee	A, AE, AE FLOODWAY, X	1' – 4'+
	Rosa	Central Blount	Black Warrior-Tombigbee	A, X	1' – 4'+
	Snead	Northeastern Blount	Black Warrior-Tombigbee	A, AE, X	1' – 4'+
	Susan Moore	Northeastern Blount	Black Warrior-Tombigbee	A, AE, X	1' – 4'+
County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
CHEROKEE	Cedar Bluff	Central Cherokee	Coosa – Tallapoosa	AE	1' – 4'+
	Centre	Central Cherokee	Coosa – Tallapoosa	X	1' – 4'+
	Collinsville	Northwest Cherokee	Coosa – Tallapoosa	A, AE, AE FLOODWAY, X	1' – 4'+
	Gaylesville	Northcentral Cherokee	Coosa – Tallapoosa	A, AE, X	1' – 4'+
	Leesburg	West Cherokee	Coosa – Tallapoosa	AE, X	1' – 4'+
	Sand Rock	Northwest Cherokee	Coosa – Tallapoosa	A, X	1' – 4'+

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.24 | Flood Zone and Depths by Division F Community (Continued)

County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
CULLMAN	Baileyton	Northeast Cullman	Black Warrior - Tombigbee	X	1' - 4'+
	Berlin	Northcentral Cullman	Black Warrior - Tombigbee	X	1' - 4'+
	Colony	Southeast Cullman	Black Warrior - Tombigbee	A, X	1' - 4'+
	Cullman	Northcentral Cullman	Black Warrior - Tombigbee	A, AE, X	1' - 4'+
	Dodge City	Southcentral Cullman	Black Warrior - Tombigbee	A, X	1' - 4'+
	Fairview	Northeast Cullman	Black Warrior - Tombigbee	A, X	1' - 4'+
	Garden City	Southeast Cullman	Black Warrior - Tombigbee	A, X	1' - 4'+
	Good Hope	Central Cullman	Black Warrior - Tombigbee	A, AE, X	1' - 4'+
	Hanceville	Southeast Cullman	Black Warrior - Tombigbee	A, AE, AE FLOODWAY, X	1' - 4'+
	Holly Pond	East Cullman	Black Warrior - Tombigbee	A, X	1' - 4'+
	South Vinemont	North Cullman	Black Warrior - Tombigbee	X	None
	West Point	Northwest Cullman	Black Warrior - Tombigbee	A, X	1' - 4'+

The Lewis Smith Lake in the Region

The Lewis Smith Lake is a **21,200**-acre lake that touches portions of Cullman, Walker, and Winston Counties in north-central Alabama. It was created in 1961 by the Alabama Power Company through the construction of the Lewis Smith Dam on the Sipsey fork of the Black Warrior River, with the intent to produce hydro-electric power. The earth and rock filled dam is **2,200** feet long and **300** feet tall, and one of the largest dams of its type in the eastern United States. A high-water emergency spillway was constructed on the western bank of the dam to accommodate heavy flooding predicted to occur every 50 years. To date, water within Lewis Smith Lake has never risen high enough to activate the spillway. With a maximum depth of **264** feet, Lewis Smith Lake is the deepest lake in Alabama.

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.24 | Flood Zone and Depths by Division F Community (Continued)

County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
DEKALB	Collinsville	Southeast DeKalb	Coosa – Tallapoosa	AE, AE FLOODWAY, X	1’ – 4’+
	Crossville	South DeKalb	Middle Tennessee-Elk	A, X	1’ – 4’+
	Fort Payne	Central DeKalb	Coosa – Tallapoosa	A, AE, AE FLOODWAY, X	1’ – 4’+
	Fyffe	Central DeKalb	Middle Tennessee-Elk	A, X	1’ – 4’+
	Geraldine	Southwest DeKalb	Middle Tennessee-Elk	A, X	None
	Hammondville	North DeKalb	Coosa – Tallapoosa	A, AE, X	1’ – 4’+
	Henagar	Northwest DeKalb	Middle Tennessee-Elk	A, X	1’ – 4’+
	Ider	North DeKalb	Middle Tennessee-Elk	X	1’ – 4’+
	Lakeview	West DeKalb	Middle Tennessee-Elk	A, X	None
	Mentone	Northeast DeKalb	Coosa - Tallapoosa	A, X	1’ – 4’+
	Pine Ridge	Central DeKalb	Coosa – Tallapoosa	A, X	1’ – 4’+
	Powell	West DeKalb	Middle Tennessee-Elk	A, X	None
	Rainsville	Central DeKalb	Middle Tennessee-Elk	A, AE, AE FLOODWAY, X	1’ – 4’+
	Sand Rock	Southeast DeKalb	Coosa – Tallapoosa	X	None
	Shiloh	Central DeKalb	Middle Tennessee-Elk	A, X	None
	Sylvania	Northwest DeKalb	Middle Tennessee-Elk	A, X	1’ – 4’+
	Valley Head	Northeast DeKalb	Coosa - Tallapoosa	A, AE, AE FLOODWAY, X	1’ – 4’+

Table 4.24 | Flood Zone and Depths by Division F Community (Continued)

County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
ETOWAH	Altoona	West Etowah	Black Warrior - Tombigbee	A, AE, X	1' - 10'
	Attalla	Central Etowah	Coosa - Tallapoosa	A, AE, AE FLOODWAY, X	1' - 16'+
	Gadsden	Southcentral Etowah	Coosa - Tallapoosa	A, AE, AE FLOODWAY, X	1' - 16'+
	Glencoe	South Etowah	Coosa - Tallapoosa	A, AE, AE FLOODWAY, X	1 - 16'+
	Hokes Bluff	East Etowah	Coosa - Tallapoosa	A, AE, X	1 - 10'
	Rainbow City	South Etowah	Coosa - Tallapoosa	A, AE, AE FLOODWAY, X	1' - 16'+
	Reece City	Central Etowah	Coosa - Tallapoosa	A, X	1' - 10'
	Ridgeville	Central Etowah	Coosa - Tallapoosa	A, X	1' - 10'
	Sardis City	North Etowah	Coosa - Tallapoosa	X	None
	Southside	South Etowah	Coosa - Tallapoosa	A, AE	1' - 10'
	Walnut Grove	West Etowah	Black Warrior - Tombigbee	A, AE, AE FLOODWAY, X	1' - 10'

The Coosa River in the Division F Region

The Coosa River is a **280**-mile tributary of the Alabama River. It begins at the confluence of the Oostanaula and Etowah rivers in Rome, Georgia, and ends just northeast of Montgomery, where it joins the Tallapoosa River to form the Alabama River. There are seven impoundments on the Coosa River from south to north built by the Alabama Power Company. The most significant impoundment in the planning area is Weiss Lake – an Alabama Power lake spanning **30,200** acres (**447** miles of shoreline) with an **87,750**-kilowatt generating capacity. Most notable communities potentially impacted by flooding of the Coosa River are Gadsden, Rainbow City, and Southside.

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.24 | Flood Zone and Depths by Division F Community (Continued)

County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
JACKSON	Bridgeport	Northeast Jackson	Middle-Tennessee Elk	A, AE, X	1' – 4'+
	Dutton	Southeast Jackson	Middle-Tennessee Elk	A, X	1' – 4'+
	Hollywood	Central Jackson	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+
	Hytov	Northwest Jackson	Middle-Tennessee Elk	X	1' – 4'+
	Langston	Southcentral Jackson	Middle-Tennessee Elk	A, X	1' – 4'+
	Paint Rock	Western Jackson	Middle-Tennessee Elk	A	1' – 4'+
	Pisgah	Eastern Jackson	Middle-Tennessee Elk	A, X	1' – 4'+
	Pleasant Grove	Western Jackson	Middle-Tennessee Elk	X	1' – 4'+
	Scottsboro	Central Jackson	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+
	Section	Southcentral Jackson	Middle-Tennessee Elk	A, X	1' – 4'+
	Skyline	Northwest Jackson	Middle-Tennessee Elk	X	1' – 4'+
	Stevenson	Northeast Jackson	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+
	Woodville	Southwestern Jackson	Middle-Tennessee Elk	AE, AE FLOODWAY, X	1' – 4'+
	County	Community	Orientation (In County)	Watershed Basin	Flood Zone
LIMESTONE	Ardmore	Northeast Limestone	Middle-Tennessee Elk	A, X	1' – 4'+
	Athens	Central Limestone	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+
	Elkmont	North Limestone	Middle-Tennessee Elk	X	1' – 4'+
	Lester	Northwest Limestone	Middle-Tennessee Elk	X	1' – 4'+
	Mooresville	Southeast Limestone	Middle-Tennessee Elk	AE, X	1' – 4'+

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.24 | Flood Zone and Depths by Division F Community (Continued)

County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
MADISON	Gurley	Eastern Madison	Middle-Tennessee Elk	A, AE, X	1' – 4'+
	Huntsville	Central Madison	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+
	Madison	Western Madison	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+
	New Hope	Southeastern Madison	Middle-Tennessee Elk	A, AE, X	1' – 4'+
	Owens Cross Roads	Southeastern Madison	Middle-Tennessee Elk	AE, AE FLOODWAY, X	1' – 4'+
	Triana	Southwestern Madison	Middle-Tennessee Elk	AE, X	1' – 4'+
County	Community	Orientation (In County)	Watershed Basin	Flood Zone	1% Annual Chance Flood Depth
MORGAN	Decatur	Northwest Morgan	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+
	Eva	Southeast Morgan	Middle-Tennessee Elk	X	1' – 4'+
	Falkville	Southcentral Morgan	Middle-Tennessee Elk	AE, AE FLOODWAY, X	1' – 4'+
	Hartselle	Central Morgan	Middle-Tennessee Elk	AE, AE FLOODWAY, X	1' – 4'+
	Priceville	Northcentral Morgan	Middle-Tennessee Elk	A, X	1' – 4'+
	Somerville	Eastern Morgan	Middle-Tennessee Elk	A, X	1' – 4'+
	Trinity	Northwest Morgan	Middle-Tennessee Elk	A, AE, AE FLOODWAY, X	1' – 4'+

Previous Occurrences

According to the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, **687** incidents of flooding or flash flooding have occurred in the Division F Region. Floods and flash floods occurred on **137** days out of the designated time period (1990 – 2020). Flash flood activity is the most common hazard plaguing each county.

Table 4.25 | Blount County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Blount County	Flood / Flash Flood	39	0 / 0	\$8,000 / \$498,000
Countywide / Zone	Flash Flood	10	0 / 0	\$5,000 / \$201,000
Allgood	Flash Flood	2	0 / 0	\$ 0 / \$200,000
Blountsville	Flash Flood	1	0 / 0	\$3,000 / \$35,000
Cleveland	Flash Flood	1	0 / 0	\$0 / \$0
Hayden	Flood / Flash Flood	8	0 / 0	\$0 / \$0
Highland Lake	None	0	0 / 0	\$0 / \$0
Locust Fork	None	0	0 / 0	\$0 / \$0
Nectar	None	0	0 / 0	\$0 / \$0
Oneonta	Flood / Flash Flood	9	0 / 0	\$0 / \$35,000
Rosa	Flash Flood	2	0 / 0	\$0 / \$0
Snead	None	0	0 / 0	\$0 / \$0
Susan Moore	None	0	0 / 0	\$0 / \$0
Unincorporated	Flood / Flash Flood	7	0 / 0	\$0 / \$27,000

Flooding in Blount County

Blount County has had **39** flood and flash flood encounters since 1990. Most of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. Ten (10) incidents have taken place at a ‘countywide’ scale or in the Blount Zone, accounting for **\$201,000** in property damage and **\$5,000** in crop damages. Total damages due to flood activity in Blount County during the 30-year study period is **\$498,000**.

Flooding in Blount County Jurisdictions**Allgood**

The Town of Allgood has had two (2) flood events since 1990. The most severe of the two events happened in January of 2009 and left behind **\$200,000** in property damage. This event contained heavy rainfall that produced flooding at several locations across Blount County including Allgood. One woman had to be rescued after her vehicle was swept away near Oneonta, and another motorist in the same area was rescued after having their vehicle become encircled by flood waters. At least **two** mobile homes were heavily damaged by flood waters.

Blountsville

The Town of Blountsville has had one (1) major flash flood event since 1990. This single event resulted in eighteen people being evacuated from a mobile home park, some by boat, when a small creek flooded causing water to rise into the park. Several cars were totally submerged, and the water reached into a few of the mobile homes. This event resulted in **\$35,000** in property damage and **\$3,000** in damaged goods.

Cleveland

The **one** flood event associate with the Town of Cleveland took place in August of 2009. A very moist and tropical air mass, ushered in by the remnants of Tropical Storm Claudette, led to several days of thunderstorms with very heavy rainfall across Central Alabama. The continuous heavy rain caused water to cover roads, leading to the closure of AL-160 at Locust Fork.

Hayden

Hayden has multiple accounts of flooding and flash flooding recorded during the study period. There have been six (6) flash flood events and two (2) flood events in Hayden's recent history. All events have resulted in the flooding of roads within Hayden and Blount County, halting travel until the waters recede. Fortunately, no damage to property or goods was reported after any event.

Highland Lake

The Town of Highland Lake does not have any significant flood events reported by the NOAA. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Locust Fork

Locust Fork does not have any significant flood events on record. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Nectar

The Town of Nectar does not have any significant flood events on record. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Flooding in Blount County Jurisdictions (Continued)

Oneonta

There have been **eight** instances of flash flooding within Oneonta and one account of flooding since 1990. These events have resulted in a total of **\$35,000** in property damage. Instances of flooding and flash flooding generally result in unpassable roads due to high waters and four of the events resulted in one or more business closure due to water damage.

Rosa

Rosa has experienced **two** flash flood events within the study period time frame. Neither event resulted in any recorded monetary damage to goods or property. During both events water covered a few roads within Rosa, making them temporarily impassable.

Snead

The Town of Snead does not have any significant flood events reported by NOAA. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Susan Moore

Susan Moore does not have any significant flood events on record. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Sources: Blount County Multi-Hazard Mitigation Plan (2016); NOAA Storm Data; First Street Foundation Flood Model



Floodwaters encroaching upon Hometown Market in Oneonta, AL in Dec. 2015. Source: Blount County Communications (Blount Co. 911) via Twitter

Table 4.26 | Cherokee County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Cherokee County	Flood / Flash Flood	25	0 / 0	\$5,000 / \$283,000
Countywide / Zone	Flash Flood	7	0 / 0	\$5,000 / \$241,000
Cedar Bluff	Flash Flood	1	0 / 0	\$0 / \$0
Centre	Flood / Flash Flood	6	0 / 0	\$0 / \$34,000
Collinsville	There are no reported incidents for this county's portion of the jurisdiction.			
Gaylesville	Flash Flood	2	0 / 0	\$0 / \$0
Leesburg	Flood / Flash Flood	2	0 / 0	\$0 / \$8,000
Sand Rock	There are no reported incidents for this county's portion of the jurisdiction.			
Unincorporated	Flood / Flash Flood	14	0 / 0	\$5,000 / \$241,000

*It is important to note the narratives presented in the county tables focus solely on events specified for each county jurisdiction. In this instance, countywide events are not factored into the total count of flood incidents for each jurisdiction; however, they are included in the total count for overall incidents that have occurred in the County. These figures will be adjusted when discussing vulnerability.

Flooding in Cherokee County

Cherokee County has experienced **25** flood and flash flood encounters since 1990. Most of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. There have been no reported deaths or injuries during this time. Seven incidents have been designated 'countywide' or were noted to take place in the Cherokee Zone; neither incident resulted in property nor crop damages. The complete total of damages due to flooding in DeKalb County during the 30-year study period is **\$288,000**.

Flooding in Cherokee County Jurisdictions**Cedar Bluff**

In May 2017, heavy rain was cited to have caused flash flooding in the area, specifically rain tied to an upper-level trough that approached the areas from the west. Precipitable water values also rose from above two inches; a condition that resulted in several impassable roads through the community including Boundary Avenue, Lawrence Street, and portions of County Road.

Centre

The City of Centre has had six (6) flood occurrences during the 30-year study period. Flood events in this jurisdiction appear to occur in two- to four- year increments. Flood damage to properties in Centre equates to **\$34,000**; the most 'expensive' event occurred in January 2009. Around a half dozen roads were closed due to high water; one car on Park Street was swept away by flood waters.

Collinsville

Collinsville has varying accounts of flood history as the jurisdiction is in both Cherokee and DeKalb Counties. No flooding events have occurred in the Cherokee County portion of the Town.

Gaylesville

The two flood events associated with the Town of Gaylesville were initially reported in the unincorporated Blue Pond community and the City of Centre. Both incidents resulted from heavy rain in the area; rainfall amounts were in the two- to four- inch range with locally higher amounts. Periods of heavy rainfall produced flooding and several road closures around Weiss Lake, where water likely reached Gaylesville via the Chattooga River.

Leesburg

Leesburg has experienced two flooding events ten years apart from one another. Several road closures were enacted in and around Leesburg, including County Road 44, due to high water. Water also covered County Roads 55 and Highway 411. Total property damages amount to **\$8,000**.

Sand Rock

Sand Rock has varying accounts of flood history as the jurisdiction is in both Cherokee and DeKalb Counties. In the Cherokee County portion of the Town, there are an estimated 30 properties at risk of being flooded over a 15- to 30-year period. Heavy rainfall would be the most likely cause of rapid surges in the multiple waterways that intersect the Town, specifically Yellow Creek and adjoining smaller branches that run throughout Sand Rock.

Sources: Cherokee County Natural Hazard Mitigation Plan (2015); NOAA Storm Data; First Street Foundation Flood Model

Division F Regional Hazard Mitigation Plan
Section 4 | Hazard Profiles
4.6 Flooding

Table 4.27 | Cullman County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Cullman County	Flood / Flash Flood	73	1 / 0	\$10,000 / \$555,000
Countywide / Zone	Flash Flood	6	0 / 0	\$5,000 / \$180,000
Baileyton	Flash Flood	2	0 / 0	\$0 / \$0
Berlin	Flash Flood	1	0 / 0	\$0 / \$0
Colony	Flood / Flash Flood	2	0 / 0	\$0 / \$3,000*
Cullman	Flood / Flash Flood	11	1 / 0	\$5,000 / \$32,000
Dodge City	Flood / Flash Flood	2	0 / 0	\$0 / \$8,000
Fairview	Flood	1	0 / 0	\$0 / \$300,000*
Garden City	Flash Flood	1	0 / 0	\$0 / \$0
Good Hope	Flash Flood	6	0 / 0	\$0 / \$0
Hanceville	Flood / Flash Flood	6	0 / 0	\$0 / \$0
Holly Pond	Flood	1	0 / 0	\$0 / \$300,000*
South Vinemont	None	0	0 / 0	\$0 / \$0
West Point	Flood / Flash Flood	6	0 / 0	\$0 / \$0
Unincorporated	Flood / Flash Flood	37	0 / 0	\$5,000 / \$523,000

* Property damage figures represent the total amount of damages in the overall impacted area, not the total damages occurring in each respective jurisdiction.

Flooding in Cullman County

Cullman County has had **73** flood and flash flood encounters since 1990. Most of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. There was one reported injury but no reported deaths for this jurisdiction. Six incidents have taken place at a 'countywide' scale or in the Cullman Zone, accounting for **\$180,000** in property damage and **\$5,000** in crop damages. Total damages due to flood activity in Cullman County during the 30-year study period is **\$565,000**.

Flooding in Cullman County Jurisdictions**Baileyton**

The Town of Baileyton's most significant flood event occurred on Christmas Day 2015. Radar and newspaper estimate that three to four inches of rain fell in a short period of time, on already saturated ground. One section of CR 310 near Guthery's Crossroads was washed away.

Berlin

This jurisdiction is noted as the 'end location' for a flood incident that occurred in January 2010. Two to three inches of rainfall caused flash flooding west of Berlin and east of Bolte. Roads impacted included County Road 616, Highway 31, and Highway 278.

Colony

The Town of Colony is noted as impacted area during two flooding incidents. Heavy rainfall of three- to five- inches caused roads in the Colony community to become flooded and impassible. Highway 91 between this jurisdiction and Hanceville is noted as one of these roads.

Cullman (City)

According to NOAA data, the City of Cullman has not had a significant flooding incident since portions of County Road 1401 were washed away by a flash flood in 2010. In fact, flash floods are the only type of flood activity reported for this jurisdiction. There have been eleven (11) total reported flash flood events; property damages from two events in the 1990s totaled **\$32,000**.

Dodge City

This jurisdiction is noted in the 2015 Cullman County Natural Hazard Mitigation Plan as having no determined elevations, which means that flood areas within Dodge City are Zones A, C, and X. Moreover, Lewis Smith Lake is to the southwest of this jurisdiction; this water source has multiple adjacent creeks that run through this jurisdiction, thus potentially increasing flood risk.

Fairview

While this jurisdiction has not been an initial location of significant flood activity in Cullman County, the Town was a causality in a disastrous January 2009 flood incident. Heavy rainfall caused area creeks and streams to flood numerous roads. This storm – which caused **\$300,000** in damages – was reported to have affected Fairview, Holly Pond, and Baileyton the most.

Garden City

Garden City's most significant flood incident took place in May 2003. The portion of Highway 31 that runs through the area was reported flooded with several inches of water. According to the Flood Factor models, this jurisdiction's flood risk is increasing. Approximately 78 properties are currently at risk in Garden City; this number is expected to increase by **3.8%** (to 81 properties) by 2050.

Good Hope

The City of Good Hope experienced six flooding events during the 30-year study period. Flooding in this jurisdiction was reported on the east side of Good Hope along Doc Clemmons Road, Cupp Road, and Lindsey Road. Heavy rainfall caused upwards of several feet in water coverage along bridges and roadways, however, water depth in these situations was undetermined.

Flooding in Cullman County Jurisdictions (Continued)**Hanceville**

Six flooding events took place in Hanceville from 1990 to 2020. Several roads closed during these incidents, including Lark Street and Highways 31 and 91 when once flooded with twelve to fifteen inches of water.

Holly Pond

The Town of Holly Pond is noted as having no determined elevations, thus inhabiting Zone A, C, and X flood zones. Flood Factor modeling estimates over 30 properties in this jurisdiction that are risk of some sort of flood activity. Most of these at-risk properties are scattered along U.S. Highway 278.

South Vinemont

The Town of South Vinemont does not have any significant flood events reported by the NOAA. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

West Point

West Point, Alabama experienced six flood incidents during the study period. In July 2008, a nearly stationary strong thunderstorm produced heavy rainfall during the afternoon hours, producing reports of up to a foot of water flowing over roadways in the West Point area. Portions of County Road 1140 appear to be the most susceptible to flash floods.

Sources: Cullman County Natural Hazard Mitigation Plan (2015); NOAA Storm Data; First Street Foundation Flood Model



A partially submerged vehicle along Oak Drive in northeast Cullman (Dec.2015). Source: Amanda Shavers-Davis, The Cullman Times

Table 4.28 | DeKalb County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
DeKalb County	Flood / Flash Flood	77	1 / 2	\$5,000 / \$2,350,000
Countywide / Zone	Flood / Flash Flood	5	0 / 0	\$5,000 / \$1,925,000
Collinsville	Flash Flood	9	0 / 0	\$0 / \$150,000*
Crossville	Flood	1	0 / 0	\$0 / \$0
Fort Payne	Flood / Flash Flood	18	0 / 0	\$0 / \$10,000
Fyffe	Flash Flood	2	1 / 0	\$0 / \$0
Geraldine	None	0	0 / 0	\$0 / \$0
Hammondville	Flash Flood	1	0 / 0	\$0 / \$0
Henagar	Flood / Flash Flood	4	0 / 0	\$0 / \$200,000
Ider	Flash Flood	2	0 / 0	\$0 / 150,000*
Lakeview	None	0	0 / 0	\$0 / \$0
Mentone	Flood	2	0 / 0	\$0 / \$0
Pine Ridge	Flash Flood	1	0 / 0	Unknown
Powell	None	0	0 / 0	\$0 / \$0
Rainsville	Flood / Flash Flood	4	0 / 0	\$0 / \$0
Sand Rock	None	0	0 / 0	\$0 / \$0
Shiloh	None	0	0 / 0	\$0 / \$0
Sylvania	Flash Flood	2	0 / 0	\$0 / \$0
Valley Head	Flood / Flash Flood	9	0 / 0	\$0 / \$65,000
Unincorporated	Flood / Flash Flood	36	1 / 2	\$0 / \$150,000

* Property damage figures represent the total amount of damages in the overall impacted area , not the total damages occurring in each respective jurisdiction.

Flooding in DeKalb County

DeKalb County has had **77** flood and flash flood encounters since 1990. Most of these events were the result of above average heavy rainfall throughout the county. The most common types of flooding in this jurisdiction are flash floods and riverine flooding. Flood incidents in this jurisdiction have accounted for two direct deaths and one direct injury. Five incidents have been designated 'countywide' or were noted to take place in the DeKalb Zone, totaling an estimated **\$1,925,000** in both property and crop damages. The complete total of damages due to flooding in DeKalb County during the 30-year study period is **\$2,355,000**.

Flooding in DeKalb County Jurisdictions

Collinsville

The earliest known instance of flood activity in Collinsville occurred in June 2004. Two flash flood events would take place that year; another three events took place in 2009. The most significant of these was a flash flood that resulted in **\$150,000** in property damage. The most recent flood event took place in April 2020, where heavy rain led to the first floor of Collinsville School being flooded.

Crossville

The Town of Crossville has only one significant flood event reported by the NOAA. Big Wills Creek, which mostly runs parallel to County Road 51, overwhelmed its banks. Highway 227 at County Road 51 was underwater with several inches of water over the road. Flooding also occurred along County Roads 371, 739, 386, and 30, with portions of each roadway washed out.

Fort Payne

The City of Fort Payne has experienced sixteen (**16**) flood-related events in the 30-year timeframe. Intense heavy rainfall has been the leading cause of most of these events. Highways 11 and 35 are the most susceptible to flooding, however, local roads such as Jordan Road, Godfrey Avenue, and Airport Road West. Big Wills Creek experience flash floods twice near this area during the study period, reaching a record crest of **17.94 feet** during the April 2020 floods in DeKalb County.

Fyffe

Fyffe has experienced two events, both of which have been flash floods. Law enforcement officials reported the first flooding incident on June 17, 2003. No damages to property or crops were reported, nor were any deaths or injuries. However, flash flooding conditions were linked to a washed-out culvert on County Road 61. The second incident occurred on August 9, 2012, approximately five miles to the southwest of Fyffe in the unincorporated community of Ten Broeck.

Geraldine

The NOAA does not have any reported incidents of this hazard occurring in this jurisdiction. It is also noted in the 2015 DeKalb County Natural Hazard Mitigation Plan that this jurisdiction has not had any flood incidents in its natural hazard history.

Flooding in DeKalb County Jurisdictions (Continued)**Hammondville**

The NOAA reports one instance of flood activity occurring in this jurisdiction. While there are no flood incidents noted to have started in the Town of Hammondville, this area is noted to be the “end location” of the April 13, 2020 flood that severely impacted the Valley Head community.

Henagar

The City of Henagar has had four (4) flood incidents since 1990. The most significant of these took place on July 1, 2007. Rainfall amounts of **1.4** to **4.1** inches were measure in the vicinity of western Fort Payne, much of it falling within a 30-minute timeframe. Given available data, this jurisdiction appears to have one flood every six years.

Ider

The NOAA reports two incidents of flood activity occurring in this jurisdiction. Flood assessments of the area conducted by the Flood Factor™ flood risk model indicate that there are over 20 properties in Ider that are at risk of being flooded in the next fifteen (**15**) years. The most at risk of these properties are clustered along AL-Hwy 117, Trenton Road, and Willow Road.

Lakeview

The NOAA does not have any reported incidents of this hazard occurring in this jurisdiction. Lakeview’s proximity to Town Creek, a local waterway with a section of drainage area spanning 101.45 square miles, enhances flood risk. Therefore, it can be assumed that riverine flooding is likely to result from above average rainfall in this jurisdiction.

Mentone

Even though this jurisdiction sits atop Lookout Mountain, the Town of Mentone has experienced two incidents of flooding during the 30-year study period. Local emergency management authorities reported several inches of water over a local road, likely caused by higher-than-average rainfall. However, no depth of the floodwater was noted.

Pine Ridge

The NOAA does not have any reported incidents of this hazard occurring in this jurisdiction. However, local emergency management sources site that the Town was one of several in DeKalb County to have suffered severe flooding during the series of storms that took place in April 2020.

Powell

This jurisdiction is considered one of several in DeKalb County that do not experience significant local flooding of developed areas. Localized drainage issues or other problems are the exception.

Rainsville

The Town of Rainsville has had four flood-related events in its history. Flash floods were responsible for several inches of water along local roadways including County Roads 47 and 50, and Alabama Highway 75. Residential properties also reported flooding during certain events.

Flooding in DeKalb County Jurisdictions (Continued)

Sand Rock

Sand Rock has varying accounts of flood history as the jurisdiction is in both Cherokee and DeKalb Counties. In the published 2011 Flood Insurance Study for DeKalb County, the DeKalb County portion of the jurisdiction was designated “non-flood prone.”

Shiloh

The Town of Shiloh is located between the Town of Fyffe and the City of Rainsville along AL-Hwy 75 (known locally as Main Street.) Unlike its neighboring communities, this jurisdiction has little to no history of flooding.

Sylvania

NOAA data reports two significant incidents of flooding in the Town of Sylvania. The first incident happened in January 2013; the second in January 2017. In both instances, county roadways were incapacitated by floodwater, specifically AL Hwy 75 and County Roads 27,112, and 116.

Valley Head

The Town of Valley Head has experienced nine combined incidents of flooding and flash flooding. The most significant of these events was a flash flood that took place in September 2009; there were \$60,000 in damages. Five to six inches of rainfall, with local amounts up to eight inches, caused flash flooding in northeastern DeKalb County. Both the Town Hall and Fire Department incurred damage due to water flowing through those buildings.

Sources: DeKalb County Natural Hazard Mitigation Plan (2015); NOAA Storm Data; First Street Foundation Flood Model



The south end of Fort Payne near the I-59 exit. Source: Steven Stiefel, Fort Payne Times-Journal

Table 4.29 | Etowah County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Etowah County	Flood / Flash Flood	31	1 / 0	\$5,000 / \$519,000
Countywide / Zone	Flood / Flash Flood	7	0 / 0	\$5,000 / \$277,000
Altoona	Flood / Flash Flood	2	0 / 0	\$0 / \$0
Attalla	Flash Flood	7	0 / 0	\$0 / \$4,000
Gadsden	Flood / Flash Flood	12	0 / 0	\$0 / \$168,000
Glencoe	Flash Flood	1	0 / 0	\$0 / \$40,000*
Hokes Bluff	Flash Flood	1	0 / 0	\$0 / \$40,000*
Rainbow City	Flood / Flash Flood	2	1 / 0	\$0 / \$73,000
Reece City	None	0	0 / 0	\$0 / \$0
Ridgeville	None	0	0 / 0	\$0 / \$0
Sardis City	None	0	0 / 0	\$0 / \$0
Southside	Flood	1	0 / 0	\$0 / \$0
Walnut Grove	Flood / Flash Flood	2	0 / 0	\$0 / \$0
Unincorporated	Flood / Flash Flood	8	0 / 0	\$0 / \$100,000

* Property damage figures represent the total amount of damages in the overall impacted area , not the total damages occurring in each respective jurisdiction.

Flooding in Etowah County

Etowah County has had **31** flood and flash flood encounters since 1990. Most of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. There has been one reported injury and no deaths during this time. Five incidents have been designated ‘countywide;’ these events have caused **\$277,000** in property damage and **\$5,000** in crop damage. The complete total of damages due to flooding in Etowah County during the 30-year study period is **\$524,000**.

Flooding in Etowah County Jurisdictions**Altoona**

The Town of Altoona has experienced two significant flood events – one flash flood and one flood. Due to heavy rainfall from the remnants of Tropical Storm Lee resulted in portions of Dee Nix Road and Buzzard Rock Road, south of Altoona, flooded. These roads were closed for two days.

Attalla

The most significant event in this jurisdiction took place in July 2005. All four lanes of U.S. Highway 431 were closed due to flooding. This event resulted in **\$4,000** in property damage.

Gadsden

Twelve (**12**) significant flooding incidents have occurred in this jurisdiction in the 30-year study period; two events are specific to the East Gadsden area. The most damaging flash flood caused **\$30,000** in property damage. When floods strike Gadsden, roads such as Meighan Boulevard, 11th Street, and Tuscaloosa Avenue are incapacitated and become impassable.

Glencoe

This jurisdiction is noted as one of four hardest hit communities during a June 1999 flood event. Three to six inches of rain fell within a few hours, mainly across southern Etowah County. Numerous roads across the county were flooded with up to three feet of water; several roads were closed.

Hokes Bluff

This jurisdiction is noted as one of four hardest hit communities during a June 1999 flood event. Three to six inches of rain fell within a few hours, mainly across southern Etowah County. Numerous roads across the county were flooded with up to three feet of water; several roads were closed.

Rainbow City

The NOAA notes the July 2005 flash flood as the most significant in this jurisdiction's hazard history. The weight of heavy rain caused a partial roof collapse at the Paradise Bowling Alley. One person was injured, and overall property damages totaled **\$73,000**.

Reece City

According to the 2015 Etowah County Hazard Mitigation plan, this jurisdiction is unlikely to experience any flood activity. However, flood risk for this jurisdiction is potentially increasing. Approximately **98** properties are currently at risk; this figure is projected to increase by **3.1%** within the next 30 years.

Ridgeville

Flood risk for Ridgeville is projected to increase within the next 30 years. According to Flood Factor estimates, approximately 23 properties are currently at risk of flooding. By 2050, this figure is estimated to grow by **4.3%**.

Flooding in Etowah County Jurisdictions

Sardis City

Flood risk for Sardis City is projected to increase within the next 30 years. According to Flood Factor estimates, approximately 106 properties are currently at risk of flooding. Within the next 15 years, this number is expected to increase by **4.7%**; and by 2050, this figure is estimated to grow by **8.5%**.

Southside

An August 2018 report sited flood activity in this jurisdiction. Heavy rainfall caused a rock slide; several roads across the county to close due to high water; and a home flooded in the Southside community. Additionally, there are several roads in the city that are susceptible to flooding.

Walnut Grove

Flooding and flash flooding was reported for this jurisdiction in September 2011. Due to heavy rainfall from the remnants of Tropical Storm Lee, several roads in and around Walnut Grove were closed due to flood waters. These conditions lasted for roughly two days.

Sources: Etowah County Natural Hazard Mitigation Plan (2015); NOAA Storm Data; First Street Foundation Flood Model

The Tennessee River in the Region

The Tennessee River is a **652**-mile river that forms in Knoxville, Tennessee and runs through east Tennessee into Chattanooga before crossing into north Alabama. It travels through the counties of Jackson, Marshall, Madison, Morgan, Limestone, Lawrence, Colbert, and Lauderdale, before flowing back into Tennessee. The river has been dammed numerous times, primarily during the 1930s by Tennessee Valley Authority (TVA). The three main dams constructed or obtained by TVA that are located on the Tennessee River are Lake Guntersville Dam in northeastern Alabama and Wheeler Lake and Wilson Lake Dams in northwestern Alabama. These Dams are all hydroelectric and contribute to the generation of electricity for TVA Power customers throughout Blount, Calhoun, Cherokee, Colbert, Cullman, DeKalb, Etowah, Franklin, Jackson, Jefferson, Lauderdale, Lawrence, Limestone, Madison, Marshall, Morgan, and Winston Counties.

* Flood depths for Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison and Morgan Counties were estimated by the Flood Factor flood risk assessment tool. Etowah County flood depth data was provided by the OWR Alabama Flood Risk Information System.

Sources: The Office of Water Resources (OWR), A Division of the Alabama Department of Economic and Community Affairs; First Street Foundation Flood Model – Flood Factor® Software

Table 4.30 | Jackson County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Jackson County	Flood / Flash Flood	57	0 / 0	\$5,000 / \$1,655,000
Countywide / Zone	Flash Flood	6	0 / 0	\$5,000 / \$1,240,000
Bridgeport	Flash Flood	1	0 / 0	\$ 0 / \$0
Dutton	Flash Flood	1	0 / 0	\$ 0 / \$0
Hollywood	Flood	2	0 / 0	\$0 / \$0
Hytop	Flash Flood	1	0 / 0	\$0 / \$300,000
Langston	Flood	1	0 / 0	\$0 / \$0
Paint Rock	Flash Flood	1	0 / 0	\$0 / \$0
Pisgah	Flash Flood	1	0 / 0	\$0 / \$0
Pleasant Grove	Flash Flood	1	0 / 0	\$0 / \$0
Scottsboro	Flood/ Flash Flood	9	0 / 0	\$0 / \$10,000
Section	None	0	0 / 0	\$0 / \$0
Skyline	None	0	0 / 0	\$0 / \$0
Stevenson	Flash Flood	2	0 / 0	\$0 / \$0
Woodville	Flood/ Flash Flood	7	0 / 0	\$0 / \$0
Unincorporated	Flood/ Flash Flood	23	0 / 0	\$0 / \$105,000

Flooding in Jackson County

Jackson County has had **57** flood and flash flood encounters since 1990. Most of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. Six (6) incidents have taken place at a 'countywide' scale or in the Jackson Zone, accounting for **\$1,240,000** in property damage and **\$5,000** in crop damages. Total damages due to flood activity in Jackson County during the 30-year study period is **\$1,655,000**.

Flooding in Jackson County Jurisdictions

Bridgeport

The Town of Bridgeport has had **one** Flash Flood event recorded since 1990. In May 2009, strong to severe thunderstorms caused two to three feet of water to accumulate over Broadway Avenue between 8th and 9th Street. Other streets that were impacted included Bleeker Street, Aldhouse Avenue, and Moore Avenue. No damage to goods or property was reported as a result of this flash flood event.

Dutton

A **single** flash flood event took place within Dutton during the 30-year study period. In 2009, clusters of heavy rain producing thunderstorms enveloped north Alabama during the late afternoon and early evening hours of August 1st. Several of these storms dumped **1 to 3** inches of rain in a very short time resulting in brief flash flooding in Colbert, Morgan, and Jackson Counties. One severe storm knocked a tree down in Jackson County. Within Dutton in particular, flash flooding resulted in high water covering County Road 47. This event resulted in no recorded damage to goods or property.

Hollywood

Hollywood has had **two** (2) reported instances of flooding within the study time. Both instances were the result of the same storm event that took place in February 2018. Widespread heavy rainfall impacted Hollywood and surrounding areas from February 28th through the 1st of March, with lingering flooding conditions lasting the better part of 7 days. Rainfall totals of four (**4**) to six (**6**) inches fell across much of the area, leading to areal and river flooding. All the Huntsville Weather Forecast Office's (WFO) HSA river forecast points had some type of product out for the affected area during this event. To date, this has only happened one or two other times in the Huntsville WFO's history.

Hytop

Hytop has had a **single** flash flood event within the 30-year study period. In August of 2010, heavy rainfall totaling between 3- to 8- inches impacted Hytop and surrounding areas. By 8:30 am, significant flash flooding was impacting residences on highway 79. Although this was a singular event, it resulted in **\$300,000** in property damages.

Langston

Langston was impacted by a **single** flood event in February 2010. A heavy rainfall event unfolded across the area from the 10th through the 11th, with the vast majority of the Hydrologic Service Area receiving anywhere from 2-4 inches of rainfall. Isolated reports of **5 - 6** inches of rainfall occurred in a few spots across the area. Due to already saturated soils in place, widespread flash flooding (at onset). Flooding continued for much of the event, with some spots still dealing with lingering nuisance flooding a couple of days later. Flooding led to water covering the road within Lakeshore Drive in Langston. The depth of water is unknown. No damage to property or goods was recorded.

Paint Rock

One flash flood event took place in Paint Rock in December of 2009. A strong storm system brought flooding rainfall across much of northern Alabama and portions of southern middle Tennessee. Rainfall amounts of **2 to 4** inches were common, with some areas receiving **5 to 7** inches. This produced widespread and extensive flash flooding and river/creek flooding, particularly in Morgan, Madison, and Jackson counties. Flooding was reported over both lanes of Highway 72 near the Jackson and Madison County border, where Paint Rock resides right inside the Jackson County border.

Flooding in Jackson County Jurisdictions (Continued)**Pisgah**

The Town of Pisgah has **one** significant flash flood event reported by NOAA. A cold front moved through the region in January 2013 with a line of thunderstorms. This event produced scattered wind damage across northwest Alabama. Excessive rainfall developed within Pisgah and across north Alabama as the cold front began to slowly stall out across the area. Much colder air filtered into the region behind the front. This shallow cold air mass, combined with over-running precipitation across the area, resulted in periods of freezing rain across much of north Alabama. No damage to property or goods was recorded.

Pleasant Grove

Pleasant Grove has experienced a single flash flood event during the 30-year study period. In February 2018, Pleasant Grove was affected by a storm system that also impacted neighboring communities of Hollywood and Scottsboro. Flash flooding caused over one (1) foot of water to cover County Road 8 in the Nat Mountain Community. The flash flooding resulting in County Road 8 to be barricaded and closed off until it was deemed passable, impeding the flow of traffic since this is the primary traffic artery within the Pleasant Grove community.

Scottsboro

Nine flooding and flash flooding events have been reported within the City of Scottsboro within the past 30 years. All flooding and flash flooding events resulted in the closure of at least one road. The only event that resulted in property damage can be attributed to a long-term flood event that took place within Scottsboro that led to numerous roads closures within the city due to high water. The flooding was so severe it resulted in several evacuations within the area. This event resulted in **\$10,000** of reported property damages.

Section

The Town of Section does not have any significant flood events reported by NOAA. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Skyline

Skyline does not have any significant flood events on record within the study period. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Stevenson

Two flash flood events have occurred within Stevenson during the past thirty years. Both events resulted in road closures within Stevenson. In May 2010, approximately a **50-foot** section of Old Mount Carmel Road in the Stevenson community was closed due to flooding. No damage to property or goods was recorded.

Woodville

The Town of Woodville has **seven** (7) flood and flash flood events on record within the study period. Four events were flood events, and three events were flash flooding. All events resulted in road closures. In April 2012, rising waters resulting in the flooding of homes located on Collins Street and a water rescue on College Street in Woodville. Flood waters also left multiple cars submerged. The depth of flood waters from this storm is unknown. No damage to property or goods was recorded.

Table 4.31 | Limestone County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Limestone County	Flood / Flash Flood	80	0 / 0	\$5,000 / \$329,000
Countywide / Zone	Flood/ Flash Flood	15	0 / 0	\$5,000 / \$329,000
Ardmore	Flash Flood	2	0 / 0	\$ 0/ \$0
Athens	Flood/ Flash Flood	14	0 / 0	\$ 0/ \$0
Elkmont	Flash Flood	1	0 / 0	\$0 / \$0
Lester	None	0	0/ 0	\$0 / \$0
Mooreville	Flash Flood	1	0 / 0	\$0 / \$0
Unincorporated	Flash Flood	1	0 / 0	\$0 / \$0

Flooding in Limestone County

Limestone County has had 80 flood and flash flood encounters since 1990. Almost all of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. Fifteen (15) incidents have taken place at a ‘countywide’ scale or in the Limestone Zone, accounting for **\$329,000** in property damage and **\$5,000** in crop damages. Total damages due to flood activity in Limestone County during the 30-year study period is **\$334,000**.

Flooding in Limestone County Jurisdictions

Ardmore

The Town of Ardmore is located on the Tennessee state line, with half of the town being located within the state of Alabama and any portion north of Main Street being located within the state of Tennessee. They have **two** reported flash flood events according to NOAA. Both events resulted in flooding of local roads. Of the two events, one took place in March 2004. After a severe rain event, the railroad underpass at Highway 53 and Tennessee Highway 7 on the state line was reported to be completely under water with several inches of water over the road leading to the underpass.

Flooding in Limestone County Jurisdictions (Continued)**Athens**

Fourteen (14) flooding and flash flooding events took place in the City of Athens during the thirty-year study period. Of the fourteen reported instances, only one was classified as a flood event. All fourteen events resulted in water covering roadways and road closures. For example, in July 2012, flash flooding prompted the temporary closure of Hobbs Street on the campus of Athens State University after a foot of flood water accumulated on the roadway. To date, no damage to goods or property have been recorded by NOAA.

Elkmont

One (1) flash flooding event was reported within the Town of Elkmont within the 30-year study period. In January 2013, A cold front moved through the region with a line of thunderstorms producing scattered wind damage across northwest Alabama. Excessive rainfall developed in Elkmont and surrounding areas as the cold front began to slowly stall out across the area. Much colder air filtered into the region behind the front. This shallow cold air mass, combined with over-running precipitation across the area, resulted in periods of freezing rain across much of north Alabama. Within Elkmont, this led to several inches of water covering Cannon Road near Fort Hampton Road just northwest of Athens, making travel hazardous. No damage to goods or property were reported.

Lester

The Town of Lester does not have any significant flood events reported by the NOAA. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone X. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Mooreville

The Town of Mooreville has one flash flood event on record with NOAA. In February 2005, a weather event resulted in water covering I-565 in Eastern Limestone County. This presented a hazard to interstate travelers. No damage to goods or property was reported as a result of this event.



A social media image showing a white vehicle underwear in the Ardmore community. In February 2019 – Jessica Barnett, The News Courier

Table 4.32 | Madison County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Madison County	Flood / Flash Flood	190	4 / 2	\$10,000 / \$6,942,000
Countywide / Zone	Flood	2	0 / 0	\$0 / \$0
Gurley	Flash Flood	7	0 / 0	\$0 / \$0
Huntsville	Flood/ Flash Flood	36	1 / 1	\$0 / \$1,526,000
Madison	Flood/ Flash Flood	23	0 / 0	\$0 / \$258,000
New Hope	Flood/ Flash Flood	2	0 / 0	\$0 / \$0
Owens Cross Roads	Flood/ Flash Flood	5	0 / 0	\$0 / \$0
Triana	None	0	0 / 0	\$0 / \$0
Unincorporated	Flood/Flash Flood	103	0 / 1	\$0/132,000

Flooding in Madison County

Madison County has had **190** flood and flash flood encounters since 1990. The majority of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. Two (2) incidents have taken place at a 'countywide' scale or in the Madison Zone. Total damages due to flood activity in Madison County during the 30-year study period is **\$6,942,000**.

Flooding in Madison County Jurisdictions

Gurley

Seven (7) flooding and flash flooding events took place in the Town of Gurley during the thirty-year study period. Of the seven reported instances, three were classified as flash flood events. All seven events resulted in water covering roadways and/or road closures. For example, in January 2011, heavy rainfall caused roads in and near the Gurley community to become impassable. A car was stranded as it drove into a flooded roadway southwest of Gurley. Rock Cut Road was also closed due to flash flooding in the same area. To date, no damage to goods or property have been recorded by NOAA within the Gurley community.

Flooding in Madison County Jurisdictions (Continued)**Huntsville**

The City of Huntsville has had **thirty-six** (36) significant flooding/ flash flooding events on record within the stated study period. Of the reported instances, only four were reported as flood events. While numerous events were reported, only one event was of significance to cause loss of life and injury. In July 1999, heavy rainfall between four to seven inches, most of which occurred in just less than two hours, flooded the Huntsville area. According to newspaper reports, one woman was killed when her car stalled on a flooded bridge on Vermont Road. As she exited the car, she was swept away in the water. A television cameraman was injured when he was swept away by high water while filming. He was rescued by the Huntsville Fire Department. Several other motorists were stranded in high water and were rescued by the fire department. Numerous roads in the area were flooded and subsequently closed. Many local streams and creeks were out of their banks, sending several feet of water into approximately 300 homes and businesses. Several residents were rescued from their homes. Several thousand area customers were without power through the early morning hours due to lightning strikes. This same system caused a mudslide to occur in Monte Sano State Park covering part of the park road. While floods and flash floods have not caused any reported damages to goods within the City of Huntsville during the 30-year study period, they have caused **\$1,526,000** in damages to property.

Madison

The City of Madison has had **twenty-three** flood and flash flood events since 1990. The most severe of the events happened in December of 2008 and left behind **\$120,000** in property damage. Widespread flash flooding was reported over portions of western and northwestern Madison County. Flood waters were most prevalent in Harvest, Toney, Madison, and central and northern portions of Huntsville. Flood reports began at 11:45 PM on December 9th, lasting into morning rush hour. Multiple roads experienced significant flash flooding. Flood waters caused several vehicles stalled out and forced the evacuation of a trailer park. Between three (**3**) and six (**6**) inches of rain fell in these areas in less than 12 hours. While floods and flash floods have not caused any reported damages to goods within the City of Madison during the study period, they have caused **\$258,000** in damages to property.

Table 4.33 | Morgan County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Morgan County	Flood / Flash Flood	115	0 / 0	\$5,000 / \$1,801,000
Countywide / Zone	Flash Flood	8	0 / 0	\$5,000 / \$98,000
Decatur	Flood/Flash Flood	22	0 / 0	\$ 0/ \$38,000
Eva	None	0	0 / 0	\$ 0/ \$0
Falkville	Flash Flood	5	0 / 0	\$0 / \$0
Hartselle	Flood/ Flash Flood	8	0 / 0	\$0 / \$0
Priceville	None	0	0 / 0	\$ 0/ \$0
Somerville	Flood/ Flash Flood	6	0 / 0	\$0 / \$0
Trinity	Flood/ Flash Flood	5	0 / 0	\$0 / \$500,000
Unincorporated	Flood/Flash Flood	61	0 / 0	\$0/\$1,165,000

Flooding in Morgan County

Morgan County has had **115** flood and flash flood encounters since 1990. Most of these events were the result of above average and heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. Eight (**8**) incidents have taken place at a ‘countywide’ scale or in the Morgan Zone, accounting for **\$98,000** in property damage and **\$5,000** in crop damages. Total damages due to flood activity in Morgan County during the 30-year study period is **\$1,801,000**.

Flooding in Morgan County Jurisdictions**Decatur**

Twenty-two (22) flooding and flash flooding events took place in the City of Decatur during the thirty-year study period. Of the twenty-two reported instances, only one was classified as a flood event. All fourteen events resulted in water covering roadways and road closures. In August 2012, downtown Decatur received two (2) to three (3) inches of rainfall in less than one hour. Several roads were closed or were deemed impassible. A mother and child were stranded in their vehicle in flood water at the intersection of Eighth Street and Church Street Northeast. Flood water was up to the base of car windows on Lee Street at the Courthouse. The City Hall basement had flooding as well. This event alone resulted in **\$20,000** in property damage. While no damage to goods has been recorded, Decatur has documented **\$38,000** in property damage due to flood events during the study period.

Eva

The Town of Eva does not have any significant flood events reported by the NOAA. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Falkville

Five (5) flash flooding events took place in the Town of Falkville during the thirty-year study period. All five events resulted in water covering roadways and/or road closures. In April 2020 significant flash flooding occurred along Jones Branch and Flint Creek necessitating a water rescue from a vehicle. To date, no damage to goods or property have been recorded by NOAA within the Falkville community.

Hartselle

The City of Hartselle has **eight** (8) flood and flash flood events on record within the study period. Two events were flood events, and six events were classified as flash flooding. All events resulted in road closures during these incidents, including Stewart Street NW, Peach Orchard Road, Nance Ford Road, Mitwede Street, and Downtown Hartselle. No damage to property or goods was recorded.

Priceville

The Town of Priceville does not have any significant flood events reported by the NOAA. This jurisdiction has no special flood hazard areas identified; therefore, all areas have been designed Zone C. This means that the town falls in an area of minimal flood hazard and the area is higher than the elevation of the 0.2-percent-annual-chance flood.

Somerville

Somerville has multiple accounts of flooding and flash flooding recorded during the study period. There have been **five** (5) flash flood events and one (1) flood event in Somerville's recent history. All events have resulted in the flooding of roads within Somerville, halting travel until the waters recede. No damage to property or goods has been reported after any event.

Trinity

Five (5) flash flooding events took place in the Town of Trinity during the thirty-year study period. All five events resulted in water covering roadways and/or road closures. A single event in December 2009 accounts for all recorded property damage from flooding, totaling **\$500,000**, within Trinity during the study period. Three (3) to six (6) inches of heavy rainfall caused widespread flash flooding within Trinity and across Morgan County, resulting in numerous road closures. To date, no damage to goods has been recorded by NOAA within the Trinity community.

Section 4 | Hazard Profiles

4.6 Flooding

Table 4.34 | Flood Activity by Division F County (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Blount County	Flood / Flash Flood	39	0 / 0	\$8,000 / \$498,000
Cherokee County	Flood / Flash Flood	25	0 / 0	\$5,000 / \$283,000
Cullman County	Flood / Flash Flood	73	1 / 0	\$10,000 / \$555,000
DeKalb County	Flood / Flash Flood	77	1 / 2	\$5,000 / \$2,350,000
Etowah County	Flood / Flash Flood	31	1 / 0	\$5,000 / \$519,000
Jackson County	Flood / Flash Flood	57	0 / 0	\$5,000 / \$1,655,000
Limestone County	Flood / Flash Flood	80	0 / 0	\$5,000 / \$329,000
Madison County	Flood / Flash Flood	190	0 / 0	\$10,000 / \$6,942,000
Morgan County	Flood / Flash Flood	115	0 / 0	\$5,000 / \$1,801,000
Total Flood / Flash Flood Events		687	3 / 2	\$58,000 / \$14,932,000

Hazard [Impact] – Phase I Counties

Floods and flash floods have caused over **\$3 million** in property damage and **\$25,000** in damages to local crops in Phase I counties within thirty years. These figures are potentially higher, especially when applying tools that analyze property loss on a regional scale. One such tool is HAZUS, a loss estimation software that breaks down the various means by which a flood devastates local communities. The *Local Community Impact* segment provides an overview of a HAZUS flood scenario conducted July 2020. It is important to note that while the findings presented in this segment are based on 2010 Census Bureau data, its objectives are to provide local communities with a realistic snapshot of area flood impacts and lay the groundwork on which to mitigate these costly effects.

Local Community Impact | Subregion I 100-Year Flood Scenario

Region Description | The geographical size of the region is approximately **2,682** square miles and contains **16,339** census blocks. The region contains over **111,000** households and has a total population of **281,934** people. There are an estimated **133,244** buildings in the region with a total building replacement value of over **\$25 million**. Approximately **92.4%** of the buildings (and **71.5%** of the building value) are associated with residential housing.

General Building Stock | HAZUS estimates that there are **133,244** buildings in the region which have an aggregate total replacement value of **\$25,6287,668**. Table 4.25 presents the relative distribution of this figure by general occupancy. Table 4.26 depicts expected damage to essential facilities. On the day of the scenario event (March 15th), the model estimates that **837** hospital beds are available in the region. Additional facilities include **126** schools, **138** fire stations, **37** police stations, and **5** emergency operation centers.

Table 4.35 | Building Exposure of Occupancy Type for Phase I Counties

Occupancy	Exposure (\$1000)	Percent of Total
Residential	18,313,306	71.5%
Commercial	3,872,237	15.1%
Industrial	1,799,758	7.0%
Agricultural	165,881	0.6%
Religion	699,825	2.7%
Government	457,999	1.8%
Education	318,662	1.2%
Total	25,627,668	100%

Table 4.36 | Expected Damage to Essential Facilities

Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	5	1	0	1
Fire Stations	138	3	0	3
Hospitals	9	2	0	1
Police Stations	37	3	0	3
Schools	126	3	0	3

Local Community Impact | Subregion I 100-Year Flood Scenario

Social Impact | HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. The program also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates **3,465** households (or **10,395** of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these **614** people (out of a total population of **281,934**) will seek temporary shelter in public shelters.

Economic Loss | The total economic loss estimated for the flood is \$1,677.96 million which represents 27.61% of the total replacement value of the scenario buildings. Total building-related losses were \$992.87 million dollars. 41% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 36.8% of the total loss.

Table 4.37 | Building-Related Economic Loss Estimates (in Millions)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	1,318,940	392,470	88,090	41,900	1,841,390
	Content	669,140	1,015,950	214,520	164,740	2,064,36
	Inventory	0	22,520	41,720	1,490	65,740
	Subtotal	1,988,080	1,430,940	344,340	208,120	3,971,480
Business Interruption						
	Income	13,760	563,180	5,150	43,800	625,890
	Relocation	310,560	178,610	5,260	22,180	516,620
	Rental Income	125,190	108,070	1,280	2,940	237,490
	Wage	32,360	748,340	8,620	571,050	1,360,370
	Subtotal	481,870	1,598,200	20,320	639,970	2,740,360
Total		2,469,950	3,029,140	364,660	848,100	6,711,840

Note: While undergoing Phase II of our planning process, the HAZUS Team released HAZUS 5.0, a new version of the software that made the previous version of the program obsolete. The previous version of HAZUS was used to generate data displayed in the *Local Community Impact* segment for Phase I counties. The same analysis had not been completed for Phase II counties planning area (Blount, Jackson, Limestone, Madison and Morgan Counties) by the time the new software was released. Thus, a flood scenario analysis for the Phase II counties will be conducted in a subsequent update of this document.

Probability of Future Events

As outlined in the *Local Community Impact* section, flood activity inevitably affects local built and natural environments. However, flood hazards also create social and economic challenges for communities that many are often ill-equipped to handle. While flooding occurs throughout every county in the Division, HAZUS scenario data shows that DeKalb and Cullman Counties are especially prone to flood activity, with Madison and Morgan Counties’ extensive flood history pointing to similar conclusions. Thus, the probability of floods occurring across the Region varies and will be explored in the probability and vulnerability sections of this Plan.

Hazard [Background]

Dams are man-made barriers constructed for the sole purposes of storing, controlling or diverting water. These structures are typically made from earth, rock, concrete, or mine tailings (materials left over after mining ore). A dam failure event can be defined as ***a breach, collapse, or other failure that results in downstream flooding***. Dam failures result from various events – most notably, natural events or human-induced events. Natural hazards such as earthquakes, hurricanes, or landslides are particularly significant causes of dam failures because there is little to no advance warning of these incidents.

Although flooding produced as a result of prolonged rain is the most common cause of dam failure, there are essentially two factors that impact the severity of a full or partial dam failure: the amount of water impounded in the dam's reservoir and the density, type, and value of development and infrastructure downstream. A typical dam failure involves inadequate spillway capacity or erosion of internal piping throughout the dam or its foundation. A complete dam failure occurs if a total structural breach takes place, thus releasing a massive wave of water downstream to damage or destroy whatever is in its path. The area impacted by this large quantity of water would be confronted with challenges similar to those of areas experiencing periods of flooding.

Affected Locations

According to the U.S. Army Corps of Engineers (USACE) National Inventory of Dams (NID), there are **186** recorded dams in the Division F planning area. Of these structures, fifty-one (**51**) are classified by the USACE as high-risk dams and twenty-five (**25**) as significant-risk dams. The locations of these high- and significant-risk dams are communities with an elevated risk of flooding should dam failure occur. Table 4.28 provides an itemized inventory of the region's dams by county and community.



Weiss Dam on the Coosa River, Courtesy of Alabama Power Company. Source: Encyclopedia of Alabama

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County

BLOUNT COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL01167	INLAND LAKE DAM	0	0	BLACKBURN FORK LITTLE WARRIOR RIVER	ONEONTA	Local Government	Water Supply, Recreation	High
	AL01168	HIGHLAND LAKE	0	0	BLACKBURN FORK LITTLE WARRIOR RIVER	HIGHLAND LAKE COMMUNITY	Public Utility	Recreation	High
	AL01169	MARSHALL MCCAY LAKE DAM	16	25	HOGELAND CREEK	ELVESTA COMMUNITY	Public Utility	Recreation	High
	AL01170	MOUNTAIN WOODS LAKE	40	2400	HOGELAND CREEK	ELVESTA COMMUNITY	Public Utility	Recreation	High
	AL01171	MOUNTAIN LAKE DAM	56	5878	GURLEY CREEK	VILLAGE SPRINGS NORTH	Public Utility	Recreation	Significant
	AL01172	CURTIS WILLIAMS LAKE	32	190	TR BROWNS CREEK	NORTH BROOKSVILLE	Public Utility	Fire Protection, Stock, Or Small Fish Pond	Significant
	AL01173	RUELL SNEAD DAM NO. 1	18	90	TR-KENCHELOW CREEK	MT. CARMEL CHURCH	Public Utility	Recreation	Low
	AL01174	RUELL SNEAD DAM NO. 2	23	80	TR-KENCHELOW CREEK	MT. CARMEL CHURCH	Public Utility	Fire Protection, Stock, Or Small Fish Pond	Low
	AL01176	MANOR LAKE	80	2008	TR-GRAVES CREEK	SW LIBERTY	Public Utility	Fire Protection, Stock, Or Small Fish Pond	High
AL01179	ADAMS LAKE	17	73	SAND VALLEY CREEK	SAND VALLEY COMMUNITY	Public Utility	Fire Protection, Stock, Or Small Fish Pond	High	
AL01180	MURPHREE LAKE	14	140	GIN BRANCH	GUM SPRINGS	Public Utility	Recreation	Low	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

BLOUNT COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL01182	WHITED LAKE	0	0	--	--	Public Utility	Recreation	Significant
	AL01183	WILL ENGLE DAM	30	191	JOURDEN CREEK	N. FOSTER CHAPEL COMMUNITY	Public Utility	Recreation	High
	AL01184	MCKAY LAKE DAM	25	233	JOURDEN CREEK	HIGHLAND LAKE COMMUNITY	Public Utility	Recreation	High
	AL01185	WOODS LAKE	28	250	TR-NEELY CREEK	HAYDEN SOUTH	Public Utility	Recreation	Low
	AL01188	DR. PATTON'S LAKE	30	105	CHENEY BRANCH	SOUTH EASLEY	Public Utility	Recreation	Low
	AL01191	HAZERIG FARM DAM	0	0	--	--	Public Utility	Fire Protection, Stock, Or Small Fish Pond	Significant
	AL01192	FOREST INGRAM LAKE	20	80	TR-GRAVES CREEK	OAK GROVE	Public Utility	Recreation	High
	AL01193	HAZERIG LAKE	22	770	TR-ANDY BRANCH	SOUTH CLEVELAND	Public Utility	Recreation	High
	AL01195	JOHNSON FARM LAKE DAM	0	0	TR-HALLMARK CREEK TRIB 4	LOCUST FORK	Public Utility	Fire Protection, Stock, Or Small Fish Pond	High
AL01199	SPRING VALLEY PONDS	12	150	TR-GRAVES CREEK OFFSTREAM	FOWLER SPRINGS	Public Utility	Water Supply, Recreation	Low	
AL01202	PITTMAN LAKES DAM NO. 2	32	333	GURLEY CREEK	VILLAGE SPRINGS	Public Utility	Recreation	High	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
BLOUNT COUNTY	AL01858	CURTIS WILLIAMS UPPER DAM	28	140	TR-BROWNS CREEK	NORTH BROOKSVILLE	Public Utility	Recreation	Significant
	AL01859	WILDER LAKE DAM	0	0	HALLMARK CREEK TRIB 3	LOCUST FORK	Public Utility	Recreation	High
	AL01860	TOM ROBINETTE DAM	0	0	--	--	Public Utility	Recreation	High
	AL01867	YOUNGBLOOD LAKE DAM	29	87	TR-HALLMARK CREEK	LITTLE SHENANDOAH	Public Utility	Recreation	Low
	AL01868	JOHNSON POND DAM	18	63	TR-HALLMARK CREEK	WEST LOCUST FORK	Public Utility	Recreation	Significant
	AL01871	SEEBURN HEZERIG DAM	24	132	TR-DRY CREEK	GREEN CHAPEL COMMUNITY	Public Utility	Recreation	Significant
	AL01872	HAZERIG LOWER POND DAM	15	105	TR-ANDY BRANCH TRIB 3	GREEN CHAPEL COMMUNITY	Public Utility	Fire Protection, Stock, Or Small Fish Pond	High
	AL01873	HAZERIG UPPER POND DAM	11	50	TR-DRY CREEK	GREEN CHAPEL COMMUNITY	Public Utility	Recreation, Fire Protection, Stock, Or Small Fish Pond	High
	AL01874	MCPHERSON DAM	25	92	LITTLE WARRIOR RIVER	NORTH ONEONTA	Public Utility	Recreation, Fish and Wildfire Pond	Low
	AL01875	DR. PATTON'S LOWER LAKE DAM	35	440	CHENEY BRANCH	SOUTH EASLEY COMMUNITY	Public Utility	Recreation	Low
	AL01876	VANDERGRIFT POND DAM	0	0	CALVERT PRONG TRIB 15	ONEONTA	Public Utility	Fire Protection, Stock, Or Small Fish Pond	High
	AL01990	DR. PATTON'S LAKE	30	433	CHENEY BRANCH	ONEONTA	Public Utility	Recreation, Fish and Wildfire Pond	Low

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
CHEROKEE COUNTY	AL00573	WEISNER	24	1133	TR TERRAPIN CREEK	TENNALA	Public Utility	Recreation	Low
	AL00576	LAGARDE NO.1 DAM	8	159	GLADE BRANCH	LADIGA	Public Utility	Recreation	Low
	AL00577	LAGARDE NO.2 DAM	25	45	GLADE BRANCH	LADIGA	Public Utility	Recreation	Low
	AL00578	ARRINGTON NO. 1 DAM	16	71	TR HURRICANE CREEK	ARRINGTON CHAPEL	Public Utility	Recreation	Low
	AL00579	ARRINGTON NO. 2 DAM	30	231	TR HURRICANE CREEK	ARRINGTON CHAPEL	Public Utility	Recreation	Low
	AL00580	TERRAPIN CREEK W/S DAM SITE 8	47	5880	FROG CREEK	ELLISVILLE	Public Utility	Flood Control	Low
	AL00581	TERRAPIN CREEK W/S DAM SITE 6	36	1422	TR TERRAPIN CREEK	ELLISVILLE	Local Government	Flood Control	Significant
	AL00582	TERRAPIN CREEK W/S DAM SITE 17	31	1542	HURRICANE CREEK	SPRING GARDEN	Local Government	Flood Control	Low
	AL01415	WEISS - MAIN DAM	85.5	306400	COOSA	CENTRE	Public Utility	Hydroelectric, Recreation	High
	AL01415	WEISS - SADDLE DIKE C	10	306400	COOSA	CENTRE	Public Utility	Hydroelectric, Recreation	High
	AL01415	WEISS - SPILLWAY DIVERSION DAM	90	306400	COOSA	CENTRE	Public Utility	Hydroelectric, Recreation	High
	AL01415	WEISS - SADDLE DIKE A	10	306400	COOSA	CENTRE	Public Utility	Hydroelectric, Recreation	High
	AL01415	WEISS - SADDLE DIKE B	10	306400	COOSA	CENTRE	Public Utility	Hydroelectric, Recreation	High
	AL01415	WEISS - HIGHWAY 411 DIKE	90	306400	COOSA	CENTRE	Public Utility	Hydroelectric, Recreation	High
	AL01720	NORTON DAM	21	77	TR SPRING CREEK	ROCK RUN	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Low

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

CULLMAN COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL00975	FORREST INGRAM DAM	95	6413	BRINDLEY CREEK	WELTI WEST	Public Utility	Water Supply, Recreation	Significant
	AL00976	LAKE GEORGE DAM	70	5775	BRIDGE CREEK	CULLMAN	Local Government	Recreation	High
	AL00977	LAKE CATOMA DAM	100	21,400	EIGHT MILE CREEK	CULLMAN	Local Government	Water Supply, Recreation	High
	AL00978	EVA ROAD LAKE	35	216	BRIDGE CREEK	CULLMAN	Local Government	Recreation	High
	AL00979	SPORTSMAN LAKE DAM	20	363	WOLF CREEK	CULLMAN	Local Government	Recreation	High
	AL00980	W.I. WALKER DAM	31	110	TR COPPERAS BRANCH	BERLIN	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Significant
	AL00981	WALLACE HATHCOCK DAM	20	114	TR-BAVAR CREEK	GOOD HOPE	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond, Fish and Wildlife Pond	High
	AL00982	LEE HART DAM	20	170	TR EIGHT MILE CREEK	SOUTH CULLMAN	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Low
	AL00983	FORREST INGRAM DAM	25	190	TR RICE CREEK	BLACK WARRIOR RIVER CAMP	Public Utility	Water Supply	Significant
	AL00984	L.B. HAYES DAM	32	640	TR KILLPATRICK CREEK	CULLMAN NORTH	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Low
AL00985	ROY SHAW DAM	26	80	TR BUZZARD BRANCH	UNION CHURCH COMMUNITY	Public Utility	Fire Protection, Stock, or Small Fish Pond	Significant	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

CULLMAN COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL00986	TOMMY EGE DAM	18	90	HENDERSON BRANCH	WEST HOLLY POND	Public Utility	Fire Protection, Stock, or Small Fish Pond	Low
	AL00988	HOLLIS POND DAM	13	91	TR SIMPSON CREEK	FISHING CAMP	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Low
	AL00989	BROWN POND DAM	14	126	TR ROCK CREEK	EMENUS CHURCH COMMUNITY	Public Utility	Fire Protection, Stock, or Small Fish Pond	Significant
	AL00990	WHITES DAM	15	188	TR CROOKED CREEK	CLARKSON	Public Utility	Recreation	Significant
	AL00991	HARBISONS POND DAM	15	160	TR BLEVENS CREEK	SOUTH ADDISON	Public Utility	Fire Protection, Stock, or Small Fish Pond	Low
	AL00992	LICK CREEK DAM	15	165	TR LICK CREEK	SOUTH HARMONY	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Low
	AL00993	PAUL RIGSBY DAM	30	150	ROCK CREEK	BEULAH CHURCH COMMUNITY	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Significant
	AL00994	CARL BUDWEG DAM	25	188	TR RYAN CREEK	CULLMAN	Public Utility	Recreation	Low
	AL01420	LEWIS SMITH	300	1,670,600	SIPSEY FORK, WARRIOR RIVER	SIPSEY	Public Utility	Hydroelectric, Flood Control, Navigation, Recreation	High
	AL01811	EGE FARM DAM	22	132	TR RYAN CREEK	CULLMAN	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Low
	AL01812	OTTIS BURROW DAM	13	50	UNKNOWN	CULLMAN	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	High
	AL02546	GRANT CRIDER	45	68.52	U/N TRIB TO LICK CREEK	POWELLVILLE	Public Utility	Fire Protection, Stock, or Small Fish Pond, Fish and Wildlife Pond	Low
	ID Applied For	DUCK RIVER RESERVOIR DAM	120	600	DUCK RIVER	CULLMAN	Local Government	Water Supply, Recreation	High

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

DEKALB COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL01203	DEKALB COUNTY PUBLIC LAKE DAM	48	2231	TR SOUTH SAUTY CREEK	SYLVANIA	State	Recreation	High
	AL01204	CAMP COMER	28	781	SEYMOR BRANCH	LAKE HOWARD	Public Utility	Recreation	Low
	AL01205	FORT PAYNE DAM	37	1394	TR BIG WILLS CREEK	FORT PAYNE	Local Government	Water Supply, Recreation	High
	AL01206	A.A. MILLER DAM	17	119	WEST FORK LITTLE RIVER	CAMP CLOUDMONT	Public Utility	Recreation	Low
	AL01207	ROTCH AND CASSIDY	28	120	TR YELLOW CREEK	EDNA HILL	Public Utility	Recreation	Low
	AL01208	TEMPLE	33	502	HICKS CREEK	CANYON PARK	Public Utility	Recreation	Low
	AL01209	CASH	49	2003	JOHNNIES CREEK	LITTLE RIVER	Public Utility	Recreation	Low
	AL01210	SMITH	15	61	TR BIG WILLS CREEK	CHUMLEY BRIDGE COMMUNITY	Public Utility	Recreation	Low
	AL01211	PRESTWOOD	24	68	WHITE HALL BRANCH	WHITE HALL	Public Utility	Recreation	Significant
	AL01215	HAWKINS	14	50	BETHEL BRANCH	HAMMONDVILLE	Public Utility	Recreation	Low
	AL01216	GILBERT	20	158	HORSEHEAD CREEK	CENTRAL	Public Utility	Recreation	Low
	AL01217	J.R. GILBERT	18	83	TR SPRINGHILL CREEK	CENTRAL	Public Utility	Recreation	High
	AL01218	STORIE	17	106	TR SPRINGHILL CREEK	CENTRAL	Public Utility	Recreation	High
	AL01219	CHITWOOD	20	162	BROWN BRANCH	GUEST	Public Utility	Recreation	High
	AL01220	CHAMBERS	19	82	TR TOWN CREEK	KINGS CHAPEL COMMUNITY	Public Utility	Recreation	Low
	AL01221	FLETCHER GILBERT	23	58	REEDY CREEK	GILBERT CROSSROADS	Public Utility	Recreation	High
	AL01903	SHARP BRANCH DAM	19	177	SHARP BRANCH	DESOTO PARK COMMUNITY	Public Utility	Recreation	Low
	AL02058	OWENS LAKE	30	238	-	CENTRE	Public Utility	Flood Control, Recreation, Fire Protection, Stock, Or Small Fish Pond, Fish and Wildlife Pond	Low
	AL83481	FORT PAYNE DAM #2	8	410	BIG WILLS CREEK	FORT PAYNE	Local Government	Water Supply, Recreation	High
AL83482	GILREATH LAKE	15	58	LITTLE SHOAL CREEK	FIVE FORKS	Public Utility	Recreation	High	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

ETOWAH COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL01226	BRISTOW CREEK W/S DAM SITE 1	33	1890	WADE CREEK	WALNUT GROVE	Local Government	Irrigation, Flood Control	High
	AL01228	PERMAN	16	108	TR DRY CREEK	WILLIAMS	Public Utility	Recreation	Low
	AL01230	CARDWELL	21	66	TR-HOPTON CREEK	RAINBOW CITY WEST	Public Utility	Recreation	High
	AL01232	LITTLES	13	68	TR ROCK CREEK	WILLIAMS	Public Utility	Recreation	Low
	AL01233	WESSON	11	154	TR ROCK CREEK	WILLIAMS	Public Utility	Recreation, Fire Protection, Stock, of Small Fish Pond	Low
	AL01234	BENNETT	20	145	TR DRY CREEK	REAVES	Public Utility	Recreation	High
	AL01235	THORTON NO. 1	9	105	TR DRY CREEK	MAYES CROSSROADS	Public Utility	Recreation	Low
	AL01236	THORTON NO. 2	21	325	TR DRY CREEK	MAYES CROSSROADS	Public Utility	Recreation, Fire Protection, Stock, of Small Fish Pond	Low
	AL01237	THORTON NO. 3	15	126	TR DRY CREEK	MAYES CROSSROADS	Public Utility	Recreation, Fire Protection, Stock, of Small Fish Pond	Low
	AL01238	THORTON NO. 4	13	105	TR DRY CREEK	MAYES CROSSROADS	Public Utility	Recreation, Fire Protection, Stock, of Small Fish Pond	Low
	AL01239	THORTON NO. 5	10	50	TR DRY CREEK	MAYES CROSSROADS	Public Utility	Recreation, Fire Protection, Stock, of Small Fish Pond	Low
	AL01240	THORTON NO. 6	16	59	TR DRY CREEK	MAYES CROSSROADS	Public Utility	Recreation, Fire Protection, Stock, of Small Fish Pond	Low
	AL01242	THORVAL	9	112	TR COOSA RIVER	SONOMA	Public Utility	Recreation, Fire Protection, Stock, of Small Fish Pond	Low
	AL01243	JENKINS NO. 1	10	50	TR SAMUELS CHAPEL CREEK	SAMUELS CHAPEL	Public Utility	Recreation	Low
AL01244	JENKINS NO. 2	19	90	TR SAMUELS CHAPEL CREEK	SAMUELS CHAPEL	Public Utility	Recreation	Low	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

ETOWAH COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL01246	GOODYEAR	11	128	TR COOSA RIVER	GADSDEN	Public Utility	Recreation	Low
	AL01247	JENKINS NO. 3	12	330	TR PAYNE BRANCH	WALNUT GROVE	Public Utility	Recreation	High
	AL01249	ESTEES	12	129		EDWARDSVILLE	Public Utility	Recreation	Low
	AL01250	CAMP SEQUOYAH	20	111		GADSDEN	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond, Fish and Wildlife Pond	Low
	AL01251	HARDIN	13	50		BRICE	Public Utility	Flood Control, Recreation	Low
	AL01252	STEPHENS	14	71		PLEASANT HILL	Public Utility	Recreation, Fire Protection, Stock, or Small Fish Pond	Low
	AL01511	KIMBALL LAKE	16	50		RAINBOW CITY WEST	Public Utility	Recreation	High
	AL01869	GLASSCO LAKE DAM	18	60		IVALEE	Public Utility	Recreation	High
	AL01904	ASH DISPOSAL POND DAM	16	167		GADSDEN	Public Utility	Debris Control	Low
AL02067	GEORGE Y WILLIAMS	25	89		ATTALLA	Public Utility	Recreation, Fish and Wildlife Pond	Low	

Alabama Power - Plant Gadsden Ash Pond

The Plant Gadsden Ash Pond was constructed in 1949 by creating an earth dike around an existing bottom area upslope from the Coosa River. The Ash Pond’s original discharge structure was constructed on the Coosa River side of the impoundment and discharged into a channel feeding the river. The first expansion of the Ash pond occurred in 1976 and included the construction of a new western impoundment and emergency discharge structure. The new dike was constructed against the western dike face of the original (1949) impoundment while the pond’s discharge structure was relocated so that it discharged into a nearby lake that feeds the Coosa River. The final expansion came in 1978 when the western pond dike (constructed in 1976) was expanded to the northwest toward the Twin Bridges golf course. This new discharge structure served to manage emergency storm water flows and to serve as a treated water draw source for the plant’s processes.

Source: “History of Construction for Existing CCR Surface Impoundment – Plant Gadsden Ash Pond.” – Alabama Power

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

JACKSON COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL00995	MANSEL WOLF DAM	18	163	TR DRY CREEK	HOLLYWOOD	Public Utility	Recreation, Fire Protection, Stock, Or Small Fish Pod, Fish and Wildlife Pond	Low
	AL00996	ROBERT SHRADER DAM	14	78	TR FLAT ROCK CREEK	FLAT ROCK	Public Utility	Recreation, Fish and Wildlife Pond	Low
	AL01753	WAITES POND	15	44	TR TENNESSEE RIVER	SCOTTSBORO	Public Utility	Recreation, Fish and Wildlife Pond	High
	AL01754	HILL POND DAM	21	92	POLE BRANCH	SKYLINE	Public Utility	Recreation	Low
	AL02201	DIAMOND POTATO CO FARM RESERVOIR	24	76	DICKEY CREEK	NONE	Public Utility	Irrigation	Low
	AL02352	DIAMOND POTATO CO FARM	24	135	TR DICKEY CREEK	SCOTTSBORO	Public Utility	Irrigation	Low
	AL02594	WIDOWS CREEK FOSSIL PLANT - RED WATER #1	14	198	TENNESSEE	STEVENSON	-	Flood Control	Significant
	AL02597	WIDOWS CREEK FOSSIL PLANT - ACTIVE ASH DISPOSAL AREA PERIMETER DIKE	45.9	2434	TENNESSEE RIVER - OFFSTREAM	STEVENSON	Federal	Other	Significant
	AL02601	WIDOWS CREEK FOSSIL PLANT - UPPER/LOWER ASH STILLING POND PERIMETER DIKE	23	168	TENNESSEE RIVER - OFFSTREAM	STEVENSON	Federal	Other	Significant
AL05294	WIDOWS CREEK FOSSIL PLANT - RED WATER POND #1	14	198	TENNESSEE RIVER - OFFSTREAM	STEVENSON	-	Flood Control	Low	
AL83508	BELLEFONTE - YARD DRAINAGE POND	12.1	61	TENNESSEE RIVER - OFFSTREAM	HOLLYWOOD	Federal	Flood Control, Other	Low	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
LIMESTONE COUNTY	AL01006	ENON DAM	25	81	TR BRIDGEFORTH BRANCH	GRAY SPRING	Public Utility	Recreation, Fish and Wildlife Pond	Low
	AL01008	ANTIOCH DAM	20	120	TR-DAVIS BRANCH	ST. MARKS CHURCH COMMUNITY	Public Utility	Recreation, Fire Protection, Stock, Or Small Fish Pond, Fish and Wildlife Pond	Low
	AL01009	MONTGOMERY LAKE	15	87	TR-SWAN CREEK	ATHENS SE SUBURB	Public Utility	Recreation, Fish and Wildlife Pond	High
	AL01010	BROOKWOOD FOREST LAKE	13	77	TR-SWAN CREEK	ATHENS	Public Utility	Irrigation, Fish and Wildlife Pond	High
	AL01011	LAWSON LAKE NO. 1	13	206	TR-ROUND ISLAND CREEK	PROCTOR	Public Utility	Irrigation, Fish and Wildlife Pond	Significant
	AL01012	LAWSON LAKE NO. 2	14	168	TR-ROUND ISLAND CREEK	PROCT 004	Public Utility	Irrigation, Recreation, Fire Protection, Stock, Or Small Fish Pond, Fish and Wildlife Pond	Low
	AL01013	LAKE GARY DAM	15	117	TR-BEAVER DAM	GREEN BRIAR	Public Utility	Recreation, Fire Protection, Stock, Or Small Fish Pond, Fish and Wildlife Pond	Low
	AL01902	LITTRELL DAM	16	94	TR-DRY CREEK	POPLAR CREEK	Public Utility	Recreation	Significant
	AL02208	ENON DAM	25	67	TR-BRIDGEFORTH BR.	ENON COMMUNITY	Public Utility	Recreation, Fire Protection, Stock, Or Small Fish Pond	Low

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

LIMESTONE COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL02209	LAWSON LAKE NO. 3	15	87	TR-ROUND ISLAND CREEK	PROCTOR	Public Utility	Irrigation, Recreation, Fish and Wildlife Pond	Low
	AL02210	STRAIN NURSERY	20	58	TR-SWAN CREEK	TANNER	Public Utility	Irrigation	Significant
	AL02211	THOMAS VANN	20	106	TR-LIMESTONE CREEK	CAPSHAW	Public Utility	Irrigation, Recreation, Fire Protection, Stock, Or Small Fish Pond	Low
	AL02602	BROWNS FERRY - DISCHARGE CONTROL STRUCTURE	24	187	TENNESSEE RIVER - OFFSTREAM	ATHENS	Federal	Water Supply, Other	Low
	AL02603	BROWNS FERRY - GATE STRUCTURE #2 IMPOUNDMENT	25	187	TENNESSEE RIVER - OFFSTREAM	ATHENS	Federal	Water Supply, Other	Low
	AL01244	JENKINS NO. 2	19	90	TR SAMUELS CHAPEL CREEK	SAMUELS CHAPEL	Public Utility	Recreation	Low

MORGAN COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL01028	LAKE CHULAVISTA DAM	15	86	TR-MUD TAVERN CREEK	SW MACEDONIA COMMUNITY	Public Utility	Recreation	Low
AL01029	GUY ROBERTS DAM	13	98	TR-FLINT CREEK	HARTSELLE	Public Utility	Recreation, Fire Protection, Stock, Or Small Fish Pond, Fish and Wildlife Pond	Low	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Table 4.38 | Division F Dam Inventory by County (Continued)

MADISON COUNTY	NID-ID	Dam Name	NID Height (Ft.)	NID Storage (Acre-Feet)	River	City	Owner Type	Purpose(s)	Hazard Potential
	AL01014	JIMMY JOHNSTON LAKE DAM	24	123	TR-MOUNTAIN FORK CREEK	BLOUCHER FORD	Local Government	Recreation	Low
	AL01015	SMITH, WALKER, AND JOHNSON LAKE DAM	25	155	SAND BRANCH	GURLEY	Public Utility	Recreation, Fish and Wildlife Pond	Significant
	AL01016	MT. LAKE RESORT	20	675	KILLINGSWORTH BR COVE	PLEASANT MT. CHURCH	Public Utility	Recreation, Fish and Wildlife Pond	High
	AL01017	HURRICANE CREEK W/S DAM SITE 11	40	78	KILLINGSWORTH COVE BRANCH	GURLEY	Public Utility	Flood Control	High
	AL01018	RANDALL MULLINS LAKE DAM	12	96	TR-LIMESTONE CREEK	READY CROSSING	Public Utility	Recreation, Fish and Wildlife Pond	Low
	AL01020	MADISON COUNTY PUBLIC LAKE DAM	35	2232	TRIBUTARY OF HURRICANE CREEK	GURLEY	State	Recreation, Fish and Wildlife Pond	Low
	AL01021	MARY ANN DRAKE	8	736	BETTS SPRING BRANCH	TRIANA	Public Utility	Recreation, Fish and Wildlife Pond	Low
	AL01532	MADISON COUNTY NATURE TRAIL DAM	23	198	NONE	HUNTSVILLE	Local Government	Recreation	Low
	AL01533	ROMINE LAKE DAM	25	103	KNOX CREEK	CAPSHAW	Public Utility	Recreation	Low
	AL02216	GREEN MT. LAKE	21	186	TR-TENNESSEE RIVER	N/A	Local Government	Recreation, Fish and Wildlife Pond	Significant
	AL02217	JIMMY JOHNSTON	18	92	TR-HURRICANE FORT FLINT RIVER	BLOUCHER FORD	Local Government	Recreation, Fish and Wildlife Pond	Significant
	AL02218	RANDALL MULLINS	10	80	TR-LIMESTONE CREEK	TRIANA	Public Utility	Fish and Wildlife Pond	Low
AL83510	BRAGG FARM RESERVOIR	21.48	98.38	BRIER FORK - OS	MERIDIANVILLE	Private	Irrigation	Low	

Section 4 | Hazard Profiles

4.7 Dam/Levee Failure

Hazard [Extent]

The potential extent of dam failure is categorized by each event’s “hazard potential.” The hazard potential for dams indicates the probable damage that would occur if the dam were to fail, specifically to human life or property. Table 4.39 explains each potential risk category and catalogs each county’s dam inventory by risk. Blount County has the largest number of high-risk dams (19); Blount and Cullman County tie for the largest number of significant-risk dams (7); and Etowah County has the largest number of low-risk dams (20). Morgan County has the least number of dams in the Division overall.

Table 4.39 | Division F Dam Inventory by Risk Category

Risk Categories		Number of Dams		
<i>High</i> – Loss of one human life is likely if the dam fails		51		
<i>Significant</i> – Possible loss of human life and likely significant property or environmental destruction if the dam fails		25		
<i>Low</i> – No loss of life and low economic or environmental damage.		87		
Total		163		

County	No. of Dams	High Risk	Significant Risk	Low Risk
Blount	38	19	7	12
Cherokee	15	6	1	8
Cullman	23	7	7	9
DeKalb	20	8	1	11
Etowah	26	6	0	20
Jackson	12	1	3	8
Limestone	14	2	3	9
Madison	13	2	3	8
Morgan	2	0	0	2
Total Dams	163	51	25	87

Previous Occurrences

To date, there have been **no dam failures** in the planning area. However, there has been an instance where a dam had to shut down for repairs. In 2019, the Duck River Dam in Cullman County became a point of contention between the City of Cullman and the dam's construction company and design engineers. The main issue with the dam was "excessive leakage" flowing into the dam's gallery, the thoroughfare that allows inspections and repairs inside the dam. It was later discovered that water was damaging electrical wiring, thus causing the dam's gates and valves to malfunction. This dam is not included in Table 4.29 figures as it had not been rated at the time this



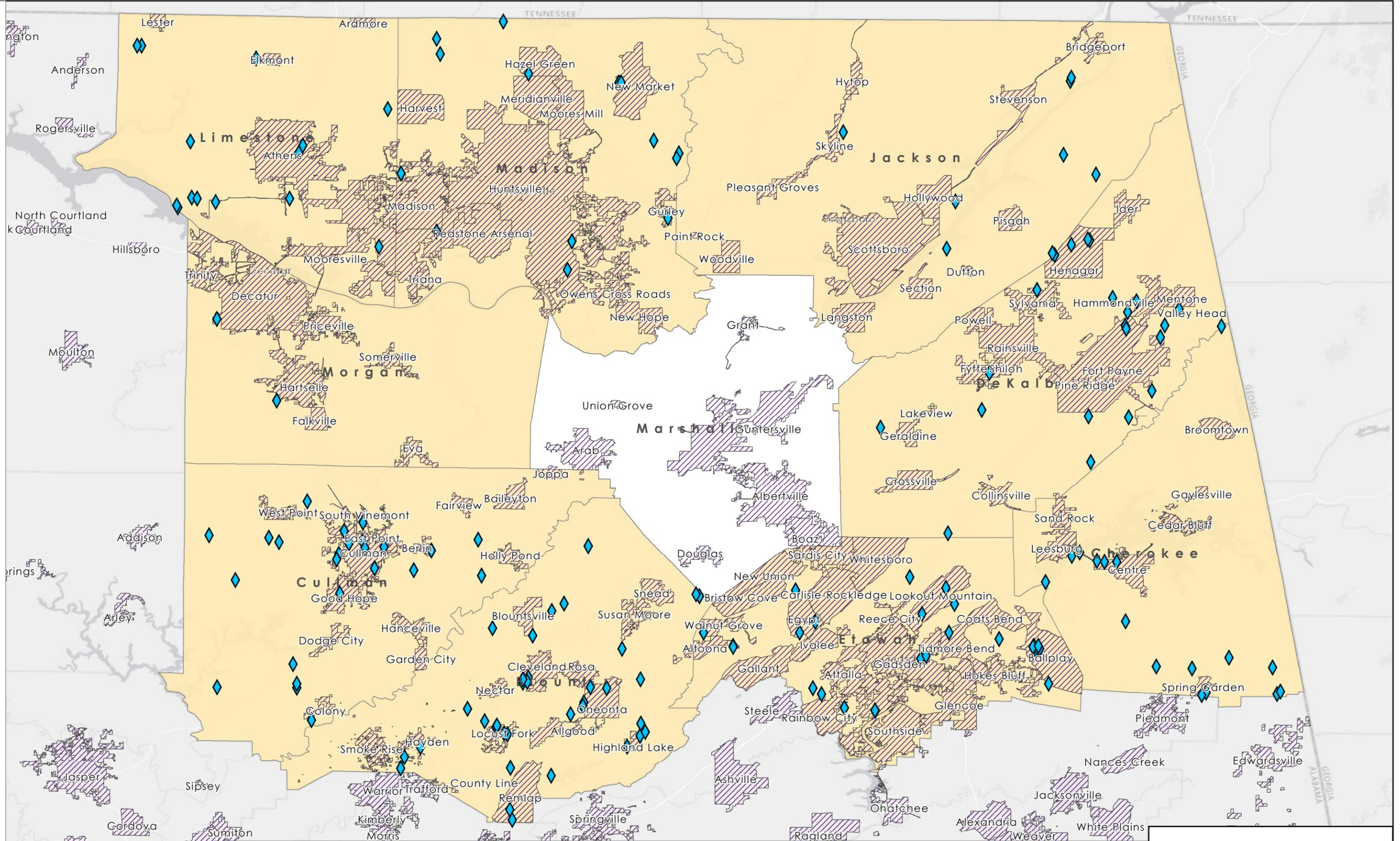
Duck River Dam. *Courtesy of Duck River Reservoir Project - Facebook.* [Source: The Cullman Tribune. August 2017 and October 2019](#)

Probability of Future Events

There are **no documented occurrences** of dam failure within the planning area. However, high- and significant-risk dams are potential threats for local communities with every incident of heavy rainfall. Moreover, inconsistent inspection and maintenance of existing dams increases the likelihood that a dam failure will occur. Given these factors, the probability of future dam failure events throughout the Region is presumably low.

DIVISION F REGION DAM LOCATIONS

Blount | Cherokee | Cullman | DeKalb | Etowah | Jackson | Limestone | Madison | Morgan

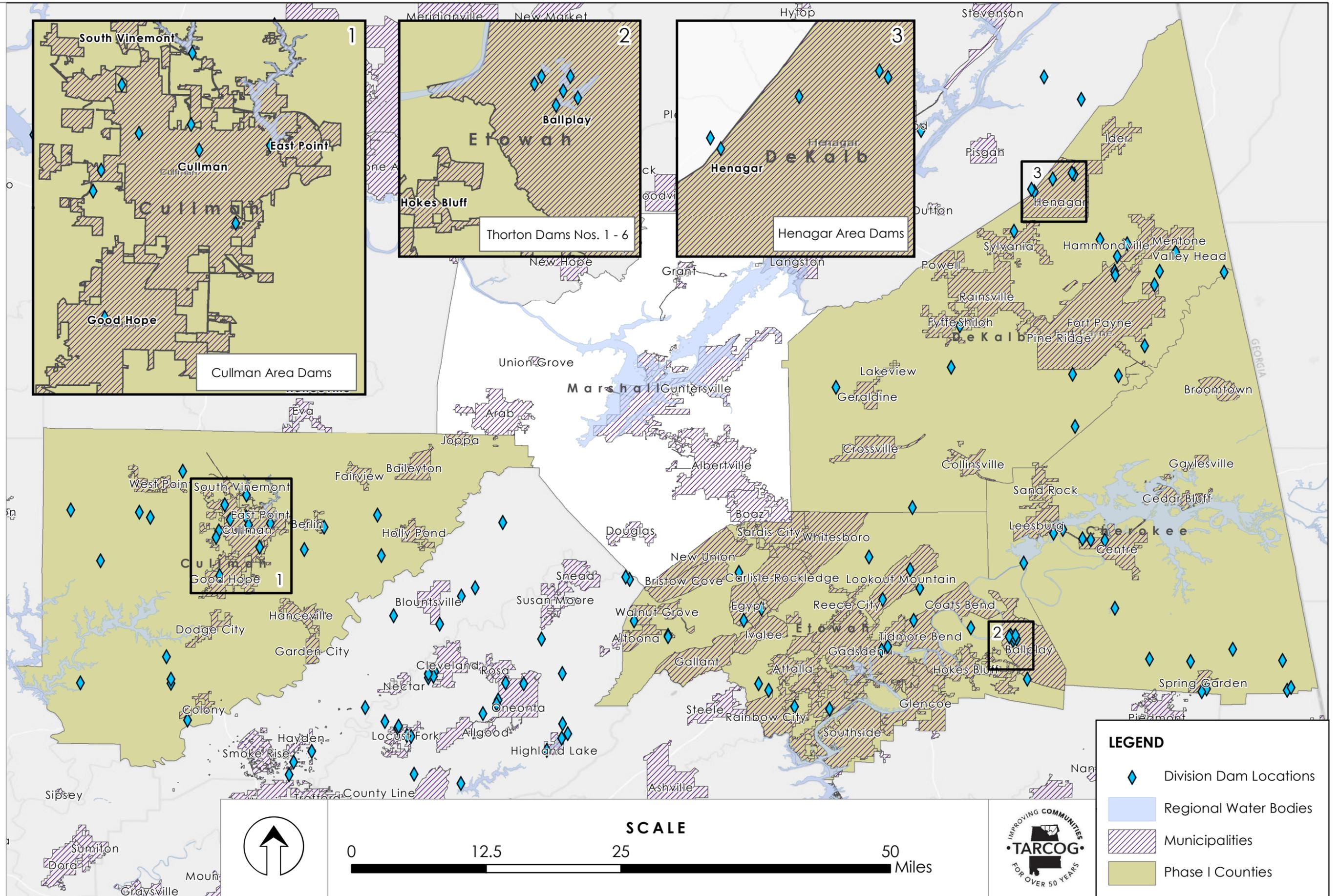


LEGEND

- ◆ Division Dam Locations
- ▨ Municipalities

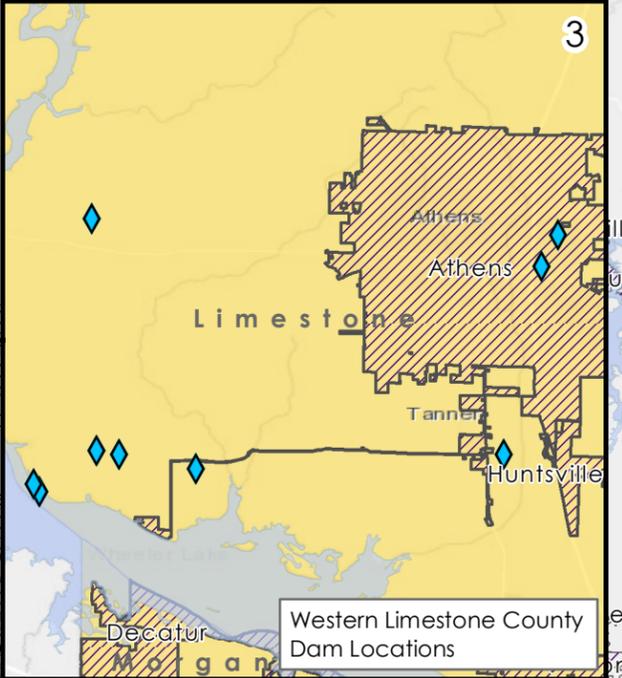
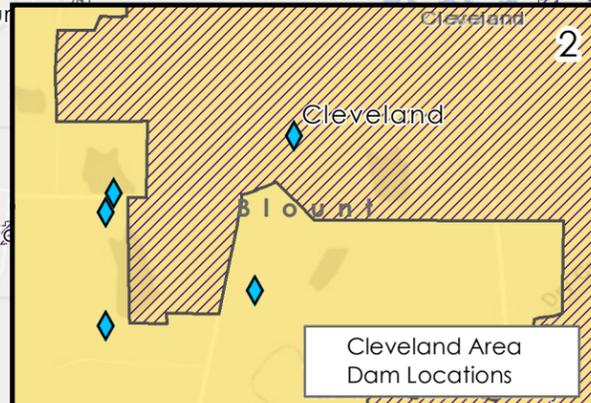
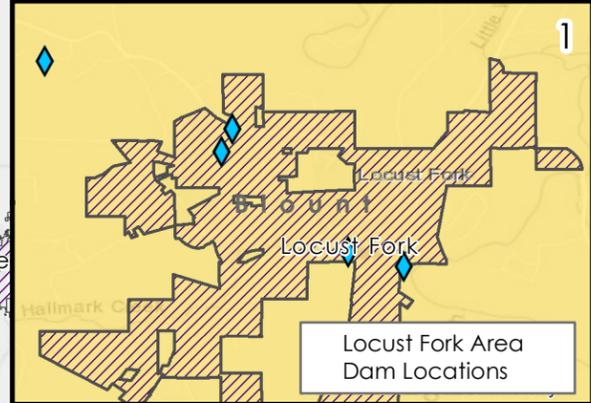
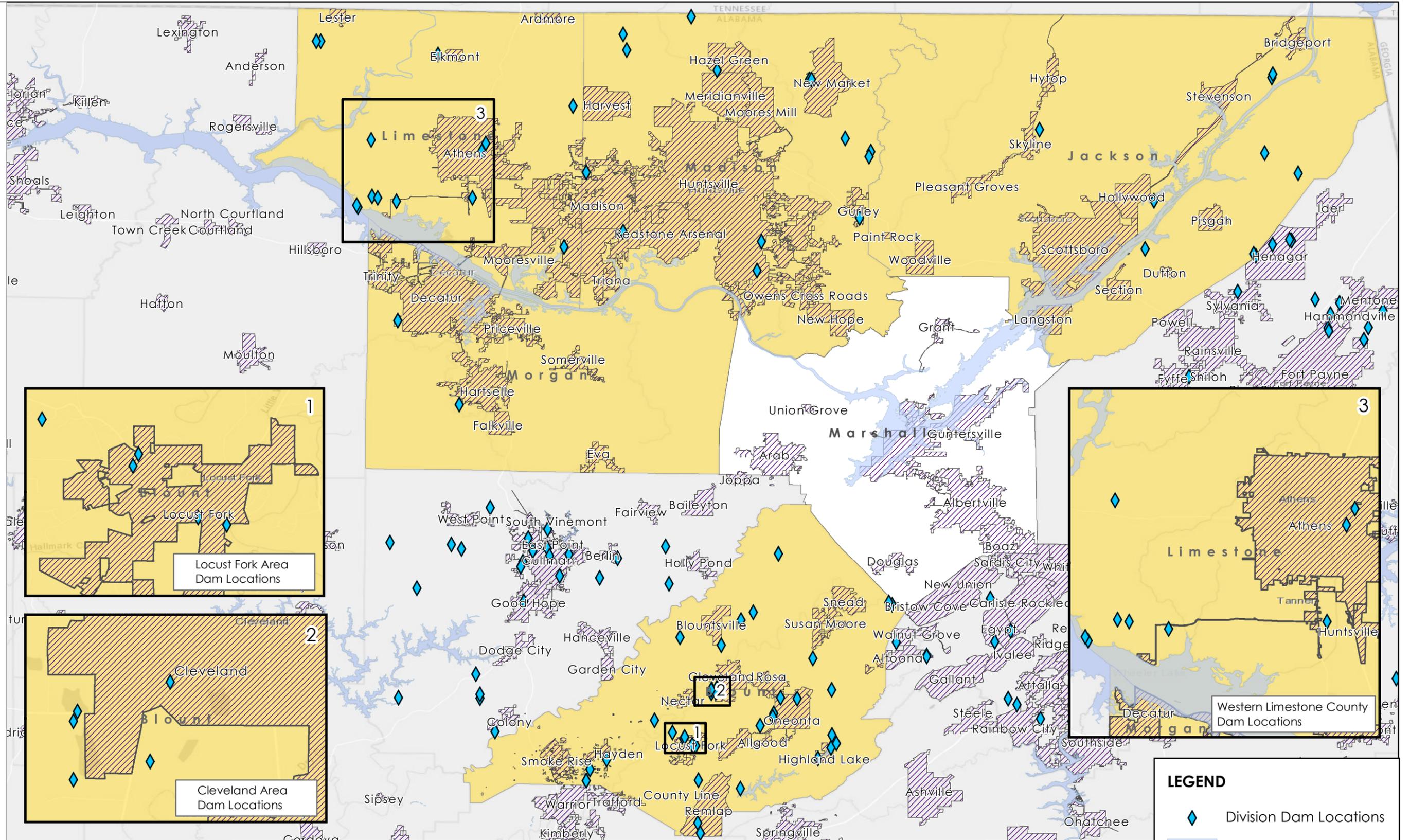
DIVISION F REGION DAM LOCATIONS | PHASE I COUNTIES

Cherokee | Cullman | DeKalb | Etowah



DIVISION F REGION DAM LOCATIONS | PHASE II COUNTIES

Blount | Jackson | Limestone | Madison | Morgan



LEGEND

- Division Dam Locations
- Regional Water Bodies
- Municipalities
- Phase II Counties



4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Background] – High/Strong Winds

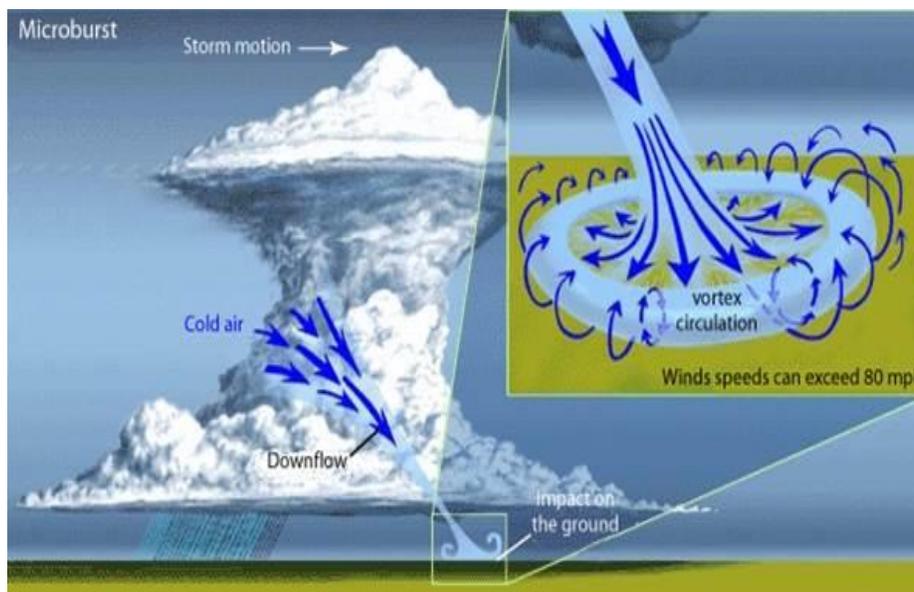
Extreme windstorm events are most often associated with tropical extratropical (forming outside the tropics) and tropical cyclones, winter cyclones, and severe thunderstorms. They accompany “mesoscale offspring” such as tornadoes and downbursts. Winds vary from zero at ground level to **200 mph** (89 m/s) in the upper atmospheric jet stream at **6 to 8 mi** (10 to 13 km) above the earth’s surface.

Mesoscale: *Of intermediate size; of or relating to a meteorological phenomenon approximately 10 to 1000 kilometers in horizontal extent.*

Merriam –Webster Dictionary, 2020

Large-scale extreme wind events are experienced over every region of the country and its territories. Additional wind hazards occur on a very localized level due to downslope windstorms along mountainous terrains. Severe thunderstorms also produce wind downbursts and microbursts. Downbursts are powerful winds that descend from a thunderstorm and spread out quickly once they touch the ground. These winds can easily cause damage like that of an EFO (**65-85 mph**) or EF1 (**86-110 mph**) tornado and are sometimes misinterpreted as tornadoes. A microburst is a localized column of sinking air (downdraft) within a thunderstorm that is usually less than or equal to **2.5 miles** in diameter. (Figure 4.31) Otherwise, these phenomena are referred to as macrobursts.

Figure 4.43 | Microburst Formation from a Thunderstorm



Sources: National Weather Service, National Oceanic and Atmospheric Administration; FEMA, MHIRA (1997)

Affected Locations

Windstorm events occur frequently throughout the Division F Region. Each municipality within the nine-county planning area is susceptible to wind-related hazards. It is important to note, however, that the severity of each event differs, and not every county is equally afflicted by these hazards.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Extent]

While hurricane activity is measured using the Saffir-Simpson Hurricane Scale, other wind speeds are estimated using the Beaufort Wind Scale. This scale, developed by Rear-Admiral Sir Francis Beaufort in 1805, was initially created to help sailors assess winds through visual observation. The scale ranges from force **0** (calm) to force **12** (hurricane). In 1926, a uniform set of velocity equivalents was accepted for the Beaufort scale; and by 1946, the scale extended to **17** values, adding five values to further refine hurricane-force winds. Wind velocities in knots (kts) replaced Beaufort numbers on weather maps in 1955.

Table 4.44 | Beaufort Wind Force Scale

Force	Wind Speed		Description	Specifications (L) = for use on land; (S) = for use on water
	Mph	Kts (knots)		
0	0 - 1	0 - 1	Calm	(S) Sea like a mirror. (L) Calm; smoke rises vertically
1	1 - 3	1 - 3	Light Air	(S) Ripples with the appearance of scales are formed, but without foam crests. (L) Direction of wind shown by smoke drift, but not by wind vanes.
2	4 - 7	4 - 6	Light Breeze	(S) Small wavelets, still short, but more pronounced. Crests have a glassy appearance and do not break. (L) Wind felt on face; leaves rustle; ordinary vanes moved by wind.
3	8 - 12	7 - 10	Gentle Breeze	(S) Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered “white horses.” (L) Leaves and small twigs in constant motion; wind extends light flag.
4	13 - 18	11 - 16	Moderate Breeze	(S) Small waves, becoming larger; fairly frequent “white horses.” (L) Raises dust and loose paper; small branches are moved.
5	19 - 24	17 - 21	Fresh Breeze	(S) Moderate waves, taking a more pronounced long form; many “white horses” are formed. (L) Small trees in leaf begin to sway; crested wavelets form on inland waters.
6	25 - 31	22 - 27	Strong Breeze	(S) Large waves begin to form; the white foam crests are more extensive everywhere. (L) Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Table 4.44 | Beaufort Wind Force Scale (Continued)

Force	Wind Speed		Description	Specifications (L) = for use on land; (S) = for use on water
	Mph	Kts		
7	32 - 38	28 - 33	Near Gale	(S) Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind. (L) Whole trees in motion; inconvenience felt when walking against the wind.
8	39 - 46	34 - 40	Gale	(S) Moderately high waves of greater length; edges of crests begin to break into spindrift. The foam is blown in well-marked streaks along the direction of the wind. (L) Breaks twigs off trees; generally impedes progress.
9	47 - 54	41 - 47	Severe Gale	(S) High waves. Dense streaks of foam along the direction of the wind. Crests of waves begin to topple, tumble and roll over. Spray may affect visibility. (L) Slight structural damage occurs (chimney-pots and slates removed).
10	55 - 63	48 - 55	Storm	(S) Very high waves with long overhanging crests. The resulting foam, in great patches, is blown in dense white streaks along the direction of the wind. Overall the surface of the sea takes on a white appearance. The tumbling of the sea becomes heavy and shock-like. Visibility affected. (L) Seldom experienced inland; trees uprooted; considerable structural damage occurs.
11	64 - 72	56 - 63	Violent Storm	(S) Exceptionally high waves (small and medium-size ships might be for a time lost to view behind the waves). The sea is completely covered with long white patches of foam lying along the direction of the wind. Everywhere the edges of the wave crests are blown into froth. Visibility affected. (L) Very rarely experienced; accompanied by wide-spread damage.
12	72 - 83	64 - 71	Hurricane	(S) The air is filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected. (L) Refer to the Saffir-Simpson Hurricane Scale.

Source: National Weather Service, National Oceanic and Atmospheric Administration

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Previous Occurrences – High/Strong Wind

The National Oceanic and Atmospheric Administration (NOAA) documents high wind, strong wind, and thunderstorm wind events separately. For the purposes of reporting previous occurrences of each category of ‘windstorm’ throughout the region, past incidents will be separated into multiple tables. Tables 4.45 and 4.46 break down high/strong wind events from 1996 to the early 2020 and Table 4.47 depicts thunderstorm wind incidents since the 1950s. According to NOAA data, **145** incidents of high/strong wind have occurred in the Division since 1996.

Table 4.45 | Division F – Phase I Counties High/Strong Wind Incidents (1996 - 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property	Reporting Source(s)
Cherokee	High / Strong Wind	10	0 / 0	\$0 / \$410,000	Broadcast Media Emergency Manager General Public
Cullman	High / Strong Wind	11	1 / 0	\$0 / \$1,704,000	AWOS* Emergency Manager Law Enforcement Newspaper
DeKalb	High / Strong Wind	26	0 / 0	\$0 / \$1,765,000	Emergency Manager Newspaper
Etowah	High / Strong Wind	15	3 / 0	\$0 / \$406,500	AWOS* Emergency Manager Law Enforcement Newspaper
Totals:		62	4 / 0	\$0 / \$4,285,500	*Automated Weather Observing Systems

County	No. of High Wind Events	No. of Strong Wind Events	High Wind Damage (\$)	Strong Wind Damage (\$)
Cherokee	2	8	\$370,000	\$40,000
Cullman	9	2	\$694,000	\$1,010,000
DeKalb	12	14	\$575,000	\$1,190,000
Etowah	3	12	\$202,000	\$204,500

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Table 4.46 | Division F – Phase II Counties High/Strong Wind Incidents (1996 - 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property	Reporting Source(s)
Blount	High / Strong Wind	14	0 / 0	\$0 / \$233,500	Emergency Manager Newspaper General Public
Jackson	High / Strong Wind	14	0 / 0	\$0 / \$642,500	Broadcast Media Emergency Manager Social Media Utility Company
Limestone	High / Strong Wind	9	1 / 0	\$0 / \$87,000	Emergency Manager Law Enforcement Newspaper Utility Company
Madison	High / Strong Wind	29	0 / 0	\$0 / \$2,254,000	Broadcast Media Emergency Manager Law Enforcement Social Media Utility Company
Morgan	High / Strong Wind	17	3 / 0	\$0 / \$1,309,000	Emergency Manager Law Enforcement Newspaper
Total High/Strong Wind Incidents:		83	4 / 0	\$0 / \$4,562,000	

County	No. of High Wind Events	No. of Strong Wind Events	High Wind Damage (\$)	Strong Wind Damage (\$)
Blount	4	10	\$106,000	\$127,500
Jackson	9	5	\$630,000	\$12,500
Limestone	6	3	\$33,000	\$57,000
Madison	11	18	\$87,000	\$2,167,000
Morgan	8	9	\$65,000	\$1,244,000

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Impact] – High/Strong Wind

High/strong wind activity, while not as common as other natural hazards, substantially impacts communities throughout the region. Since 1996, there have been seven (7) high/strong wind events between the Phase I Counties that have caused over \$50,000 in property damage. Of these seven incidents, high winds caused roughly \$1,630,000 in damages and strong winds caused \$2,075,000. Table 4.47 breaks down hazard impact by estimated property damage in Cherokee, Cullman, DeKalb, and Etowah Counties.

Table 4.47 | Phase I Counties High/Strong Wind Impact by Property Damage (\$)

County	No. of Events	Estimated Property Damage (In Dollars)				
		\$0 - \$1,000	\$1,001 - \$5,000	\$5,001 - \$10,000	\$10,001 - \$50,000	\$50,000+
Cherokee	10	2	2	2	3	1
Cullman	11	1	2	6	0	2
DeKalb	26	6	9	0	8	3
Etowah	15	3	3	0	8	1
Total	62	12	16	8	19	7

Most Damaging Windstorms in Division F - Phase I Counties

Cherokee County – 09.16.2004 | High winds knocked down hundreds of trees and power lines areawide. At least three homes sustained significant damage. Maximum wind gusts were estimated around 60 mph. At least 800 customers were without power at the height of the storm (Hurricane Ivan). Estimated damage sustained: \$350,000.

Cullman County – 12.20.2007 | Damaging strong winds occurred in two main swaths in north central and northeast Alabama. The area sustained winds of 30 to 40 mph, with gusts around 50 mph. The sustained winds and gusts downed numerous trees onto power lines, resulting in multiple power outages. In a few cases, telephone and power poles were snapped. Communities that reported downed trees: Crane Hill, Bremen, Garden City, Battleground, and Fairview. Estimated damage sustained: \$1,000,000.

DeKalb County – 12.20.2007 | Strong winds knocked down trees and powerlines across the county. These winds are attributed to one of two widespread swaths of damaging winds that tracked through Cullman into southern Marshall and DeKalb Counties. Particularly hard hit were the Collinsville and Geraldine communities. The strongest wind damage occurred in the Geraldine area. Estimated damage sustained: \$1,000,000.

Etowah County – 09.16.2004 | The Etowah County EMA recorded a wind gust of 57 mph; these **high winds** are associated with Hurricane Ivan. Peak wind gusts across the county were around 60 mph. Numerous trees and power lines were blown down; power was not fully restored for at least 2 days. Several homes suffered mainly roof damage. Estimated damage sustained: \$180,000.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

There have also been seven (7) high/strong wind events that caused over \$50,000 in property damage between the Phase II Counties. Of these seven incidents, high winds caused roughly \$680,000 in damages and strong winds caused \$3,165,000. Table 4.48 breaks down hazard impact by estimated property damage in Blount, Jackson, Limestone, Madison, and Morgan Counties.

Table 4.48 | Phase II Counties High/Strong Wind Impact by Property Damage (\$)

County	No. of Events	Estimated Property Damage (In Dollars)				
		\$0 - \$1,000	\$1,001 - \$5,000	\$5,001 - \$10,000	\$10,001 - \$50,000	\$50,000+
Blount	14	1	6	2	4	1
Jackson	14	7	5	0	1	1
Limestone	9	3	4	0	2	0
Madison	29	9	8	3	7	2
Morgan	17	2	5	3	4	3
Total	83	22	28	8	18	7

Most Damaging Windstorms in Division F - Phase II Counties

Blount County - 09.16.2004 | Numerous trees and power lines were knocked down from Ivan's **high winds** across the county. **Ten to twenty** homes suffered varying degrees of damage, mainly minor roof damage. Maximum wind gusts were estimated between 55 - 60 miles an hour. Estimated damage sustained: \$80,000.

Jackson County - 04.13.2009 | **High winds** between 45 and 55 mph with gusts around 65 mph downed numerous trees and powerlines. Significant damage to structures occurred from fallen trees. Particularly hard-hit areas included: Scottsboro, Wannville, Stevenson, and Jackson County Park, and Bynum Park in Scottsboro. Several mobile homes at Jackson County Park were demolished by fallen trees. Estimated damage sustained: \$600,000.

Limestone County - 04.22.1018 | Limestone County has not experienced a high or strong wind incident that caused greater than \$50,000 in damages. However, a reported incident in April 2018 accounted for this amount in damages due to several downed trees and powerlines; damage to Piney Creek Bridge; and complete damage to one law enforcement vehicle. Estimated damage sustained: \$50,000.

Madison County - 12.20.2007 | Madison County has experienced two strong wind events that caused an estimated **\$1,000,000** in damage to local communities. In December 2007, **strong winds** sustained around 40 mph with gusts around 50 mph, knocking down several trees and powerlines across the county. Hardest hit locations: Mountain Gap, the intersection of Rock Cut Road and U.S. Hwy 72 in Gurley, and other communities in eastern Madison County. The second event occurred in March 2016. Combined estimated damage sustained: \$2,000,000.

Morgan County - 12.21.2007 | Morgan County has undergone three events that have inflicted more than \$50,000 in damages to the community. The most significant event occurred in December 2007; **strong winds** damaged structures across multiple communities. Combined estimated damage sustained: \$1,165,000.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Previous Occurrences – Thunderstorm Wind

According to NOAA data, **3,210** incidents of thunderstorm wind have occurred in the Division F Region between 1959 and 2020. Madison County has experienced the most thunderstorm events and event deaths out of any county jurisdiction in the planning area. Cullman County has suffered the most injuries from thunderstorm winds and Limestone County the most crop and property damage. In total, thunderstorm wind activity has caused an estimated **\$38.3 million** in damages within the 64-year study period.

Table 4.49 | Division F Thunderstorm Wind Incidents (1956 - 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Blount	Thunderstorm Wind	276	21 / 0	\$23,000 / \$1,321,000
Cherokee	Thunderstorm Wind	168	2 / 0	\$10,000 / \$1,168,000
Cullman	Thunderstorm Wind	438	28 / 2	\$67,000 / \$4,727,000
DeKalb	Thunderstorm Wind	432	12 / 0	\$36,000 / \$3,295,000
Etowah	Thunderstorm Wind	294	16 / 0	\$26,000 / \$2,505,000
Jackson	Thunderstorm Wind	322	5 / 0	\$20,000 / \$1,758,000
Limestone	Thunderstorm Wind	394	3 / 0	\$541,000 / \$9,854,000
Madison	Thunderstorm Wind	500	20 / 12	\$17,000 / \$9,333,000
Morgan	Thunderstorm Wind	437	5 / 1	\$47,000 / \$4,316,000
Totals:		3,210	112 / 15	\$787,000 / \$38,277,000

Source: The National Oceanic and Atmospheric Administration (NOAA).

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Impact] – Thunderstorm Wind

More than half of thunderstorm wind occurrences in the Division F Region have resulted in relatively modest property damage (meaning incidents resulting in damages of \$1,000 or less.) In contrast, there have been **65** incidents across the Region where property damage exceeded \$50,000. Damages of these events total **\$26,541,000** – **69.3%** of the overall property damage figure for the division. Table 4.50 breaks down thunderstorm wind impact by estimated property damage for every county in the planning area.

Table 4.50 | Division F County Thunderstorm Wind Impact by Property Damage (\$)

County	No. of Events	Estimated Property Damage (In Dollars)				
		\$0 - \$1,000	\$1,001 - \$5,000	\$5,001 - \$10,000	\$10,001 - \$50,000	\$50,000+
Blount	276	159	70	21	21	5
Cherokee	168	85	53	16	13	1
Cullman	438	276	73	34	44	11
DeKalb	432	275	71	47	33	6
Etowah	294	125	64	17	29	8
Jackson	322	218	59	21	20	4
Limestone	394	246	68	38	34	8
Madison	500	284	102	54	45	15
Morgan	437	281	80	34	35	7
Total	3,210	1,949	640	282	274	65

Thunderstorm Wind in Blount County, Alabama

Blount County experienced **276** severe thunderstorm wind events from April 1955 to November 2020. This equates to an estimated **four** significant incidents per year over the last 65 years. The most significant thunderstorm for this jurisdiction occurred in February 1999. Thunderstorm wind left a swathe of damage stretching for a four-mile-long area from west of Locust Fork to just south-southeast of Nectar. Major damage was done to two houses and one mobile home. Minor damage occurred to four houses, several barns and one mobile home. Four mobile homes were completely destroyed.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Thunderstorm Wind in Cherokee County, Alabama

Cherokee County experienced **168** thunderstorm wind incidents over the 65-year study period. This equates to an estimated **four** incidents per year. The Town of Cedar Bluff sustained the most property damage during this timeframe. The worst storm to hit this area occurred in April 1994. A portion of the roof to the Cedar Bluff High School gym was blown off. Numerous trees were blown down, and a lumber company lost part of its roof as did a paint and body shop. **Four** homes were damaged, **two** mobile homes destroyed, and **two** mobile homes damaged in the Watson's Crossroads area on Alabama Highway 35 north of Gaylesville. **Twelve** camping trailers were destroyed in the Buffington Campground.

Thunderstorm Wind in Cullman County, Alabama

Cullman County experienced **438** thunderstorm wind events over the 65-year study period. This equates to an estimated **seven** incidents per year. This jurisdiction has experienced several significant thunderstorms during the study period, however, there have only been **two** that have caused an extensive amount of property damage. In August 2007, two thunderstorm events, occurring within one week of each other, were reported as causing **\$1,000,000** each.

Thunderstorm Wind in DeKalb County, Alabama

DeKalb County has the fourth highest number of thunderstorm wind occurrences in the Division F Region. This jurisdiction has experienced **432** events, which equates to an estimated **seven** occurrences per year. The most devastating events took place in June 1994, where two incidents caused an estimated **\$500,000** per event. High wind damaged eight businesses, two homes and a church in Henagar. Nearly **8,000** per customers were without service at one point. Numerous large trees were downed on the outskirts of Fort Payne near an area called Dugout Valley. The communities of Powell, Rainsville, Paine Ridge, Adamsburg, Fyffe, and Geraldine also reported trees and downed power lines. A business at an industrial park suffered roof damage estimated at **\$50,000**.

Thunderstorm Wind in Etowah County, Alabama

Etowah County has experienced **294** thunderstorm wind events during the 65-year study period. This equates to an estimated **five** events per year. An event in February 1999 accounts for the most damage in this jurisdiction's history. Numerous trees and power lines were knocked down or uprooted in southern Etowah County sporadically along this path. Many trees blocked roadways. **Ten** single family homes were totally destroyed. **Twenty** other homes were demolished, and four additional mobile homes received minor damage. Stowers Manufacturing Plant in Gadsden had a large portion of its roof torn off.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Thunderstorm Wind in Jackson County, Alabama

Jackson County experienced **322** thunderstorm wind incidents over the 65-year study period. This equates to an estimated **five** incidents per year. The City of Stevenson sustained the most property damage during this timeframe. The worst storm to hit this area occurred in May 1994. **Twenty** homes were damaged by what was believed to be thunderstorm winds in the Fackler and Stevenson area. Isolated damage was also reported in other parts of Jackson County including Scottsboro with numerous trees down throughout the county. Damage included shingles off, porches and awnings ripped from buildings, and a mobile home was moved off its foundation.

Thunderstorm Wind in Limestone County, Alabama

Limestone County has sustained the most property and crop damage out of any county in the Division F Region. This jurisdiction has experienced **394** thunderstorm wind incidents, which equates to **eight** incidents per year. The most extensively damaging event in this jurisdiction's history occurred in the City of Athens in June 1994. The total property damage of this incident is reported at **\$5,000,000**. To date, the City of Athens is one of the hardest communities in Limestone County. Thunderstorm winds have been responsible for damages to trees, roofs, power lines and poles, and numerous residential and commercial structures.

Thunderstorm Wind in Madison County, Alabama

Madison County has the highest number of thunderstorm wind occurrences in the Division F Region. This jurisdiction has experienced **500** events, which equates to an estimated **seven** occurrences per year. While there have been **five** reported incidents of thunderstorm winds causing **\$1,000,000** in property damages, the most destructive injured **twelve** people and killed **one**. In June 2008, a non-severe thunderstorm produced a microburst as it was dissipating at the Huntsville International Airport during an air show. Several tents were damaged and destroyed by the thunderstorm winds. A large, expensive army tent and equipment was damaged.

Thunderstorm Wind in Morgan County, Alabama

Morgan County has experienced **437** thunderstorm wind events during the 65-year study period. This equates to an estimated **seven** events per year. There have been **two** reported incidents that resulted in **\$1,000,000** worth of property damages. Both events involved substantial damage to utility poles and numerous large trees. In fact, powerlines were blown down at the intersection of Highway 31 and Kayo Road in the Decatur area. Thunderstorm winds also produced roof damage to multiple chicken houses and outbuildings.

Source: National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information Storm Events Database

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Background] - Tornadoes

Tornadoes are violently rotating columns of air extending from a thunderstorm to the ground. The most ferocious events can produce destructive wind speeds of **250 mph** or more. These storms can also produce damage paths in excess of one mile wide and fifty (**50**) miles long. In an average year, **800** tornadoes are reported across the country.

In Alabama, the typical tornado season spans from spring to the beginning of summer (March to early June), with April and June designated as peak months for tornadic activity. However, the state experiences a “secondary” tornado season from November to December. According to data collected by the Montgomery Advertiser, as of April 2020, Alabama has experienced **2,673** tornadoes, **666** fatalities, over **\$6 billion** in property damage and over **\$56 million** worth of damages to crops.

Affected Locations

Every county throughout the Division has been significantly affected by high winds related to tornadic activity. In fact, the entire Division F region is in the Zone IV wind zone (see figure below). This zone is prone to experiencing wind speeds near 250 mph or greater. For example, communities in Cullman County have been hit particularly hard by this natural hazard. However, depending on a tornado’s scale, neighboring counties are just as likely to be impacted by the same storm or storms that arise as a result of the main event.

Figure 4.51 | United States Wind Zones (2018)



Source: The National Institute of Standards and Technology

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Extent]

Tornadic activity is measured using the Fujita Tornado Scale – this scale assesses the damage caused by the tornado after it passes over the afflicted area. A newer scale, the Enhanced Fujita Scale (EF Scale), became operational on February 1, 2007. This scale assigns tornadoes ratings based on estimated wind speeds and corresponding damage. The EF Scale was revised from the original Fujita Tornado Scale to better examine tornado damage, specifically to better align wind speeds with storm damage. Tables 4.52 and 4.53 compare the original Fujita Scale and the Enhanced Fujita Scale.

Table 4.52 | Original Fujita Tornado Scale

Category	Wind Speed (mph)	Description of Damage
F0	40 - 72	<i>Light</i> damage. Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage to sign boards.
F1	73 - 112	<i>Moderate</i> damage. The lower limit is the beginning of hurricane speed. Roof surface peeled off; mobile homes pushed off foundations or overturned; moving automobiles pushed off roads.
F2	113 - 157	<i>Considerable</i> damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
F3	158 - 206	<i>Severe</i> damage. Roofs and some walls torn off well-constructed houses; trains overturned; most forest trees uprooted; cars lifted off ground and thrown.
F4	207 - 260	<i>Devastating</i> damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large projectiles generated.
F5	261 - 318	<i>Incredible</i> damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized projectiles fly through the air in excess of 100-yards; trees debarked.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Table 4.53 | Enhanced Fujita Scale

Category	Wind Speed (mph)	Description of Damage
EF0	65 - 85	<i>Light</i> damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	86 - 110	<i>Moderate</i> damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111 - 135	<i>Considerable</i> damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely obliterated; large trees snapped or unrooted; light-object projectiles generated; cars lifted off ground.
EF3	136 - 165	<i>Severe</i> damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166 - 200	<i>Devastating</i> damage. Well-constructed houses and whole frame houses completely leveled; cars thrown; and small projectiles launched.
EF5	> 200	<i>Incredible</i> damage. Strong frame houses leveled off foundations and swept away; automobile-sized projectiles fly through the air in excess of 100m (109 yds.); high-rise buildings have significant structural deformation; incredible phenomena will occur.

The United States and Canada are the only countries in the world to have verified reports of tornadoes with a classification of F5 or EF5 strength. This is due to North America’s unique topography.

Source: C. Burt – The Five Deadliest F/EF5 Tornadoes on Record

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Previous Occurrences

According to the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, **207** tornadic incidents have occurred in Phase I counties since 1950. While other natural hazards have had considerable impact on communities throughout the entire planning area, tornadoes have, by far, been the most damaging and the most fatal. Table 4.54 below provides an overview of historical occurrences of tornadoes in Cherokee, Cullman, DeKalb, and Etowah Counties.

Table 4.54 | Phase I Counties Tornadic Activity Incidents (1950 - 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Cherokee	Tornado	16	50 / 3	\$0 / \$21,989,000
Cullman	Tornado	95	273 / 11	\$45,500 / \$97,555,280
DeKalb	Tornado	64	151 / 34	\$30,000 / \$25,218,500
Etowah	Tornado	32	44 / 0	\$73,000 / \$25,386,530
Totals:		207	518 / 48	\$148,500 / \$170,149,310

Source: The National Oceanic and Atmospheric Administration (NOAA).

Note: A HAZUS hurricane scenario was conducted for the four-county Phase I planning area to provide an example of an immense windstorm event's potential damage. The scenario uses Hurricane Opal as a case study in estimating how significantly the event would have impacted the subregion. Estimated social and economic impacts are based on 2010 Census data and were produced using HAZUS estimation methodology software. A copy of the Hurricane Global Risk Report can be found in the appendix.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

The National Oceanic and Atmospheric Administration (NOAA) Storm Events Database reported **288** incidents of tornadic activity in Phase II counties since 1950. Table 4.55 below provides an overview of historical occurrences in Blount, Jackson, Limestone, Madison, and Morgan Counties.

Table 4.55 | Phase II Counties Tornadic Activity Incidents (1950 - 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Blount	Tornado	57	83 / 3	\$54,000 / \$33,454,000
Jackson	Tornado	46	37 / 12	\$5,000 / \$9,821,000
Limestone	Tornado	63	299 / 24	\$50,000 / \$1,018,092,000
Madison	Tornado	79	793 / 47	\$0 / \$524,982,250
Morgan	Tornado	43	233 / 13	\$0 / \$14,454,750
Totals:		288	515 / 48	\$109,000 / \$1,600,804,000

Source: The National Oceanic and Atmospheric Administration (NOAA).

Note: In a future update of the Division F Region Hazard Mitigation Plan, a HAZUS hurricane scenario will be conducted for the Phase II five-county planning area to provide local stakeholders with an example of an immense windstorm event’s potential damage.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Impact] – Phase I Counties

Tornadoes are the most devastating hazards that occur throughout the Division. As the *Previous Occurrences* section indicates, these natural hazards inflicted over **\$170 million** in damage across Cherokee, Cullman, DeKalb, and Etowah Counties within the 70-year study period. Table 4.56 below scales tornadic activity by Phase I county using Fujita and Enhanced Fujita categories.

Table 4.56 | Phase I County Tornadic Activity by Scale Category

County	No. of Events	F0 / EF0	F1 / EF1	F2/EF2	F3/EF3	F4/EF4	F5/EF5
Cherokee	16	5	4	3	4	0	0
Cullman	95	26	35	20	10	4	0
DeKalb	64	10	21	20	8	4	1
Etowah	32	6	11	10	4	1	0
Total	207	47	71	53	26	9	1

EF5 on April 27, 2011

Ten Broeck, DeKalb County – A powerful storm system roared across the Southeast United States on Wednesday, April 27, 2011. This storm system would be responsible for one of the largest and deadliest tornado outbreaks to ever impact much of the southeastern region. This violent long track tornado began in the Lakeview community northeast of Geraldine before tracking northeastward, generally parallel to, and just east of, State Route 75. Along this line, the tornado passed through Fyffe, Rainsville, Sylvania, and eventually into northern DeKalb County south of the Cartersville community, killing 25 people.

Initial damage included mostly felled and snapped trees and structural damage to small buildings. Extensive damage was noted especially in Rainsville and Sylvania where the path width was estimated to over 1/2 mile wide. Other areas impacted by the storms include the City of Cullman, where extensive damage occurred to buildings in the downtown area, and to the Town of Fairview, both of which are located in Cullman County. In addition, the communities of Rainsville, Sylvania, Henagar and Ider in DeKalb County were severely impacted.

Section 4 | Hazard Profiles

4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Hazard [Impact] – Phase II Counties

The *Previous Occurrences* section also states that tornadoes inflicted over **\$1.6 billion** in damages throughout Blount, Jackson, Limestone, Madison, and Morgan Counties within the 70-year study period. Table 4.57 below scales tornadic activity by Phase II county using Fujita and Enhanced Fujita categories.

Table 4.57 | Phase II County Tornadic Activity by Scale Category

County	No. of Events	F0 / EF0	F1 / EF1	F2/EF2	F3/EF3	F4/EF4	F5/EF5
Blount	57	17	22	14	2	2	0
Jackson	46	13	17	8	5	3	0
Limestone	63*	31	15	7	4	2	2
Madison	79*	26	27	16	4	3	2
Morgan	43	12	13	7	6	3	2
Total	288*	99	94	52	21	13	6

* Three reported tornadoes designated “EFU.” This signifies “Tornadoes Without Visible Damage Evidence.” On rare occasions it is impossible to rate the strength of a confirmed tornado because there is little to no damage evidence. In these cases, the Storm Data preparer can document such as tornado as “EF-Unknown” (EFU).

The April 3rd and 4th 1974 Tornado Outbreak in Alabama

Alabama was one of several states devastated by the “Super Outbreak,” as April 3rd and 4th, 1974, has become known. During the late afternoon and evening hours of April 3, 1974, at least eight tornadoes, including four extremely intense and long-lived storms, brought death and extreme storm destruction to Alabama. **Eighty-six** persons were killed, 949 were injured, and damages exceeded **\$50 million**. **Sixteen** counties in the northern part of the State were hit the hardest.

Source: “Tornado Super Outbreak 4/3/1974” – NWS Birmingham, Alabama. Weather.gov.

Probability of Future Events

Tornadoes and other high wind events are extremely difficult events to predict. Nevertheless, the likelihood of these events occurring is ever present, especially given the right atmospheric conditions. Considering the history of windstorm incidents – high/strong winds, thunderstorm winds, and tornadoes – throughout the Region, these hazards have a substantially high likelihood of occurring. Probability will be further explored in Section 5 - Jurisdictional Vulnerability.

Section 4 | Hazard Profiles

4.9 Winter Storms / Winter Weather

Hazard Background – Winter Storms

The State of Alabama Hazard Mitigation Plan defines winter storms as events characterized by extreme cold and precipitation in the form of snow, ice, and/or sleet. These events can also cause other natural hazards, such as erosion, severe thunderstorms, tornados, and extreme winds. Like other natural hazard activity, winter storms can substantially impact human life, result in economic loss, and disrupt transportation and commerce. Moreover, acute winter storm incidents are known to result in vehicle/pedestrian accidents and downed trees and debris that incapacitate utility systems and transportation networks.

Table 4.58 | Winter Weather Precipitation Terminology

Precipitation Type	Description
Snow	Frozen precipitation that falls through a deep below-freezing atmospheric layer, often reaching the ground in the form of soft, white flakes.
Sleet	Frozen precipitation that falls through a shallow layer of warm air (above freezing) will partially melt. It will re-freeze into ice pellets as it re-enters a layer of air that is below freezing. Sleet usually bounces when it hits the surface and does not stick to objects. However, sleet can accumulate like snow and cause hazardous travel conditions.
Freezing Rain	This occurs when frozen precipitation completely melts into rain as it falls through a deep layer of warm air (above freezing). As the rain re-enters the shallow layer of cold air near the surface, it will re-freeze on contact as it reaches the surface. Freezing rain will create a coating of ice on any object it comes into contact with.

Source: Alabama Winter Weather Awareness Week Publication, November 10-15, 2019

Natural hazards that fall under the Winter Storms category are blizzards, frost/freeze, heavy snow, ice storms, winter storms, and winter weather. Cold/wind chills, extreme cold/wind chills, and freezing fog are also included in this category and speak to extreme cold conditions throughout the Division. According to a weather forecast office (WFO) via the National Weather Service (NWS), the climatological winter season between October 15 and April 15. The following shows monthly normals and extremes noted by the Huntsville WFO.

Table 4.59 | Monthly Normals and Extremes – Huntsville, AL WFO

	Jan.	Feb.	Mar	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.
Norm High	51.2	55.9	64.9	73.6	81.3	88.2	90.7	90.9	85.0	74.6	63.7	53.5	72.9
Norm Low	31.8	35.5	42.2	50.0	59.3	67.1	70.4	69.4	62.5	51.0	41.8	34.4	51.4
Norm Avg.	41.5	45.7	53.5	61.8	70.3	77.7	80.6	80.1	73.7	62.8	52.7	43.9	62.1

4.9 Winter Storms / Winter Weather

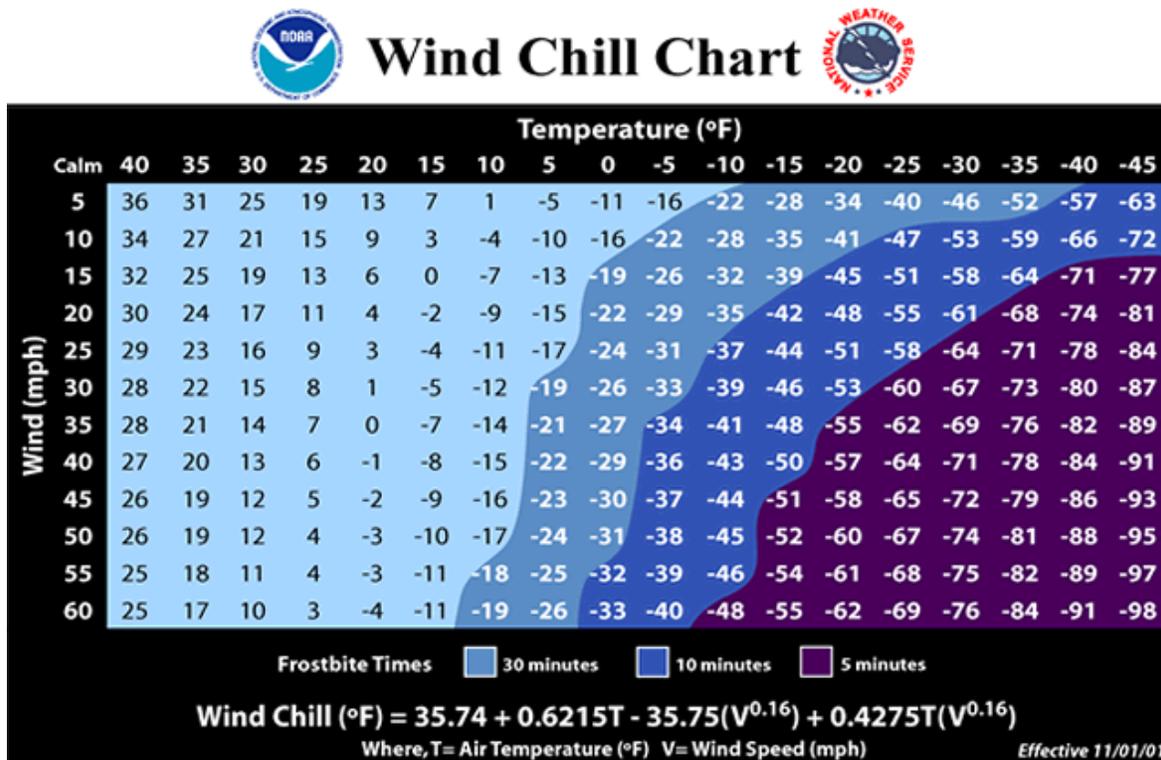
Affected Locations

Every county and municipality in the Division F Region planning area is vulnerable to winter storm activity. The degree at which this hazard impacts each jurisdiction varies. While winter storms are considered areawide hazards, information will be provided for individual communities, as available, to provide a clearer depiction of winter weather impacts at the local level.

Hazard [Extent]

Extreme cold air comes every winter in at least part of the country and affects millions of people across the United States. The arctic air, together with brisk winds, can lead to dangerously cold wind chill values. One method to measure the extent of winter storm activity is by using the Wind Chill Temperature (WCT) index. According to the NWS, this chart uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter winds and freezing temperatures. In fact, the WCT is used to calculate the amount of time a person can withstand certain extreme cold before frostbite sets in, as depicted below in Figure 4.60.

Figure 4.60 | Wind Chill Chart – National Weather Service



Previous Occurrences

Winter storms are considered areawide hazards across the region. While data is supplied at the county level, previous occurrences and resulting difficulties of these incidents may reflect similar occurrences at the community level. Additionally, it is important to note that the NOAA Storm Events Database began collecting winter weather data in 1996. Thus, information provided in this hazard profile omits significant incidents before this year, except the Blizzard of 1993, which is used as an example to describe localized winter weather conditions later in the profile.

Section 4 | Hazard Profiles

4.9 Winter Storms / Winter Weather

Table 4.61 | Division F Winter Storm Activity by County (1996 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
BLOUNT COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	33	0 / 0	\$1,001,000 / \$750,000
	Cold / Wind Chill	3	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	1	0 / 0	\$0 / \$0
	Frost / Freeze	2	0 / 0	\$0 / \$0
	Heavy Snow	5	0 / 0	\$0 / \$0
	Ice Storm	3	0 / 0	\$0 / \$710,000
	Winter Storm	6	0 / 0	\$1,000 / \$40,000
	Winter Weather	13	0 / 0	\$0 / \$0
Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
CHEROKEE COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	32	0 / 0	\$1,001,000 / \$367,000
	Cold / Wind Chill	3	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	1	0 / 0	\$0 / \$0
	Frost / Freeze	2	0 / 0	\$0 / \$0
	Heavy Snow	4	0 / 0	\$0 / \$0
	Ice Storm	4	0 / 0	\$0 / \$334,000
	Winter Storm	10	0 / 0	\$1,000 / \$33,000
	Winter Weather	8	0 / 0	\$0 / \$0

Cold Front – Winter 1996

Extreme cold weather set new record lows across much of Alabama. New records, set over the course of three days, included: March 7 | Huntsville **22°**; March 8 | Anniston **21°**, Birmingham **18°**, Huntsville **15°**, Montgomery **24°**, and Tuscaloosa **21°**; March 9 | Anniston **18°**, Birmingham **15°**, Huntsville **15°**, Montgomery **20°**, and Tuscaloosa **16°**; and March 10 | Huntsville **18°** and Tuscaloosa **23°**. An AL Extension horticulturist cited that high temperatures in the 60s and 70s were interrupted by a cold snap that dropped temperatures into the teens. That warm weather caused trees to become more active, leaving buds more susceptible to damage. Eventually, the cold snap would effectively destroy the State’s peach crop that year.

Section 4 | Hazard Profiles

4.9 Winter Storms / Winter Weather

Table 4.61 | Division F Winter Storm Activity by County (1996 - 2020) | Continued

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
CULLMAN COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	81	0 / 0	\$1,001,000 / \$2,066,100
	Cold / Wind Chill	8	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	1	0 / 0	\$0 / \$0
	Freezing Fog	3	0 / 0	\$0 / \$0
	Frost / Freeze	32	0 / 0	\$0 / \$0
	Heavy Snow	8	0 / 0	\$0 / \$100
	Ice Storm	2	0 / 0	\$0 / \$2,000,000
	Sleet	1	0 / 0	\$0 / \$0
	Winter Storm	8	0 / 0	\$1,000 / \$66,000
	Winter Weather	18	0 / 0	\$0 / \$0

In December 1998, a winter storm brought a mixture of freezing rain, sleet, and rain to the northern half of Alabama. The precipitation began in a narrow band across Fayette, Walker, Cullman, and Marshall Counties. The northwestern quarter of the state saw temperatures at or below freezing for most of the event. Numerous roads were closed, and several multiple-vehicle and single-vehicle accidents occurred due to icy roads.

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
DEKALB COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	104	0 / 0	\$1,001,000 / \$1,358,000
	Cold / Wind Chill	7	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	2	0 / 0	\$0 / \$0
	Freezing Fog	1	0 / 0	\$0 / \$0
	Frost / Freeze	35	0 / 0	\$0 / \$0
	Heavy Snow	11	0 / 0	\$0 / \$0
	Ice Storm	7	0 / 0	\$0 / \$1,304,000
	Winter Storm	11	0 / 0	\$1,000 / \$54,000
	Winter Weather	30	0 / 0	\$0 / \$0

Section 4 | Hazard Profiles

4.9 Winter Storms / Winter Weather

Table 4.61 | Division F Winter Storm Activity by County (1996 - 2020) | Continued

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
ETOWAH COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	31	0 / 0	\$1,001,000 / \$70,000
	Cold / Wind Chill	3	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	1	0 / 0	\$0 / \$0
	Frost / Freeze	2	0 / 0	\$0 / \$0
	Heavy Snow	4	0 / 0	\$0 / \$0
	Ice Storm	2	0 / 0	\$0 / \$26,000
	Winter Storm	12	0 / 0	\$1,000 / \$44,000
	Winter Weather	7	0 / 0	\$0 / \$0

January 2005 | A winter storm brought a mixture of freezing rain, sleet, and rain to the northern half of Alabama. Ice accumulations up to one quarter inch occurred briefly during the overnight and early morning hours. These accumulations were generally confined to treetops, bridges, other elevated surfaces, and higher elevations. Western Etowah County reported downed trees. This event caused property damages of **\$20,000**.

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
JACKSON COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	106	0 / 0	\$1,001,000 / \$2,140,000
	Cold / Wind Chill	9	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	2	0 / 0	\$0 / \$0
	Freezing Fog	2	0 / 0	\$0 / \$0
	Frost / Freeze	35	0 / 0	\$0 / \$0
	Heavy Snow	9	0 / 0	\$0 / \$0
	Ice Storm	5	0 / 0	\$0 / \$2,086,000
	Winter Storm	11	0 / 0	\$1,000 / \$54,000
	Winter Weather	32	0 / 0	\$0 / \$0

Jackson County has sustained the most damage from ice storms out of any county in the Division F Region.

Section 4 | Hazard Profiles

4.9 Winter Storms / Winter Weather

Table 4.61 | Division F Winter Storm Activity by County (1996 - 2020) | Continued

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
LIMESTONE COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	84	0 / 0	\$1,001,000 / \$1,262,000
	Cold / Wind Chill	8	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	1	0 / 0	\$0 / \$0
	Freezing Fog	1	0 / 0	\$0 / \$0
	Frost / Freeze	30	0 / 0	\$0 / \$0
	Heavy Snow	6	0 / 0	\$0 / \$0
	Ice Storm	3	0 / 0	\$0 / \$1,200,000
	Winter Storm	12	0 / 0	\$1,000 / \$62,000
	Winter Weather	23	0 / 0	\$0 / \$0
Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
MADISON COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	144	0 / 1	\$1,001,000 / \$1,566,000
	Cold / Wind Chill	23	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	23	0 / 0	\$0 / \$0
	Freezing Fog	4	0 / 0	\$0 / \$0
	Frost / Freeze	32	0 / 0	\$0 / \$0
	Heavy Snow	9	0 / 0	\$0 / \$0
	Ice Storm	5	0 / 1	\$0 / \$1,500,000
	Winter Storm	12	0 / 0	\$1,000 / \$66,000
	Winter Weather	36	0 / 0	\$0 / \$0

4.9 Winter Storms / Winter Weather

Table 4.61 | Division F Winter Storm Activity by County (1996 - 2020) | Continued

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
MORGAN COUNTY COUNTYWIDE / ZONE	Winter Storms / Winter Weather	88	0 / 0	\$1,001,000 / \$1,125,000
	Cold / Wind Chill	9	0 / 0	\$1,000,000 / \$0
	Extreme Cold / Wind Chill	1	0 / 0	\$0 / \$0
	Freezing Fog	2	0 / 0	\$0 / \$0
	Frost / Freeze	26	0 / 0	\$0 / \$0
	Heavy Snow	9	0 / 0	\$0 / \$0
	Ice Storm	3	0 / 0	\$0 / \$1,000,000
	Sleet	1	0 / 0	\$0 / \$0
	Winter Storm	11	0 / 0	\$1,000 / \$125,000
	Winter Weather	25	0 / 0	\$0 / \$0

Blizzard of March 12-14, 1993

March 12-14, 1993 | The North American blizzard that impacted north Alabama and southern middle Tennessee produced heavy snowfall and extreme societal impacts across the Tennessee Valley. Several snowfall records were set across Alabama and Tennessee from this event. This blizzard was also referred to as the “Storm of the Century” and/or the “1993 Superstorm” due to its large scale and widespread record-breaking snowfall it produced from the Northern Gulf Coast of Alabama and Florida, the chain of the Appalachian Mountains, and into the Northeast and New England. At least **14** persons died in southern middle Tennessee and north Alabama, all due to storm exposure, and damage estimates in 1993 dollars exceeded **\$100 million**. Of the **14** deaths, six people died at home. The weight of the snow combined with wind gusts in excess of **50** mph knocked out power, collapsed numerous roofs, and downed thousands of trees across the area.

At the height of the storm, over **400,000** residences were without electricity. In some locations, roads remained impassable for nearly a week, hampering emergency and relief efforts. Snow amounts ranged from greater than four inches in northwest Alabama to at or greater than a foot or snow in portions of the higher elevations of northeast Alabama and southern middle Tennessee. This powerful storm system would have been a category two on the Saffir-Simpson Hurricane intensity scale due to the strength of the winds. Following the storm, record cold invaded the area. The deep snow cover, combined with clear skies and light winds, dropped temperatures from single digits to near zero on the morning of March 14 across much of north Alabama and southern Tennessee. These unusually cold temperatures were around 35 degrees below normal for mid-March.

Source: National Oceanic and Atmospheric Administration (NOAA) – Super Storm March 1993, NWS Forecast Office Huntsville

4.9 Winter Storms/Winter Weather

Table 4.62 | Total Snowfall During 1993 Blizzard by Most Impacted Jurisdictions

Location	County	Snowfall Total (Inches): 3/12 – 3/14/1993
Valley Head, Alabama	DeKalb	17.7"
Winchester, Tennessee	Franklin (TN)	13"
Albertville, Alabama	Marshall	12"
Fort Payne, Alabama	DeKalb	12"
Scottsboro, Alabama	Jackson	12"
Hanceville, Alabama	Cullman	11"
Cullman, Alabama	Cullman	10"
Guntersville, Alabama	Marshall	9"
Moulton, Alabama	Lawrence	8.3"
Decatur, Alabama	Limestone/Morgan	8"
Huntsville, Alabama	Limestone/Madison/Morgan	7.3"
Belle Mina, Alabama	Limestone	7"
Athens, Alabama	Limestone	7"
Fayetteville, Tennessee	Lincoln (TN)	6"
Muscle Shoals, Alabama	Colbert	4.6"

Source: The National Oceanic and Atmospheric Administration (NOAA).

In addition to the communities listed above, the following Division F communities also reported record snowfall during the 1993 Super Storm: Walnut Grove (Etowah) – 20" and Oneonta (Blount) – 16".

Source: "The Blizzard of '93 covered all 67 Alabama counties with snow" – AL.com

Section 4 | Hazard Profiles

4.9 Winter Storms/Winter Weather

Hazard [Impact]

The National Oceanic and Atmospheric Administration (NOAA) documents winter weather events separately. For the purposes of reporting previous occurrences of 'winter weather activity' throughout the region, past incidents are combined into the 'winter storm/ winter weather' category. Table 4.63 breaks this activity by county from 1996 to early 2020. According to NOAA data, **703** incidents of winter weather activity have occurred in the Division F Region since 1996. This indicates an annual estimate of **29** winter weather events over the last **24** years.

Table 4.63 | Division F Winter Storm Incidents (1996 - 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Blount	Winter Storm / Winter Weather	33	0 / 0	\$1,001,000 / \$750,000
Cherokee	Winter Storm / Winter Weather	32	0 / 0	\$1,001,000 / \$367,000
Cullman	Winter Storm / Winter Weather	81	0 / 0	\$1,001,000 / \$2,066,100
DeKalb	Winter Storm / Winter Weather	104	0 / 0	\$1,001,000 / \$1,358,000
Etowah	Winter Storm / Winter Weather	31	0 / 0	\$1,001,000 / \$70,000
Jackson	Winter Storm / Winter Weather	106	0 / 0	\$1,001,000 / \$2,140,000
Limestone	Winter Storm / Winter Weather	84	0 / 0	\$1,001,000 / \$1,262,000
Madison	Winter Storm / Winter Weather	144	0 / 1	\$1,001,000 / \$1,566,000
Morgan	Winter Storm / Winter Weather	88	0 / 0	\$1,001,000 / \$1,125,000
Total Winter Weather Events:		703	0 / 1	\$9,009,000 / \$10,704,100

Source: The National Oceanic and Atmospheric Administration (NOAA) Storm Events Database.

Section 4 | Hazard Profiles

4.9 Winter Storms/Winter Weather

Hazard Impact by Division F Region County

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Blount	Winter Storm / Winter Weather	33	0 / 0	\$1,001,000 / \$750,000

BLOUNT COUNTY | According to NOAA data from 1996 to 2000, Blount County experienced **seven** winter weather-related storms. This period is also when this jurisdiction suffered the most damage financially. Ice and winter storms specifically caused **\$725,000** in property damages; cold/wind chill and a winter storm caused **\$1,001,000**. Between 2000 and 2010, **13** storms occurred with only **\$25,000** in damages occurring during that timeframe. Since 2010, **13** events occurred with no reported crop or property damages. In most cases, winter storm events resulted in record breaking low temperatures, an increase in vehicular accidents due to iced over roads, and thick ice accumulations that damaged trees and power lines. While winter weather activity is the most common hazard to occur in Blount County, it has been one of the least financially impactful hazards to the area.

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Cherokee	Winter Storm / Winter Weather	32	0 / 0	\$1,001,000 / \$367,000

CHEROKEE COUNTY | From 1996 to 2000, Cherokee County experienced **eight** winter weather-related storms. Cold/wind chill caused **\$1,000,000** in crop damage; ice and winter storms combined caused **\$32,000** in property damage and **\$1,000** in crop damage. Between 2000 and 2010, **14** events occurred, resulting in **\$335,000** in property damage and no reported crop damage. Since 2010, **16** events have impacted this jurisdiction, none of which are reported to have caused crop or property damage. Power outages, damaged/downed trees, record low temperatures, and ice accumulations on roadways, bridges and other elevated surfaces were cited in multiple winter storm incidents across the area.

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Cullman	Winter Storm / Winter Weather	81	0 / 0	\$1,001,000 / \$2,066,100

CULLMAN COUNTY | Cullman County experienced **eight** winter-related storms from 1996 to 2000. Cold/wind chill caused **\$1,001,000** in crop damage, however, winter storms by far have caused the most significant damage to this jurisdiction. The most significant event to occur before 2000 happened in 1998 – an ice storm composed of freezing rain, sleet, and rain swept across the northern half of the state. Cullman County was noted as one of the most impacted; an estimated **\$2,000,000** in property damages ensued. Numerous trees were down across the area and significant power outages transpired as a result of this storm. Several roadways were also closed due to ice accumulations.

Section 4 | Hazard Profiles

4.9 Winter Storms/Winter Weather

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
DeKalb	Winter Storm / Winter Weather	104	0 / 0	\$1,001,000 / \$1,358,000

DEKALB COUNTY | From 1996 to 2000, DeKalb County experienced **eleven** winter weather-related storms. Crop damages totaled **\$1,001,000** and were the result of cold/wind chill and winter storm activity. Property damages during this time period amounted to **\$53,000**. Between 2000 and 2010, **18** incidents occurred – these events caused an estimated **\$1,305,000** in property damages. Two ice storms, the most destructive events to take place during this timeframe, took place within one week of each other. Since 2010, **75** winter weather-related events occurred in DeKalb County, with **15** events occurring in 2018 alone. There were no reports of property or crop damage for any of these events.

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Etowah	Winter Storm / Winter Weather	31	0 / 0	\$1,001,000 / \$70,000

ETOWAH COUNTY | Etowah County experienced **eight** winter weather incidents before 2000. The two most devastating events for local crops both occurred in Winter 1996, causing **\$1,001,000** in total damages. Winter weather activity ranged from extreme cold/wind chill incidents to full on winter storms between 2000 and 2010, which combined caused **\$36,000** in property damages. Since 2010, **15** winter weather incidents have occurred in Etowah County, none of which have registered significant damage in the area. Typical issues that accompany winter weather in this jurisdiction include hazardous iced-over roadways, increased safety risks for motorists, abnormal low temperatures, and above-average snowfall.

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Jackson	Winter Storm / Winter Weather	106	0 / 0	\$1,001,000 / \$2,140,000

JACKSON COUNTY | From 1996 to 2000, Jackson County experienced **eleven** winter weather-related events. Cold/wind chill activity and winter storm activity caused **\$1,001,000** in crop damage during this timeframe. Frost/freeze incidents have been the most frequent throughout the 24-year study period in this jurisdiction. Total damages of events before 2000 equated to **\$55,000**. Between 2000 and 2010, **29** winter weather events took place across the County – property damages totaled **\$2,085,000**. Since 2010, **65** winter weather events have occurred, the majority of which are designated as ‘winter weather.’ None of these incidents, however, reported any crop or property damages. Communities in the higher elevations of Jackson County are the most susceptible to significant snowfall accumulations. Widespread impacts of winter weather in this jurisdiction include low temperatures and frost and ice development along local roadways.

Section 4 | Hazard Profiles

4.9 Winter Storms/Winter Weather

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Limestone	Winter Storm / Winter Weather	84	0 / 0	\$1,001,000 / \$1,262,000

LIMESTONE COUNTY | From 1996 to 2000, Limestone County experienced **ten** winter weather-related storms. Crop damages totaled **\$1,001,000** and were the result of cold/wind chill and winter storm activity. Property damages during this time period amounted to **\$1,246,000**. Between 2000 and 2010, **12** incidents occurred – these events caused an estimated **\$16,000** in property damages. There were no incidents during this time period that reported crop damages. Since 2010, **62** winter weather-related events occurred in Limestone County, with **11** events occurring in both 2018 and 2019. There were no reports of property or crop damage for either of the 62 noted incidents.

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Madison	Winter Storm / Winter Weather	144	0 / 1	\$1,001,000 / \$1,566,000

MADISON COUNTY | Madison County experienced **24** winter weather incidents from 1996 to 2000. The two most devastating events for local crops and properties occurred in Winter 1996 and Winter 1998. The Winter 1996 event caused **\$1,001,000** in crop damage and the Winter 1998 event caused **\$1,500,000** in property damage. Winter weather activity ranged from extreme cold/wind chill incidents to full on winter storms between 2000 and 2010, which, combined, caused **\$17,000** in property damages. Since 2010, **78** winter weather incidents have occurred in Madison County, none of which have registered significant damage in the area. Typical issues that accompany winter weather in this jurisdiction include hazardous iced-over roadways, increased safety risks for motorists, abnormal low temperatures, and above-average snowfall.

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Morgan	Winter Storm / Winter Weather	88	0 / 0	\$1,001,000 / \$1,125,000

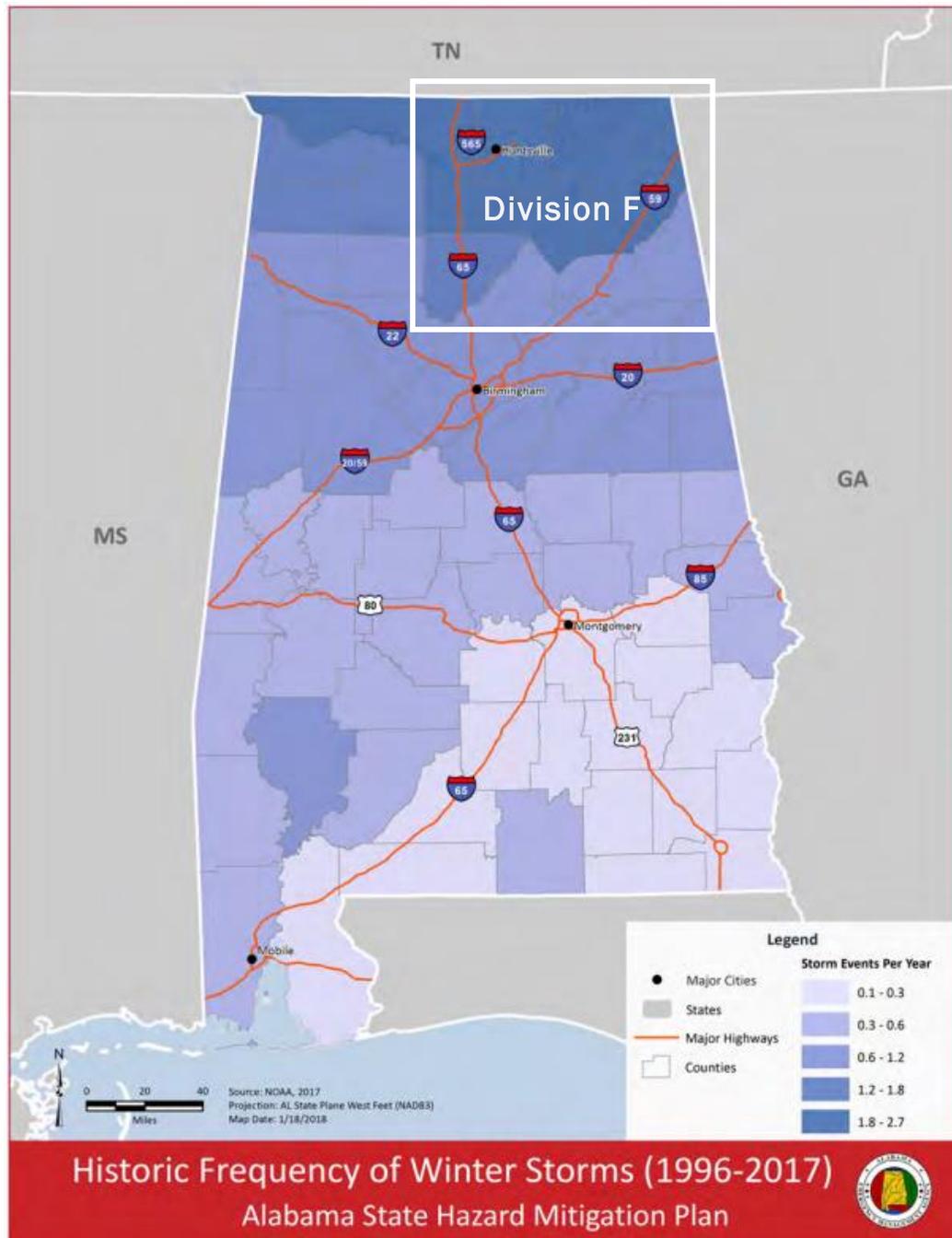
MORGAN COUNTY | From 1996 to 2000, Morgan County experienced **eleven** winter weather-related events. Cold/wind chill activity and winter storm activity caused **\$1,001,000** in crop damage during this timeframe. Frost/freeze incidents have been the most frequent throughout the 24-year study period in this jurisdiction. Total damages of events before 2000 equated to **\$1,009,000**. Between 2000 and 2010, **12** winter weather events took place across the County – property damages totaled **\$16,000**. Since 2010, **75** winter weather events have occurred, the majority of which are designated as ‘winter weather.’ None of these incidents, however, reported any crop or property damages. Widespread impacts of winter weather in this jurisdiction include low temperatures and frost and ice development along local roadways.

4.9 Winter Storms/Winter Weather

Probability of Future Events

Winter storms/winter weather will, to some extent, continue to annually impact the Division F Region. Historical records of this hazard don't necessarily determine future activity, and frequency of these incidents is relatively unpredictable. However, the Region's location, illustrated in Figure 4.64 below, ensures some form of winter storm activity every winter.

Figure 4.64 | Historic Frequency of Winter Storms in Alabama (1996 -2017)



Hazard Background – Wildfires

In response to increasing demand for more accurate and up-to-date wildfire risk information across the South, the Southern Group of State Foresters (SGSF) embarked on a wildfire risk assessment for the entire South, completing the project in 2005. The goal of the Southern Wildfire Risk Assessment (SWRA) project was to provide a consistent, comparable set of scientific results to be used as a foundation for wildfire mitigation and prevention planning in the Southern states.

Results of the SWRA can be used to help prioritize areas in states where tactical analyses, community interaction and education, or mitigation treatments might be necessary to reduce risk from wildfires. In addition, the information provided in the assessment can be used to support several different key priorities. Table 4.65 lists these priorities as described by the SGSF.

Table 4.65 | Key Priorities Supported by Wildfire Assessment Analyses

Identify areas that are most prone to wildfire	Define wildland communities and identify the risk to those communities
Identify areas that may require additional tactical planning, specifically related to mitigation projects and Community Wildfire Protection Planning	Increase communication with local residents and the public to address community priorities and needs
Provide the information necessary to justify resource, budget and funding requests	Plan for response and suppression resource needs
Allow agencies to work together to better define priorities and improve emergency response, particularly across jurisdictional boundaries.	Plan and prioritize hazardous fuel treatment programs

Source: Southern Group of State Foresters | Wildfire Risk Assessment Portal

Affected Locations

Wildfires have occurred in every county in the Division F Region planning area. However, the degree that wildfires impacted each county has varied throughout the last thirteen (13) years. It is unclear whether every community in the region has been affected by wildfires as available data on this hazard is collected at the county level. Wildfires are not necessarily designated area specific hazards as they are uncontrolled blazes fueled by weather, wind, and dry underbrush - they can destroy everything in their path. Thus, if an incident occurs in one community, depending on the vicinity of surrounding communities, wildfires can quickly become multi-area hazards.

Hazard [Extent]

Wildfire activity intensity can be measured through the Characteristic Fire Intensity Scale (FIS). The FIS specifically identifies areas where significant fuel hazards and associated dangerous fire behavior potential exists based on a weighed average of four percentile weather categories. Similar to the Richter scale for earthquakes, the FIS provides a standard scale to measure potential wildfire intensity.

The fire intensity scale is a fire behavior output, which is influenced by three environmental factors – fuels, weather, and topography. Weather is by far the most dynamic variable as it changes frequently. To account for this variability, four percentile weather categories were created from historical weather observations to represent low, moderate, high, and extreme weather days for each weather influence zone in the South. A weather influence zone is an area where, for analysis purposes, the weather on any given day is considered uniform.

Figure 4.66 | Division F Region Characteristic Fire Intensity by Acres

Class	Acres	Percent
Non-Burnable	748,628	18.1 %
1 Lowest Intensity	32,997	0.8 %
1.5	643,951	15.5 %
2 Low	624,125	15.1 %
2.5	1,506,958	36.3 %
3 Moderate	208,474	5.0 %
3.5	211,339	5.1 %
4 High	170,080	4.1 %
4.5	2	0.0 %
5 Highest Intensity	0	0.0 %
Total	4,146,554	100.0 %

Source: Southern Wildfire Risk Assessment Division F Region Summary Report

In addition to a fire’s intensity, wildfire severity is also defined by size class and by the National Fire Danger Rating (NFDR) System. The NFDR system allows fire managers to express the level of fire danger in an area (and the need for fire protection) in terms of qualitative or numeric indices. Size classes range from Class A (1/4 acre or less burned) to Class G (5,000 acres or more burned). Table 4.67 provides an abbreviated explanation of the danger levels established by the National Fire Danger Rating System (as explained through the Southern Wildfire Risk Assessment Summary Project Area Report). Table 4. 68 describes the size classes of wildfire incidents through the number of acres impacted as defined by the National Wildfire Coordinating Group.

Table 4.67 | National Fire Danger Rating System (USFS)

Fire Scale Rating and Color Code	Description
Class 1, Very Low	Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
Class 2, Low	Small flames, usually less than two feet long; small amount of very short-range spotting possible. Fires are typically easy to suppress by trained firefighters with basic training and non-specialized equipment.
Class 3, Moderate	Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.
Class 4, High	Large flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.
Class 5, Very High	Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

Source: Southern Wildfire Risk Assessment Division F Region Summary Report

Table 4.68 | Size Class of Fire

Size Class	Class Description	Size Class	Class Description
Class A	One-fourth acre or less	Class E	300 acres or more, < 1,000 acres
Class B	More than ¼ acre, < 10 acres	Class F	1,000 acres or more, < 5,000 acres
Class C	10 acres or more, < 100 acres	Class G	5,000 acres or more
Class D	100 acres or more, < 300 acres		

Source: National Wildfire Coordinating Group - IOSC

Previous Occurrences

The Alabama Forestry Commission (AFC) documents wildfire occurrences across the state dating back to 2007. While each Division F county has extensive histories of wildfire activity, this hazard did not have the same impact across each jurisdiction. Table 4.69 below provides the number of wildfire events and the total number of acres affected by county. Between 2007 and 2020, a total of **3,159** designated wildfires occurred throughout the nine-county region.

Table 4.69 Division F Wildfire Incidents by County Jurisdictions (2007 - 2020)

County	Hazard	# of Events	Total Affected Acres in Region	Percentage of Total Acres Affected
Blount	Wildfire	343	4,774.30	8.53%
Cherokee	Wildfire	604	21,141.50	37.77%
Cullman	Wildfire	353	5,382.65	9.62%
DeKalb	Wildfire	777	10,685.23	19.09%
Etowah	Wildfire	266	4,349.01	7.77%
Jackson	Wildfire	309	6,386.48	11.41%
Limestone	Wildfire	191	1,036.40	1.85%
Madison	Wildfire	102	407.50	0.73%
Morgan	Wildfire	214	1,806.80	3.23%
Total Wildfire Events:		3,159	55,969.87	100%

Source: Alabama Forestry Commission Current Wildfire Totals (2007 – 2020)

Wildfires in AEMA Division F

Alabama Forestry Commission (AFC) data states that the Division F region has experienced **3,159** wildfires from January 2007 to December 2020. This equates to an estimated **243** incidents per year over the last 13 years. Wildfires have been the most prevalent in DeKalb County, with activity in Cherokee County following behind. However, wildfires activity has been more detrimental to Cherokee County. Over **21,000** acres were burned in this jurisdiction, an estimated **37.8%** of the total impacted acreage in the region. As of December 2020, a total of **55,970** acres in the Division F region has been afflicted by wildfires.

Wildfires in Blount County, Alabama

Blount County experienced **343** wildfires from January 2007 to December 2020. This equates to an estimated **26** incidents per year over the last 13 years. The two most significant wildfires for this jurisdiction both occurred in November 2016 – **450** acres were scorched on November 23rd and **357** acres were scorched on November 7th. According to U.S. Drought Monitor data, these incidents coincide with reported drought activity for that month. Unfortunately, it is not explicitly clear whether the D2-D4 conditions were directly responsible for or the result of these two events.

Wildfires in Cherokee County, Alabama

Cherokee County experienced **607** wildfires from January 2007 to December 2020. This equates to an estimated **47** incidents per year over the last 13 years. The most significant wildfire to afflict this jurisdiction occurred in March 2007, where **3,000** acres burned over the course of three days. According to AFC data, this appears to be the first known Class F fire to occur in this jurisdiction. The second incident with this designation occurred four years later in February 2011, where **2,332** acres were damaged by wildfire.

Wildfires in Cullman County, Alabama

Cullman County experienced **353** wildfires from January 2007 to December 2020. This equates to an estimated **27** incidents per year over the last 13 years. The most significant wildfire to afflict this jurisdiction occurred in July 2012, where **400** acres burned over the course of roughly eight hours. This incident is one of seven recorded Class D fires in the County's hazard history according to the Forestry Commission.

Wildfires in DeKalb County, Alabama

DeKalb County experienced **777** wildfires from January 2007 to December 2020. This equates to an estimated **60** incidents per year over the last 13 years. The most significant wildfire to afflict this jurisdiction occurred in November 2016, where **2,096** acres burned for several days. The fire was reported on November 9th, contained on November 25th, and controlled on December 5th. This event is the only Class F incident in the jurisdiction's history. Three Class D fires and four Class E wildfires have also caused substantial damage throughout the county – these fires ranged from 150 acres in size to 812 acres.

Wildfires in Etowah County, Alabama

Etowah County experienced **266** wildfires from January 2007 to December 2020. This equates to an estimated **20** incidents per year over the last 13 years. The most significant wildfire to afflict this jurisdiction occurred in March 2007, where **400** acres were scorched within 24 hours. This is the only Class E fire reported by the Alabama Forestry Commission during the study period. All other reported substantial wildfire events impacted 100 to 200 acres, thus placing their designation in the Class D category (100 acres or more, but less than 300 acres).

Wildfires in Jackson County, Alabama

Jackson County experienced **309** wildfires from January 2007 to December 2020. This equates to an estimated **24** incidents per year over the last 13 years. The most significant wildfire to afflict this jurisdiction occurred in May 2007, where **1,010** acres were scorched within 24 hours. This is the only Class F fire reported by the Alabama Forestry Commission during the study period. Two Class E fires, occurring in March 2007 and April 2010, scorched 400 acres and 510 acres, respectively. All other reported substantial wildfire events impacted 150 to 250 acres, thus placing their designation in the Class D category.

Wildfires in Limestone County, Alabama

Limestone County experienced **191** wildfires from January 2007 to December 2020. This equates to an estimated **15** incidents per year over the last 13 years. The most significant wildfires to occur in this jurisdiction all fall within the Class C category. All other activities can be categorized as Class A or Class B events.

Wildfires in Madison County, Alabama

Madison County experienced **102** wildfires from January 2007 to December 2020. This equates to an estimated **8** incidents per year over the last 13 years. Madison County has the lowest number of wildfire incidents in the Division F region. Moreover, wildfire events in this jurisdiction have fallen in either the Class A or Class B categories.

Wildfires in Morgan County, Alabama

Morgan County experienced **214** wildfires from January 2007 to December 2020. This equates to an estimated **16** incidents per year over the last 13 years. The most significant wildfire to afflict this jurisdiction was a Class D event that scorched 100 acres. Outside of this incident, there have been a series of Class C events to take place throughout the 13-year study period.

Hazard [Impact]

The Wildland Urban Interface (WUI) was used to provide an accurate depiction of wildfire impact throughout the region. The WUI is a rating of the potential impact of a wildfire on people and their homes. The key input, WUI, reflects housing density (houses per acre) consistent with Federal Register National standards. The location of people living in the Wildland Urban Interface and rural areas is key information for defining potential wildfire impacts to people and homes.

To calculate the WUI Risk Rating, the WUI housing density data was combined with Flame Length data and response functions were defined to represent potential impacts. The response functions were defined by a team of experts based on values defined by the SWRA Update Project technical team. Combining flame length with the WUI housing density data yields the greatest potential impact to homes and citizens.

Fire intensity data is modeled to incorporate penetration into urban fringe areas so that outputs better reflect real world conditions for fire spread and impact in fringe urban interface areas. With this enhancement, houses in urban areas adjacent to wildland fuels are incorporated into the WUI risk modeling. Figure 4.70 categorizes the region's acreage from the potentially most impacted class to the least impacted class. Table 4.71 further projects the number of currently endangered acres according to the Southern Wildfire Risk Assessment Summary Report.

Figure 4.70 | Division F Region Wildland Urban Interface (WUI) Risk Rating

Class	Acres	Percent
-9 Major Impacts	152	0.0 %
-8	11,412	0.6 %
-7	44,060	2.3 %
-6	47,947	2.5 %
-5 Moderate	596,995	31.2 %
-4	354,728	18.6 %
-3	129,444	6.8 %
-2	612,876	32.1 %
-1 Minor Impacts	114,576	6.0 %
Total	1,912,190	100.0 %

Source: Southern Wildfire Risk Assessment Division F Region Summary Report – Generated 03/22/21

Table 4.71 | WUI Projected Acreage Impact by Division F County

County	Impacted Acres			Total Impacted Acreage
	Minor (-1 to -3)	Moderate (-4 to -6)	Major (-7 to -9)	
Blount	102,290	112,140	7,893	222,323
Cherokee	55,082	68,009	10,309	133,400
Cullman	119,197	135,200	5,502	259,899
DeKalb	143,124	133,904	6,947	283,975
Etowah	83,134	111,667	8,266	203,067
Jackson	117,906	87,795	5,172	210,873
Limestone	75,445	84,815	1,771	162,031
Madison	68,001	158,042	5,963	232,006
Morgan	92,752	106,906	3,812	203,470
Total Impacted Acreage	856,931	998,478	55,635	1,911,044

Source: Southern Wildfire Risk Assessment County Summary Reports– Generated 07/2020 – 04/2021

4.10 Wildfires

The Southern Wildfire Risk Assessment Report for the Division F Region estimates that over **1.9 million acres** throughout the entire planning area will be potentially impacted by a wildfire. While **856,931 acres (44.8%)** are estimated to experience “minor” impacts, **55.2%** of the total impacted acreage is at risk of experiencing impacts classified as “moderate” or “major.” While these figures alone may convey an immediate need to implement wildfire mitigation measures, overlaying this information with the estimated population within the WUI (845,240 people) provides a sharper picture of areas that require more extensive mitigation measures than others. Area specific vulnerability descriptions throughout the region occurs in the Jurisdictional Vulnerability section of this regional hazard mitigation document. Maps depicting county and community risk to wildfires can be found in the Appendices.

Probability of Future Events

The threat of wildfires is ongoing throughout every county in the planning area. Fire behavior is the way a fire reacts to the environmental influences of fuels, weather, or topography. The probability of future wildfire varies given factors such as a community’s topography, existing surface and canopy fuels, and susceptibility to hazards such as drought or lightning. Probability of wildfire events for each county and community will be extensively discussed in the Vulnerability section of this plan.

Hazard Background – Hailstorms

Hailstorms are storms of spherical balls of ice. Hail is a product of thunderstorms or intense showers. It is generally white and translucent, consisting of liquid or snow particles encased with layers of ice. Hail is formed within the high portion of a well-organized thunderstorm. When hailstorms become too heavy to be caught in an updraft and carried back into the clouds of a thunderstorm (hailstones can be caught in numerous updrafts, adding a coating of ice to the original frozen droplets each time), they then fall as hail, and a hailstorm occurs.

According to the State of Alabama Hazard Mitigation Plan, hailstorms occur most frequently in the late spring and early summer when the jet stream moves northward across the Great Plains. This creates steep temperature gradients from the surface to upper air masses, producing the strong updrafts required for hail formation. While thunderstorms are most common along the Gulf Coast, thunderstorms that produce hail are more common in the Great Plains, where the temperature contrasts associated with the jet stream are greatest.

[Source: Appendix B: Glossary of Terms | Using HAZUS-MH for Risk Assessment, How-To Guide. FEMA 433. August 2004.](#)

Affected Locations

Hailstorms are recognized by every county in the planning area as areawide hazards. Each county in the region has an extensive history of hailstorm activity, with most having incidents dating as far back as the 1950s and 1960s. Throughout these previous occurrences, there is evidence of certain jurisdictions experiencing more events than others. For example, areas more prone to thunderstorm activity may have an increased risk of hailstorms occurring. Moreover, given the scale of the hailstorm, and the size of the corresponding hail, this hazard is fully capable of producing effects that cover multiple areas.

Hazard [Extent]

Hailstorm activity is measured by the Torro Hailstorm Intensity Scale. This scale was introduced by Jonathan Webb of Oxford, England, in 1986 as a means of categorizing hailstorms through the size of hail. The name derives from the private and mostly British research body named the Tornado and Storm Research Organization (TORRO). Table 4.72 categorizes hailstorm intensity and damage impact through hail size comparison.

Table 4.72 | Combined NOAA/TORRO Hailstorm Intensity Scales

Intensity	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	Lime or 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	4.0+	Softball and Up	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Source: Natural Hazard Extent Scales | North Central Texas Council of Governments (NCTCOG)

Previous Occurrences

The National Oceanic and Atmospheric Administration (NOAA) extensively documents hail activity for each county in the region. Table 4.73 breaks down this activity by county from the 1950s to early 2020. According to NOAA data, 1,573 incidents of hailstorms have occurred in the Division F Region since 1968. This indicates an annual estimate of 24.6 hailstorm events per year over the last 64 years.

Table 4.73 | Division F Hailstorm Events by County (1956 – 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Blount	Hail	107	0 / 0	\$26,000 / \$193,000
Cherokee	Hail	107	0 / 0	\$21,000 / \$125,000
Cullman	Hail	237	0 / 0	\$80,000 / \$996,000
DeKalb	Hail	182	0 / 0	\$51,000 / \$456,000
Etowah	Hail	124	0 / 0	\$3,000 / \$131,000
Jackson	Hail	119	0 / 0	\$31,000 / \$238,000
Limestone	Hail	167	0 / 0	\$7,000 / \$75,000
Madison	Hail	360	0 / 0	\$7,000 / \$432,000
Morgan	Hail	170	0 / 0	\$8,000 / \$204,000
Total Hailstorm Events:		1,573	0 / 0	\$234,000 / \$2,850,000

Source: The National Oceanic and Atmospheric Administration (NOAA) Storm Events Database.

Note: The following tables are meant to depict hailstorm events by county jurisdiction. Depending upon the hazard, the NOAA database lists hazardous incident occurrences down to the community level. However, not every jurisdiction is reported as specifically experiencing hailstorm activity. Therefore, communities noted with an (*) are noted as not having individualized storm events according to NOAA data. Hailstorm events for these jurisdictions will thereby align with reported countywide designated events.

Section 4 | Hazard Profiles

4.11 Hail

Blount County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Blount	Hail	107	0 / 0	\$26,000 / \$193,000
Countywide	Hail	12	0 / 0	\$0 / \$4,000
Allgood*	Hail	12*	0 / 0	N/A
Blountsville	Hail	16	0 / 0	\$6,000 / \$9,000
Cleveland	Hail	14	0 / 0	\$7,000 / \$18,000
Hayden	Hail	5	0 / 0	\$1,000 / \$40,000
Highland Lake*	Hail	12*	0 / 0	N/A
Locust Fork	Hail	5	0 / 0	\$5,000 / \$37,000
Nectar	Hail	2	0 / 0	\$4,000 / \$15,000
Oneonta	Hail	20	0 / 0	\$1,000 / \$44,000
Rosa	Hail	1	0 / 0	\$0 / \$0
Snead	Hail	8	0 / 0	\$0 / \$5,000
Susan Moore*	Hail	12*	0 / 0	N/A
Unincorporated	Hail	24	0 / 0	\$2,000 / \$21,000

Cherokee County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Cherokee	Hail	107	0 / 0	\$21,000 / \$125,000
Countywide	Hail	8	0 / 0	\$0 / \$0
Cedar Bluff	Hail	12	0 / 0	\$0 / \$1,000
Centre	Hail	19	0 / 0	\$0 / \$70,000
Collinsville*	Hail	8*	0 / 0	N/A
Gaylesville	Hail	7	0 / 0	\$6,000 / \$18,000
Leesburg	Hail	6	0 / 0	\$0 / \$0
Sand Rock	Hail	6	0 / 0	\$0 / \$16,000
Unincorporated	Hail	49	0 / 0	\$15,000 / \$20,000

Cullman County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Cullman	Hail	237	0 / 0	\$80,000 / \$996,000
Countywide	Hail	27	0 / 0	\$0 / \$0
Baileyton	Hail	7	0 / 0	\$4,000 / \$19,000
Berlin*	Hail	27	0 / 0	N/A
Colony*	Hail	27	0 / 0	N/A
Cullman	Hail	43	0 / 0	\$33,000 / \$842,000
Dodge City*	Hail	27	0 / 0	N/A
Fairview	Hail	13	0 / 0	\$0 / \$7,000
Garden City*	Hail	27	0 / 0	N/A
Good Hope	Hail	9	0 / 0	\$22,000 / \$35,000
Hanceville	Hail	17	0 / 0	\$0 / \$6,000
Holly Pond	Hail	12	0 / 0	\$0 / \$2,000
South Vinemont	Hail	8	0 / 0	\$0 / \$2,000
West Point	Hail	12	0 / 0	\$0 / \$3,000
Unincorporated	Hail	84	0 / 0	\$21,000 / \$80,000

March 2018 Hailstorm – Cullman County

In the early evening of March 19, a line of supercell thunderstorms was moving east by southeast across Lawrence, Morgan, Winston and Cullman Counties when a new storm developed immediately ahead of these storms, moving on a slower northeasterly track. Merging of the new storm with the line of supercells created strong updrafts which allowed hailstones to remain aloft for extended periods of time and continue to grow. When they began to fall, they were, according to the National Weather Service, “the size of baseballs to as big as grapefruits.”

The pathway of the hailstorm began around Good Hope and included the Deer Trace subdivision north of that city, across the interstate from Cullman’s south side. Sweeping eastward into Cullman, the storm affected almost every business along the Cherokee Avenue retail corridor, as well as residential areas to the north and south of the thoroughfare. Hail hit multiple subdivisions before the storm followed Bolte Road out of town on its way toward Welti. The last concentration of large hailstones fell around the Walter community, where Alabama’s current state record hailstone was recovered. Numerous industrial parks and industrial developments suffered extensive damage to roofs and roof-mounted equipment. Multiple sites reported building repair costs of more than \$1 million each.

Source: “March 19, 2018 Hailstorm: 1 year later.” W.C. Man – The Cullman Tribune. March 19, 2019. Accessed June 3, 2021.

Section 4 | Hazard Profiles

4.11 Hail

DeKalb County Hailstorm Events

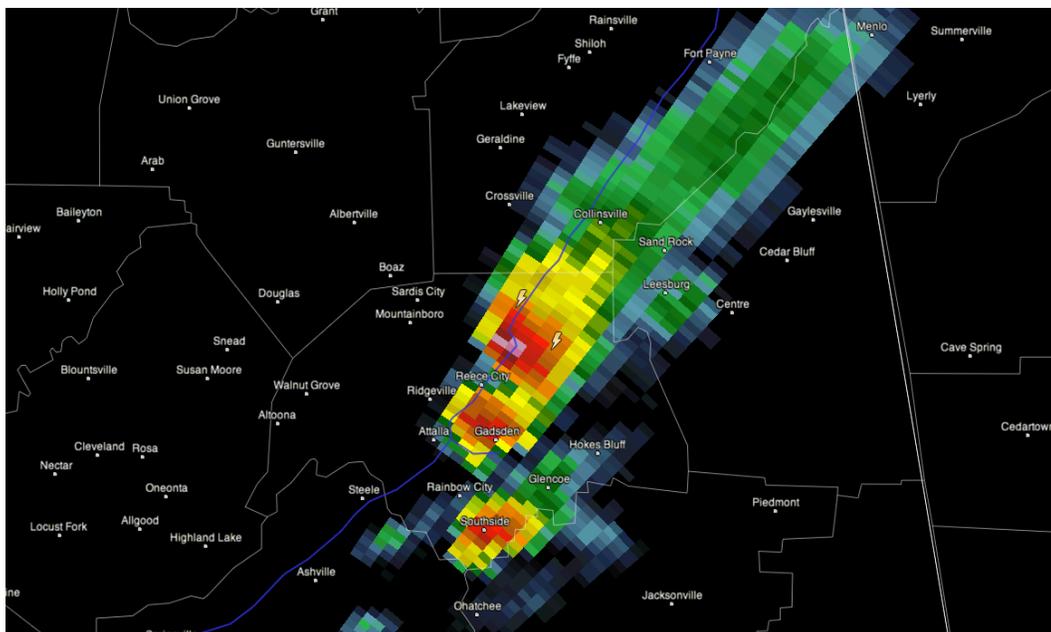
County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
DeKalb	Hail	182	0 / 0	\$51,000 / \$456,000
Countywide	Hail	21	0 / 0	\$0 / \$0
Collinsville	Hail	14	0 / 0	\$0 / \$8,000
Crossville	Hail	6	0 / 0	\$0 / \$0
Fort Payne	Hail	30	0 / 0	\$4,000 / \$82,000
Fyffe	Hail	5	0 / 0	\$0 / \$1,000
Geraldine	Hail	11	0 / 0	\$25,000 / \$62,000
Hammondville	Hail	1	0 / 0	\$0 / \$0
Henagar	Hail	8	0 / 0	\$20,000 / \$75,000
Ider	Hail	6	0 / 0	\$0 / \$12,000
Lakeview*	Hail	21	0 / 0	N/A
Mentone	Hail	5	0 / 0	\$0 / \$20,000
Pine Ridge*	Hail	21	0 / 0	N/A
Powell	Hail	1	0 / 0	\$0 / \$0
Rainsville	Hail	21	0 / 0	\$2,000 / \$144,000
Shiloh*	Hail	21	0 / 0	N/A
Sylvania	Hail	10	0 / 0	\$0 / \$0
Valley Head	Hail	4	0 / 0	\$0 / \$2,000
Unincorporated	Hail	39	0 / 0	\$0 / \$50,000

4.11 Hail

Etowah County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Etowah	Hail	124	0 / 0	\$3,000 / \$131,000
Countywide	Hail	25	0 / 0	\$0 / \$0
Altoona	Hail	2	0 / 0	\$0 / \$0
Attalla	Hail	6	0 / 0	\$2,000 / \$25,000
Gadsden	Hail	20	0 / 0	\$0 / \$17,000
Glencoe	Hail	7	0 / 0	\$0 / \$0
Hokes Bluff	Hail	10	0 / 0	\$1,000 / \$3,000
Rainbow City	Hail	11	0 / 0	\$0 / \$3,000
Reece City	Hail	2	0 / 0	\$0 / \$0
Ridgeville*	Hail	25	0 / 0	N/A
Sardis City	Hail	5	0 / 0	\$0 / \$0
Southside	Hail	3	0 / 0	\$0 / \$5,000
Walnut Grove	Hail	5	0 / 0	\$0 / \$0
Unincorporated	Hail	27	0 / 0	\$0 / \$78,000

Figure 4.73 | Hail Over Etowah County



Source: A strong storm over Etowah County is producing hail as it moves northeast. alabamawx.com. Accessed June 3, 2021

Section 4 | Hazard Profiles

4.11 Hail

Jackson County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Jackson	Hail	119	0 / 0	\$31,000 / \$238,000
Countywide	Hail	11	0 / 0	\$0 / \$0
Bridgeport	Hail	15	0 / 0	\$2,000 / \$7,000
Dutton	Hail	2	0 / 0	\$0 / \$2,000
Hollywood	Hail	3	0 / 0	\$24,000 / \$50,000
Hytov	Hail	1	0 / 0	\$0 / \$0
Langston	Hail	5	0 / 0	\$0 / \$0
Paint Rock*	Hail	11	0 / 0	N/A
Pisgah	Hail	5	0 / 0	\$0 / \$10,000
Pleasant Groves	Hail	3	0 / 0	\$0 / \$0
Scottsboro	Hail	17	0 / 0	\$0 / \$49,000
Section	Hail	7	0 / 0	\$0 / \$75,000
Skyline	Hail	10	0 / 0	\$0 / \$2,000
Stevenson	Hail	5	0 / 0	\$0 / \$0
Woodville	Hail	10	0 / 0	\$0 / \$30,000
Unincorporated	Hail	25	0 / 0	\$5,000 / \$13,000

Limestone County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Limestone	Hail	167	0 / 0	\$7,000 / \$75,000
Countywide	Hail	25	0 / 0	\$0 / \$0
Ardmore	Hail	16	0 / 0	\$0 / \$15,000
Athens	Hail	35	0 / 0	\$7,000 / \$33,000
Elkmont	Hail	16	0 / 0	\$0 / \$5,000
Lester	Hail	2	0 / 0	\$0 / \$0
Mooreville	Hail	1	0 / 0	\$0 / \$0
Unincorporated	Hail	72	0 / 0	\$0 / \$22,000

4.11 Hail

Madison County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Madison	Hail	360	0 / 0	\$7,000 / \$432,000
Countywide	Hail	41	0 / 0	\$0 / \$0
Gurley	Hail	6	0 / 0	\$0 / \$100,000
Huntsville	Hail	72	0 / 0	\$0 / \$58,000
Madison	Hail	29	0 / 0	\$0 / \$75,000
New Hope	Hail	10	0 / 0	\$0 / \$0
Owens Cross Roads	Hail	6	0 / 0	\$0 / \$0
Triana	Hail	1	0 / 0	\$0 / \$0
Unincorporated	Hail	197	0 / 0	\$7,000 / \$199,000

Morgan County Hailstorm Events

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Morgan	Hail	170	0 / 0	\$8,000 / \$204,000
Countywide	Hail	32	0 / 0	\$0 / \$0
Decatur	Hail	23	0 / 0	\$2,000 / \$29,000
Eva	Hail	3	0 / 0	\$0 / \$5,000
Falkville	Hail	9	0 / 0	\$2,000 / \$7,000
Hartselle	Hail	20	0 / 0	\$0 / \$60,000
Priceville	Hail	5	0 / 0	\$0 / \$0
Somerville	Hail	8	0 / 0	\$0 / \$15,000
Unincorporated	Hail	70	0 / 0	\$4,000 / \$88,000

Hazard [Impact]

The NOAA reported **1,573** incidents of hailstorms throughout the Division F region from January 1956 to November 2020. Madison County has experienced the most hailstorm incidents out of any county in the region. However, hailstorm damage has been the most significant in Cullman County, where property damage from this hazard reached nearly **\$1 million**. The following narratives provide brief descriptions of hailstorm impacts by county jurisdiction.

Hailstorms in Blount County, Alabama

Blount County experienced **107** hailstorms over the 64-year study period. This equates to an estimated **two** incidents per year. The City of Oneonta sustained the most property damage during this timeframe, followed by the Towns of Hayden and Locust Fork. Hail sizes spanning from penny-sized to golf ball-sized were reported throughout the County, with dime-sized hail noted as the most common. The most noteworthy event to occur in Blount County occurred on April 20, 1996, where nickel-sized hail was reported at Locust Fork, two miles northeast of Cleveland, and at Oneonta.

Hailstorms in Cherokee County, Alabama

Like Blount County, Cherokee County also experienced **107** hailstorms over the 64-year study period. This equates to an estimated **two** incidents per year. The City of Centre sustained the most property damage during this timeframe; collective damages reported in unincorporated areas of Cherokee County accounted for the second largest damage amount. On May 2, 2003, hail measuring **4.5 inches** in diameter (roughly the size of a softball) fell mostly across rural areas in western and southern Cherokee County and caused **\$65,000** in property damage.

Hailstorms in Cullman County, Alabama

Cullman County has the second highest number of hailstorm incidents in the Division F region. Over the last 64 years, this jurisdiction has experienced **237** hailstorms, which equates to an estimated **four** storms per year. Combined, unincorporated communities in the County experienced the most hail incidents. However, the City of Cullman has been the most impacted jurisdiction with **43** events, **\$33,000** in crop damages, and **\$842,000** in property damages. The most destructive hail event occurred on, May 15, 1995 – softball-sized hail damaged an entire inventory of cars at a local Chevrolet dealership.

*Cullman County stakeholders adjusted this statement during a regionwide review comment period. The most destructive hail event occurred on March 19, 2018; estimated damages totaled over \$30 million. Hail recording during this storm measured a state-record of 5.38 inches in diameter.

Hailstorms in DeKalb County, Alabama

DeKalb County experienced **182** hailstorm events over the 64-year study period. This equates to an estimated **three** events per year. Crop damage in the Town of Geraldine totaled **\$25,000**, the most of any community in the County. Property damage was the most substantial in the Cities of Rainsville (**\$144,000**) and Fort Payne (**\$82,000**) followed by the Towns of Henagar (**\$75,000**) and Geraldine (**\$62,000**). The most damaging event in this jurisdiction's history occurred on March 12, 2010. A thunderstorm produced half dollar (1.25 inches in diameter) to golf ball (1.75 inches in diameter) sized hail just southwest of the Rainsville community. As the storm pushed through the city, large hail struck **19** buildings, tearing up siding, awnings, and damaging some automobiles. Hail accumulation of at least one to three inches was reported.

Hailstorms in Etowah County, Alabama

Etowah County experienced **124** hailstorm events over the 64-year study period. This equates to an estimated **two** events per year. Combined, unincorporated communities experienced the most property damage over the course of the study period. Hailstorm incidents were the most prevalent in the City of Gadsden, however, the City of Attalla is reported as having the highest property damage figure (**\$25,000**). The most substantial event in Etowah County took place in the community of Keener on May 2, 2003. Penny- to baseball- sized hail fell along the eastern county line, causing a total of **\$75,000** in property damage.

Hailstorms in Jackson County, Alabama

Jackson County experienced 119 hailstorm incidents over the 64-year study period, equating to an estimated **two** events per year. The Town of Hollywood experienced the most crop damage (**\$24,000**) and the Town of Section experienced the most property damage (**\$75,000**). In fact, Section also witnessed the most damaging hailstorm event in the County. On April 22, 2005, baseball-sized hail reportedly caused **\$50,000** in property damage throughout the Town.

Hailstorms in Limestone County, Alabama

Limestone County experienced **167** hailstorm incidents over the 64-year study period, equating to an estimated **two to three** events per year. Hailstorm incidents were the most prevalent and destructive in the City of Athens, where a combined **35** events caused **\$7,000** in crop damage and **\$33,000** in property damage. Athens is also where hail 3.75 inches in diameter, the largest size known to this area, was reported on May 18, 2005.

Hailstorms in Madison County, Alabama

Madison County has experienced the most hailstorm activity out of any county in the Division F region. This jurisdiction has reported 360 incidents of hail over the 64-year study period, which equates to an estimated **five** events per year. Combined, unincorporated communities across the County experienced the most hail activity – these activities also account for the most property damage in the County. The most incidents to impact a single jurisdiction (**72**) occurred in the City of Huntsville. However, the Town of Gurley is reported as sustaining the most damage during a 2006 incident that extensively damaged trees and caused slight to moderate damage to several vehicles and **seven** residences.

Hailstorms in Morgan County, Alabama

Morgan County experienced **170** hailstorms over the 64-year period. This equates to an estimated **two** to **three** incidents per year. Combined, unincorporated communities across the County experienced the most hail activity – these activities also account for the most property damage in the County. The most incidents to impact a single jurisdiction (**23**) occurred in the City of Decatur, however, the City of Hartselle is reported as the jurisdiction that has sustained the most damage out of the incorporated communities (**\$60,000**). The most damaging event in the County's history occurred on April 7, 2006, where golf ball- to tennis ball sized struck several communities including, Decatur, Hartselle, and Somerville.

Probability of Future Events

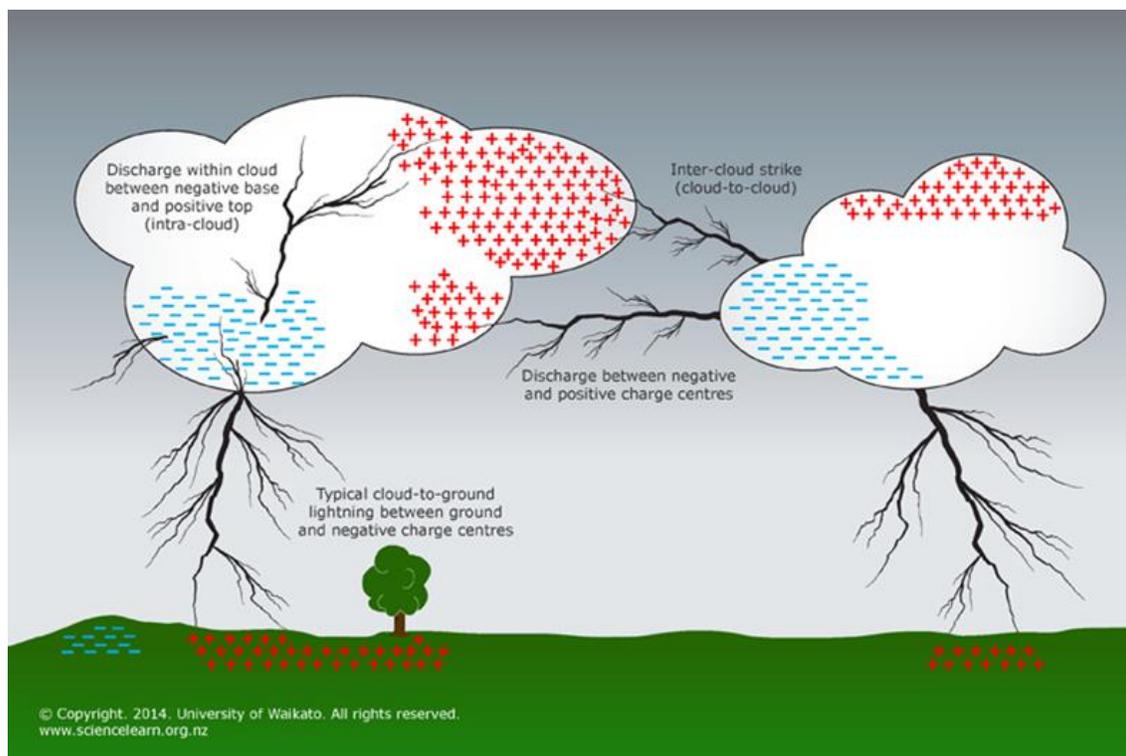
As outlined by each description of hailstorm activity by county, hailstorms are relatively common throughout the Division. While these hazards may not create as significant social or economic challenges as floods or tornadoes, they are no less dangerous or harmful to local communities. It is also important to note that the risk of a hailstorm event significantly increases with every severe thunderstorm that occurs in the planning area. Thus, the probability of future hailstorm events is considered **high** with the severity of these incidents varying across the Division F Region.

Hazard Background – Lightning

The National Oceanic and Atmospheric Administration (NOAA) defines lightning as a giant spark of electricity in the atmosphere between clouds, the air, or the ground. In the early stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges build up enough, this insulating capacity of the air breaks down and there is a rapid discharge of electricity that is commonly referred to as lightning.

This hazard is one of oldest observed natural phenomena on earth. It can be seen in volcanic eruptions, extremely intense forest fires, surface nuclear detonations, heavy snowstorms, in large hurricanes, and most commonly, in thunderstorms. In fact, most lightning starts inside a thunderstorm and travels through clouds. There are roughly 5 to 10 times as many lightning flashes that remain in a cloud as there are flashes which travel to the ground, but individual storms may have more or fewer flashes reaching ground. Lightning can strike where it is not raining, or even before rain reaches the ground. Figure 4.74 diagrams intra-cloud lightning, inter-cloud lightning, and cloud-to-ground lightning.

Figure 4.74 | Lightning Explained – Conditions Needed for Lightning to Occur



Source: National Oceanic and Atmospheric Administration (NOAA) – The National Severe Storms Laboratory: Severe Weather 101 – Lightning.

Key Facts About Lightning | The National Weather Service

- Each year in the United States, there are about 25 million cloud-to-ground lightning flashes and about 300 people struck by lightning. Of those struck, about 30 people are killed and others suffer lifelong disabilities. There were 17 reported lightning-related fatalities in 2020.
- All thunderstorms produce lightning and are dangerous.
- Lightning often strikes outside the area of heavy rain and may strike as far as 10 miles from any rainfall. Many lightning deaths occur ahead of storms before any rain arrives or after storms have seemingly passed and the rain has ended.
- If you can hear thunder, you are in danger. Do not be fooled by blue skies. If you hear thunder, lightning is close enough to pose an immediate threat.
- Lightning leaves many victims with permanent disabilities. While only about 10% of lightning victims die, many survivors live the rest of their lives with intense pain, neurological disabilities, depression, and other health problems.

Source: "Lightning Safety Brochure." National weather Service (NWS). www.weather.gov/lightning

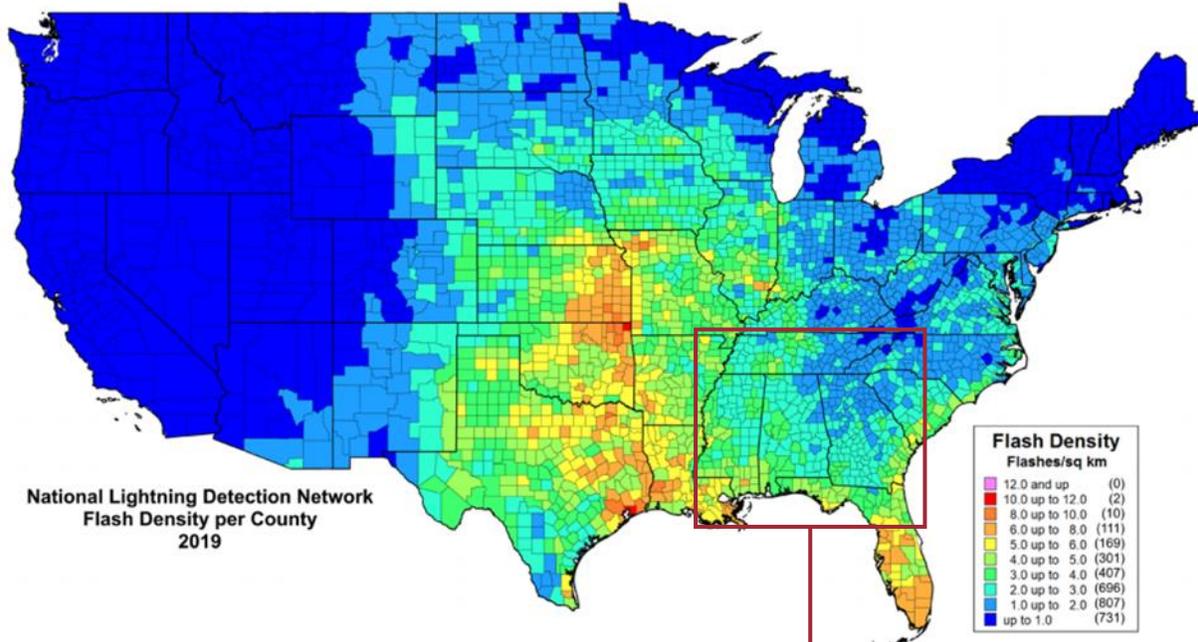
Affected Locations

Lightning is recognized by every county in the planning area as an areawide hazard. Areas particularly prone to severe thunderstorm activity have an increased risk for lightning incidents.

Hazard [Extent]

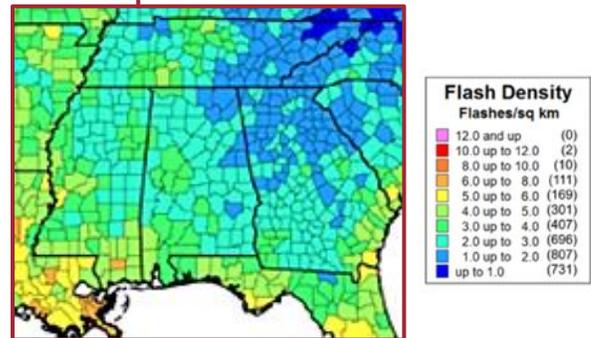
Lightning is measured using a variety of means and instruments. The mechanism most used for collecting data on lightning activity is the Vaisala National Lightning Detection Network (NLDN). NDLN provides a wealth of significant lightning data on individual strikes including cloud-to-ground stroke or in-cloud pulse designation, location, duration polarity, and peak current. This network consists of more than 100 remote ground based Viasala Improved Performance Combined Technology (IMPACT) ESP Lightning Sensors. These sensors instantly detect the electromagnetic signals given off when lightning strikes the Earth's surface. Since 1989, the NLDN has reported more than 20 million cloud-to-ground lightning flashes that occur every year.

Figure 4.75 | U.S. Cloud-to-Ground Flash Density per County (2019)



Flash Density in the Division F Region

According to the 2019 Vaisala Annual Lightning Report, **223 million** lightning events occurred across the U.S. – an increase of **8 million** more events occurring than in 2018. The State of Alabama ranked **no. 18** in total lightning counts per state, tallying **3,970,233** cloud-to-ground strokes plus cloud pulses. As shown in **Figure 4.75**, Division F counties fall on the lower end of the flashes per square kilometer spectrum. However, a deeper look into Vaisala’s flash density data reveals that the Region’s total lightning density regarding events ranges between 8 to 96 strokes/pulses per square kilometer.



Source: “Year of Thunder and Lightning – Annual Lightning Report 2019.” Vaisala.
https://www.vaisala.com/en/system/files/documents/Vaisala-Annual-Lightning-Report-2019_0.pdf

Previous Occurrences

The National Oceanic and Atmospheric Administration (NOAA) estimates that **188** lightning incidents have been reported for the Division F Region between February 1996 and September 2020. This indicates an annual estimate of **7.8** lightning strikes per year over the last 24 years. Table 4.76 itemizes lightning events by planning area county during the study period.

Section 4 | Hazard Profiles

4.12 Lightning

Table 4.76 | Division F Lightning Events by County (1996 – 2020)

County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property
Blount	Lightning	11	1 / 1	\$0 / \$327,000
Cherokee	Lightning	4	2 / 0	\$0 / \$177,000
Cullman	Lightning	14	5 / 0	\$0 / \$158,500
DeKalb	Lightning	17	3 / 0	\$1,000 / \$436,000
Etowah	Lightning	14	2 / 0	\$0 / \$302,000
Jackson	Lightning	9	6 / 1	\$0 / \$140,000
Limestone	Lightning	29	5 / 0	\$0 / \$1,210,500
Madison	Lightning	65	10 / 5	\$5,000 / \$2,951,500
Morgan	Lightning	25	5 / 0	\$0 / \$3,385,500
Total Lightning Events:		188	37 / 9	\$6,000 / \$9,088,000

Hazard [Impact]**Lightning in Blount County, Alabama**

Blount County experienced **11** significant lightning incidents over the 24-year study period. This equates to **less than one** event per year. The unincorporated community of Nector reported the most substantially damaging event in the County's history – on August 13, 2010, lightning struck a house, causing a fire. The sole fatality due to lightning was reported near the City of Oneonta – a two-year-old boy was struck while helping his family garden.

4.12 Lightning

The following Blount County communities reported lightning strikes during the study period:

Table 4.77 | Blount County Significant Lightning Events (1996 - 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Blountsville	1	0 / 0	\$0 / \$15,000
Hayden	1	1 / 0	\$0 / \$5,000
Hendrix	1	0 / 0	\$0 / \$12,000
Nector	1	0 / 0	\$0 / \$150,000
Oneonta	4	0 / 1	\$0 / \$87,000
Remlap	2	0 / 0	\$0 / \$45,000
Snead	1	0 / 0	\$0 / \$13,000
Total Lightning Events:	11	1 / 1	\$0 / \$327,000

Lightning in Cherokee County, Alabama

Cherokee County experienced **4** significant lightning incidents over the 24-year study period. This equates to **less than one** event per year. The unincorporated community of Congo reported the most substantially damaging event in the county's history – on August 13, 2010, lightning struck a house on County Road 77, causing a fire. The **two** injuries were reported for the County occurred in the Weiss Lake East area. On August 8, 2002, two young boys were struck by lightning while playing outside on the bank of Weiss Lake.

The following Cherokee County communities reported lightning strikes during the study period:

Table 4.78 | Cherokee County Significant Lightning Events (1996 - 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Centre	1	0 / 0	\$0 / \$25,000
Congo	1	0 / 0	\$0 / \$150,000
Pope	1	0 / 0	\$0 / \$2,000
Weiss Lake East	1	2 / 0	\$0 / \$0
Total Lightning Events:	4	2 / 0	\$0 / \$177,000

4.12 Lightning

Lightning in Cullman County, Alabama

Cullman County experienced **14** significant lightning incidents over the 24-year study period. This equates to **less than one** event per year. The unincorporated community of Ebenezer reported the most substantially damaging event in the County’s history – on August 8, 2012, lightning struck a house, producing a fire that destroyed the home. There have been **five** total injuries related to lightning in Cullman County.

The following Cullman County communities reported lightning strikes during the study period:

Table 4.79 | Cullman County Significant Lightning Events (1996 – 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Bremen	1	1 / 0	\$0 / \$0
County Line	1	0 / 0	\$0 / \$500
Cullman	3	1 / 0	\$0 / \$3,000
Ebenezer	1	0 / 0	\$0 / \$100,000
Fairview	1	1 / 0	\$0 / \$0
Good Hope	1	1 / 0	\$0 / \$0
Jones Chapel	2	1 / 0	\$0 / \$8,000
Loretto	1	0 / 0	\$0 / \$5,000
Phelan	3	0 / 0	\$0 / \$42,000
Total Lightning Events:	14	5 / 0	\$0 / \$158,500

Lightning in DeKalb County, Alabama

DeKalb County experienced **17** significant lightning incidents over the 24-year study period. This equates to **less than one** event per year. The Town of Crossville reported the most substantially damaging event in the County’s history – on July 24, 1999, lightning struck A1 Cabinets, a local furniture manufacturer. The lightning strike caused an explosion, and the subsequent fire destroyed the entire business.

4.12 Lightning

The following DeKalb County communities reported lightning strikes during the study period:

Table 4.80 | DeKalb County Significant Lightning Events (1996 - 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Beaty Crossroads	1	0 / 0	\$0 / \$5,000
Crossville	2	0 / 0	\$0 / \$150,000
Fort Payne	4	1 / 0	\$0 / \$220,000
Grove Oak	1	0 / 0	\$0 / \$2,000
Henagar	1	0 / 0	\$0 / \$2,000
Kilpatrick	2	1 / 0	\$0 / \$20,000
Mentone	1	0 / 0	\$1,000 / \$0
Rainsville	1	0 / 0	\$0 / \$5,000
Stamp	1	1 / 0	\$0 / \$0
Sylvania	2	0 / 0	\$0 / \$7,000
Ten Broeck	1	0 / 0	\$0 / \$25,000
Total Lightning Events:	17	3 / 0	\$1,000 / \$436,000

Lightning Incidents in Fort Payne, Alabama

The NOAA reports four lightning events that resulted in substantial damage and injury in the Fort Payne community. Lightning struck one home in June 1996, causing an extensive fire. In April 1997, lightning struck a hosiery mill and destroyed **15** knitting machines. One employee was injured trying to put out the fire. Two years later, lightning struck a pole at the only five-way intersection in the city, knocking out power and severely damaging a traffic signal and the associated controller. The final incident, occurring in July 2015, involved lightning striking and damaging a home on County Road 505. Event damages totaled **\$40,000, \$85,000, \$75,000, and \$20,000**, respectively.

Lightning in Etowah County, Alabama

Etowah County experienced **14** significant lightning incidents over the 24-year study period. This equates to **less than one** event per year. A countywide-designated event reported the most damage in the county's history – on July 27, 2005, an auto body shop in Attalla was struck by lightning. The ensuing fire destroyed the entire business. Another lightning strike hit a clothes dryer in a home in Gadsden. The residents were able to extinguish the fire after it caused minor damage.

4.12 Lightning

The following Etowah County communities reported lightning strikes during the study period:

Table 4.81 | Etowah County Significant Lightning Events (1996 – 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Countywide	1	0 / 0	\$0 / \$110,000
Ballplay	1	0 / 0	\$0 / \$23,000
Gadsden	4	0 / 0	\$0 / \$106,000
Gallant	1	1 / 0	\$0 / \$1,000
Hokes Bluff	1	0 / 0	\$0 / \$10,000
Littleton	1	1 / 0	\$0 / \$2,000
Mountainboro	1	0 / 0	\$0 / \$15,000
Noccalula Falls	1	1 / 0	\$0 / \$0
Rainbow City	1	0 / 0	\$0 / \$20,000
Southside	1	0 / 0	\$0 / \$5,000
Walnut Grove	1	0 / 0	\$0 / \$10,000
Total Lightning Events:	14	2 / 0	\$0 / \$302,000

Lightning in Jackson County, Alabama

Jackson County experienced **9** significant lightning incidents over the 24-year study period. This equates to **less than one** event per year. The Town of Pisgah reported the most substantially damaging event in the county's history. On July 7, 1997, a house in this jurisdiction, which is in the eastern part of the county, was struck by lightning, decimating the home. An incident reported in an unincorporated community accounted for the most injuries and deaths in Jackson County. A minor traffic accident occurred on State Road 73 in Bryant. A group of three firefighters and two other men were standing next to the accident scene when lightning struck a tree nearby. One man was killed, and four others received injuries of varying intensity.

The following Jackson County communities reported lightning strikes during the study period:

4.12 Lightning

Table 4.82 | Jackson County Significant Lightning Events (1996 – 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Countywide	1	0 / 0	\$0 / \$0
Bryant	1	4 / 1	\$0 / \$0
Dutton	1	0 / 0	\$0 / \$0
Hollywood	1	0 / 0	\$0 / \$5,000
Hytop	1	1 / 0	\$0 / \$0
Pisgah	1	0 / 0	\$0 / \$80,000
Scottsboro	2	1 / 0	\$0 / \$35,000
Section	1	0 / 0	\$0 / \$20,000
Total Lightning Events:	9	6 / 1	\$0 / \$140,000

Direct Lightning Strike Injuries in Jackson County

There have been **two** reported direct lightning strike injuries in Jackson County’s history.

Hytop | A male was struck by lightning while working on a boat beneath an open-air carport at his residence. The person experienced second- and third- degree burns to his chest. Other specific injury information was unavailable. The person was airlifted to a burn unit in Nashville, Tennessee for treatment.

Scottsboro | A woman was struck by lightning while on the telephone inside her residence. She was transported to the hospital for treatment.

Lightning in Limestone County, Alabama

Limestone County experienced **29** significant lightning incidents over the 24-year study period, equating to **one** event per year. An incident reported in the Town of Elkmont accounted for the most substantially damaging event in the County’s history. A vigorous cold front produced a line of thunderstorms with lightning, heavy rain and gusty winds. One of the storms produced lightning which struck a chimney and ignited a fire which destroyed a home. In Burgreen Corner, lightning struck a house on Cardinal Drive, resulting in a fire that consumed most of the home. The City of Athens has the largest property damage figure in Limestone’s history as well as the highest number of reported injuries from lightning strikes.

The following Limestone County communities reported lightning strikes during the study period:

4.12 Lightning

Table 4.83 | Limestone County Significant Lightning Events (1996 - 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Athens	15	3 / 0	\$0 / \$708,000
Burgreen Corner	1	0 / 0	\$0 / \$150,000
Capshaw	2	0 / 0	\$0 / \$1,500
Copeland	1	0 / 0	\$0 / \$20,000
Elkmont	3	1 / 0	\$0 / \$280,000
French Mill	3	0 / 0	\$0 / \$6,000
Lawngate	1	0 / 0	\$0 / \$40,000
Mooreville	1	0 / 0	\$0 / \$5,000
Ripley	1	1 / 0	\$0 / \$0
Sardis Springs	1	1 / 0	\$0 / \$0
Total Lightning Events:	29	5 / 0	\$0 / \$1,210,500

Most Significant Lightning Damage in Athens, Alabama

July 1996 | Lightning struck a power pole and severed it knocking out power to 3,500 residents in the central part of the County. (**\$15,000**) In the same month, lightning struck a fire hydrant in Athens and caused the water line to break. (**\$10,000**)

February 1998 | Lightning struck a tree starting a fire that spread to a house. The house was completely destroyed. (**\$95,000**)

April 2006 | Lightning struck a home along Nick Davis Road in eastern Limestone County. The lightning started a fire at the residence, which produced extensive damage to the home. (**\$50,000**)

August 2011 | A lightning strike from severe thunderstorms moving through Limestone County caused a fire that burned the Athens Church of God to the ground. (**\$500,000**)

Lightning in Madison County, Alabama

Madison County experienced **65** significant lightning incidents over the 24-year study period, equating to at least **two** to **three** events per year. The City of Huntsville reported the second highest property damage figure along with the most injuries and deaths out of any Division F community. However, the single most devastating lightning incident occurred in the Nunn Store community. A lightning strike caused fire to develop at a home on Allen Ben Road, tragically gutting the home. This fire jumped to a neighboring house, causing damage to the upstairs portion of the home.

Section 4 | Hazard Profiles

4.12 Lightning

The following Madison County communities reported lightning strikes during the study period:

Table 4.84 | Madison County Significant Lightning Events (1996 - 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Countywide	1	0 / 0	\$0 / \$15,000
Bell Factory	2	0 / 1	\$0 / \$50,000
Brownsboro	1	0 / 0	\$0 / \$0
Chelsea	1	3 / 1	\$0 / \$0
Cherrytree	1	0 / 1	\$0 / \$0
Farley	2	0 / 0	\$0 / \$11,000
Gurley	1	0 / 0	\$0 / \$20,000
Harvest	2	0 / 0	\$0 / \$45,000
Hazel Green	1	0 / 0	\$0 / \$20,000
Huntsville	31	7 / 1	\$5,000 / \$1,114,000
Lily Flag	1	0 / 0	\$0 / \$1,000
Madison	4	0 / 0	\$0 / \$37,000
Meridianville	1	0 / 0	\$0 / \$500
Monrovia	1	0 / 0	\$0 / \$250,000
Moontown	1	0 / 0	\$0 / \$200,000
Moores Mill	1	0 / 0	\$0 / \$0
Mt. Leventov	1	0 / 0	\$0 / \$250,000
Nebo	1	0 / 1	\$0 / \$1,000
New Sharon	2	0 / 0	\$0 / \$255,000
Normal	2	0 / 0	\$0 / \$2,500
Nunn Store	1	0 / 0	\$0 / \$600,000
Oakwood College	3	0 / 0	\$0 / 42,000
Toney	1	0 / 0	\$0 / \$15,000
Union Grove	1	0 / 0	\$0 / \$10,000
Total Lightning Events:	65	10 / 5	\$5,000 / \$2,951,500

4.12 Lightning

Lightning in Morgan County, Alabama

Morgan County experienced **25** significant lightning incidents over the 24-year study period, equating to **one** event per year. The City of Hartselle reported the highest property damage figure out of any Division F community. This jurisdiction is also where the most substantially damaging lightning incident in Morgan County occurred. On May 13, 2009, lightning struck a four-story, **20,000** square foot house on Breeding Drive, causing a devastating fire. A mother and child were in the home but escaped without injury. The blazed burned the house to the ground and destroyed two antique cars.

The following Morgan County communities reported lightning strikes during the study period:

Table 4.85 | Morgan County Significant Lightning Events (1996 – 2020)

Location	# of Events	Injuries / Deaths	Damaged Crops / Property
Austinville	1	0 / 0	\$0 / \$10,000
Basham	1	0 / 0	\$0 / \$200,000
Cedar Lake	1	0 / 0	\$0 / \$1,000
Cole Springs	1	0 / 0	\$0 / \$2,000
Decatur	8	2 / 0	\$0 / \$61,000
Falkville	2	1 / 0	\$0 / \$275,000
Hartselle	4	1 / 0	\$0 / \$2,110,500
Huntsville Lacey Sp.	1	0 / 0	\$0 / \$200,000
Leesdale	1	0 / 0	\$0 / \$10,000
Priceville	1	0 / 0	\$0 / \$1,000
Pumpkin Center	2	1 / 0	\$0 / \$500,000
Trinity	1	0 / 0	\$0 / \$5,000
Union	1	0 / 0	\$0 / \$10,000
Total Lightning Events:	25	5 / 0	\$0 / \$3,385,500

Probability of Future Events

Significant lightning incidents are uncommon occurrences throughout the Division F region. Some communities appear to be more at risk of property damage than others. For example, more urbanized communities have an increased risk of attracting lightning strikes given that these areas are more prone to develop in dense patterns and construct taller structures. It is also important to note that the risk of significant lightning strikes increases with every severe thunderstorm that occurs in the planning area. Taking this factor and the unpredictable nature of lightning activity into account, the probability of future lightning events will vary across each Division F county.

4.13 Land Subsidence + Sinkholes

Hazard Background – Land Subsidence and Sinkholes

Sinkhole: An area of ground that has no natural external surface drainage – when it rains, the water stays inside the sinkhole and typically drains into the subsurface. Sinkholes can vary from a few feet to hundreds of acres and from less than 1 to more than 100 feet deep. Some are shaped like shallow bowls or saucers whereas other have vertical walls; some hold water and form natural ponds.

Subsidence: Sinking or downward settling of the earth's surface, not restricted in rate, magnitude, or area involved. Subsidence may be caused by natural geologic processes, such as solution, compaction, or withdrawal of fluid lava from beneath a solid crust; man's activity such as subsurface mining or the pumping of oil or ground water may also cause subsidence.

Source: Landslides Glossary – USGS; Water Science School – Sinkholes, USGS.

What is the difference between a sinkhole and land subsidence?

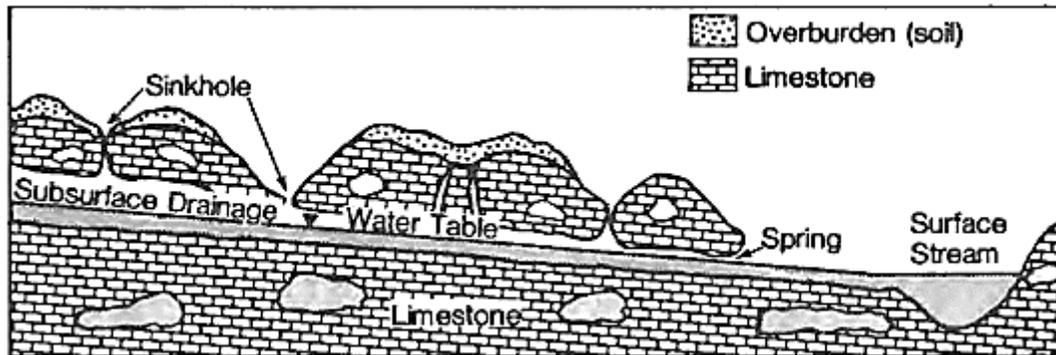
Sinkholes are just one of many forms of ground collapse, or subsidence. Land subsidence is a gradual settling or sudden sinking of the Earth's surface owing to subsurface movement of earth materials. The principal causes of land subsidence are aquifer-system compaction, drainage of organic soils, underground mining, hydro-compaction, natural compaction, sinkholes, and thawing permafrost. Land subsidence can affect areas that are thousands of square miles in size.

A sinkhole is a depression in the ground that has no natural external surface drainage. This means that when it rains, all the rainwater stays inside the sinkhole and typically drains into the subsurface. Sinkholes are most common in what geologists call, "karst terrain." These are regions where the type of rock below the land surface can naturally be dissolved by groundwater circulating through them. Soluble rocks include salt beds and domes, gypsum, and limestone and other carbonate rock.

During the formation of karst terrain, water percolating underground enlarges subsurface flow paths by dissolving rock. As some subsurface flow paths are enlarged over time, water movement in the aquifer changes character from one where groundwater flow was initially through small, scattered openings in the rock to one where most flow is concentrated in a few well-developed conduits. As the flow paths continue to enlarge, caves may be formed, and the groundwater table may drop below the level of surface streams; surface streams may then begin to lose water to the subsurface. As more of the surface water is diverted underground, surface streams and surface valleys become a less conspicuous feature of the land surface and are replaced by closed basins. Funnels or circular depressions called sinkholes often develop at some places in the low points of these closed basins.

4.13 Land Subsidence + Sinkholes

Figure 4.86 | Karst Terrain Formation



Sources: Geology. "What is the difference between a sinkhole and land subsidence?" USGS. Water Fact Sheet, "Hydrologic Hazards in Karst Terrain." USGS and the Dept. of the Interior.

Affected Locations

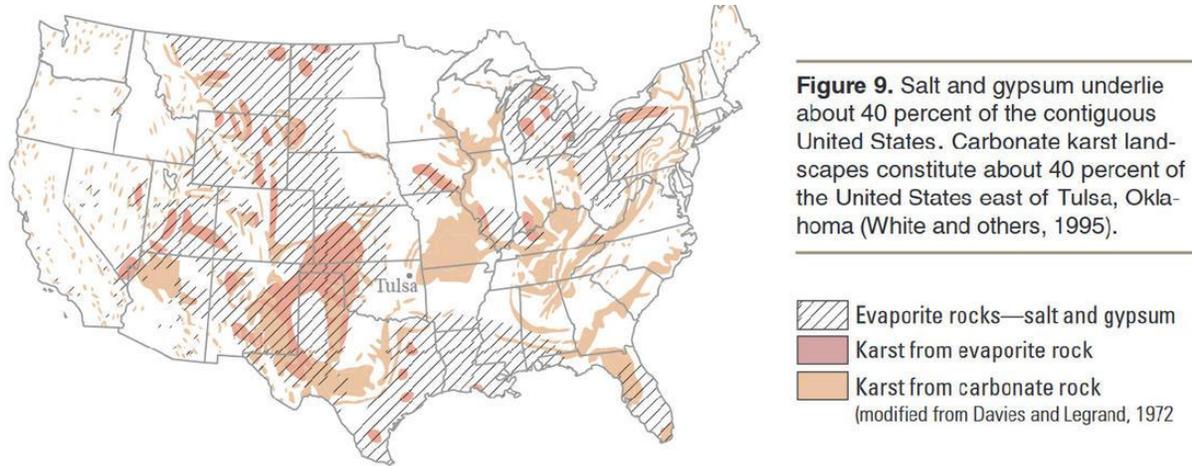
Sinkholes are common where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that can naturally be dissolved by groundwater circulating through them. As the rock dissolves, spaces and caverns develop underground. Sinkholes are dramatic because the land usually stays intact for a while until the underground spaces just get too big. If there is not enough support for the land above the spaces, then a collapse of the land surface can occur. These collapses can be small, or they can be substantially large, occurring where houses or roads are on top. The most damage from sinkholes tends to occur in Florida, Texas, Alabama, Missouri, Kentucky, Tennessee, and Pennsylvania.

As previously mentioned, caves are formed through a series of chained activities involving the flow paths of water underground. In definition, caves are geologic features that form in rock units known as karst, which result when slightly acidic rainwater erodes soluble bedrock. In karst areas, flowing water creates caves, sinkholes, and disappearing streams. Northeast Alabama is part of the "TAG" area, so named because it is a region of southeastern Tennessee, northern Alabama, and northwestern Georgia that is rich in karst geology. Caves in Alabama are found in three main regions: the **Valley and Ridge section**, which is part of both the TAG area and the southern reaches of the Appalachian mountain system; the **Tennessee River Valley region**, where the Tennessee River and its streams erode the carbonate rocks and create caves; and the **Coastal Plain section**, where people have discovered caves in the outcropping limestone beds.

Figure 4.86 depicts national karst landscapes that are prone to land subsidence and sinkholes. Given the Division's location in the Tennessee-Alabama-Georgia karst (TAG) area, the entire nine-county planning area is at risk of being impacted by sinkhole and land subsidence activity.

4.13 Land Subsidence + Sinkholes

Figure 4.87 | Karst Landscape Areas Prone to Land Subsidence and Sinkholes



The sudden and sometimes catastrophic subsidence associated with localized collapse of subsurface cavities (sinkholes) is detailed in two case studies. This type of subsidence is commonly triggered by ground-water-level declines caused by pumping and by enhanced percolation of ground water. Collapse features tend to be associated with specific rock types, such as evaporites (salt, gypsum, and anhydrite) and carbonates (limestone and dolomite). These rocks are susceptible to dissolution in water and the formation of cavities. Salt and gypsum are much more soluble than limestone, the rock type most often associated with catastrophic sinkhole formation. Evaporite rocks underlie about 35 to 40 percent of the United States, though in many areas they are buried at great depths. Natural solution-related subsidence has occurred in each of the major salt basins in the United States. The high solubilities of salt and gypsum permit cavities to form in days to years, whereas cavity formation in carbonate bedrock is a very slow process that generally occurs over centuries to millennia. Human activities can expedite cavity formation in these susceptible materials and trigger their collapse, as well as the collapse of pre-existing subsurface cavities.

Source: Land Subsidence in the United States, USGS Fact Sheet 165-00

Sources: "Sinkholes." Water Science School. USGS. "Karst landscapes are more prone to have land subsidence and sinkholes." Figure 9. USGS.

The Importance of Caves in the Division F Region

Alabama ranks third among all U.S. states in the number of troglobite species. Jackson County has more caves and species than any other Alabama county and more troglobite species than any other county in the continental United States. Because of the number of caves and animals living in them, northeast Alabama is the most important site in North America for cave fauna. Russell Cave, also in Jackson County, holds 10,000 years of history dating back to the Archaic period. In the late nineteenth century, Shelta Cave in Huntsville was the site of parties and underground boating. In the 1930s during Prohibition, Blount County was home to an infamous speakeasy in Bangor Cave, where wealthy patrons flocked to enjoy music, drinks, and gambling.

Source: "Caves." Jessica Fordham Kidd, University of Alabama. Encyclopedia of Alabama.

4.13 Land Subsidence + Sinkholes

Hazard [Extent]

Sinkhole and land subsidence activity can be measured through various methods. In areas where these hazardous occurrences are more pronounced, the most common measurement tools are vertical extensometers, baseline and repeated surveys of benchmarks using Global Positioning System (GPS) or conventional survey methods, and Interferometric Synthetic Aperture Radar (InSAR).

Vertical Extensometers provide site-specific measurements of subsidence. These instruments consist of a pipe or cable anchored at the bottom of the borehole. The pipe or cable extends from the bottom of the borehole, through the geologic layers that are susceptible to compaction, to the ground surface. The pipe or cable is then connected to a recorder that frequently measures the relative distance between the bottom of the borehole and the ground surface.

Leveling using Global Positioning System (GPS) surveying or conventional leveling are alternatives to vertical extensometers. GPS surveying is used to monitor subsidence over greater distances or at a regional scale. Benchmarks or “geodetic stations” are used along a transect or network. Ground elevations at each benchmark can be obtained within plus or minus one inch of accuracy with GPS surveying. For regional scale surveys of this type, conventional leveling is less accurate. The land surface elevations are initially surveyed and then re-surveyed every few years to track changes in elevation at the benchmarks and monitor trends over time.

InSAR, Interferometric Synthetic Aperture Radar, is an increasingly popular alternative to extensometers and GPS or conventional surveying methods. InSAR is a space-borne, remote sensing technique that uses changes in satellite radar signals created by interferences on the earth’s surface to measure changes in land surface elevation. It is used to measure and track deformations in the earth’s surface caused by earthquakes, volcanoes, and by groundwater and fossil fuel extraction and injection. Like GPS, InSAR enables measurement of subsidence on a regional scale and, like extensometers, the accuracy of elevation measurements with InSAR can be within a fraction of an inch.

Source: “Land Subsidence: What Is It and Why Is It An Important Aspect of Groundwater Management.” Allan Fulton, UCCD Farm Advisor – Tehama, Glenn, Colusa, and Shasta Counties, CA.

If extensometer, GPS, or InSAR data is unavailable, sinkholes can be classified by characteristics such as formation process and speed. Table 4.88 describes six types of sinkholes as classified by geologist Tony Waltham.

Section 4 | Hazard Profiles

4.13 Land Subsidence + Sinkholes

Table 4.88 | Six Different Types of Sinkholes (2005)

Type of Sinkhole	Formation Process	Host Rock Type	Formation Speed	Typical Maximum Size	Engineering Hazard
Solution sinkhole	Dissolutional lowering of surface	Limestone, dolomite, gypsum, salt	Stable landforms evolving over > 20,000 years	Up to 1,000 m across and 100 m deep	Fissure and cave drains must exist beneath the floor
Collapse sinkhole	Rock roof failure into underlying cave	Limestone, dolomite, gypsum, basalt	Extremely rare, rapid failure events, into old cave	Up to 300 m across and 100 m deep	Unstable breakdown floor; failure of loaded cave roof
Caprock sinkhole	Failure of insoluble rock into cave in soluble rock below	Any rock overlying limestone, dolomite, gypsum	Rare failure events, evolve over > 10,000 years	Up to 300 m across and 100 m deep	Unstable breakdown floor
Subsidence sinkhole - dropout	Soil collapse into soil void formed over bedrock fissure	Cohesive soil overlying limestone, dolomite, gypsum	In minutes, into soil void evolved over months or years	Up to 50 m across and 10 m deep	The main threat of instant failure in soil-covered karst
Subsidence sinkhole - suffusion	Down-washing of soil into fissures in bedrock	Non-cohesive soil over limestone, dolomite, gypsum	Subsiding over months or years	Up to 50 m across and 10 m deep	Slow destructive subsidence over years
Buried sinkhole	Sinkhole in rock, soil-filled after environmental change	Rockhead depression in limestone, dolomite, gypsum	Stable features of geology, evolved over 10,000 years	Up to 300 m across and 100 m deep	Local subsidence on soft fill surrounded by stable rock

Source: "Sinkholes and subsidence: Karst and cavernous rocks in engineering and construction." Waltham, T; Bell, FG; and Culshaw, M. (2005) Springer-Praxis Books in Geophysical Sciences, Springer, Heidelberg, Germany.

Section 4 | Hazard Profiles

4.13 Land Subsidence + Sinkholes

Previous Occurrences

According to Geological Survey of Alabama, there are approximately 2,601 noted sinkholes scattered about the Division F Region. Historic instances of sinkholes and land subsidence throughout the Region vary in severity and scale. USGS topographic maps depict areas where sinkholes have occurred and those that are prone to land subsidence. Presumably, karst geologic areas are most likely to experience either of these hazards. Table 4.89 itemizes sinkhole locations in each Division F county by noting those that are 30-feet across or larger.* Maps depicting locations of sinkholes in each county can be found in the Appendices.

Table 4.89 | Area Sinkhole Locations by Division County and Community

County	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Blount County	Blount Springs	26
Blountsville		2	1969
Nectar		16	1961
Oneonta		4	1958
Trafford		1	1961
County	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Cherokee County	Ellisville	8
Gaylesville		1	
Little River		1	
Piedmont		1	
County	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Cullman County	Garden City	1
Holly Pond		14	1958
Simcoe		7	1958

4.13 Land Subsidence + Sinkholes

Table 4.89 | Area Sinkhole Locations by Division County and Community (Continued)

DeKalb County	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Fort Payne	6	1946
	Grove Oak	15	1972
	Henagar	8	1985
	Ider	3	1975
	Simcoe	7	1958
	Sulphur Springs	6	1982

Etowah County	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Altoona	8	1958
	Gadsden West	46	1959
	Glencoe	2	1956
	Keener	15	1959

Gadsden Area Prone to Sinkholes

In 2015, the Gadsden Times newspaper sited how vulnerable the City of Gadsden is to sinkhole hazards. According to geologist Sandy Ebersole with the Geological Survey of Alabama (GSA), the Gadsden area – and just about all of North Alabama – is more prone to sinkholes than the rest of the State. This is primarily because much of the rock in the Gadsden area is limestone, and limestone is the key cause of sinkholes in this jurisdiction. In fact, limestone is predisposed to dissolve and does so more quickly if water is standing, such as after a flood event. Extremely dry ground can also cause issues.

Another factor that amplifies existing sinkhole activity and the formation of new sinkholes in the Gadsden area is the city’s location. Gadsden is at the base of Lookout mountain, one of the last mountains in the Appalachian chain. There are also numerous faults in the area, and any movement could cause the limestone to fracture, leaving it susceptible to be crushed more quickly. This action alone can cause sinkholes to develop at a more rapid rate.

Source: “Geologist: Gadsden area prone to sinkholes.” Lisa Rogers Savage. January 18, 2015. Accessed June 7, 2021.

4.13 Land Subsidence + Sinkholes

Table 4.89 | Area Sinkhole Locations by Division County and Community (Continued)

Jackson County	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Bridgeport	4	1985
	Dutton	2	1984
	Estillfork	9	1977
	Flat Rock	4	1984
	Hollytree	4	
	Hollywood	33	1981
	Hytow	23	1977
	Langston	2	1985
	Lim Rock	39	1974
	Paint Rock	43	1983
	Princeton	43	1977
	Scottsboro	28	1983
Stevenson	8	1984	
Trenton	7	1982	

The Sharp-Bingham Mountain Preserve – Jackson County

Jackson County leads North America in the number of caves (**1500+**) for an individual county. The Sharp-Bingham Mountain Preserve is in western Jackson County near the Madison County line, as its name implies, includes portions of Sharp and Bingham mountains. Sharp Mountain, along the Jackson-Madison county line, is the western boundary, while Bingham Mountain forms the eastern boundary. The two mountains meet at the north end of Calloway Sink.

Within the boundaries of the preserve is an extensive sink system, which includes Calloway, Keel, and Cox sinks, surface features of the Tony Sinks Cave System. Approximately **60** caves, **30** karst features, and several springs are known from the Sharp-Bingham Mountain area. This area is an important one of the karst and cave systems in Alabama because of the number of caves and the extensive connected systems. This cave system is hydrologically dynamic; new sinkholes in the Calloway and Keel sinks have opened in the last 20 years. Above ground is a relatively unbroken second-growth hardwood forest, and good forest cover is vital to protection to underground waters.

Source: "Biological Inventor of the Cave and Karst Systems of the Nature Conservancy's Sharp-Bingham Mountain Preserve."

Section 4 | Hazard Profiles

4.13 Land Subsidence + Sinkholes

Table 4.89 | Area Sinkhole Locations by Division County and Community (Continued)

	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Limestone County	Ardmore	6
Athens		19	1983
Capshaw		25	1983
Decatur		44	1984
Elkmont		46	1976
Greenbrier		35	1977
Huntsville		20	1976
Madison		32	1983
Tanner		59	1976
Trenton		7	1982
	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Madison County	Huntsville	20
Madison		32	1983
Maysville		27	1983
Meridianville		66	1983
Moontown		9	1976
New Hope		12	1974
New Market		18	1976
Toney		2	1977
Triana		193	1984

4.13 Land Subsidence + Sinkholes

Table 4.89 | Area Sinkhole Locations by Division County and Community (Continued)

Morgan County	Sinkhole Locations	No. of Sinkholes*	Year Topographic Maps Published
	Brooksville	22	1977
	Danville	74	1978
	Decatur	44	1984
	Eva	3	1977
	Falkville	14	1984
	Hartselle	121	1984
	Hulaco	10	1977
	Massey	2	1977
	Somerville	44	1984
	Trinity	281	1975
Union Hill	2	1958	

Source: Geological Survey of Alabama (2021)

* Note: For the purposes of this table, the number of sinkholes listed in each community coincides with points in a GIS shapefile provided by the GSA. The file from which this data is derived represents larger (30-feet across and larger) sinkholes shown on published USGS 1:24,000-scale topographic maps. Most of these maps were published between 1950 and 1980. Any sinkholes that have formed since these USGS maps were published are not included in this dataset. Sinkholes smaller than 30-feet in diameter are also not represented in this data.

Hazard [Impact]

Sinkholes and Land Subsidence in Morgan County, Alabama

Blount County contains karst units with minor carbonates, as well as limestones and dolostones. The jurisdiction has a higher density of sinkholes, especially at the northwest portion of the county, when compared to most of the state. Portions of Blount County are more susceptible to sinkholes, such as Hayden and Blountsville. The Smoke Rise community, a census designated place near Hayden, has formed ground depressions.

4.13 Land Subsidence + Sinkholes

Sinkholes and Land Subsidence in Cherokee County, Alabama

Sinkhole activity has been known to cause significant damage to roadways in Cherokee County. A 2018 event resulted in moderate damage to a portion of County Road 123 off Highway 9 in Cedar Bluff. Highway department workers had to bring in a road grader and a “large load of chert” to temporarily fill the hole. According to a county engineer, the chert would have to settle for the working crew to repack and patch the road. Fortunately, the hole was discovered by a local county resident before anyone drove into it. Cherokee County EMA officials were also called to the scene.

Figure 4.90 | Imagery of a sinkhole on County Road 123 in Cedar Bluff, Alabama (2018)



Source: “County Highway Department Personnel and EMA Officials Respond After A Sinkhole Opens Up on Co. Rd. 123 in Cedar Bluff.” Joey Weaver - WEIS Radio/100.5FM – 990 AM

Sinkholes and Land Subsidence in Cullman County, Alabama

In March 2020, residents in the Arkadelphia community discovered a what was assumed to be a pothole on County Road 8. Witnesses later discovered a substantial amount of earth washed out under the asphalt, creating a sinkhole in the road. The Cullman County Sheriff’s Office, local firefighters and a Cullman County Road Department crew responded shortly after 5pm. The crew completed the repairs around 9pm the same evening.

Source: “Arkadelphia residents find sinkhole forming under road.” The Cullman Tribute. Accessed May 21, 2021.

Sinkholes and Land Subsidence in DeKalb County, Alabama

An active sinkhole was reported near the Hammondville community in May 2003. The hole, created by an earthquake striking the area days prior, expanded largely due to flood waters. The hole eventually grew to measure 30-feet in width and nearly 15-feet deep. The event occurred on private property, and no one was injured.

4.13 Land Subsidence + Sinkholes

Sinkholes and Land Subsidence in Etowah County, Alabama

In February 2020, heavy rains washed out several roads, including Dogwood Lane near Sardis City, Alabama. This resulted in a substantial sinkhole that left the road impassable.

Figure 4.91 | Sinkhole on Dogwood Road in Sardis City (2020)



Source: Gadsden-Etowah County EMA Director Deborah Gaither. "Storms wash out roads in Randolph, Etowah Counties." WBRC News. Accessed May 21, 2021.

Sinkholes and Land Subsidence in Jackson County, Alabama

While most standing sinkholes in Jackson County are potentially hazardous, the most famous sinkhole in this jurisdiction rests in Neversink Preserve and has been a popular tourist attraction for the area for many years. Neversink Pit measures 40-feet wide at the top and 100-feet wide at the bottom with an overall drop of 162-feet. This attraction is in the Fackler community and is owned by the Southeastern Cave Conservancy (SCCi). Other sinkhole activity throughout the county resulted in incapacitated roads and potential safety threats to local citizens.

Source: "This Hidden Alabama Waterfall Cascades 16 Stories Down Into A Rocky Portal." Tate Jacaruso. April 9, 2020. Accessed May 23, 2021.

4.13 Land Subsidence + Sinkholes

Sinkholes and Land Subsidence in Limestone County, Alabama

Sinkhole activity in Limestone County appears to be the most predominate in the unincorporated community of Tanner. In 2011, a motorist's SUV was trapped in what initially appeared to be a pothole on Ingram Road off Highway 31. Ingram Road is a mostly agricultural roadway in the Tanner area that connects Lucas Ferry Road to Highway 31. The Limestone County Sheriff's Department responded to the emergency call and a towing company was able to rescue the vehicle. It is unclear if heavy rain was a factor in the incident.

Source: *"Limestone County road swallowed by sinkhole."* Bobby Shuttleworth. August 4, 2011. Accessed May 24, 2021.

Sinkholes and Land Subsidence in Madison County, Alabama

Numerous large and small sinkholes are present throughout Madison County. Subsidence activity in this area has occurred along residential roadways and heavily trafficked county thoroughfares. In March 2019, residents in a Madison County neighborhood reported a sinkhole that formed from three separate potholes on Raspberry Way. Consistent days of heavy rain caused the potholes to expand and thus combine into one significant sinkhole.

A month later, a large sinkhole was reported on Alabama Highway 53. The hole reported measured 7.5-feet in diameter at the surface, wider below the surface, and 12- to 14- feet deep. ALDOT conducted exploratory drilling in the area to determine the cause and extent of the issue. The hole was eventually repaired with riprap and flowable concrete fill.

Sources: *"Large Sinkhole Causing Problems for Homeowners in Madison County."* Alexis Scott. March 5, 2019. Accessed May 24, 2021. *"Road reopened after sinkhole caused northbound land closure on Highway 53 in Madison County."* WHNT News 19. April 11, 2019. Accessed May 24, 2021.

Sinkholes and Land Subsidence in Morgan County, Alabama

The northern/northcentral portions of Morgan County are susceptible to land subsidence. The largest extend of sinkholes is in the eastern portion of this jurisdiction. This area, between Apple Grove Road and Pine Ridge Road is called Newsome Sinks. According to the Geological Survey of Alabama (GSA), the four-mile length of Newsome Sinks makes it the longest such area of sinkholes in the State. While no detrimental events have occurred in Newsome Sinks, sinkholes in other parts of Morgan County have been known to endanger residents and local livestock. In October 2020, a horse was rescued from a sinkhole on Bethel Circle, a residential roadway in an unincorporated segment of the County. The Morgan County sheriff's Office, a local towing company, the City of Priceville Maintenance Department, and a host of local volunteers assisted in the rescue.

Sources: 2017 Morgan County Multi-Hazard Mitigation Plan; *"Horse rescued from sinkhole in Morgan County."* Jess Grotjahn. October 30, 2020. Accessed May 24, 2021.

4.13 Land Subsidence + Sinkholes

Newsome Sinks Karst Area

Newsome Sinks Karst Area occupies a north-south trending karst valley about **4-miles** long, $\frac{3}{4}$ mile wide and **400-feet** deep. Both ends of the drainage basin are higher in elevation than the valley floor, forcing water runoff to escape through subterranean passageways. The Newsome Sinks area is hollowed out by more than 40 caves, with over **50,000 feet** of known passages. Most of the passages are dry, carrying water only during periods of heavy rainfall. The **1,396-acre** site was designated a national natural landmark in 1973.

Source: "Newsome Sinks Karst Area." National Natural Landmarks. National Park Service (NPS).

Probability of Future Events

The Division F Region has over **2,600** known significant sinkholes across its planning area. Smaller land subsidence incidents are possible in any county in the region, however, communities with an extensive history of these hazards have a slightly higher probability of future sinkhole development. It is also important to note that any existing sinkhole or area prone to land subsidence of any level can become dangerous when significant hazards – namely, consistent severe thunderstorms, earthquakes, or droughts – occur in the region. Thus, future probability of land subsidence and sinkhole activity in the region varies.

Hazard Background – Landslides

Landslide: The movement of a mass of rock, debris, or earth down a slope. Earthquake shaking and other factors can induce landslides underwater. These landslides are called submarine landslides. Submarine landslides sometimes cause tsunamis that damage coastal areas.

Source: [Landslides Glossary – USGS](#).

Landslides are a type of “mass wasting,” which denotes any down-slope movement of soil and rock under the direct influence of gravity. The term “landslide” encompasses five modes of slope movement: falls, topples, slides, spreads, and flows. These are further subdivided by the type of geologic material (bedrock, debris, or earth). Debris flows (commonly referred to as mudflows or mudslides) and rock falls are examples of common landslide types.

Nearly every landslide has multiple causes. Slope movement occurs when forces acting down-slope (mainly due to gravity) exceed the strength of the earth materials that compose the slope. Causes include factors that increase the effects of down-slope forces and factors that contribute to low or reduced strength. Although gravity acting on an over-steepened slope is the primary reason for a landslide, there are other contributing factors:

- Erosion by rivers, glaciers, or ocean waves create over-steepened slopes.
- Rock and soil slopes are weakened through saturation by snowmelt or heavy rains.
- Earthquakes create stresses that make weak slopes fail.
- Earthquakes of magnitude 4.0 and greater have been known to trigger landslides.
- Volcanic eruptions produce loose ash deposits, heavy rain, and debris flows.
- Excess weight from the accumulation of rain or snow, stockpiling of rock or ore, from waste piles, or from man-made structures may stress weak slopes to failure and other structures.

Slope material that becomes saturated with water may develop a debris flow or mud flow. The resulting slurry of rock and mud may pick up trees, houses, and cars, thus blocking bridges and tributaries causing flooding along its path.

Source: “What is a landslide and what causes one?” [Frequently Asked Questions - Natural Hazards](#).
“[Landslides 101](#)” [Landslides Hazards – USGS](#).

Affected Locations

Areas highly susceptible to landslides include high-angle slopes, especially in areas underlain by shales. The Appalachian Mountains, the Rocky Mountains and the Pacific Coastal Ranges, and some parts of Alaska and Hawaii have severe landslide issues. Since 1982, there has been landslide activity in every Division F county except Blount and Cherokee Counties. According to the 2018 State Hazard Mitigation Plan, however, the largest landslide in Alabama to be documented by the press was reported to be 1 mile long and occurred along the slide of Bogan Mountain, temporarily damming up the Chattooga River. While the slide is not apparent on the topographic maps, the mountain does have steep slopes with a relatively high landslide susceptibility.

Hazard [Extent]

Detailed instrumental monitoring of landslides is often not possible because of the lack of scientific expertise or insufficient budgets for instrumentation and subsurface investigation. Additionally, instrumental monitoring is often not practical unless a rather small area is involved with intensive examination for a specific purpose.

There are several types of landslides and other downhill mass movements. The most common types in Alabama include creep, slides, and rockfalls. Figure 4.92 depicts imagery corresponding to each type of landslide.

Creep is an imperceptible, slow downward movement of soil or rocks on slopes. Along the creep slope, objects can display signs of this slow movement. Leaning utility poles, trees, retaining walls or offset fences can be signs that an area is undergoing creep.

Slides are movements of soil or rock along a distinct surface of rupture which separates the slide material from the more stable underlying material. At the top of a slide is a cracked portion of the hill slope referred to as a scarp. Near the bottom of the slide (the toe), material mounds up creating a bulge in the topography.

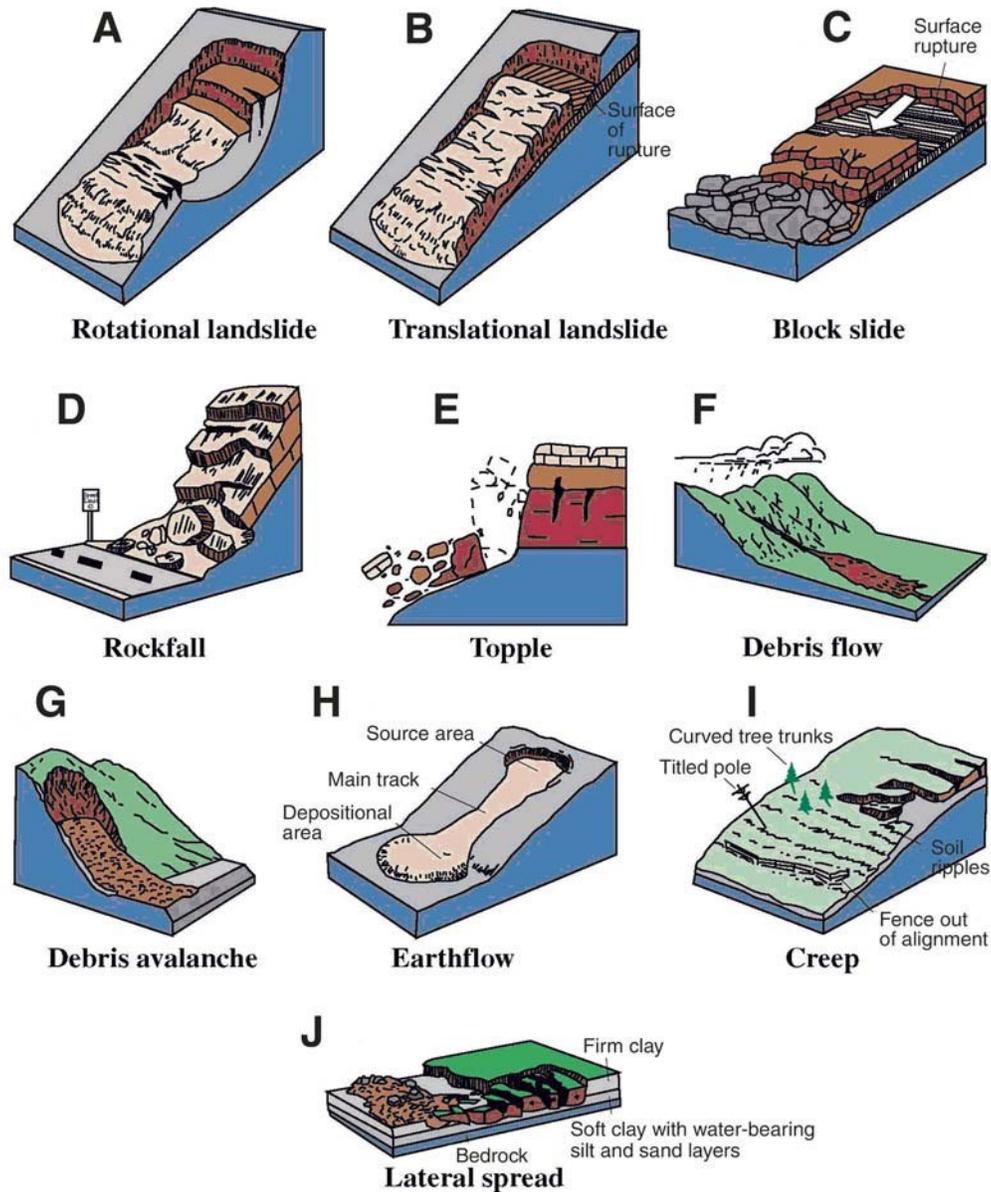
Rock falls are rapid movements of bedrock characterized by free-fall, bouncing, and rolling. These are most common in areas of very steep or near-vertical slopes such as roadcuts.

Source: "Landslide Science and Types." Geological Hazards. Geological Survey of Alabama (GSA).

Previous Occurrences

Landslide incidence is defined as the number of landslides that have occurred in a given geographic area. The Geological Survey of Alabama (GSA) collects data on previously recorded landslides, slope failures, and unstable soil conditions in a 1982 study. Table 4.93 breaks down occurrences of landslide activity across the Division F Region by quadrant, unit age, and primary and secondary rock composition. It is important to note that Blount and Cherokee Counties do not have any previously recorded landslides or slope failures noted in the 1982 study.

Figure 4.92 | Examples of Different Types of Landslide Movement



Source: Examples of Different Types of Landslide Movement – Modified from Cruden and Varnes (1996).
 Wieczorek, G.F., and Snyder, J.B., 2009, Monitoring slope movements, in Young, R., and Norby, L., Geological
 Monitoring: Boulder, Colorado, Geological Society of America, p. 245–271

Section 4 | Hazard Profiles

4.14 Landslides

Table 4.93 | Landslides by County in the Division F Region (1982)

Cullman County	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
	Cold Springs	Pennsylvanian	Sandstone	Shale
	Hanceville	Pennsylvanian	Sandstone	Shale
	Falkville	Mississippian	Limestone	Mudstone
	Falkville	Pennsylvanian	Sandstone	Shale

DeKalb County	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
	Keener	Pennsylvanian-Mississippian	Shale	Sandstone
	Leesburg	Pennsylvanian	Sandstone	Conglomerate
	Chavies	Pennsylvanian-Mississippian	Shale	Sandstone
	Fort Payne	Pennsylvanian-Mississippian	Shale	Sandstone
	Fort Payne	Mississippian	Limestone	Mudstone
	Valley Head	Pennsylvanian-Mississippian	Shale	Sandstone

Etowah County	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
	Keener	Ordovician	Shale	Mudstone
	Keener	Mississippian	Limestone	Chert
	Gadsden East	Pennsylvanian-Mississippian	Shale	Sandstone
	Gadsden West	Mississippian	Limestone	Mudstone

Section 4 | Hazard Profiles

4.14 Landslides

Table 4.93 | Landslides by County in the Division F Region (1982) (Continued)

	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
Jackson County	Dutton	Mississippian	Limestone	Mudstone
	Hytow	Pennsylvanian	Sandstone	Conglomerate
	Estill Fork	Mississippian	Limestone	Chert
	Estill Fork	Mississippian	Limestone	Chert
	Princeton	Mississippian	Limestone	Mudstone
	King Cove	Mississippian	Limestone	Mudstone
	Lim Rock	Mississippian	Limestone	Mudstone
	Mud Creek	Mississippian	Limestone	Mudstone
	Mud Creek	Mississippian	Shale	Limestone
	Mud Creek	Mississippian	Shale	Limestone
	Langston	Pennsylvanian	Sandstone	Conglomerate
	Dutton	Pennsylvanian	Sandstone	Conglomerate
	Dutton	Pennsylvanian	Sandstone	Conglomerate
	Dutton	Mississippian	Shale	Limestone
	Stevenson	Mississippian	Limestone	Mudstone
	Stevenson	Mississippian	Shale	Limestone
	New Home	Mississippian	Shale	Limestone
Dutton	Pennsylvanian	Sandstone	Conglomerate	
Limestone County	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
	Elkmont	Ordovician	Limestone	Shale
	Tanner	Mississippian	Limestone	Chert

Section 4 | Hazard Profiles

4.14 Landslides

Table 4.93 | Landslides by County in the Division F Region (1982) (Continued)

	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
Madison County	Huntsville	Mississippian	Shale	Limestone
	Huntsville	Mississippian	Shale	Limestone
	Huntsville	Mississippian	Limestone	Dolostone (Dolomite)
	Huntsville	Mississippian	Limestone	Dolostone (Dolomite)
	Huntsville	Mississippian	Limestone	Dolostone (Dolomite)
	Huntsville	Mississippian	Limestone	Mudstone
	Huntsville	Mississippian	Limestone	Mudstone
	Huntsville	Mississippian	Limestone	Mudstone
	Huntsville	Mississippian	Limestone	Mudstone
	Huntsville	Mississippian	Shale	Limestone
	Farley	Mississippian	Shale	Limestone
	New Hope	Mississippian	Limestone	Mudstone
	Farley	Mississippian	Limestone	Mudstone
	Farley	Pennsylvanian	Sandstone	Conglomerate
	Farley	Mississippian	Limestone	Mudstone
	Farley	Mississippian	Limestone	Mudstone
	New Hope	Mississippian	Shale	Limestone
	New Hope	Pennsylvanian	Sandstone	Conglomerate
	New Hope	Mississippian	Limestone	Mudstone
	New Hope	Mississippian	Shale	Limestone
	New Hope	Mississippian	Shale	Limestone
	New Hope	Mississippian	Limestone	Mudstone

Table 4.93 | Landslides by County in the Division F Region (1982) (Continued)

	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
Madison County	New Hope	Mississippian	Limestone	Mudstone
	Maysville	Mississippian	Limestone	Dolostone (Dolomite)
	Maysville	Mississippian	Limestone	Chert
	King Cove	Mississippian	Limestone	Dolostone (Dolomite)
	King Cove	Mississippian	Limestone	Mudstone
	King Cove	Mississippian	Limestone	Mudstone
	King Cove	Mississippian	Limestone	Dolostone (Dolomite)
	King Cove	Mississippian	Limestone	Dolostone (Dolomite)
	King Cove	Mississippian	Limestone	Mudstone
	Huntsville	Mississippian	Limestone	Mudstone
	Huntsville	Mississippian	Limestone	Mudstone
	Huntsville	Mississippian	Limestone	Mudstone



Severe cracks in Hwy 231 caused by a local landslide. Source: ABC WAAY 31. March 06, 2020

Table 4.93 | Landslides by County in the Division F Region (1982) (Continued)

	Quadrant	Unit Age	Primary Rock Type	Secondary Rock Type
Morgan County	Eva	Mississippian	Limestone	Mudstone
	Falkville	Pennsylvanian	Sandstone	Shale
	Falkville	Mississippian	Limestone	Mudstone
	Hartselle	Mississippian	Limestone	Shale
	Decatur	Mississippian	Sandstone	Shale
	Center Grove	Mississippian	Limestone	Mudstone
	Center Grove	Mississippian	Shale	Limestone
	Newsome Sinks	Pennsylvanian	Sandstone	Shale
	Center Grove	Mississippian	Limestone	Mudstone
	Eva	Mississippian	Limestone	Mudstone

Source: Geological Survey of Alabama, Rheams. 1982.

Hazard [Impact]

Landslides in Cullman County, Alabama

On March 26, 2010, an early morning landslide in the Smith Lake area created a major inconvenience for residents in Southwest Cullman County. A section of County Road 950 that runs parallel to the lake slide into the water following heavy rainfall, sending trees, dirt, and debris tumbling downhill and into the lake. The road dead ends past the landslide area. County Road 950 is also subject to subsidence from unstable soil and heavy erosion.

Landslides in DeKalb County, Alabama

In April 2021, the Alabama Department of Transportation (ALDOT) has closed Alabama 117 between Mentone and Valley Head as a precaution, pending further investigation and repair of a landslide below the roadway on the side of Lookout Mountain. Traffic between Mentone and Valley Head had to be detoured as AL-117 was closed between Tutwiler Gap and Cool Street in Mentone. ALDOT contacted the Georgia Department of Transportation (GDOT) officials to help re-route commercial traffic off Georgia Highway 48 in Chattooga County due to Alabama 117 closing. The repair included excavation along a 300-foot-long section of the highway and construction of a rock buttress – a more stable rock fill replacing the loose material – followed by reconstruction of the damaged section of the road.

Landslides in Etowah County, Alabama

Etowah County lies in an area of moderate susceptibility and low incidence of landslides. In 2015, a landslide event occurred on U.S. Highway 431 just south of Rockledge Road. Rocks, soil, and trees slid down the rain-soaked mountainside on evening, blocking the southbound lanes of traffic. Some vehicles sustained damage, including a truck that ran into debris on the roadway, but no injuries resulted from the actual slide. The incident slowed traffic in the area between milepost 272.0 and 271.0. The only County-maintained road that remained closed due to the incident was Horton Gap Road at the intersection of Nelson Williams Road. At the time of the landslide, the road was to be closed indefinitely.

Source: [“Landslide clean-up on US Highway 431 near Rockledge will take weeks.” Eric T. Wright – The Gadsden Times.](#)

Landslides in Jackson County, Alabama

In November 2011, the Jackson County Sheriff’s Department along with State Troopers closed Alabama Highway 35 in the Section community. The road was closed due to a landslide that occurred around 4:45am, leaving local safety crews unsure of how much of the roadway was covered by trees, boulders, dirt, and debris. Once aware of the damage, officials stated that debris blocked the span of the highway between the Town of Section and the City of Scottsboro, at the foot of Sand Mountain.

Source: [“Highway 35 closed in Jackson County due to landslide.” Nov. 29, 2011. Nate Adams – Lite 96.9.](#)

Landslides in Limestone County, Alabama

Landslides, or at least slope failures, have been reported in the Elkmont and Tanner communities in Limestone County. However, no incidents or injuries have been reported in these areas or other areas of Limestone County.

Landslides in Madison County, Alabama

A rockslide on Governors Drive in Huntsville was reported the morning of September 30, 2019. A drought was considered the cause of large rocks sliding onto a road just west of Monte Sano Boulevard. Both north and southbound lanes were closed for hours while transportation crews cleared the area. ALDOT used heavy equipment to move the debris; the incident took roughly three hours to clear.

Source: [“Crews say rockslide on Governors Drive in Huntsville may have been caused by the drought.” Sept. 30, 2019. Waaytv.com – ABC 31. Accessed May 31, 2021.](#)

Landslides in Morgan County, Alabama

Torrential rain caused a landslide fifty feet below the surface of Highway 231 in the Lacey Spring community in February 2020. After consecutive days of heavy rain, the road started to slide off Brindlee Mountain, virtually damaging the road beyond repair. During the road's closure, Highway 231's detour added time and mileage to drivers' commutes. Repairs for the replacement of the roadway totaled \$21 million – the final product featured twin bridges that would span the same length of miles as Highway 231.

Source: [“Highway 231 reopens in Lacey’s Spring.” Sept. 28, 2020. WHNT.com – News 19. Accessed May 31, 2021.](#)

Probability of Future Events

Landslides are one of the most unpredictable hazards impacting the Division F Region. New incidents of this natural hazard are probable in areas with high-angled slopes or areas where landslides have previously occurred. However, landslide activity can also occur following hazards that drastically change the earth below the ground's surface, i.e., severe flooding, earthquakes, and droughts. Communities prone to these hazards have an increased risk of landslides occurring. With these factors in mind, future probability of landslide activity in the Region varies.

Section 5 - Jurisdictional Vulnerability

SECTION 5 | VULNERABILITY

5.1 Jurisdictional Vulnerability Overview | Blount County

- Natural Hazard Vulnerability in Blount County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.2 Jurisdictional Vulnerability Overview | Cherokee County

- Natural Hazard Vulnerability in Cherokee County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.3 Jurisdictional Vulnerability Overview | Cullman County

- Natural Hazard Vulnerability in Cullman County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.4 Jurisdictional Vulnerability Overview | DeKalb County

- Natural Hazard Vulnerability in DeKalb County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.5 Jurisdictional Vulnerability Overview | Etowah County

- Natural Hazard Vulnerability in Etowah County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.6 Jurisdictional Vulnerability Overview | Jackson County

- Natural Hazard Vulnerability in Jackson County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.7 Jurisdictional Vulnerability Overview | Limestone County

- Natural Hazard Vulnerability in Limestone County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.8 Jurisdictional Vulnerability Overview | Madison County

- Natural Hazard Vulnerability in Madison County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

5.9 Jurisdictional Vulnerability Overview | Morgan County

- Natural Hazard Vulnerability in Morgan County
- Socially Vulnerable Populations
- Vulnerable Structures
- Critical Facility Inventory
- Vulnerability Summary

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Vulnerability describes the *extent to which something is damaged by a natural hazard*. It is often based on studies of how buildings perform when they are exposed to hazards. Injury and mortality functions (how many people are injured or die during events) are also used as indicators of vulnerability. However, these indicators are generally not used to describe physical assets as they entail more variables.

The *Hazard Profiles* of the Division F Regional Hazard Mitigation Plan began by measuring primary impacts and hazardous results for the most substantial hazards occurring in Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, and Morgan Counties. Tables at the end of each respective county’s vulnerability section will delve into the future probability of these hazards and the extent to which communities are vulnerable.

Table 5.1 | Hazard Vulnerability by Jurisdiction in Blount County, Alabama

	Natural Hazards	Municipalities					
		Allgood	Blountsville	Cleveland	Hayden	Highland Lake	Nectar
Blount County	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	H	H	H	H	H	H
	Earthquakes	H	H	H	H	H	H
	Flooding	M	M	M	M	M	M
	Hail	L	L	L	L	L	L
	High Winds - High / Strong Winds	M	M	M	M	M	M
	High Winds - Tornadoes	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L
	Lightning	H	H	H	H	H	H
	Wildfire	M	M	M	M	M	M
	Winter Storms / Winter Weather	H	H	H	H	H	H
	Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction) ; M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)						

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.1 | Hazard Vulnerability by Jurisdiction in Blount County, Alabama (Cont'd)

	Natural Hazards	Municipalities				
		Oneonta	Rosa	Snead	Susan Moore	Unincorporated County
Blount County	Dam Failure	L	L	L	L	L
	Drought / Extreme Temps.	H	H	H	H	H
	Earthquakes	H	H	H	H	H
	Flooding	M	M	M	M	M
	Hail	L	L	L	L	L
	High Winds - High / Strong Winds	M	M	M	M	M
	High Winds - Tornadoes	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H
	Landslides	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L
	Lightning	H	H	H	H	H
	Wildfire	M	M	M	M	M
	Winter Storms / Winter Weather	H	H	H	H	H

Key: **L | Low Risk**; little damage potential (< 5% damage to the jurisdiction) ; **M | Medium Risk**; moderate damage potential (5-10% potential damage to the jurisdiction); **H | High Risk**; significant damage to the jurisdiction (10%> potential damage)

Natural Hazard Vulnerability in Blount County

Dam Failure | According to the U.S. Corps of Engineers National Inventory of Dams, there are **34** dams and levees in Blount County. Most of these are earth type dams, while one is a buttress type (Youngblood Lake Dam), and most are used for recreational purposes (fishing, tourism). Maximum discharge, which is the number of cubic feet per second which the spillway is capable of discharging when the reservoir is at its maximum designed water surface elevation, ranges from **9** cu ft/sec to **4,320** cu ft/sec. The former is associated with Spring Valley Ponds, while the latter is associated with Doctor Patton’s Lower Lake Dam. Dams and levees are located across the County, so a slight risk of dam or levee failure exists for several incorporated jurisdictions.

The dam with the highest hazard potential is Inland Lake, a **7 ½** miles long, **1,536-acre** artificial lake located off the Little Warrior River in Blount County. The lake holds more than **20 billion** gallons and current maximum withdrawal is **47 million** gallons/day. Inland Lake Dam is a major dam in Blount County that creates a major water supply source for the Birmingham Water Works Board (BWWB). In 2013, the BWWB made repairs to the dam and lowered levels to minimize safety concerns. If this dam fails, flooding with significant downstream damages would occur and disruption in water supply to the Birmingham metropolitan area served by the BWWB (both industrial and public) would likely be significant.

5.1 Jurisdictional Vulnerability Overview | Blount County

Natural Hazard Vulnerability in Blount County (Continued)

Drought / Extreme Temperatures | Blount County has dealt with drought on multiple occasions in its history. During the 15-year study period, this jurisdiction experienced **29** drought events and was rated as having a D2 Severe/D3 Extreme Drought classified event during this time. The extreme heat event in 2007, occurring during a statewide drought, caused one injury. The statewide drought, occurring from 2006-2008, caused agricultural, hydrologic, and sociological impacts to Blount County. Drought conditions ranged from D2-Severe to D4- Exceptional. Stream and river levels were low; reservoir levels were impacted; municipal water shortages persisted (even with the implementation of water restriction plans); and crops were adversely impacted.

Droughts and heat waves are expected to affect Blount County, on average, **one** time per year (based on historical data). Extreme heat events are likely and significant droughts are possible. According to the National Climatic Data Center, “scientists know that atmospheric moisture plays an important role in heat waves. They tend to occur more frequently in dry conditions with low humidity, but heat waves in high humidity can take their toll on the population, livestock, and wildlife.”

Earthquakes | When earthquakes strike a region, it is impossible to predict which area will be affected the most at a sub-county level. According to data provided by the Geologic Survey of Alabama, **seven** earthquakes have occurred within the boundaries of Blount County between 1886 and 2020. Blount County is within the Southern Appalachian Seismic Zone, with which these earthquakes are associated.

Damages to buildings and infrastructure depend not only on the energy released during an earthquake but also underlying soils and geological characteristics. Blount County has a very low degree of seismic liquefaction susceptibility throughout the county. Additionally, soil type and site amplification contribute to the velocity at which rock or soil transmits shear waves (USGS). Of the five soil types identified by the National Earthquake Hazards Reduction Program, Blount County contains soil site amplification classes based on metasedimentary and metamorphic rocks with medium to high shear-wave velocities. These typically do not contribute to enhanced amplification of earthquake shaking. Some areas with thin soils overlying hard rock (soil site classification B) have even less amplification; very few areas with thicker soils, such as floodplains, have soil site classifications of D or F (higher amplification).

Seismic hazards data from the USGS Earthquake Hazards program shows the majority of Blount County has only a two percent chance of exceeding shaking above 14-20%g (northeastern portion of the county falls within the 10-14% range) in the next 50 years. GSA records and analysis suggest the likelihood of damaging earthquake is extremely low. Most Alabama earthquakes have been associated with the Southern Appalachian Seismic Zone. While Blount County lies within the Southern Appalachian Seismic Zone, it still maintains a low probability of future occurrences.

Flooding / Flash Floods | Flooding and flash flooding is of moderate concern to Blount County communities. NOAA records affirm this public perception. The Flood Insurance Rate Maps (FIRMs) of the National Flood Insurance Program (NFIP) indicates Blount County has extensive areas prone to flooding. All of Blount County resides in the 100-year flood zone. Flooding in Blount County occurs almost yearly in every jurisdiction, most frequently between November and April. Champion Creek, in Oneonta, is prone to flooding; as well as areas in and around Blue Spring Creek and Copeland Creek in Blountsville; the Warrior River in Snead; and Blackburn Fork, and Locust River Fork.

5.1 Jurisdictional Vulnerability Overview | Blount County

Natural Hazard Vulnerability in Blount County (Continued)

The extent of each flood varies according to the amount of rainfall, the rate of storm water flow, and the capacity of the receiving channel to discharge flood waters. Flooding along streams and tributaries is a large concern in Blount County, many of which events are flash floods. Flash flooding can result in property damage, as well as casualties. Flash flooding also affects accessibility for emergency services, road damage, and utility damage.

The costliest flooding event (damages at **\$200,000**) for Blount County occurred on January 6, 2009, where areas of the county received some of the worst flash flooding among the state. Pouring down upwards of six inches of rain, this flood caused several people to be trapped in their cars; a car to wash off the road on Covered Bridge Road (north of Oneonta), and another car to get stuck in two feet of water on Hoods Crossing Road (near Oneonta). Flooding was also reported at Reed Road at Sugar Land Lake; River Road, south of Highland Lake; Springville Boulevard at Boat Landing Road; Tumlin Road at AL 160 in Hayden; and Smith Road, four miles south of Oneonta.

Past trends indicate that regular occurrences of heavy rainfall will continue to create flooding throughout Blount County. Blount County should expect approximately one flood event per year, although the severity of damage may vary widely from one year to the next. With respect to climate change, an increase in temperature and moisture in the air can lead to heavier precipitation events. However, the causes of flooding are varied, including improper land uses on floodplains, surface paving, quality of flood forecasting, settlement patterns, and warning systems.

High Winds / Strong Winds | Four Federal disaster declarations for hurricanes have included Blount County from 1973 to 2020, including Hurricane Ivan, Hurricane Katrina, Hurricane Gustav, and Hurricane Sally. Hurricanes Opal(1995), Ivan (2004), Katrina (2005), and Sally (2020) were all impactful enough for both federal and state disaster declarations to impact Blount County. Of these events, records indicate that Hurricane Opal had direct impact on Blount County.

On October 4, 1995, Hurricane Opal made landfall at Pensacola Beach, FL as a category 3 hurricane, with maximum sustained winds of **115** mph. it continued to move north-northeast into the state of Alabama. The hurricane caused extensive damage, and the eastern portion of the state experienced the most damage. Trees, signs, and power lines were downed statewide as **2.6 million** Alabama residents lost electricity for up to one week. Hurricane Opal caused **\$1 billion** in property damage and **\$10 million** in crop damage. Hurricane Opal's path crossed over Blount County. Blount County experienced significant rainfall accumulation averaging **5** inches of rain.

Blount County is a low risk for a direct hit by a hurricane/tropical storm due to its position several miles inland from the Alabama coastline. Although Blount County does not feel the effects of storm surges, other effects such as heavy winds, flooding and tornadoes can have significant impact on local communities. All Blount County communities generally share equal risks for high and strong wind events.

Thunderstorms | Blount County experiences numerous thunderstorms every year. All areas of Blount County have equal exposure to severe storms. According to the National Climatic Data Center (NCDC), there have been **276** severe thunderstorm wind events within Blount County since the 1950s. These storms have produced **\$1,321,000** in property damage and **\$23,000** in crop damage.

5.1 Jurisdictional Vulnerability Overview | Blount County

Natural Hazard Vulnerability in Blount County (Continued)

One of the more recent thunderstorm events occurred in July 2015 and produced high winds and lightning. Flash flooding also resulted and numerous trees were downed on Swan Bridge Road, Chaly Springs Road, Inland Dam Road, Beaver Creek Road, County Highway 15, and County Highway 39. News reports indicated several power lines down and a blown transformer at Pine Mountain Road and County Road 23 near the Blount County/St. Clair County line.

It is certain that thunderstorms will show annual occurrences throughout all of Blount County jurisdictions. Past trends show an average of nine (9) damage inducing thunderstorms per year. Regarding the impact of climate change on severe storms, the National Climatic Data Center says, “heavy and extreme precipitation events often associated with thunderstorms and convection are increasing and have been linked to human-induced changes in atmospheric composition”.

Tornadoes | Tornadoes are typically not location specific hazards. All Blount County locations and jurisdictions are equally at risk for tornadoes. In Blount County, tornadoes tend to be severe but infrequent.

One tornadic event with an EF-2 rating which affected Blount County took place on April 28, 2014, injuring at least **two** community members. The maximum path width was **1,300** yards, and the damage path length was **14.6** miles. The tornado began in St. Clair County, causing significant damage and continued into eastern Blount County. The **130-mph** storm downed several trees, destroyed mobile homes, and tore roofs off single-family homes (NWS).

However, the most damaging tornado occurred on April 27, 2011, when at least **28** tornadoes touched down in central Alabama, causing over **a thousand** injuries and **249** deaths within the state. Known as the Cordova track, an EF-4 tornado touched down in Pickens County and moved eastward across Tuscaloosa County, Fayette County, Walker County, and into Blount County. In Blountsville, the storm traveled across Hwy 431 damaging several brick and slab foundation homes on Maple Drive. Other homes were damaged as the storm continued north.

According to the National Climatic Data Center, Blount County was the site of **fifty-seven** tornado events between 1951 and 2020. These events caused a total of **83** injuries, three (3) deaths, and damages over **\$33 million** – an average of **1** tornado and **\$484,841** in property damages per year. If historical trends continue, Blount County can anticipate almost one tornado every year.

Landslides | The Geologic Survey of Alabama shows no historic landslides occurring in Blount County. However, this does not necessarily equate to a lack of landslides. There are no requirements for reporting landslides in the state, and the records of historical landslides that do exist are incomplete. Thus, it is difficult to determine where landslides have occurred in the past for Blount County.

Areas with the highest potential and susceptibility for future occurrences include areas of high angle slope underlain by shales which have low rock strength. The Pennington Shale, for example, has been documented as being associated with slope movements (slumps) in Blount County and the surrounding region. These land movements are constant geologic processes that will continue. Likelihood of landslides is greatest in higher slopes associated with shales.

5.1 Jurisdictional Vulnerability Overview | Blount County

Natural Hazard Vulnerability in Blount County (Continued)

Land Subsidence / Sinkholes | Portions of Blount County are more susceptible to sinkholes than other areas. These include locales such as Hayden and Blountsville. One of the areas of highest sinkhole density in Blount County is near Hayden and includes Rickwood Caverns State Park and its large basin of coalescing sinkholes. These sinkholes and caverns are in the Bangor Limestone, the geologic unit with which most sinkholes in Blount County are associated. Sinkholes are also common in the Sequatchie and Murphee Valleys. When subsidence or sinkholes occur, the impact on communities can be significant. Loss of property value, increased insurance costs, and potential injury are possible. Extent and rates of sinkhole growth can be impacted by many variables including heavy rain, draught, water well drawdown, development, and construction. Site assessments prior to construction can sometimes provide subsurface information valuable in decision making for building, reducing potential for structural damage later.

Data from the Geological Survey of Alabama counts over **6,400** sinkholes from 1:24,000-scale topographic maps across Alabama. The Town of Smoke Rise, a census designated place near Hayden, had formed depressions. The presence of limestone and dolostone within the county with the many sinkholes mapped throughout the county indicates a high probability of continued sinkhole formation. The probability of future sinkholes is higher for communities along the northern border of the county, traveling east from Interstate 65.

Lightning | Blount County experiences multiple lightning events every year. All areas of Blount County are equally vulnerable to lightning. According to the National Climatic Data Center (NCDC), there have been **11** damaging lightning events within Blount County since 1996, one of which resulted in a death and **one** of which resulted in an injury. These events have produced a total of **\$327,000** in property damage. There is a less than 50% chance that a significant lightning event will occur in Blount County; however, the risk of occurrence increases with the occurrence of severe thunderstorm events.

Wildfires | Areas in and around Blount County are susceptible to wildfires. The two primary categories of wildfires experienced in Blount County are wildland fires and interface fires. Wildland fires are uncontrolled fires that spread through vegetative fuels and most of these types of fires in Blount County occur on privately owned land. Interface fires occur at the wildland urban interface, where forest land meets civilization and most Blount County wildfires are of this type. Blount County homes and farms are scattered throughout forested areas, all of which provide fuel for wildfires.

Blount County experienced **343** wildfires from January 2007 to December 2020. This equates to an estimated **26** incidents per year over the last 13 years. The two most significant wildfires for this jurisdiction both occurred in November 2016 – **450** acres were scorched on November 23rd and **357** acres were scorched on November 7th. According to U.S. Drought Monitor data, these incidents coincide with reported drought activity for that month. Unfortunately, it is not explicitly clear whether the D2-D4 conditions were directly responsible for or the result of these two events.

Winter Storms / Winter Weather | Blount County's location in the northern part of Alabama makes winter storms a likely occurrence, relative to other parts of the state. Winter storms that strike Blount County are relatively mild, characterized by snow dusting or light freezing rain. On average, the county receives **two** inches of snowfall annually with three winter storm events every two years. Rarely do snowfalls exceed two inches or freezes disrupt road travel for long periods. Although, when winter storms or severe freezes do occur, major transportation disruptions and power outages are expected, due to the inexperience of having to deal with such infrequent events.

5.1 Jurisdictional Vulnerability Overview | Blount County

Natural Hazard Vulnerability in Blount County (Continued)

The lowest recorded temperature in Blount County of -15°F occurred in 1899 and the largest snowfall of **16** inches occurred during the Alabama Blizzard of 1993. All participating jurisdictions are equally likely to experience winter storms/freezes, which may be accompanied by snow, freezing rains, and extreme temperature lows. Blount County experiences annual disruptions and some damages due to severe winter storms/freezes. While the yearly average snowfall is two inches, some events have produced major disruptions and damages. According to the National Climate and Data Center (NCDC), **thirty-three** winter storms (including ice storms and heavy snow) or extreme cold events have been reported since 1996.

The most recent snow event took place in Blount County on March 5, 2015, when wintry precipitation swept Alabama from northwest to southeast. Heavy icing and several road closings across northern Alabama occurred as a result. The Blount County EMA reported icing on the double bridges along AL-75 at County Road 15; as well as other road issues on Skyline Drive, County Road 45 near Nectar, and Roswell Creek Road in Blountsville.

Socially Vulnerable Populations

Natural hazard events have different impacts across Blount County populations. These populations can be quantified by social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey. Blount County has **645** square miles of land and **6** square miles of water. Population density is currently estimated at **88.5** persons per square mile.

Table 5.2 shows population characteristics for Blount County by jurisdiction and by census tract. Oneonta is the most populated community, followed by Blountsville, Locust Fork, Hayden, Cleveland, Snead, Susan Moore, Allgood, Rosa, Highland Lake, and Nectar. Regarding vulnerability, the larger an area's population, the more susceptible people and structures are to incurring injury and damage. Tract 506.02 is the most populated tract in the county that includes the entirety of the Town of Hayden. Tract 502, at the heart of Blount County, is the least populated tract. It contains portions of the Cleveland, Oneonta, and Rosa communities.

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies.

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.2 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 Yrs. and Over
Jurisdiction							
Blount County	57,645	55,981	1,124	1,538	14,829	32,583	10,233
Allgood	674	625	20	52	173	428	73
Blountsville	1,838	1,769	65	78	553	1,010	275
Cleveland	1,167	1,124	3	62	215	696	256
Hayden	1,252	1,201	37	35	268	736	248
Highland Lake	360	358	2	18	59	176	125
Locust Fork	1,631	1,617	19	5	463	1,337	290
Nectar	330	328	2	0	95	173	62
Oneonta	6,575	5,823	533	281	1,776	3,385	1,414
Rosa	400	396	4	0	100	233	67
Snead	702	691	0	11	109	451	142
Susan Moore	700	674	8	21	119	408	173
County Census Tract							
Tract 501.01	7,747	7,147	401	361	1,907	4,509	1,331
Tract 501.02	7,073	6,798	201	136	1,755	3,731	1,587
Tract 502	3,870	3,818	3	87	1,073	2,262	535
Tract 503	4,749	4,659	110	110	1,150	2,515	1,084
Tract 504	4,138	4,094	0	136	1,085	2,352	701
Tract 505	7,455	7,339	75	200	1,925	4,239	1,291
Tract 506.01	4,183	4,090	76	167	1,187	2,380	616
Tract 506.02	9,414	9,153	200	184	2,355	5,490	1,569
Tract 507	9,016	8,883	58	157	2,392	5,105	1,519

Source: American Community Survey (ACS) Demographic and Housing Estimates (2018)

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

In addition to racial and age composition in Blount County, income levels are also important when identifying and planning for vulnerable populations. Lower income individuals have difficulty acquiring resources to prepare for or recover from disasters. Table 5.3 provides a breakdown of median household income, per capita income, and poverty level data for the jurisdictions and census tracts in the county.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. The Hayden, Highland Lake, Locust Fork, and Snead communities all have median household incomes that exceed the state average. Census tracts 502, 505, 506.01, and 506.02 have the same designation. Tract 506.02 is the only tract with a median household income that’s higher than the national average.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Hayden and Highland Lake are the only two jurisdictions with per capital income averages higher than the state average; no jurisdiction has an average that surpasses the nation’s figure. Tracts 501.02, 504, and 506.02 have per capita incomes above Alabama’s per capita figure. There are no jurisdictions or census tracts with per capita income averages above the 2018 U.S. average.

Table 5.3 | Blount County Income Data by Jurisdiction and Census Tract (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Blount County	\$48,695	\$22,656	7,739	13.6%
Allgood	\$42,500	\$17,141	194	27.6%
Blountsville	\$28,382	\$16,393	612	27.1%
Cleveland	\$37,237	\$19,177	102	7.6%
Hayden	\$54,688	\$26,880	109	8.8%
Highland Lake	\$55,000	\$31,658	21	5.1%
Locust Fork	\$56,500	\$19,076	190	12.9%
Nectar	\$41,250	\$21,889	38	10.1%
Oneonta	\$45,217	\$24,751	731	11.8%
Rosa	\$44,375	\$20,806	47	11.0%
Snead	\$49,750	\$25,143	106	11.9%
Susan Moore	\$40,909	\$20,444	160	18.9%

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.3 | Blount County Income Data by Jurisdiction and Census Tract (2018) (Cont'd)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
County Census Tract				
Tract 501	\$48,011	\$23,206	1,100	14.8%
Tract 501.02	\$41,968	\$27,110	1,097	15.9%
Tract 502	\$54,063	\$20,891	504	11.9%
Tract 503	\$39,620	\$18,891	1,195	24.0%
Tract 504	\$47,587	\$27,006	425	11.0%
Tract 505	\$48,738	\$26,369	995	12.7%
Tract 506.01	\$55,417	\$23,765	518	12.4%
Tract 506.02	\$67,175	\$30,178	525	5.8%
Tract 507	\$42,736	\$21,674	1,380	16.0%

Source: Income In The Past 12 Months (In 2018 Inflation Adjusted Dollars)

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. County census tract 503 is the only tract that exceeds both the state and national poverty levels; tracts 501, 501.02, and 507 exceeds the national figure. Tract 506.02 has the lowest below poverty percentage in the county at **5.8%**. Allgood, Blountsville, and Susan Moore are projected as having below poverty rates higher than both the state and national rates. Highland Lake has the lowest below poverty percentage in Blount County at **5.1%**; and Allgood has the highest percentage at **26.6%**.

Vulnerable Structures

Housing is a critical consideration of mitigation planning as residential development is often the most prevalent form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5 shows housing characters for Blount County by jurisdiction.

Oneonta has the largest number of housing units, followed by Blountsville and Cleveland. Locust Fork has the largest concentration mobile homes; Allgood has the largest percentage of mobile homes within a municipality. Historically, mobile home units have been highly susceptible to natural hazards and prone to substantial amounts of damage or complete destruction. Implementing regulations for development and maintenance of these structures could drastically reduce costly natural hazard impacts. Additionally, development should be restricted in flood prone areas or areas with an extensive history of detrimental hazard impact.

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.4 | Blount County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Blount County	24,222	6,108	25.2%
Allgood	273	151	55.3%
Blountsville	833	129	15.5%
Cleveland	547	103	18.8%
Hayden	524	144	27.5%
Highland Lake	243	0	0%
Locust Fork	524	167	31.9%
Nectar	154	44	28.6%
Oneonta	2,567	17	0.7%
Rosa	158	51	32.3%
Snead	390	66	16.9%
Susan Moore	328	83	25.3%

Source: American Community Survey (ACS) Selected Housing Characteristics (2018)

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Blount County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. Each of the critical facilities listed in the following tables are vulnerable to each of the hazards identified in the risk assessment. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.5 | Critical Government Facilities in Blount County, Alabama

Facility	Location	City	Description
Adult Rehabilitation Svc	1004 2 nd Ave E	Oneonta	State Education Programs
Alabama Transportation Dept.	6480 2 nd Ave W	Oneonta	State Transportation Programs
American Red Cross	906 2 nd Ave E	Oneonta	Social Service & Welfare Organizations
ARC- Blount County	615 Fairgrounds Ave	Oneonta	Government Offices County
Blount County	1004 2 nd Ave E	Oneonta	County Gov't Transportation Programs
Blount County ARC	100 Mountain Springs Rd. #103	Oneonta	Government Offices County
Blount County Bus Shop	3070 Swann Bridge Rd	Cleveland	Government Offices County
Blount County Children's Ctr	106 1 st Ave West	Oneonta	Social Service & Welfare Organizations
Blount County Courthouse	220 2 nd Ave E #106	Oneonta	Government Offices County
Blount County Engineers	6454 2 nd Ave W	Oneonta	Government Offices County
Blount County Health Dept.	1001 Lincoln Ave	Oneonta	County Government Public Health Programs
Blount County Offices	415 5 th Ave E	Oneonta	Government Offices County
Blount County Probate Office	306 2 nd Ave	Hayden	County Government General Offices
Blount County – Oneonta Agri	500 New St	Oneonta	Government Offices County
Blount County – Oneonta Chamber	227 2 nd Ave E	Oneonta	Chamber of Commerce
Blountsville Housing Authority	134 Solar Dr	Blountsville	Housing Authorities
Blountsville Town Hall	10017 Lee St W	Blountsville	City Government Offices
Cleveland Town Hall	62732 US Hwy 231	Cleveland	City Government Offices
Forestry Commission	49686 US Highway 231	Oneonta	Government Forestry Services
Hayden Town Hall	5030 State Highway 160	Hayden	City Government Transportation
Hayden Transportation Dept.	22 State Highway 160	Hayden	State Government Transportation
Highland Lake Town Hall	612 Lakeshore Dr	Oneonta	City Governments Offices
National Guard	1625 Pocota Dr	Oneonta	State Government-National Security
Nectar Town Hall	14795 State Highway 160	Cleveland	City Government Offices
Oneonta City Airport	3201 Airport Rd	Oneonta	Airport
Oneonta City Barn	115 Jack Fendley Dr	Cleveland	Government Offices City
Oneonta City Hall	202 3 rd Ave E	Oneonta	City Government Offices
Oneonta City of Depot	28117 State Hwy 75	Oneonta	Government Offices City

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.5 | Critical Government Facilities in Blount County, Alabama (Cont'd)

Facility	Location	City	Description
Oneonta Housing Authority	606 Fairgrounds Ave	Oneonta	Housing Authority
Oneonta Recreation Dept.	420 Gym St	Oneonta	Parks
Robbins Field Airport	231 Airport Rd	Oneonta	Airport
Senior Citizen’s Ctr	100 Jack Fendley Dr	Oneonta	Social Service & Welfare Organizations
Snead Park & Recreation	354 Pearman Rd	Altoona	Parks
Snead Park & Recreation	77 Ballard Rd	Altoona	Parks
Snead Town Hall	87169 US Highway 278	Snead	City Government Offices
Susan Moore Town Hall	39989 State Highway 75	Altoona	City Government Offices
Town of Allgood	4535 Old Highway 75	Allgood	Government Office City
US Post Office	17198 Remlap Dr	Remlap	Post Offices
US Post Office	18095 State Highway 160	Cleveland	Post Offices
US Post Office	20 Park Rd	Locust Fork	Post Offices
US Post Office	26038 Highway 75 N	Allgood	Post Offices
US Post Office	2920 College St	Altoona	Post Offices
US Post Office	333 7 th St N	Oneonta	Post Offices
US Post Office	4425 State Highway 160	Hayden	Post Offices
US Post Office	69210 Main St	Blountsville	Post Offices
West Blount Park & Recreation	340 Bent Tree Dr	Hayden	Parks

Table 5.6 | Blount County Public Safety Facilities

Agency	Type	Address	City
Allgood Volunteer Fire & Rescue	Fire Rescue	4543 Old Hwy 75	Allgood
Bangor Fire Department	Fire Rescue	205 Philpot Rd	Hayden
Blount County Emergency Management	Emergency	220 2nd Ave E	Oneonta
Blount County 911	Emergency	111 Jack Fendley Dr	Oneonta
Blount Rescue Squad	Fire Rescue	500 Firestone Rd	Oneonta
Blountsville Volunteer Fire & Rescue Station 1	Fire Rescue	68053 Main St	Blountsville
Blountsville Volunteer Fire & Rescue Station 2	Fire Rescue	324 Adams Rd	Blountsville

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.6 | Blount County Public Safety Facilities (Cont'd)

Agency	Type	Address	City
Brooksville Volunteer Fire & Rescue Summit	Fire Rescue	81390 US Hwy 231	Blountsville
Cleveland Volunteer Fire Department	Fire Rescue	62732 US Hwy 231	Cleveland
Corner Fire Department	Fire Rescue	3105 Corner Rd	Warrior
Dallas-Selville Fire Rescue	Fire Rescue	24555 State Hwy 79	Trafford
Holly Springs Fire and Rescue	Fire Rescue	175 Co. Hwy 24	Springville
Locust Fork Vol. Fire Department	Fire Rescue	34 Town Hall Rd	Locust Fork
Mt. High Volunteer Fire Station 1	Fire Rescue	20 Oscar Bradford Rd	Warrior
Mt. High Volunteer Fire Station 2	Fire Rescue	3910 County Hwy 5	Hayden
Murphree Valley Volunteer Fire Department	Fire Rescue	215 Buckner Mill Road	Oneonta
Nectar Fire Department	Fire Rescue	14795 AL Hwy 160	Cleveland
Oneonta Fire & Rescue	Fire Rescue	308 2 nd St N	Oneonta
Oneonta Fire & Rescue Station 13	Fire Rescue	3800 St. Andrews Pkwy	Oneonta
Pine Mountain Volunteer Fire & Rescue	Fire Rescue	4481 Pine Mountain Rd	Remlap
Pine Mountain Volunteer Fire & Rescue	Fire Rescue	581 Fall Branch Rd	Remlap
Remlap Fire Department Station 1	Fire Rescue	40 Fire Fighter Ln	Remlap
Remlap Fire Department Station 2	Fire Rescue	77 Old Compton Rd	Remlap
Ricetown Volunteer Fire & Rescue	Fire Rescue	241 Ricetown Rd	Hayden
Rosa Fire Department	Fire Rescue	35 Waterton Dr	Oneonta
Royal Community Fire Department	Fire Rescue	16151 Co Highway 26	Blountsville
Snead Fire & Rescue	Fire Rescue	86708 US Highway 278	Snead
Straight Mountain Fire & Rescue Station 1	Fire Rescue	4201 Co Highway 29	Oneonta
Straight Mountain Fire Department Station 2	Fire Rescue	48095 US Highway 231	Oneonta
Summit Volunteer Fire Department	Fire Rescue	79094 US Highway 231	Blountsville
Susan Moore Fire Department	Fire Rescue	39999 State Hwy 75	Altoona
West Blount Fire & Rescue Station 1	Fire Rescue	5020 State Hwy 160	Hayden
West Blount Fire & Rescue Station 2	Fire Rescue	1235 Mountain Tr	Warrior
West Blount Fire & Rescue Station 3	Fire Rescue	9780 State Hwy 160	Hayden

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.7 | Blount County Public Safety Facilities (Continued)

Agency	Type	Address	City
Blount County Sheriff	Law Enforcement	225 Industrial Park Rd	Oneonta
Blountsville Police Department	Law Enforcement	171 Water St	Blountsville
Cleveland Police Department	Law Enforcement	62732 US Hwy 231	Cleveland
Oneonta Police Department	Law Enforcement	302 2 nd St N	Oneonta
Snead Police Department	Law Enforcement	87169 US 278	Snead

Table 5.8 | Blount County Utility Services

Company Name	Type	Address	City
Alabama Power Co.	Electric	69544 Main St	Blountsville
Altoona Water & Sewer	Water Wastewater	2844 Main St	Altoona
Blount County Landfill	Solid Waste	2390 Armstrong Loop	Oneonta
Blount County Water	Water Wastewater	18 Arena Dr	Cleveland
Oneonta City Water Filter	Water Wastewater	230 Waterton Dr	Oneonta
Oneonta Utilities Natural Gas	Natural Gas	105 High School St	Oneonta
Oneonta Utilities Sewer	Natural Gas	105 High School St	Oneonta
Oneonta Utilities Water	Natural Gas	105 High School St	Oneonta
Pine Bluff Water Authority	Water Wastewater	30096 State Hwy 79	Locust Fork
Remlap-Pine Mountain Water	Water Wastewater	17545 State Hwy 75	Remlap

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.9 | Blount County Schools

School	Grades	Address	City
Allgood Alt School	2-12	45 Community Rd	Oneonta
Appalachian School	K-12	350 County Rd 12	Oneonta
Bibleway Christian Academy (Private)	PK-6	8224 County Highway 36	Altoona
Blount Co. Career Tech Center	10-12	61500 US Hwy 231	Cleveland
Blount Co. Multi-Needs Center	PK-12	189 Horton Ln	Cleveland
Blountsville Elementary School	K-6	260 Page St	Blountsville
Cleveland Elementary School	K-6	115 Stadium Dr	Cleveland
Cleveland High School	7-12	71 High School St	Cleveland
Hayden Elementary School	3-4	4111 State Hwy 160	Hayden
Hayden High School	8-12	125 Atwood Rd	Hayden
Hayden Middle School	5-7	310 Second Ave	Hayden
Hayden Primary School	K-2	160 Bracken Ln	Hayden
JB Pennington High School	7-12	81 College St	Blountsville
Locust Fork Elementary School	K-6	155 School Rd	Locust Fork
Locust Fork High School	7-12	77 School Rd	Locust Fork
Oneonta Elementary School	K-5	27605 State Hwy 75	Oneonta
Oneonta Middle & High School	9-12	27605 State Hwy 75	Oneonta
Southeastern School	K-9	18770 State Hwy 75	Remlap
Susan Moore Elementary School	K-6	3996 Susan Moore Rd	Blountsville
Susan Moore High School	7-12	4040 Susan Moore	Blountsville
Victory Christian School (Private)	PK-10	4204 County Highway	Oneonta

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.10 | Blount County Community Shelters

Agency	Address	Community
Blountsville Storm Shelter	195 Water St	Blountsville
Cleveland Storm Shelter	517 Park Rd	Cleveland
Locust Fork Shelter	32 Town Hall	Locust Fork
Snead Storm Shelter	49 McCall St	Altoona

Table 5.11 | Blount County Hospital and Elderly Care Facilities

Facility	Location	City	Description
TLC Nursing Ctr	215 Valley Rd	Oneonta	Nursing Home
Cleveland Country Manor	2273 Swann Bridge Rd	Cleveland	Retirement-Assisted Living
Crestline Homes	907 Jones Ave	Oneonta	Retirement-Assisted Living
Eastside Mental Health Ctr	1002 2 nd Ave E	Oneonta	Hospital
Jacobs House	101 Jacobs Ln	Hayden	Retirement-Assisted Living
Magnolia House	100 4 th Ave W	Oneonta	Hospital
Medical Center Blount	150 Gilbreath Dr	Oneonta	Hospital
New Beacon Inc.	1901 2 nd Ave E #C	Oneonta	Nursing Home
Olive Home Inc.	1100 2 nd Ave E	Oneonta	Nursing Home
Summer’s Landing Elderly Care	115 Lakeview Dr.	Cleveland	Nursing Home
Warden Manor Assisted Living	3219 Arkadelphia Rd	Hayden	Retirement-Assisted Living

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.12 | Blount County Warning Sirens

Location	Address	Community
911 Center	111 Jack Fendley Dr	Oneonta
Allgood Old Town Hall	4535 Old Hwy 75	Allgood
Blountsville Water Tank	495 Whispering Trail	Blountsville
Blowgourd	33906 State Hwy 79	Cleveland
Five Points	Five Points Rd/Blackwood Cir	Cleveland
Fred Terry Rd	565 Fred Terry Rd	Locust Fork
Grandview Trail Water Tower	1086 Grandview Trail	Smoke Rise
Hayden Town Hall	5030 State Hwy 160	Hayden
Highland Lake Town Hall	612 Lakeshore Dr	Highland Lake
Jackson Ave	629 Jackson Ave	Oneonta
Lehigh Rd/PBC	952 Philadelphia Rd	Dallas-Selfville
Limestone Springs	600 Colonial Dr	Oneonta
Locust Fork Town Hall	34 Town Hall Rd	Locust Fork
North Jan St	521 Jan St	Oneonta
Remlap Dr	17963 Remlap Dr	Remlap
Rosa Town Hall	35 Waterton Dr	Rosa
Snead Water Tank	81 Medical St	Snead
Susan Moore Town Park	4604 Susan Moore Dr	Susan Moore
Town Hall	62732 US Hwy 231	Cleveland
Town Hall	14795 State Hwy 160	Nectar
VFD	16151 State Hwy 26	Royal
VFD	87608 US Hwy 278	Snead
VFD	24555 State Hwy 79	Dallas-Selfville
VFD #2	48095 US Hwy 231	Straight Mountain
VFD at 278	81390 US Hwy 278	Brooksville

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview | Blount County

Vulnerability Summary

Table 5.1 provides an overall summary of Blount County’s vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: **L** to indicate *low* vulnerability; **M** to indicate *medium* vulnerability; and **H** to indicate *high* vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.13 below provides a summary of the county’s annual potential loss estimates by hazard. Table 5.14 on the following page further breaks down natural hazard probability and damage estimates in Blount County.

5.13 | Summary of Blount County’s Annual Potential Loss Estimates by Hazard

Hazard	Total Estimated Risk
Dam/Levee Failure	N/A
Drought/Extreme Heat	None
Earthquakes	None
Flooding	\$16,867
Hail	\$3,421
High Winds - High / Strong Winds	\$9,729
High Winds - Tornadoes	\$477,914
High Winds - Severe T-storms	\$21,000
Landslides	N/A
Land Subsidence / Sinkholes	Unknown
Lightning	\$5,109
Wildfire	Unknown
Winter Storms / Winter Weather	\$72,958

5.1 Jurisdictional Vulnerability Overview | Blount County

Table 5.14 Natural Hazard Probability and Damage Estimates In Blount County, AL						
Blount County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	29	15	None	1.9 events/yr	N/A
	Earthquakes	7	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	39	24	\$506,000	1.6 events/yr	\$21,083
	Hail	107	64	\$219,000	1.7 events/yr	\$3,422
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 57 Windstorms: 14 Thunderstorms: 276	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$33,508,000 Windstorms: \$233,500 Thunderstorms: \$1,344,000	Tornadoes: 1.1 events/yr Windstorms: < 1 event/yr Thunderstorms: 4.5 events/yr	Tornadoes: \$67,016 Windstorms: \$9,729 Thunderstorms: \$22,033
	Landslides	None	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	49	69	Unknown	< than 1 event/yr	Unknown
	Lightning	11	24	\$327,000	< than 1 event/yr	\$13,625
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	343	13	N/A	26.4 events/yr	Unknown
	Winter Storms/Winter Weather	33	24	\$1,751,000	1.4 events/yr	\$72,958

Table 5.14 provides probability and damage estimates for the entire Blount County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated 26.4 events taking place each year.

Section 5 | Hazard Profiles

5.2 Jurisdictional Vulnerability Overview | Cherokee County

The vulnerability assessment process is necessary to identify those natural hazards that pose a threat to Cherokee County and its municipal jurisdictions. Each jurisdiction was responsible for identifying these hazards in previous mitigation planning efforts. Occurrences of natural hazards in the county are largely documented by the National Oceanic and Atmospheric Administration’s (NOAA) National Climatic Data Center (NCDC). A study period was implemented into the examination of these occurrences to establish the vulnerability of jurisdictions to certain hazards and to determine the probability of these incidents occurring in the future. Table 5.15 displays the resulting vulnerability determinations for Cherokee County municipalities based on figures in the County’s previous hazard mitigation documents.

Table 5.15 | Hazard Vulnerability by Jurisdiction in Cherokee County, Alabama

	Natural Hazards	Municipalities					
		Cedar Bluff	Centre	Gaylesville	Leesburg	Sand Rock	Unincorporated County
Cherokee County	Dam Failure	L	L	L	M	L	L
	Drought / Extreme Temps.	L	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L
	Flooding	M	L	M	L	M	M
	Hail	L	L	L	L	L	L
	High Winds - High / Strong Winds	L	L	L	L	L	L
	High Winds - Tornadoes	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L
	Lightning	L	L	L	L	L	L
	Wildfire	M	M	M	M	M	M
	Winter Storms / Winter Weather	M	M	M	M	M	M
	Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction) ; M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)						

Natural Hazard Vulnerability in Cherokee County

Dam Failure | There are eleven dams in Cherokee County: ten (10) earth dams and one concrete gravity dam. The dam that is noted by the U.S. Corps of Engineers as having a “high hazard” impact is Weiss Dam., meaning that failure or maloperation of this dam would likely result in the loss of human life. The reservoir for the dam covers 30,200 acres, reaches a maximum depth of 62’ and has a watershed of 5,273 square miles.

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Natural Hazard Vulnerability in Cherokee County (Continued)

The roads affected in the event of a failure are secondary highways and lesser roads. The Adams Ferry Bridge would receive a floods wave in approximately **1** minute and **21** seconds in normal condition failure; a flood wave would reach Garrett Bridge in **24** seconds. Primary effects from dam failure in Cherokee County would include loss of life; destruction of property; unregulated water flow to surrounding areas; and increased amount of disease and disease-carrying animals in the area. Hazardous results would include chemical spills from local factories caused by rushing water and heavy flooding that causes many deaths by injuring or trapping people in structures or vehicles.

Drought / Extreme Temperatures | In 2006, Cherokee County experienced **D2** Severe Drought events and **D3** Extreme Drought events. Impacts of such events include crop and/or pasture losses; water shortages; and imposing water restrictions. In 2007 and 2008, Cherokee County experienced **D1** Moderate Drought events, **D2** Severe Drought events, **D3** Extreme Drought events, and **D4** Exceptional Drought events. Impacts of such events included exceptional and widespread crop and/or pasture losses; water shortages, especially in reservoirs, streams, and wells; water restrictions; and water emergencies.

Extreme summer heat is the combination of very high temperatures and exceptionally humid conditions. Conditions like these that persist for extensive periods of time are called heat waves. Heat stress can be indexed by combining the effects of temperatures and humidity. The human risks associated with extreme heat include heatstroke, heat exhaustion, heat syncope, and heat cramps. Young children and senior citizens are among the most vulnerable populations to these risks. Fortunately, there have been no extreme heat events reported in the Cherokee County during the 15-year study period.

Earthquakes | Cherokee County is at risk for earthquakes, however, earthquakes occurring in Cherokee County are predominantly low magnitude events. The risk of a significant, damage-causing earthquake in Cherokee County is low to moderate. Two zones of frequent earthquake activity that could potentially impact Cherokee County are the New Madrid Seismic Zone and the Southern Appalachian Seismic Zone. Damage could be significant in Cherokee County if a powerful earthquake were to occur because buildings in this part of the county have not been constructed to withstand such a powerful force, according to the County's 2015 Hazard Mitigation Plan. Cherokee County's historical earthquake activity is slightly below Alabama's state average. The largest earthquake within 30 miles of Centre, Alabama was a **4.6** magnitude that occurred in 2015. Primary effects from earthquakes in Cherokee County would include property damage; underground infrastructure damage; collapsing buildings; and triggers for other natural disasters. Hazardous results from earthquakes in Cherokee County would include shifting of underlying soil and breaching of dams are examples of possible results from an earthquake and tremors that cause cracking of roads, bridges, or buildings, which may also lead to collapse.

Flooding / Flash Floods | Flash flooding can occur anywhere in the county due to inadequate or clogged drainage systems and excessive rainfall. Unpaved dirt roads, common in the rural areas, are particularly vulnerable. In addition to damaging homes, flooding can adversely impact crops, water and sewer systems, and dams and levees. All jurisdictions in Cherokee County are vulnerable to flood events. Primary flooding issues occur along Weiss Lake and its tributaries. The Town of Cedar Bluff has flooding along its town limits. The northern border of Centre is the most susceptible to flooding; Park Street in downtown Centre is of particular concern for flood activity. La Rue Finis Road in Leesburg has been subject to repeated flooding. The intersection of State Highway 35 and County Road 68 in Gaylesville experiences repeated flooding. While the DeKalb County portion of the Town of Sand Rock is 'non-flood prone,' designated high-risk flood zones intersect sections of Valley Road, State Highway 68 West, and Sand Rock Avenue in the Cherokee County portion of Sand Rock. Flood impacts include property and crop damage, contamination or failure of water and sewer systems, increase in waterborne disease, and possible dam or levee failure.

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Natural Hazard Vulnerability in Cherokee County (Continued)

Hail | During the **64-year** study period covered for hailstorms, Cherokee County experienced **107** hail events resulting in no deaths or injuries, **\$21,000** in crop damages, and **\$125,000** in property damages. All jurisdictions are vulnerable to hail events. On May 2, 2003, hail measuring **4.5 inches** in diameter fell mostly across rural areas in western and southern Cherokee County and caused **\$65,000** in property damage.

High Winds / Strong Winds | High winds from storms such as Hurricane Ivan and strong winds from Hurricane Lee have substantially impacted Cherokee County. The most significant effects have been related to excessive rainfall, damaging wind, and tornados. High wind events in the area have reached as high as **60** miles per hour. Residents suffered loss of power, damage to homes, blocked roadways from associated storm debris, and loss of other critical utilities. In critical storm incidents, numerous trees were reported uprooted or snapped apart in the communities of Gaylesville, Calhoun, Sand Mountain, and Cedar Bluff. As many as 8,000 residents have been without power at one time due to a storm ravaging the county. Mobile homes are particularly vulnerable and are impacted more than conventionally built homes. Mobile homes in the county represent **29.2%** (as of 2018) of the housing stock. Effects of these storms generally impact the entire county and are not limited to a specific location.

Thunderstorms | All Cherokee County jurisdictions are vulnerable to thunderstorm events. Cherokee County experiences storms every year with varying frequency and intensity. The highest magnitude of wind occurred on April 27, 2011, near Gnatville and was recorded at **70** knots or **81** miles per hour. This event caused one injury and **\$15,000** of property damages. Another event occurred on January 5, 2007, where winds of **55** knots or **63** miles per hour and resulted in **\$50,000** property damages.

Tornadoes | Areas with higher population densities pose the greatest potential for property damage, injury, and death. The County's previous hazard mitigation plan notes that the most densely populated area in the county has approximately **63.60** persons per square mile. Communities with a high concentration of mobile homes are extremely vulnerable to tornadoes. Mobile homes are not capable of withstanding the strong winds associated with this hazard. Cherokee County has a total of **4,825** mobile homes countywide, **29.2%** of the total housing stock.

The most powerful storm system to hit Cherokee County occurred on April 27, 2011. This event, considered to be one of the most significant tornado outbreaks in Alabama's history, moved into southwestern Cherokee County south of Estes Crossroads, along County Road 19. The storm would strengthen to an EF3 rating by the time it crossed AL Hwy 9 south of Coloma. Damage along County Road 29 south of Forney was consistent with an EF3 rating and winds of **160** mph. This single event resulted in **25** injuries and over **\$19 million** in property damages.

Landslides | Landslides are possible in Cherokee County, but seldom occur. Road construction itself is often the source of potential landslide events as existing slopes and hillsides are cut to accommodate road construction; the associated roadway receives the most impact of these types of landslides. The potential impacts to Cherokee County as a result of landslides include property damages, impassable roads, sediment erosion, and possible infrastructure damages. All jurisdictions identified landslides as a possible local hazard. No landslides have been reported for this jurisdiction or the communities therein.

Land Subsidence / Sinkholes | Impacts of sinkhole events are damages to property, infrastructure, and/or roadways. Areas of denser development could experience more significant impact and loss due to increased number and concentration of structures and associated utility services. All jurisdictions identified this as a possible hazard. Sinkholes have been identified in the Ellisville, Gaylesville, Little River, and Piedmont communities.

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Natural Hazard Vulnerability in Cherokee County (Continued)

Lightning | Lightning can cause substantial property damage and loss of human lives. All jurisdictions are vulnerable to lightning events. During the 14-year study period, Cherokee County experienced **four** significant lightning events resulting in no deaths, **two** injuries, no crop damages, and **\$177,000** in property damages. The unincorporated community of Congo reported the most substantially damaging event – lightning struck a house on County Road 77, causing a fire.

Wildfire | Cherokee County contains a significant amount of forestland, over **69%** of its land area. The timber industry is very prominent and timber crops could be significantly impacted in this county. During the 13-year study period, Cherokee County experienced **604** wildfire events resulting in **21,141.50** total acres being burned. Based on this data, the average number of wildfires per year is **46.8** and average acres burned per year is **1,626.3**, which equates to **37.8%** of the Region's total acreage. Alabama's forest products industries are still vital to the State's economy. Both rural and urban areas in all jurisdictions are impacted by wildfires and result in loss of wilderness, crops, livestock and other property. Loss of human life, both residents and firefighters, is also possible.

Winter Storms / Winter Weather | During the 30-year study period, Cherokee County has been affected by **32** winter storm / winter weather events – **three** cold/wind chill events; **one** extreme cold/wind chill event; **two** frost/freeze events; **five** heavy snow events; **three** ice storm events; **six** winter storm events; and **thirteen** winter weather events – resulting in **\$1,001,000** in crop damage and **\$750,000** in property damage. These events impact the county in various ways. Ice and small amounts of snow can cripple the county, leaving roads impassable, effectively crippling residents from traveling to school, work, or other necessary destinations. These conditions can also create a panic of activity and traffic congestions in advance of a predicted storm. Drivers are not accustomed to navigating these conditions; therefore, accidents often occur. Snow and ice can also weigh down tree limbs and power lines causing them to break, resulting in power failures and property damages.

Local businesses and residents are often not equipped with generators to restore power during these severe winter weather events. Additionally, many homes may not be properly insulated, which may lead to health concerns, the most extreme of which is death. The most significant impacts from an actual winter storm/winter weather event are power outages and consequential loss of heat, numerous transportation related accidents, and stranded motorists. Much like drought, extreme cold has more impact on disadvantaged populations, especially the homeless. Since these storms have no defined track, all residents of Cherokee County are vulnerable to severe winter weather events.

Source: Cherokee County Hazard Mitigation Plan 2015 Plan Update

Socially Vulnerable Populations

Natural hazard events have different impacts across Cherokee County populations. These populations can be quantified by social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey. Cherokee County has **553.70** square miles of land and **46.28** square miles of water. Population density is currently estimated at **46.6** persons per square mile.

Section 5 | Hazard Profiles

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Table 5.16 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 Yrs. and Over
Jurisdiction							
Cherokee County	25,853	24,853	1,336	558	5,797	14,435	5,621
Cedar Bluff	2,067	1,692	293	14	457	1,116	494
Centre	3,505	2,886	504	58	624	1,826	1,055
Gaylesville	191	181	0	10	41	101	49
Leesburg	1,092	1,083	0	9	251	654	187
Sand Rock	471	462	0	9	88	286	97
County Census Tract							
Tract 9557.01	3,517	3,237	259	27	764	2,016	737
Tract 9557.02	3,688	3,576	64	52	908	2,049	731
Tract 9558	5,427	5,241	136	59	1,112	3,188	1,127
Tract 9559	4,011	3,714	299	72	961	2,277	773
Tract 9560	4,209	3,775	358	191	786	2,198	1,225
Tract 9561	5,001	4,624	220	157	1,266	2,707	1,028

Source: American Community Survey (ACS) Demographic and Housing Estimates (2018)

Table 5.16 shows population characteristics for Cherokee County by jurisdiction and by census tract. Centre is the most populated community, followed by Cedar Bluff, Leesburg, Sand Rock, and Gaylesville. Regarding vulnerability, the larger an area’s population, the more susceptible people and structures are to incurring injury and damage. Tract 9558 is the most populated tract in the county as it includes portions of Cedar Bluff, Leesburg, Sand Rock and Collinsville in Cherokee County; Fort Payne in DeKalb County, and Gadsden in Etowah County. Tract 9557.01, the sixth and least populated tract, contains portions of Cedar Bluff and Gaylesville.

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies.

Section 5 | Hazard Profiles

5.1 Jurisdictional Vulnerability Overview

In addition to racial and age composition in Cherokee County, income levels are also important when identifying and planning for vulnerable populations. Lower income individuals have difficulty acquiring resources to prepare for or recover from disasters. Table 5.17 provides a breakdown of median household income, per capita income, and poverty level data for the jurisdictions and census tracts in the county.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. Both Leesburg and Sand Rock have median household incomes that exceed the state average; no census tract has incomes that meet this designation. There are no jurisdictions or census tracts in Cherokee County that exceed the national median household income average.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Leesburg and Sand Rock are the only two jurisdictions with per capital income averages higher than the state average; no jurisdiction has an average that surpasses the nation’s figure. County census tract 9559 is the only tract with an average above Alabama’s per capita income. There are no jurisdictions or census tracts with per capita income averages above the 2018 U.S. average.

Table 5.17 | Cherokee County Income Data by Jurisdiction and Census Tract (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Cherokee County	\$41,014	\$24,301	3,827	15.0%
Cedar Bluff	\$30,870	\$19,674	341	16.8%
Centre	\$30,000	\$25,427	818	25.4%
Gaylesville	\$29,107	\$20,235	50	26.2%
Leesburg	\$50,573	\$31,166	141	12.9%
Sand Rock	\$54,063	\$29,556	13	2.8%
County Census Tract				
Tract 9557.01	\$41,386	\$21,378	342	10.6%
Tract 9557.02	\$31,820	\$18,874	867	24.6%
Tract 9558	\$44,333	\$23,350	584	10.5%
Tract 9559	\$46,690	\$28,119	849	21.7%
Tract 9560	\$45,163	\$26,498	509	13.1%
Tract 9561	\$38,565	\$21,595	409	7.5%

Source: Income In The Past 12 Months (In 2018 Inflation Adjusted Dollars)

Section 5 | Hazard Profiles

5.2 Jurisdictional Vulnerability Overview | Cherokee County

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. County census tracts 9557.02 and 9559 exceed the state and national poverty rates. All other tracts' averages are below both state and national figures. Tract 9561 has the lowest below poverty percentage in the county at **7.5%**. Centre and Gaylesville are projected as having below poverty rates higher than both the state and national rates; Cedar Bluff and Leesburg have below poverty percentages that are higher than the state's figures. Sand Rock has the lowest below poverty percentage in Cherokee County at **2.8%**; Gaylesville has the highest at **26.2%**.

Vulnerable Structures

Housing is a critical consideration of mitigation planning as residential development is often the most prevalent form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.18 shows housing characters for Cherokee County by jurisdiction.

Centre has the largest number of housing units, followed by Cedar Bluff, Leesburg, Sand Rock, and Gaylesville. Cedar Bluff has the largest concentration mobile homes and the largest percent of mobile homes within a municipality. Historically, mobile home units have been highly susceptible to natural hazards and prone to substantial amounts of damage or complete destruction. Implementing regulations for development and maintenance of these structures could drastically reduce costly natural hazard impacts. Additionally, development should be restricted in flood prone areas or areas with an extensive history of detrimental hazard impact.

Table 5.18 | Cherokee County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Cherokee County	16,531	4,825	29.20%
Cedar Bluff	1,250	328	26.20%
Centre	1,982	140	7.10%
Gaylesville	91	4	4.40%
Leesburg	606	155	25.60%
Sand Rock	242	15	6.20%

Source: American Community Survey (ACS) Selected Housing Characteristics (2018)

Section 5 | Hazard Profiles

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Cherokee County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. Each of the critical facilities listed in Table 4.46 are vulnerable to each of the hazards identified in the risk assessment. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

Impacts of Development Trends on Vulnerability

Cherokee County is a predominately rural county. Several economic development issues were outlined in the East Alabama Regional Planning and Development Commission’s (EARPDC) *Comprehensive Economic Development Strategy for the East Alabama Region* (2011 revision) regarding Cherokee County that could inhibit the area’s growth. The following table lists key issues that could possibly be further exacerbated by natural hazard activity.

Table 5.19 | Local Issues and Potential Natural Hazard Risks in Cherokee County

Issue	Potential Risk after Natural Hazard
Schools are in poor condition.	Schools are critical facilities in any community, but more so in rural communities. In these areas, educational facilities may double as shelters in times of crisis. However, if a natural hazard incapacitates or destroys these facilities, the community could become more susceptible to casualties.
Public water needs to extend throughout the county.	An inadequate water system could potentially hinder recovery efforts after a significant natural hazard incident. Additionally, providing adequate utility access may deter unfavorable development in areas that strain existing systems.
Sewer service is very limited.	Households that rely on septic tanks could encounter costly repairs in the event of significant flood or seismic activity.
The county does not have direct interstate access.	The lack of interstate access poses challenges to implementing functional evacuation plans, which in turn poses risks to citizen and visitor safety.
Poor internet access.	As we advance further into a society that relies on the internet for everyday tasks, lack of internet access could impede the distribution of pertinent communication during hazardous events.

Section 5 | Hazard Profiles

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Table 5.19 | Local Issues and Potential Natural Hazard Risks in Cherokee County (Cont'd)

Issue	Potential Risk after Natural Hazard
<p>Rapid population growth has created a shortage of housing.</p>	<p>Housing shortages reduce viable housing options for vulnerable population groups. These persons may be forced to settle for substandard housing options - older, outdated or deteriorating homes. Structures with these conditions are the most vulnerable to extreme natural hazard activity, thus creating multiple risks to the public safety.</p>
<p>E-911 needs upgrading.</p>	<p>An outdated emergency system obstructs the ability of public safety organizations to respond to casualties or crises that result from natural hazard activity. Alerting citizens of impending natural hazard threats is also potentially comprised.</p>
<p>Local governments have insufficient funds to make needed infrastructure and public facility and service improvements.</p>	<p>Financial constraints make it difficult for municipalities to perform daily operations. This becomes exceedingly difficult when natural hazards suddenly strike. Recovery efforts or vital infrastructure improvements after hazard events can become overwhelming, especially for small communities with limited tax bases.</p>
<p>Weiss Lake has a pollution problem, especially from untreated sewage being released upstream.</p>	<p>Aside from impacting local wildlife, extreme flash flooding at Weiss Lake would lead to a variety of issues for surrounding communities. Untreated sewage in the lake could spread into residential areas in Centre, Cedar Bluff, and Leesburg if torrential rain caused significant flooding at multiple points across the lake.</p>
<p>Substandard manufacturing homes being brought into the area from Georgia.</p>	<p>Manufactured and mobile homes are liabilities in any community and susceptible to severe damage or destruction given the hazard occurring. Introducing substandard units into an area's housing stock only increases the likelihood of property damage or displaced citizens during natural hazard incidents.</p>

Section 5 | Hazard Profiles

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Table 5.20 | Critical Facilities in Cherokee County, Alabama

Facility	Location	Use	Value
Cherokee Baptist Medical Center	400 Northwood Drive, Centre	Hospital	\$9,052,630
Central Dispatch	100 Cedar Bluff Road, Centre	Emergency Center	\$900,000
Cedar Bluff VFD	4920 Main Street, Cedar Bluff	Fire Station	--
Broomtown Rinehart FD	2340 Co. Rd. 46, Gaylesville	Fire Station	--
Gaylesville VFD	4740 Main St., Gaylesville	Fire Station	--
Tucker's Chapel VFD	2000 Co. Rd. 47, Cedar Bluff	Fire Station	--
Sand Rock VFD	1805 Sand Rock Ave., Sand Rock	Fire Station	--
Leesburg VFD	1900 Lokey Street, Leesburg	Fire Station	--
Ellisville VFD	7315 AL Hwy. 9 South, Centre	Fire Station	--
Centre VFD	401 E. Main Street, Centre	Fire Station	--
McCord's Crossroads VFD	6600 Co. Rd. 16, Centre	Fire Station	--
Spring Garden VFD	4635 Co. Rd. 8, Spring Garden	Fire Station	--
Cherokee Co. Sheriff's Dept.	100 Cedar Bluff Rd., Centre	Police Station	\$1,260,000
Cherokee County Criminal	100 W. Main Street, Centre	Police Station	\$1,260,000
Leesburg Police Department	1910 Lokey Street, Leesburg	Police Station	\$1,260,000
Cherokee County Sheriff	200 Cherokee Ave. West	Police Station	\$1,260,000
Cedar Bluff Police Department	4920 Main Street, Cedar Bluff	Police Station	\$1,260,000
Cherokee County Career & Technology Center	600 Bay Springs Rd, Centre	School	\$6,733,560
Spring Garden High School	2430 Co. Rd. 29, Spring Garden	School	\$8,936,280
Cedar Bluff High School	3655 Old Highway 9, Cedar Bluff	School	\$7,820,880
Gaylesville High School	760 Trojan Way, Gaylesville	School	\$5,698,630
Sand Rock High School	1950 Sand Rock Ave., Sand Rock	School	\$15,158,920
Centre Elementary School	725 E. Main Street, Centre	School	\$11,254,850
Centre Middle School	350 E. Main Street, Centre	School	\$4,469,080
Cherokee County High School	910 Warrior Drive, Centre	School	\$5,751,030
Centre Municipal Airport	Centre	Airport	\$10,651,000
Cedar Bluff U.B. Land Apt. Syst.	Cedar Bluff Utility Board	Wastewater Treatment Plant	\$59,940,000
Cherokee County Wastewater	Leesburg	Wastewater Treatment Plant	\$59,940,000
Centre Wastewater Treatment Lagoon	South College Street, Centre	Wastewater Treatment Plant	\$59,940,000
WEIS 990 (AM)	Centre	Broadcast Facility	\$90,000
WAGC 1560 (AM)	Centre	Broadcast Facility	\$90,000
WRHY CH (FM)	Centre	Broadcast Facility	\$90,000

Section 5 | Hazard Profiles

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Vulnerability Summary

Table 5.15 provides an overall summary of Cherokee County's vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: L to indicate **low** vulnerability; M to indicate **medium** vulnerability; and H to indicate **high** vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.21 below provides a summary of the county's annual potential loss estimates by hazard. Table 5.22 on the following page further breaks down natural hazard probability and damage estimates in Cherokee County.

Table 5.21 | Summary of Cherokee County's Annual Potential Loss Estimates by Hazard

Hazard	Total Estimated Risk
Dam/Levee Failure	N/A
Drought/Extreme Heat	None
Earthquakes	None
Flooding	\$9,600
Hail	\$2,281
High Winds - High / Strong Winds	\$49,083
High Winds - Tornadoes	\$314,200
High Winds - Severe T-storms	\$6,721
Landslides	N/A
Land Subsidence / Sinkholes	Unknown
Lightning	\$7,375
Wildfire	Unknown
Winter Storms / Winter Weather	\$57,000

5.2 Jurisdictional Vulnerability Overview | Cherokee County

Table 5.22 Natural Hazard Probability and Damage Estimates In Cherokee County, AL						
Cherokee County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	36	15	None	2.4 events/yr	N/A
	Earthquakes	9	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	25	30	\$288,000	< than 1 event/yr	\$12,000
	Hail	107	64	\$146,000	1.7 events/yr	\$2,281
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 16 Windstorms: 10 Thunderstorms: 168	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$21,989,000 Windstorms: \$410,000 Thunderstorms: \$1,178,000	Tornadoes: < than 1 event/yr Windstorms: < than 1 event/yr Thunderstorms: 2.8 events/yr	Tornadoes: \$439,780 Windstorms: \$17,083 Thunderstorms: \$19,311
	Landslides	None	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	11	53	Unknown	< than 1 event/yr	Unknown
	Lightning	4	24	\$177,000	< than 1 event/yr	\$7,375
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	604	13	N/A	46.5 events/yr	N/A
	Winter Storms/Winter Weather	32	24	\$1,368,000	1.3 events/yr	\$57,000

Table 5.22 provides probability and damage estimates for the entire Cherokee County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated 46.5 events taking place each year.

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

The vulnerability assessment process is necessary to identify those natural hazards that pose a threat to Cullman County and its municipal jurisdictions. Each jurisdiction was responsible for identifying these hazards in previous mitigation planning efforts. Occurrences of natural hazards in Cullman County are largely documented by the National Oceanic and Atmospheric Administration’s (NOAA) National Climatic Data Center (NCDC). A study period was implemented into the examination of these occurrences to establish the vulnerability of jurisdictions to certain hazards and to determine the probability of these incidents occurring in the future. The study periods for these hazards vary depending upon the information available. Table 5.23 displays the resulting vulnerability determinations for Cullman County municipalities based on figures in the 2015 Cullman County Natural Hazards Mitigation Plan and more extensive data collected from the NOAA.

Table 5.23 | Hazard Vulnerability by Jurisdiction in Cullman County, Alabama

	Natural Hazards	Municipalities					
		Baileyton	Colony	Cullman	Dodge City	Fairview	Garden City
Cullman County	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	M	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L
	Flooding	M	M	M	L	M	M
	Hail	L	L	L	M	M	L
	High Winds - High / Strong Winds	H	M	M	H	M	H
	High Winds - Tornadoes	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L
	Lightning	M	M	M	M	M	M
	Wildfire	L	L	L	L	L	L
	Winter Storms / Winter Weather	M	L	L	L	L	L
	Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction) ; M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)						

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.23 | Hazard Vulnerability by Jurisdiction in Cullman County, Alabama (Cont'd)

	Natural Hazards	Municipalities					
		Good Hope	Hanceville	Holly Pond	South Vinemont	West Point	Unincorporated County
Cullman County	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	M	L	L	L	L	H
	Earthquakes	L	L	L	L	L	L
	Flooding	M	M	M	M	M	H
	Hail	L	L	L	L	L	H
	High Winds - High / Strong Winds	M	H	H	H	H	H
	High Winds – Tornadoes	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	L	L	L	M
	Land Subsidence / Sinkholes	L	L	L	L	L	L
	Lightning	M	M	M	M	M	H
	Wildfire	L	L	L	L	L	H
	Winter Storms / Winter Weather	L	L	L	L	L	H
Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction) ; M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)							

Source: Cullman County, Alabama Natural Hazards Mitigation Plan 2015

Natural Hazard Vulnerability in Cullman County

Dam Failure | The risks associated with dam/levee failures are the same as those risks associate with flooding. There have been no significant dam or levee failures reported in Cullman County. This jurisdiction experienced **64** flood/flash flood events in a **30-year** period resulting in a greater than **100%** probability that a flood or flash flood will occur on an annual basis. The extent/range of magnitude or severity that could be experienced by Cullman County due to a dam failure event is equal to that of a flood event, which is minor to major.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Natural Hazard Vulnerability in Cullman County (Continued)

Primary effects from dam failure in Cullman County would include loss of life; unregulated water flow to surrounding areas; and an increased amount of disease and disease-carrying animals in the area. Hazardous result from dam failure would include large amounts of water sweeping property and severely damaging any property in the area and chemical spills from local factories caused by rushing water polluting the area and destroying crops.

Drought / Extreme Temperatures | Cullman County experienced moderate (D1) to exceptional (D4) drought conditions from March 2007 through April 2008 having hydrologic, agricultural, and sociological impacts. Crops became highly stressed due to lack of rainfall, with losses ranging from 50 to nearly 100 percent. Many crops were in poor or very poor condition, along with livestock and hay production. Additionally, about 60% of the livestock, and 75% of pasture lands, were also considered poor or very poor; and hay yields for the summer were less than half of normal. Stream flows on area rivers and waterways remained near record low levels, and most reservoir levels were well below normal. Navigation on major rivers were significantly impacted, and many boat landings on major lakes were unusable due to extremely low lake levels. The number of mandatory water restrictions continued to increase, with fines and surcharges being enforced for excessive water usage. Many residential lawns, shrubbery, and gardens became severely distressed by the substantially dry conditions.

Alabama Drought Monitor

March 2007/April 2008 - Alabama implemented the Statewide Drought Monitoring System during the most extensive drought in the state's history since 2000. Thirty-one (31) counties across the state declared areawide disasters. Alabama farmers received **\$1 million** in federal disaster aid along with other grant assistance. Drought continued to escalate and by August 2007 all 67 counties were declared natural disaster areas by the federal government. The then State Agriculture Commissioner Ron Sparks referred to this event as the worst drought in 30-40 years.

Source: Cullman County, Alabama Natural Hazards Mitigation Plan 2015

Cullman experienced 27 drought/extreme heat events in a 15-year period resulting in a greater than 100% probability that a drought event will occur on an annual basis. Neither of the 27 events resulted in monetary damages, which translates to an estimated \$0 of expected annual damages from future events. Primary effects from drought and excessive heat in Cullman County would include crop and other agricultural damage; increased vulnerability to forest fires and sinkholes; and heat exhaustion, heat stroke, heat syncope, and heat cramps. Hazardous results from significant drought damage and excessive heat in this jurisdiction would include a water supply shortage that results in economic losses of crops and livestock; forest fires that can devastate vast acreages and burn homes and businesses; and inflation of energy prices due to the loss of hydropower.

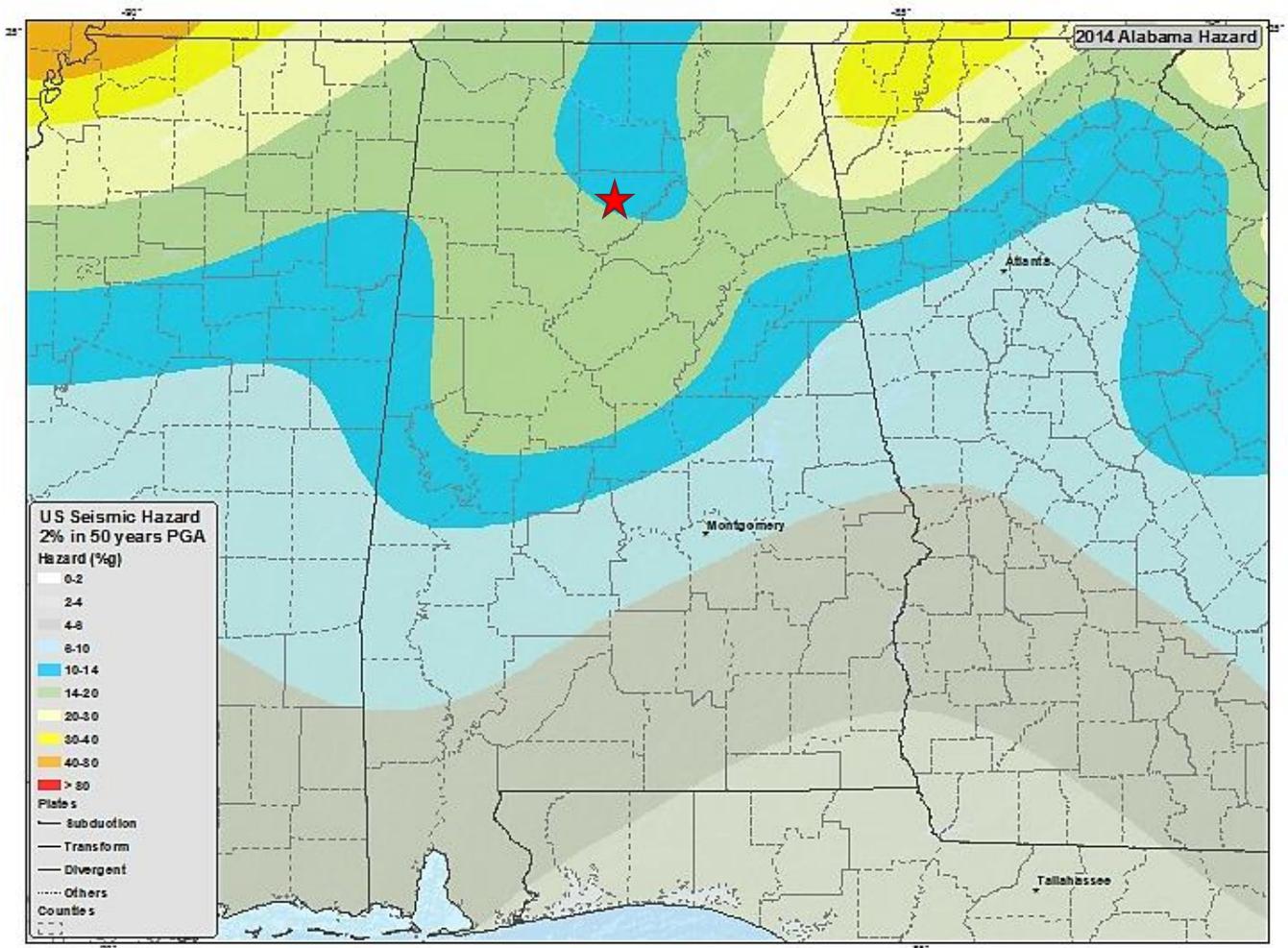
5.3 Jurisdictional Vulnerability Overview | Cullman County

Natural Hazard Vulnerability in Cullman County (Continued)

Earthquakes | Earthquakes occurring in Cullman County are predominately low magnitude events. However, there is a growing concern that a high magnitude event is inevitable, and earthquakes are becoming a much larger concern to the county. According to data compiled by the Geological Survey of Alabama (GSA), the county's most significant earthquake took place in November 1991; this event occurred in the City of Cullman and registered a magnitude of **2.3** on the Richter scale. This incident is one of **six** total earthquakes to occur in the county during the 134-year study period, which is the entire timeframe of available earthquake history in the State of Alabama.

Figure 5.24 depicts the seismic zones of the southeastern United States in 2014, giving particular attention to Alabama. The county's position (indicated by the red star) is shown in relation to the New Madrid Seismic Zone to the northwest and the Southern Appalachian Seismic Zone to the northeast. Cullman County's risk for earthquakes falls in both the **10 - 14%** and **14 - 20%** probability of exceedance ranges. The most common probability of exceedance is 10 percent, and the most used period is 50 years. Statistically, the loss which has a **10%** probability of exceedance in 50 years also has approximately 0.2 percent probability of exceedance in 1 year. Thus, the risk of a significant, damage-causing earthquake in Cullman County is low to moderate.

Figure 5.24 | State of Alabama Seismic Hazard Map (2014)



Source: Cullman County Natural Hazards Mitigation Plan 2015 Plan; International Risk Management Institute (IRMI), USGS

5.3 Jurisdictional Vulnerability Overview | Cullman County

Natural Hazard Vulnerability in Cullman County (Continued)

Primary effects from earthquake activity in Cullman County would include property damage; underground infrastructure damage; building collapse; and triggers for other natural disasters. Hazardous results from earthquake activity would include tremors that cause cracking of roads, bridges, or buildings; severely damaged pipes and underground wiring due to the movement of the earth; and shifting of underlying soil and breaching of dams.

Flooding/ Flash Floods | Flooding/flash flooding caused by rainfall occurs to some extent almost annually in nearly every part of Cullman County. Flooding occurs most frequently between November and April, with a peak period from February through April. Flash flooding has the potential to affect every jurisdiction in Cullman County. Riverine flooding can create minor to moderate property damage and a slight risk of casualties throughout areas of the county adjacent to rivers and creeks. Additionally, riverine and flash flooding can reduce accessibility for emergency services.

Dam and levee failures also present certain flood risks. Cullman County has over twenty (20) dams within its jurisdiction; seven of these structures have high hazard potential. Five of the seven high risk dams – Lake George Dam, Lake Catoma Dam, Eva Road Dam, Sportsman Lake Dam, and Ottis Burrow Dam – are located near the City of Cullman. Multiple creeks cross primary and secondary corridors in Cullman, such as Old Hanceville Highway, 3rd Street, and 2nd Avenue NE; often trekking through residential areas. Historically, substantial rainfall has resulted in downed trees, washed out bridges, and incapacitated roads around the city. Pan Creek, a FEMA-designated floodway, intersects State Highway 69 and Summitt Road in Baileyton. Significant rainfall in Berlin may result in Polecat Branch flooding segments of County Roads 1611, 1630, and other unpaved roadways. Flood zones attributed to Clarkton, Dean, and Rice Creeks cross State Highway 91 at multiple points throughout the Town of Colony. Simpson Creek, an offshoot of Lewis Smith Lake, forms a floodway that meanders through a residential/commercial sector in northern Dodge City along Beech Grove Road.

A small segment of Dry Creek intercepts County Road 1655 at the southwestern most portion of the Town of Fairview. On the northern end of town, a floodway intersects Boyd Road, a north-to-south corridor that provides access to Fairview Elementary and Fairview High School. Flood areas attached to Mulberry Fork cross U.S. Highway 31 and 3rd Street SE in Garden City. Several roadways in Good Hope have experienced flood activity with varying flood depths including Beech Grove Road, Day Gap Road, Doc Clemmons Road, Cupp Road, Beech Avenue, Shelton Road, and Lindsey Road. Wallace Hathcock Dam, one of the County's noted high-hazard dams, is also in the Good Hope community. Downtown Hanceville has a substantial flood area south of the intersection of Arkadelphia Road and Main Street. This area, composed of Zones A, AE, AE Floodway, and X, intersects multiple local roadways and spans northeast through residential areas off Blountsville Road and Commercial Street. U.S. Highway 278, the major corridor running through Holly Pond is intersected by Lick Creek in the west and Mud Creek in the east. In the Town of West Point, State Highway 157 is intersected by Crooked Creek and Chaney Branch.

The Town of South Vinemont, north of the City of Cullman, is the only jurisdiction without designated flood zones in Cullman County. Moreover, there are no historical records of dam/levee failures in Cullman County. Should such an event arise, however, the Cullman County Emergency Management Agency (CCEMA) is prepared to coordinate efforts with multiple agencies across the county.

Cullman County experienced **64** floods/flash floods in a 30-year period, resulting in a greater than **100%** probability that a flood/flash flood event will occur on an annual basis. Primary effects from floods in Cullman County would include loss of life; property damage; crop damage; and dam and levee failure. Hazardous results from significant flood in Cullman County would include rapidly moving water destroys anything in its path and leaves hazardous mold and breed insects; periods of standing water that kills inadaptible plants, and flowing water that removes sediment and nutrients from the soil; and breached dams and levees that allow water to flood into the surrounding floodplain resulting in crop and property destruction.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Natural Hazard Vulnerability in Cullman County (Continued)

Hail | Hailstorms occur most frequently during the late spring and early summer, when the jet stream moves northward across the Great Plains. During this period, extreme temperature changes occur from the surface up to the jet stream, resulting in the strong updrafts required for hail formation. Hailstorms occur in some form or fashion on a very regular basis in Cullman County. The annual probability of hail occurring somewhere in the county is quite high; however, the site-specific incidence of hail is considered low because of the localized nature of the hazard.

An estimated **237** hailstorm events have occurred in Cullman County during the 64-year study period. Combined, unincorporated communities in the County experienced the most hail incidents. However, the City of Cullman has been the most impacted jurisdiction with **43** events, **\$33,000** in crop damages, and **\$842,000** in property damages. The most destructive hail event occurred on May 15, 1995 – softball-sized hail damaged an entire inventory of cars at a local Chevrolet dealership.

High Winds / Strong Winds | Cullman County is at a low risk for a direct hit by a hurricane due to its position several miles inland from the Alabama coastline. However, hurricanes and tropical storms such as Dennis and Katrina have affected Cullman County. The most significant impacts have been related to excessive rainfall, damaging wind, and tornados. Residents suffer loss of power, damages to homes, blocked roadways from associated storm debris. And loss of other crucial utilities. Mobile homes are particularly vulnerable and are impacted more than conventionally built structures. Cullman County has an estimated **8,615** mobile homes countywide, **22.9%** of the total housing stock. The greatest concentration of mobile homes in a municipality is in the Town of Colony where **43.2%** of the housing units are mobile homes.

Two of the most significant wind-related events in Cullman County occurred in 2007 and 2009. On December 20, 2007, Cullman County experienced strong sustained winds of **30 - 40** miles per hour with gusts around **50** miles per hour. Strong winds down trees across roads in many locations across the county. Cities reporting downed trees include Crane Hill, Loretta, Bremen, Garden City, Battleground, Fairview, and Gold Ridge. Cullman County reported **\$1 million** in property damages. On April 12-13, 2009, the county experienced high winds between **45 - 55** miles per hour with gusts approaching **65** miles per hour. These winds downed numerous trees and power lines across the county. Homes were damaged by fallen trees in many locations. Some of the hardest hit areas include Logan, Cullman, Good Hope, Hanceville, and Catalina Point. Cullman County reported **\$600,000** in property damages.

Cullman County experienced **11** high/strong events in a **24-year** period, resulting in a roughly **45%** probability that a high wind event will occur on an annual basis. The total amount of damages for the 11 events was **\$1,704,000**, with strong wind events account for **\$1,010,000** of this figure. Primary effects of these events include rain levels that can easily exceed **15-20** inches; winds strong enough to produce twisters; and an increased possibility of complete destruction of towns and structures that fall within high wind paths.

Thunderstorms | Cullman County experiences many thunderstorms each year. The county is most susceptible to thunderstorms during the spring, summer, and late fall. Most of the damage caused by thunderstorms results from straight-line winds, lightning, flash flooding, and hail. Occasionally, thunderstorms will spawn tornadoes. Damage from thunderstorms can have a wide range of severity. Each jurisdiction is at risk for thunderstorm events.

On August 24, 2007, Cullman County experienced a thunderstorm event that resulted in **\$1 million** in property damages. A slow-moving cold front pushed into unstable, tropical air overnight producing wind damage and flash flooding in many areas of the county. As the front continued pushing southeast during the day on August 25, 2007, thunderstorms ahead of the front isolated large hail as well as damaging winds. This is the most significant wind event to occur in this jurisdiction.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Natural Hazard Vulnerability in Cullman County (Continued)

Cullman County experienced **417** thunderstorms in a **61-year** period, resulting in a greater than 100% probability that a thunderstorm event will occur on an annual basis. Damaged for the 417 events totaled **\$4,791,500** with a probability of at least **6** events per year and an estimated **\$78,549** in future damages. Primary effects from thunderstorms in Cullman County would include straight-line winds, lightning, flooding, hail, and spawning tornadoes. Hazardous results from significant thunderstorms in this jurisdiction would include downed trees and electrical lines resulting in loss of power; heavy rains that produce severe stormwater run-off in developed areas and cause bodies of water to breach their banks; and large hail that injures people and livestock and damages crops.

Tornadoes | Cullman County is in the FEMA designated Zone IV wind zone. Zone IV (shown in United States Wind Zones (2018) on page 110 in the Hazard Profiles section of this plan) has witnessed a higher frequency of tornadoes than any other zone. Zone IV has also witnessed some of the deadliest tornadoes in history. Tornadoes do not follow a definite path; all jurisdictions are vulnerable to tornado events. Property damage, injury, and death can result from the weakest tornadoes. Interruption of electrical services, communications, and other utilities may occur. Transportation corridors may be blocked, or even destroyed. Debris removal can take time and can be costly. Longer response times results from having limited emergency personnel.

A total of **87** tornadoes occurred in Cullman County according to the NOAA-NCDC during the **70-year** study period. An estimated **\$97,565,280** in property damage, **\$10,000** in crop damage, **273** injuries, and **11** deaths occurred as a result of the reported tornadoes. Areas with higher population densities pose the greatest potential for property damage, injury, and death. The Cities of Cullman and Hanceville are the most densely populated areas of the county's communities; thus, both jurisdictions carry significant risk of being impacted by tornadoes. Mobile homes are not capable of withstanding the strong winds associated with tornadoes. Cullman County has a total of **8,615** mobile homes countywide. The greatest concentration of mobile homes in a municipality is in the Town of Colony, where **43.2%** of the units are mobile homes. The most significant event during the study period occurred in the area of Arkadelphia on April 27, 2011, with an EF4 tornado, **4.42** miles in length and **440** yards wide. A powerful storm system crossed the Southeast United States on Wednesday, resulting in a large and deadly tornado outbreak. This event broke the record for number of tornadoes in a day for the State of Alabama, becoming the most significant tornado outbreak in the state's history. The City of Cullman experienced extensive damages to buildings in the downtown area and to the Town of Fairview. The location of Cullman County in Wind zone IV, past occurrences of tornadoes, and the potential for future occurrences to cause damage, death, and injuries leaves Cullman County vulnerable to and at risk for tornadoes.

Primary effects from tornadoes in Cullman County would include loss of life; property damage; infrastructure destruction and damage; sanitation and water delivery interruption. Hazardous results from significant tornadoes in this jurisdiction would include roadways becoming blocked by debris; toppled power poles destroyed communication receivers, and offline water sanitation and treatment plants; and sanitation crews, inability to remove massive amounts of waster, which results in increased disease-carrying insects and lack of potable water.

Landslides | On March 26, 2010., and early morning landslide in the Smith Lake area created a major inconvenience for residents in Southwest Cullman County. A section of County Road 950 that runs parallel to the lake slide into the water following heavy rainfall, sending trees, dirt, and debris tumbling downhill and into the lake. This was not the first event in this area. The county almost lost their track hoe while working on unstable grounds in the same area prior to this landslide event. The road runs along the deep channel of the lake and is set midway in the slope of a steep bank fronting the lake. County Road 950 is subject to subsidence from unstable soil and heavy erosion.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Natural Hazard Vulnerability in Cullman County (Continued)

Three communities in Cullman County have experienced landslides – Cold Springs, Falkville, and Hanceville. One landslide event resulted in \$25,000 in property damages – it is the only reported landslide, therefore, it is the one that resulted in the most damages, deaths, and injuries. This event also serves as the extent/range of magnitude or severity that could be experienced by Cullman County due to a landslide event – the ranking is minimum to minor impact. Primary effects from landslides in Cullman County would include property damage, impassable roads, sediment erosion, and underground infrastructure damage. Hazardous results from landslides include movements with tremendous force capable of destroying most structures in its path while carrying anything it encounters; materials that damage and destroy roads as well as block them with debris, resulting in disruption to business and other activity; removed sediment that leaves the surrounding area bare and prone to erosion; and underground pipes and wiring being ripped up or buried deeper.

Land Subsidence / Sinkholes | Cullman County geology has a low susceptibility to sinkhole events; therefore, this jurisdiction is at a slight risk for such events. According to the Geological Survey of Alabama (GSA), there are **22** recorded sinkholes recorded in Cullman County, **14** of which are in the Holly Pond community. The probability of future occurrences is difficult to predict due to limited historical records and detailed geologic studies. Areas in Cullman County underlain by carbonate rocks and characterized by the presence of subsurface cavities, sinkholes, and underground drainage are called “karst terrains.” It is these karst areas that are most susceptible to sinkhole development and subsidence.

Expansive soils are soils that swell when they interact with water. The presence of clay is generally the cause of such behavior. Cullman County has Appalachian Plateau soils, meaning that most of the area’s soils consists primarily of sandstone, shale, limestone, and conglomerate formations. As development continues in rural areas of the County, it is likely that sinkholes will begin to have a greater impact on local communities. When subsidence occurs in developed areas, it can have a significant impact on communities including loss of property values, increased insurance costs and potential injuries.

Lightning | The probability of a lightning strike causing damage somewhere in Cullman County is high. However, because the impacts of such an event are so localized, the site-specific incidence of a lightning strike occurring is considered very low. A significant lightning event on August 8, 2012, resulted in **\$100,000** property damages near the Ebenezer community. No deaths, injuries, or crop damages were reported for this event. Incidences were also reported in the Good Hope and Fairview communities; one injury occurred during each event.

Cullman County has experienced **14** significant lightning events during the 24-year study period – equating to an estimated **58%** chance that a significant lightning incident will occur annually. Out of these incidents, there were **five** injuries, no deaths, no crop damage, and **\$158,500** in property damages. Based on these factors, there extent/range of magnitude that could be experienced by Cullman County due to a lightning event ranks minimum to minor.

Primary effects from significant lightning events in this jurisdiction may include power outages; wildfires; electrocution; and disruption of communication waves. Hazardous results from significant lightning in Cullman County may include power outages that result in tremendous losses for food distributors and individuals due to loss of refrigeration as well as disruptions to routine business operations; fires that destroy nearly everything in their paths along with being detrimental to the health of any living organism; electrocution of electronic devices such as water and sewer pumps leading to disruptions in service, unsanitary conditions, and lack of potable water; and disrupted communications from electrical storms that result in the inability to communicate with other agencies, making preparation or recovery from a storm increasingly difficult.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Natural Hazard Vulnerability in Cullman County (Continued)

Wildfire | Cullman County is at a slight to moderate risk of a wildfire, and the entirety of this jurisdiction is vulnerable to wildfires. Most wild land fires occur on privately owned lands. Additionally, most of the fires occur in areas where homes and structures are endangered. These areas are known as the wildland urban interface (WUI) and are defined as areas where development meets wild land vegetation, both of which provide fuel for fires. The wildland urban interface areas have continued to increase significantly throughout the county, thus further increasing the risk of major losses from wildfires. In Cullman County, most wild land urban interface areas are considered “intermixed.”

Instead of having large forest areas surrounding an isolated town, Cullman County contains many scattered homes and farms spread across the forest areas. According to the 2020 Forest Resource Report, Cullman County has a total of **241,232** acres of forestland – **73,478** acres of softwoods; **32,346** acres of hardwood/pine; and **135,408** acres of hardwoods. In addition to affecting people, wildfires may severely impact livestock, inflicting a severe economic on farmers. Timber loss to fire creates an economic loss to both the private landowner and potentially to the county’s overall economy. Wildfires in Cullman County are generally moderate in intensity, resulting in destruction of undergrowth and some timber. The soil surface layer of the forest recovers quickly, minimizing erosion and water quality impacts.

Nearly all wildfires in Cullman County are human caused (only a small percentage area caused by other natural hazards), with arson and careless debris burning being the major causes of wildfires. Cullman County had a total of **353** wildfires during the 23-year study period, affecting a total of **5,382.65** acres (**9.6%** of the total affected acres in the Region). Primary effects from wildfire in Cullman County would include loss of property, loss of livestock, destruction of wilderness, and crop destruction. Hazardous results from significant wildfire in the County would include widespread fire destroys everything flammable, leaving people homeless and businesses destroyed; an entire year’s crop lost by burning through all vegetation; and losing fenced in livestock to smoke inhalation or worse

Winter Storms / Winter Weather | Cullman County commonly has winter storm incidents – these incidents impact the county in various ways. Ice and small amounts of ice can cripple the county. Drivers that are not accustomed to driving in severe winter weather conditions may cause traffic accidents. Snow and ice can weigh down tree limbs and power lines causing them to break, resulting in power failure and property damage. Local businesses and residents are not equipped with generators to restore power during these severe winter weather events. Since these storms have no defined track, all jurisdictions in Cullman County are vulnerable to severe winter storms.

The most common impacts of severe winter weather are power failure due to downed power lines and traffic hazards. Winter storm occurrences tend to be very disruptive to transportation and commerce. Trees, cars, roads, and other surfaces develop a coating or glaze of ice, making even small accumulations of ice extremely hazardous to motorists and pedestrians. The most prevalent impacts of heavy accumulations of ice are slippery roads and walkways that lead to vehicle and pedestrians; collapsed roofs from fallen trees and limbs and heavy ice and snow loads; telephone poles and lines, electrical wires, and communication towers As a result of severe ice storms, telecommunications and power can be disrupted for days. Additionally, many homes and buildings, especially in rural areas, lack proper insulation or heating, leading to risk of hypothermia. Extremely cold temperatures accompanied by strong winds can result in wind chills that cause bodily injury such as frostbite and death.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Cullman County experienced **eight** winter-related storms from 1996 to 2000. Cold/wind chill caused **\$1,001,000** in crop damage, however, winter storms by far have caused the most significant damage to this jurisdiction. The most significant event to occur before 2000 happened in 1998 – an ice storm composed of freezing rain, sleet, and rain swept across the northern half of the state. Cullman County was noted as one of the most impacted; an estimated **\$2,000,000** in property damages ensued. Numerous trees were down across the area and significant power outages transpired as a result of this storm. Several roadways were also closed due to ice accumulations.

Primary effects from winter storms in Cullman County would include injury and damage from downed trees and utility lines due to the snow and ice load; widespread impassible roads and bridges; disruption of services and response capabilities; and crop and other agricultural damage. Hazardous results from winter storms in the County would include loss of power, communications, and fires are common results of severe winter storms; loss of transportation ability will affect emergency response, recovery, and supply of food and materials; numerous vehicle accidents in a winter storm that can overextend the resources of local fire rescue and law enforcement; and a food and housing shortage within the community due to an increased number of stranded motorists and homeless persons.

[Source: Cullman County, Alabama Natural Hazards Mitigation Plan 2015](#)

Socially Vulnerable Populations

Certain populations are generally more affected by hazard events. These populations can be defined in terms of social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey (ACS). Cullman County has **735** square miles of land and **20** square miles of water. Population density is currently estimated at **111.9** persons per square mile.

Table 5.25 depicts the county's population characteristics by jurisdiction and by census tract. The City of Cullman is the most populated jurisdiction, followed by the City of Hanceville and the Towns of Good Hope, Holly Pond, Baileyton, South Vinemont, West Point, Dodge City, Garden City, Fairview, and Colony. The county has eighteen census tracts. In terms of vulnerability, the larger the population of an area the more people and structures that could possibly be damaged or destroyed. Tract 9642 is the most populated tract and contains the Towns of Berlin and Fairview. Tract 9656 is the least populated tract and contains mostly unincorporated areas of the county.

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.25 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 and Over
Jurisdiction							
Cullman County	82,853	78,804	1,073	2,976	20,320	47,190	10,773
Baileyton	810	804	0	6	192	454	164
Berlin	--	--	--	--	--	--	--
Colony	434	20	386	28	100	266	68
Cullman	15,558	14,412	200	946	4,156	8,490	2,912
Dodge City	554	548	0	6	135	335	84
Fairview	497	464	0	33	167	227	103
Garden City	553	545	0	8	128	347	78
Good Hope	2,793	2,415	0	378	1,024	1,351	418
Hanceville	3,340	3,014	250	76	532	1,941	867
Holly Pond	953	939	4	10	265	529	159
South Vinemont	630	593	11	26	168	386	76
West Point	593	567	0	26	170	350	73
County Census Tract							
Tract 9641	6,187	6,129	2	56	1,568	3,491	1,128
Tract 9642	6,971	6,948	5	114	1,566	3,977	1,428
Tract 9643	5,058	4,815	36	268	1,206	3,001	851
Tract 9644	4,473	4,432	6	97	1,022	2,527	924
Tract 9645	4,455	4,398	168	40	1,230	2,566	659
Tract 9646	3,747	3,542	22	111	954	2,137	656
Tract 9647	5,597	5,283	0	363	1,716	3,071	810
Tract 9648	4,269	4,177	154	61	1,260	2,310	699
Tract 9649	6,519	6,195	92	649	1,730	3,551	1,238
Tract 9650	6,361	6,073	84	269	1,558	3,614	1,189
Tract 9651	3,741	3,553	148	47	925	2,268	548
Tract 9652	2,696	2,648	8	63	692	1,565	439
Tract 9653	4,664	4,567	20	169	1,148	2,703	813
Tract 9654.01	3,251	3,070	180	41	723	1,766	762
Tract 9654.02	4,237	4,116	142	21	764	2,592	881
Tract 9655	5,042	4,653	414	8	1,178	3,006	858
Tract 9656	2,172	2,172	0	74	338	1,374	460
Tract 9657	2,873	2,808	39	93	742	1,671	460

Source: American Community Survey (ACS) Demographic and Housing Estimates (2018)

5.3 Jurisdictional Vulnerability Overview | Cullman County

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies.

In addition to the racial and age composition within the county, income levels are important when identifying vulnerable populations. Lower income individuals may not have the resources to prepare for or recover from disasters. Table 5.26 shows the median household income, per capita income, and poverty level data for the jurisdictions and census tracts in Cullman County.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. Only the Town of West Point has a median household income that exceeds the state average; less than half of the tracts in Cullman County meet this designation. There are no jurisdictions or census tracts in Cullman County that exceed the national median household income average.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. West Point is the only jurisdiction with a per capital income average higher than the state average; no jurisdiction has an average that surpasses the national figure. County census tract 9649 is the only tract with an average above Alabama's per capita income. There are no jurisdictions or census tracts with per capita income averages above the 2018 U.S. average.

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. Six out of the twelve municipalities in Cullman County have percentages of persons below the poverty level that are higher than the state average, and nine of the twelve percentages higher than the national average. Six county census tracts exceed the state and national poverty rates; thirteen tracts' average above both the state and national figures. Tract 9646 has the lowest below poverty percentage in the county at **9.0%**. Cullman, Dodge City, Good Hope, Hanceville, and West Point are projected as having below poverty rates lower than the state average. Nearly every municipality in Cullman County has "below poverty rates" higher than both the state and national rates. Good Hope has the lowest "below poverty percentage" in Cullman County at **7.5%**; Fairview has the highest at **35.4%**.

Vulnerable Structures

Housing is an important consideration of mitigation planning as residential development is often the most common form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.27 shows housing characteristics for Cullman County by jurisdiction.

In Cullman County there are a total of 37,652 housing units. The Town of Good Hope had the highest number of mobile home units within a municipality, while South Vinemont has the highest percentage of mobile homes within a municipality. Mobile home units are historically very vulnerable to a variety of hazards and prone to high amounts of damage and complete destruction.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.26 | Cullman County Income Data by Jurisdiction and Census Tract (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Cullman County	\$42,558	\$22,980	12,801	15.8%
Baileyton	\$34,444	\$18,362	168	20.7%
Berlin	--	--	--	--
Colony	\$41,500	\$21,990	81	18.7%
Cullman	\$43,545	\$25,448	2,401	16.0%
Dodge City	\$33,125	\$25,366	68	12.3%
Fairview	\$33,750	\$15,736	176	35.40%
Garden City	\$36,833	\$21,593	159	28.8%
Good Hope	\$48,371	\$20,626	208	7.5%
Hanceville	\$32,647	\$21,131	440	15.0%
Holly Pond	\$37,857	\$19,099	197	20.7%
South Vinemont	\$29,318	\$17,112	185	29.4%
West Point	\$56,058	\$27,207	100	16.9%
County Census Tracts				
Tract 9641	\$32,243	\$16,812	1,293	20.9%
Tract 9642	\$38,873	\$21,357	934	13.4%
Tract 9643	\$54,038	\$23,949	633	12.6%
Tract 9644	\$43,542	\$23,185	791	17.8%
Tract 9645	\$40,926	\$20,345	723	16.3%
Tract 9646	\$51,806	\$23,875	337	9.0%
Tract 9647	\$50,093	\$20,661	623	11.3%
Tract 9648	\$42,219	\$22,207	1,091	25.6%
Tract 9649	\$50,459	\$29,085	991	15.8%
Tract 9650	\$40,653	\$22,703	907	15.1%
Tract 9651	\$42,773	\$23,698	367	9.8%
Tract 9652	\$52,768	\$24,312	426	16.1%
Tract 9653	\$40,625	\$20,842	714	15.3%
Tract 9654.01	\$29,433	\$18,293	550	19.7%
Tract 9654.02	\$42,800	\$24,367	732	17.3%
Tract 9655	\$47,594	\$25,458	797	15.8%
Tract 9656	\$50,521	\$38,138	343	15.8%
Tract 9657	\$43,244	\$22,271	580	20.2%

Source: Income In The Past 12 Months (In 2018 Inflation Adjusted Dollars)

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.27 | Cullman County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Cullman County	37,652	8,615	22.9%
Baileytown	340	49	14.4%
Berlin	--	--	--
Colony	183	79	43.2%
Cullman	6,988	135	1.9%
Dodge City	281	58	20.6%
Fairview	191	44	23.0%
Garden City	217	47	21.7%
Good Hope	939	288	30.7%
Hanceville	1,494	37	2.5%
Holly Pond	392	29	7.4%
South Vinemont	320	119	37.2%
West Point	250	52	20.8%

Source: American Community Survey (ACS) Selected Housing Characteristics (2018)

Housing Characteristics in Colony, AL

Colony had **183** housing units in 2018, **83.1%** (152) of which were occupied. Of the occupied units, **82.2%** (125) were owner-occupied and **17.8%** (27) were renter-occupied. **34.4%** of housing units in Colony are valued at less than \$50,000; **57.6%** of units are valued less than \$100,000. The median gross rent for occupied units was **\$625**.

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Cullman County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. Each of the critical facilities listed in Table 4.55 are vulnerable to each of the hazards identified in the risk assessment. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.28 | Critical Facilities in Cullman County, Alabama

Facility	Location	Value
Cullman County Courthouse	500 2 nd Ave. SW, Cullman	Building: \$16,500,792 Contents: \$1,872,000
Victim Services	310 3 rd Ave. NE, Cullman	\$1,243,246
Cullman County Health Department	601 Logan Ave. SW, Cullman	\$1,254,286
Agri Trade Center	2423 2 nd Ave. NW, Cullman	\$2,202,854
1 Electrical System	--	\$99,000,000
2 Natural Gas Distributors	--	--
7 Broadcast Facilities	--	\$630,000
1 Newspaper	--	--
Sheriff's Department and Crime Stoppers	500 2 nd Ave. SW, Cullman	\$2,520,000
1 E-911 Center	--	--
Airport Hangar	--	\$68,000
Forestry Service	--	\$112,000
Cullman County Community Center	County Road 663, Cullman	160,500
Crane Hill Senior Center	15095 County Road 222, Crane Hill	Building: \$165,850 Contents: \$2,000
Bremen Community Center	County Road 110, Cullman	\$85,600
Community Center, Beat 8	County Road 15, Cullman	\$160,500
Cullman County Jail/Juvenile Detention	1900 Beech Ave., Cullman	Building: \$13,746,000 Contents: \$700,000
Office Trailer	17 County Road, Crane Hill	\$25,000
Environmental Center	10075 Highway 69 S., Bremen	Building: \$417,721 Contents: \$20,000
(20) OHV Park Storage Buildings	10075 Highway 69 S., Bremen	Building: \$300,000 Contents: \$34,000
Cullman Regional Medical Center	1912 Al Hwy 157, Cullman	\$19,111,110
1 EMS Transport Service	--	--
2 Hazmat Teams	--	--
2 Rescue Teams	--	--
Smith Lake		
Smith Lake Senior Center	Sportsman Lake Road NW, Cullman	\$10,651,000
Smith Lake Maintenance Building	1536 Sportsman Lake Rd., Cullman	\$55,000
Smith Lake Maintenance Shop	416 County Road 385, Cullman	\$118,400
Water and Sewer		
Water Department Office	2051 2 nd Ave. SW, Cullman	Building: \$405,520 Content: \$350,000

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.28 | Critical Facilities in Cullman County, Alabama (Continued)

Facility	Location	Value
Water Department Shop	2051 2 nd Ave. SW, Cullman	Building : \$405,520 Contents: 350,000
8 Booster Stations	--	\$1,060,000
Cullman County Sanitary Department	Highway 69, Cullman	Building: \$214,500 Content: 53,000
Oden Ridge Water Tank	Oden Ridge	\$315,000
Eva Water Tank	Cullman	\$162,000
County Line Water Tank	Cullman	\$225,000
Hamby Chapel Water Tank	Cullman	\$162,000
Hamby Chapel Water Tank #2	Cullman	\$1,080,000
Berlin Water Tank	Cullman	\$369,000
Stouts Mountain Water Tank	County Road 564, Stouts Mountain	\$315,000
Shelton Grove Water Tank	County Road 223, Shelton Grove	\$315,000
Bushy Pond Water Tank	County Road 222 Bushy Pond	\$315,000
Crane Hill Water Tank	County Road 222, Crane Hill	\$447,000
Springhill Water Tank	County Road 1136, Cullman	\$990,000
Springhill Water Tank #2	118 County Road 1148, Springhill	\$225,000
Schmuck Mountain Water Tank	County Road 18, Schmuck Mountain	\$315,000
Bremen Water Tank	County Road 109, Bremen	\$315,000
Water Department/EMA Office	2020 Beech Ave. SE, Cullman	Building: \$1,851,000 Contents: \$275,000
9 Water Utility Systems	--	\$269,730,000
Cullman Water Treatment Plant	--	\$29,970,000
6 Wastewater Treatment Facilities	--	\$359,640,000
County Road Department		
Cullman County Road Department Garage Buildings (2)	--	Buildings: \$1,420,138 Content: \$96,000
Cullman County Road Department Storage Buildings (2)	--	\$113,000
Cullman County Road Department Shed	--	\$35,000
Cullman County Road Department Fueling Station	--	\$134,712
West Office	3190 County Road 438, Cullman	Building: \$337,827 Content: \$20,000
West Fueling Station	3190 County Road 438, Cullman	\$83,000

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.28 | Critical Facilities in Cullman County, Alabama (Continued)

Facility	Location	Value
Road Department Office	2883 Highway 69 N., Cullman	\$992,955
Cullman County Board of Education		
Cullman County BOE	--	\$11,401,310
Maintenance Facilities	--	\$4,107,961
Communication Centers	--	\$324,559
Parkside Elementary	--	\$9,779,148
Cold Springs School Facilities	--	\$23,385,148
Child Development Centers	--	\$3,811,943
Dowling Community Center	--	\$261,281
Fairview School Facilities	--	\$37,005,387
Garden City Schools Facilities	--	\$3,816,249
Good Hope Schools and Facilities	--	\$25,720,099
Good Hope Primary Schools	--	\$11,300,359
Harmony School	--	\$12,384,415
Hanceville Schools and Facilities	--	\$27,727,806
Holly Pond School and Facilities	--	\$26,387,866
Jones Chapel Schools and Facilities	--	\$3,157,774
Logan School Facilities	--	\$2,457,526
Vinemont Schools and Facilities	--	\$31,306,918
Walti Schools and Facilities	--	\$4,332,660
West Point Schools and Facilities	--	\$42,576,492
Career Center Facilities	--	\$12,722,482

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.28 | Critical Facilities in Cullman County, Alabama (Continued)

Facility	Location	Value
Bremen VFD	PO Box 162, Bremen, AL 35033	–
Station #1	1425 County Road 110, Cullman	Building: \$175,000 Contents: \$65,000
Station #2	50 County Road 143, Bremen	Building: \$3,500 Contents: \$65,000
Station #3	5286 County Road 38, Hanceville	Building: \$35,000 Contents: \$2,500
1995 Ford Pumper	--	\$250,000
2004 Freightliner Pumper	--	\$250,000
2000 International Pumper	--	\$250,000
1995 Ford Brush	--	\$65,000
1993 Ford Brush	--	\$65,000
1993 Ford Brush	--	\$65,000
1990 Ford Tanker	--	\$175,000
10 KW Generator	--	\$8,000
Mobile SCBA Fill Unit	--	\$65,000
Sparkman Fire Truck	--	\$300,000
E-1 Fire Engine #2	--	\$200,000
KME Fire Truck	--	\$300,000
International EMS 1		\$45,000
Food Service Truck	--	\$45,000
Breathing Air Compressor	--	\$35,000

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.28 | Critical Facilities in Cullman County, Alabama (Continued)

Facility	Location	Value
Walter VFD	4411 Co. Rd. 781, Cullman	\$180,000
1984 5-ton military surplus brush/tanker	--	\$20,000
1986 Ford 500-gpm service/pumper	--	\$25,000
1996 Darley 1250/1000 pumper	--	\$200,000
2000 CS 1250/1000 pumper	--	\$200,000
2006 Ford F350 Service/Rescue Crew Cab Skid Unite	--	\$80,000
2010 Pierce 1250/1000 pumper/ rescue	--	\$200,000
25 KW Generator	--	\$30,000
Surplus 3KW Generator on Trailer	--	\$3,500
Arkadelphia VFD	5023 Co. Rd. 35, Bremen	\$240,000
Battleground VFD	8630 Co. Rd. 1082, Vinemont	\$240,000
Berlin VFD	3581 U.S. Hwy 278 E., Cullman	\$240,000
Bethsadia VFD	454 Co. Rd. 804, Cullman	\$240,000
Cold Springs VFD	9110 Co. Rd. 109, Bremen	\$240,000
Crane Hill VFD	225 Co. Rd. 870, Crane Hill	\$240,000
Gold Ridge VFD	5225 Co. Rd. 1545, Cullman	\$240,000
Johnsons Crossing VFD	1599 Co. Rd. 1617, Hanceville	\$240,000
Jones Chapel VFD	96 Co. Rd. 940, Cullman	\$240,000
Joppa VFD	15437 AL Hwy 69 N., Joppa	\$240,000
Logan VFD	4215 Co. Rd. 818, Logan	\$240,000
Loretta VFD	7648 Co. Rd. 437, Cullman	\$240,000
Sardis VFD	8176 Co. Rd. 30, Sardis	\$240,000
Trimble VFD	4896 Co. Rd. 222 or 7744 Co. Rd. 813, Cullman	\$240,000
TOTAL		\$1,141,130,792

5.3 Jurisdictional Vulnerability Overview | Cullman County

Impacts of Development Trends on Vulnerability

Development trends – particularly population shifts, land use changes created by major economic development expansions, infrastructure improvements of countywide significance – are important considerations to effective mitigation planning. These trends must be continually monitored and analyzed to keep abreast of changing vulnerabilities of jurisdictions and the increasing exposure of growing populations, new buildings, and enlarged infrastructure to natural hazards. As growth and development patterns change over time, the risks to property damage and lives also change. This section examines the projected growth trends and other impacts of countywide significance that are expected to affect the location and extent of natural hazards vulnerability over time.

Cullman County is mostly a rural county. The county government relies on the North Central Alabama Regional Council of Governments (**NARCOG**) for assistance in land use development. The following is acreage usage in order of *most use to least use* in Cullman County: Forest, Agriculture, Transportation, Residential, Public, Industrial, and Commercial. Open and minimally encumbered land exists which must be capitalized on. Abundant electric power and natural gas embrace the area. Existing and planned city and county water and wastewater systems serve extensively as the foundation for extension and interconnection to accommodate development. However, the more these systems expand, and the larger the built environment's footprint grows, the more susceptible these local assets become to areawide hazards such as severe thunderstorms, tornadoes, and floods.

The tourism industry in Cullman County offers historic attractions which can be cumulatively leveraged as a destination attraction. Industry offers extensive employment with good paying jobs and is a major driver in support and growth of retail development. Retail development is typically community oriented whereas major industrial development is best maximized through regional county teamwork. Teamwork and unity through coalition of local governing bodies presents a compelling case for federal and state financial support and sends a reverberating message throughout industry. This very support can also be utilized to implement hazard mitigation practices that protect Cullman County's growing industry realms.

The Region's major roads and highways are adequate for current transportation needs. Throughout the system, however, there are numerous segments where improvements in alignment and road surfaces are needed. Also, many of the bridges serving the major roads are too narrow for acceptable safety standards. As the county grows and experiences further development, new routes and improvements to existing highways will be needed. This especially holds true to those road networks that are perpetually at risk of natural hazard impacts. Table 4.56 provides a listing of critical roadways that are vulnerable to hazards such as floods and landslides.

Rail Service is provided to the area by Norfolk Southern Railway (east/west) and CSX Transportation (north/south). Air transportation is provided to Cullman County by the Huntsville International Airport. This facility is the newest, most modern and largest of its type in the State of Alabama. Additionally, Folsom Field in Cullman is a smaller non-commercial airport. Cullman County is served by carrier companies, motor freight terminal, UPS, Federal Express and Airborne Express. At present, two major bus lines serve the North Central Alabama Region. Greyhound provides commercial bus service to the North and South, with six northbound and seven southbound buses traversing the Region daily, and Continental Trailways buses make two eastbound and three westbound runs daily. Each of these modes of transportation are critical to the functionality of life in and growth of Cullman County. This is especially true when considering the role these transportation networks play in times of crisis. Natural hazards can incapacitate the more commonly used road networks; thus, it is important to assess the current vulnerabilities of all transportation modes in Cullman County to enhance public safety operations when hazards occur.

Section 5 | Hazard Profiles

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.29 | Critical Roadways Vulnerable to Flooding and Landslides in Cullman County

Name	Type	Flood Type
AL Highway 69	Major Transportation Route	Majority in Zone X crossing Zone A
AL Highway 157	Major Transportation Route	Majority in Zone X crossing Zone A
U.S. Highway 31	Major Transportation Route	Majority in Zone X crossing Zone A
U.S. Highway 278	Major Transportation Route	Majority in Zone X crossing Zone A
AL Highway 91	Major Transportation Route	Majority in Zone X crossing Zone A
County Road 222	Major Transportation Route	Majority in Zone X crossing Zone A
County Road 747	Major Transportation Route	Majority in Zone X crossing Zone A
Interstate 65	Major Transportation Route / Hurricane Evacuation Route / Nuclear Evacuation Route	Majority in Zone X crossing Zone A
County Road 216 to Old 69 to Interstate 65	--	--
County Road 216 to AL Highway 69 South	--	--
County Road 223 to AL Highway 69 South	--	--
Howard Circle to AL Highway 69 South		--

Water and sewer service has been a major funding priority for projects. Potable water may be the most basic of all infrastructures and good water and sewer systems is imperative for economic growth and industrial development. Cullman offers public sanitary sewage within the county. On-site sewage disposal systems present a variety of problems and should be considered only a tolerable minimum at best. Due to physiographical limitations throughout much of the county, there is a danger of ground water contamination and stream pollution, even when on-site systems appear to be functioning properly. This issue can be further exacerbated by natural hazards that overload or severally damage local water and sewer systems, especially in areas that are prone to hazardous activity.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Impacts of Development Trends on Vulnerability (Continued)

The source of electric power is from the Tennessee Valley Authority (TVA). The power is distributed through several local electric departments, and power companies operating within the county's rural areas. Natural gas is furnished by Cullman-Jefferson Counties Gas District, Northwest Alabama Gas District, and Wheeler Basin Natural Gas. In addition to the abovementioned systems several L.P gas companies operate within the county, supplying areas not reached by natural gas. Solid waste service is provided by both local municipal collection and private collectors. As community and economic development efforts continue throughout the county, it is important that these agencies work with other hazard mitigation stakeholders when planning the future locations of power stations and wastewater treatment facilities. By identifying areas hardest hit by devastating natural hazards, utility providers potentially reduce vulnerability to damages resulting from these incidents.

The North-Central Alabama Regional Council of Governments (NARCOG) identified a series of weaknesses and threats to the its three-county region in their 2012-2017 Comprehensive Economic Development Strategy (CEDS) that carry significant risk of worsening after natural hazard activity. The plan recognized that changes in development for jurisdictions in hazard prone areas are on-going issues that must be constantly monitored and addressed in the local planning process. Changing development trends and the on-going growth and shift of population can increase levels of vulnerability. The potential impacts of these changes can have adverse impacts, such as:

- Increasing demands for developable land area to accommodate new growth can push new development to previously undeveloped flood plains.
- New development and associated parking, roads, and other impermeable surfaces can increase urban runoff, exacerbating flooding hazards.
- New construction in previously rural areas can push the wildland-urban interface, increasing exposure to wildfires.
- New housing may be constructed inadequately to withstand the damaging wind threats of high winds and tornadoes.
- Increased population can stretch the demand for limited water resources in times of drought.
- More development in widespread areas subject to sinkholes can increase the probability of property and infrastructure damages.

5.3 Jurisdictional Vulnerability Overview | Cullman County

Vulnerability Summary

Table 5.23 provides an overall summary of Cullman County's vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: **L** to indicate **low** vulnerability; **M** to indicate **medium** vulnerability; and **H** to indicate **high** vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.30 below provides a summary of the county's annual potential loss estimates by hazard. Table 5.31 on the following page further breaks down natural hazard probability and damage estimates in Cullman County.

Table 5.30 | Summary of Cullman County's Annual Potential Loss Estimates by Hazard

Hazard	Total Estimated Risk
Dam/Levee Failure	N/A
Drought/Extreme Heat	None
Earthquakes	None
Flooding	\$18,833
Hail	\$16,813
High Winds - High / Strong Winds	\$71,000
High Winds - Tornadoes	\$1,393,790
High Winds - Severe T-storms	\$78,549
Landslides	Unknown
Land Subsidence / Sinkholes	Unknown
Lightning	\$6,604
Wildfire	Unknown
Winter Storms / Winter Weather	\$127,796

5.3 Jurisdictional Vulnerability Overview | Cullman County

Table 5.31 Natural Hazard Probability and Damage Estimates In Cullman County, AL						
Cullman County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	27	15	None	1.8 events/yr	N/A
	Earthquakes	6	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	73	24	\$565,000	3.0 events/yr	\$12,000
	Hail	237	64	\$1,076,000	3.7 events/yr	\$16,813
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 95 Windstorms: 11 Thunderstorms: 438	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$97,600,780 Windstorms: \$1,704,000 Thunderstorms: \$4,794,000	Tornadoes: 1.9 events/yr Windstorms: < 1 event/yr Thunderstorms: 21.1 events/yr	Tornadoes: \$3,402,986 Windstorms: \$178,562 Thunderstorms: \$191,533
	Landslides	4	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	22	62	Unknown	< than 1 event/yr	Unknown
	Lightning	14	24	\$158,500	< than 1 event/yr	\$6,604
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	353	13	N/A	27.2 events/yr	Unknown
	Winter Storms/Winter Weather	81	24	\$3,067,100	3.4 events/yr	\$127,796

Table 5.31 provides probability and damage estimates for the entire Cullman County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated 27.2 events taking place each year.

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

The vulnerability assessment process is necessary to identify those natural hazards that pose a threat to DeKalb County and its municipal jurisdictions. The following sections will detail jurisdictional vulnerability to the various hazards. As shown by the tables many hazards are expected to occur in the future but are also expected to have various impacts as far as damages are concerned. A few, however, are expected to have a major impact on the County as the years progress.

Table 5.32 displays the resulting vulnerability determinations for DeKalb County municipalities based on figures in the 2015 Natural Hazards Mitigation Plan for DeKalb County, Alabama and more extensive data collected from the National Oceanic and Atmospheric Administration (NOAA).

Table 5.32 | Hazard Vulnerability by Jurisdiction in DeKalb County, Alabama

	Natural Hazards	Municipalities					
		Collinsville	Crossville	Fort Payne	Fyffe	Geraldine	Hammondville
DeKalb County	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	M	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L
	Flooding	M	L	H	L	L	M
	Hail	H	H	H	H	H	H
	High Winds - High / Strong Winds	H	M	M	H	M	H
	High Winds - Tornadoes	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L
	Lightning	H	H	H	H	H	H
	Wildfire	L	L	L	L	L	L
	Winter Storms / Winter Weather	L	L	L	L	L	L

Key: **L | Low Risk**; little damage potential (< 5% damage to the jurisdiction) ; **M | Medium Risk**; moderate damage potential (5-10% potential damage to the jurisdiction); **H | High Risk**; significant damage to the jurisdiction (10%> potential damage)

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.32 | Hazard Vulnerability by Jurisdiction in DeKalb County, Alabama (Cont'd)

	Natural Hazards	Municipalities					
		Henagar	Ider	Lakeview	Mentone	Pine Ridge	Powell
DeKalb County	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	M	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L
	Flooding	H	L	L	L	L	L
	Hail	H	H	H	H	H	H
	High Winds - High / Strong Winds	H	H	H	H	H	H
	High Winds - Tornadoes	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L
	Lightning	H	H	H	H	H	H
	Wildfire	L	L	L	L	L	L
	Winter Storms / Winter Weather	L	L	L	L	L	L
Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction) ; M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)							

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.32 | Hazard Vulnerability by Jurisdiction in DeKalb County, Alabama (Cont'd)

DeKalb County	Natural Hazards	Municipalities				
		Rainsville	Shiloh	Sylvania	Valley Head	Unincorporated County
	Dam Failure	L	L	L	L	L
	Drought / Extreme Temps.	M	L	L	L	L
	Earthquakes	L	L	L	L	L
	Flooding	H	L	L	H	H
	Hail	H	H	H	H	H
	High Winds - High / Strong Winds	H	H	H	H	H
	High Winds - Tornadoes	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H
	Landslides	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L
	Lightning	H	H	H	H	H
	Wildfire	L	L	L	L	L
	Winter Storms / Winter Weather	L	L	L	L	L
Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction) ; M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)						

Natural Hazard Vulnerability in DeKalb County

Dam Failure | To date, there have been no incidents of dam failure in DeKalb County. **Eight** of the County’s dams are designated as high hazard and **one** dam is designated as significant hazard. These designations reflect the severity of potential damage to surrounding areas should the dams fail. DeKalb County has the largest number of high-hazard dams in the Region; however, this is not to say that the County is particularly vulnerable to floods resulting from dam failure. Therefore, the area overall has low vulnerability to dam failure incidents. However, with the right conditions, local reservoirs with at-risk dams can become overwhelmed and the surrounding areas inundated with floodwaters. Thus, the extent/range of magnitude or severity that could be experienced by DeKalb County due to a dam failure event is equal to that of a flood event, which is minor to major.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Natural Hazard Vulnerability in DeKalb County (Continued)

Dam locations and nearby communities are the most vulnerable to impacts of dam failure incidents. The eight high hazard potential dams in or near the Central, Fort Payne, Five Forks, Gilbert Crossroads, Guest, and Sylvania communities. Other communities have a reduced vulnerability to dam failure impacts; however, this depends on their proximity to the high-risk dams. Two high-risk dams in particular – DeKalb County Public Lake Dam in Sylvania and Fort Payne Dam in Fort Payne – have water storage capacities over 1,000 acres per foot. The DeKalb County Public Lake Dam has the largest storage capacity out of any dam in DeKalb County at **2,231** acre-feet. Primary effects from dam failure in DeKalb County could include loss of life; destruction of property; unregulated water flow to surrounding areas; and increased amount of disease and disease-carrying animals in the area. Hazardous results could include heavy flooding that causes many deaths by injuring or trapping people in structures or vehicles.

Drought / Extreme Temperatures | Drought is known to occur in DeKalb County. According to the National Climatic Data Center, March of 2007, normally one of the wettest months of the year, was instead one of the driest on record. The dry weather continued into April and beyond May 2007, plunging the area into an historic drought situation. Small grass fires developed; rivers, creeks and farm ponds experienced lowered water levels; and soil moisture was at historic lows. Crops were stressed and drought emergencies were issued by the Alabama Forestry Commission due to the possibility of wildfire. Significant precipitation occurred in August, but the drought persisted through the Fall and Winter. By March 2008, rainfall was nearing normal bringing some relief. In July, the area was still feeling the effects of drought and there was still not enough groundwater recharge. There was substantial rainfall in August bringing deep groundwater to near average levels and soil moisture to near average for the first time in two years. September was dry, but by December 2008, heavy rainfall had ended the drought.

DeKalb County has been included in “Drought Management Region I” in the *Alabama Drought Management Plan* as prepared by the Alabama Department of Economic and Community Affairs (ADECA) Office of Water Resources (AOWR). Nine drought management regions were established by the OWR to more efficiently assess and respond to drought conditions across Alabama. According to the state drought management plan, the establishment of drought management regions does not limit drought management efforts or drought declaration levels in an area smaller than a drought management region, such as a county or watershed. If drought conditions warrant, the AOWR, in consultation with the Alabama Drought Assessment and Planning Team (ADAPT) and Monitoring and Impact Group (MIG) may determine that the designated drought management regions are inadequate to capture a particular drought impact and consequently a drought declaration at a smaller level may be issued, i.e., for a county.

DeKalb experienced **34** drought/extreme heat events in a 15-year period resulting in a greater than 100% probability that a drought event will occur on an annual basis. Neither of the 34 events resulted in monetary damages, which translates to an estimated \$0 of expected annual damages from future events. Primary effects from drought and excessive heat in DeKalb County would include crop and other agricultural damage; increased vulnerability to forest fires and sinkholes; and heat exhaustion, heat stroke, heat syncope, and heat cramps. Hazardous results from significant drought damage and excessive heat in this jurisdiction would include a water supply shortage that results in economic losses of crops and livestock; forest fires that can devastate vast acreages and burn homes and businesses; and inflation of energy prices due to the loss of hydropower.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Natural Hazard Vulnerability in DeKalb County (Continued)

Earthquakes | The earliest known earthquake incident to occur in Alabama occurred in Valley Head in 1886. Since then, there have been **25** total earthquakes in DeKalb County. Two of these earthquakes also resulted in numerous aftershocks. The most significant earthquake event was on April 29, 2003; an earthquake registering **5.1** on the Richter Scale had its epicenter in northeast DeKalb County just east of DeSoto State Park. According to the Geological Survey of Alabama, this earthquake is one of the largest earthquakes known to have occurred anywhere in the southern Appalachians. The quake was felt as far away as Tuscaloosa and Montgomery. The only other earthquake ever recorded in Alabama to have this magnitude was a 5.1 earthquake in Escambia County in 1997. Although earthquakes are common in this area, they are normally quite small and usually not felt.

Earthquakes may occur in any area of DeKalb County and are considered an areawide hazard. The magnitude of the twenty-five earthquakes in DeKalb County since 1886 have ranged from 1.2 to 5.1 on the Richter Scale with an average magnitude of **2.0** and a midpoint of about **1.8** or **1.9**. Most of these earthquakes are not severe enough to be felt, and no records have been provided of significant financial repercussions due to earthquakes. Thus, county and municipal vulnerability to this hazard is low to moderate given an earthquake's magnitude.

Flooding / Flash Floods | Most of the flooding issues in DeKalb County stem from the area's topography, a condition that fosters poor drainage issues throughout the county. There are two linear mountains – Sand Mountain to the west and Lookout Mountain to the east, with the extended valley running the length of the county in between. Flood activity particularly happens in areas along Big Wills Valley and drains portions of Sand Mountain and Lookout Mountain. Rainfall flows rapidly down these mountains into the valley below where much of the land development in the county has taken place.

Much of the flooding and drainage problem in DeKalb County relates to the many dirt or otherwise substandard roads and the bridges on dirt roads. There are about **250** miles of such roads in the county. These roads often have poor provision for proper drainage and may wash out during significant rainfall. Also, there are about **19** old wooden bridges, about **3** of which are typically under water during heavy rainfall. More specifically, the extent of flooding/drainage problems in local communities is as follows:

Collinsville. Little Wills Creek floods Collinsville's central business district and an adjacent residential area. The flood prone area consisted of approximately **21.9** acres. Flooding is aggravated by the inadequate capacity for passing flood flow on the part of bridges and culverts downstream from the central business district and by the accumulation of debris at the upstream sides of these culverts and bridges. Little Wills Creek joins with Big Wills Creek northeast of the interchange of I-59 and Alabama Highway 68. Big Wills Creek floods rural land in this area.

Fort Payne. Big Wills Creek and its easterly tributaries flood various portions of Big Wills Valley and adjacent Railroad Valley. Big Wills Valley is predominately rural, whereas Railroad Valley is urbanized, compromising the most of the City's urban development.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Natural Hazard Vulnerability in DeKalb County (Continued)

The following tributaries with flood-prone areas in Railroad Valley drain westerly through Big Ridge into Big Wills Creek:

- *Allen Branch*, entering Big Wills Creek at Northwest 59th Street,
- *Steward Branch*, entering Big Wills Creek at Northwest 49th Street,
- *Beeson Branch*, entering Big Wills Creek at Airport Road,
- *Dye Branch*, entering Big Wills Creek at the interchange of Alabama State Route 35 and I-59,
- An unnamed branch entering Big Wills Creek at Southwest 31st Street.

Dye Branch's flood-prone area includes parts of downtown Fort Payne and areas of wholesaling, warehousing, and industrial land use in central Fort Payne. The remaining tributaries of Big Wills Creek originating in Railroad Valley include developing residential, commercial, and industrial areas in Fort Payne's urban fringe. Big Wills Creek floods predominantly rural land, except for scattered residential development near the Creek in Big Wills Valley.

Hammondville. The Hammondville Branch of Big Wills Creek floods an area comprising about 128 acres and drains southwesterly crossing Alabama Highway 117, joining Big Wills Creek approximately one mile south of the town.

Henagar. Horsehead Creek and South Sauty Creek in addition to local tributaries constitute the source of flood activity in Henagar. South Sauty Creek and tributaries flood land in the central area of town. Horsehead Creek's flood prone area includes land in the extreme northern portion of the town. Henagar's flood prone area comprises about 127 acres.

Rainsville. Ivy, Piney, Town, and South Sauty Creeks and adjacent tributaries cause localized flooding in the City of Rainsville. These three creeks drain most of Rainsville's corporate area to the southwest and south. The latter stream drains the city's northern quarter to the west. Of the previously mentioned streams, Piney Creek causes Rainsville's most serious flooding problems due to its location adjacent to Rainsville's Central Business District. Ivy and South Sauty Creeks flood areas of scattered residential development. Town Creek (the largest creek draining this area) floods an entirely rural area. The Rainsville Fire Department is in flood zone "C" but is close to the floodplain. The city's total flood-prone area constitutes an estimated 835 acres.

Valley Head. The Valley Head Branch of Big Wills Creek flows through the Central Business District of the Town of Valley Head, periodically flash-flooding commercial structures. This creek runs westerly through a gap in Little Ridge at Winston Spring, changing its name to Big Wills Creek at Winston Spring. The flood-prone comprises about 19 acres. Aside from the previously mentioned commercial structures in Valley Head's CBD, Valley Head Branch causes structural damage to street pavements and bridges along the creek's course southwest from the central business district to Winston Spring and floods the Valley Head Park Pavilion below this spring. Local flooding is aggravated by the limited capacity of some bridges and culverts and by the accumulation of debris and brush at the upstream ends of the central business district's bridges and culverts. Specific flooding issues in Valley Head include the flooding of the Fire Department and Town Hall.

Other municipalities in DeKalb County. The towns of Crossville, Fyffe, Geraldine, Ider, Lakeview, Mentone, Pine Ridge, Powell, Shiloh and Sylvania do not experience significant flooding of developed areas other than localized drainage problems or problems otherwise mentioned.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Natural Hazard Vulnerability in DeKalb County (Continued)

Unincorporated area. The unincorporated area of DeKalb County exhibits flooding problems in the flood-prone areas drained by the following major streams: Big and Little Wills Creek and Little River that drain to the Coosa River and Town, Ivy Horsehead, South Sauty, Piney, Kroger, Black Oak, Flat Rock, and Bryant Creeks that drain to the Tennessee River. These streams flood predominantly rural areas, comprising forests and agricultural land use with scattered structures. The flood-prone areas adjacent to these streams are generally narrow, linear areas with rapid drainage, susceptible to flash flooding. Flash Flooding is the predominant local flooding condition, due to the topography of Sand and Lookout Mountains. Lacking low-lying areas near the Tennessee River, DeKalb County does not experience ponding or backwash flooding.

Hail | Hailstorms in DeKalb County are considered areawide incidents. All areas and jurisdictions in the County have experienced, or have a high likelihood of experiencing, and are potentially affected by hailstorms.

DeKalb County experienced **182** hailstorm events over the 64-year study period. This equates to an estimated **three** events per year. Crop damage in the Town of Geraldine totaled **\$25,000**, the most of any community in the County. Property damage was the most substantial in the Cities of Rainsville (**\$144,000**) and Fort Payne (**\$82,000**) followed by the Towns of Henagar (**\$75,000**) and Geraldine (**\$62,000**). The most damaging event in this jurisdiction's history occurred on March 12, 2010. A thunderstorm produced half dollar (1.25 inches in diameter) to golf ball (1.75 inches in diameter) sized hail just southwest of the Rainsville community. As the storm pushed through the city, large hail struck **19** buildings, tearing up siding, awnings, and damaging some automobiles. Hail accumulation of at least one to three inches was reported.

High Winds / Strong Winds | High/strong winds are natural hazards that occur quite frequently within DeKalb County. Damage from any isolated event is usually not as great as with other wind-related incidents such as tornadoes. However, when taken cumulatively, the damages can be significant. According to the US Wind Zone Map published by FEMA, DeKalb County is in Wind Zone IV where winds can be as high as **250** mph.

There have been **26** specific high/strong wind incidents in DeKalb County during the 24-year study period. While these windstorm hazards impact the county on an areawide scale, certain communities have been reported as sustaining more damage than others. Residential development in Ider and Sylvania was substantially damaged by windstorms in the 1990s. Windstorm activity appeared most prevalent from 2000 to 2010, where the Collinsville, Fort Payne, Geraldine, Ider, Mentone, and Valley Head communities experienced consistent damage from storms. In fact, the most destructive incident occurred in 2007, where strong wind damage grossed an estimated **\$1 million**. Incidents of high winds clocked between **45 – 50** mph were notorious for blowing down numerous trees and power lines across the county resulting in expansive power outages. This trend in windstorm activity would continue well over the next decade. The last strong wind incident of note occurred in 2019; wind gusts intensified up to **55** mph, knocking down numerous trees, several of which blocked roadways and caused at least three vehicular accidents. An estimated **250** customers lost power in the Mentone area due to numerous trees being knocked down.

Thunderstorms | DeKalb County experiences many thunderstorms each year. During the 61-year study period, this area experienced **420** incidents, the highest number of incidents in any county in Subregion I. Most of the damage caused by this hazard results from straight-line winds, lightning, flash flooding, and hail. Occasionally, thunderstorms will spawn tornadoes, the most destructive hazard that occurs in DeKalb County. Damage from thunderstorms varies in severity and scale. Each jurisdiction in this area is at risk for thunderstorm events.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Natural Hazard Vulnerability in DeKalb County (Continued)

Landslides | Local officials have reported landslides on both mountainous areas of the County. There are known to be landslides and/or potential landslides in the areas of the mountain bluffs, particularly where new construction is occurring. Landslide activity has occurred along Sand Mountain and Lookout Mountain, particularly in the areas of State Highways 35 and 117, north of which run northwest to southeast cutting across the ridgelines of the mountains. Landslides in remote, natural areas, though, are not usually reported.

According to the Geological Survey of Alabama, DeKalb County lies generally in an area that has high susceptibility, yet low incidence of landslides. The most immediate vulnerabilities of the area to landslide hazards are the roads that necessarily cut across the mountain ridges and land development, particularly housing, that is constructed on or near steep slopes and hillsides. There has not been sufficient information to quantify the potential dollar loss due to landslides. If new, more extensive development begins to take place in the mountainous areas along the Side of Sand Mountain and Lookout mountain, the potential for damages could rise if measures are not taken to protect such development from poor development practices.

Land Subsidence / Sinkholes | In DeKalb County, generally, the valley that extends southwest to northeast between Sand Mountain and Lookout Mountain is underlain by carbonate rock and is thus susceptible to the formation of sinkholes. Sinkhole activity has been reported in the Fort Payne, Grove Oak, Henagar, Ider, Simcoe, and Sulphur Springs communities, the most significant of which resulted from an earthquake that occurred on April 29, 2003. In addition to producing moderate damage across communities in northern Alabama, this event also caused a **29-foot-wide** sinkhole to form northwest of Fort Payne. No damages were reported as a result of the sinkhole.

Vulnerability to the communities of DeKalb County to land subsidence hazards is considered to primarily relate to highway construction. Given the general density of development in DeKalb County, it is not thought that land subsidence will be a major hazard to most land development. There is not sufficient information to develop an estimate of potential loss due to land subsidence or sinkholes in DeKalb County.

Lightning | According to the National Climatic Data Center (NCDC), there have been **17** significant occurrences of lightning during the 24-year study period. There events caused **three** injuries, no deaths, \$1,000 in crop damage, and \$436,000 in property damage. The location of lightning events is considered areawide in DeKalb County. All areas and jurisdictions in the County have experienced, or have a high likelihood of experiencing, and are potentially affected by lightning.

Several events in the county's history have been detrimental to local communities. The lightning event on April 21, 1997, struck a hosiery mill destroying **15** knitting machines. One person was injured as he attempted to put out the fire. The lightning event on July 24, 1999, caused an explosion and fire that destroyed a cabinet shop. The lightning of September 7, 2006, damaged a barn and destroyed farm equipment. Nine cows were killed in Mentone by lightning in 2007, and on February 17, 2008, lightning knocked out the main switching facility at Farmers Telecommunications Cooperative. A utility man was struck by lightning while repairing a phone line during the June 2010 event. Due to a lightning strike, a house caught fire on June 21, 2011. Lightning also struck a home on July 5, 2012, and on August 09, 2012, a house fire started due to lightning.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Natural Hazard Vulnerability in DeKalb County (Continued)

Wildfires | DeKalb County experienced **777** wildfires from January 2007 to December 2020. This equates to an estimated **60** incidents per year over the 13-year study period. The most significant wildfire to afflict this jurisdiction occurred in November 2016, where **2,096** acres burned for several days. The fire was reported on November 9th, contained on November 25th, and controlled on December 5th. This event is the only Class F incident in the jurisdiction's history. Three Class D fires and four Class E wildfires have also caused substantial damage throughout the county – these fires ranged from 150 acres in size to 812 acres.

Wildfire activity was not identified in DeKalb County's previous hazard mitigation plan as a significant threat to the area. However, according to the Alabama Forestry Commission, DeKalb County had the highest number of wildfire incidents and the second highest number of acres affected by wildfires in the Division F Region between 2007 - 2020. It is unclear whether any of these incidents caused significant damage to local communities, and while wildfire activity was not specifically assessed in the County's last hazard mitigation plan, wildfires were identified by the community as events of particular threat to the County.

Winter Storms / Winter Weather | Winter storms occur in all parts of DeKalb County, particularly in the rural area and in higher elevations of Sand Mountain and Lookout Mountain. Communities in DeKalb County express varying levels of concern about future winter storm with community of Mentone specifically indicating a past event which caused considerable damage. Winter storm events are considered areawide hazards in the County. All areas and jurisdictions in DeKalb County have experienced, or have a high likelihood of experiencing, and are potentially affected by winter storms. The higher elevations of Sand Mountain and Lookout Mountain may experience extended effects from such events.

According to the National Climatic Data Center (NCDC), there have been **104** significant winter weather events in DeKalb County over the 24-year study period. Damages of these events totaled **\$1,001,000** in crop damages and **\$1,358,000** in property damages. Cold/wind chill, ice storms, and winter storms have been the most detrimental winter weather incidents in the county's hazard history. Of particular concern regarding winter storms are the highway and road gaps through the mountains, the potential damage to roads and highways, and the accumulation of snow and ice on dirt roads. Notable vulnerable roadways include Alabama Highways 35 and 117 where they each cross both Sand Mountain and Lookout Mountain in the Fort Payne area and in the Valley Head/Mentone area.

[Source: DeKalb County Natural Hazard Mitigation Plan – 2015, National Climatic Data Center \(NCDC\)](#)

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Socially Vulnerable Populations

Certain populations are generally more affected by hazard events. These populations can be defined in terms of social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey (ACS). Cullman County has **777** square miles of land and **2** square miles of water. Population density is currently estimated at **91.6** persons per square mile.

Table 5.33 depicts the county's population characteristics by jurisdiction and by census tract. The City of Fort Payne is the most populated jurisdiction at **14,006**, followed by the City of Rainsville then Sylvania, Collinsville, Henagar, Crossville, Fyffe, Powell, Geraldine, Valley Head, Ider, Hammondville, Shiloh, Mentone, Pine Ridge and Lakeview. The county has fourteen census tracts. In terms of vulnerability, the larger the population of an area the more people and structures that could possibly be damaged or destroyed. Tract 9607 is the most populated tract and contains the Town of Crossville. Tract 9612 is the least populated tract and contains a quadrant of the City of Fort Payne.

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies.

In addition to the racial and age composition within the county, income levels are important when identifying vulnerable populations. Lower income individuals may not have the resources to prepare for or recover from disasters. Table 5.34 shows the median household income, per capita income, and poverty level data for the jurisdictions and census tracts in DeKalb County.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. Only the Towns of Mentone and Sylvania have median household incomes that exceeds the state average; county tract 9612 is the only tract that meets this designation. There are no jurisdictions or census tracts in DeKalb County that exceed the national median household income average.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Geraldine, Hammondville, and Mentone are the only jurisdictions with a per capital income averages higher than the state average; Mentone is the only jurisdiction with an average that surpasses the national figure. County census tract 9612 is the only tract with an average per capita income higher than the state and national figures.

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.33 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 and Over
Jurisdiction							
DeKalb County	71,200	62,602	1,428	8,875	19,123	40,458	11,619
Collinsville	2,074	1,023	113	952	534	1,216	324
Crossville	1,945	1,754	0	191	442	1,065	438
Fort Payne	14,006	11,982	648	1,849	3,804	8,196	2,006
Fyffe	1,357	1,312	4	67	434	759	164
Geraldine	929	915	7	108	246	480	203
Hammondville	526	518	6	6	129	278	119
Henagar	2,059	1,912	0	202	469	1,237	353
Ider	644	617	0	37	107	389	148
Lakeview	154	144	0	10	60	55	39
Mentone	305	299	0	6	30	145	130
Pine Ridge	287	168	2	127	51	204	32
Powell	1,089	1,038	38	59	247	685	157
Rainsville	5,018	4,776	81	327	1,263	3,053	702
Shiloh	321	298	0	32	75	198	48
Sylvania	2,413	2,194	5	287	803	1,398	212
Valley Head	660	634	4	35	210	320	130
County Census Tract							
Tract 9601	5,794	5,573	1	460	1,271	3,223	1,300
Tract 9602	3,172	2,872	39	330	725	1,762	685
Tract 9603	7,454	6,512	204	1,081	2,164	4,278	1,012
Tract 9604	6,047	5,682	107	364	1,498	3,714	835
Tract 9605	5,782	5,577	54	171	1,459	3,253	1,070
Tract 9606	5,839	5,512	40	411	1,493	3,365	981
Tract 9607	8,082	6,698	61	1,471	2,490	4,440	1,152
Tract 9608	5,064	3,540	239	1,443	1,472	2,647	945
Tract 9609	3,913	3,376	330	403	900	2,499	514
Tract 9610	4,425	4,323	33	172	1,153	2,480	792
Tract 9611	3,306	2,922	54	429	875	1,964	467
Tract 9612	2,302	1,832	41	456	600	1,319	383
Tract 9613	6,002	4,654	252	1,276	2,086	3,122	794
Tract 9614	4,128	3,574	12	565	991	2,184	953

Source: American Community Survey (ACS) Demographic and Housing Estimates (2018)

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.34 | DeKalb County Income Data by Jurisdiction and Census Tract (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
DeKalb County	\$39,233	\$21,004	15,518	22.1%
Collinsville	\$27,375	\$14,522	703	37.4%
Crossville	\$36,161	\$23,357	456	25.3%
Fort Payne	\$40,382	\$20,625	3,162	23.3%
Fyffe	\$45,000	\$20,154	182	13.5%
Geraldine	\$32,308	\$31,159	209	22.7%
Hammondville	\$46,875	\$30,381	35	6.7%
Henagar	\$38,711	\$19,524	523	25.4%
Ider	\$38,750	\$23,935	128	19.9%
Lakeview	\$47,292	\$18,903	35	22.7%
Mentone	\$50,417	\$52,486	35	11.5%
Pine Ridge	\$37,083	\$19,280	63	22.0%
Powell	\$33,750	\$22,686	408	37.7%
Rainsville	\$35,449	\$19,287	1,266	25.5%
Shiloh	\$37,321	\$22,268	44	13.8%
Sylvania	\$48,636	\$21,073	379	15.7%
Valley Head	\$30,104	\$14,350	266	40.3%
County Census Tract				
Tract 9601	\$38,277	\$21,184	834	14.4%
Tract 9602	\$32,390	\$19,928	576	18.2%
Tract 9603	\$37,334	\$21,171	2,017	27.2%
Tract 9604	\$41,363	\$21,780	955	15.8%
Tract 9605	\$44,286	\$25,962	959	16.6%
Tract 9606	\$31,971	\$21,533	1,349	23.3%
Tract 9607	\$34,917	\$16,692	1,603	20.2%
Tract 9608	\$34,306	\$17,909	1,342	27.9%
Tract 9609	\$35,103	\$19,407	876	24.4%
Tract 9610	\$37,665	\$19,277	712	16.1%
Tract 9611	\$44,489	\$20,155	516	16.3%
Tract 9612	\$69,261	\$37,883	76	3.3%
Tract 9613	\$38,038	\$17,130	2,125	35.4%
Tract 9614	\$40,550	\$25,938	1,065	25.8%

Source: Income In The Past 12 Months (In 2018 Inflation Adjusted Dollars)

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. Ten of the sixteen municipalities in DeKalb County have percentages of persons below the poverty level that are higher than the state average, and twelve of the sixteen communities have figures higher than the national average. All but one census tract exceeds the national poverty rate. Tract 9612 has the lowest below poverty percentage in the county at **3.3%**. Fyffe, Mentone, Shiloh, and Sylvania are projected as having below poverty rates lower than the state average. Nearly every municipality in DeKalb County has below poverty rates higher than both the state and national rates. Hammondville has the lowest below poverty percentage in DeKalb County at **6.7%**; Valley Head has the highest at **40.3%**.

Vulnerable Structures

Housing is an important consideration of mitigation planning as residential development is often the most common form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.35 shows housing characteristics for DeKalb County by jurisdiction.

In 2018, there were **31,462** housing units in DeKalb County. Fort Payne had the highest number of mobile home units within a municipality, while Collinsville has the highest percentage of mobile homes within a municipality. Mobile home units are historically very vulnerable to a variety of hazards and prone to high amounts of damage and complete destruction.

Table 5.35 | DeKalb County Housing Characteristics by Jurisdiction (2018)

Jurisdiction	Total Housing Units	Mobile Home Units	Mobile Home %
DeKalb County	31,462	7,508	23.9
Collinsville	804	294	36.6%
Crossville	789	122	15.5%
Fort Payne	6,280	708	11.3%
Fyffe	517	38	7.4%
Geraldine	443	24	5.4%
Hammondville	235	44	18.7%
Henagar	1,068	263	24.6%
Ider	326	78	23.9%
Lakeview	60	16	26.7%
Mentone	378	22	5.8%
Pine Ridge	123	32	26.0%
Powell	352	97	27.6%
Rainsville	2,189	231	10.6%
Shiloh	174	49	28.2%
Sylvania	909	305	33.6%
Valley Head	308	37	12.0%

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Critical Facility Inventory

Critical facilities are instrumental to daily operations in DeKalb County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. Each of the critical facilities listed in Table 4.63 are vulnerable to each of the hazards identified in the risk assessment. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

Table 5.36 | Critical Facilities in DeKalb County, Alabama

Facility	Owner	Primary Purpose
Collinsville		
Collinsville School	DeKalb County BOE	Education
DeKalb Ambulance Service	DeKalb Hospital Association	Public Safety
Collinsville Town Hall/Police Department	Town of Collinsville	Public Safety
Collinsville Water and Sewer	Town of Collinsville	Utility
Collinsville VFD	Town of Collinsville	Public Safety
Collinsville Community Center	Town of Collinsville	Place of Assembly
Collinsville Health Care & Rehab	Private	Medical
TVA Substation	TVA	Utility
Sand Mountain Electric Substation	Sand Mountain Electric Coop	Utility
TDS Substation	TDS Telecom	Utility
DC Gas	DeKalb Cherokee Gas	Utility
Koch's	-	Industrial
Crossville		
Crossville School	DeKalb County BOE	Education
Crossville Town Hall/ Police Department	Town of Crossville	Government / Public Safety
Crossville Wastewater	Town of Crossville	Public Safety
Crossville VFD	Town of Crossville	Public Safety

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.36 | Critical Facilities in DeKalb County, Alabama (Cont'd)

Facility	Owner	Primary Purpose
Fort Payne		
Fort Payne Water Treatment Plant	Fort Payne Water Board	Utility
Northeast Alabama Water	Northeast Water, Sewer, & Fire Protection	Utility
Northeast Alabama Water	Northeast Water, Sewer, & Fire Protection	Utility
Fort Payne Middle School	Fort Payne BOE	Education
Williams Ave Elementary	Fort Payne BOE	Education
Wills Valley Elementary	Fort Payne BOE	Education
DeKalb Ambulance Service	City of Fort Payne	Public Safety
Fort Payne City Hall	City of Fort Payne	Government
Fort Payne Police Department	City of Fort Payne	Public Safety
Fort Payne Wastewater	City of Fort Payne	Utility
Isbell Field	City of Fort Payne	Transportation
Fort Payne Public Works	City of Fort Payne	Public Works
Fort Payne Fire Department	City of Fort Payne	Public Safety
Fort Payne Fire Department #2	City of Fort Payne	Public Safety
Fort Payne Fire Department #3	City of Fort Payne	Public Safety
Fort Payne Fire Department #4	City of Fort Payne	Public Safety
Fort Payne Fire Department #5	City of Fort Payne	Public Safety
Fyffe		
Fyffe School	DeKalb County BOE	Education
Fyffe Town Hall/Police & Fire Departments	Town of Fyffe	Government / Public Safety
Fyffe Senior Center	Town of Fyffe	Place of Assembly
Geraldine		
Geraldine High School	DeKalb County BOE	Education
DeKalb Ambulance Service	DeKalb Hospital Association	Public Safety
Geraldine Town Hall/Police Dept.	Town of Geraldine	Public Safety
Geraldine VFD	Town of Geraldine	Public Safety

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.36 | Critical Facilities in DeKalb County, Alabama (Cont'd)

Facility	Owner	Primary Purpose
Hammondville		
DeKalb Ambulance Service	DeKalb Hospital Association	Medical
Hammondville Town Hall/Police Department	Town of Hammondville	Government / Public Safety
Hammondville VFD	Town of Hammondville	Public Safety
Henagar		
Henagar Elementary	DeKalb County BOE	Education
Henagar City Hall	City of Henagar	Government
Henagar Police Department	City of Henagar	Public Safety
Henagar Wastewater	City of Henagar	Utility
Henagar VFD	City of Henagar	Public Safety
Robert Hadden Memorial Library	City of Henagar	Educational
City of Henagar Street Building	City of Henagar	Public Works
Henagar Community Center	City of Henagar	Place of Assembly
Ider		
Ider High School	DeKalb County BOE	Education
DeKalb Ambulance Service	DeKalb Hospital Association	Medical
Ider Town Hall/Police Department	Town of Ider	Government / Public Safety
Ider Wastewater Treatment	Town of Ider	Utility
Ider VFD	Town of Ider	Public Safety
Ider Rescue Squad	Town of Ider	Public Safety
Lakeview		
Lakeview Town Hall	Town of Lakeview	Government
Mentone		
Moon Lake School	DeKalb County BOE	Education
Mentone Town Hall/Police Department	Town of Mentone	Government / Public Safety
Mentone VFD	North Lookout Mountain Fire Protection District	Public Safety

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.36 | Critical Facilities in DeKalb County, Alabama (Cont'd)

Facility	Owner	Primary Purpose
Pine Ridge		
Pine Ridge VFD	Pine Ridge Fire Protection District	Public Safety
Pine Ridge Town Hall	Town of Pine Ridge	Government
Pine Ridge Community Center	Pine Ridge Fire Department	Public Safety
Powell		
Powell Town Hall/Police Department	Town of Powell	Government/ Public Safety
Powell VFD	Town of Powell	Public Safety
Rainsville		
Plainview High School	DeKalb County BOE	Education
DeKalb Ambulance Service	DeKalb Hospital Association	Medical
Northeast AL Agri-Business Center	DeKalb County	Recreation
Rainsville City Hall	City of Rainsville	Government
Rainsville Police Department	City of Rainsville	Public Safety
Rainsville Wastewater	City of Rainsville	Utility
Rainsville Fire Department	City of Rainsville	Public Safety
Shiloh		
Shiloh Town Hall/Fire Department	Town of Shiloh	Government/ Public Safety
Sylvania		
Sylvania High School	DeKalb County BOE	Education
Sylvania Town Hall/Police Department	Town of Sylvania	Government/ Public Safety
Sylvania Fire Station #1	Town of Sylvania	Public Safety
Sylvania Fire Station #2	Town of Sylvania	Public Safety
Sylvania Sewer Pump Station #1	Town of Sylvania	Utility
Sylvania Sewer Pump Station #2	Town of Sylvania	Utility
Sylvania Sewer Pump Station #3	Town of Sylvania	Utility
Sylvania Sewer Pump Station #4	Town of Sylvania	Utility

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.36 | Critical Facilities in DeKalb County, Alabama (Cont'd)

Facility	Owner	Primary Purpose
Valley Head		
Valley Head Water Plant	Valley Head Water Board	Utility
Valley Head School	DeKalb County BOE	Education
Valley Head Town Hall/Police Department	Town of Valley Head	Government/ Public Safety
Valley Head VFD	Town of Valley Head	Public Safety
DeKalb County		
DeKalb County Schools Coliseum	DeKalb County BOE	Recreation/Shelter
Ruhama School	DeKalb County BOE	Education
DeKalb County Sheriff's Office	DeKalb County Commission	Public Safety
DeKalb Activities Building	DeKalb County Commission	Government
DeKalb County Courthouse	DeKalb County Commission	Government
DeKalb County Road Department	DeKalb County Commission	Public Works
DeKalb County Senior Center	DeKalb County Commission	Place of Assembly/Shelter
DeKalb County VFW Fairgrounds	DeKalb County Chapter Veterans of Foreign Wars	Recreation
DeKalb Regional Medical Center	Community Health Systems	Medical
Adamsburg VFD	Adamsburg Fire Protection District	Public Safety
Aroney VFD Station #1	Aroney Fire Protection District	Public Safety
Aroney VFD Station #2	Aroney Fire Protection District	Public Safety
Blake VFD	Blake Fire Protection District	Public Safety
Carterville VFD	Cartersville Fire Protection Authority	Public Safety
Dogtown VFD	Dogtown Fire Protection District	Public Safety
Grove Oak VFD	Grove Oak Fire Protection Authority	Public Safety
Hendrixville VFD	Hendrixville Fire Protection District	Public Safety
Kilpatrick VFD	Kilpatrick Fire Protection District	Public Safety
Mentone VFD Station #2	Mt. Vera Fire Protection District	Public Safety

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.36 | Critical Facilities in DeKalb County, Alabama (Cont'd)

Facility	Owner	Primary Purpose
DeKalb County (Continued)		
Peak's Corner VFD	Peak's Corner Fire Protection District	Public Safety
Tenbroeck VFD	Tenbroeck Fire Protection Authority	Public Safety

Source: DeKalb County Natural Hazard Mitigation Plan (2015)

Impacts of Development Trends on Vulnerability

Development trends – particularly population shifts, land use changes created by major economic development expansions, infrastructure improvements of countywide significance – are important considerations to effective mitigation planning. These trends must be continually monitored and analyzed to keep abreast of changing vulnerabilities of jurisdictions and the increasing exposure of growing populations, new buildings, and enlarged infrastructure to natural hazards. As growth and development patterns change over time, the risks to property damage and lives also change. This section examines the projected growth trends and other impacts of countywide significance that are expected to affect the location and extent of natural hazards vulnerability over time.

One of the county's primary goals in its 2015 County Hazard Mitigation Plan prioritized prevention, specifically establishing communities *that are designed and built in a manner that reduces the risk of natural hazards to life and property*. The corresponding objectives to this goal demonstrate how local stakeholders recognized vulnerabilities in the built environment across all jurisdictions and created short- and long-range actions to address them. Such actions included performing a land use study that includes a comprehensive land use inventory and coordinating jurisdictions to develop guidelines to prepare community growth and development plans that incorporate hazard mitigation considerations. Actions targeted at improving mitigation efforts against flood activity are particularly noteworthy, as this hazard is one of the most detrimental to this mountainous area.

The general land use pattern in DeKalb County consists of largely rural and rural residential area among several towns with a concentration of urban development in the Fort Payne area. Population growth trends southwestward and northeastward from Fort Payne along the Big Wills Valley and on Sand Mountain in the Rainsville area. The increasing commercial development in the vicinity of the Interstate 59 exit at Fort Payne is a small example of land use in this mountainous area. Big Willis Valley contains the primary transportation routes through the county, which include Interstate Highway 59 and U.S. Highway 11. These corridors run parallel northeast and southwest through the middle of the county and connect the area to Birmingham to the southwest and to Chattanooga to the northeast. The primary railroad in DeKalb County, Norfolk Southern, also runs through Big Wills Valley. This valley area in DeKalb County to flood activity, which means that any existing and future development along transportation networks in Big Valley will be inherently vulnerable to flooding and flash flooding.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Impacts of Development Trends on Vulnerability (Cont'd)

Housing growth in DeKalb County, of course, parallels the population growth of recent years. ACS estimates in 2018 projected that housing unit development increased by **12.2%** since 2000 and **2.5%** since 2010. The population estimates for the same year projected a **10.5%** increase since 2000, a trend that appears to align with the growth in housing development. Mobile/manufactured homes account for **23.9%** of the total housing stock in DeKalb County. These units are widely dispersed throughout the area with only the central Fort Payne area without a significant number of units. There are a few instances of recreational vehicles being used for housing with the sole concentration residing in the Lookout Mountain area near Little River Canyon. Over half of the County’s housing was built before 1979, and about **3,512** housing units were constructed before 1940. As DeKalb County has a significant number of older communities, older housing is also dispersed throughout the area. Much of the newer housing in the county is in the northern Fort Payne area.

The county government often relies on the Top of Alabama Regional Council of Governments (**TARCOG**) for assistance in land use development and other needs pertinent to its growth. As one of five counties in the TARCOG service area and Economic Development District (EDD), DeKalb County was included in the organization’s *2018 – 2022 Comprehensive Economic Development Strategy (CEDS)* document. Using wide ranging community stakeholder inputs, partnerships, and multi-agency state and federal involvement, this document established courses of action to support economic development activities throughout the region. The following are issues identified in DeKalb County that could possibly be further exacerbated by natural hazard activity.

Table 5.37 | Local Issues and Potential Natural Hazard Risks in DeKalb County

Issue	Potential Risk after Natural Hazard
Deteriorating rural road systems.	With DeKalb County consisting of largely rural and rural residential areas, it is important that county road networks are in the best conditions to ensure the safety of travelers. An existing lack of financial resources inhibits the ability to maintain local roadways. This issue is further amplified by damages incurred by natural hazards.
Vacate buildings inadequate for use.	Vacant blighted/dilapidated structures are liabilities to any community. Older vacant structures carry the most substantial risk, especially those plagued with dangerous substances. In the event of significant natural hazard activity, these substandard structures could expose hazardous materials and debris into local communities.

Section 5 | Hazard Profiles

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.37 | Local Issues and Potential Natural Hazard Risks in DeKalb County (Cont'd)

Issue	Potential Risk after Natural Hazard
Differing municipal priorities/lack of regional approach.	Natural hazard activity occurs with very little regard for municipal borders. Local assets are always at risk of sustaining some form of damage, including large-scale industrial properties. Significant natural hazard activity could likely expose gaps in mitigation strategies, gaps that have an improved chance of being filled with the assistance of regional partners.
Aging public infrastructure.	Outdated public infrastructure presents challenges to local communities without the threat of natural hazard activity. However, any substantial hazard incident could increase strain on existing road and utility networks, thereby resulting in these systems shutting down.
Lack of sewer in rural areas.	Households that rely on septic tanks could encounter costly repairs in the event of significant flood or seismic activity.
Poor internet/broadband access.	As we advance further into a society that relies on the internet for everyday tasks, lack of internet access could impede the distribution of pertinent communication during hazardous events.

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Vulnerability Summary

Table 5.32 provides an overall summary of DeKalb County's vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: **L** to indicate *low* vulnerability; **M** to indicate *medium* vulnerability; and **H** to indicate *high* vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.38 below provides a summary of the county's annual potential loss estimates by hazard. Table 5.39 on the following page further breaks down natural hazard probability and damage estimates in DeKalb County.

Table 5.38 | Summary of DeKalb County's Annual Potential Loss Estimates by Hazard

Hazard	Total Estimated Risk
Dam/Levee Failure	N/A
Drought/Extreme Heat	None
Earthquakes	None
Flooding	\$78,500
Hail	\$7,922
High Winds - High / Strong Winds	\$73,541
High Winds - Tornadoes	\$360,479
High Winds - Severe T-storms	\$54,467
Landslides	Unknown
Land Subsidence / Sinkholes	Unknown
Lightning	\$18,208
Wildfire	Unknown
Winter Storms / Winter Weather	\$98,292

5.4 Jurisdictional Vulnerability Overview | DeKalb County

Table 5.39 Natural Hazard Probability and Damage Estimates In DeKalb County, AL						
DeKalb County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	29	15	None	1.9 events/yr	N/A
	Earthquakes	25	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	39	24	\$2,355,000	1.6 events/yr	\$98,125
	Hail	182	64	\$507,000	2.8 events/yr	\$7,922
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 64 Windstorms: 26 Thunderstorms: 432	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$25,248,500 Windstorms: \$1,765,000 Thunderstorms: \$3,331,000	Tornadoes: 1.3 events/yr Windstorms: 1.1 events/yr Thunderstorms: 7.1 events/yr	Tornadoes: \$504,970 Windstorms: \$73,542 Thunderstorms: \$54,607
	Landslides	6	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	45	62	Unknown	< than 1 event/yr	Unknown
	Lightning	17	24	\$437,000	< than 1 event/yr	\$18,208
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	777	13	N/A	59.8 events/yr	Unknown
	Winter Storms/Winter Weather	104	24	\$2,359,000	4.3 events/yr	\$98,291

Table 5.31 provides probability and damage estimates for the entire DeKalb County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated **59.8** events taking place each year.

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

The vulnerability assessment process is necessary to identify those natural hazards that pose a threat to Etowah County and its municipal jurisdictions. Each jurisdiction was responsible for identifying these hazards in previous mitigation planning efforts. Occurrences of natural hazards in Etowah County are largely documented by the National Oceanic and Atmospheric Administration’s (NOAA) National Climatic Data Center (NCDC). A study period was implemented into the examination of these occurrences to establish the vulnerability of jurisdictions to certain hazards and to determine the probability of these incidents occurring in the future. The study periods for these hazards vary depending upon the information available. Table 5.39 displays the resulting vulnerability determinations for Etowah County municipalities based on figures in the 2015 Etowah County Multi-Hazard Mitigation Plan and more extensive data collected from the NOAA.

Table 5.39 | Hazard Vulnerability by Jurisdiction in Etowah County, Alabama

	Natural Hazards	Municipalities					
		Altoona	Attalla	Gadsden	Glencoe	Hokes Bluff	Rainbow City
Etowah County	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	L	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L
	Flooding	H	H	H	H	H	H
	Hail	M	M	M	M	M	M
	High Winds - High / Strong Winds	H	H	H	H	H	H
	High Winds - Tornadoes	M	M	M	M	M	M
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	H	L	L	L
	Land Subsidence / Sinkholes	L	M	M	L	L	L
	Lightning	M	M	M	M	M	M
	Wildfire	M	M	M	M	M	M
	Winter Storms / Winter Weather	H	H	H	H	H	H

Key: **L | Low Risk**; little damage potential (< 5% damage to the jurisdiction) ; **M | Medium Risk**; moderate damage potential (5-10% potential damage to the jurisdiction); **H | High Risk**; significant damage to the jurisdiction (10%> potential damage)

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.39 | Hazard Vulnerability by Jurisdiction in Etowah County, Alabama (Cont'd)

Etowah County	Natural Hazards	Municipalities					
		Reece City	Ridgeville	Sardis City	Southside	Walnut Grove	Unincorporated County
	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	L	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L
	Flooding	H	H	H	H	H	H
	Hail	M	M	M	M	M	M
	High Winds - High / Strong Winds	H	H	H	H	H	H
	High Winds - Tornadoes	M	M	M	M	M	M
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	L	L	L	L	L	M
	Land Subsidence / Sinkholes	L	L	L	L	L	M
	Lightning	M	M	M	M	M	M
	Wildfire	M	M	M	M	M	M
	Winter Storms / Winter Weather	H	H	H	H	H	H
Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction) ; M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)							

Natural Hazard Vulnerability in Etowah County

Dam Failure | There have been no incidents of dam failure in Etowah County. There are six dams designated as having high hazard potential for failure. Etowah County is tied with Cherokee County in having lowest number of high-risk dams in the Division F Region. Although the area has low vulnerability to dam failure incidents, with the right conditions, local reservoirs with at-risk dams can become overwhelmed, and the surrounding areas inundated with floodwaters. Thus, the extent/range of magnitude or severity that could be experienced by Etowah County due to a dam failure event is equal to that of a flood event, which is minor to major.

5.5 Jurisdictional Vulnerability Overview | Etowah County

Natural Hazard Vulnerability in Etowah County (Continued)

Dam locations and nearby communities are the most vulnerable to impacts of dam failure incidents. The six high hazard potential dams in or near the Ivalee, Rainbow City, Reeves, and Walnut Grove communities. Other communities have a reduced vulnerability to dam failure impacts; however, this depends on their proximity to the high-risk dams. The only high-risk dam with a storage capacity over **1,000** acre-feet is the Bristow Creek Dam.

Another high-hazard dam of note that could significantly impact Etowah County is Weiss Dam in Cherokee County.

Primary effects from dam failure in Etowah County could include loss of life; destruction of property; unregulated water flow to surrounding areas; and increased amount of disease and disease-carrying animals in the area. Hazardous results could include heavy flooding that causes many deaths by injuring or trapping people in structures or vehicles.

Weiss Dam – Cherokee County, AL

Alabama Power operates Weiss Dam located in Cherokee County, AL. Weiss Dam was the first dam built as a part of an Alabama Power Company construction program that further developed the Coosa River in the late 1950s and the 1960s. It became operational on June 5, 1961. It is constructed of gravity concrete and earth fill and covers **30,798** feet. Its maximum height is **126** feet. A breach of Weiss Dam has never occurred. However, a dam break at Weiss Dam could have potentially dire consequences for Etowah County, including loss of life, injury, damage to critical infrastructure, loss of homes and businesses, and loss of power and utility services for a long period of time.

Source: Etowah County Multi-Hazard Mitigation Plan (2015)

Drought / Extreme Temperatures | Drought is known to occur in Etowah County. According to the National Climatic Data Center, the most notable drought events for this jurisdiction started in July 2016. A lack of rainfall during the second half of the month of June 2016 and above normal temperatures resulted in Severe Drought (**D2**) conditions developing across the northwest and northeast portions of central Alabama during the month of July. Extreme Drought conditions (**D3**) developed by October 2016; and worsened to Exceptional Drought (**D4**) by December. Moderate Drought (**D1**) and severe drought conditions would later occur in 2017 and 2018. Incidents such as grass fires; rivers, creeks and farm ponds experiencing lowered water levels; and low soil moisture are likely to occur. During these times, the Alabama Forestry Commission are likely to issue drought emergencies due to the increased possibility of wildfire.

Extreme summer heat is the combination of very high temperatures and exceptionally humid conditions. Conditions like these that persist for extensive periods of time are called heat waves. Heat stress can be indexed by combining the effects of temperatures and humidity. The human risks associated with extreme heat include heatstroke, heat exhaustion, heat syncope, and heat cramps. Young children and senior citizens are among the most vulnerable populations to these risks. Fortunately, there have been no extreme heat events reported in the Etowah County during the 15-year study period.

Earthquakes | Since Alabama's first known earthquake in 1886, there have been **four** reported events in Etowah County. Two zones of frequent earthquake activity that could potentially impact Etowah County are the New Madrid Seismic Zone and the Southern Appalachian Seismic Zone. Earthquakes may occur in any area of Etowah County and are considered an areawide hazard. The magnitude of the four earthquake incidents ranged from **2.2** to **3.2** on the Richter Scale with an average magnitude of **2.6**. Communities impacted include Clubview Heights, Crossville, Gadsden, and Southside. Most of these incidents are not severe enough to be felt, and there are no records of significant financial repercussions due to earthquakes. The risk of a significant, damage-inducing earthquake in Etowah County is low to moderate.

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Natural Hazard Vulnerability in Etowah County (Continued)

Flooding / Flash Floods | River floods may occur anytime but are most common between January and May. Flash floods are the most common type of flooding in the County. They are prone to occur anytime, especially with summertime thunderstorms and land falling tropical systems. Dam and levee breaches may also occur anytime but would most likely occur due to a large amount of rainfall. They are most common in areas adjacent to bodies of water. FEMA-issued flood maps for every area of Etowah County show the boundaries of areas with a 1% chance of experiencing flooding every year (100-year flood area), and 0.5% chance of experiencing flooding every year (500-year flood area).

The unincorporated areas of Etowah County have a total population of 29,291 people, living in approximately 10,513 households. The most vulnerable populations to flood activity in these areas are those households located in the 100-year floodplain. According to the County’s 2015 Hazard Mitigation Plan, no assets owned by the Etowah County Commission or key facilities in the unincorporated areas of Etowah County have a 1% or greater risk of being flooded annually. However, there are several roadways across this jurisdiction that have been identified as having drainage issues. At-risk areas and thoroughfares for the County and municipalities therein are listed in Table 4.68.

Neither of the Altoona’s key facilities have a 1% or greater risk of being flooded every year, however, overland flooding is an issue in certain areas of the town. The Attalla Public Works Department is the only key facility in the city that is vulnerable to flooding. Overland flooding, however, is an issue in parts of downtown and west Attalla. The City of Gadsden has **eight** key facilities that are vulnerable to floods: Eura Brown Elementary School, Coosa Christian School, George W. Floyd Elementary School, Gadsden Fire Station #4, Gadsden Fleet Management Department, Gadsden Water Works & Sewer Board, Koch Foods, and the Riverview Regional Medical Center. Overland flooding is also a concern for various parts of Gadsden. The City of Glencoe does not have any key facilities with a 1% or greater risk of being flooded annually; however, overland flooding is an issue in this jurisdiction. The same can be said for the City of Hokes Bluff, where only Eastview Avenue is identified as having draining issues. Rainbow City’s key facilities are not at risk of annual flooding, but there are **five** roadways identified as having drainage issues. Reece City, while unlikely to experience significant flood activity, also identified **five** roadways susceptible to drainage issues should overland flooding occur. Properties along these roads could thereby be in jeopardy of flooding. Ridgeville is similar in not having previous flood/flash flood incidents. However, the Town’s Main Street has been noted to experience overland flooding activity.

Table 5.40 | Identified Etowah County Areas With Drainage Issues

Etowah County (Incorporated)			
Coosa Drive	Eastern Etowah County	Murphree Valley Road	Western Etowah County
Adams Road	Northeastern Etowah County	Bristow Cove Road	Northern Etowah County
Cox Gap Road	Northern Etowah County	Jackson Trail	Northern Etowah County
Owls Hollow Road	Eastern Etowah County		
Town of Altoona			
2 nd Street	6 th Avenue	County Highway 41	
College Street	Highway 132/Main Street	<i>Italicized</i> roadways fall in or near FEMA-designated flood zones.	

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.40 | Identified Etowah County Areas With Drainage Issues (Continued)

City of Attalla				
Hannah Avenue	5 th Avenue		Attalla Country Club	
Burke Avenue	Cleveland Avenue		Attalla City Park	
1 st Street	3 rd Street		American Legion Fair Grounds	
City of Gadsden				
6 th Street	Herzberg Avenue	Arrowhead Drive	Bellevue Drive	
Oak Park	Forrest Avenue	East Broad Street	Monte Vista Drive	
South 4 th Street	Goldenrod Avenue	Stonewall Avenue	Agricola Shopping Center	
Herzberg Circle	South Gadsden	Mill Village	Etowah Park	
City of Glencoe				
Larry Street	Larrydale Drive	Macon Drive	Glenport Avenue	Taylor Road
City of Rainbow City				
Gilmer Lane	Brown Avenue	Westminster Drive	Whorton Creek	Dry Creek
Town of Reece City				
Nichols Road	Donald Road	Higdon Road	Crudup Road	U.S. Highway 11 (500 Block)
City of Southside				
Hall Drive	Island Way	Rosewood Lane		Vista Trail
Robertson Street W	Robertson Street E	Mountainview Drive	Watson Street	Valley Drive
Abernathy Circle	Cedar Bend Road (at Miller Creek)	Cedar Bend Road (at Richland Way)	South Valley Road (Berkley Hills area)	

Source: Etowah County Multi-Hazard Mitigation Plan (2015)

The Town of Sardis City does not have key facilities with a 1% or greater risk of annual flooding nor has overland flooding been identified as a major issue in this jurisdiction. However, significant rainfall may cause Short Creek to rise over its banks, potentially putting at least three roadways on the southeastern end of this jurisdiction at risk. While the City of Southside has not identified key facilities at risk of annual flooding, overland flooding has been noted as an issues in at least thirteen areas. The Town of Walnut Grove identified its Town Hall, Volunteer Fire Department, and Water Works as three key facilities vulnerable to flood activity as they are all in a flood zone. Overland flooding, however, has not been identified as an issue in this jurisdiction. It is important to note that flood probability and magnitude are highly location-specific. Truly accurate determinations of flood probability require site-specific data gathering. Countywide, due to development and weather patterns, floods are rated as a high hazard for the county and its municipalities. Given that Etowah County experienced **31** floods/flash floods in a 30-year period, there is a greater than **100%** probability that a flood event will occur on an annual basis.

5.5 Jurisdictional Vulnerability Overview | Etowah County

Natural Hazard Vulnerability in Etowah County (Continued)

Primary effects from floods in Etowah County could include loss of life; property damage; crop damage; and dam and levee failure. Hazardous results from significant flood in Etowah County would include rapidly moving water destroys anything in its path and leaves hazardous mold and breed insects; periods of standing water that kills inadapted plants, and flowing water that removes sediment and nutrients from the soil; and breached dams and levees that allow water to flood into the surrounding floodplain resulting in crop and property destruction.

Hail | Although hailstorms are considered a countywide hazard, not every jurisdiction is impacted by this hazard in the same way. Etowah County experienced **124** hailstorm events over the 64-year study period, equating to an estimated **two** events per year. Combined, unincorporated communities experienced the most property damage over the course of the study period, suggesting that these areas may have more vulnerability than highly developed areas of the County. Hailstorm incidents were the most prevalent in the City of Gadsden, however, the City of Attalla is reported as having the highest property damage figure (**\$25,000**). The most substantial event in Etowah County took place in the community of Keener on May 2, 2003. Penny- to baseball- sized hail fell along the eastern county line, causing a total of **\$75,000** in property damage.

High Winds / Strong Winds | High/strong winds are natural hazards that occur quite frequently within Etowah County. Damage from any isolated event is usually not as great as with other wind-related incidents such as tornadoes. However, when taken cumulatively, the damages can be significant. According to the US Wind Zone Map published by FEMA, DeKalb County is in Wind Zone IV where winds can be as high as **250** mph.

There have been **15** specific high/strong wind incidents in Etowah County during the 24-year study period. While these windstorm hazards impact the county on an areawide scale, certain communities have been reported as sustaining more damage than others. Numerous trees and power lines were blown down across the entire county, resulting in widespread power outages. Homes in Gadsden, Glencoe, and Rainbow City have sustained damage due to high and strong winds incidents. In fact, the most destructive incident occurred in 2004, where high wind damage grossed an estimated **\$180,000**. Several homes suffered mainly roof damage; power was not fully restored for at least two days. The Etowah County Emergency Management Agency (ECEMA) recorded a wind gust of **57** miles an hour during Ivan – peak wind gusts across the county were around **60** miles per hour. Windstorm activity would occur every 1-3 years after this major event.

Thunderstorms | Severe thunderstorms are most common between March and August, with a secondary peak in November. Storms which occur between March and May are associated with cold fronts in the primary severe weather season and are much more likely to produce tornadoes. Isolated summertime thunderstorms develop randomly and rarely produce tornadoes. Severe thunderstorms may also occur with land-falling tropical systems.

All areas of Etowah County are equally at risk for severe thunderstorms.. During the 61-year study period, the county experienced **290** incidents, the second lowest number of incidents in Subregion I. Most of the damage caused by this hazard results from straight-line winds, lightning, flash flooding, and hail. Occasionally, thunderstorms will spawn tornadoes, the most destructive hazard that occurs in Etowah County. Damage from thunderstorms varies in severity and scale. Over half of the thunderstorm incidents in this jurisdiction have caused less than \$1,000 in total damage. The highest grossing thunderstorm event occurred in February 1999 – this storm caused **\$800,000** in property damages. The damage was heavily concentrated in Gadsden and Walnut Park. Many trees blocked roadways. Ten single family homes were completely destroyed, twenty homes sustained major damage. Minor damage was reported to another **29** homes. Two mobile homes were demolished, and four additional mobile homes received minor damage.

5.5 Jurisdictional Vulnerability Overview | Etowah County

Natural Hazard Vulnerability in Etowah County (Continued)

Tornadoes | Etowah County is in the FEMA designated Zone IV wind zone. Zone IV (shown in *United States Wind Zones (2018)* on page 110 in the Hazard Profiles section of this plan) has witnessed a higher frequency of tornadoes than any other zone. Zone IV has also witnessed some of the deadliest tornadoes in history. Tornadoes do not follow a definite path; all jurisdictions are vulnerable to tornado events. Property damage, injury, and death can result from the weakest tornadoes. Interruption of electrical services, communications, and other utilities may occur. Transportation corridors may be blocked, or even destroyed. Debris removal can take time and can be costly. Longer response times results from having limited emergency personnel.

Since 1950, tornadoes have occurred in every month in Etowah County except January, July, and October. April is by far the most prevalent month for tornado activity in the county. March, June, and November are second in tornado activity. While Etowah County's tornado activity does not line up exactly with Alabama's, the peak activity period is regarded as the same.

A total of **29** tornadoes occurred in Etowah County according to NOAA-NCDC reports during the **70-year** study period. An estimated **\$25,386,530** in property damage, **\$73,000** in crop damage, **41** injuries, and no deaths occurred as a result of the reported tornadoes. Etowah County is the only jurisdiction in the four-county subregion without deaths due to tornadic activity. Areas with higher population densities pose the greatest potential for property damage, injury, and death. The Cities of Gadsden, Rainbow City, Southside, Attalla, Glencoe, and Hokes Bluff are the most densely populated area of the county's municipalities with a high concentration of mobile homes that are extremely vulnerable to tornadoes. Mobile homes are not capable of withstanding the strong winds associated with tornadoes. Etowah County has **5,228** mobile homes countywide, **11.0%** of the total housing stock. The greatest concentration of mobile homes in a municipality is in the Town of Walnut Grove, where **33.5%** of housing units are mobile homes.

Historically, Etowah County has experienced four tornadic incidents that have grossed over \$1 million in property damage since 1950. In December 2000, an F3 tornado touched down near Tidmore Bend, 5.3 miles east northeast of the City of Gadsden and lifted near Pollard Bend in Cherokee County. The tornado track was **8.1** miles in Etowah County and **4.7** miles in Cherokee County for a total of **12.8** miles. The total damage inflicted by this storm was estimated at **\$10 million**. Like many counties in Alabama, Etowah County sustained substantial damage from a tornado in April 2011. This EF-designated tornado initially touched down in eastern Jefferson County, north northeast of Trussville. The tornado moved northeast through portions of St. Clair, Calhoun, Etowah and Cherokee Counties, before it moved into Georgia. Once the storm moved into southeastern Etowah County just east of Cannon Gap Rd, it caused mainly tree damage consistent with an EF1 rating and winds of **100** mph. Approximately **\$9.4 million** in property damage occurred during this incident. An F3 tornado touched down in the Sardis City area the afternoon of April 5, 1985. Ten homes were destroyed, cars were blown into houses, and one community (unnamed) was destroyed. The storm resulted in **\$2.5 million** in damages. On November 24, 2001, an F4 tornado first touched down in the vicinity of the Mt. Carmel Church, south of US 231 on CR 29, where several trees were snapped off. The tornado tracked northeast and produced extensive F2-type damage to homes and trailer homes along Tidwell Road where several injuries occurred. From there, the tornado continued moving northeast and produced it's worst, F4 magnitude damage, between Robbins Lake and Airport Road. The tornado continued northeast across Robbins Field, then across an unpopulated area, until it entered western Etowah County in the town of Altoona, eventually dissipating near AL Route 132. Total damages from this event were estimated at **\$1.5 million**.

Primary effects from tornadoes in Etowah County would include loss of life; property damage; infrastructure destruction and damage; sanitation and water delivery interruption. Hazardous results from significant tornadoes in this jurisdiction would include roadways becoming blocked by debris; toppled power poles destroyed communication receivers, and offline water sanitation and treatment plants; and sanitation crews, inability to remove massive amounts of waster, which results in increased disease-carrying insects and lack of potable water.

5.5 Jurisdictional Vulnerability Overview | Etowah County

Natural Hazard Vulnerability in Etowah County (Continued)

Landslides | In Alabama, most sinkholes or subsidence are caused by a loss of support, roof collapse, and/or raveling. Loss of support refers to the groundwater that provides support to roofs of subsidence cavities; roof collapse (or collapse of unsupported openings) describes the result from the enlargement an opening beyond the ability of materials above to bridge it; and raveling is the slow erosion of unconsolidated sediments into an underground opening. According to previous hazard mitigation plans for Etowah County, this jurisdiction has experienced moderate losses due to landslides in the last 30 years; however, the extent of these losses is unclear. The entire county lies in an area of moderate susceptibility and low incidence of landslides – meaning that landslides are likely to occur anywhere in this jurisdiction but the rate at which these events occur, as well as the severity of these incidents, is difficult to predict. One reported incident of significant landslide activity occurred in 1972. The southbound land of Interstate 59 slid down a hillside. No injuries were reported. Total damage was **\$1.2 million** (approximately **\$7,799,885** in 2021 dollars). Extensive repairs caused a major disruption to local traffic flows.

Land Subsidence / Sinkholes | Previous county mitigation plans note that sinkholes are “fairly common” in Etowah County. Sinkholes are most common in a southwest to northeast span from Gallant to Duck Springs. This includes Attalla, Ridgeville, Reece City, and Gadsden. Sinkhole activity has also been reported in Walnut Grove and Glencoe. According to data from the Geological Survey of Alabama (GSA), the City of Gadsden is the jurisdiction with the most reported sinkhole incidents, followed by the unincorporated community of Keener, the Town of Altoona, and the Town of Glencoe. It is important to know that this information only accounts for sinkholes whose maps were published between 1950 and 1980 and those that span 30-feet in diameter. Sinkholes smaller than 30-feet in diameter and those reported after 1980 were not included in this dataset.

Lightning | Etowah County experienced **14** significant lightning incidents over the 24-year study period. This equates to **less than one** event per year. Significant lightning incidents accounted for **two** injuries, no crop damage, and **\$302,000** in property damages. A countywide-designated event reported the most damage in the county’s history – on July 27, 2005, an auto body shop in Attalla was struck by lightning. The ensuing fire destroyed the entire business. Another lightning strike hit a clothes dryer in a home in Gadsden. The residents were able to extinguish the fire after it caused minor damage. Lightning has also been known to strike unsuspecting citizens and leave several locations without power after severe thunderstorms.

Wildfires | Wildfires affect every community in Etowah County; however, it is difficult to estimate potential losses due to this hazard. Most of the timberland that would be lost in the county due to a wildfire would be lost in the county has a greater impact on the private industries located throughout the County. The interface areas are primarily residential, although a few businesses do exist in these areas. Most of the critical facilities (medical, police, government) exist well inside urbanized areas, although some facilities in rural areas of the county. Moreover, many of the volunteer fire departments that are in this jurisdiction are in rural and unincorporated areas. Etowah County averaged **20** wildfires per year over the 13-year study period.

Winter Storms / Winter Weather | Winter storms are a low frequency, high impact hazard in Etowah County; these incidents are considered the second most recurring hazard the County faces. Nevertheless, all areas of Etowah County are equally at risk for winter storms. This jurisdiction has experienced **31** combined incidents of winter storms/ winter weather over the 24-year study period. Cold/wind chill has caused \$1,001,000 in crop damages; ice and winter storms have caused \$70,000 in property damage. It has been previously noted that this jurisdiction has limited snow removal equipment. This suggests that even amounts less than an inch of snow could cause various issues throughout the county including hazardous iced-over roadways and abnormal low temperatures.

5.5 Jurisdictional Vulnerability Overview | Etowah County

Socially Vulnerable Populations

Certain populations are generally more affected by hazard events. These populations can be defined in terms of social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey (ACS). Cullman County has **535** square miles of land and **14** square miles of water. Population density is currently estimated at **192.4** persons per square mile.

Table 5.41 depicts the county's population characteristics by jurisdiction and by census tract. The City of Gadsden is the most populated jurisdiction at **35,624** citizens, followed by Rainbow City, Southside, Attalla, Glencoe, Hokes Bluff, Sardis City, Walnut Grove, Altoona, Reece City, and Ridgeville. The county has thirty census tracts. In terms of vulnerability, the larger the population of an area the more people and structures that could possibly be damaged or destroyed. Tract 105.01 is the most populated tract and contains the City of Southside. Tract 7 is the least populated tract and falls within the City of Gadsden's city limits.

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies.

In addition to the racial and age composition within the county, income levels are important when identifying vulnerable populations. Lower income individuals may not have the resources to prepare for or recover from disasters. Table 5.42 shows the median household income, per capita income, and poverty level data for the jurisdictions and census tracts in Etowah County.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. The Glencoe, Rainbow City, Sardis City, and Southside communities all have median household incomes higher than the state average. Only the City of Southside has a median household income figure higher than both the state and national average. Tracts 4, 11, 104.02, 105.01, 105.02, and 106.01 each have median household incomes higher than the state average. Tracts 4, 11, and 105.01 are the only tracts with median household incomes higher than the national average; Tract 11 has the highest figure for Etowah County at **\$82,760**.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Glencoe, Rainbow City, and Southside are the only municipalities with per capita incomes above the state's average. No jurisdiction's per capita income figures exceed the national average. Tracts 4, 11, 12, 104.02, 105.02, and 108 are the only tracts that have per capita income figures that surpass the state's average; tracts 11 and 104.02 are the only two that surpass the national average.

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.41 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 and Over
Jurisdiction							
Etowah County	102,939	84,363	17,074	3,297	24,635	59,427	18,877
Altoona	890	872	12	20	260	490	140
Attalla	5,847	4,837	1,098	118	1,735	3,277	865
Gadsden	35,624	21,433	13,260	1,671	8,265	20,690	6,669
Glencoe	5,120	5,040	101	122	1,054	2,949	1,117
Hokes Bluff	4,271	4,271	0	0	1,020	2,357	894
Rainbow City	9,581	7,930	1,389	329	2,349	5,489	1,743
Reece City	729	701	9	38	141	396	192
Ridgeville	118	22	96	0	28	77	13
Sardis City	1,764	1,748	0	15	433	1,018	382
Southside	8,788	8,564	130	158	1,944	5,329	1,515
Walnut Grove	917	917	13	37	237	546	134
County Census Tract							
Tract 2	3,702	1,772	1,891	128	872	2,193	637
Tract 3	2,633	696	1,948	27	886	1,272	475
Tract 4	3,986	3,569	421	179	784	2,255	947
Tract 5	1,785	1,537	193	88	449	994	342
Tract 6	1,980	1,721	295	52	576	1,155	249
Tract 7	1,156	560	514	82	418	573	165
Tract 8	1,211	399	507	305	488	586	137
Tract 9	2,544	1,845	674	25	345	1,620	579
Tract 10	1,329	565	545	283	524	625	180
Tract 11	5,322	4,906	385	43	1,102	2,825	1,395
Tract 12	2,886	2,309	398	258	378	1,852	656
Tract 13	2,807	1,563	1,277	0	498	1,970	339
Tract 16	3,300	1,047	2,264	42	709	2,017	574
Tract 17	1,731	897	698	159	353	1,081	297
Tract 101	2,227	1,676	553	108	485	1,386	356
Tract 102	5,044	4,523	606	66	1,463	2,737	844
Tract 103	2,620	2,390	226	68	665	1,399	556
Tract 104.01	3,840	2,702	889	249	1,181	2,234	425
Tract 104.02	5,013	4,645	355	80	1,039	2,909	1,065
Tract 105.01	8,409	8,220	94	148	1,819	5,108	1,482
Tract 105.02	5,116	5,052	101	96	1,009	2,958	1,149
Tract 106.01	5,235	5,235	0	45	1,303	2,913	1,019
Tract 106.02	3,391	3,391	0	77	772	3,076	543
Tract 107	3,750	3,292	361	141	887	2,171	692
Tract 108	2,847	2,704	144	52	678	1,658	511
Tract 109	1,682	1,617	68	8	385	1,019	278
Tract 110.01	5,044	4,916	0	140	1,257	2,957	830
Tract 110.02	4,362	4,230	104	109	1,043	2,447	872
Tract 111	5,646	5,525	52	212	1,743	2,963	940
Tract 112	2,341	859	1,511	26	524	3,374	343

Source: American Community Survey (ACS) Demographic and Housing Estimates (2018)

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.42 | Etowah County Income Data by Jurisdiction and Census Tract (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Etowah County	\$44,023	\$24,065	17,566	17.3%
Altoona	\$37,679	\$17,345	142	16.9%
Attalla	\$40,998	\$19,280	493	8.7%
Gadsden	\$32,853	\$20,796	9,600	27.6%
Glencoe	\$59,114	\$30,716	282	5.5%
Hokes Bluff	\$48,472	\$25,247	551	13.0%
Rainbow City	\$49,085	\$29,019	1,205	12.6%
Reece City	\$46,848	\$24,574	71	9.7%
Ridgeville	–	\$14,967	29	24.6%
Sardis City	\$59,500	\$28,742	93	5.3%
Southside	\$71,224	\$32,023	597	6.9%
Walnut Grove	\$37,986	\$18,974	113	12.3%
County Census Tract				
Tract 2	\$33,397	\$16,636	1,010	29.4%
Tract 3	\$21,492	\$11,603	1,007	38.6%
Tract 4	\$62,961	\$29,717	386	14.8%
Tract 5	\$25,089	\$16,109	584	32.7%
Tract 6	\$28,117	\$15,884	600	30.3%
Tract 7	\$14,324	\$16,608	632	55.5%
Tract 8	\$21,705	\$11,796	–	–
Tract 9	\$30,238	\$19,688	463	19.5%
Tract 10	\$26,611	\$15,373	573	43.4%
Tract 11	\$82,760	\$40,388	144	2.8%
Tract 12	\$32,926	\$28,214	571	19.8%
Tract 13	\$22,946	\$14,400	1,064	38.0%
Tract 16	\$36,576	\$20,529	911	28.7%
Tract 17	\$24,462	\$17,775	467	27.0%
Tract 101	\$46,042	\$21,525	412	18.8%
Tract 102	\$38,919	\$25,296	264	5.4%
Tract 103	\$43,984	\$23,469	398	15.2%
Tract 104.01	\$48,070	\$23,263	901	23.6%
Tract 104.02	\$57,287	\$36,015	285	5.7%
Tract 105.01	\$73,248	\$34,726	576	6.9%
Tract 105.02	\$59,819	\$29,200	230	4.5%
Tract 106.01	\$55,456	\$26,713	531	10.2%
Tract 106.02	\$45,839	\$24,126	404	12.0%
Tract 107	\$46,078	\$23,559	412	11.0%
Tract 108	\$41,746	\$28,418	389	13.9%
Tract 109	\$46,625	\$20,947	234	13.9%
Tract 110.01	\$47,292	\$22,887	817	16.2%
Tract 110.02	\$42,266	\$21,567	506	11.6%
Tract 111	\$45,486	\$21,736	1,269	23.2%
Tract 112	\$24,202	\$21,208	775	33.2%

Source: Income In The Past 12 Months (In 2018 Inflation Adjusted Dollars)

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. Gadsden and Ridgeville are the only two municipalities with percentages of “persons below the poverty level” higher than the state average. The Altoona, Gadsden, and Ridgeville communities all have figures higher than the national average. Over half of the tracts in Etowah County have poverty rates that exceed the state and national average. Tract 7 has the highest percentage of persons below the poverty level in the county at **55.5%**.

Vulnerable Structures

Housing is an important consideration of mitigation planning as residential development is often the most common form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.43 shows housing characteristics for Etowah County by jurisdiction.

In 2018, there were **47,705** housing units in Etowah County. Rainbow City had the highest number of mobile home units within a municipality, while Walnut Grove has the highest percentage of mobile homes within a municipality. Mobile home units are historically very vulnerable to a variety of hazards and prone to high amounts of damage and complete destruction.

Table 5.43 | Etowah County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Etowah County	47,705	5,228	11.0%
Altoona	394	55	14.0%
Attalla	2,823	187	6.6%
Gadsden	17,677	336	1.9%
Glencoe	2,405	165	6.9%
Hokes Bluff	1,962	185	9.4%
Rainbow City	4,606	416	9.0%
Reece City	316	53	16.8%
Ridgeville	70	19	27.1%
Sardis City	722	47	6.5%
Southside	3,774	397	10.5%
Walnut Grove	352	118	33.5%

Source: Selected Housing Characteristics (2018)

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Etowah County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. Each of the critical facilities listed in Table 5.44 are vulnerable to each of the hazards identified in the risk assessment. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

Table 5.44 | Critical Facilities in Etowah County, Alabama

Facility	Owner	Primary Purpose
Altoona		
Altoona Town Hall	Town of Altoona	Public Safety
Altoona Fire Department	Town of Altoona	Public Safety
Altoona Police Department	Town of Altoona	Public Safety
Altoona Water & Sewer Board Assets	Town of Altoona	Medical
AMED Ambulance Service Headquarters	--	Public Safety
West End Elementary School	Etowah County BOE	Education
Attalla		
Attalla City Hall	City of Attalla	Government
Attalla Elementary School	Etowah County BOE	Education
Attalla Fire Department – Station #1	City of Attalla	Public Safety
Attalla Fire Department – Station #2	City of Attalla	Public Safety
Attalla Fire Department – Station #3	City of Attalla	Public Safety
Attalla Police Department	City of Attalla	Public Safety
Attalla Public Works Department	City of Attalla	Public Works
Attalla Water & Sewer Board Assets	City of Attalla	Utilities
Etowah Middle School	Etowah County BOE	Education
Etowah High School	Etowah County BOE	Education

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.44 | Critical Facilities in Etowah County, Alabama (Continued)

Facility	Owner	Primary Purpose
Gadsden		
Adams Elementary School	Etowah County BOE	Education
Eura Brown Elementary School	Etowah County BOE	Education
Coosa Christian School	Etowah County BOE	Education
Donehoo Christian School	Etowah County BOE	Education
Episcopal Day School	--	Education
George W. Floyd Elementary School	Etowah County BOE	Education
Gadsden City Hall	City of Gadsden	Government
Gadsden City High School	Etowah County BOE	Education
Gadsden Fire Station #1	City of Gadsden	Public Safety
Gadsden Fire Station #2	City of Gadsden	Public Safety
Gadsden Fire Station #4	City of Gadsden	Public Safety
Gadsden Fire Station #5	City of Gadsden	Public Safety
Gadsden Fire Station #6	City of Gadsden	Public Safety
Gadsden Fire Station #7	City of Gadsden	Public Safety
Gadsden Fire Station #8	City of Gadsden	Public Safety
Gadsden Fire Station #9	City of Gadsden	Public Safety
Gadsden Fleet Management Department	--	Public Safety
Gadsden Middle School	Etowah County BOE	Education
Gadsden Police Department	City of Gadsden	Public Safety
Gadsden Public Works Department	City of Gadsden	Public Works
Gadsden Regional Medical Center	--	Medical
Gadsden State Community College	--	Education

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.44 | Critical Facilities in Etowah County, Alabama (Continued)

Facility	Owner	Primary Purpose
Gadsden (Cont'd)		
Gadsden Water Works & Sewer Board	City of Gadsden	Utility
Gadsden/Etowah County Emergency Operations Center	--	Medical
Goodyear Tire & Rubber Company	--	Industrial
Keystone Foods	--	Industrial
Koch Foods	--	Industrial
Litchfield Middle School	Etowah County BOE	Education
R.A. Mitchell Elementary	Etowah County BOE	Government
Northeast Alabama Regional Airport	--	Transportation
Riverview Regional Medical Center	--	Medical
Saint James Catholic School	--	Education
Emma Sansom Middle School	--	Education
Striplin Elementary School	--	Education
Walnut Park Elementary	--	Education
Ray Thompson Elementary School	--	Education
Glencoe		
Glencoe City Hall	City of Glencoe	Government
Glencoe Elementary School	Etowah County BOE	Education
Glencoe First Station #1	City of Glencoe	Public Safety
Glencoe First Station #2	City of Glencoe	Public Safety
Glencoe High School	Etowah County BOE	Education
Glencoe Middle School	Etowah County BOE	Education
Glencoe Police Department	City of Glencoe	Public Safety

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.44 | Critical Facilities in Etowah County, Alabama (Continued)

Facility	Owner	Primary Purpose
Glencoe (Cont'd)		
Glencoe Public Works Department	City of Glencoe	Public Works
Glencoe Water & Sewer Board	--	Medical
Hokes Bluff		
Hokes Bluff City Hall	City of Hokes Bluff	Government
Hokes Bluff Elementary School	Etowah County BOE	Education
Hokes Bluff Fire Department	City of Hokes Bluff	Public Safety
Hokes Bluff High School	Etowah County BOE	Education
Hokes Bluff Middle School	Etowah County BOE	Education
Hokes Bluff Police Department	City of Hokes Bluff	Public Safety
Hokes Bluff Public Works Department	City of Hokes Bluff	Public Works
Hokes Bluff Water & Sewer Board	City of Hokes Bluff	Utility
Rainbow City		
John Jones Elementary School	Etowah County BOE	Education
Rainbow City City Hall	City of Rainbow City	Government
Rainbow City Fire Station #1	City of Rainbow City	Public Safety
Rainbow City Fire Station #2	City of Rainbow City	Public Safety
Rainbow City Police Department	City of Rainbow City	Public Safety
Rainbow City Streets Department	City of Rainbow City	Public Safety
Rainbow City Utility Department	City of Rainbow City	Public Safety

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.44 | Critical Facilities in Etowah County, Alabama (Continued)

Facility	Owner	Primary Purpose
Rainbow City (Cont'd)		
Rainbow Middle School	City of Rainbow City	Education
Westbrook Christian School	--	Education
Reece City		
Reece City Town Hall	Town of Reece City	Government
Reece City VFD	Town of Reece City	Public Safety
Ridgeville		
Ridgeville Town Hall	Town of Ridgeville	Government
Ridgeville Water Works	Town of Ridgeville	Utility
Sardis City		
Sardis High School	Etowah County BOE	Education
Sardis Middle School	Etowah County BOE	Education
Sardis City Police Department	Town of Sardis City	Public Safety
Sardis City Town Hall	Town of Sardis City	Government
Sardis City VFD	Town of Sardis City	Public Safety
Sardis City Water Board	Town of Sardis City	Utility
Southside		
Southside City Hall	City of Southside	Government
Southside Elementary School	Etowah County BOE	Education

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.44 | Critical Facilities in Etowah County, Alabama (Continued)

Facility	Owner	Primary Purpose
Southside (Cont'd)		
Southside Fire Department	City of Southside	Education
Southside High School	Etowah County BOE	Education
Southside Police Department	City of Southside	Public Safety
Southside Street & Sanitation Department	City of Southside	Public Works
Southside Water & Sewer Board	City of Southside	Utility
Walnut Grove		
Walnut Grove Town Hall	Town of Walnut Grove	Government
Walnut Grove VFD	Town of Walnut Grove	Public Safety
Walnut Grove Water Works	Town of Walnut Grove	Education
West End High School	Etowah County BOE	Education
Etowah County		
Ballplay #1 VFD	Etowah County Commission	Public Safety
Ballplay #2 VFD	Etowah County Commission	Public Safety
Big Wills Water & Fire Pro Authority	Etowah County Commission	Utility
Black Creek Fire Department	Etowah County Commission	Public Safety
Carlisle Elementary School	Etowah County Commission	Education
Coates Bend VFD	Etowah County Commission	Public Safety
Crems Water & Fire Pro Authority	Etowah County Commission	Utility

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.44 | Critical Facilities in Etowah County, Alabama (Continued)

Facility	Owner	Primary Purpose
Etowah County (Cont'd)		
Douglas Water & Fire Pro Authority	Etowah County Commission	Utility
Duck Springs Elementary School	Etowah County Commission	Education
Egypt VFD	Etowah County Commission	Public Safety
Etowah County Courthouse	Etowah County Commission	Government
Etowah County Sheriff's Office/Judicial Building/Detention Center	Etowah County Commission	Government
Etowah County Engineering Department – Main Building	Etowah County Commission	Government
Etowah Engineering Department – Attalla Shop	Etowah County Commission	Government
Etowah Engineering Department – Gadsden Shop	Etowah County Commission	Government
Fords Valley & Highway 278 Water Cooperative	Etowah County Commission	Utility
Gallant VFD	Etowah County Commission	Public Safety
Gaston School	Etowah County Commission	Education
Highland Elementary School	Etowah County Commission	Education
Highland VFD	Etowah County Commission	Public Safety
Highland Water & Fire Pro Authority	Etowah County Commission	Utility
Ivalee Elementary School	Etowah County Commission	Education
Ivalee VFD	Etowah County Commission	Public Safety
Keener VFD	Etowah County Commission	Public Safety
Lookout Mountain VFD	Etowah County Commission	Public Safety

Section 5 | Hazard Profiles

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.44 | Critical Facilities in Etowah County, Alabama (Continued)

Facility	Owner	Primary Purpose
Etowah County (Cont'd)		
Mountainboro VFD	Etowah County Commission	Public Safety
New Union VFD	Etowah County Commission	Public Safety
Northeast Etowah County Water Cooperative	Etowah County Commission	Utility
Sand Valley VFD	Etowah County Commission	Public Safety
Tidmore Bend VFD	Etowah County Commission	Public Safety
Tillison Bend VFD	Etowah County Commission	Public Safety
West Etowah Water & Fire Pro Authority	Etowah County Commission	Public Safety
West Etowah VFD	Etowah County Commission	Public Safety
Whitesboro Elementary School	Etowah County Commission	Education
Whorton Bend Water & Fire Pro Authority	Etowah County Commission	Utility
Whorton Bend VFD	Etowah County Commission	Public Safety

Source: Etowah County Multi-Hazard Mitigation Plan (2015)

5.5 Jurisdictional Vulnerability Overview | Etowah County

Impacts of Development Trends on Vulnerability

Development trends – particularly population shifts, land use changes created by major economic development expansions, infrastructure improvements of countywide significance – are important considerations to effective mitigation planning. These trends must be continually monitored and analyzed to keep abreast of changing vulnerabilities of jurisdictions and the increasing exposure of growing populations, new buildings, and enlarged infrastructure to natural hazards. As growth and development patterns change over time, the risks to property damage and lives also change. This section examines the projected growth trends and other impacts of countywide significance that are expected to affect the location and extent of natural hazards vulnerability over time.

Previous mitigation strategies for Etowah County focused on three specific priorities: protecting life; protecting vital service; and protecting property. The corresponding objectives to these goals demonstrate how local stakeholders recognized vulnerabilities in the built environment across all jurisdictions and created short- and long-range actions to address them. Actions targeted at improving mitigation efforts against flood activity are particularly noteworthy, as this hazard is one of the most detrimental to this jurisdiction.

According to U.S. Census and American Community Survey (ACS) estimates, the population for Etowah County has decreased by 1.43% since 2010. This decreasing population trend is projected to continue well into 2040, where the county's population is expected to reduce by 4.1% by that year. Declining population trends could lead to an array of issues such as increases in vacant/dilapidated structures and underutilized utility systems. However, a declining population trend does not always reflect or result in positive or negative growth across other sectors, i.e., housing or job growth. In fact, as new economic development opportunities are introduced into the county and surrounding areas, current population trends may change. This phenomenon, thus, will impact the methods in which local communities approach development and land use.

Section 5 | Vulnerability

5.5 Jurisdictional Vulnerability Overview | Etowah County

Vulnerability Summary

Table 5.39 provides an overall summary of Etowah County's vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: **L** to indicate **low** vulnerability; **M** to indicate **medium** vulnerability; and **H** to indicate **high** vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.45 below provides a summary of the county's annual potential loss estimates by hazard. Table 5.46 on the following page further breaks down natural hazard probability and damage estimates in Etowah County.

Table 5.45 | Summary of Etowah County's Annual Potential Loss Estimates by Hazard

Hazard	Total Estimated Risk
Dam/Levee Failure	N/A
Drought/Extreme Heat	None
Earthquakes	None
Flooding	\$17,467
Hail	\$2,094
High Winds - High / Strong Winds	\$16,938
High Winds - Tornadoes	\$363,708
High Winds - Severe T-storms	\$41,483
Landslides	Unknown
Land Subsidence / Sinkholes	Unknown
Lightning	\$12,583
Wildfire	Unknown
Winter Storms / Winter Weather	\$44,625

5.5 Jurisdictional Vulnerability Overview | Etowah County

Table 5.46 Natural Hazard Probability and Damage Estimates In Etowah County, AL						
Etowah County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	29	15	None	1.9 events/yr	N/A
	Earthquakes	4	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	31	24	\$524,000	1.3 events/yr	\$21,833
	Hail	124	64	\$134,000	1.9 events/yr	\$2,094
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 32 Windstorms: 15 Thunderstorms: 294	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$25,459,530 Windstorms: \$406,500 Thunderstorms: \$2,531,000	Tornadoes: < than 1 event/yr Windstorms: < than 1 event/yr Thunderstorms: 4.8 events/yr	Tornadoes: \$509,191 Windstorms: \$16,938 Thunderstorms: \$41,492
	Landslides	4	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	71	62	Unknown	1.1 events/yr	Unknown
	Lightning	14	24	\$302,000	< than 1 event/yr	\$12,583
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	266	13	N/A	20.5 events/yr	Unknown
	Winter Storms/Winter Weather	31	24	\$1,071,000	1.3 events/yr	\$44,625

Table 5.46 provides probability and damage estimates for the entire Etowah County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated 20.5 events taking place each year.

Natural Hazard Vulnerability in Jackson County

Table 5.47 below provides an overall summary of Jackson County’s vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: **L** to indicate *low* vulnerability; **M** to indicate *medium* vulnerability; and **H** to indicate *high* vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.51 on page 5-120 further breaks down natural hazard probability and damage estimates in Jackson County.

Table 5.47 | Hazard Vulnerability by Jurisdiction in Jackson County, Alabama

	Natural Hazards	Municipalities						
		Bridgeport	Dutton	Hollywood	Hytop	Langston	Paint Rock	Pisgah
Jackson County	Dam Failure	--	--	--	--	--	--	--
	Drought / Extreme Temps.	L	L	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L	L
	Flooding	H	M	M	L	H	H	M
	Hail	H	H	H	H	H	H	H
	High Winds - High / Strong Winds	H	H	H	H	H	H	H
	High Winds - Tornadoes	H	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H	H
	Landslides	L	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L	L
	Lightning	H	H	H	H	H	H	H
	Wildfire	L	M	L	M	M	L	M
	Winter Storms / Snow	L	L	L	L	L	L	L

Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles

	Natural Hazards	Municipalities							
		Pleasant Groves	Scottsboro	Section	Skyline	Stevenson	Woodville	Unincorporated County	
Jackson County	Dam Failure	--	--	--	--	--	--	--	
	Drought / Extreme Temps.	L	L	L	L	L	L	L	
	Earthquakes	L	L	L	L	L	L	L	
	Flooding	L	H	M	L	H	H	H	
	Hail	H	H	H	H	H	H	H	
	High Winds - High / Strong Winds	H	H	H	H	H	H	H	
	High Winds - Tornadoes	H	H	H	H	H	H	H	
	High Winds - Severe T-storms	H	H	H	H	H	H	H	
	Landslides	L	L	L	L	L	L	L	
	Land Subsidence / Sinkholes	L	L	L	L	L	L	L	
	Lightning	H	H	H	H	H	H	H	
	Wildfire	M	M	H	M	M	L	H	
	Winter Storms / Winter Weather	L	L	L	L	L	L	L	
	Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction); M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)								

Natural Hazard Vulnerability in Jackson County

Dam Failure | The primary dam of concern to Jackson County is Nick-a-Jack Dam that is located upstream on the Tennessee River in Marion County, Tennessee. Rather than revisit this issue with the limited resources available for this effort, one should reference the Nick-a-Jack Dam Emergency Action Plan that is maintained by the Tennessee Valley Authority and is kept on file at the offices of the Jackson County Emergency Management Agency.

Drought / Extreme Temperatures | Jackson County is familiar with both drought and extreme temperatures. According to the National Climatic Data Center (NCDC), Jackson County currently has 35 Drought events on record with the worst drought on record occurring in 2007. According to the NCDC, March of 2007, normally one of the wettest months of the year, was instead one of the driest on record. The dry weather continued into April and beyond with May 2007 plunging the area into a historic drought situation. Small grass fires developed; rivers, creeks and farm ponds experienced lowered water levels; and soil moisture was at historic lows. Crops were stressed and drought emergencies were issued by the Alabama Forestry Commission due to the possibility of wildfire.

Significant precipitation occurred in August, but the drought persisted through the fall and winter. By March 2008, rainfall was nearing normal bringing some relief. In July, the area was still feeling the effects of drought and there was still not enough groundwater recharge. There was substantial rainfall in August bringing deep groundwater to near average levels and soil moisture to near average for the first time in two years. September was dry, but by December 2008 heavy rainfall had ended the drought.

In August of 2007, high temperatures aggravated the drought conditions that were prevalent across much of North Alabama that summer. Additionally, four high temperature events were recorded in 2010. A period of hot weather was observed from July 7th through the 9th, with high temperatures reaching the upper 90s, with **100 to 102 degrees** reported at a few locations on the 8th. Heat index values approached or reached **105 degrees**. A heat wave re-established itself on July 21st and lasted through the 26th. Numerous heat-related illnesses or emergencies were reported. Heat index values reached or exceeded 105 degrees each day during this period. The heat wave that began in July continued into early August where on August 1, 2010, heat index values climbed to **110 degrees** or higher. Some areas reached at least 105 degrees. Temperatures reached or exceeded **100 degrees** in some areas on the 3rd and 4th, and again from the 10th through 13th of August.

In 2012, **two** events of temperature extremes are listed by the National Climatic Data Center for Jackson County. A very hot period occurred during the last week of June. On June 29-30, 2012, maximum temperatures climbed to **100 degrees** or higher on each of these days. While on July 1-3, 2012, temperatures climbed into the 100 to 105 degrees range at many locations in north Alabama. The high temperature in Scottsboro and at Russell Cave National Monument reached **101** and **102 degrees** on July 2nd and 3rd respectively.

There were no specific monetary damages recorded for Jackson County for any of these events, whether for drought, extreme heat, or extreme cold. Although crop damage from the drought of 2007-2008 is known to have occurred, no information was found on record containing past estimates of damages. Drought and extreme temperature events are considered areawide hazards. All areas and jurisdictions in Jackson County have experienced, and are potentially affected by, drought and extreme temperatures.

Earthquakes | Since 1886, there have been **40** earthquake events in Jackson County according to the Geological Survey of Alabama (GSA). The most significant earthquake event in Jackson County happened when Pleasant Groves experienced an earthquake with a magnitude of **3.9** on December 8, 2001. Although earthquakes occur fairly frequently in Jackson County, they are normally quite small and usually not felt. Earthquakes may occur in any area of Jackson County and should be considered an areawide hazard.

The magnitude of the 40 earthquakes in Jackson County have ranged from 0.7 to 3.9 on the Richter Scale with the average magnitude of **1.84**. As stated, most of these earthquakes are not severe enough to be felt. No records were found of monetary damages resulting from earthquakes.

North Alabama is in the South Appalachian Seismic Zone (SASZ) that is considered an area of moderate risk. Jackson County, specifically, is in an area where, in the event of an earthquake, horizontal shaking at a level of 4%g – 8%g has a **10 percent** chance of being exceeded in a 50-year period (g is the gravitational acceleration of a falling object). Comparatively, extreme south Alabama has a level of 0%g – 2%g, middle Alabama has a level of 2%g – 4%g, the center of the New Madrid

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

Seismic Zone near St. Louis has a level of 16%g – 24%g, and the coastal areas of California have a level of 32%g or greater.

While earthquake data has been recorded in Alabama since 1886, the first earthquake on record in Jackson County took place in 1927. There have been 40 earthquakes have been reported in Jackson County over the course of 93 years. This frequency is expected to continue.

Despite the occurrence of an earthquake of some magnitude, the actual damage sustained was minor. Wall hangings shook, items fell off shelves, and so forth. Closer to the epicenter, a trailer came off its foundation, a large sinkhole was known to open due to the earthquake and some wells were thought to be affected. Given the rareness of events of the magnitude of the recent earthquake, and the lack of significant damages attributable to it, earthquakes are not expected to be a significant natural hazard for Jackson County. In most cases, adherence to the provisions of typical building codes will likely prevent most potential damages from becoming severe.

Flooding / Flash Floods | Flooding, and more specifically, poor drainage, is a quite common problem in Jackson County. Although the Tennessee River is controlled by Guntersville Dam, flooding is still quite common in the Paint Rock River area and in other parts of the county where there is poor drainage. In rural areas in particular, beaver dams seem to be a significant contributor to the problem.

The National Climatic Data Center reports thirty-one significant flooding events in Jackson County. All of these have been since 1995 indicating more rigorous reporting in recent years. Also, there was the federal disaster declaration #1466 in relation to flooding on May 12, 2003, and #1836 on May 8, 2009. Although other flooding events have occurred, no other declarations related to flooding have occurred since #1836 on May 8, 2009.

The location of flooding is, of course, in the areas bordering the Tennessee River, the Paint Rock River, and other creeks and streams.

As an example of the extent of flooding, in the occurrence of November 9, 1995, the Paint Rock River at Woodville crested at **16.05** feet, a little more than six feet above flood stage. The river was above flood stage from the 8th through the 11th. Little impact was experienced from this flooding. On April 3, 2000, numerous roads and highways were flooded across the County and many were temporarily impassible. On May 6, 2003, there was extensive flooding across the County with over **200** homes and businesses receiving significant flood damage. Most other listed occurrences of flooding were marked by roads and highways being covered with water. The NCDC indicates that there was **\$1,655,000** in property damage and **\$5,000** in crop damage from flooding and flash flooding that occurred between 1995 and 2020.

It is certain that flooding problems will continue to occur frequently in Jackson County and that it will take considerable efforts to address the problems. As indicated in the paragraphs above, from 1995 to 2020, as reporting appeared to become more reliable, there has averaged about one significant occurrence every two years.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

Most of the flooding that occurs in Jackson County is in rural and forested areas. The more common problems regarding flooding in Jackson County appear to be related to roadways. In particular, local officials have noted the following specific problems:

- U.S. Highway 72 in the Paint Rock area;
- Alabama Highway 65 in the Paint Rock Valley;
- Alabama Highway 117 in the Stevenson area;
- County Road 2 in the Pleasant Groves area;
- County Road 8 in the Pleasant Groves to Woodville area;
- County Road 22 in the Pikesville area;
- County Road 30 in the Larkinsville to Woodville area;
- County Road 33 in the Hollywood area; and
- County Road 45 in the Stevenson area.

There appear to be some isolated problems in the county regarding structures located in flood prone areas but few, if any, concentrations. Flooding along the Paint Rock River is common and there are a few houses in this area that experience problems at times, but there are no concentrations of many structures.

More specifically, the extent of flooding/drainage problems in particular areas of Jackson County are as follows:

The unincorporated area of Jackson County exhibits flooding problems in the flood prone areas drained by the following streams: Paint Rock River, North Sauty, Mud, Widows, Crow, Jones, and Bryant Creeks. The flood prone areas adjacent to these creeks are linear and winding areas with rapid drainage, subject to flash flooding. Flash flooding is the predominant form of flooding, due to the mountainous topography within Jackson County. However, backwater flooding along the Tennessee River portion of the County does occur periodically, especially at the confluence of Mud Creek and the Tennessee River. The creeks and rivers within the rural portions of the county flood predominantly forest and agricultural land with scattered development. Specific problems noted in unincorporated Jackson County include:

- North Jackson High School is located close to a floodplain, but to date, has not been affected; and
- Limrock-Aspel Volunteer Fire Department is on the verge of a floodplain.

The flood prone areas of rural Jackson County are expected to continue to remain in rural and agricultural or forest land use. Developers of residential, subdivisions, commercial, and industrial development have generally avoided construction within the flood prone areas in Jackson County due to a lack of accessibility and lack of public utilities. Nevertheless, limited development could take place

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

as transportation system and public utility improvements are made. Development is expected to increase within the rural flood prone areas as the growing pressures of urban development in the incorporated towns and cities continue into rural areas.

Bridgeport. The overflow of the Tennessee River and flash flooding on Battery Hill Branch, Railroad Branch, and Jackson Branch periodically inundate the eastern portion of Bridgeport east of Fifth Avenue and Bleeker Street. During a 100-year flood, the L&N Railroad tracks would be inundated, extending from the north corporate limits of Bridgeport, north to the Alabama-Tennessee state line. Bridgeport's future development trends do not indicate further urban development of the flood prone areas.

Hollywood. Local flooding in the Town of Hollywood is generated by Pit Creek flowing through central Hollywood to the confluence of Dry Creek near U.S. 72 to the south. In addition, local flooding is also experienced along Dry Creek in the southwestern portion of the town. Pit Creek originates on Poorhouse Mountain several miles north of Hollywood, and this creek drops rapidly to the valley flood within central Hollywood inundating approximately **35.9** percent of the town. Dry Creek floods the southwestern portion of the town, causing backwater flooding over large areas, approximately **16.9** percent of Hollywood's land area. Hollywood's total flood prone area consists of approximately **110** acres. Specific problems noted in Hollywood include:

- Dry Creek poses a threat to the Hollywood Fire Station; and
- Hollywood Elementary School is located close to a floodplain, but to date, has not been affected.

Paint Rock. The Paint Rock River causes minor flooding in the town east of the Norfolk Southern Railroad tracks extending from the northeastern corporate limits directly south to the southeastern corporate limits. The flood prone area of Paint Rock comprises about 66 acres. Increases on the local rate of growth and development pressures from the Huntsville area are expected to further impact the flood prone area.

Pisgah. Dogwood Branch, Little Bryant Creek, and Rorex Creek cause minor flooding within the town's corporate limits. The flood prone area of Pisgah comprises about **121** acres. Slow drainage and debris blocking the normal flow of the above-mentioned creeks aggravates local flooding problems, causing backwater flooding within the town. Due to limited public utilities and a declining economic base, the growth of Pisgah will increase at a slow to moderate rate in the future. Town officials and developers recognize the dangers of additional construction within the flood prone areas. Consequently, urban development is not expected to take place within those areas.

Scottsboro. Roseberry Creek, Dry Creek, North Sauty Creek and their tributaries flood portions of the heavily developed north central urbanized area and the land area adjacent to Lake Guntersville. The most severe damage caused to urban development occurs along Roseberry Creek and its tributaries, consisting of College Branch, Skelton Branch, Wallace Branch, and Bynum Branch, since this system drains the most developed residential and commercial areas of the city. Residents who live along Roseberry Creek drainage system state floods occur on the creek approximately two or three times

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

per year. In summary, urban development in Scottsboro's flood prone area comprises about **2,254** acres. Specifically, Collins Elementary School in Scottsboro is in a floodplain.

Stevenson. Portions of Stevenson, Alabama, are subject to flooding by both backwater from the Tennessee River and by flash flooding on Bengis Creek. Included in Stevenson's flood prone area are about 340 acres. Stevenson's most serious flooding problems are caused by Bengis Creek, due to its location near the residentially developed southern portion of the city. Specific problems noted in Stevenson include:

- Stevenson Fire Station #2 was examined and has not experienced any flooding since construction
- Stevenson Elementary School is located close to a floodplain, but to date, has not been affected

Other municipalities in Jackson County. The towns of Dutton, Hytop, Pleasant Groves, Section, Skyline and Woodville do not experience significant local flooding of developed areas other than localized drainage problems or other problems as are otherwise mentioned above.

Jackson County has participated in the National Flood Insurance Program regular program for unincorporated areas since May 3, 1990. The unincorporated area is covered by flood hazard prevention regulations of which the County Engineer is the administrator. Flooding is considered to be among the most significant natural hazard problems facing Jackson County.

Hail | According to the National Climatic Data Center (NCDC), there have been **119** significant hailstorm events in Jackson County from 1950 to 2020. The largest number of events in a single day occurred on May 7, 1998, having nine reports of hailstorms in various parts of the county.

The location of hailstorm events is considered areawide in Jackson County. All areas and jurisdictions in Jackson County have experienced, or have a high likelihood of experiencing, and are potentially affected by hailstorms.

Most of the hail experienced since 1995 in Jackson County produced less than quarter size hail. Of 119 events noted, most events produced quarter size (1") or smaller hailstones with roughly one-third events involving penny size or smaller. Eleven events contained golf ball size hail and four events contained baseball size hail.

Since 1950, reporting from the NCDC indicates that there was **\$238,000** in property damage and **\$31,000** in crop damage from these hailstorms. About **\$71,000** of that property damage occurred on May 7, 1998. There are no records of deaths or injuries from hailstorms during this time period.

Since 1995, there have been about two to three days of hailstorms per year with some years having as many as four or five days of hail. This frequency is expected to continue into the future with perhaps a little higher incidence as reporting continues to improve.

There have been no specific vulnerabilities reported in the preparation of this plan, although the potential of general property damage and crop damage continues as is indicated from the past climate statistics.

High Winds / Strong Winds | Jackson County is not a coastal area and is generally not subject to hurricanes or tropical storms. However, the effects of the remnants of such storms is recorded from time to time. In 1995, Hurricane Opal was still registering high winds (tropical force) and significant

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

rainfall as it passed through north Alabama and Georgia and in 2004, Hurricane Ivan did as well. In 2005, the remnants of tropical storm Dennis in July and Hurricane Katrina in August again brought high winds and rainfall to Jackson County. For the purposes of this plan, the effects of high winds, rainfall and flooding are considered through the mitigation of these other hazards.

Thunderstorms | Thunderstorms and high winds are natural hazards that occur quite frequently within Jackson County. Damage from any isolated event is usually not as great as with other types of hazards such as tornadoes. However, when taken cumulatively, the damages can be significant. According to the US Wind Zone Map published by FEMA, Jackson County is in Wind Zone IV where winds can be as high as **250** mph.

According to the National Climatic Data Center (NCDC), there have been **322** significant events in Jackson County from January 1, 1950, through November 2020. For the 26-year period from 1994 to 2020, there were **150** days of significant storms in Jackson County for an average of almost six such storms per year. The highest reported years were 2003, 2004 and 2009 and in which there were ten days of storms each.

National Weather Service in Huntsville, Alabama reported that on April 13, 2009, a Wake Low Event caused strong winds with gusts up to **65** miles per hour causing considerable damage in Jackson and nearby Counties. Numerous trees and power lines were downed in these areas, with many trees and power poles falling on houses and blocking roadways.

From 1950 to 2020, reporting from the NCDC indicates that there were 322 notable thunderstorm events with **\$1,758,000** in property damage and **\$20,000** in crop damage from these storms. There have been no specific vulnerabilities reported in the preparation of previous hazard mitigation plans for Jackson County. The vulnerabilities because of such storms are similar in nature to the vulnerabilities related to flooding and tornadoes.

Tornadoes | Tornadoes are one of the most significant natural hazards that occur within Jackson County. Although they might not occur as frequently as other storms, an isolated tornado can cause incredible damages. Tornadoes are also the most likely hazard, except flooding, to cause injuries and death.

Almost all (twelve) communities as well as unincorporated areas/communities in Jackson County expressed concern regarding tornadoes with nine communities indicating experiencing past events. According to the National Climatic Data Center (NCDC), there have been **46** tornadoes in Jackson County from January 1, 1950, to November 2020, resulting in **12** deaths and **37** injuries.

The federal disaster declaration #1466 on May 12, 2003, was in reference to tornadoes as well as severe thunderstorms and flooding. On April 27, 2011, Jackson County experienced an F1 and F2 Tornado as well as two F4 tornadoes that resulted in 8 deaths within Jackson County specifically in the area of Higdon and Flat Rock communities and Fackler community and on the outskirts of the City of Bridgeport (northeast Jackson County) along the Tennessee River. The tornadoes of April 27, 2011, left death and destruction in Jackson County as it did in many areas of the Southeast United States and resulted in Presidential Disaster Declaration DR-1971.

The location of tornadoes is considered areawide in Jackson County. Tornadoes are possible, and have occurred, in all areas of Jackson County, though some specific jurisdictions have been spared. Interestingly, it appears from past occurrences that the Sand Mountain area tends to experience more, or more severe tornadoes, than other areas of the County. This may be due to reporting rather than

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

actual conditions. Local officials have noted that unreported tornadoes have occurred in sparsely populated areas of the Cumberland Plateau.

Reporting from the National Climatic Data Center indicates that, since 1950, there has been **\$9,821,000** in property damage and **\$5,000** in crop damage from these storms.

Given its history of tornadoes and severe thunderstorms, there is no question that Jackson County will continue to experience such storms in the future. Jackson County is in the area designated by the American Society of Civil Engineers as Wind Zone IV that has a design wind speed of **250** mph. Although there is no spatial predictability of individual tornado events within as small an area as a county, the trend of several events over a long period of time can give some indication of what to expect in the future. Absent some significant climatic change that is beyond the scope of this study, it is expected that at some time over the next fifty years, Jackson County will experience tornadoes of similar number and severity as occurred over the last fifty years.

Tornadoes are so unpredictable and can be so severe, that they are the most likely natural hazard, in Jackson County, to result in loss of life. Vulnerabilities in this regard include schools. Although there are certainly other places where people may tend to congregate, it is probable that schools have the greatest concentration of people, day in and day out, of any other facilities.

Landslides | Landslides are known to occur in the mountainous areas of Jackson County along the side of Sand Mountain and in the Cumberland Plateau in the northern portion of the County. Landslides in remote, natural areas are not usually reported. A few known events include slides on July Mountain south of Scottsboro, along State Highway 35 as it goes up Sand Mountain, and on State Highway 117 near Flat Rock.

According to the Geological Survey of Alabama, Jackson County lies generally in an area that has moderate to low incidence of landslides. Susceptibility indicates the percentage of the area that is susceptible to landslides. Incidence indicates whether an area has been subject to landslides. Moderate to low incidence indicates that **1.5** percent to **15** percent of the area has been subject to landslides. There are no reported losses due to landslides within Jackson County.

Given that Jackson County does not have high susceptibility to landslides and that the areas of the highest incidence are not in the path of significant future population growth and land development, the probability of future hazardous or damaging landslides is not great except for the highway development.

The most immediate vulnerability of the area to landslide hazards is highways that cut across the ridges and land development, particularly housing, that is constructed in the mountainous area in the northern portion of the county. There is not sufficient information to quantify the potential dollar loss due to landslides. If additional and more extensive development begins to take place in areas with mountainous terrain, such as along the side of Sand Mountain and in the Cumberland Plateau, the potential for injuries and damages could increase unless proactive measures are taken to protect such areas against poor development practices.

Land Subsidence / Sinkholes | In Jackson County, the areas of the County in the valley along the Tennessee River and its tributaries are generally underlain by limestone and are thus susceptible to the formation of sinkholes.

Because much of Jackson County is underlain by carbonate rock, in this case, limestone, it is suspected that there are multiple unreported instances of land subsidence.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

It has been noted that sinkholes occur throughout the area. Specific instances of mention were: 1) A sinkhole near Paint Rock opened and another small sinkhole occurred in a private yard in 2015; and 2) A major sinkhole on U.S. Highway 72 between Gurley and Paint Rock that closed a portion of the highway roughly twenty years ago; 3) and another opened sinkhole near County Highway 5 around 2016. Other than the sinkhole mentioned above that closed U.S. Highway 72, no known damages are reported.

It is expected that land subsidence will continue to be a risky natural hazard to Jackson County in the future, though not as significant as other hazards. Given the number of sinkholes detailed above under previous occurrences, it is expected that the probability of an event each year will be low.

Vulnerability of the communities of Jackson County to land subsidence hazards is considered to primarily relate to highway construction. Given the general density of development in Jackson County, it is not thought that land subsidence will be a major hazard to most land development. There is not sufficient information to develop an estimate of potential loss due to land subsidence in Jackson County.

Lightning | Although lightning is a common occurrence as it accompanies thunderstorms, occasionally it causes damage to property and can also cause injury and death. According to the National Climatic Data Center there have been **nine** significant occurrences of lightning within Jackson County over the period from 1950 to 2020. Several of these events caused property damage and injuries with one event causing one death and four injuries. Three of the recorded lightning incidents caused house fires ranging from substantial damage to a total loss.

In addition to the nine reported events contained within the NCDC data, on August 20, 1994, four people were struck by lightning, two injured seriously, at a golf course in the Long Island Community located roughly 3 miles northeast of Bridgeport. The people were taken by Life Force helicopter to Erlanger Hospital in Chattanooga. The four had been playing golf when it began raining, and they were standing under a tree at the Number 5 green. The NCDC data also omits the report that occurred on July 9, 2012, when lightning struck the National Weather Service Radar Tower in Hytop, Alabama rendering it non-operational for some time.

The lightning event that occurred August 12, 2001, struck a tree near an accident scene that was being investigated causing one death and injuring four others. The lightning of July 1, 2012, in Section set fire to a home near County Road 120.

The location of lightning events is considered areawide in Jackson County. All areas and jurisdictions in Jackson County have experienced, or have a high likelihood of experiencing, and are potentially affected by lightning.

The NCDC indicates that there was **\$140,000** in property damage from lightning from the events that have taken place in Jackson County. Since 1994, there has averaged about one significant lightning event every two years out of the many instances of lightning that is common with storms. This frequency of lightning is expected to continue with perhaps a little higher incidence as reporting continues to improve. However, the significance of the lightning events listed is not due to the magnitude of the lightning but to the resulting damages. With one tragic exception, these damages were largely preventable, in which case, the event would not have been listed. There have been no specific vulnerabilities reported in the preparation of this plan, although the potential of general property damage continues as is indicated from the past climate statistics.

Wildfires | With regard to fuels, Jackson County contains extensive areas covered by forests. According to the 2016 county hazard mitigation plan, forests covered over 62% of the total land area of Jackson County. The County's total timberland in 2014 consisted of **11,761** acres in Federal ownership, **11,761** acres in State and local ownership and **410,635** acres in private ownership. Most of these areas are in the upland plateau and steep, mountain sites in the north and west portions of the county. An estimated **85%** of the forested lands are composed of oak-hickory cover type. These areas can be classified as heavy fuel, that is, vegetation consisting of round wood three to eight inches in diameter.

During the 13-year study period, Jackson County experienced **309** wildfire events resulting in **6,386.48** total acres being burned. Based on this data, the average number of wildfires per year is **23.8** and average acres burned per year is **491.3**. The probability of future wildfire events in Jackson County is relatively moderate. The extent of vulnerability is expected to be great, particularly regarding the immediately affected forested areas and, because of population growth in forested areas, to those areas of the wildland-urban interface. Previous estimates showed that, if wildfire incident trends continue as projected, about **2.8%** of the County's forested area or about **1.15%** of the County's total area will be affected over the next ten years. Furthermore, potentially affected areas are areas of rough terrain where there is also beginning to be more development. Unfortunately, historical loss figures are unavailable, so calculations of potential damages cannot be undertaken.

Winter Storms/Winter Weather | Winter storms occur in all parts of Jackson County with particularly intense effects being observed in the higher elevations of Sand Mountain and the Cumberland Plateau. Conversations with local officials indicate that icing problems occur about once or twice per year with snow in the higher elevations of Jackson County being more common. This is borne out by information from the National Climatic Data Center (NCDC) that indicates that there have been **106** significant snow, ice, and winter weather events in Jackson County from 1996 to 2020. The most significant event was the winter storm of March 12, 1993, that caused four deaths. The winter storm of February 18, 2000 was part of federal disaster declaration #1417. On February 25, 2015, heavy snow occurred with amounts ranging from **7.2** inches in Scottsboro, Alabama to **10.5** inches in Dutton, Alabama in Jackson County. The winter storm of March 5, 2015, resulted in a half of an inch of sleet and two tenths of an inch of freezing rain across Jackson County, causing slick and hazardous driving conditions. On February 8, 2020, snow developed during the early morning hours, ending by late morning. Snow accumulations of one to two- and one-half inches fell throughout Jackson County, especially atop the Cumberland Plateau.

While precipitation can be dangerous in freezing weather, extremely low temperatures can pose just as much risk. In December of 1995, the body of a man was found near his car which was apparently stuck in a creek in extreme Northwest Jackson County during very cold conditions. Three events of extremely low temperatures were recorded in 1996. In early February of 1996, record lows were listed generally for North Alabama. Later that month above-average highs in the 80's were recorded. This set the stage for crop damage to occur in Jackson County and other parts of the State the following month in March of 1996 when new low temperatures were again experienced.

In January of 2009, low temperatures of 2 to 8 degrees Fahrenheit with wind chill of 5 to 10 degrees below zero were recorded at some locations in Jackson County, particularly the town of Section. The next year, a record cold air mass overspread the region beginning on the evening of January 5th as a strong cold front moved through. Temperatures only climbed into the single digits and teens on the 6th and dropped into the zero to 10 above range for lows on the 7th. Northwest to north winds behind

the front produced very low wind chills in the zero to 10 below range for all the entire area on the 6th into the early morning of the 7th. A few locations in the higher elevations of northeast Alabama experienced wind chills of 10 to 15 below zero during this time. Wind chills dropped into the zero to 5 below zero range during the early morning of the January 29, 2014.

The location of winter storm events is considered areawide in Jackson County. All areas and jurisdictions in Jackson County have experienced, or have a high likelihood of experiencing, and are potentially affected by winter storms. As previously stated, the higher elevations of Sand Mountain and the Cumberland Plateau may experience extended effects from such events.

Winter storms have caused an estimated **\$2,140,000** in property damages and **\$1,001,000** in reported crop damage during the study period. Of particular concern to winter storms is the damage potential to roads and highways and to the accumulation of snow and ice on dirt roads. Of particular concern are Alabama Highways 35 and 40 where they rise from the Tennessee River up to Sand Mountain. All mountain gap roads are of concern, specifically Alabama Highways 79 and 146 in the Skyline area of the Cumberland Plateau. There is not sufficient information at this time to predict the extent of damages from future winter storms.

Socially Vulnerable Populations

Natural hazard events have different impacts across Jackson County populations. These populations can be quantified by social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey (ACS). Jackson County has **1,078** square miles of land and **49** square miles of water, totaling an area of **1,127** square miles. Population density is currently estimated at **46.2** persons per square mile. Table 5.48 depicts the county's population characteristics by jurisdiction and by census tract. The City of Scottsboro is the most populated jurisdiction, followed by the Cities of Bridgeport and Stevenson and the Towns of Hollywood, Section, Skyline, Woodville, Pisgah, Pleasant Groves, Dutton, Hytop, Langston, and Paint Rock. The county has eleven census tracts. Regarding vulnerability, the larger the population of an area, the more people and structures are at risk of harm or damage. Tract 9511 is the most populated tract and contains the Dutton, Langston, and Section communities. Tract 9504 is the least populated, containing mostly unincorporated communities.

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies. Tables 5.48 breaks down population data by race and age for the county by community and census tract.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Table 5.48 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 and Over
Jurisdiction							
Jackson County	52,094	48,828	2,039	2,680	12,151	29,971	9,972
Bridgeport	2,303	2,055	186	125	610	1,263	430
Dutton	411	406	0	5	146	213	52
Hollywood	1,088	938	167	27	259	621	254
Hytov	394	384	0	31	114	215	65
Langston	216	206	10	3	9	116	91
Paint Rock	184	180	0	11	50	91	43
Pisgah	761	741	0	53	185	447	129
Pleasant Groves	416	406	0	18	100	248	68
Scottsboro	14,527	13,120	930	725	3,195	8,408	2,924
Section	959	953	0	6	298	508	153
Skyline	939	854	20	103	266	491	182
Stevenson	1,847	1,425	391	58	507	1,011	329
Woodville	821	774	35	47	295	412	114
County Census Tract							
Tract 9501	6,402	6,294	0	299	1,543	3,792	1,067
Tract 9502	3,219	2,950	207	140	847	1,719	653
Tract 9503	5,721	4,993	587	166	1,466	3,144	1,111
Tract 9504	2,129	2,013	27	162	482	1,263	384
Tract 9505	3,360	3,235	49	196	859	2,009	492
Tract 9506	5,761	5,273	344	171	1,121	3,630	1,010
Tract 9507	4,485	4,271	233	41	1,115	2,496	874
Tract 9508	3,937	3,256	342	462	677	2,365	895
Tract 9509	5,712	5,514	179	113	1,368	2,996	1,348
Tract 9510	4,471	4,325	0	247	897	2,694	880
Tract 9511	6,897	6,704	71	530	1,776	3,863	1,258

In addition to racial and age composition in Jackson County, income levels are also important when identifying and planning for vulnerable populations. Lower income individuals have difficulty acquiring resources to prepare for or recover from disasters. Table 5.49 provides a breakdown of median household income, per capita income, and poverty level data for the jurisdictions and census tracts in the county.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. The Hytop and Pleasant Groves communities are the only two that have median household incomes that exceed the state average; census tract 9509 is the only tract with the same distinction. No municipality or tract has a median household income that is higher than the national average.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Langston is the only jurisdiction with a per capita income average higher than both the state and national figures. Tract 9509 is the only tract with the same distinction.

Table 5.49 | Jackson County Income Data by Jurisdiction and Census Tract (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Jackson County	\$39,816	\$21,608	10,418	20.2%
Bridgeport	\$29,440	\$18,441	775	33.7%
Dutton	\$35,833	\$19,860	96	23.4%
Hollywood	\$34,318	\$19,637	172	15.7%
Hytop	\$50,268	\$25,106	17	4.3%
Langston	\$47,188	\$33,438	18	8.3%
Paint Rock	\$31,250	\$26,257	49	26.6%
Pisgah	\$26,976	\$14,848	258	33.9%
Pleasant Groves	\$49,593	\$24,151	29	7.0%
Scottsboro	\$41,064	\$24,672	2,850	20.2%
Section	\$28,917	\$16,719	320	33.4%
Skyline	\$32,143	\$17,145	284	30.2%
Stevenson	\$31,484	\$18,456	387	21.0%
Woodville	\$27,411	\$16,567	255	31.6%
County Census Tracts				
Tract 9501	\$39,051	\$21,113	1,306	20.5%
Tract 9502	\$30,071	\$20,447	959	29.8%
Tract 9503	\$34,372	\$19,095	1,092	19.4%
Tract 9504	\$39,583	\$23,740	463	21.9%
Tract 9505	\$38,669	\$20,392	630	18.8%
Tract 9506	\$40,381	\$20,724	1,104	19.2%
Tract 9507	\$40,846	\$21,308	988	22.0%
Tract 9508	\$36,552	\$23,411	925	26.0%

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 9509	\$50,063	\$29,367	458	8.0%
Tract 9510	\$31,657	\$20,161	980	22.0%
Tract 9511	\$43,125	\$19,042	1,513	22.0%

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. Hytop, Pleasant Groves, Langston, and Hollywood are the only jurisdictions with poverty level percentages that do not exceed the state or national figure. Pisgah has the highest below poverty percentage rate in Jackson County. Tract 9509 has the lowest poverty percentage in the County at **8.0%**; tract 9502 has the highest percentage at **29.8%**.

Vulnerable Structures

Housing is a critical consideration of mitigation planning as residential development is often the most prevalent form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.50 shows housing characters for Jackson County by jurisdiction.

The City of Scottsboro has the largest number of housing units, followed by Bridgeport and Stevenson. Scottsboro also has the largest concentration of mobile homes, and the Town of Paint Rock has the largest percent of mobile homes within a municipality. Historically, mobile homes units have been highly susceptible to natural hazards and prone to substantial amounts of damage or complete destruction. Implementing regulations for development and maintenance of these structures could drastically reduce costly natural hazard impacts. Additionally, development should be restricted in flood prone areas or areas with an extensive history of detrimental hazard impact.

Table 5.50 | Jackson County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Jackson County	25,106	4,912	19.6%
Bridgeport	1,221	173	14.2%
Dutton	160	29	18.1%
Hollywood	519	142	27.4%
Hytop	188	54	28.7%

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Langston	210	39	18.6%
Paint Rock	83	26	31.3%
Pisgah	375	52	13.9%
Pleasant Groves	179	30	16.8%
Scottsboro	7,184	526	7.3%
Section	426	42	9.9%
Skyline	489	148	30.3%
Stevenson	944	162	17.2%
Woodville	297	43	14.5%

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Jackson County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. A listing of the County’s facilities can be found in the appendices of this document. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

5.6 Jurisdictional Vulnerability Overview | Jackson County

Table 5.51 Natural Hazard Probability and Damage Estimates In Jackson County, AL						
Jackson County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	35	15	None	2.3 events/yr	N/A
	Earthquakes	40	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	57	24	\$1,660,000	2.4 events/yr	\$69,167
	Hail	119	64	\$269,000	1.9 events/yr	\$4,203
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 46 Windstorms: 14 Thunderstorms: 322	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$9,826,000 Windstorms: \$642,500 Thunderstorms: \$1,778,000	Tornadoes: < than 1 event/yr Windstorms: < than 1 event/yr Thunderstorms: 5.3 events/yr	Tornadoes: \$196,520 Windstorms: \$26,771 Thunderstorms: \$29,148
	Landslides	18	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	249	62	Unknown	4.0 events/yr	Unknown
	Lightning	9	24	\$140,000	< than 1 event/yr	\$5,833
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	309	13	N/A	23.8 events/yr	Unknown
	Winter Storms/Winter Weather	106	24	\$3,141,000	1.3 events/yr	\$130,875

Table 5.51 provides probability and damage estimates for the entire Jackson County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated 23.8 events taking place each year.

Natural Hazard Vulnerability in Limestone County

Table 5.52 provides an overall summary of Limestone County’s vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: **L** to indicate *low* vulnerability; **M** to indicate *medium* vulnerability; and **H** to indicate *high* vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.56 on page 5-139 provides a summary of the County’s annual potential loss estimates by hazard.

Table 5.52 | Hazard Vulnerability by Jurisdiction in Limestone County, Alabama

	Natural Hazards	Municipalities					
		Ardmore	Athens	Elkmont	Lester	Mooreville	Unincorporated County
Limestone County	Dam Failure	L	L	L	L	L	L
	Drought / Extreme Temps.	M	M	M	M	M	M
	Earthquakes	L	L	L	L	L	L
	Flooding	M	M	M	M	M	M
	Hail	L	M	M	L	L	M
	High Winds – High / Strong Winds	M	M	M	M	M	M
	High Winds – Tornadoes	H	M	M	M	M	M
	High Winds – Severe T-storms	M	H	H	M	M	H
	Landslides	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L
	Lightning	L	M	L	L	L	L
	Wildfire	M	M	M	H	H	H
	Winter Storms / Winter Weather	H	H	H	H	H	H
	Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction); M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)						

Dam Failure | Dam and levee failures are flood risks. Limestone County has **12** High Density Polyethylene (HPDE - Earth) Dams. According HAZUS-MH 2011, two dams (Brookwood Forest Lake and Montgomery Lake) are considered high hazard dams (loss of one human life is likely if the dam fails). This classification is assigned to a dam depending upon the urban development directly downstream of the dam and whether failure would result in serious economic loss. Classifications are assigned to a dam depending upon the urban development directly downstream of the dam and whether failure would result in serious economic loss. The classification is not an indication of the quality of the dams' construction.

In the event of a flood or significant earthquake in Limestone County, the possibility for an emergency could exist at these dams. The ALCEMA is prepared to coordinate efforts if an event arises at these dams.

No historical records are available of dam/levee failures in Limestone County. When a dam fails, a large quantity of water is suddenly released downstream, destroying anything in its path. The area impacted by the water emitted by dam failure would encounter the same risks as those in a flood zone during periods of flooding. The area directly affected by the water released during a dam failure is not county wide. The probability of future occurrences cannot be characterized on a countywide basis because of the lack of information available. The overall area affected is low and impacts are localized. This rating is intended only for general comparison to other hazards that are being considered.

Dam failures may result from one or more the following:

- Prolonged periods of rainfall and flooding (the cause of most failures)
- Inadequate spillway capacity which causes excess overtopping flows
- Internal erosion erosions due to embankment or foundation leakage or piping
- Improper maintenance
- Improper design
- Negligent operation
- Failure of upstream dams
- Landslides into reservoirs
- High winds
- Earthquakes

Drought / Extreme Temperatures | Droughts and heat waves have a county-wide impact. Between 1995 and 2020, Limestone County experienced **28** Drought events according to the National Climatic Data Center (NCDC). The future incidence of drought within Limestone County is highly unpredictable, conditions may be localized, or widespread, and not much historical data is available making it difficult to determine the future probability of drought conditions with any accuracy. The qualitative probability rating for drought is high. Though historically not a major problem, the region is susceptible to extreme drought conditions.

Limestone County experienced moderate (D1) to exceptional (D4) drought conditions from March 2007 through August 2008 having hydrologic, agricultural, and sociological impacts. Crops became highly stressed due to the lack of rainfall, with losses ranging from 50 to nearly 100 percent. Many crops were considered to be in poor or very poor condition, along with livestock and hay production. In addition, about 60 percent of the livestock, and 75 percent of pasture lands, were also considered to be poor or very poor, and hay yields for the summer were less than half of normal. Stream flows on

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

area rivers and waterways remained near record low levels, and most reservoir levels were well below normal. Navigation on major rivers became significantly impacted, and many boat landings on major lakes became unusable due to extremely low lake levels. The number of mandatory water restrictions continued to increase, with fines and surcharges being enforced for excessive water usage. Many residential lawns, shrubbery, and gardens became severely stressed by the very dry conditions. Statewide, 31 counties were declared a disaster area. Alabama farmers received one million dollars in federal disaster aid along with other grant assistance. It was during this time that the State implemented its Drought Monitoring System. Drought conditions continued to escalate and by August 2007 all 67 Alabama counties were declared Natural Disaster areas by the Federal Government. The State Agriculture Commissioner (at the time) Ron Sparks referred to this event as the worst drought in 30-40 years. (Source: NOAA NCDC)

In 2012, severe drought (D2) conditions were declared on July 3 and ended on the 25th.

On June 28, 2009, the heat index values in Limestone County reached 108 degrees This event is referenced as a worst-case excessive heat scenario of such an event occurring during the plan's study period of 1995-2020.

Limestone County experienced **28** drought/extreme heat events during the plan's study period, resulting in a greater than 100% probability that a drought event will occur on an annual basis. The total amount of damages for the 28 drought/extreme heat events was \$0 with 0 drought events causing damage resulting in an unknown estimation of expected annual damages from future events. The referenced drought/extreme heat event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten-year period and serves as the extent/range of magnitude or severity that could be experienced by Limestone County due to a drought/extreme heat event; the ranking is minor to major. Limestone County's extent for drought conditions is Exceptional Drought (D4) and for excessive heat is 108 degrees Fahrenheit.

Primary effects from Drought and Excessive Heat in Limestone County would include:

- Crop and other agricultural damage
- Water supply shortage - water wells, creeks, rivers, and lakes dry up
- Increase vulnerability to forest fires and sinkholes
- Heat exhaustion; heat stroke; heat syncope; and heat cramps

Hazardous results from significant Drought and Excessive Heat in Limestone County would include:

- Agricultural damage from drought will result in economic losses of crops and livestock.
- A water supply shortage will result in the necessity for water to be trucked into the area, damage to the sewer system and lack of hydroelectric power.
- Forest fires can devastate vast acreages and burn homes and businesses.
- Heat exhaustion can be debilitating and result in a hospital stay. Heat stroke can cause death.

- Energy prices will inflate due to loss of hydropower

Earthquakes | The zone of frequent earthquake activity affecting Limestone County is the Southern Appalachian Seismic Zone (SASZ) (also called the Eastern Tennessee Seismic Zone). Limestone County is located within the SASZ zone and is at a moderate risk for earthquakes.

Earthquakes occurring in Limestone County are predominantly low magnitude events. However, there is growing concern that a high magnitude event is inevitable, and earthquakes are becoming a much larger concern to the county. GSA is currently working to better define seismic hazards and impacts throughout the county. Limestone County has a 4-8% chance of experiencing horizontal shaking; however, there are insufficient historical records and geologic studies to predict the future probability of an earthquake occurring in Limestone County. The risk of a significant, damage-causing earthquake in Limestone County is low to moderate.

Limestone County has reportedly experienced **six** earthquake events since 1886. While the Geologic Survey of Alabama has been recording events that have taken place since 1886, all events in Limestone County have been recorded since 1990. In accordance with FEMA guidelines, an area with 2% or greater probability of exceedance in 50 years should be further assessed for vulnerability. Limestone County's risk falls at approximately the **12-16%** probability of exceedance in 50 years. To date, there have been earthquake epicenters of 1.0-1.5 and 2.0-2.9 experienced in Limestone County.

Limestone County experienced six earthquake events in a 30-year period resulting in 20% probability that an earthquake event will occur on an annual basis. The total amount of damages for the six earthquake events was \$0 or unknown with an unknown estimation of expected annual damages from future events. According to the U. S. Geological Survey, Limestone County's extent for a landslide event occurring is moderate and NOAA states the extent for the study period of this plan is a 5.4 magnitude earthquake.

Primary effects from earthquake in Limestone County would include:

- Property Damage
- Underground infrastructure damage
- Building collapse
- Trigger for other natural disasters

Hazardous results from earthquake in Limestone County would include:

- Shaking can cause cracking of roads, bridges, or buildings, which may also lead to collapse.
- Pipes and wiring underground could be severely damaged due to the movement of the earth. This would result in interruption of service and long periods of repair before lines were serviceable again.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

- Buildings in Limestone County are not built to meet the rigors of earthquakes; collapsing structures could kill or injure occupants.
- Earthquakes can create other disasters such as landslides, flooding, and sinkholes.
- Shifting of underlying soil and breaching of dams are examples of possible results from an earthquake.

Flooding / Flash Floods | Flooding/flash flooding caused by rainfall occurs to some extent almost every year in almost every part of Limestone County. Flooding occurs most frequently between November and April, with a peak from February through April. Flash flooding has the potential to affect every jurisdiction in Limestone County. Riverine flooding can potentially create minor to moderate property damage and a slight risk of casualties throughout areas of the county adjacent to rivers and creeks. Flash flooding can potentially create extensive property damage and casualties to the entire county.

Flooding can occur along the banks of the creeks and streams that flow throughout the county and where development has encroached in the floodplain. Flash flooding can occur anywhere in the county due to inadequate or clogged drainage systems and excessive rainfall. Unpaved dirt roads, common in the rural areas, are particularly vulnerable. Impacts in developed areas include street flooding and water backing up into homes and buildings. In addition to damaging homes, flooding can adversely impact crops, water and sewer systems, and dams and levees. All jurisdictions are vulnerable to flood events.

On February 5, 2004, a flood event occurred in Limestone County. Many roads near Browns Ferry Nuclear Power Plant and in Athens were covered with several inches of water over the roads. This storm resulted in no reported damages. (Source: NOAA NCDC)

On March 26, 2009, runoff from heavy rainfall caused area streams to overflow and closing Bill Black, Myers, and Cowford Roads due to 2 – 4 inches of water over roadways. This storm resulted in no reported damages. (Source: NOAA NCDC)

On September 23, 2009, a flood event occurred in Limestone County. Runoff from rainfall from the night of the 22nd through the morning of the 23rd caused Big Creek, Northwest of Athens, to rise over its banks and flood Bill Black Road. During peak flooding, up to two feet of water was flowing over this low water crossing. This storm resulted in no reported damages. (Source: NOAA NCDC)

On January 17, 2012, flash flood events occurred in Limestone County. Flash flooding (2 – 3.5 inches) occurred on several roads including Bethel, Thach and McKee Roads in northeast Limestone County adjacent to northern Madison County. Flash flooding (2 - 3.5 inches) also occurred along several points along and near Highway 99, including at the intersection of Tillman Road. These storms resulted in **\$15,000** of property damages. (Source: NOAA NCDC)

On July 4, 2013, a flood event occurred in Limestone County. A nearly stationary band of heavy rain developed on the 4th of July across portions of Northwest and North Central Alabama. The bulk of the rainfall occurred during the late morning through late afternoon hours. The hardest hit counties were Lawrence, Eastern Limestone, Western Madison and Morgan Counties where 5 to 10 inches of rain were measured. Capshaw Road was closed at Sanderson Road and between Wall Triana and Nance Roads, in addition to other roads in Eastern Limestone County. Levert Avenue was closed due to flash

Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles

flooding. Fifteen area and county roads were closed due to high water in southeastern Limestone County, from near Mooresville Road to along and northeast of Huntsville Browns Ferry Road. Water was at least a foot to a foot and a half deep over the roadways. Arbor Trace near County Line Road was also closed due to flooding. Widespread area flooding occurred, and numerous roads were closed or became impassible in some areas through the evening of July 6th. These storms resulted in no reported damages. (Source: NOAA NCDC)

Local drainage floods may occur outside of recognized drainage channels or delineated flood plains for a variety of reasons, including concentrated local precipitation, a lack of infiltration, inadequate facilities for drainage and storm water conveyance, and/or increased surface runoff. Such events often occur in flat areas, particularly during winter and spring in areas with frozen ground, and also in urbanized areas with large impermeable surfaces. High groundwater flooding is a seasonal occurrence in some areas but may occur in other areas after prolonged periods of above-average precipitation.

Limestone County experienced **80** flood/flash flood events since 1996 when the first event was recorded by the NCDC in Limestone County, resulting in a greater than 100% probability that a flood/flash flood event will occur on an annual basis. The total amount of damages for the **80** flood/flash flood events was **\$329,000** to property and **\$5,000** in damages to crops. The referenced flood event(s) serves as the extent/range of magnitude or severity that could be experienced by Limestone County due to a flood event; the ranking is minor to major.

Primary Effects from Floods in Limestone County would include:

- Loss of life
- Property damage
- Crop damage
- Dam and levee failure

Hazardous results from significant flood in Limestone County would include:

- Rising water levels can quickly sweep people along in its path.
- Rapidly moving water destroys anything in its path and also leaves hazardous mold and breed insects.
- Periods of standing water kill inadaptable plants, and flowing water removes sediment and nutrients from the soil.
- Breached dams and levees allow water to flood into the surrounding floodplain resulting in destruction of crops and property.

Hail | Hail is experienced in some capacity almost annually in Limestone County. All areas of Limestone County are equally vulnerable to hail. According to the National Climatic Data Center (NCDC), there have been **167** recorded hail events within Limestone County since 1955. These events have produced a total of **\$75,000** in property damage and **\$7,000** in damage to crops.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

It is certain that hail will continue to be an annual occurrence in Limestone County jurisdictions. Past trends show an average of three (3) hail events per year. Previous events have produced pea-size to tennis ball sized hail depending on the severity of the event to which the hail is connected.

High Winds / Strong Winds | Limestone County is at a low risk for a direct hit by a hurricane due to its position inland from the Alabama coastline. Although Limestone County does not feel the effects of storm surges, other effects including heavy rain, flooding, winds, and tornados often have significant impacts on Limestone County.

Hurricanes and tropical storms such as Dennis and Katrina have affected Limestone County. The most significant impacts have been related to excessive rainfall, damaging wind, and tornados. Residents suffer loss of power, damage to homes, blocked roadways from associated storm debris, and loss of other crucial utilities. Mobile homes are particularly vulnerable and are impacted more than conventionally built structures. According to the US Census Bureau's 2019 American Community Survey, Limestone County has a total of **4,438** mobile homes countywide, **12.3%** of the total housing stock.

Effects of these storms generally impact the entire county and are not limited to a specific location. The fact that other surrounding counties will have also been affected by the same event only adds to the burden, as utility crews are often overwhelmed by the needs of an entire region or state.

Hurricane Dennis made landfall on July 10, 2005, at the Santa Rosa Sound in Florida, approximately 25 miles from the Florida-Alabama state line. The remnants of Tropical Storm Dennis moved northward from the Gulf Coast and into the Tennessee Valley during the evening of July 10th. Gusty winds in excess of tropical storm force resulted in some minor tree damage across north Alabama along with several power outages. The winds and rain diminished during the early morning hours of July 11th.

The remnants of Hurricane Katrina moved northward along the Alabama/Mississippi state line. Katrina was still a strong tropical storm as the center passed just west of North Alabama during the evening hours of August 29, 2005. Most of North Alabama experienced tropical storm force wind gusts for several hours with a few wind gusts as high as **60** mph being reported. While structural damage was very limited, a few homes did receive minor roof damage due to the loss of a few shingles. Numerous trees and power lines were blown down across the entire area and thousands of people lost power. Katrina moved relatively quickly to the north and thus rainfall was limited. Rainfall amounts were around four to five inches near the Alabama/Mississippi line but tapered off significantly farther to the east with locations near the Alabama/Georgia line only seeing a half inch or less.

On January 29, 2008, Limestone County experienced high winds of at least 45 mph with gusts over **50** mph blew down numerous trees and power lines across the county leaving power outages. A 53-mph wind gust was measured at Pryor Field. Limestone County reported **\$5,000** in property damages. Another high wind event occurred on February 11, 2009, when a sustained period of high winds (60 mph) knocked down trees across the county. A tree was blown down onto a home in Ardmore. Numerous trees were knocked down in the Paradise Shores community. Limestone County reported **\$5,000** in property damages.

On March 18, 2013, a strong wind (50 mph) event occurred and resulted in trees being knocked down on Sutton Hill Road. Property damages of **\$1,000** were reported. Another strong wind event occurred on December 11, 2008, resulting in an uprooted tree falling onto a power line which tripped a power substation and knocked power out for about **5,000** utility customers in the Athens area. Property damages of **\$3,000** were reported.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

On April 22, 2018, strong and gusty winds of 30-35 mph with gusts around **50** mph occurred during the evening hours of the 22nd into the early morning hours of the 23rd. A wake low event enhanced the winds and wind gusts between 8 pm and midnight in Limestone County. A local newspaper described numerous reports of trees and power lines down across the county during this event causing power outages for at least **6,700** residents. A Sheriff Deputy was dispatched to one of the multiple trees that had fell, blocking Elkton Road. In doing so, another large tree fell during the event onto a vehicle resulting in a minor injury. The roll cage behind the seat of the passenger protected the occupant from serious injury or worse. The vehicle was a total loss. Another large tree was reported to have fell across Piney Creek Bridge, while yet another fell onto a fence of a farm allowing a number of cattle to get loose. This single wind event resulted in **\$50,000** in property damage.

Limestone County experienced 12 hurricane/tropical storm/tropical depression/high wind/strong wind events since 1996 when the first event was recorded by the NCDC, resulting in an 80% probability that a hurricane/tropical storm event will occur on an annual basis. The total amount of damages for the 12 hurricane/tropical storm/tropical depression/high wind/strong wind events was **\$87,000**. The referenced hurricane/tropical storm/tropical depression/high wind/strong wind events are the ones that resulted in the most damages, deaths, and injuries and serves as the extent/range of magnitude or severity that could be experienced by Limestone County due to a hurricane/tropical storm/tropical depression/high wind/strong wind event; the ranking is minor to major. Limestone County's extent from these storms is winds more than tropical storm winds, up to **60** mph.

Primary Effects of Hurricanes:

1. Wind

- Secondary cause of deaths related to hurricanes
- Continue causing destruction as storm travels miles inland
- Able to completely destroy towns and structures that fall within storm path
- Winds near perimeter of eye of storm are strongest and most intense
- Oftentimes produce tornados

2. Heavy Rains

- Rain levels during hurricanes can easily exceed 15 to 20 inches
- Cause flooding beyond coastal regions

Secondary Effects of Hurricanes:

1. Tornados

- Usually found in right-front quadrant of storm or embedded in rain bands
- Some hurricanes capable of producing multiple twisters
- Usually not accompanied by hail or numerous lightning strikes
- Tornado production can occur for days after the hurricane makes landfall
- Can develop at any time of the day or night during landfall of a hurricane

2. Inland Flooding

- Statistically responsible for greatest number of fatalities over last 30 years
- Stronger storms not necessarily cause of most flooding; weaker storms that move slowly across the landscape can deposit large amounts of rain, causing significant flooding

Thunderstorms | Limestone County experiences many thunderstorms each year. The county is most susceptible to thunderstorms during the spring, summer, and late fall. Most of the damage caused by thunderstorms results from straight-line winds, lightning, flash flooding, and hail. Occasionally, thunderstorms will spawn tornados. Damage from thunderstorms can have a wide range of severity. Each jurisdiction within Limestone County is at risk for thunderstorm events.

On August 25, 2007, Limestone County experienced a thunderstorm event that resulted in **\$1 million** in property damages. A slow-moving cold front pushed into unstable, tropical air overnight on the 24th, producing wind damage and flash flooding in many areas. As this cold front continued to push further southeast during the day on the 25th, thunderstorms ahead of the front produced isolated large hail as well as damaging winds during the afternoon and evening hours. Winds resulting from thunderstorms produced roof damage to businesses on Shaw Road off U.S. Highway 72 west of Athens in the Ripley Community.

On October 18, 2007, Thach in Limestone County experienced a thunderstorm event that resulted in **\$1 million** in property damages. An isolated supercell thunderstorm moved northeast into Lawrence County during the early to mid-afternoon along a warm frontal boundary. This storm produced an EF1 tornado which produced minor damage. Later in the evening, a broken line of strong to severe thunderstorms along and ahead of an approaching cold front moved east into northern Alabama, continuing until just after midnight on the 19th. A tree was blown down on a home on New Bethel Road in Elkmont.

Limestone County experienced **394** thunderstorm events since 1965 resulting in a greater than 100% probability that a thunderstorm event will occur on an annual basis. The total amount of damages for the 394 thunderstorm events were **\$10,125,000**. The referenced thunderstorm event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten-year period and serves as the extent/range of magnitude or severity that could be experienced by Limestone County due to a thunderstorm event; the ranking is minor to major. The extent of a thunderstorm event for Limestone County is 75 miles per hour winds and property damages of one million per event.

Primary effects from thunderstorms in Limestone County would include:

- Straight-line Winds
- Lightning
- Flooding
- Hail
- Spawning Tornados

Hazardous results from significant thunderstorms in Limestone County would include:

- High winds can cause downed trees and electrical lines resulting in loss of power.
- Severe storms are capable of producing intense lightning that poses many threats to people and infrastructure and can ignite fires.
- Heavy rains can produce severe storm water run-off in developed areas and cause bodies of water to breach their banks.
- Large hail can injure people and livestock and damage crops.

Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles

- Severe thunderstorms can produce tornados that destroy anything in its path, resulting in loss of power, shelter, and potential loss of life.

Tornadoes | Most tornadoes do not touch the ground, but when the lower tip of a tornado touches the earth, it can cause extensive damage. Tornadoes often form in convective cells such as thunderstorms or at the front of hurricanes. Most tornadoes last less than 30 minutes but can exist for more than an hour. In Alabama, the typical tornado season extends from March through early June, with April and June being peak months for tornado activity. Additionally, Alabama experiences a secondary tornado from November through December. Limestone County falls in Wind Zone IV, a zone that is said to have witnessed a higher frequency of tornadoes than other designated wind zones. Zone IV has also witnessed some of the deadliest tornadoes in history.

Limestone County experienced **63** tornadic events between 1950 and 2020. These events resulted in **\$50,000** in crop damage, an estimated **\$1.01 billion** in property damage, **299** injuries and the deaths of **24** people. Areas with higher population densities post the greatest potential for property damage, injury, and death.

Landslides | There have been Limestone County experienced 0 or unknown landslide events in a 10-year period resulting in an unknown probability that a landslide event will occur on an annual basis. The total amount of damages for the unknown landslide events was \$0 with an unknown estimation of expected annual damages from future events. The extent/range of magnitude or severity that could be experienced by Limestone County due to a landslide event; the ranking is minimum to minor – according to the U. S. Geological Survey, Limestone County’s extent for a landslide event occurring is moderate.

Primary effects from landslide in Limestone County would include:

- Property damage
- Impassable roads
- Sediment erosion
- Underground infrastructure damage

Hazardous results from landslide in Limestone County would include:

- Landslides move with tremendous force capable of destroying most structures in its path while carrying anything it encounters.
- Material from landslides can damage and destroy roads as well as block them with debris, resulting in disruption to business and other activity.
- Removed sediment can leave the surrounding area bare and prone to erosion.
- The flow of a landslide can rip underground pipes and wiring from an area as well as bury them deeper under debris, creating a loss of services.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

Lightning | Lightning typically occurs as a by-product of a thunderstorm and can cause substantial property damage and loss of human lives. Each jurisdiction is at risk for lightning events. Lightning strikes can cause power outages, fires, electrocution, and disruptions to communication systems. The NOAA NCDC reported **29** lightning events since 1996, resulting in **four injuries** and **\$1,210,000** in property damages

The probability of a lightning strike causing damage somewhere in Limestone County is high. However, because the impacts are so localized, the site-specific incidence of a lightning strike occurring is considered very low.

A lightning event occurred on June 4, 2010, as daytime heating and a weak boundary extending from eastern Virginia southwest into northern Alabama sparked scattered strong to severe pulse thunderstorms during the afternoon and evening. A few storms in Marshall and Limestone counties knocked down several trees in the Horton and Douglas Communities. A man was struck by lightning on Paradise Shores Road and sustained non-life-threatening injuries. One injury occurred as a result of this storm.

On July 26, 2010, scattered strong to severe pulse storms developed along an outflow boundary just north of the Tennessee River during peak daytime heating. This storm produced scattered reports of wind damage, isolated flash flooding and one lightning injury. A severe microburst on the east side of Athens heavily damaged a gas station and nearly uprooted some trees as well. One female was struck and injured by lightning while on Highway 31 North. One injury occurred as a result of this storm.

On August 3, 2011, a series of severe thunderstorms produced widespread wind damage. One of the storms knocked a tree down onto a mobile home, killing one occupant. Wind speeds up to **110** mph knocked a series of power poles down as well. Several power outages were reported due to lightning or trees being knocked down onto power lines. A lightning strike from severe thunderstorms moving through Limestone County caused a fire that burned the Athens Church of God to the ground. As a result of this storm, **\$500,000** occurred in property damages.

Limestone County experienced **29** lightning events since 1996, resulting in an 100% probability that a lightning event will occur on an annual basis. The total amount of damages for the 29 lightning events was **\$1,210,000** with **19** lightning events causing damage resulting in an estimated **\$55,790** of expected annual damages from future events. The referenced lightning event(s) serves as the extent/range of magnitude or severity that could be experienced by Limestone County due to a lightning event; the ranking is minimum to minor. Limestone County is at a moderate risk of lightning incidences. According to the Vaisala's National Lightning Detection Network (NLDN), Limestone County's extent for lightning flashes per square mile per year is from six to twenty-eight and one-half million in property damages per event.

Primary effects from lightning in Limestone County would include:

- Power Outages
- Wildfires
- Electrocution
- Disruption of Communication Waves

Hazardous results from significant lightning in Limestone County would include:

- Power outages result in tremendous losses for food distributors and individuals due to loss of refrigeration as well as disruptions to routine business operations.
- Fires destroy most everything it encounters and can be detrimental to the health of any living organism due to the massive smoke cloud it produces.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

- Electrocuting of electronic devices such as water and sewer pumps can cause disruption in service leading to unsanitary conditions and lack of potable water.
- Disrupted communications from electrical storms can result in inability to communicate with other agencies, making preparation or recovery from a storm nearly impossible.

Land Subsidence / Sinkholes | In Limestone County, sinkholes are common where the rock below the land surface is limestone, dolomite, or salt that can naturally be dissolved by ground water. As the rock dissolves, cavities and caverns develop underground. Sinkholes may be dramatic if the land stays intact for some time until the underground spaces just get too big, and a sudden collapse of the land surface occurs.

Historically, land subsidence or sinkhole events have not been well documented. Limestone County geology has a low susceptibility to such events; therefore, is at a slight risk for sinkholes.

The probability of future occurrences cannot be predicted due to a lack of historical records and detailed geologic studies. Areas in Limestone County underlain by carbonate rocks and characterized by the presence of subsurface cavities, sinkholes, and underground drainage are called "karst terrains." It is these karst areas that are most susceptible to sinkhole development and subsidence.

As development continues in rural areas of Limestone County it is likely that sinkholes will begin to have a greater impact on communities. When subsidence occurs in developed areas it can have a significant impact on communities including loss of property values, increased insurance costs and potential injuries.

In Limestone County, sinkholes are common where the rock below the land surface is limestone, dolomite, or salt that can naturally be dissolved by ground water. As the rock dissolves, cavities and caverns develop underground. Sinkholes may be dramatic if the land stays intact for some time until the underground spaces just get too big and a sudden collapse of the land surface occurs. Some sinkholes are formed due to the leak in underground storm drains and sewer systems; when they collapse, the damage can be seen for many miles due to the repairs that become necessary.

The probability of future occurrences based on past experiences during this plan's study period is 10% annual probability a sinkhole will occur in Limestone County. These are random events, which can be influenced by drought conditions.

Limestone County experienced **one** significant sinkhole/expansive soil events during a 10-year period resulting in a 10% probability that a sinkhole/expansive soil event will occur on an annual basis. The total amount of damages for the one sinkhole/expansive soil events was \$0 or unknown with 0 sinkhole/expansive soil events causing damage resulting in an unknown estimation of expected annual damages from future events. The extent/range of magnitude or severity that could be experienced by Limestone County due to a sinkhole/expansive soil event is minimum to minor based on the lack of historical records and detailed geologic studies. The sinkhole extent for Limestone County during this plan's study period is a 7-foot deep hole.

Primary effects from sinkholes in Limestone County would include:

- Property damage
- Sediment erosion
- Impassable roads
- Infrastructure damage

Hazardous results from sinkholes in Limestone County would include:

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

- When they are formed on land, they can change the general topography of the land area and divert streams of underground water.
- If they form suddenly in areas with heavy population, they can cause a lot of damage to human life and property, as all in the area of the sinkhole may be lost.
- They can be dangerous to the foundations of buildings. Total buildings could be lost.
- Toxic chemicals beneath the earth can come up and may pollute the groundwater.

Wildfires | Limestone County is at a slight to moderate risk of a wildfire. Most of wild land fires occur on privately owned lands. Additionally, most of the fires occur in areas where homes or structures are endangered. These areas are known as the wild land urban interface and are defined as areas where development meets wild land vegetation, both of which provide fuel for fires. The wild land urban interface areas have increased significantly throughout the country, and now face the risk of major losses from wildfires. In Limestone County, most wild land urban interface areas are considered “intermixed.”

Instead of having large forest areas surrounding an isolated town, Limestone County contains many scattered homes and farms spread across the forest areas. In addition to affecting people. Wildfires may severely impact livestock inflicting a severe economic impact on farmers. Timber loss to fire creates an economic loss to both the private landowner and the country’s economy. Wildfires in Limestone County generally are moderate in intensity, resulting in destruction of undergrowth and some timber. The soil surface layer of the forest recovers quickly, minimizing erosion and water quality impacts. The entirety of Limestone County is vulnerable to wildfires. However, according to the U.S. Forestry Service, Limestone County is in an area where the current fire danger conditions are low to moderate.

Limestone County experienced **191** wildfire events in a thirteen-year period, resulting in a significant probability that a wildfire event will occur on an annual basis. The total amount of acres burned for the 191 events was 1,036.4, equating to an average of 80 acres burned per wildfire event. The extent/range of magnitude or severity that could be experienced by the County due to a wildfire event has a minimum to minor rating.

Winter Storms/Winter Weather | Limestone County is vulnerable to extreme winter weather conditions such as extreme cold temperatures, snow, and ice. Limestone County commonly has extreme cold and winter storm events. These events impact the county in a variety of ways. Ice and small amounts of snow can cripple the county. Drivers are not accustomed to driving in these conditions; therefore, many accidents occur. Snow and ice can weigh down tree limbs and power lines causing them to break, resulting in power failure and property damage. Local businesses and residents are not equipped with generators to restore power during these severe winter weather events. Also, many homes may not be properly insulated, leading to health concerns and deaths. Since these storms have no defined track, all residents of Limestone County are vulnerable to severe winter storms.

On October 28-29, 2008, countywide temperatures dropped to below freezing for more than 5 hours. Some of the lows reached were Athens : **30°** , Belle Mina : **25°** , Pryor Field : **29°** , and Sardis Springs : **26°** .

On January 29, 2010, a mix of rain, sleet, and snow changed to primarily freezing rain during the day. This produced accumulation of ice between **0.25** and **0.35** inches on trees and elevated surfaces, along with a few tenths of an inch of snowfall through the early afternoon hours. The highest ice accumulation of **0.35** inches was reported in the Ardmore community. One elderly woman was injured in a wreck due to the slick conditions.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

On February 8, 2010, a winter weather event resulted in one to four inches of snowfall accumulation across the county. The highest snowfall accumulation was reported in Elkmont. Several car accidents occurred across the county. Another winter weather event on February 2, 2013, resulted in a combination of light snow and sleet accumulation of around a quarter of an inch about a mile east of Cartwright, Alabama. No damages were reported.

On October 26, 2013, a frost freeze event resulted in the temperature dropping to **27** degrees at Pryor Field Regional Airport (ASOS). No damages were reported.

On January 14, 2013, a light glaze of ice was reported at the corner of Highway 99 and Tillman Mill Road. It was estimated that around a tenth of an inch of freezing rain had accumulated on trees and power lines about eight miles northwest of Athens. No damages were reported.

On January 9, 2011, a heavy snow event resulted in most locations across the county receiving eight to ten inches of snowfall. Even some amounts between ten and twelve inches fell in extreme northwestern portions of the county.

On January 17, 2013, one half inch of snow was reported off County Line Road and Mill Road, about two miles west of Madison, Alabama in Eastern Limestone County. No damages were reported.

Limestone County experienced **75** winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold events in since 1996 when the NCDC first recorded such events in Limestone County, resulting in a greater than 100% probability that a winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold event will occur on an annual basis. The total amount of damages for the **75** winter storm/winter weather events was **\$1,262,000** to property and **\$1,001,000** to crops. The referenced winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold event(s) serves as the extent/range of magnitude or severity that could be experienced by Limestone County due to a winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold event; the ranking is minimum to minor. According to noaa.gov, Limestone County's extent is **25°** weather, **.35** inches of ice and **8-10** inches of snowfall.

Primary effects from winter storms in Limestone County would include:

- Injury and damage from downed trees and utility lines due to the snow and ice load
- Widespread impassable roads and bridges
- Disruption of services and response capabilities
- Crop and other agricultural damage

Hazardous results from winter storms in Limestone County would include:

- Loss of power, communications, and fires are common results of severe winter storms. Widespread power outages close down businesses and impact hospitals, nursing homes, and adult and child care facilities serving special needs populations.
- Loss of transportation ability will affect emergency response, recovery and supply of food and materials.
- Numerous vehicle accidents in a winter storm can stretch thin the resources of fire rescue and law enforcement.
- Stranded motorists and the homeless can create a food and housing shortage within the community.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

- The widespread nature of winter storms usually creates a strain on police, fire and medical providers due to the volume of calls for service.

Socially Vulnerable Populations

Natural hazard events have different impacts across Limestone County populations. These populations can be quantified by social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey (ACS). Limestone County has **560** square miles of land and **47** square miles of water, totaling an area of **607** square miles. Population density is currently estimated at **166.2** persons per square mile.

Table 5.53 depicts the county’s population characteristics by jurisdiction and by census tract. The City of Athens is the most populated jurisdiction, followed by the Towns of Ardmore, Elkmont, Lester, and Mooresville. The county has sixteen census tracts. Regarding vulnerability, the larger the population of an area, the more people and structures are at risk of harm or damage. Tract 208.02 is the most populated tract and contains portions of the Athens and Huntsville communities. Tract 207 is the least populated, containing mostly unincorporated areas.

Table 5.53 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 and Over
Jurisdiction							
Limestone County	93,052	76,728	13,240	4,910	23,655	55,674	13,723
Ardmore	1,305	1,201	78	26	313	761	231
Athens	25,176	19,597	4,686	1,591	5,627	15,025	4,524
Elkmont	490	458	31	8	127	264	99
Lester	190	184	9	2	43	125	22
Mooresville	89	76	10	3	18	53	18
County Census Tract							
Tract 201.01	4,890	4,703	178	97	1,382	2,650	658
Tract 201.02	5,600	5,401	173	48	1,209	3,427	964
Tract 202.01	4,957	4,409	202	346	1,361	2,696	900
Tract 202.02	5,423	5,214	234	42	1,317	3,351	755
Tract 203	3,815	3,650	168	37	861	2,391	563
Tract 204.01	5,796	5,399	323	103	1,440	3,257	1,099
Tract 204.02	5,704	5,009	353	349	1,627	3,258	822

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 205	2,741	2,178	577	26	324	1,330	1,087
Tract 206	4,743	3,649	769	585	1,191	2,755	797
Tract 207	2,283	1,871	333	104	636	1,469	178
Tract 208.01	8,267	6,331	1,575	702	1,822	5,446	999
Tract 208.02	10,164	8,930	905	381	2,518	6,188	1,458
Tract 209	4,596	3,563	936	240	991	2,672	933
Tract 210	2,543	1,279	1,183	122	519	1,745	279
Tract 211	6,497	4,619	1,699	330	1,529	3,950	1,018
Tract 212	15,033	10,523	3,632	1,398	4,928	8,889	1,216

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies. In addition to the racial and age composition within the county, income levels are important when identifying vulnerable populations. Lower income individuals may not have the resources to prepare for or recover from disasters. Table 5.54 shows the median household income, per capita income, and poverty level data for the jurisdictions and census tracts in Limestone County.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. The City of Athens and the Towns of Elkmont and Mooresville each have median household incomes that exceed the state average; over half the tracts in Limestone County meet this designation. Mooresville is the only jurisdiction that exceeds the national figure.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Athens and Mooresville are the only two jurisdictions with per capita incomes exceeding the state average; Mooresville exceeds both the national and state figures. Several county tracts exceed the state's per capita figure – Tract 212 has the highest per capita figure in the county at **\$35,473**.

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. Ardmore is the only jurisdiction with a poverty figure higher than both the state and national figures. The Town of Mooresville is the only community, incorporated or unincorporated, noted as having a zero percent population below poverty level figure. Tract 207 has the highest percentage of persons below poverty in Limestone County at **33.7%**.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Table 5.54 | Limestone County Income Data by Jurisdiction and Census Tract (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Limestone County	\$56,460	\$27,699	12,384	13.7%
Ardmore	\$38,214	\$18,851	244	18.7%
Athens	\$49,549	\$29,336	3,616	14.7%
Elkmont	\$56,071	\$24,106	7	1.4%
Lester	\$40,000	\$20,814	24	12.6%
Mooresville	\$108,750	\$69,304	0	0.0%
Tract				
Tract 201.01	\$55,921	\$22,279	645	13.3%
Tract 201.02	\$44,256	\$25,930	566	10.1%
Tract 202.01	\$43,764	\$21,065	1,227	24.8%
Tract 202.02	\$59,432	\$26,200	745	13.9%
Tract 203	\$58,667	\$26,539	308	8.1%
Tract 204.01	\$51,102	\$29,134	1,260	21.7%
Tract 204.02	\$61,194	\$23,461	1,119	19.6%
Tract 205	\$31,071	\$21,035	321	13.2%
Tract 206	\$30,151	\$16,626	1,084	24.3%
Tract 207	\$23,586	\$21,487	770	33.7%
Tract 208.01	\$71,076	\$22,575	933	15.5%
Tract 208.02	\$84,318	\$33,171	309	3.0%
Tract 209	\$59,537	\$34,445	454	9.9%
Tract 210	\$45,993	\$25,062	210	8.3%
Tract 211	\$56,928	\$32,055	893	13.7%
Tract 212	\$89,944	\$35,473	1,540	10.2%

Vulnerable Structures

Housing is an important consideration of mitigation planning as residential development is often the most common form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.55 shows housing characteristics for Limestone County by jurisdiction.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

In Limestone County there were a total of **36,520** housing units in 2018. The City of Athens had the highest number of mobile home units within a municipality, while the Town of Lester has the highest percentage of mobile homes within a municipality. Mobile home units are historically very vulnerable to a variety of hazards and prone to high amounts of damage and complete destruction.

Table 5.55 | Limestone County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Limestone County	36,069	4,536	12.6%
Ardmore	545	14	2.6%
Athens	10,186	395	3.9%
Elkmont	169	20	11.8%
Lester	58	11	19.0%
Mooreville	34	0	0.0%

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Limestone County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. A listing of the County’s facilities can be found in the appendices of this document. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

5.7 Jurisdictional Vulnerability Overview | Limestone County

Table 5.56 Natural Hazard Probability and Damage Estimates In Limestone County, AL						
Limestone County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	28	15	None	1.9 events/yr	N/A
	Earthquakes	6	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	80	24	\$334,000	3.3 events/yr	\$13,917
	Hail	167	64	\$82,000	2.6 events/yr	\$1,281
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 63 Windstorms: 9 Thunderstorms: 394	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$1,018,092,000 Windstorms: \$87,000 Thunderstorms: \$10,395,000	Tornadoes: 1.3 events/yr Windstorms: < than 1 event/yr Thunderstorms: 6.5 events/yr	Tornadoes: \$20,362,840 Windstorms: \$3,625 Thunderstorms: \$170,410
	Landslides	2	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	293	62	Unknown	4.7 events/yr	Unknown
	Lightning	29	24	\$1,210,500	1.2 events/yr	\$50,438
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	191	13	N/A	14.7 events/yr	Unknown
	Winter Storms/Winter Weather	84	24	\$2,567,000	3.5 events/yr	\$106,958

Table 5.56 provides probability and damage estimates for the entire Limestone County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated 14.7 events taking place each year.

Natural Hazard Vulnerability in Madison County

Table 5.57 provides an overall summary of Madison County’s vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: L to indicate *low* vulnerability; M to indicate *medium* vulnerability; and H to indicate *high* vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.61 on page 5-153 further breaks down natural hazard probability and damage estimates in Madison County.

Table 5.57 | Hazard Vulnerability by Jurisdiction in Madison County, Alabama

	Natural Hazards	Municipalities						
		Gurley	Huntsville	Madison	New Hope	Owens Cross Roads	Triana	Unincorporated County
Madison County	Dam Failure	L	L	L	L	L	L	L
	Drought / Extreme Temps.	L	L	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L	L
	Flooding	M	H	M	M	H	M	M
	Hail	L	M	M	L	L	L	H
	High Winds - High / Strong Winds	L	L	L	L	L	L	L
	High Winds - Tornadoes	H	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H	H
	Landslides	M	M	M	M	M	M	M
	Land Subsidence / Sinkholes	M	M	M	M	M	M	M
	Lightning	H	H	H	H	H	H	H
	Wildfire	L	L	L	L	L	L	L
	Winter Storms / Winter Weather	M	M	M	M	M	M	M
	Key: L Low Risk ; little damage potential (< 5% damage to the jurisdiction); M Medium Risk ; moderate damage potential (5-10% potential damage to the jurisdiction); H High Risk ; significant damage to the jurisdiction (10%> potential damage)							

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

Dam Failure | Dam and/or levee failure events are rare in Madison County and historical information does not exist. The risks associated with dam/levee failures are the same as those risks associated with flooding and it is confined to a well-defined area.

During the 2014 Madison County HMP revision, a debate among the Committee took place regarding the definition of a dam for the purposes of use within the 2015 plan. Furthermore, discussion included the inaccuracy of HAZUS 2012 dam data, and reduced the number of dams listed within previous versions of the hazard mitigation plan from eleven in the October 2012 version to four in the 2014 update.

The extent for dam failure is a failure of the Guntersville Dam on the Tennessee River during probable maximum flood conditions for which the potential is low. The greatest risk to Madison County would result from a failure of TVA's Guntersville Lake Dam located outside of Madison County on the Tennessee River, about 25 miles upstream from Huntsville. During the 2014 update process, the validity of the following paragraph, included in prior versions of the plan, was brought into question:

“Madison County has many small dams. Nine are large enough to be listed on the Corps of Engineer's Dam Inventory. None of the dams are known to directly threaten life or residences. One dam would affect property in Madison County in the event of failure: the Madison Lake Dam.”

Drought / Extreme Temperatures | Madison County occasionally experiences short droughts and extreme summer heat. According to NOAA, there were **127** incidents of heat and/or extreme heat recorded between 1996 and 2020, and **37** droughts were recorded between 1996 and 2020. Madison County falls in an area that may experience humid, short droughts and extreme summer heat. This event has an impact on electric, water service providers, and the agricultural industry in Madison County. The extent of extreme heat is **111** degrees Fahrenheit. Based on limited historical information from the Storm Events Database, Madison County can anticipate up to **14** days annually of excessive heat and drought conditions. Though historically drought has not caused major problems, the region is susceptible to extreme drought conditions.

Flooding / Flash Floods | Madison County has a history of flooding and flash flooding. One-hundred and ninety (**190**) different flood and flash flood events have resulted in two deaths, one injury and **\$3.471 million** in property and **\$5,000** in crop damages. Most flooding in Madison County is of a flash type, along streams and tributaries. One event that took place on June 28, 1999, is further described by the NCDC as follows:

*Heavy rainfall of four to seven inches, most of which occurred in just less than two hours, flooded the Huntsville area. According to newspaper reports, one woman was killed when her car stalled on a flooded bridge on Vermont Road. As she exited the car, she was swept away in the water. A television cameraman was injured when he was swept away by high water while filming. He was rescued by the Huntsville Fire Department. Several other motorists were stranded in high water and were rescued by the fire department. Numerous roads in the area were flooded and subsequently closed. Many local streams and creeks were out of their banks, sending several feet of water into approximately **300** homes and businesses. Several residents were rescued from their homes. Several thousand area customers were without power through the early morning hours due to lightning strikes. A mudslide occurred in Monte Sano State Park covering part of the park road.*

(Source: <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms>)

The flooding that occurred between May 6 and May 9, 2003, resulted in a Federal Disaster Declaration on May 12, 2003, for 38 counties, including Madison. For four weeks following the declaration, state and federal financial assistance was available to help individuals, families and businesses recover from losses suffered in the severe

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

storms, floods, and tornadoes of May. The total assistance available exceeded \$13.4 million. The impact on Madison County from this event was significant. In the years since 2003, Madison County has been awarded \$1.8 million dollars in mitigation funding related to this disaster.

During 2015, there were **11** Flood events. Madison County contains the following waterways: Aldridge Creek, Barren Fork Creek, Flint River, Huntsville Spring Branch, Hurricane Creek, Indian Creek, Limestone Creek, Mountain Fork, and Paint Rock River. Each waterway ends in the Tennessee River which is the southern border of Madison County. The extent of flooding is from a crest of **26.10** feet at Whitesburg on the Tennessee River. Based on the information available from NOAA, it appears Madison County can expect to experience flash flooding 2 times per year. The expected damage resulting from flooding is approximately \$682,166 per year. Although we can extract data and probability of occurrence from historical information, they do not necessarily predict future occurrences.

Hail | Hail is experienced in some capacity almost annually in Madison County. All areas of Madison County are equally vulnerable to hail. According to the National Climatic Data Center (NCDC), there have been **360** recorded hail events within Blount County since 1961. These events have produced a total of **\$432,000** in property damage and **\$7,000** in damage to crops.

It is certain that hail will continue to be an annual occurrence in Madison County jurisdictions. Past trends show an average of **eleven (11)** hail events per year. Previous events have produced pea-size to golf ball sized hail depending on the severity of the event to which the hail is connected.

High Winds / Strong Winds | Since 1994, twenty-nine (**29**) significant hurricanes/tropical storms/High Wind/Strong Wind events have affected Madison County. It is difficult to estimate how many severe thunderstorms and tornadoes may have been caused by a tropical storm or hurricane. All of the tropical systems were well below tropical storm strength when they affected Madison County. The strongest of these storms was Hurricane Ivan.

Madison County is susceptible to the effects of coastal storms. Since Madison County is inland, the primary risk is the impact of high winds, the formation of tornados, and flooding. Ten percent of deaths in the United States that are associated with hurricanes are due to tornadoes. Owing to its distance from the coast, Madison County is not susceptible to the direct impacts of hurricanes or tropical storms with regards to storm surge. However, the extent of impact would be comparable with that of severe thunderstorms, flooding, and tornadoes, as tropical systems have the potential to produce those hazards.

Based on limited historical information from the Storm Events Database, a hurricane or tropical storm impacts the county every couple of years and usually indirectly. According to the NCDC, Madison County has sustained **\$2,254,000** in property damage and **\$1,500** in crop damage from high wind/strong wind events. Although one can extract data and probability of occurrence from historical information, the risk of a hurricane or tropical storm and the location of damage are random.

Thunderstorms | The Storm Events Database contains roughly 677 reports of damage from severe thunderstorms in Madison County since 1956. These have caused at least 12 deaths, 20 injuries, **\$9,983,300** in property damage and **\$17,000** in crop damage.

Since 1975 Madison County has experienced over 500 severe thunderstorms. Large hail, though very rare, can cause injury or loss of life. Normally it only causes damage to automobiles, trees, and crops. Both lightning and high winds frequently cause loss of life and considerable property damage. The power of lightning's electrical charge and intense heat can electrocute on contact, split trees, ignite fires, and cause electrical failures.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

The extent of thunderstorm/wind events is **85** knots, lightning causing one or more deaths or injuries and damage of **\$600,000**, and hail is 3.00 inches. The extent/range of magnitude or severity that could be experienced by Madison County due to a lightning event is based on the Vaisala's National Lightning Detection Network (NLDN) at NOAA.gov and is 6-8 average flash density fl/sq mi/yr cloud-to-ground lightning incidences.

The probability of a severe thunderstorm occurring depends on certain atmospheric and climatic conditions. Although the threat may be low, the potential for severe thunderstorms is great. The residents of Madison County can expect to experience annual damages of approximately **\$280,000** from severe thunderstorms. The damages include the sum of annual damages resulting from high wind, hail, and lightning. The probability of annual occurrence, based on historical averages, is 2.8 events per year. Although we can extract data and probability of occurrence from historical information, the risk of a thunderstorm occurring, and the location of damage appear to be a random event.

Tornadoes | According to the NCDC, a total of **79** tornadoes have resulted in **47** deaths and **791** injuries within Madison County since 1951. The cumulative number of tornadoes has caused over **\$524,982,250** dollars in property damage.

The county has suffered three major damage-causing incidents by tornadoes. In April of 1974 two consecutive F5 tornadoes touched down causing a total of **220** injuries and **14** deaths. On November 15, 1989, a similar situation occurred when two consecutive F4 tornadoes touched down in the county. On April 27, 2011, seven tornadoes touched down in Madison County, including an EF4 tornado, which resulted in 9 deaths and over **80** injuries, and causing over **\$8 million** in damage to public infrastructure alone. The April 27, 2011 event is considered to be Alabama's worst natural disaster.

The following is a report on the November 15, 1989 tornado.

*The first tornado touchdown began at 34° 39'N/86° 39'W and ended at 34° 44'N/ 86° 26'W cutting a path 13 miles long and 880 yards wide that caused the death of **21** people, injured **463** and **\$250 million** in property damage. The second tornado touched down in the same location the previous one ended and continued the path of destruction for 6 additional miles (end point 34° 47'N/86° 22'W) at the same width causing \$250 million more in damage but no additional injuries or deaths.*

The following is a report on the April 27, 2011 EF4 tornado.

*The tornado crossed in Madison County east of Limestone County Prison...along Orvil Smith Road with a path width of ½ mile. The tornado maintained an EF-3 strength with winds of 140 to 160 MPH and a path width between ¼ and ½ mile for much of its track northeast across Old Railroad Bed Road and Ford Chapel Road, before narrowing to around **300** yards in Anderson Hills. Dozens of well-constructed homes were destroyed, in some cases with all exterior walls collapsing in both single and two-story homes. At least 3-5 mobile homes were either destroyed or swept completely clean with no evidence of debris. At least 2 other well-constructed homes had complete wall collapse in Anderson Hills and were shifted off their foundation. This damage was once again consistent with low end EF-4 wind speeds of around **170** MPH. Numerous tall pines and other hardwood trees were snapped, uprooted, and debarked along the entire path. The path width widened once again to around ½ mile as the tornado tracked through residential areas along Bald Eagle Lane, Old Eli Road and Ginnery Row. At least 2 of these homes had complete wall collapse, but these structures had foundation straps and nails in lieu of bolts. At least one fatality was confirmed at one of these residences. Eight additional fatalities occurred in Madison County along the track of this violent tornado. The damage was consistent with high end EF-3 wind speeds*

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

between 140 and 160 MPH. The tornado lifted just south of the Patterson Lane after twisting irrigation equipment and snapping additional trees. Just to the northeast of this location, the tornado touched down again as an EF-0 tornado with peak wind speeds of 70 MPH. Along Grimwood Road and Walker Lane, south of Hazel Green, the tornado uprooted and snapped several trees. The tornado weakened or may have lifted briefly across extreme northeast Madison County before re-strengthening again as it entered Lincoln County in Southern Middle Tennessee.

The entire county is equally susceptible to damage from tornadoes. The extent for tornadoes is an F5/EF5 tornado.

Based on historical averages, Madison County has experienced **\$3.6 million** in damages over a 52-year period or **\$70,000** per year with 0.8 annual events. A death or injury causing tornado has occurred on average once every 15 and 6 years, respectively. Historical data cannot predict the paths and severity of future tornadic activity. Consequently, all areas should be regarded as equally at risk for tornadoes.

Landslides | Several landslide events occurred in Madison County during the 1990's. One such event was on June 28, 1999. The landslide occurred in Monte Sano State Park covering part of the park's road.

The effects of landslides are often misrepresented as being the result of the landslide's trigger event, such as a flood, earthquake, volcanic eruption, hurricane, or coastal storm. Madison County has a risk of landslide occurrences.

Areas in Madison County where landslides have occurred previously are also susceptible to future landslides. The extent for landslides is 2500 feet by $\frac{1}{4}$ to $\frac{1}{2}$ mile wide (per City of Huntsville Planning Department). The topography and geology of Madison County is susceptible to the effects of landslides, especially in the eastern areas of the county where colluvial soils are present. Colluvial soils and increased development in areas with colluvial soils increase the likelihood of landslides having an impact on Madison County.

There are multiple areas in Madison County with colluvial soils. The impact from a landslide can include loss of life (According to FEMA: 25 –50 people annually in the United States), damage to buildings, lost productivity, disruption in utilities and transportation systems, and reduced property values.

Land Subsidence / Sinkholes | Numerous large and small sinkholes are present throughout Madison County. Madison County is in a segment of the state where the geology is highly susceptible to subsidence. When subsidence occurs in developed areas it can have a significant impact on the communities including loss of property value, increased cost on insurance and potential injury.

Madison County is underlain by carbonate rocks, primarily limestone. The County is underlain by a dense karst network of sinkholes, swallow holes, springs, and caves, and is part of the TAG (Tennessee-Alabama-Georgia) region - one of the densest karstic areas of the country. Although there are no State or County regulations requiring reporting of sinkholes, the Geological Survey of Alabama (GSA) receives an average of 10 calls per year about Madison County sinkholes forming along roadsides and on private property. Ongoing karst research and mapping by the GSA has identified an active karst system across the County, including 450 sinkhole depressions and over 80 springs (on USGS topographic maps).

Given past occurrences of sinkholes and the geologic setting of the County, sinkhole development and active natural growth will continue on an annual basis (100% probability of occurrence) in Madison County. Factors that may increase sinkhole growth and occurrence rates include (but are not limited to) drought, heavy rain storms, and urban

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

development. Prediction of numbers of new sinkholes per year is not possible at this time given lack of reporting regulations.

*The above section regarding Land Subsidence and Sinkholes was compiled with considerable input from Dr. Sandy Ebersole at the Geological Survey of Alabama per the 2016 Madison County Hazard Mitigation Plan.

Lightning | Madison County experiences multiple lightning events every year. All areas of Madison County are equally vulnerable to lightning. According to the National Climatic Data Center (NCDC), there have been **65** damaging lightning events within Madison County since 1995, resulting in four deaths and nine injuries. These events have produced a total of **\$2,951,500** in property damage and **\$5,000** in damage to crops.

It is certain that lightning will continue to show annual occurrences throughout all of Madison County jurisdictions.

Wildfires | There are four categories of wildfires that are experienced throughout the United States: wild land fires and brush fires, interface or intermix fires, firestorms, and prescribed fires and prescribed natural fires. The two primary categories of wildfires that are experienced in Madison County are wild land fires and interface or intermix. Wild land fires are fueled exclusively by natural vegetation. Interface or intermix fires are fueled by both vegetation and the built-up environment.

Madison County experienced **102** wildfire events in a thirteen-year period, resulting in a significant probability that a wildfire event will occur on an annual basis. The total amount of acres burned for the 102 events was 407.5, equating to an average of 4 acres burned per wildfire event. The majority of rural Madison County is farm land except for the mountains that are still timbered. The lack of major fires can be attributed to the urban areas surrounding Decatur and Huntsville, the Wheeler National Wildlife Refuge, and Redstone Arsenal being in the southwest portion of Madison County. It can thereby be inferred that, given the average number of wildfires per year and the low extent of fires of fires in the area, wildfires do not have a significant impact on the communities in Madison County.

Winter Storms/Winter Weather | Madison County frequently experiences winter storms and extreme cold. The greatest single event (since 1993) occurred in 1993 with a total of **13** inches of snowfall within 24 hours. Since 1993, there have been 53 recorded events.

During 2015, there were seven Winter Storm events and one Extreme Cold event. The entire county is equally at risk for winter storms and freezes. The extent of cold temperature is **-11** degrees Fahrenheit and snowfall of **24.0** inches.

Madison County does have a considerable risk of a winter storm occurring and it has a high threat of a winter storm affecting the area. This is a direct result to the area's ability to handle a severe winter storm as well as the terrain of the county. Based on the information available from NOAA, Madison County can expect a significant winter storm almost two times per year (1.78 times annually).

Socially Vulnerable Populations

Natural hazard events have different impacts across Madison County populations. These populations can be quantified by social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey. Madison County has **802** square miles of land and **11** square miles of water, equating to a total area of **813** square miles. Population density is currently estimated at **88.5** persons per square mile.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Table 5.58 shows population characteristics for Madison County by jurisdiction and by census tract. Huntsville is the most populated community, followed by Madison, New Hope, Owens Cross Roads, Gurley, and Triana. Regarding vulnerability, the larger an area’s population, the more susceptible people, and structures are to incurring injury and damage. Tract 109.01 is the most populated tract in the county that includes portions of the City of Huntsville. Tract 2.01 is the least populated tract with an estimated population of **897**.

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies.

Table 5.58 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 and Over
Jurisdiction							
Madison County	357,560	253,465	91,670	25,412	89,075	217,177	51,308
Gurley	738	615	126	63	187	451	100
Huntsville	193,663	123,859	61,996	14,148	46,511	116,838	30,314
Madison	48,275	37,310	7,905	4,924	12,846	30,249	5,180
New Hope	2,856	2,779	12	122	787	1,621	448
Owens Cross Roads	2,029	1,869	148	102	421	1,326	282
Triana	686	219	457	29	135	441	110
County Census Tract							
Tract 2.01	897	116	791	3	295	486	116
Tract 2.02	3,893	803	3,022	165	1,476	2,220	197
Tract 3.01	4,111	863	3,167	252	1,278	2,241	592
Tract 3.02	3,410	729	2,549	185	964	1,915	531
Tract 4.03	4,712	907	3,718	124	922	2,805	985
Tract 5.01	2,059	468	1,591	0	581	1,126	352
Tract 5.02	2,063	394	2,176	149	743	1,447	413
Tract 5.03	1,780	397	1,317	90	371	1,101	308
Tract 6.01	1,239	464	794	34	180	807	252
Tract 6.02	2,178	684	1,434	126	651	1,114	413
Tract 7.01	2,617	686	1,798	223	575	1,553	489
Tract 7.02	2,506	741	1,733	32	484	1,263	759

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 9.01	4,314	4,031	193	112	795	2,347	1,172
Tract 9.02	1,974	1,918	18	63	267	1,398	309
Tract 10	2,781	2,558	106	285	358	2,077	346
Tract 12	2,753	107	2,623	32	1,393	1,331	329
Tract 13.01	3,189	657	2,368	276	485	2,459	245
Tract 13.02	1,805	648	1,096	120	414	1,109	282
Tract 14.01	1,738	1,472	235	87	293	1,932	210
Tract 14.02	5,216	3,242	1,927	412	821	3,783	612
Tract 15	4,578	2,664	1,717	270	1,125	2,978	475
Tract 17	1,797	1,776	0	27	447	913	437
Tract 18.01	4,024	3,852	87	175	1,047	2,215	762
Tract 19.01	3,735	3,351	9	449	1,000	1,711	1,024
Tract 19.02	1,509	1,451	0	81	241	684	584
Tract 19.03	2,266	2,115	71	184	538	1,229	499
Tract 20	2,060	1,935	0	136	485	1,252	323
Tract 21	3,255	1,166	1,795	397	1,275	1,719	261
Tract 22	1,921	1,242	423	344	338	1,235	348
Tract 23	4,950	3,767	753	837	1,198	3,075	677
Tract 24	4,451	2,706	1,508	295	1,527	2,455	469
Tract 25.01	3,312	1,808	1,253	371	861	2,262	189
Tract 25.02	3,191	1,420	1,621	358	750	2,293	148
Tract 26	3,877	3,429	418	94	642	2,267	968
Tract 27.01	2,645	2,534	70	93	412	1,583	650
Tract 27.21	3,963	3,335	544	718	941	2,008	1,014
Tract 27.22	2,826	2,407	179	242	530	1,500	796
Tract 28.01	4,434	3,358	980	359	912	2,560	962
Tract 28.02	7,019	6,239	648	534	1,778	4,139	1,102
Tract 29.11	4,205	3,734	272	265	976	2,269	960
Tract 29.12	2,380	2,215	56	250	469	1,270	641
Tract 29.21	6,372	5,357	712	721	1,648	3,724	1,000
Tract 29.22	3,524	3,187	180	403	582	2,118	824
Tract 30	2,589	1,401	1,174	61	694	1,422	473
Tract 31	5,116	3,368	1,689	131	598	3,855	663
Tract 101	9,515	8,101	1,269	715	2,288	5,783	1,444
Tract 102	5,986	5,259	686	267	1,587	3,641	758
Tract 103.01	7,474	6,750	637	253	1,785	4,510	1,179
Tract 103.02	4,321	3,703	457	125	1,151	2,566	604

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 104.01	5,967	5,436	509	269	1,540	3,844	583
Tract 104.02	6,160	4,856	1,169	568	1,328	4,033	799
Tract 105.01	13,322	8,426	4,518	937	4,167	7,883	1,272
Tract 105.02	3,805	2,111	1,701	73	1,126	2,327	352
Tract 106.12	5,920	4,113	1,674	183	1,324	3,643	953
Tract 106.21	7,417	5,331	1,952	475	2,011	4,504	902
Tract 106.22	11,467	5,267	5,673	1,056	2,406	7,996	1,065
Tract 106.23	7,130	5,118	1,882	387	2,141	4,336	653
Tract 106.24	8,093	6,265	1,396	660	2,323	4,878	892
Tract 107.01	9,343	6,565	2,554	738	2,298	5,651	1,394
Tract 107.02	8,451	6,007	2,672	444	2,207	4,748	1,496
Tract 108	9,957	8,746	1,033	364	2,487	6,170	1,300
Tract 109.01	15,883	14,713	635	767	4,785	8,776	2,322
Tract 109.02	3,295	2,925	327	514	808	1,950	537
Tract 110.11	10,016	7,895	1,364	1,094	3,162	5,957	897
Tract 110.12	5,500	4,966	321	391	994	3,546	960
Tract 110.13	5,189	4,363	531	445	1,349	3,136	704
Tract 110.14	9,305	6,738	1,686	1,290	2,545	5,937	823
Tract 110.21	5,456	3,302	1,848	457	1,215	3,790	451
Tract 110.22	7,477	5,366	1,678	929	1,952	4,747	778
Tract 111	1,455	951	432	105	470	943	32
Tract 112	12,704	7,954	4,071	1,258	2,876	8,653	1,175
Tract 113	6,705	6,122	168	558	1,562	3,962	1,181
Tract 114	4,483	4,417	12	227	1,128	3,842	641

In addition to racial and age composition in Madison County, income levels are also important when identifying and planning for vulnerable populations. Lower income individuals have difficulty acquiring resources to prepare for or recover from disasters. Table 5.59 provides a breakdown of median household income, per capita income, and poverty level data for the jurisdictions and census tracts in the county.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. The Town of Triana is the only jurisdiction that has a median household income below the state’s figure. Only the City of Madison and the Town of Owens Cross Roads have median income figures that exceed the national figure. The City of Madison has the highest median household income figure in the county at **\$89,522**. Tract 110.12 has the highest median household income figure across Madison County at **\$140,833**; Tract 12 has the lowest at **\$11,657**.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Gurley, New Hope, and Owens Cross Roads have per capita estimates below the state’s figure; Huntsville, Madison, and Triana each have estimates that exceed the national average.

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Table 5.59 | Madison County Income Data by Jurisdiction (2018)

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Madison County	\$63,417	\$35,526	45,960	13.2%
Gurley	\$52,143	\$21,683	155	21.3%
Huntsville	\$53,840	\$34,589	32,890	17.7%
Madison	\$89,522	\$45,299	3,040	6.3%
New Hope	\$49,071	\$24,664	439	15.4%
Owens Cross Roads	\$67,917	\$30,661	127	6.5%
Triana	\$47,212	\$33,208	70	10.2%
Tract				
Tract 2.01	\$23,702	\$14,582	320	35.7%
Tract 2.02	\$30,020	\$9,095	767	39.3%
Tract 3.01	\$34,207	\$18,399	1,358	33.0%
Tract 3.02	\$27,283	\$16,306	1,078	32.0%
Tract 4.03	\$53,241	\$27,556	397	8.4%
Tract 5.01	\$42,500	\$19,284	423	20.8%
Tract 5.02	\$43,974	\$22,066	403	15.8%
Tract 5.03	\$48,897	\$23,206	173	9.8%
Tract 6.01	\$45,139	\$23,773	262	21.2%
Tract 6.02	\$34,565	\$16,355	742	34.2%
Tract 7.01	\$29,826	\$22,472	731	28.1%
Tract 7.02	\$25,966	\$22,043	565	23.0%
Tract 9.01	\$57,557	\$34,345	435	10.1%
Tract 9.02	\$53,319	\$33,197	228	11.7%
Tract 10	\$42,593	\$35,899	542	19.5%
Tract 12	\$11,657	\$8,351	1,845	67.0%
Tract 13.01	\$21,424	\$17,086	1,344	42.1%
Tract 13.02	\$36,875	\$24,208	419	23.3%
Tract 14.01	\$81,597	\$47,703	180	10.4%
Tract 14.02	\$44,452	\$29,961	881	17.0%
Tract 15	\$33,634	\$17,535	981	27.7%
Tract 17	\$93,583	\$60,960	38	2.1%

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 18.01	\$109,484	\$49,889	57	1.4%
Tract 19.01	\$117,813	\$61,528	65	1.8%
Tract 19.02	\$106,190	\$69,182	84	5.6%
Tract 19.03	\$157,417	\$77,849	40	1.8%
Tract 20	\$67,332	\$39,279	175	8.5%
Tract 21	\$18,152	\$12,313	1,941	59.6%
Tract 22	\$30,212	\$20,580	592	34.8%
Tract 23	\$31,148	\$22,272	1,734	35.0%
Tract 24	\$23,368	\$15,668	1,806	41.1%
Tract 25.01	\$19,492	\$12,822	1,527	46.1%
Tract 25.02	\$28,077	\$16,896	1,000	31.5%
Tract 26	\$54,706	\$38,394	534	14.6%
Tract 27.01	\$30,625	\$51,082	115	4.3%
Tract 27.21	\$73,850	\$43,994	371	9.4%
Tract 27.22	\$96,464	\$48,263	71	2.5%
Tract 28.01	\$51,113	\$30,774	903	20.9%
Tract 28.02	\$68,438	\$38,486	528	7.6%
Tract 29.11	\$77,969	\$39,066	135	3.2%
Tract 29.12	\$93,583	\$47,319	59	2.5%
Tract 29.21	\$65,057	\$38,129	804	12.7%
Tract 29.22	\$109,554	\$53,072	58	1.6%
Tract 30	\$18,867	\$15,959	1,245	51.7%
Tract 31	\$50,069	\$37,276	670	28.1%
Tract 101	\$67,985	\$32,543	1,197	12.6%
Tract 102	\$73,704	\$34,105	310	5.2%
Tract 103.01	\$50,089	\$26,946	833	11.2%
Tract 103.02	\$50,688	\$24,950	683	15.8%
Tract 104.01	\$49,417	\$25,904	575	9.6%
Tract 104.02	\$54,697	\$31,564	621	10.1%
Tract 105.01	\$92,917	\$35,800	760	5.7%
Tract 105.02	\$63,668	\$25,887	400	10.5%
Tract 106.12	\$75,500	\$35,971	129	2.2%
Tract 106.21	\$118,922	\$47,289	224	3.0%
Tract 106.22	\$41,261	\$30,496	2,840	27.5%
Tract 106.23	\$104,292	\$39,833	495	6.9%
Tract 106.24	\$91,787	\$37,002	279	3.4%
Tract 107.01	\$78,958	\$36,716	518	5.5%
Tract 107.02	\$66,418	\$30,471	1,145	13.5%

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 108	\$84,485	\$37,157	509	5.2%
Tract 109.01	\$118,774	\$57,235	355	2.2%
Tract 109.02	\$50,734	\$25,946	479	14.8%
Tract 110.11	\$121,882	\$43,247	366	3.7%
Tract 110.12	\$140,833	\$68,963	365	6.7%
Tract 110.13	\$83,596	\$38,833	98	1.9%
Tract 110.14	\$98,692	\$48,626	548	5.9%
Tract 110.21	\$57,133	\$37,778	423	7.8%
Tract 110.22	\$53,464	\$37,120	1,130	15.3%
Tract 111	\$84,375	\$32,004	52	5.5%
Tract 112	\$91,125	\$44,244	930	7.3%
Tract 113	\$73,466	\$36,126	324	4.9%
Tract 114	\$50,556	\$25,248	746	16.7%

The percent of persons below the poverty level in the State of Alabama is **17.5%**. The corresponding rate for the United States is **14.1%**. The City of Madison has the lowest percentage of persons below the poverty level; the Town of Gurley is estimated to have the highest figure at **21.3%**. Tract 12 has the highest percentage of persons below the poverty level at **67%**; Tract 18.01 has the lowest percentage at **1.4%**.

Vulnerable Structures

Housing is a critical consideration of mitigation planning as residential development is often the most prevalent form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.60 shows housing characters for Madison County by jurisdiction.

The American Community Survey (ACS) estimated a total of **159,299** housing units in Madison County in 2018. Huntsville has the largest number of housing units, followed by Madison, New Hope, Owens Cross Roads, Triana, and Gurley. Although Huntsville has the largest concentration of mobile homes, New Hope has the largest percent of mobile homes within a municipality. Historically, mobile home units have been highly susceptible to natural hazards and prone to substantial amounts of damage or complete destruction. Implementing regulations for development and maintenance of these structures could drastically reduce costly natural hazard impacts. Additionally, development should be restricted in flood prone areas or areas with an extensive history of detrimental hazard impact.

Table 5.60 | Madison County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Madison County	159,299	7,081	4.4%
Gurley	377	15	4.0%
Huntsville	92,098	1,525	1.7%
Madison	19,548	189	1.0%
New Hope	1,281	170	13.3%
Owens Cross Roads	807	48	5.9%
Triana	382	35	9.2%

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Madison County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. A listing of the County’s facilities can be found in the appendices of this document. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

5.8 Jurisdictional Vulnerability Overview | Madison County

Table 5.61 Natural Hazard Probability and Damage Estimates In Madison County, AL						
Madison County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	37	15	None	2.5 events/yr	N/A
	Earthquakes	12	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	190	24	\$6,952,000	7.9 events/yr	\$289,667
	Hail	360	64	\$206,000	5.6 events/yr	\$3,219
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 79 Windstorms: 29 Thunderstorms: 500	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$524,982,250 Windstorms: \$2,254,000 Thunderstorms: \$9,350,000	Tornadoes: 1.6 events/yr Windstorms: 1.2 events/yr Thunderstorms: 8.2 events/yr	Tornadoes: \$10,499,645 Windstorms: \$93,917 Thunderstorms: \$153,279
	Landslides		N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	379	62	Unknown	6.1 events/yr	Unknown
	Lightning	65	24	\$2,956,500	2.7 events/yr	\$123,188
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	102	13	N/A	7.8 events/yr	Unknown
	Winter Storms/Winter Weather	144	24	\$2,567,000	6 events/yr	\$106,958

Table 5.61 provides probability and damage estimates for the entire Madison County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Flooding events have the highest annual probability of occurring, with an estimated 7.9 events taking place each year.

Natural Hazard Vulnerability in Morgan County

Table 5.62 provides an overall summary of Morgan County’s vulnerability to specified hazards by jurisdiction. Hazard vulnerability is categorized by using the letters L, M, and H: L to indicate *low* vulnerability; M to indicate *medium* vulnerability; and H to indicate *high* vulnerability. These designations are further defined in the table key. Each jurisdiction considered how vulnerable it is to each hazard by considering the percentage of potential damage and the frequency of occurrences. Probability and annual damage estimates were then calculated by encapsulating previous occurrences and estimated damages within a certain timeframe (or study period). Table 5.66 on page 5-168 provides a summary of the County’s annual potential loss estimates by hazard.

Table 5.62 | Hazard Vulnerability by Jurisdiction in Morgan County, Alabama

	Natural Hazards	Municipalities							
		Decatur	Eva	Falkville	Hartselle	Priceville*	Somerville*	Trinity	Unincorp. Community
Morgan County	Dam Failure	L	L	L	L	L	L	L	L
	Drought / Extreme Temps.	L	L	L	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L	L	L
	Flooding	M	M	M	M	M	M	M	M
	Hail	L	L	L	L	L	L	L	L
	High Winds - High / Strong Winds	H	H	H	H	H	H	H	M
	High Winds - Tornadoes	H	H	H	H	H	H	H	M
	High Winds - Severe T-storms	H	H	H	H	H	H	H	M
	Landslides	L	L	L	L	L	L	L	L
	Land Subsidence / Sinkholes	L	L	L	L	L	L	L	L
	Lightning	M	M	M	M	M	M	M	M
	Wildfire	L	L	L	L	L	L	L	L
	Winter Storms / Winter Weather	M	M	M	M	M	M	M	M

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

Key: **L | Low Risk**; little damage potential (< 5% damage to the jurisdiction); **M | Medium Risk**; moderate damage potential (5-10% potential damage to the jurisdiction); **H | High Risk**; significant damage to the jurisdiction (10%> potential damage)

*Per the approved 2010 Morgan County HMP, all jurisdictions within Morgan County have participated in the planning process. These jurisdictions include Decatur, Hartselle, Falkville, Trinity, and Morgan County, and are all continuing participating jurisdictions in the Morgan County Hazard Mitigation Plan. The Towns of Priceville, Eva, and Somerville participated in this plan revision but if they apply for HMGP funds, Morgan County will be the applicant for them, and they are not listed as participating jurisdictions in the update.

Dam Failure | The National Inventory of Dams lists two dams in Morgan County. Both dams are classified as having high downstream hazard potential, meaning failure or faulty operation could probably result in the loss of human life. There have been no significant dam or levee failures reported in Morgan County. The risks to Morgan County associated with dam failure are minimal.

Drought / Extreme Temperatures | Droughts and heat waves affect all areas and jurisdictions of Morgan County equally. Certain areas, such as agricultural areas and areas with vulnerable water supplies, may be more susceptible to the adverse effects of droughts.

Primary effects from droughts and heat waves in Morgan County include:

- Crop and other agricultural damage;
- Water supply shortage - water wells, creeks, rivers, and lakes dry up;
- Forest fires; and
- Heat exhaustion and heat stroke.

Hazardous results from significant droughts and heat waves in Morgan County include:

- Agricultural damage from drought will result in economic losses of crops and livestock;
- A water supply shortage will result in damage to the sewer system, a lack of hydroelectric power, and the necessity for water to be transported into the area;
- Forest fires can devastate vast acreages, burning homes and businesses;
- Heat exhaustion can be debilitating and result in hospitalization. Heat stroke can cause death.

Typically, Morgan County droughts and extreme heat events do not carry reported damages. The highest recorded temperature of 108 occurred on July 28, 1952. According to the National Climatic Data Center (NCDC) records, there have been **28** droughts/heat/extreme heat events in Morgan County between 2005 and 2020. Morgan County experienced a D4 Exceptional Drought intensity in 2007. The rank of droughts and heat waves is minor.

Alabama experienced the worst drought it has ever seen in 2007. With drought conditions carrying over from 2006 (at a deficit of **12** inches of rain), by late spring of 2007, the drought moved up to a D4 Exceptional Drought intensity, the highest intensity, which is characterized by widespread crop and pasture losses, wildfires, and severe shortages of water resources in reservoirs, streams, and wells. The 2007 drought was not limited to Morgan County; it became widespread, affecting most of the southeastern U.S. Alabama reported a rainfall deficit that reached nearly **30** inches by 2007. Impacts were felt by farmers of all crops, including timber, livestock producers, and the forestry service. Additionally, electricity providers were affected as river and lake levels dropped and some

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

municipalities were forced to place restrictions on water consumption as supplies became strained. State Agriculture Commissioner Ron Sparks referred to this event as the worst drought in 30-40 years.

Morgan County experienced prolonged drought conditions once again in 2016. Morgan County ranged from Extreme to Severe conditions, as reported by the U.S. Drought Monitor. The drought of 2016 resulted in numerous fires in Morgan County. As a result of the drought and fires, local volunteer fire departments were eligible for grant funding to assist with the associated costs.

The County is susceptible to droughts and heat waves. There is not a significant historical record of droughts and heat waves, except for the severe droughts occurring in 2007 and 2008. According to the National Climatic Data Center, “scientists know that atmospheric moisture plays an important role in heat waves. They tend to occur more frequently in dry conditions with low humidity, but heat waves in high humidity can take their toll on the population, livestock, and wildlife”.

Earthquakes | When earthquakes strike a region, it is impossible to predict which area will be affected the most at a sub-county level. Morgan county is at a low to medium risk for an earthquake to occur, though minor effects from the three seismic zones are not out of the question. Damages to buildings and infrastructure depend not only on the energy released during an earthquake but also underlying soils and geological characteristics. For instance, structures built upon loose sediments of riverine floodplains along the Tennessee River is more likely to be damaged than structures built in higher elevations. Liquefaction is most likely to occur in soils with high water content within parts of these flood plains.

According to the Geological Survey of Alabama (GSA), recent seismograph records indicate that earthquakes in the state are frequent but not strong enough to be felt on the land surface. Earthquakes can occur anywhere in Alabama but are unlikely to cause damage.

According to the United States Geological Survey, the risk of a significant, damage-causing earthquake in Morgan County is minor, with the strongest intensity expected to be a VII on the Modified Mercalli Intensity Scale, during a New Madrid Seismic Zone (NMSZ) event. The probability if a repeat of the 1811-1819 NMSZ earthquake is 7-10%. Morgan County has only a **2%** chance of exceeding shaking above 13%g in the next 50 years.

Because Morgan County is located within the Southern Appalachian Seismic Zone and the New Madrid Seismic Zone, earthquake potential is likely, although potential for significant shaking is very low. Damage could be catastrophic in Morgan County if a powerful earthquake were to occur because buildings have not been constructed to withstand such a powerful force. The last significant earthquake that affected Alabama was the 1895 New Madrid earthquake. This quake is estimated to have been a **6.8** in magnitude on the Richter scale and was moderately felt throughout the southeastern United States. The New Madrid Seismic Zone runs along the Mississippi River. Geologists agree that another major earthquake along the New Madrid Seismic Zone could cause chimneys to fall, glass to break, and walls to crack in Morgan County.

Flooding / Flash Floods | On Christmas Day, 2015, Morgan County experienced flooding after receiving extensive rain. Many roads were closed for as long as a week as water receded. After the water receded, it was

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

discovered that some roads had been washed away and others were covered with debris. In addition to road damages a number of houses and businesses were impacted. Damage included:

- Homes with major damage: 41
- Homes with minor damage: 37
- Businesses with major damage: 51
- Businesses with minor damage: 1

Though there was not enough damage to receive a federal disaster declaration from FEMA, the County received a Small Business Administration declaration for the severe storms and flooding, making people eligible for low interest loans. Communities impacted included Decatur, Cotaco, Falkville, Hartselle, Lacey's Spring, and other unincorporated areas of Morgan County.

Primary effects from floods in Morgan County could potentially include:

- Loss of life;
- Property damage;
- Crop damage; and
- Dam failure.

Hazardous results from significant flooding in Morgan County include:

- Rising water levels that can quickly sweep people along in its path;
- Rapidly moving water destroying anything in its path, leaving hazardous mold and conditions ideal for insect breeding;
- Periods of standing water killing inadaptible plants, and flowing water removing sediment and nutrients from the soil;
- Breached dams and levees allowing water to flood into the surrounding floodplain, resulting in destruction of crops and property.

Flooding caused by rainfall occurs to some extent almost every year in almost every part of Morgan County. Flooding occurs most frequently between November and April, with a peak from February through April. Flooding that affects Morgan County occurs in areas where development has encroached into flood-prone areas, areas that have inadequate drainage systems, and in denuded areas and within narrow, steep hills and valleys. Flood hazard areas in the county are located on the floodplain of all rivers, streams, lakes, and wetlands. Urban development in Morgan County and its municipalities have been occurring at a rapid pace for the last decade. As land is converted from fields or woodlands to roads and urban development, it loses its ability to absorb rainfall.

Morgan County's area has **2.81%** of water, making up **19** square miles. Flash flooding has the potential to affect every jurisdiction in Morgan County. Residential and commercial developments within flood plain areas have contributed to the increased losses from flooding situations. Urban portions of the county have become increasingly vulnerable to urban flooding. The population growth increases the potential for more development, which extends the amount of impermeable surfaces; therefore, urban flooding risks are increased. Riverine flooding can potentially create minor to moderate property damage and a slight risk of casualties throughout areas

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

of the county adjacent to rivers and creeks. Flash flooding has the potential to result in extensive property damage and casualties in the county. Riverine and flash flooding can also affect accessibility for emergency services.

The extent/range of magnitude or severity that could be experienced by Morgan County due to a flood event is minor to major.

The Flood Insurance Rate Maps (FIRMs) of the National Flood Insurance Program (NFIP) indicates Morgan County has extensive areas located in the 100-year flood plain.

The extent of each flood varies according to the amount of rainfall, the rate of storm water flow, and the capacity of the receiving channel to discharge flood waters. Morgan County experiences riverine flooding, primarily along local streams, and tributaries of the Tennessee River. The ranking is minor to major. The extent is 23 feet on the Tennessee River.

National Climatic Data Center (NCDC) records indicate that **116** floods and/or flash floods have occurred in Morgan County from 1996 to 2020. **\$1,801,000** in property damages and **\$5,000** in crop damage has occurred, averaging at approximately **\$75,000** per year. The extent of flooding during this plan's study period is difficult to estimate due to insufficient data on the depth of flood waters, however, Morgan County regularly experiences flash flooding when receiving 5-7 inches of rain within a day (on saturated soil). Developed areas, such as downtown Decatur and Hartselle, have experienced flooding rapidly when receiving 2-3 inches in as many hours.

Past trends indicate that regular occurrences of heavy rainfall will continue to create flooding throughout Morgan County. Morgan County should expect approximately one flood event per year, although the severity of damage may vary widely from one year to the next. The occurrence of 100 and 500-year flood events are unlikely, and average damages are likely to be minimal. However, the causes of flooding are varied, including improper land uses on floodplains, surface paving, quality of flood forecasting, settlement patterns, and warning systems.

Hail | Hail is experienced in some capacity almost annually in Morgan County. All areas of Morgan County are equally vulnerable to hail. According to the National Climatic Data Center (NCDC), there have been **170** recorded hail events within Morgan County since 1955. These events have produced a total of **\$204,000** in property damage and **\$8,000** in damage to crops.

High Winds / Strong Winds | Morgan County is at a low risk for a direct hit by a hurricane due to its position several hundred miles inland from the Alabama coastline. Although Morgan County does not feel the effects of storm surges, other effects including heavy rain, flooding, and tornadoes often have significant impacts on the County. For example, in 1995 Hurricane Opal made landfall in the Florida Panhandle near Pensacola Beach. Opal then moved across the state of Alabama destroying trees, signs, and power lines with high winds. Heavy rain fell quickly across the county causing flooding along the banks of creeks and streams.

Hurricanes pose the greatest threat to life and property, but tropical depressions and storms can also cause extensive damage and loss of life. Inland hurricanes will dissipate by the time they reach Morgan County, which is located over 300 miles from the closest Gulf Coast landfall location. Should the path pass through or very near Morgan County, a hurricane would be downgraded to a tropical depression with thunderstorms and maximum sustained winds of 38 mph or less. If rated as an inland tropical storm, maximum sustained winds could go as high as 73 mph. Hurricanes can be accompanied by tropical storms, tropical depressions, severe storms, high

Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles

winds, floods, and even tornadoes. The last recorded hurricane event for Morgan County was a tropical storm in 2005 (Katrina). The rank of hurricanes is minor to moderate.

As is the case with most natural hazards, past records are no guarantee of the probability of future hurricane events affecting Morgan County. Given its inland location, however, Morgan County can continue to expect the remnants of frequent Gulf Coast hurricanes and occasional direct impacts of tropical depressions. Climate changes have been theorized to affect future hurricane events in that the hurricane season has been expanded in recent years. The typical April through November hurricane season is lasting longer. According to Meteorologist Jeff Masters, this is likely due to warmer seawater and an increase of moisture in the atmosphere. The primary and most significant damage associated with a hurricane is caused by high winds and storm surges. While the effect of climate change on winds is debatable, there is a consensus that sea levels are rising, and water temperatures are increasing as a direct result of global warming.

Thunderstorms | Severe storms lack geographic centers and boundaries, therefore cannot be substantively mapped. All areas of Morgan County have equal exposure to severe storms, including thunderstorms, high winds, heavy precipitation, and hail.

Primary Effects from thunderstorms in Morgan County would include:

- High winds;
- Straight-line winds;
- Lightning;
- Flooding;
- Hail; and
- Tornadoes.

Hazardous results from significant thunderstorms in Morgan County include:

- High winds that can cause downed trees and electrical lines, resulting in loss of power and hazardous road conditions.
- Severe storms capable of producing intense lightning that poses threats to people and infrastructure and can ignite fires.
- Heavy rains capable of producing severe storm water run-off in developed areas and can cause bodies of water to breach their banks.
- Large hail that can injure people and livestock, and damage crops and property.
- Severe thunderstorms capable of producing tornadoes that destroy anything in their path, resulting in loss of power, shelter, and potential loss of life.
-

According to the National Climatic Data Center, Morgan County experienced **437** severe storms between 1996 and 2020. The total amount of damages for the 437 severe storm events was **\$4,316,000** in property damages and **\$47,000** in crop damages. One death and five injuries were reported during these thunderstorm events. Morgan County will continue to have multiple severe storms every year.

One of Morgan County's worst extent of severe storms during this plan's study period occurred on June 15, 2009. On this date, a cluster of supercell thunderstorms developed in western Tennessee during the afternoon hours, dropping southeast into northwestern and north central Alabama during the early to middle evening hours. These storms produced copious amounts of large hail, some of it over 3 inches in diameter in the Decatur area. Damaging winds of **65 to 95** mph were estimated, knocking down numerous large trees in the path of these storms. The strongest estimated winds up to 95 mph occurred in a 16 square mile area affecting portions of Eva, Center Dale, and Gum Pond. Flash flooding became a problem due to intense rainfall of 1 to 3 inches, particularly in Decatur and Hartselle. Nearly continuous lightning was reported with these storms. Observers noticed spectacular anvil crawler and cloud to ground lightning strikes. Numerous power outages were reported due to power lines being knocked down or due to lightning strikes.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

It is certain that severe storms will show annual occurrences throughout all of Morgan County jurisdictions. Although not every storm will exhibit all the hazards associated with severe storms; high winds are less frequent, and large, damaging hail is rare.

Tornadoes | All Morgan County locations are equally at risk for tornadoes. Tornadoes pose a significant threat to Morgan County communities. In Morgan County, tornadoes occur almost yearly and can be severe. The extent for tornadoes is EF5.

On April 27th, 2011, at least **28** tornadoes touched down in Alabama, causing over a **thousand** injuries and **248** deaths within the state. Morgan County was impacted by **three** tornadoes on April 27th, 2011.

Primary effects from tornadoes in Morgan County include:

- Loss of life;
- Property damage;
- Infrastructure destruction and damage; and
- Sanitation and water delivery interruption.

Hazardous results from significant tornadoes in Morgan County include:

- Collapse of structures can leave people homeless;
- Roadways may become blocked by debris. Damage may destroy automobiles creating additional hardships to individuals and families and business operations;
- High wind speeds associated with a tornado can destroy anything in its path.
- Power poles topple, communication receivers are destroyed, and water sanitation and treatment plants are offline;
- Due to destruction, sanitation crews are unable to remove massive amounts of waste and water delivery is disrupted. This can lead to an increase in disease-carrying insects and lack of potable water.

According to the National Climatic Data Center, Morgan County was the site of **43** tornado events between 1952 and 2020. These events caused **233** injuries, **13** deaths and damages of **\$14,455,000**. The referenced tornado events are the ones that resulted in the most damages during the past twenty-year period and serves as the extent/range of magnitude or severity that could be experienced by Morgan County due to a tornado event; the ranking is major.

Storm experts point out that tornadoes are unpredictable, which makes future risk difficult to determine. However, if historical trends continue, Morgan County can anticipate one tornado per year. According to climatologists, the effect of climate change on tornadic activity is inconclusive. Jeff Trapp, a professor of atmospheric science at Purdue University indicates that, "while it's unclear how the intensity or frequency of tornadoes will increase, there may be more days featuring conditions ripe for twisters. We would see an increase in the number of days that could be favorable for severe thunderstorm and tornado formation. The tornado season, which varies by region, could be expanded".

Landslides | The three underlying geologic formations present within the region are the Coker, Gordo, and Tuscaloosa groups. These groups are classified as having low to moderate susceptibility to slope failure.

Primary effects from landslide in Morgan County include:

- Property damage;
- Impassable roads;
- Sediment erosion; and
- Underground infrastructure damage.

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

Hazardous results from landslides in Morgan County include:

- Force capable of destroying most structures, while carrying anything they encounter;
- Material that can damage and destroy roads, as well as block them with debris, resulting in disruption to business and other activity;
- Removed sediment leaving the surrounding area bare and prone to erosion;
- Destruction and burial of underground pipes and wiring from an area, creating a loss of services.

Most areas in Morgan County are rated as having a low to moderate degree of susceptibility to landslides. While there are areas in the county with a very high susceptibility, these are primarily located in rural, less populated areas.

According to the GSA data, most of Morgan County is an area of low to moderate susceptibility to landslides. These same areas, however, have a low incidence.

In 2012, a landslide closed northbound lanes of I-65 near mile marker 330 for two weeks. This landslide was discovered when Alabama Department of Transportation officials were repairing a sinkhole in 2011. Total project costs were estimated at **\$2.1 million**. On February 12 and 13, 2020 a large landslide occurred on State Route 53 (US Hwy 231) at milepost 301.7 approximately 17 miles south of the Laceys Springs Community. The slide completely severed the four-line divided highway, a major commuting route between Huntsville and several communities south of the city. Detours were established on existing state and county roads, but these alternate routes added 30 to 60 minutes to commute times, depending on the time of day. Total repair costs due to this event equaled **\$21 million**. Despite the damage caused by these events, the rank of landslides is **minor**.

A landslide mapping project of the Geological Survey of Alabama (Rheams,1982) identified **9** historic landslides in the county. Morgan County is in a part of the state where the geology is low to moderate landslide incidence susceptibility to subsidence and low incidence. Precise locations of susceptibility would require extensive and costly geologic studies, which are not available.

Land Subsidence /Sinkholes | The northern and north central portions of Morgan County are susceptible to land subsidence. Historically, land subsidence or sinkhole events have not been well documented.

The largest extent of sinkholes is in eastern Morgan County. This area, between Apple Grove Road and Pine Ridge Road is called Newsome Sinks. It is approximately **four** miles in length and the largest area of sinkholes in the state. The rank of sinkholes is **minor**.

Morgan County is at a high risk for sinkholes. The probability of future occurrences cannot be predicted due to a lack of detailed geologic studies.

As development continues in rural areas of Morgan County, it is likely that sinkholes will begin to have a greater impact on communities. When subsidence occurs in developed areas it can have a significant impact on communities including loss of property values, increased insurance costs, and the potential for injuries.

Lightning | Morgan County experiences multiple lightning events every year. All areas of Morgan County are equally vulnerable to lightning. According to the National Climatic Data Center (NCDC), there have been **25**

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

damaging lightning events within Morgan County since 1995, resulting in no deaths and four injuries. These events have produced a total of **\$3,385,000** in property damage.

Wildfires | Morgan County is at slight to moderate risk of a wildfire. Most wildland fires occur on privately owned lands, with most fires occurring in areas where homes or structures are endangered. These areas are known as the wildland urban interface and are defined as areas where development meets wildland vegetation, both of which provide fuel for fires. The wildland urban interface (WUI) areas have increased significantly throughout the county, and now face the risk of major losses from wildfires. In Morgan County, most wildland urban interface areas are considered “intermixed.”

Instead of having large forest areas surrounding an isolated town, Morgan County contains many scattered homes and farms spread across the forest areas. In addition to affecting people, wildfires may severely impact livestock, inflicting a severe economic impact on farmers. Timber loss to fires creates an economic loss to both the private landowner and the county’s economy. Wildfires in Morgan County generally are moderate in intensity, resulting in destruction of undergrowth and some timber. The soil surface layer of the forest recovers quickly, minimizing erosion and water quality impacts. All of Morgan County is vulnerable to wildfires.

Morgan County experienced **214** wildfire events in a thirteen-year period, resulting in a significant probability that a wildfire event will occur on an annual basis. The total amount of acres burned for the 214 events was **1,806.8**, equating to an average of **139** acres burned per wildfire event. The frequency and severity of wildfires is dependent on weather and on human activity. Nearly all wildfires in Morgan County are human caused (only a small percent are caused by lightning), with arson and careless debris burning being the major causes of wildfires. If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives, damage forest resources, and destroy structures.

Winter Storms | What is often called the worst winter storm in Alabama history struck Friday afternoon, March 12, 1993, and lasted until mid-day Saturday. Snow began falling over north Alabama Friday afternoon and spread southward overnight to the Gulf Coast. The storm was caused by a strong and massive low-pressure system that moved from the western Gulf of Mexico into the Florida panhandle, and up the Eastern Seaboard. The heaviest snow began after midnight when northerly winds of **40 to 55** mph became common. Frequent lightning discharges occurred for several hours giving an eerie blue tinged glow to the atmosphere. By mid-day Saturday, snow had accumulated to 6 to 12 inches over North Alabama and 2 to 4 inches at the Gulf Coast. A 40-mile-wide band of 12 to 20 inches fell from the Birmingham area northeastward to DeKalb and Cherokee counties, generally following the Appalachian Mountains.

High winds combined with the heavy wet snow felled numerous trees and knocked down power lines over a wide area. Numerous roads became impassable, and hundreds of thousands of homes were without power. It was estimated that **400,000** homes were without electricity, and many remained so for several days. Temperatures fell well into the single digits and teens across much of the state Saturday night. The Birmingham Airport temperature fell to 2 degrees, the coldest January temperature ever recorded. Some roads in north Alabama remained impassable until the following Tuesday. The snow and high winds knocked many radio and television stations off the air, and severely hampered emergency personnel responding to fires, stranded motorists, and those in dire need of medical attention. Many large trees fell onto homes and businesses and numerous awnings and roofs collapsed under the weight of the heavy snow. Most of the damage estimates were at least **\$50 million**. Some estimates ranged between **\$80** and **\$100 million**. A total of **\$5 billion** of property damages resulted statewide. **Four** deaths occurred in Morgan County because of this storm.

Primary effects from winter storms in Morgan County include:

Division F Regional Hazard Mitigation Plan Section 5 | Hazard Profiles

- Injury and damage from downed trees and utility lines due to the snow and ice load;
- Widespread impassable roads and bridges;
- Disruption of services and response capabilities; and
- Crop and other agricultural damage.

Hazardous results from winter storms in Morgan County include:

- Loss of power, communications, and fires. Widespread power outages close businesses and impact hospitals, nursing homes, and adult and child care facilities serving special needs populations;
- Loss of transportation affecting emergency response, recovery and supply of food and materials;
- Stranded motorists and the homeless can create a food and housing shortage within the community;
- The widespread nature of winter storms usually creates a strain on police, fire, and medical providers due to the volume of calls for service.

Winter temperatures in Morgan County are generally moderate; the average temperature is 49.6° F and the average winter minimum is 33.6° F (Table 5-8). Extreme cold temperatures are rare for this area. These rare temperature lows can result in burst plumbing in homes and occasional deaths due to lack of sufficient heating or exposure to cold. There is also the potential for secondary deaths due to carbon monoxide exposure as people use stoves and generators to heat in absence of regular electrical heating. The lowest recorded temperature of -19° F occurred in 1966.

All participating jurisdictions within Morgan County are equally likely to experience winter storms/freezes, which may be accompanied by snow, freezing rains, and extreme temperature lows.

Morgan County experiences annual disruptions and some damages due to severe winter storms/freezes. The yearly average snowfall is less than one inch, but some events have produced major disruptions and damages. Winter temperatures on average are above freezing, but occasional freezes do occur. Morgan County's extent of snow during the plan's study period is approximately 5 inches which occurred on January 22, 2016, in Falkville. The rank of winter storms and freezes is minor.

There have been **37** reported winter storms, winter weather, or extreme cold events since 1996.

Winter storms/freezes should continue to affect Morgan County on an annual basis, to some extent. However, the historical records cannot determine future outcomes; frequency of these events is totally unpredictable. The risks associated with the average annual hazard are slight, but the more infrequent, severe winter storms/freezes have potentially severe risks. These severe winter events can cause major transportation disruptions, lengthy power outages, substantial property damages, and some loss of life.

Socially Vulnerable Populations

Natural hazard events have different impacts across Morgan County populations. These populations can be quantified by social, racial, and economic characteristics. This section will identify and discuss vulnerable populations throughout the county using data from the 2018 American Community Survey

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

(ACS). Morgan County has **580** square miles of land and **19** square miles of water, totaling an area of **599** square miles. Population density is currently estimated at **205.38** persons per square mile.

Table 5.63 depicts the county’s population characteristics by jurisdiction and by census tract. The City of Decatur is the most populated jurisdiction, followed by the City of Hartselle, and the Towns of Priceville, Trinity, Falkville, Eva, and Somerville. Regarding vulnerability, the larger the population of an area, the more people and structures are at risk of harm or damage. Tract 53.01 is the most populated tract, and Tract 51.03 is the least populated.

Minority populations are largely considered to be more vulnerable to hazard event impacts. These populations may not have the resources necessary to recover as quickly or completely from disasters. Additionally, minority populations generally have higher percentages of inadequate home and medical insurance, while also living in housing that may be deemed substandard. Populations over sixty-five years of age and those under eighteen years of age tend to be more vulnerable than other population groups. These groups pose greater risks for injury and medical complications that are likely to result during a natural hazard incident. Additionally, these groups may require more attention during evacuation, i.e., special accommodations in the form of shelters or medical supplies.

Table 5.63 | County Population Characteristics by Jurisdiction + Census Tract (2018)

	Total Pop.	White	Black	Other	Under 19 Yrs. Old	Age 20-64 Yrs.	Age 65 and Over
Jurisdiction							
Morgan County	119,122	98,193	15,987	7,342	30,014	69,243	19,865
Decatur	54,617	38,427	12,922	4,688	13,594	31,323	9,700
Eva	560	556	0	7	143	323	94
Falkville	1,373	1,301	60	52	264	722	387
Hartselle	14,405	13,139	951	425	3,717	8,329	2,359
Priceville	3,318	3,010	205	158	935	1,822	561
Somerville	534	473	53	17	96	340	98
Trinity	2,972	2,577	206	209	1,088	1,645	239
County Census Tract							
Tract 1	4,052	2,588	1,048	449	1,274	2,071	707
Tract 2	3,520	3,255	37	287	936	1,805	779
Tract 3	2,917	2,533	392	0	601	1,857	459
Tract 4	3,818	2,769	909	215	713	2,530	575
Tract 6	2,865	767	1,722	386	812	1,700	353
Tract 7	4,100	1,735	1,971	436	1,174	2,546	380
Tract 8	2,955	2,004	871	180	631	1,636	688
Tract 9	4,963	2,985	1,298	877	1,635	2,445	883

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 10	3,476	2,115	882	569	996	2,005	475
Tract 51.01	5,521	4,711	558	408	1,543	3,338	640
Tract 51.03	944	894	50	2	171	662	111
Tract 51.05	2,401	2,254	96	109	609	1,199	593
Tract 51.06	6,254	4,549	1,624	364	1,330	3,929	995
Tract 51.07	4,718	4,114	311	300	1,103	2,836	779
Tract 51.08	3,665	3,122	555	172	750	2,153	762
Tract 51.09	4,128	2,517	1,249	464	1,147	2,396	585
Tract 52	6,399	6,080	249	141	1,758	3,681	960
Tract 53.01	8,300	7,616	673	175	1,759	4,794	1,747
Tract 53.02	3,779	3,610	65	113	940	1,604	664
Tract 53.03	3,413	3,164	197	84	754	1,755	904
Tract 53.04	6,007	5,532	291	226	1,848	3,317	842
Tract 54.04	5,331	4,961	197	209	1,295	2,194	899
Tract 54.05	4,503	4,248	282	36	1,233	2,722	548
Tract 55	5,934	5,801	60	146	1,608	3,265	1,061
Tract 56	5,817	5,441	146	293	1,296	3,630	891
Tract 57.01	2,753	2,635	61	190	767	1,509	477
Tract 57.02	6,589	6,193	193	511	1,331	4,150	1,108

In addition to racial and age composition in Morgan County, income levels are also important when identifying and planning for vulnerable populations. Lower income individuals have difficulty acquiring resources to prepare for or recover from disasters. Table 5.64 provides a breakdown of median household income, per capita income, and poverty level data for the jurisdictions and census tracts in the county.

In 2018, American Community Survey (ACS) data projected that the median household income for the State of Alabama was **\$48,486** and the median household income (MHI) for the United States was **\$60,293**. Most communities in Morgan County have median household income figures above the state's figure. The City of Priceville is the only municipality that far exceeds both the state and national median household income figures with an estimate of **\$98,333**. Tract 2 has the highest median income figure out of all Morgan County tracts at **\$83,063**; Tract 6 has the lowest household income figure in the county at **\$19,679**.

Per capita income (PCI) is *a measure of the amount of money earned per person in a nation or geographic region*. The per capita income for the State of Alabama was **\$26,846** in 2018, **\$32,621** for the United States. Most Morgan County communities and census tracts have per capita estimates above the state and national averages. The City of Priceville, in addition to having the highest median household income estimate, also has the highest per capita income figure in the county at **\$35,885**.

Table 5.64 | Morgan County Income Data by Jurisdiction and Census Tract (2018)

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

	Median Household Income	Per Capita Income	Pop. Below Poverty Level	Pop. % Below Poverty Level
Jurisdiction				
Morgan County	\$49,751	\$25,907	17,920	15.3%
Decatur	\$45,048	\$26,637	10,506	19.6%
Eva	\$57,639	\$30,885	43	7.7%
Falkville	\$40,357	\$20,496	182	17.3%
Hartselle	\$59,482	\$28,855	960	6.7%
Priceville	\$98,333	\$35,610	182	5.6%
Somerville	\$34,107	\$24,136	77	14.4%
Trinity	\$59,615	\$24,347	446	15.0%
Tract				
Tract 1	\$31,152	\$17,812	1,379	35.4%
Tract 2	\$83,063	\$41,041	280	8.0%
Tract 3	\$52,031	\$30,353	242	8.3%
Tract 4	\$39,299	\$24,915	367	11.3%
Tract 6	\$19,679	\$11,889	1,338	55.8%
Tract 7	\$32,098	\$14,553	1,697	41.4%
Tract 8	\$38,504	\$20,328	879	29.9%
Tract 9	\$35,893	\$16,469	1,252	26.0%
Tract 10	\$54,808	\$21,096	310	8.9%
Tract 51.01	\$56,903	\$27,773	565	10.2%
Tract 51.03	\$56,250	\$27,886	34	3.6%
Tract 51.05	\$71,591	\$32,567	189	7.9%
Tract 51.06	\$38,730	\$26,819	1,217	19.6%
Tract 51.07	\$71,849	\$37,898	469	10.0%
Tract 51.08	\$55,720	\$31,031	480	13.2%
Tract 51.09	\$24,450	\$18,466	1,052	25.5%
Tract 52	\$53,454	\$24,471	660	10.4%
Tract 53.01	\$65,101	\$32,500	336	4.0%
Tract 53.02	\$63,992	\$29,328	222	5.9%
Tract 53.03	\$41,118	\$29,213	383	11.3%
Tract 53.04	\$62,700	\$26,974	382	6.4%
Tract 54.04	\$63,661	\$33,307	623	11.9%
Tract 54.05	\$50,444	\$23,373	555	12.4%
Tract 55	\$48,007	\$20,567	945	16.8%

**Division F Regional Hazard Mitigation Plan
Section 5 | Hazard Profiles**

Tract 56	\$48,723	\$28,269	664	11.4%
Tract 57.01	\$46,750	\$22,937	518	18.8%
Tract 57.02	\$46,771	\$22,948	882	13.4%

Vulnerable Structures

Housing is a critical consideration of mitigation planning as residential development is often the most prevalent form of development in communities. Two primary factors to consider when analyzing housing are housing concentration and housing types. This section will focus on the total number of housing units in the county and jurisdictions within and the most vulnerable of these units – mobile homes. Table 5.65 shows housing characters for Morgan County by jurisdiction.

The American Community Survey (ACS) estimated a total of **51,951** housing units in Morgan County in 2018. Decatur has the largest number of housing units, followed by Hartselle, Priceville, Trinity, Falkville, Somerville, and Eva. Decatur has the highest concentration of mobile homes, and Somerville has he largest percentage of mobile homes within a municipality. Historically, mobile home units have been highly susceptible to natural hazards and prone to substantial amounts of damage or complete destruction. Implementing regulations for development and maintenance of these structures could drastically reduce costly natural hazard impacts. Additionally, development should be restricted in flood prone areas or areas with an extensive history of detrimental hazard impact.

Table 5.65 | Morgan County Housing Characteristics by Jurisdiction (2018)

	Total Housing Units	Mobile Home Units	Mobile Home %
Jurisdiction			
Morgan County	51,951	1,529	6.09%
Decatur	24,888	455	1.8%
Eva	254	20	7.9%
Falkville	489	77	15.7%
Hartselle	6,191	71	1.1%
Priceville	1,105	36	3.3%
Somerville	290	106	36.6%
Trinity	1,056	253	24.0%

Critical Facility Inventory

Critical facilities are instrumental to daily operations in Morgan County. These facilities enhance and maintain quality of life and disruptions in operation of critical facilities could result in severe impacts on the community. A listing of the County’s facilities can be found in the appendices of this document. These facilities include but are not limited to governmental services; police and fire departments; public works; educational; industrial; and medical.

5.9 Jurisdictional Vulnerability Overview | Morgan County

Table 5.66 Natural Hazard Probability and Damage Estimates In Morgan County, AL						
Morgan County	Natural Hazard	Occurrences	Study Period (Years)	Damaged Recorded (\$)	Probability (Annual)	Estimated Future Damage (Annual)
	Dam Failure	None	N/A	N/A	N/A	N/A
	Drought	28	15	None	1.9 events/yr	N/A
	Earthquakes	4	133	Unknown	< than 1 event/yr	Unknown
	Extreme Temperatures	Covered Under Drought Hazard				
	Flooding (Riverine flooding, Flash floods)	115	24	\$1,806,000	4.8 events/yr	\$75,250
	Hail	170	64	\$212,000	2.7 events/yr	\$3,313
	High Winds (Windstorms, Tornadoes, Severe Thunderstorms)	Tornadoes: 43 Windstorms: 17 Thunderstorms: 437	Tornadoes: 50 Windstorms: 24 Thunderstorms: 61	Tornadoes: \$14,454,750 Windstorms: \$1,309,000 Thunderstorms: \$4,363,000	Tornadoes: < than 1 event/yr Windstorms: < than 1 event/yr Thunderstorms: 7.1 events/yr	Tornadoes: \$336,157 Windstorms: \$54,541 Thunderstorms: \$71,525
	Landslides	10	N/A	N/A	N/A	N/A
	Land Subsidence and Sinkholes	617	62	Unknown	10 events/yr	Unknown
	Lightning	25	24	\$3,385,500	1.0 event/yr	\$135,420
	Sea Level Rise and Coastal Land Change	Does Not Occur in the Region				
	Wildfires	214	13	N/A	16.5 events/yr	Unknown
	Winter Storms/Winter Weather	88	24	\$2,126,000	3.7 events/yr	\$88,583

Table 5.66 provides probability and damage estimates for the entire Morgan County area. Windstorm events, specifically tornadoes, caused the most recorded damage out of all natural hazards identified in this jurisdiction. Wildfire events have the highest annual probability of occurring, with an estimated 16.5 events taking place each year.

Section 6 - Division Mitigation Actions

SECTION 6 | MITIGATION

6.1 Mitigation Planning Process

- Update Process

6.2 Capabilities Assessment for Local Jurisdictions

- Land Use Planning and Zoning Regulations
- Flood and Building Ordinance Enforcement
- NFIP Participation Status
- General Technical and Financial Capacity
- Statutory Authority and Resources
- Plans, Ordinances, and Programs Relevant to Hazard Mitigation

6.3 Regional Mitigation Goals

- Prevention
- Property Protection
- Natural Resource Protection
- Structural Mitigation
- Emergency Services
- Public Education and Awareness

6.4 Regional Mitigation Strategies

- Strategy Alignment to Goal Areas
- Example Strategies

6.5 Jurisdictional Mitigation Action Plans

- Action Plan Elements & Definitions
- Councils of Government
- Blount County
- Cherokee County
- Cullman County
- DeKalb County
- Etowah County
- Jackson County
- Limestone County
- Madison County
- Morgan County

SECTION 6 | MITIGATION

6.1 Mitigation Planning Process

Local planning stakeholders were asked to review the progress of their previously adopted mitigation goals and to reevaluate those strategies based on the updated information from the Risk Assessment (Section 4) and identified vulnerabilities to each profiled hazard. The goals and strategies were viewed considering the impact and extent of hazard occurrences in local jurisdictions and the Division F region. Participating jurisdictions were also asked to provide updates regarding their core capabilities to implement identified hazard mitigation actions including, but not limited to land use planning and zoning regulations; flood controls and building code enforcement; technical and financial capacity; and existing authorities and powers relevant to mitigation practices.

6.2 Capabilities Assessment for Local Jurisdictions

A capability assessment examines the ability of each jurisdiction to implement a comprehensive mitigation strategy by examining existing programs, regulations, resources, and practices. This determination allows a jurisdiction to assess whether mitigation actions are feasible, due to financial resources, administrative capacity, political climate, and other jurisdictional capabilities.

The Alabama Emergency Management Agency (AEMA) Division F is a ten-county region composed of **117** jurisdictions with a myriad of governmental powers. The specific planning area for the Division F Regional Hazard Mitigation Plan includes nine counties with **95** jurisdictions. All county governments are governed by an elected commission. Most municipalities have a Mayor/Council form of government. The utility providers and educational institutions are commonly governed by a Board and Operations Executive.

The mitigation strategies provided in Section 6.4 and the jurisdiction-specific action plans provided in Section 6.5 are framed by the capacity and capability of local jurisdictions to implement those actions through existing authorities, policies, programs, and resources. For most jurisdictions in the planning area, these implementation capacities are often very limited for the following reasons.

Land Use Planning and Zoning Regulations

Authority to control development through land use planning and zoning, a critical tool in hazard mitigation, is vested in municipalities that choose to exercise these practices. Capacity to implement and enforce these practices, however, is limited due to local expertise, financial constraints, and public acceptance. The State of Alabama does not require a jurisdiction to implement land use planning and associated regulations. Therefore, most local jurisdictions – especially smaller, rural communities – avoid the practice of land use planning and zoning for general purposes including hazard mitigation. In unincorporated areas within county jurisdictions, this authority is largely absent except as it applies to flood control and public street and subdivision regulation, which are practiced by each county in the planning area.

Section 6 | Mitigation

6.2 Capabilities Assessment for Local Jurisdictions

Flood and Building Ordinance Enforcement

Flood control, more broadly, is authorized for each local jurisdiction to practice through a local ordinance regulating the placement and construction of new structures. Each Division F county and most jurisdictions participate in the National Flood Insurance Program (NFIP) and maintain compliance with the applicable regulations (Table 6.1). Like zoning regulations, the authority to enforce building codes is primarily restricted to municipalities and is only practiced by a limited number of participating municipalities due to capacity constraints in the form of personnel, financial ability, and public acceptance.

Table 6.1 Division F National Flood Insurance Program (NFIP) Status	Participating Jurisdiction	County	Participation Status	Initial FBHM Identified	Initial FIRM Identified	Current Effective Map Date
	Cherokee County	Cherokee	Yes	02.16.1979	06.17.1991	03.16.2016
	Cedar Bluff	Cherokee	Yes	05.15.1985	01.01.1987	01.19.2011(M)
	Centre	Cherokee	Yes	02.07.1975	03.14.1980	03.16.2016
	Gaylesville	Cherokee	Yes	–	01.19.2011	01.19.2011(M)
	Leesburg	Cherokee	Yes	10.15.1976	01.19.2011	01.19.2011(M)
	Sand Rock	Cherokee	Yes	–	01.19.2011	01.19.2011(M)
	Cullman County	Cullman	Yes	07.28.1978	06.17.1991	05.24.2011
	Baileyton	Cullman	No	–	12.02.1974	05.24.2011
	Berlin	Cullman	Not Mapped			
	Colony	Cullman	Yes	–	12.02.2004	05.24.2011(M)
	Cullman	Cullman	Yes	08.09.1974	01.14.1977	05.24.2011
	Dodge City	Cullman	Yes	–	12.02.2004	05.24.2011(M)
	Fairview	Cullman	No	–	12.02.2004	05.24.2011
	Garden City	Cullman	Yes	–	12.02.2004	05.24.2011(M)
	Good Hope	Cullman	Yes	–	05.24.2011	03.01.2005
	Hanceville	Cullman	Yes	04.12.1974	09.15.1978	05.24.2011
	Holly Pond	Cullman	Yes	–	12.02.2004	05.24.2011(M)
	Vinemont	Cullman	Yes	10.01.1976	12.02.2004	(NSFHA)
	West Point	Cullman	Yes	–	12.02.2004	05.24.2011(M)
	DeKalb County	DeKalb	Yes	04.28.1978	02.20.2008	09.29.2011
	Collinsville	DeKalb	Yes	01.02.1976	04.15.1980	09.29.2011
	Crossville	DeKalb	Yes	10.29.1976	02.20.2008	09.29.2011(M)
	Fort Payne	DeKalb	Yes	11.01.1974	05.01.1980	09.29.2011
	Fyffe	DeKalb	Yes	07.02.1976	09.29.1986	09.29.2011(M)
	Geraldine	DeKalb	Yes	03.12.1973	02.20.2008	09.29.2011(M)
	Hammondville	DeKalb	Yes	11.03.1978	02.20.2008	09.29.2011
	Henagar	DeKalb	Yes	03.12.1976	02.20.2008	09.29.2011(M)
	Ider	DeKalb	Yes	–	02.20.2008	09.29.2011(M)
	Lakeview	DeKalb	No	09.07.1979	02.20.2008	09.29.2011
	Mentone	DeKalb	Yes	07.02.1976	02.20.2008	09.29.2011(M)
Pine Ridge	DeKalb	No	–	02.20.2008	09.29.2011	
Powell	DeKalb	Yes	10.26.1979	02.20.2008	09.29.2011(M)	
Rainsville	DeKalb	Yes	03.12.1976	05.01.1980	09.21.2011	
Shiloh	DeKalb	No	09.14.1979	02.20.2008	09.29.2011	
Sylvania	DeKalb	Yes	07.09.1976	02.20.2008	09.29.2011(M)	
Valley Head	DeKalb	Yes	05.03.1974	04.15.1980	09.29.2011	

Section 6 | Mitigation

6.2 Capabilities Assessment for Local Jurisdictions

Table 6.1 | Division F National Flood Insurance Program (NFIP) Status (Continued)

Participating Jurisdiction	County	Participation Status	Initial FBHM Identified	Initial FIRM Identified	Current Effective Map Date
Etowah County	Etowah	Yes	02.17.1978	04.15.1982	03.21.2019
Altoona	Etowah	Yes	05.17.1974	03.14.1980	03.21.2019
Attalla	Etowah	Yes	12.28.1973	12.01.1981	03.16.2016
Gadsden	Etowah	Yes	03.08.1974	04.04.1983	03.16.2016
Glencoe	Etowah	Yes	05.19.1974	12.01.1981	03.16.2016
Hokes Bluff	Etowah	Yes	12.10.1976	03.28.1980	03.16.2016
Rainbow City	Etowah	Yes	02.18.1977	01.06.1982	03.16.2016
Reece City	Etowah	Yes	02.21.1975	02.01.1991	03.16.2016
Ridgeville	Etowah	No	--	09.26.2008	03.16.2016
Sardis City	Etowah	Yes	09.17.1976	01.01.1987	03.21.2019
Southside	Etowah	Yes	12.07.1973	07.02.1987	03.16.2016
Walnut Grove	Etowah	Yes	01.31.1975	03.16.1981	03.21.2019
Blount County	Blount	Yes	02.24.1978	06.17.1991	03.21.2019
Allgood	Blount	--	--	--	--
Blountsville	Blount	Yes	09.29.1978	08.03.2009	03.21.2019 (M)
Cleveland	Blount	Yes	03.05.1976	08.03.2009	03.21.2019
Hayden	Blount	--	--	--	--
Highland Lake	Blount	Yes	--	08.03.2009	03.21.2019
Locust Fork	Blount	No	08.03.2009	03.21.2019	08.03.2010
Nectar	Blount	No	08.03.2009	03.21.2019	08.03.2010
Oneonta	Blount	Yes	09.13.1974	08.19.1986	03.21.2019
Rosa	Blount	Yes	--	08.03.2009	03.21.2019 (M)
Snead	Blount	Yes	06.27.1975	08.03.2009	03.21.2019
Susan Moore	Blount	Yes	09.13.1974	08.03.2009	03.21.2019
Jackson County	Jackson	Yes	04.28.1978	05.03.1990	12.16.2008
Bridgeport	Jackson	Yes	03.11.1977	07.18.1985	12.16.2008
Dutton	Jackson	Yes	07.02.1976	12.16.2008	12.16.2008
Hollywood	Jackson	Yes	03.08.1974	09.29.1986	12.16.2008
Hytov	Jackson	--	--	--	--
Langston	Jackson	Yes	--	12.16.2008	12.16.2008
Paint Rock	Jackson	No	12.10.1976	06.17.1986	12.16.2008
Pisgah	Jackson	No	09.26.1975	12.16.2008	12.16.2008
Pleasant Groves	Jackson	--	--	--	--
Scottsboro	Jackson	Yes	06.10.1977	09.18.1985	12.16.2008
Section	Jackson	No	06.25.1976	12.16.2008	12.16.2008
Skyline	Jackson	--	--	--	--
Stevenson	Jackson	Yes	05.10.1974	12.17.1987	12.16.2008
Woodville	Jackson	Yes	06.25.1976	03.01.1987	12.16.2008
Limestone County	Limestone	Yes	03.18.1977	07.16.1981	08.16.2018
Ardmore	Limestone	Yes	12.17.1976	04.15.1986	08.16.2018 (M)
Athens	Limestone	Yes	03.08.1974	09.28.1979	08.16.2018
Elkmont	Limestone	--	--	--	--
Lester	Limestone	--	--	--	--
Mooreville	Limestone	Yes	07.07.2009	08.16.2018	09.21.2010

Section 6 | Mitigation

6.2 Capabilities Assessment for Local Jurisdictions

Table 6.1 Division F National Flood Insurance Program (NFIP) Status (Continued)	Participating Jurisdiction	County	Participation Status	Initial FBHM Identified	Initial FIRM Identified	Current Effective Map Date
	Madison County	Madison	Yes	07.01.1977	07.02.1981	08.16.2018
	Gurley	Madison	Yes	09.26.1975	03.01.1995	08.16.2018
	Huntsville	Madison	Yes	05.24.1974	11.01.1979	08.16.2018
	Madison	Madison	Yes	10.01.1976	12.15.1978	08.16.2018
	New Hope	Madison	Yes	10.08.1976	06.03.1977	08.16.2018
	Owens Cross Roads	Madison	Yes	06.25.1976	03.02.1981	08.16.2018
	Triana	Madison	Yes	06.25.1976	09.29.1986	08.16.2018
	Morgan County	Morgan	Yes	03.11.1977	07.16.1981	08.16.2018
	Decatur	Morgan	Yes	05.24.1974	09.05.1979	08.16.2018
	Eva	Morgan	--	--	--	--
	Falkville	Morgan	Yes	05.24.1974	01.03.1979	08.16.2018
	Hartselle	Morgan	Yes	05.10.1974	07.17.1978	08.16.2018
	Priceville	Morgan	Yes	05.24.1974	09.05.1979	08.16.2018
	Somerville	Morgan	Yes	06.04.1976	05.02.1999	08.16.2018 (M)
Trinity	Morgan	Yes	06.25.1976	11.24.1978	08.16.2018	

Source: NFIP Community Status Book (Updated 09.24.2019)

Table 6.1 summarizes NFIP participation and policy statistics for each municipality in the planning area as of September 24, 2019. According to FEMA’s Community Status Book Report, “(M)” indicates that no elevation has been determined – all Zone A, C, and X. “NSFHA” indicates that no special flood hazard area has been determined – all Zone C. Jurisdictions that are not currently participating in the NFIP but are participating in the regional hazard mitigation planning process have identified mitigation actions to address their NFIP status in the jurisdictional mitigation action plans in Section 6.5.

General Technical & Financial Capacity

Technical and financial capacity are limiting factors for implementation in most participating jurisdictions. The need for assistance in local planning and implementation is well-established and well-documented. Communities work together through the local emergency management agencies (EMAs) and their regional planning commissions (EARPDC, NARCOG, RPCGB, and TARCOG) to meet gaps in technical capacity related to planning for mitigation. Nearly all local jurisdictions work with and through the County EMA to implement specific strategies. This is particularly apparent when working with smaller communities (those with a total population under 2,000 residents) who rely on the County EMA for nearly all local hazard mitigation, disaster response, and recovery needs.

Financial authority is vested in local elected or appointed boards and commissions. Primarily, the county commissions and local municipal councils have been the leaders determining which mitigation strategies are worthy of investment. Other participating jurisdictions have traditionally channeled mitigation projects through these local governmental bodies for sponsoring. The reliance upon federal and state grant funding is a prevalent financial strategy for mitigation projects requiring large expenditure particularly new construction or major rehabilitation of public facilities.

Section 6 | Mitigation

6.2 Capabilities Assessment for Local Jurisdictions

The capabilities of each participating jurisdiction are defined by the authorities, policies, programs, and available resources that each utilizes for hazard mitigation. Each jurisdiction falls into one of several categories, with each category possessing distinct authorities and resources to implement hazard mitigation actions. For example, counties and municipalities differ in terms of statutory authority to pursue hazard mitigation. Meanwhile, two communities with the same established authority may approach hazard mitigation entirely differently in terms of the exercise of said authority. School and utility boards are often subject to even greater restrictions on their authority.

Table 6.2 below summarizes the statutory authority and resources of each jurisdiction and its present use or potential future use of these powers to implement proposed hazard mitigation actions. The table describes powers or policies that are granted different types of participating jurisdictions in general terms; states the jurisdictions that currently apply those policies in their mitigation efforts; indicates the jurisdictions that intend to apply those authorities and policies for future implementation; and explains the means by which each jurisdiction will incorporate the mitigation actions into existing powers, authorities, and capabilities. In every case, the primary means of incorporation involves a review of proposed actions and implementation through the appropriate governmental authority such as the city council, county commission, school board, or utility board.

Table 6.2 | Statutory Authority and Resources

Authority or Power	Authorized For	Practiced By	Proposed For	Incorporated Through
Building Code Enforcement: ability to enforce codes related to building materials and construction standards outside of flood hazard areas	Municipalities	Certain jurisdictions (Table 6.3)	All municipalities	Council or Commission action to enact and enforce regulations
Capital Improvements: ability to plan and implement public infrastructure improvements to mitigate hazards	Municipalities, Counties, School Boards, Utilities	All jurisdictions	All jurisdictions	Action to approve expenditures by local county commission, city council, school board, or utility board
Financial Authority: Control of public expenditures to acquire and improve property owned by the jurisdiction; capacity to borrow and expend funds	Municipalities, Counties, School Boards, Utilities	All jurisdictions	All jurisdictions	Action to approve expenditures by local county commission, city council, school board, or utility board

6.2 Capabilities Assessment for Local Jurisdictions

Table 6.2 | Statutory Authority and Resources (Continued)

Authority or Power	Authorized For	Practiced By	Proposed For	Incorporated Through
Floodplain Buyouts: ability to purchase properties subject to routine flooding and maintain as permanent open space	Municipalities, Counties	All jurisdictions	All jurisdictions	Action to approve expenditures by local county commission or city council
Floodplain Management: ability to regulate development in areas of special flood hazard in compliance with NFIP standards; includes authority to regulate land use and subdivisions inside of flood hazard areas	Municipalities, Counties	All participating NFIP jurisdictions	All participating NFIP jurisdictions	Council or Commission action to enact and enforce regulations
Police Authority: ability to regulate activities of individuals for purposes of health, safety, and public welfare	Municipalities, Counties	All municipal jurisdictions	All municipal jurisdictions	Council or Commission action to enact and enforce regulations
Stormwater Management: ability to regulate retention, detention, and release of stormwater run-off	Municipalities	Certain jurisdictions (Table 6.3)	All municipalities	Council action to enact and enforce regulations
Subdivision Regulations: ability to regulate new developments, both inside and outside of flood hazard areas	Municipalities, Counties	Certain jurisdictions (Table 6.3)	All municipal jurisdictions	Council or Commission action to enact and enforce regulations
Zoning Authority: ability to divide political jurisdiction into districts for purposes of regulating buildings and their use, both inside and outside of flood hazard areas	Municipalities	Certain jurisdictions (Table 6.3)	All municipalities	Council action to enact and enforce regulations

Section 6 | Mitigation

6.2 Capabilities Assessment for Local Jurisdictions

Where Table 6.2 summarized the statutory authority and resources available to each jurisdiction for hazard mitigation more broadly, Table 6.3 below provides a summary of local plans, ordinances, and programs currently in place, or being developed, within jurisdictions in the Division F region. A “Yes” (Y) indicates the item is currently in place and being implemented. A “No” (N) indicates the item is not in place or being implemented. Certain jurisdictions not implementing one or more of the items in Table 6.3 have developed mitigation action items to further analyze investing the necessary resources into developing the identified plans, ordinances, and/or programs to improve hazard mitigation (Section 6.5).

Table 6.3 | Plans, Ordinances, and Programs Relevant to Hazard Mitigation

Participating Jurisdiction	County	Zoning Ordinance	Code Enforcement	Recent Comp. Plan	NFIP Participation
Cherokee County	Cherokee	N	N	N	Y
Cedar Bluff	Cherokee	Y	Y	N	Y
Centre	Cherokee	Y	Y	N	Y
Gaylesville	Cherokee	N	N	N	Y
Leesburg	Cherokee	N	N	N	Y
Sand Rock	Cherokee	N	N	N	Y
Cullman County	Cullman	N	N	Y	Y
Baileyton	Cullman	N	N	N	N
Berlin	Cullman	N	N	N	N
Colony	Cullman	N	N	N	Y
Cullman	Cullman	Y	Y	N	Y
Dodge City	Cullman	N	N	N	Y
Fairview	Cullman	N	N	N	N
Garden City	Cullman	Y	Y	N	Y
Good Hope	Cullman	Y	Y	N	Y
Hanceville	Cullman	Y	Y	Y	Y
Holly Pond	Cullman	Y	Y	Y	Y
Vinemont	Cullman	Y	Y	N	Y
West Point	Cullman	N	N	N	Y
DeKalb County	DeKalb	N	Y	Y	Y
Collinsville	DeKalb	Y	Y	N	Y
Crossville	DeKalb	Y	Y	N	Y
Fort Payne	DeKalb	Y	Y	Y	Y
Fyffe	DeKalb	Y	Y	N	Y

PHASE I COUNTIES

Participating Jurisdiction	County	Zoning Ordinance	Code Enforcement	Recent Comp. Plan	NFIP Participation
Geraldine	DeKalb	Y	Y	N	Y
Hammondville	DeKalb	N	N	N	Y
Henagar	DeKalb	N	Y	N	Y
Ider	DeKalb	N	N	N	Y
Lakeview	DeKalb	N	N	N	N
Mentone	DeKalb	N	N	Y	Y
Pine Ridge	DeKalb	N	N	N	N
Powell	DeKalb	N	N	N	Y
Rainsville	DeKalb	Y	Y	Y	Y
Shiloh	DeKalb	N	N	N	N
Sylvania	DeKalb	N	Y	N	Y
Valley Head	DeKalb	Y	Y	N	Y
Etowah County	Etowah	N	Y	Y	Y
Altoona	Etowah	N	Y	Y	Y
Attalla	Etowah	Y	Y	N	Y
Gadsden	Etowah	Y	Y	Y	Y
Glencoe	Etowah	Y	Y	Y	Y
Hokes Bluff	Etowah	Y	Y	Y	Y
Rainbow City	Etowah	Y	Y	Y	Y
Reece City	Etowah	N	Y	N	Y
Ridgeville	Etowah	N	Y	Y	N
Sardis City	Etowah	Y	Y	Y	Y
Southside	Etowah	Y	Y	N	Y
Walnut Grove	Etowah	Y	Y	Y	Y

Section 6 | Mitigation

6.2 Capabilities Assessment for Local Jurisdictions

Table 6.3 | Plans, Ordinances, and Programs Relevant to Hazard Mitigation (Continued – Phase II Counties)

Participating Jurisdiction	County	Zoning Ordinance	Code Enforcement	Recent Comp. Plan	NFIP Participation
Blount County	Blount	N	N	N	Y
Allgood	Blount	N	N	N	N
Blountsville	Blount	Y	Y	N	Y
Cleveland	Blount	N	N	N	Y
Hayden	Blount	N	N	N	N
Highland Lake	Blount	Y	Y	N	Y
Locust Fork	Blount	N	Y	N	N
Nectar	Blount	N	N	N	N
Oneonta	Blount	Y	Y	N	Y
Rosa	Blount	N	N	N	Y
Snead	Blount	N	N	N	Y
Susan Moore	Blount	N	N	N	Y
Jackson County	Jackson	N	N	N	Y
Bridgeport	Jackson	Y	Y	Y	Y
Dutton	Jackson	N	N	N	Y
Hollywood	Jackson	Y	Y	N	Y
Hytop	Jackson	Y	Y	N	N
Langston	Jackson	N	N	N	Y
Paint Rock	Jackson	N	N	N	N
Pisgah	Jackson	Y	Y	N	N
Pleasant Groves	Jackson	N	N	N	N
Scottsboro	Jackson	Y	Y	N	Y
Section	Jackson	Y	Y	N	N
Skyline	Jackson	Y	Y	Y	N

Participating Jurisdiction	County	Zoning Ordinance	Code Enforcement	Recent Comp. Plan	NFIP Participation
Stevenson	Jackson	Y	Y	N	Y
Woodville	Jackson	Y	Y	Y	Y
Limestone	Limestone	N	N	N	Y
Ardmore	Limestone	Y	Y	N	Y
Athens	Limestone	Y	Y	Y	Y
Elkmont	Limestone	Y	Y	N	N
Lester	Limestone	N	N	N	N
Mooresville	Limestone	Y	Y	N	Y
Madison County	Madison	N	N	N	Y
Gurley	Madison	Y	Y	N	Y
Huntsville	Madison	Y	Y	Y	Y
Madison	Madison	Y	Y	Y	Y
New Hope	Madison	Y	Y	N	Y
Owens Cross Roads	Madison	Y	Y	N	Y
Triana	Madison	Y	Y	Y	Y
Morgan County	Morgan	N	N	N	Y
Decatur	Morgan	Y	Y	Y	Y
Eva	Morgan	N	N	N	N
Falkville	Morgan	Y	Y	N	Y
Hartselle	Morgan	Y	Y	Y	Y
Priceville	Morgan	Y	Y	Y	Y
Somerville	Morgan	N	N	N	Y
Trinity	Morgan	Y	Y	N	Y

Sources: [Division F County Multi-Hazard Mitigation Plans](#)

6.3 Regional Mitigation Goals

6.3 Regional Mitigation Goals

Mitigation Goals are broad statements that focus on long-term priorities to reduce or avoid vulnerabilities to identified hazards within the Division F region. Provided below, are goal areas that align with FEMA’s program categories for managing a successful mitigation program. These categories are useful guidelines for identifying and sorting regional mitigation measures detailed in each jurisdiction’s action plan. As such, they provide the framework for the goals and objectives expected to be achieved by development, adoption, and implementation of the Division F Regional Hazard Mitigation plan.

It is important to note that while the goal categories may be described differently than previous county-wide hazard mitigation plans, no county-specific hazard mitigation goal was eliminated in the development of the Division F plan. Rather, goal areas were reframed and/or reorganized into the goal areas provided below which are aligned to AEMA’s statewide hazard mitigation goals for better coordination and implementation of hazard mitigation activities.

Table 6.4 | Division F Regional Mitigation Goals

GOAL 1	Prevention	Manage the development of land and buildings to minimize risk of life and property loss due to hazard events.
GOAL 2	Property Protection	Protect structures and their occupants and contents from the damaging effects of hazard events
GOAL 3	Natural Resource Protection	Preserve, rehabilitate, and enhance the beneficial functions of the natural environment to promote a balance between natural systems and social and economic demands.
GOAL 4	Structural Mitigation	Apply engineered structural modifications to natural systems and public infrastructure to reduce the potentially damaging impacts of hazards, where those modifications are feasible and environmentally suitable.
GOAL 5	Emergency Services	Improve the efficiency, timing, and effectiveness of response and recovery efforts for hazard events.
GOAL 6	Public Education & Awareness	Educate and foster public awareness of hazards and techniques available for mitigation

6.4 Regional Mitigation Strategies

Mitigation strategies build upon the broad goal statements described above to provide further definition through specific actions items. The mitigation strategies of the previous county hazard mitigation plans were evaluated on their ability and impact to help achieve the established mitigation goals emphasizing mitigation concerning new and existing buildings and infrastructure. These strategies also provide additional insight and understanding to addressing any specific hazard concerns. The mitigation strategies that are associated with each goal area are described in more detail below, as well as identifying appropriate hazard(s) that are mitigated through these approaches.

6.4 Regional Mitigation Strategies

Goal 1. Prevention

Prevention activities primarily address future development and the reduction of hazard effects on the planning area. Prevention activities are often administered through government programs or regulatory actions that influence the built environment. These activities are particularly effective in hazard mitigation for areas with little current capital investment or development. Examples of prevention activities include:

1. Land use planning and zoning administration (all hazards, primarily flooding)
2. Building code enforcement program (flooding, high winds)
3. Open space preservation (flooding)
4. Floodplain management regulations (flooding)
5. Stormwater management regulations (flooding)
6. Participation in National Flood Insurance Program (NFIP) (flooding)
7. Capital improvements planning (all hazards)

Goal 2. Property Protection

Property protection activities primarily concentrate on the modification of existing buildings and adjacent areas to strengthen their ability to withstand hazard events, or to remove an at-risk structure from hazardous locations. Examples of property protection include:

1. Acquisition of flood prone properties (flooding)
2. Relocation of flood prone structures (flooding)
3. Elevation of flood prone structures (flooding)
4. Retrofitting of critical facilities and other structures (all hazards)

Goal 3. Natural Resource Protection

Natural resource protection activities reduce the impact of hazard events by preserving, rehabilitating, or enhancing the natural environment and its protective functions. These activities would include areas such as floodplains, wetlands, and steep slopes. Examples of natural resource protection activities include:

1. Floodplain protection (flooding)
2. Watershed management (flooding)
3. Riparian buffers (flooding)
4. Forest and vegetation management (flooding, wildfire)
5. Conservation easements (flooding, land subsidence)

Goal 4. Structural Mitigation

Structural mitigation protection activities are intended to lessen the impact of a hazard by utilizing construction of an appropriate structure. Examples of structural mitigation protection activities include:

1. Reservoirs (flooding)
2. Levees and dams (flooding)
3. Stormwater diversion (flooding)
4. Retention and detention structures (flooding)
5. Safe rooms and shelters (high winds, extreme temperatures)

Goal 5. Emergency Services

Emergency services protection activities involve protecting people and property before, during, and after a hazard event. These activities assist in providing capable actions regarding hazard events. Examples of emergency services activities include:

1. Warning alert systems (all hazards)
2. Continuity of operations (all hazards)
3. Evacuation routes (all hazards)
4. Emergency responder training (all hazards)
5. Provision of alternative power (e.g., generators) (all hazards)
6. Debris removal (all hazards)

Goal 6. Public Education and Awareness

Public education and awareness activities inform and remind residents, business owners, elected officials, and other stakeholders about hazards, vulnerable locations, and mitigation actions that can be used to avoid losses. Examples of public education and awareness activities include:

1. Information dissemination, including maps and websites displaying hazard information (all hazards)
2. Public exposition or workshops (all hazards)
3. Educational programs (all hazards)
4. Real estate disclosures (dam failure, flooding, technological hazards)

6.5 Jurisdictional Mitigation Action Plans

6.5 Jurisdictional Mitigation Action Plans

This section identifies and analyzes a range of mitigation actions and projects under consideration to achieve the regional mitigation goals for reducing the impacts of hazard events to the Division F region, as well as each of the jurisdictions within the region. Local planning stakeholders thoroughly reviewed and considered the information provided in the Risk Assessment (Section 4) and their local capabilities to determine the most appropriate plan of action for their jurisdictions. Each action or project listed in the jurisdiction’s mitigation action table includes the following information: alignment with the defined hazard mitigation goals and strategies; a designation of a lead agency/responsible party; which hazards are being addressed; potential funding sources; updated priority/status of the defined action/project; and a benefit/cost score. These elements are described in more detail below.

- **Goal:** Category of mitigation goal (Section 6.3) that is met by the proposed action.
- **Action Description:** Brief explanation of mitigation action to be undertaken.
- **Hazards Addressed:** Specific hazard(s) the proposed action mitigates against.
- **Lead Agency:** Entity responsible for undertaking the action. The agency listed will often assign implementation responsibility to a specific department or division under its purview.
- **Funding Source:** Potential sources of funding applicable to proposed action.
- **Status:** Categorization based upon the following criteria:
 - **Completed:** Action has been implemented within the last five years
 - **Ongoing:** Action in progress / perennial occurrence
 - **Revised:** Action has been revised in current plan update.
 - **New:** Action has been added to action plan in current plan update.
- **Priority:** Categorization is based upon the following criteria:
 - **High:** Projected implementation within five years (immediate term action)
 - **Medium:** Projected implementation within five to ten years (mid-range action)
 - **Low:** Projected implementation beyond ten years (long-term mitigation action)
- **Benefit/Cost Score:** Categorization is based upon the following criteria:

Table 6.5 | Benefit/Cost Score Definitions

Score	Benefit Definition	Cost Definition
HIGH	Projects that benefit many in the jurisdiction that provide long-term mitigation solutions.	Projects that can be implemented by existing personnel with little additional burden on budget and are uncomplicated to implement.
MODERATE	Projects that would benefit a moderate amount of the jurisdiction’s population or provides mitigation solutions for several years.	Projects that may need additional funding, continued study, or staffing outside of normal operations, with estimated costs between \$10,000 and \$100,000.
LOW	Projects that only benefit a limited population or provides only short-term mitigation solutions.	Projects likely to cost over \$100,000, require additional funding or staffing outside of normal operations, and are complicated to implement.

6.5 Jurisdictional Mitigation Action Plans

The benefit/cost scores included in the jurisdictional mitigation action plans have been determined for planning purposes and do not include a comprehensive analysis of all costs and benefits associated with action implementation. For some actions, such as routine or ongoing operations conducted with local operating funds and existing staff, the provided benefit/cost score may be the only analysis needed. For more complicated actions requiring grant or bond funding, more in-depth evaluations of a costs and benefits will likely be required. As specific projects are developed in more detail, the benefits and costs of an action will need to be identified with more precision and the benefit-cost ration (BCR) that results from a full benefit-cost analysis may differ from what is presented in the action plans.

It should also be noted that higher scores do not necessarily correspond to high priorities, nor do low scores correspond to low priority projects. An important action with a high priority to a jurisdiction may have a lower benefit/cost score because of its complexity, assumed high expense, and other identified costs. Jurisdictions should not be deterred from further consideration of actions which have low scores until additional cost-benefit ratio analysis is undertaken.

Mitigation Action Plans

The following pages detail the individual hazard mitigation actions for each jurisdiction participating in the AEMA Division F Regional Hazard Mitigation Plan. The action plans are organized alphabetically by county and all participating jurisdictions are listed on a cover page for each county's action plan. Certain revisions or updates have been highlighted to emphasize progress made since each county's last hazard mitigation plan was approved and adopted.

SECTION 6.5.1 | COUNCILS OF GOVERNMENT (COGs) MITIGATION ACTIONS

- Top of Alabama Regional Council of Governments (**TARCOG**)
- North Central Alabama Regional Council of Governments (**NARCOG**)
- Regional Planning Commission of Greater Birmingham (**RPCGB**)

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Councils of Government (COGs)

TARCOG MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	TARCOG (with assistance from NARCOG and RPCGB) will maintain the mitigation plan by seeking additional grant funding, as needed.	All	TARCOG	HMGP / Local	New	High	High
	1, 6	TARCOG will facilitate multi-jurisdictional collaboration by attending AEMA Division F meetings on at least an annual basis.	All	TARCOG	Local	New	High	High
	1	TARCOG will conduct an annual review of the mitigation plan and update plan information, as needed.	All	TARCOG	Local	New	High	High
	1	TARCOG will support DeKalb, Jackson, Limestone, Madison, and Marshall counties (TARCOG's service area) in applying for hazard mitigation grant funding to support implementation of identified mitigation actions.	All	TARCOG	Local	New	High	High
	1, 6	TARCOG will incorporate hazard mitigation actions into other local and regional planning efforts including, but not limited to, local comprehensive plans, regional transportation planning, and the Northeast Alabama Comprehensive Economic Development Strategy (CEDS).	All	TARCOG	Local	New	Medium	High

The CEDS must be comprehensively updated every five years. The next TARCOG CEDS update will take place in 2022 and will include an added emphasis on resilience to natural disasters and other economic shocks.

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Councils of Government (COGs)

NARCOG MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	NARCOG will assist with the maintenance of the mitigation plan by seeking additional grant funding, as needed.	All	NARCOG	HMGP / Local	New	High	High
	1, 6	NARCOG will facilitate multi-jurisdictional collaboration by attending AEMA Division F meetings on at least an annual basis.	All	NARCOG	Local	New	High	High
	1	TARCOG will conduct an annual review of the mitigation plan and update plan information, as needed.	All	NARCOG	Local	New	High	High
	1	NARCOG will support Morgan and Cullman counties (NARCOG's Division F service area) in applying for hazard mitigation grant funding to support implementation of identified mitigation actions.	All	NARCOG	Local	New	High	High
	1, 6	NARCOG will incorporate hazard mitigation actions into other local and regional planning efforts including, but not limited to, local comprehensive plans, regional transportation planning, and its Comprehensive Economic Development Strategy (CEDS).	All	NARCOG	Local	New	Medium	High

The CEDS must be comprehensively updated every five years. The next NARCOG CEDS update will take place in 2022 and will include an added emphasis on resilience to natural disasters and other economic shocks.

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Councils of Government (COGs)

RPCGB MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	RPCGB will assist with the maintenance of the mitigation plan by seeking additional grant funding, as needed.	All	RPCGB	HMGP / Local	New	High	High
	1, 6	RPCGB will facilitate multi-jurisdictional collaboration by attending AEMA Division F meetings on at least an annual basis.	All	RPCGB	Local	New	High	High
	1	RPCGB will conduct an annual review of the mitigation plan and update plan information, as needed.	All	RPCGB	Local	New	High	High
	1	RPCGB will support Blount County (RPCGB's Division F service area) in applying for hazard mitigation grant funding to support implementation of identified mitigation actions.	All	RPCGB	Local	New	High	High
	1, 6	RPCGB will incorporate hazard mitigation actions into other local and regional planning efforts including, but not limited to, local comprehensive plans, regional transportation planning, and the Comprehensive Economic Development Strategy (CEDS).	All	RPCGB	Local	New	Medium	High

The CEDS must be comprehensively updated every five years. The next RPCGB CEDS update will take place in 2022 and will include an added emphasis on resilience to natural disasters and other economic shocks.

SECTION 6.5.2 | CHEROKEE COUNTY MITIGATION ACTIONS

- Cherokee County
- Cedar Bluff
- Centre
- Gaylesville
- Leesburg
- Sand Rock
- Cherokee County Board of Education

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cherokee County

CHEROKEE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	County EMA; Floodplain Manager	HMGP / Local	Ongoing	High	High
	1, 3	Train local flood plain managers through programs offered by the State Flood Plain Manager.	Flooding, Flash Floods	County EMA; County Commission	Local (\$1,000 annually)	Ongoing	Low	High
	1, 6	Distribute FEMA publication 320 "Taking Shelter from the Storm: Building a Safe Room in Your House" to local homebuilders.	Tornadoes, Thunderstorms, High Winds, Strong Winds	County EMA	HMGP, PDM, Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA; County Commission	Local	Ongoing	High	High
	2	Complete a wind retrofit of the Cherokee County Courthouse.	Tornadoes, Thunderstorms, High Winds, Strong Winds	County Commission	HMGP, PDM, Local (\$325,000)	Ongoing	High	Moderate
	4	Encourage the construction of safe rooms within new and existing public buildings, such as new schools, libraries, community centers, and other public buildings and in new and existing construction of all types, where feasible.	All	County EMA	HMGP, PDM, Local	Ongoing	Medium	Moderate

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cherokee County

CHEROKEE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct/install community safe rooms and/or individual storm shelters.	Tornadoes, Thunderstorms, High Winds, Strong Winds	County EMA	HMGP, PDM, Local (\$4,000 – \$125,000)	Ongoing	Medium	Moderate
	5	Purchase emergency generators for backup services and to accompany community safe rooms.	All	County EMA	Local, HMGP, ADECA (\$2,000 each)	Ongoing	High	High
	5, 6	Purchase and distribute weather radios to households and businesses.	All	County EMA	Local, HMGP, ADECA (\$16,350)	Ongoing	High	Moderate
	6	Educate the public about the CODE RED system which provides severe weather warnings via phone and text messaging.	All	County EMA	Local, HMGP	Revised	High	High
	6	Create a mitigation library to be housed at the County Library.	All	County EMA	Local (\$550)	Ongoing	Medium	High

Revised 2015 action to reflect existing warning system contract and increasing public awareness to participate in the CODE RED system.

Section 6 | Mitigation Action Plan Cherokee County | Cedar Bluff

TOWN OF CEDAR BLUFF MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Purchase emergency generators for backup services and to accompany community safe rooms.	Flooding, Flash Floods	Town Council / Mayor	HMGP, Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council / Mayor	Local, HMGP, ADECA (\$2,000 each)	Ongoing	High	High
	1, 6	Distribute FEMA publication 320 "Taking Shelter from the Storm: Building a Safe Room in Your House" to local homebuilders.	Tornadoes, Thunderstorms, High Winds, Strong Winds	County EMA, Town Council / Mayor	HMGP, PDM, Local	Ongoing	Low	High
	2	Complete a wind retrofit of the Cedar Bluff Town Hall.	Tornadoes, Thunderstorms, Tropical Storms and Depressions, High Winds, Strong Winds	Town Council / Mayor	HMGP, PDM, Local (\$120,000)	Ongoing	High	Moderate
	4	Encourage the construction of safe rooms within new and existing public buildings, such as new schools, libraries, community centers, and other public buildings and in new and existing construction of all types, where feasible.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	County EMA, Town Council / Mayor	HMGP, PDM, Local	Ongoing	Medium	Moderate

Section 6 | Mitigation Action Plan Cherokee County | Cedar Bluff

TOWN OF CEDAR BLUFF MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct/install community safe rooms and/or individual storm shelters.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor	HMGP, PDM, Local (\$4,500 – \$125,000)	Ongoing	Medium	Moderate
	5	Purchase emergency generators for backup services and to accompany community safe rooms.	All	Town Council / Mayor	Local, HMGP, ADECA (\$2,000 each)	Ongoing	High	High
	5, 6	Purchase and distribute weather radios to households and businesses.	All	Town Council / Mayor	Local, HMGP, ADECA (\$40 each)	Ongoing	High	Moderate
	6	Educate the public about the CODE RED system which provides severe weather warnings via phone and text messaging.	All	Town Council / Mayor	Local, HMGP	Revised	High	High

Revised 2015 action 5.1.3 to reflect warning system contract and increasing public awareness.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Cherokee County | Centre

CITY OF CENTRE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	HMGP, Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council / Mayor	Local	Ongoing	High	High
	2	Construct drainage improvements to Cedar Bluff Road and Park Street.	Flooding, Flash Floods	City Council / Mayor	ADECA, HMGP, PDM, Local (\$272,500)	Ongoing	High	Moderate
	4	Construct/install community safe rooms and/or individual storm shelters.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	City Council / Mayor	HMGP, PDM, Local (\$4,500 - \$125,000)	Ongoing	Medium	Moderate
	5	Purchase emergency generators for backup services and to accompany community safe rooms	All	City Council / Mayor	Local, HMGP, ADECA (\$2,000 each)	Ongoing	High	High
	5, 6	Purchase and distribute weather radios to households and businesses.	All	County EMA	Local, HMGP, ADECA (\$40 each)	Ongoing	High	Moderate
	6	Educate the public about the CODE RED system which provides severe weather warnings via phone and text messaging.	All	City Council / Mayor	Local, HMGP	Revised	High	High

Section 6 | Mitigation Action Plan Cherokee County | Gaylesville

TOWN OF GAYLESVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	HMGP, Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council / Mayor	Local	Ongoing	High	High
	1, 6	Distribute FEMA publication 320 "Taking Shelter from the Storm: Building a Safe Room in Your House" to local homebuilders.	Tornadoes, Thunderstorms, High Winds, Strong Winds	County EMA	HMGP, PDM, Local	Ongoing	Low	High
	2	Construct drainage improvements along Highway 35 and 68 and along Riverside Drive.	Flooding, Flash Floods	Town Council / Mayor	HMGP, PDM, Local	Ongoing	High	Moderate
	4	Encourage the construction of safe rooms within new and existing public buildings, such as new schools, libraries, community centers, and other public buildings and in new and existing construction of all types, where feasible.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	County EMA, Town Council / Mayor	HMGP, PDM, Local	Ongoing	Medium	Moderate
	4	Construct/install community safe rooms and/or individual storm shelters.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor	HMGP, PDM, Local (\$4,500 - \$125,000)	Ongoing	Medium	Moderate

Estimated cost for drainage improvements: **\$92,650** for Highways 35 and 68; **\$190,750** for Riverside Drive.

Section 6 | Mitigation Action Plan Cherokee County | Gaylesville

TOWN OF GAYLESVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Purchase emergency generators for backup services and to accompany community safe rooms	All	Town Council / Mayor	Local, HMGP, ADECA (\$2,000 each)	Ongoing	High	High
	5, 6	Purchase and distribute weather radios to households and businesses.	All	County EMA	Local, HMGP, ADECA (\$40 each)	Ongoing	High	Moderate
	6	Educate the public about the CODE RED system which provides severe weather warnings via phone and text messaging.	All	Town Council / Mayor	Local, HMGP	Revised	High	High

Revised 2015 action 5.1.3 to reflect warning system contract and increasing public awareness.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Cherokee County | Leesburg

TOWN OF LEESBURG MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	HMGP, Local	Ongoing	High	High
	1, 3	Train local flood plain managers through programs offered by the State Flood Plain Manager.	Flooding, Flash Floods	County EMA	Local	Ongoing	Low	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council / Mayor	Local	Ongoing	High	High
	1, 6	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.	Flooding, Flash Floods	County EMA, Town Council / Mayor	Local (\$550)	Ongoing	Low	Moderate
	2	Construct drainage improvements along LaRue Finnis Street.	Flooding, Flash Floods	Town Council / Mayor	HMGP, PDM, Local (\$27,250)	Ongoing	High	High
	4	Construct/install community safe rooms and/or individual storm shelters.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor	HMGP, PDM, Local (\$4,500 - \$125,000)	Ongoing	Medium	Moderate
	5	Purchase emergency generators for backup services and to accompany community safe rooms, to include a generator for the Town Hall.	All	Town Council / Mayor	Local, HMGP, ADECA (\$2,000 each)	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Cherokee County | Leesburg

TOWN OF LEESBURG MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Support the Alabama SKYWARN efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.	All	Town Council / Mayor	Local (\$40 each)	Ongoing	Medium	Moderate
	5, 6	Purchase, distribute, and promote the use of weather radios to households and businesses.	All	County EMA, Town Council / Mayor	Local, HMGP, ADECA (\$40 each)	Ongoing	Medium	Moderate
	6	Educate the public about the CODE RED system which provides severe weather warnings via phone and text messaging.	All	Town Council / Mayor	Local, HMGP	Revised	High	High

SKYWARN is the National Weather Service (NWS) program of trained volunteer weather spotters. SKYWARN spotters coordinate with local emergency management officials and send reports of weather-based phenomena to the NWS.

Combined two 2015 actions regarding weather radios into one action (purchase/distribute and promote).

Revised 2015 action 5.1.3 to reflect warning system contract and increasing public awareness.

Section 6 | Mitigation Action Plan Cherokee County | Sand Rock

TOWN OF SAND ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	HMGP, Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council / Mayor	Local	Ongoing	High	High
	1, 6	Distribute FEMA publication 320 "Taking Shelter from the Storm: Building a Safe Room in Your House" to local homebuilders.	Tornadoes, Thunderstorms, High Winds, Strong Winds	County EMA	HMGP, PDM, Local	Ongoing	Low	High
	4	Encourage the construction of safe rooms within new and existing public buildings, such as new schools, libraries, community centers, and other public buildings and in new and existing construction of all types, where feasible.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	County EMA, Town Council / Mayor	HMGP, PDM, Local	Ongoing	Medium	Moderate
	4	Construct/install community safe rooms and/or individual storm shelters.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor	HMGP, PDM, Local (\$4,500 - \$125,000)	Ongoing	Medium	Moderate
	5	Purchase emergency generators for backup services and to accompany community safe rooms, to include a generator for the Town Hall.	All	Town Council / Mayor	Local, HMGP, ADECA (\$2,000 each)	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Cherokee County | Sand Rock

TOWN OF SAND ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Support the Alabama SKYWARN efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.	All	Town Council / Mayor	Local (\$40 each)	Ongoing	Medium	Moderate
	5, 6	Purchase, distribute, and promote the use of weather radios to households and businesses.	All	County EMA, Town Council / Mayor	Local, HMGP, ADECA (\$40 each)	Ongoing	Medium	Moderate
	6	Educate the public about the CODE RED system which provides severe weather warnings via phone and text messaging.	All	Town Council / Mayor	Local, HMGP	Revised	High	High

SKYWARN is the National Weather Service (NWS) program of trained volunteer weather spotters. SKYWARN spotters coordinate with local emergency management officials and send reports of weather-based phenomena to the NWS.

Combined two 2015 actions regarding weather radios into one action (purchase/distribute and promote).

Revised 2015 action 5.1.3 to reflect warning system contract and increasing public awareness.

Section 6 | Mitigation Action Plan

Cherokee County | Board of Education

CHEROKEE COUNTY BOARD OF EDUCATION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, County BOE	Local	Ongoing	High	High
	4	Construct/install community safe rooms and/or individual storm shelters.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	County BOE	HMGP PDM, Local (\$4,500 – \$125,000)	Ongoing	High	Moderate
	6	Purchase emergency generators for backup services and to accompany community safe rooms if feasible and necessary.	All	County BOE	Local, HMGP	Ongoing	High	High

SECTION 6.5.3 | CULLMAN COUNTY MITIGATION ACTIONS

- Cullman County
- Baileyton
- Berlin
- Colony
- Cullman
- Dodge City
- Fairview
- Garden City
- Good Hope
- Hanceville
- Holly Pond
- South Vinemont
- West Point
- Cullman County Board of Education
- Cullman City Schools
- Dodge City Fire Department
- East Cullman Water System
- Hanceville Water & Sewer Board
- VAW Water System
- Wallace State Community College

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County

CULLMAN COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	County EMA; Floodplain Manager	HMGP / Local	Ongoing	High	High
	1	Encourage the development of zoning and building codes in the county and small municipalities.	All	County Commission	Local	Ongoing	High	High
	1, 2	Develop and implement a clean-up plan for the county and participating jurisdictions.	All	County Commission	Local, PDM	Ongoing	Low	Moderate
	1, 2	Develop a pre-disaster contract for clean-up.	All	County Commission	Local, PDM	Ongoing	Medium	Moderate
	1, 4	Maintain and upgrade public infrastructures and services.	All	County Commission	Local, ADECA, HMGP	Ongoing	High	High
	1, 6	Promote education, training, and certification of public works employees.	All	County Commission	Local, HMGP	Ongoing	Medium	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County Commission County EMA	Local	Ongoing	High	High

The Cullman Co Commission has the option to participate in a debris removal contract bid by the ACCA. This is part of the debris removal plan developed by the Cullman County Engineer/Road Dept.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County

CULLMAN COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Ensure all county structures are protected from lightning strikes.	Tornadoes, Thunderstorms, High Winds, Strong Winds	County Commission County EMA	Local, HMGP	Ongoing	Low	Moderate
	2, 3	Protect property by relocating the structure out of harm's way, acquiring and clearing the property, elevating the structure above flood levels, placing barriers between property and hazards (e.g. low floodwalls, firebreaks, and sewer backup valves), retrofitting a structure and carrying property insurance. This includes acquiring buildings in flood prone areas and evaluating elevations as an alternate mitigation measure.	Flooding, Flash Floods	County EMA; Floodplain Manager	Local, HMGP, ADECA	Ongoing	High	High
	4	Promote drainage improvements on local streets and develop drainage and maintenance program. Develop and implement standard operating procedures for drainage system maintenance.	Flooding, Flash Floods	County EMA; Floodplain Manager	Local, HMGP, ADECA	Ongoing	High	High
	4	Purchase/update emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities. This includes procuring a 2500 KW generator with an extra tank to power the Cullman Regional Medical Center in cases of power outages due to disastrous events.	All	County EMA	Local, ADECA, HMGP (\$1,000 - \$5,000)	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County

CULLMAN COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Continue to partner with Cullman County Economic Development Office to provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	County Commission; County EMA	Local, HMGP, ADECA, GERF (\$4,000 – \$130,000)	Revised	High	High
	4	Require new electrical distribution lines be placed underground.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	County Commission	Local	Ongoing	Medium	Medium
	5	Develop an alternative evacuation route and plan.	All	County EMA; County Road Department	Local, HMGP, PDM	Ongoing	Low	Moderate
	5	Continue tree control program near power lines and county and private utilities.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	County EMA; County Road Department	Local, HMGP, PDM	Revised	Low	Moderate
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	Low	High
	5	Ensure all hospitals, schools, and nursing home facilities have a severe weather plan in place to protect their families.	All	County EMA	Local, HMGP	Ongoing	Low	High

Since 2011, the Economic Development Office (County) has assisted in grant writing for numerous community saferooms and over 200 individual storm shelters across the county. Since that time more community shelters have been installed at senior centers.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | Baileyton

TOWN OF BAILEYTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program.	Flooding, Flash Floods	Town Council / Mayor	Local	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor, County EMA	Local	Ongoing	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	Ongoing	High	High
	4	Purchase/update emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.	All	Town Council / Mayor	Local, ADECA, HMGP (\$1,000 - \$5,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor, County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High

Baileyton is not currently a participating member in the NFIP but will explore its ability and options to participate.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | Berlin

TOWN OF BERLIN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program.	Flooding, Flash Floods	Town Council / Mayor	Local	New	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor, County EMA	Local	New	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor, County EMA	Local, HMGP (\$1,500 - \$30,000)	New	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	Town Council / Mayor	Local	New	High	High

Berlin is not currently a participating member in the NFIP but will explore its ability and options to participate.

New Actions: Berlin was incorporated in 2018 and, as a result, did not participate in previous Cullman County Hazard Mitigation Plans.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | Colony

TOWN OF COLONY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	County EMA; Floodplain Manager	HMGP / Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA; County Commission	Local	Ongoing	High	High
	4	Purchase/update emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.	All	Town Council / Mayor	Local, ADECA, HMGP (\$1,000 - \$5,000)	Ongoing	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor, County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | Cullman

CITY OF CULLMAN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council / Mayor	HMGP / Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	City Council / Mayor County EMA	Local	Ongoing	High	High
	3	Maintain and upgrade public infrastructure and services. <i>*This is part of a countywide 911 communication system upgrade goal.</i>	All	City Council / Mayor	HMGP / Local / ADECA	Ongoing	High	High
	4	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed. <i>*Includes purchasing a communications tower and new siren to upgrade emergency warning sirens in the Cullman area.</i>	All	City Council / Mayor County EMA	HMGP / Local	Ongoing	High	High
	4	Purchase/update emergency generators for post-disaster mitigation.	All	City Council / Mayor	Local, ADECA, HMGP (\$1,000 - \$30,000)	Ongoing	High	High
	4	Promote drainage improvements on local streets and develop drainage and maintenance program.	Flooding, Flash Floods	City Council / Mayor	Local, HMGP, ADECA,	Ongoing	Medium	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	City Council / Mayor County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	Ongoing	High	High

This includes constructing a FEMA P-361 safe room for our First Responders and 911 Communications and back-up EOC-EMA. *This project was ranked as the top priority to the benefit of the City of Cullman and Cullman County during the Hazard Mitigation Planning Committee Grant request session.*

Section 6 | Mitigation Action Plan
Cullman County | Dodge City

TOWN OF DODGE CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor, County EMA	Local	Ongoing	High	High
	4	Purchase/update emergency generators for post-disaster mitigation.	All	Town Council / Mayor	Local, ADECA, HMGP (\$1,000 - \$5,000)	Ongoing	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor, County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | Fairview

TOWN OF FAIRVIEW MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and consider the status of participation in and compliance with the NFIP.	Flooding, Flash Floods	Town Council / Mayor	Local	Revised	High	High
	1	Encourage the development of zoning and building codes, in county and small jurisdictions.	Tornadoes, Thunderstorms, High Winds, Hail, Floods	Town Council / Mayor	Local, HMGP	Complete	Low	Moderate
	1, 2	Develop and implement a clean-up plan.	All	Town Council / Mayor	Local, PDM	Ongoing	Low	Moderate
	1, 2	Develop a pre-disaster contact for clean-up.	All	Town Council / Mayor	Local, PDM	Ongoing	Medium	Moderate
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor, County EMA	Local	Ongoing	High	High
	4	Promote drainage improvements on local streets and develop maintenance program.	Flooding, Flash Floods	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	4	Purchase emergency generators for post disaster mitigation.	All	Town Council / Mayor	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Hail	Town Council / Mayor County EMA	Local, HMGP, GERF (\$4,000 - \$130,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High

Fairview is not currently a participating member in the NFIP but will explore its ability and options to participate.

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Cullman County | Garden City

TOWN OF GARDEN CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	Local, HMGP	Ongoing	High	High
	1, 4	Maintain and upgrade public infrastructures and services.	All	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor County EMA	Local	Ongoing	High	High
	1, 6	Educate property owners on affordable individual mitigation and preparedness actions to be taken before disaster events.	All	Town Council / Mayor	Local	Ongoing	Medium	High
	1, 6	Increase public awareness and advise the public about safety precautions to guard against injury and loss of life from hazards.	All	Town Council / Mayor	Local	Ongoing	Medium	High
	4	Promote drainage improvements on local streets and develop drainage and maintenance program.	Flooding, Flash Floods	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	4	Purchase emergency generators for post disaster mitigation.	All	Town Council / Mayor	Local, HMGP (\$1,500 – \$30,000)	Ongoing	High	High

Update: Existing generator is not working - needs to be replaced.

Section 6 | Mitigation Action Plan Cullman County | Garden City

TOWN OF GARDEN CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Provide adequate tornado/storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 – \$130,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor County EMA	Local, HMGP (\$1,500 – \$30,000)	Ongoing	High	High
	6	Provide public involvement activities and publish informational brochures on natural hazards and emergency situations.	All	Town Council / Mayor	Local	Ongoing	Medium	High

Update: Garden City currently has three working sirens.

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Cullman County | Good Hope

CITY OF GOOD HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council / Mayor	Local, HMGP	Ongoing	High	High
	1, 2	Develop and implement a clean-up plan.	All	City Council / Mayor	Local, PDM	Ongoing	Low	Moderate
	1, 2	Develop a pre-disaster contract for clean-up	All	City Council / Mayor	Local, PDM	Complete	Medium	Moderate
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor County EMA	Local	Ongoing	High	High

Update: The City of Good Hope recently purchased a skid steer with grapple bucket that will aid in the clean up process after a storm event.

The City of Good Hope signed a pre-disaster contract with Marshall's Tree Service to aid in clean up.

Section 6 | Mitigation Action Plan Cullman County | Good Hope

CITY OF GOOD HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Provide adequate tornado/storm shelters and community safe rooms.	Flooding, Flash Floods	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	4	Promote drainage improvements on local streets and develop drainage and maintenance program.	Flooding, Flash Floods	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	4	Purchase emergency generators for post disaster mitigation.	All	City Council / Mayor	Local, HMGP (\$1,500 – \$30,000)	Complete		
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	City Council / Mayor County EMA	Local, HMGP (\$1,500 – \$30,000)	Ongoing	High	High

Update: The City of Good Hope has installed 12 new culvert pipes in the last two years with concrete wing walls to improve drainage.

The City of Good Hope installed two 30-KW generators on trailers to help get into disaster areas. City Hall has been wired for quick hook-up to run at full capacity.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | Hanceville

CITY OF HANCEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council / Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	City Council / Mayor County EMA	Local	Ongoing	High	High
	2	Analyze Hanceville's municipal drainage system in flood prone areas to determine adequate sizes of ditches, culverts, and swales.	Flooding, Flash Floods	City Council / Mayor	HMGP, CDBG, Local (\$50,000)	Ongoing	High	High
	2	Consider parking lot landscaping standards in zoning ordinances to encourage infiltration of rainwater where there are large expanses of impervious surfaces, such as concrete or asphalt.	Flooding, Flash Floods	City Council / Mayor	Local	Ongoing	Medium	Low
	2, 3	Acquire buildings in flood prone areas (evaluate elevation as an alternative mitigation measure). Increase open space acquisition in flood prone areas.	Flooding, Flash Floods	City Council / Mayor	Local, HMGP, CBDG	Ongoing	Medium	Moderate
	2, 4	Clean ditches, replace and repair drainpipes identified as inadequate.	Flooding, Flash Floods	City Council / Mayor	Local, HMGP	Ongoing	Medium	Moderate

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Cullman County | Hanceville

CITY OF HANCEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Continue drainage improvements on local streets and drainage and maintenance program.	Flooding, Flash Floods	City Council / Mayor	Local, ADECA, HMGP	Revised	Medium	High
	4	Purchase emergency generators for post disaster mitigation.	All	City Council / Mayor County EMA	Local, HMGP (\$1,500 – \$30,000)	Ongoing	High	High
	4	Provide adequate tornado/storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	City Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 – \$130,000)	Ongoing	High	High
	4	Modify drainage structures to increase the size and integrity of drainage system on Highway 31 north of Highway 91. Cover open drainage ditches across from Wallace State Community College.	Flooding, Flash Floods	City Council / Mayor	Local, ADECA, HMGP	Revised	Medium	Moderate
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	City Council / Mayor County EMA	Local, HMGP (\$1,500 – \$30,000)	Ongoing	High	High
	6	Publicize the availability and promote the purchase of flood insurance coverage by property owners and renters in flood damage high risk areas.	Flooding, Flash Floods	City Council / Mayor	Local	Ongoing	High	High

Efforts currently underway: Resurfacing and drainage improvements to Commercial Street near Civic Center utilizing Rebuild Alabama Act funds (ALDOT).

Update: The City of Hanceville has constructed three storm shelters since 2011 tornados.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | Holly Pond

TOWN OF HOLLY POND MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor, County EMA	Local	Ongoing	High	High
	4	Purchase additional generators for post-disaster mitigation.	All	Town Council / Mayor	Local, ADECA, HMGP (\$1,000 - \$30,000)	Revised	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor, County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High

Update: Holly Pond is planning for each municipal building to have back-up generator systems.

Section 6 | Mitigation Action Plan
 Cullman County | South Vinemont

TOWN OF SOUTH VINEMONT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor, County EMA	Local	Ongoing	High	High
	4	Purchase generators for post-disaster mitigation.	All	Town Council / Mayor	Local, ADECA, HMGP (\$1,000 - \$30,000)	Revised	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor, County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Cullman County | West Point

TOWN OF WEST POINT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council / Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council / Mayor, County EMA	Local	Ongoing	High	High
	4	Purchase generators for post-disaster mitigation.	All	Town Council / Mayor	Local, ADECA, HMGP (\$1,000 - \$30,000)	Revised	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council / Mayor, County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	Ongoing	High	High
	5	Purchase, install, maintain, test, and upgrade emergency warning sirens as needed.	All	Town Council / Mayor, County EMA	Local, HMGP (\$1,500 - \$30,000)	Ongoing	High	High

Section 6 | Mitigation Action Plan

Cullman County | Cullman County Board of Education

CULLMAN COUNTY BOE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct storm retrofits to educational buildings.	Thunderstorms, Tornadoes, Hurricanes	Cullman County BOE	Local, HMGP, ADECA (\$400,000)	Ongoing	Low	High
	4, 5	Construct/install community safe rooms to educational buildings to include generators.	Tornadoes, Thunderstorms	Cullman County BOE	Local, HMGP, ADECA (\$100,000)	Ongoing	High	High
	4, 5	Construct/install individual storm shelters to educational buildings.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Cullman County BOE	Local, HMGP, ADECA (\$5,000)	Ongoing	Low	High
	5	Provide generators for educational buildings.	All	Cullman County BOE	Local, HMGP, ADECA (\$25,000 each)	Ongoing	High	High

Section 6 | Mitigation Action Plan

Cullman County | Cullman City Schools

CULLMAN CITY SCHOOLS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct storm retrofits to educational buildings.	Thunderstorms, Tornadoes, Hurricanes	Cullman City Schools	Local, HMGP, ADECA (\$400,000)	Ongoing	Low	High
	4, 5	Construct/install community safe rooms to educational buildings to include generators.	Tornadoes, Thunderstorms	Cullman City Schools	Local, HMGP, ADECA (\$100,000)	Ongoing	High	High
	4, 5	Construct/install individual storm shelters to educational buildings.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Cullman City Schools, County EMA	Local, HMGP, ADECA (\$5,000)	Ongoing	Low	High
	5	Provide generators for educational buildings.	All	Cullman City Schools	Local, HMGP, ADECA (\$25,000 each)	Ongoing	High	High

Section 6 | Mitigation Action Plan

Cullman County | Dodge City VFD

DODGE CITY VFD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct storm retrofits to fire buildings.	Thunderstorms, Tornadoes, Hurricanes	Dodge City VFD	Local, HMGP, ADECA (\$250,000)	Ongoing	Low	High
	4, 5	Construct/install community safe rooms to fire buildings to include generators.	Tornadoes, Thunderstorms	Dodge City VFD	Local, HMGP, ADECA (\$100,000)	Ongoing	High	High
	4, 5	Construct/install individual storm shelters to fire buildings.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Dodge City VFD	Local, HMGP, ADECA (\$5,000)	Ongoing	Low	High
	5	Provide generators for fire buildings.	All	Dodge City VFD	Local, HMGP, ADECA (\$25,000 each)	Ongoing	High	High

Section 6 | Mitigation Action Plan

Cullman County | East Cullman Water System

EAST CULLMAN WATER SYSTEM MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	East Cullman Water System, County EMA	Local	New	High	High
	4	Construct/install individual storm shelters as needed at water facilities.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	East Cullman Water System, County EMA	HMGP, ADECA (\$5,000 each)	New	High	High
	5	Purchase emergency generators for post-disaster mitigation.	All	East Cullman Water System, County EMA	HMGP, ADECA (\$5,000 - \$30,000)	New	High	High

Section 6 | Mitigation Action Plan

Cullman County | Hanceville Water and Sewer Board

HANCEVILLE WATER AND SEWER BOARD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Water & Sewer Board, County EMA	Local	New	High	High
	4	Install freestanding community safe rooms in vulnerable locations.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Water & Sewer Board, County EMA	HMGP, ADECA (\$100,000 - \$125,000)	Ongoing	Low	High
		Encourage the construction of storm shelters in new and existing construction. Construct/install individual storm shelters as needed at water facilities.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Water & Sewer Board, County EMA	HMGP, ADECA (\$5,000 each)	Ongoing	High	High
	5	Purchase emergency generators for post disaster mitigation and conduct routine tests on backup generators for all critical facilities, to include lift stations.	All	Water & Sewer Board, County EMA	HMGP, ADECA (\$5,000 - \$30,000)	Ongoing	High	High

Section 6 | Mitigation Action Plan

Cullman County | VAW Water System

VAW WATER SYSTEM MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	VAW Water System, County EMA	Local	New	High	High
	4	Construct/install individual storm shelters as needed at water facilities.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	VAW Water System, County EMA	HMGP, ADECA (\$5,000 each)	New	High	High
	5	Purchase emergency generators for post disaster mitigation and conduct routine tests on backup generators for all critical facilities.	All	VAW Water System, County EMA	HMGP, ADECA (\$5,000 - \$30,000)	New	High	High

Section 6 | Mitigation Action Plan

Cullman County | Wallace State Community College

WALLACE STATE COMMUNITY COLLEGE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Increase public awareness and advise the public about safety precautions to guard against injury and loss of life from hazards.	All	Wallace State, County EMA	Local	New	Medium	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Wallace State, County EMA	Local	New	High	High
	4	Provide adequate tornado/storm shelters and community safe rooms on campus.	All	Wallace State, County EMA	Local, HMGP, ADECA, GERF (\$4,000 - \$130,000)	New	High	Hig
	4	Purchase emergency generators for post disaster mitigation.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Wallace State, County EMA	Local, HMGP (\$1,500 - \$30,000)	New	High	High
	6	Provide public involvement activities and publish informational brochures on natural hazards and emergency situations.	All	Wallace State, County EMA	Local	New	Medium	High

New Actions: Wallace State is a new participant in the hazard mitigation plan process, and as a result, did not participate in previous Cullman County Hazard Mitigation Plans.

SECTION 6.5.4 | DEKALB COUNTY MITIGATION ACTIONS

- DeKalb County
- Collinsville
- Crossville
- Fort Payne
- Fyffe
- Geraldine
- Hammondville
- Henagar
- Ider
- Lakeview
- Mentone
- Pine Ridge
- Powell
- Rainsville
- Shiloh
- Sylvania
- Valley Head

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County

DEKALB COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	County EMA, Floodplain Manager	Local, HMGP	Ongoing	High	High
	1	Develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	County Commission	Local	Ongoing	High	High
	1	Explore nontraditional sources of both government and nongovernment grants and loans for mitigation activities.	All	County Commission, County EMA	Local	Ongoing	Low	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	County Commission	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	County Commission	Local, HMGP, ADECA	Ongoing	High	High
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	County Commission	Local	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County Commission, County EMA	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County

DEKALB COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continuing flooding.	Flooding, Flash Floods	County EMA	Local, HMGP, FMA, PDM	Ongoing	Medium	High
	2, 3	Coordinate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	County EMA	Local	Ongoing	Medium	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA	Local	Ongoing	Medium	High
	3, 6	Prepare and distribute information regarding best management practices regarding hazard mitigation in forest and vegetation management.	All	County EMA, DeKalb County VFA	Local	Ongoing	High	High
	4	Perform a utility study that will include a more comprehensive inventory and vulnerability assessment that will be applicable to the needs and concerns of both the community and the service providers.	All	County Commission, County EMA	Local, HMGP, ADECA	Ongoing	High	Moderate

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County

DEKALB COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE	
			Establish a bridge replacement program for the three old wooden bridges that are subject to flooding.	Flooding, Flash Floods	County Commission, County EMA	Local, HMGP, PDM	Ongoing	High	Moderate
	5	Acquire backup power supplies for key wastewater pumping stations.	All	County EMA	Local, HMGP, PDM	Ongoing	High	High	
	5	Develop a program and request funding for the placement of sand bins and a storage facility to protect critical mountain roads in the event of winter storms.	Winter Storms	County Commission, County EMA	Local, HMGP, PDM	Ongoing	High	High	
	4	Maintain a program for building and/or maintaining storm shelters or other protection at schools.	All	County EMA	Local, HMGP, PDM	Ongoing	High	High	
	4	Identify and construct storm shelters at dense residential areas such as apartments and mobile home parks.	All	County EMA	Local, HMGP, PDM	Ongoing	High	Moderate	
	4	Develop a program for the provision of community storm shelters.	All	County EMA	Local, HMGP, PDM	Ongoing	High	High	

Update: The County needs storage bins or containers for sand/slag positioned at strategic locations throughout DeKalb County to be used to protect or improve critical access routes on both Sand Mountain and Lookout Mountain.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County

DEKALB COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Develop a program to assure the provision of weather sirens or radios at all schools.	All	County EMA	Local, HMGP, PDM	Ongoing	High	High
	5	Develop a program for the provision of weather radios in homes and school.	All	County EMA	Local, HMGP, PDM	Ongoing	High	High
	5	Maintain a program for maintenance of other weather alert programs (IPAWS, Alert DeKalb, social media).	All	County EMA	Local, HMGP, PDM	Ongoing	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	County Commission, County EMA	Local	Ongoing	High	High
	6	Participate in public events which allows dissemination of hazard mitigation information (at least twice per year).	All	County EMA	Local	Ongoing	High	High
	6	Prepare hazard mitigation information to be distributed to hospitals, nursing homes, clinics, etc.	All	County EMA	Local, HMGP	Ongoing	High	High
	6	Develop continuing relationships with local, regional and state agencies, to include businesses, government and the academic sector, that have roles in the hazard mitigation processes.	All	County Commission, County EMA	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Collinsville

TOWN OF COLLINSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Collinsville

TOWN OF COLLINSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Crossville

TOWN OF CROSSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Crossville

TOWN OF CROSSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Fort Payne

CITY OF FORT PAYNE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	City Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Fort Payne

CITY OF FORT PAYNE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	City Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, City Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, City Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, City Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	City Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Fort Payne

CITY OF FORT PAYNE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5		Acquire backup power supply for the Fort Payne potable water treatment plant.	All	City Council/ Mayor	Local, HMGP, PDM	Ongoing	High
6		Use social media to provide information for general public use regarding hazard mitigation.	All	City Council/ Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | FYffe

TOWN OF FYFFE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Fyffe

TOWN OF FYFFE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Geraldine

TOWN OF GERALDINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Geraldine

TOWN OF GERALDINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Section 6 | Mitigation Action Plan
DeKalb County | Hammondville

TOWN OF HAMMONDVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Section 6.5 | Mitigation Action Plan DeKalb County | Hammondville

GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE	
TOWN OF HAMMONDVILLE MITIGATION ACTION PLAN	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Henagar

CITY OF HENAGAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	City Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Henagar

CITY OF HENAGAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	City Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, City Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, City Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, City Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	City Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Ider

TOWN OF IDER MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Ider

TOWN OF IDER MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Lakeview

TOWN OF LAKEVIEW MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Lakeview

TOWN OF LAKEVIEW MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Mentone

TOWN OF MENTONE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local, ADECA	Completed		
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Completed		
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High

The Town of Mentone completed a comprehensive plan and land use study in 2017.

Part of the 2017 comprehensive planning effort included future growth considerations and guidelines for development.

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Mentone

TOWN OF MENTONE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunder- storms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Pine Ridge

TOWN OF PINE RIDGE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Pine Ridge

TOWN OF PINE RIDGE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 DeKalb County | Powell

TOWN OF POWELL MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
 DeKalb County | Powell

TOWN OF POWELL MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Rainsville

CITY OF RAINSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	City Council/ Mayor	Local, ADECA	Completed		
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	City Council/ Mayor	Local	Completed		
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	City Council/ Mayor	Local	Ongoing	High	High

The City of Rainsville completed a Comprehensive Plan and Land Use Study in 2017.

Rainsville completed a zoning ordinance update in 2018.

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Rainsville

CITY OF RAINSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	City Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	City Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes , Thunder- storms, High Wind, Hail	County EMA, City Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, City Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, City Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	City Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Shiloh

TOWN OF SHILOH MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Shiloh

TOWN OF SHILOH MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
DeKalb County | Sylvania

TOWN OF SYLVANIA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Sylvania

TOWN OF SYLVANIA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High

Revision: Two 2015 actions were combined to more accurately reflect the necessary considerations and programming pertaining to the provision of storm shelters.

Division F Regional Hazard Mitigation Plan
Section 6.5 | Mitigation Action Plan
DeKalb County | Valley Head

TOWN OF VALLEY HEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Town Council/ Mayor	Local, ADECA	Ongoing	High	High
	1	Coordinate to develop guidelines that can be used for the purpose of community growth and development plans that incorporate hazard mitigation considerations.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Town Council/ Mayor	Local	Ongoing	High	High
	1, 2	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, ADECA	Ongoing	High	High

Section 6.5 | Mitigation Action Plan DeKalb County | Valley Head

TOWN OF VALLEY HEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flooding, Flash Floods	Town Council/ Mayor	Local	Ongoing	High	High
	1, 3	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continued flooding	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP, FMA	Ongoing	Medium	High
	1, 5	Consider storm shelters at dense residential areas such as apartments and mobile home parks and develop a program for the provision of community storm shelters.	Tornadoes, Thunderstorms, High Wind, Hail	County EMA, Town Council/ Mayor	Local, HMGP	Revised	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	All	County EMA, Town Council/ Mayor	Local	Ongoing	High	High
	3	Cooperate with Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Town Council/ Mayor	Local	Ongoing	Medium	High
	4	Perform roadway and drainage improvements along Railroad Avenue, First Avenue, Church Street, and Hammond Street to improve storm water management and prevent flooding.	Flooding, Flash Floods	Town Council/ Mayor	Local, ADECA	New	High	High

The Town of Valley Head is applying to ADECA for CDBG funds to improve drainage in a neighborhood prone to flooding. The total project cost is estimated at **\$400,000**.

SECTION 6.5.5 | ETOWAH COUNTY MITIGATION ACTIONS

- Etowah County
- Altoona
- Attalla
- Gadsden
- Glencoe
- Hokes Bluff
- Rainbow City
- Reece City
- Ridgeville
- Sardis City
- Southside
- Walnut Grove

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Etowah County

ETOWAH COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	County EMA	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	County EMA	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	County EMA	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	County EMA	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	County EMA	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	County EMA	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	County Commission, County EMA	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Etowah County

ETOWAH COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	County Commission, County EMA	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	County Commission, County EMA	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	County Commission, County EMA	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	County Commission, County EMA	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	County Commission, County EMA	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	County Commission, County EMA	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	County Commission, County EMA	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	County EMA	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	County Commission, County EMA	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Etowah County

ETOWAH COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	County EMA, Floodplain Manager	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	County Commission, County EMA	Local	Ongoing	High	High
	3	Make stream bank/riverbank protection improvements and mitigate slope failure along Whorton Bend Road, Tidmore Bend Road, and Wesson Gap Road.	Flooding, Flash Floods, Landslides	County Commission, County EMA	Local, ADECA, HMGP, PDM (\$100,000)	Ongoing	High	Moderate
	3	Make rock stabilization improvements along Highway 431 (Town of Mountainboro).	Flooding, Flash Floods, Landslides	County Commission, County EMA	HMGP, PDM (\$50,000)	Ongoing	High	Moderate
	4	Construct individual storm shelters throughout Etowah County including at Tillison Bend and Bally Play Bend Fire Department.	Tornadoes, Thunderstorms, High Winds, Hail	County EMA	Local, HMGP (\$131,000 - \$462,000)	Ongoing	High	Moderate
	4	Make drainage improvements to the following areas: Bristow Cove Road (Barstow Creek Flooding), Coosa Drive, River Run Road, Adams Road, Owls Hollow Road, Murphree Valley Road, and Cox Gap Road.	Flooding, Flash Floods	County Commission, County EMA	ADECA, HMGP, PDM, FMA	Ongoing	High	Moderate

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Etowah County

ETOWAH COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Address flooding at Jackson Trail.	Flooding	County EMA	Local, HMGP, FMA	Ongoing	Med.	Med.
	5	Make improvements to the County's ECSO Communication System.	All	County EMA	ADECA, HMGP (\$550,000)	Ongoing	High	High
	5	Purchase two Mobile Command Generators (ECSO).	All	County EMA	ADECA, HMGP, PDM	Ongoing	High	High
	5	Remove trees and brush from right-of-way to mitigate potential damage from ice and windstorms.	Tornadoes, Thunderstorms, High Winds, Hail	County Commission, County EMA	Local, ADECA, HMGP, PDM (\$200,000)	Ongoing	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	County Commission, County EMA	Local	New	High	High

Mobile Command Generators are estimated to cost **\$80,000** per unit.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Altoona

TOWN OF ALTOONA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	Town Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	Town Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	Town Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Altoona

TOWN OF ALTOONA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	Town Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	Town Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	Town Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Altoona

TOWN OF ALTOONA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council/ Mayor	Local	Ongoing	High	High
	4	Drainage improvements to the following areas: the intersection of 1 st Avenue and Main Street (AL Hwy 132); the intersection of 2 nd Avenue and Main Street (AL Hwy 132); the intersection of 2nd and College Streets; and 6th Avenue.	Flooding, Flash Floods	Town Council/ Mayor	Local, ADECA, HMGP, PDM	Revised to include additional locations	High	Moderate
	4	Make necessary improvements to the Town's tornado shelter to accommodate the maximum amount of residents during hazard events - primarily, parking expansion/ improvements.	Tornadoes, Thunderstorms, High Winds, Hail	Town Council/ Mayor	Local, ADECA, HMGP, PDM (\$40,000)	New	High	Moderate
	4, 5	Retrofit a cul-de-sac turn around area at the end of Sloan Drive for municipal and emergency services to provide adequate service to the residents in the area.	All	Town Council/ Mayor	Local, ADECA (\$180,000)	New	High	Moderate

Drainage improvement projects at all locations are estimated to cost approximately **\$100,000**.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Altoona

TOWN OF ALTOONA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4, 5	Retrofit a cul-de-sac turn around area at the end of 4th Avenue for municipal and emergency services to provide adequate service to the residents in the area.	All	Town Council/ Mayor	Local, ADECA (\$60,000)	New	High	Moderate
	4, 5	Expand the turn lanes at the intersection of 1st Avenue and Clair Street for municipal and emergency services to provide adequate service to the residents in the area.	All	Town Council/ Mayor	Local, ADECA (\$69,000)	New	High	Moderate
	4, 5	Expand the turn lanes at the intersection of Pinecrest Circle and Phillips Lane for municipal and emergency services to provide adequate service to the residents of a 32-unit apartment complex.	All	Town Council/ Mayor	Local, ADECA (\$88,000)	New	High	Low
	5	Purchase and install a generator for Town Hall with automatic transfer switch.	All	Town Council/ Mayor	Local, ADECA, HMGP (\$80,000)	Ongoing	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	Town Council/ Mayor	Local, ADECA	New	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Attalla

GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
CITY OF ATTALLA MITIGATION ACTION PLAN	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	City Council / Mayor	HMGP	Ongoing	High High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	City Council / Mayor	ADECA, HMGP	Ongoing	High High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	City Council / Mayor	Local, HMGP	Ongoing	Medium High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Attalla

CITY OF ATTALLA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	City Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	City Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	City Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Attalla

CITY OF ATTALLA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council/ Mayor	Local	Ongoing	High	High
	2	Renovations and improvements to the roof of the 4th Street School.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	ADECA, HMGP, PDM (\$50,000)	Ongoing	High	Moderate
	2	Renovations and improvements to the roof of the recreation center.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	ADECA, HMGP, PDM (\$50,000)	Ongoing	High	High
	2	Renovations and improvements to the roof of Station 1 (Fire Department).	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	ADECA, HMGP, PDM (\$50,000)	Ongoing	High	High
	4	Drainage improvements to the following areas: Hannah Avenue to Brown Avenue; Burke Avenue; 1st Street to 5th Avenue; underpass of 5th Avenue; 800-1000 block of W. 5th Avenue; 3rd Street between 3rd and 7th Avenues.	Flooding, Flash Floods	City Council/ Mayor	Local, ADECA, HMGP, PDM (\$500,000)	Ongoing	High	Moderate

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Attalla

CITY OF ATTALLA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Drainage improvements to all locations within the floodplain in the City limits, including, but not limited to American Legion Fair Grounds on Cleveland Avenue; Highway 77 City Park; Golf Course, and other areas prone to flooding.	Flooding, Flash Floods	City Council/ Mayor	HMGP, ADECA, FMA	Ongoing	High	High
	5	Purchase and maintain fire equipment to control wildfires which may threaten residential areas.	Wildfire	City Council/ Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	City Council/ Mayor	Local	New	High	High

Drainage improvement projects at various locations throughout the City of Attalla are estimated to cost between **\$250,000 - \$300,000** per project.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Gadsden

CITY OF GADSDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	City Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	City Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	City Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Gadsden

CITY OF GADSDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	City Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	City Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	City Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Gadsden

CITY OF GADSDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	City Council/ Mayor	Local	Ongoing	High	High
	2	Acquire approximately 25 properties located in special flood hazard areas.	Flooding, Flash Floods	City Council/ Mayor	HMGP, PDM, FMA	New	High	Moderate
	2, 5	Conduct a street tree assessment project to address debris and trees from severe thunderstorms and removed dangerous trees from rights-of-way.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	Local, ADECA, HMGP, PDM (\$100,000)	Revised to combine two related actions.	High	High
	2, 5	Initiate a program to remove trees and limbs identified as hazardous to potential storm impacts (Partnership with Alabama Power).	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	Local, ADECA, HMGP (\$300,000)	Ongoing	High	High

Flood prone parcel buyouts are estimated to cost **\$1,350,000**

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Gadsden

CITY OF GADSDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Drainage improvements to the following areas: Agricola Shopping Center; 6th Street; Oak Park; South 4th Street; Herring/Herzberg; Forrest Avenue; Goldenrod Avenue; Etowah Park; South Gadsden; Arrowhead; East Broad Street; Stonewall; Mill Village; and Belleview/Monte Vista.	Flooding, Flash Floods	City Council/ Mayor	ADECA, HMGP, PDM, FMA	Ongoing	High	Moderate
	5	Upgrade and purchase equipment to clear snow- and ice-covered roads.	Winter Storms	City Council/ Mayor	Local, HMGP	Ongoing	Med.	Moderate
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	City Council/ Mayor	Local	New	High	High

Cost estimates vary for each drainage improvement project ranging from **\$75,000 - \$1,600,000**.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Glencoe

CITY OF GLENCOE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	City Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	City Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	City Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Glencoe

CITY OF GLENCOE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	City Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	City Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	City Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Glencoe

CITY OF GLENCOE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	City Council/ Mayor	Local	Ongoing	High	High
	4	Drainage improvements to the following areas: Larry Street; Larrydale Drive; Macon Drive; Glenport Avenue; Taylor Road; and 4th Street.	Flooding, Flash Floods	City Council/ Mayor	ADECA, HMGP, PDM	Revised to include additional locations.	High	Moderate
	4	Install a community storm shelter.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	HMGP, PDM (\$25,000)	Ongoing	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	City Council/ Mayor	Local	New	High	High

Drainage improvement projects at various locations throughout the City of Glencoe are estimated to cost between **\$100,000** and **\$350,000**.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Hokes Bluff

CITY OF HOKES BLUFF MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	City Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	City Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	City Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Hokes Bluff

CITY OF HOKES BLUFF MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	City Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	City Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	City Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Hokes Bluff

CITY OF HOKES BLUFF MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	City Council/ Mayor	Local	Ongoing	High	High
	2	Make renovations and improvements to the roof of City Hall.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	ADECA, HMGP, PDM (\$50,000)	Ongoing	High	High
	4	Improve drainage on Eastview Avenue.	Flooding, Flash Floods	City Council/ Mayor	Local, ADECA, HMGP	Ongoing	High	High
	5	Upgrade and purchase equipment to clear snow- and ice-covered roads.	Winter Storms	City Council/ Mayor	Local, HMGP	Ongoing	Med.	Moderate
	5	Install a generator at Hokes Bluff Community Center.	All	City Council/ Mayor	ADECA, HMGP, PDM (\$34,000)	New	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	City Council/ Mayor	Local	New	High	High

Section 6 | Mitigation Action Plan

Etowah County | Rainbow City

CITY OF RAINBOW CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	City Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	City Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	City Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Etowah County | Rainbow City

CITY OF RAINBOW CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	City Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	City Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	City Council / Mayor	Local	Ongoing	High	High

Section 6 | Mitigation Action Plan
Etowah County | Rainbow City

CITY OF RAINBOW CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	City Council/ Mayor	Local	Ongoing	High	High
	2	Renovations and improvements to the roof of the Community Center/Library.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	ADECA, HMGP, PDM (\$150,000)	Ongoing	High	High
	4	Drainage improvements to the following areas: Whorton Creek; Dry Creek; Gilmer Lane; Brown Avenue; Riddles Bend Road between Lister Ferry and Hill Avenue; Sutton Circle; Rainbow Parkway; Westminster.	Flooding, Flash Floods	City Council/ Mayor	ADECA, HMGP, PDM (\$500,000)	Revised to include add'l locations.	High	Moderate
	4	Construct a community storm shelter.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	HMGP, PDM (\$25,000)	Ongoing	High	High
	5	Improve communication systems at the Police Station.	All	City Council/ Mayor	ADECA, HMGP, PDM (\$50,000)	New	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	City Council/ Mayor	Local	New	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Reece City

TOWN OF REECE CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	Town Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	Town Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	Town Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Reece City

TOWN OF REECE CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	Town Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	Town Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	Town Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Reece City

TOWN OF REECE CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council/ Mayor	Local	Ongoing	High	High
	4	Drainage improvements to the following areas: Nichols Road; Donald Road; Higdon Road; Crudup Road; 500 Block of Highway 11.	Flooding, Flash Floods	Town Council/ Mayor	ADECA, HMGP, PDM	Ongoing	High	Moderate
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	Town Council/ Mayor	Local	New	High	High

Drainage improvement projects at various locations throughout Reece City are estimated to cost approximately **\$150,000** per project.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Ridgeville

TOWN OF RIDGEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program.	Flooding, Flash Floods	Town Council/ Mayor	Local	New	High	High
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	Town Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	Town Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Ridgeville

TOWN OF RIDGEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council/ Mayor	Local	Ongoing	High	High
	2	Renovations and improvements to the roof of Town Hall.	Tornadoes, Thunderstorms, High Winds, Hail	Town Council/ Mayor	ADECA, HMGP, PDM (\$30,000)	Ongoing	High	High
	4	Construct a community storm shelter.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council/ Mayor	HMGP, PDM (\$25,000)	Ongoing	High	High
	4	Drainage improvements on Main Street.	Flooding, Flash Floods	Town Council/ Mayor	ADECA, HMGP, PDM (\$50,000)	Ongoing	High	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council/ Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council/ Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	Town Council/ Mayor	Local	New	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Sardis City

TOWN OF SARDIS CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	Town Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	Town Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	Town Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Sardis City

TOWN OF SARDIS CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	Town Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	Town Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	Town Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Sardis City

TOWN OF SARDIS CITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council/ Mayor	Local	Ongoing	High	High
	4	Replace Whitesboro Bridge.	Flooding, Flash Floods	Town Council/ Mayor	ADECA, HMGP, PDM	Revised	High	Moderate
	4	Construct a second fire station with a community safe room in Whitesboro.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council/ Mayor	HMGP, PDM (\$250,000)	New	High	High
	4	Construct a community storm shelter at Library and add generator.	Tornadoes, Thunderstorms, High Winds, Strong Winds, Hail	Town Council/ Mayor	HMGP, PDM (\$150,000)	New	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	Town Council/ Mayor	Local	New	High	High

Whitesboro Bridge replacement is estimated to cost approximately **\$250,000.**

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Southside

CITY OF SOUTHSIDE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	City Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	City Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	City Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	City Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	City Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Southside

CITY OF SOUTHSIDE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	City Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	City Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	City Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	City Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	City Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	City Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Etowah County | Southside

CITY OF SOUTHSIDE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	City Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	City Council/ Mayor	Local	Ongoing	High	High
	4	Drainage improvements to the following areas: Watson Street, Linda Lane, Christopher Avenue, and Fuhrman Road; Cedar Bend Road South (Cedar Lane to Hood Road), Cedar Bend Road at Miller Creek, Cedar Bend Road at Richland Way, Hood Road near Parker Anderson Drive, Mountainview Drive, Rosewood Lane, Robertson Street (East and West), Hall Drive, South Valley Road in the Berkley Hills area, Valley Lake Drive, Vista Trail and Lakemont Drive, Island Way, and Abernathy Circle.	Flooding, Flash Floods	City Council/ Mayor	ADECA, HMGP, PDM (\$75,000 - \$150,000)	Revised to include additional locations.	High	Moderate
	4	Construct a community storm shelter.	Tornadoes, Thunderstorms, High Winds, Hail	City Council/ Mayor	HMGP, PDM (\$100,000)	Ongoing	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	City Council/ Mayor	Local	New	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Etowah County | Walnut Grove

	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
TOWN OF WALNUT GROVE MITIGATION ACTION PLAN	1, 2	Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes, severe thunderstorm winds.	Tornadoes, Thunderstorms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	Medium	Moderate
	1, 5	Construct a community safe room which meets FEMA-361 standards for the protection of lives.	Tornadoes	Town Council / Mayor	HMGP	Ongoing	High	High
	1, 5	Purchase and distribute weather radios for early warning of severe weather.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 5	Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.	Tornadoes	Town Council / Mayor	ADECA, HMGP	Ongoing	High	High
	1, 5	Purchase and distribute smoke detectors for early warning of household fires.	Fires	Town Council / Mayor	Local, ADECA, HMGP	Ongoing	Medium	High
	1, 6	Promote natural hazard awareness and preparedness to protect lives through a comprehensive public information campaign (to include tornadoes, severe thunderstorms, flooding, winter storms, household fires, wildfires, landslides and sinkholes, among other natural disasters).	All	Town Council / Mayor	Local, HMGP	Revised to incorporate multiple hazards.	High	High
	1, 6	Purchase and install "Turn Around, Don't Drown" signs for known flash flood areas.	Flooding	Town Council / Mayor	Local, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Etowah County | Walnut Grove

TOWN OF WALNUT GROVE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 6	Support legislation for a State dam safety program.	Flooding	Town Council / Mayor	Local	Ongoing	Medium	Moderate
	2	Promote flood insurance for homeowners and renters, especially in floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	2	Create a plan for participation in the Community Rating System.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Promote development away from floodprone areas.	Flooding	Town Council / Mayor	Local	Ongoing	High	High
	3	Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.	Flooding	Town Council / Mayor	Local, HMGP, PDM, FMA	Ongoing	Medium	Moderate
	4	Enact erosion control measures in areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local	Ongoing	Medium	High
	4	Purchase equipment to mitigate areas which are subject to landslides and sinkholes.	Landslides/ sinkholes	Town Council / Mayor	Local, HMGP, PDM	Ongoing	Medium	High
	5	Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.	Tornadoes, Thunderstorms, Flooding, Winter Storms	Town Council / Mayor	Local, HMGP, PDM	Ongoing	High	High
	6	Educate property owners of flood plain management ordinance permitting requirements.	Flooding	Town Council / Mayor	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Etowah County | Walnut Grove

TOWN OF WALNUT GROVE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to participate in the NFIP, meeting all NFIP requirements.	Flooding, Flash Floods	Town Council/ Mayor	Local, HMGP	Ongoing	High	High
	1, 6	Meet annually to discuss and approve updates and changes to the Natural Hazard Mitigation Plan.	All	Town Council/ Mayor	Local	Ongoing	High	High
	4	Construct a community storm shelter.	Tornadoes, Thunderstorms, High Winds, Hail	Town Council/ Mayor	HMGP, PDM (\$45,000)	Ongoing	High	High
	5	Purchase and install a 42KW backup power generator at the Walnut Grove fire station.	All	Town Council/ Mayor	HMGP, PDM (\$25,000)	New	High	High
	6	Use social media to provide information for general public use regarding hazard mitigation.	All	Town Council/ Mayor	Local	New	High	High

SECTION 6.5.1 | BLOUNT COUNTY MITIGATION ACTIONS

- Blount County
- Allgood
- Blountsville
- Cleveland
- Hayden
- Highland Lake
- Locust Folk
- Nectar
- Oneonta
- Rosa
- Snead
- Susan Moore

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 5	Prepare a five-year capital improvement plan (CIP) to include capital projects that implements the natural hazards element of the community's comprehensive plan or projects identified in this multi-jurisdictional plan.	All	County EMA	Local Funds	Ongoing	Medium	Medium
	1, 5	Maintain a centralized, countywide natural hazards and risk assessment database in GIS that is accessible to local planners and emergency management personnel, including such data as flood zones, geohazards, major drainage structures, dams/levees, hurricane surge areas, tornado tracks, disaster events and their extents, and a comprehensive inventory of critical facilities within all jurisdictions.	All	County EMA	HMGP, PDM	Ongoing	Medium	Medium
	1, 5	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	Earthquakes, Floods/Flash Floods, and Wind Events	County EMA	HMGP, PDM	Ongoing	Medium	Medium
	1, 6	Mark depths of flooding and storm surge immediately after each event. Enter and maintain these historical records in GIS.	Floods/Flash Floods, Severe Thunderstorms, Wind Events	County EMA	HMGP, PDM	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Carry out detailed planning and engineering studies for sub-basins in critical flood hazard areas to determine watershed-wide solutions to flooding.	Floods/ Flash Floods	County Engineer	HMGP, PDM	Ongoing	Medium	Medium
	1	Identify existing culturally or socially significant structures and critical facilities within Blount County that have the most potential for losses from natural hazard events and identify needed structural upgrades.	All	County Engineer	HMGP, PDM	Ongoing	Medium	Medium
	1,2	Evaluate elevation and culvert sizing of existing roadways in flash flood-prone areas to ensure compliance with current standards for design year floods and develop a program for construction upgrades as appropriate.	Floods/ Flash Floods	County Engineer	Local Funds	Ongoing	Medium	Medium
	1	Identify program drainage areas, conduct engineering studies, evaluate feasibility, and construct drainage improvements to reduce or eliminate localized flooding.	Floods/ Flash Floods	County Engineer	HMGP, PDM	Ongoing	Medium	Medium
	1	Train local flood plain manager through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	County Commission	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	County Engineer, County EMA	Local Funds	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	County Engineer, County EMA	HMGP, PDM	Ongoing	Medium	Medium
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials. Restrictive development of floodways, among others.	Floods/ Flash Floods	County Engineer	Local Funds	Ongoing	Medium	Medium
	1, 2	Require delineation of flood plain fringe, floodways, and wetlands on all plans submitted with a permit for development within a floodplain.	Floods/ Flash Floods	County Engineer	Local Funds	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	County Engineer, County EMA	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	County Engineer	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	County Commission	HMGP, PDM	Ongoing	Medium	Medium
	1, 2	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Drought, Lightning, Severe Thunderstorms, Wildfires	County Commission, Fire Department	Local Funds	Ongoing	Medium	Medium
	1, 2	Establish and enforce minimum property maintenance standards that reduce or eliminate unsafe structures.	All	County Commission, County Engineer	Local Funds	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	County Commission	HMGP, PDM	Ongoing	Medium	Medium
	1	Enact local ordinance that requires community storm shelters within sizeable residential developments, such as mobile home parks, apartment complexes, planned residential communities, and campgrounds/RV parks.	Floods/ Flash Floods	County Commission	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption/enforcement of stormwater management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	County Engineer	Local Funds	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1, 2	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	County Engineer	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	County Commission	Local Funds	Ongoing	Medium	Medium
	1, 2	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	County Commission	Local Funds	Ongoing	High	High
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	County Engineer	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	County Commission, County Engineer	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	County Commission, County Engineer	HMGP, PDM	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	County Commission, County Engineer	HMGP, PDM	Ongoing	Medium	Medium
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	County Commission, County Engineer	TBD	Ongoing	High	High
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	County Commission, County Engineer	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	County Commission, County Engineer	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	County Commission, County Engineer	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	County Commission, County Engineer	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	County Commission, County Engineer	Local Funds	Ongoing	Medium	Medium
	2	Install lightning and/or surge protection on existing critical facilities.	Lightning, Severe Thunderstorms	County Engineer	Local Funds	Ongoing	Medium	Medium
	2	Conduct ongoing tree trimming programs along power lines.	Floods/ Flash Floods	County Engineer, Power Company	Local Funds	Ongoing	Medium	Medium
	2, 5	Install backup power generators for critical facilities.	All	County EMA, County Engineer, Fire Department	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	County Commission, County Engineer	HMGP, PDM	Ongoing	Medium	Medium
	3	Keep builders and developers informed of Federal wetlands permitting requirements of the Corps of Engineers.	Floods/ Flash Floods	County Engineer	Local Funds	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	County Commission, County Engineer	Local Funds	Ongoing	Medium	Medium
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	County Engineer	Local Funds	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	County Commission, County Engineer	Local Funds	Ongoing	Medium	Medium
	4	Prepare and implement standard operating procedures and guidelines for drainage system maintenance.	Lightning, Severe Thunderstorms	County Engineer	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	County Commission, County Engineer	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	County Commission	HMGP, PDM	Ongoing	Medium	Medium
	4, 5	Establish a program for subsidizing individual and community safe room construction in appropriate locations and facilities.	All	County Commission, County EMA	HMGP, PDM	Ongoing	Medium	Medium
	5, 6	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Floods/ Flash Floods	County EMA, County Engineer	Local Funds	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	County EMA	Local Funds	Ongoing	High	High
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	County EMA	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	County EMA	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	All	County EMA	Local Funds	Ongoing	High	High
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	County Commission, County EMA	HMGP, PDM	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5, 6	Distribute hazard mitigation brochures to students through area schools.	All	County EMA	Local Funds	Ongoing	High	High
	5, 6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	County EMA	Local Funds	New	High	High
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	All	County Engineer	Local Funds	Ongoing	Medium	Medium
	5, 6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	County EMA	Local Funds	Ongoing	Medium	Medium
	5, 6	Promote the use of weather radios in households and businesses.	All	County EMA	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly.	All	County Commission, County Engineer	Local Funds	Ongoing	High	High
	5, 6	Distribute weather radios and emergency response instructions to municipal residents	All	County Commission, County Engineer, County EMA	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Blount County

BLOUNT COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5, 6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	County Commission, County EMA	HMGP, PDM	Ongoing	High	High
	5, 6	Upgrade critical communications infrastructure.	All	County Commission, County EMA	HMGP, PDM	Ongoing	High	High
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	All	County EMA	Local Funds	New	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Allgood

TOWN OF ALLGOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Allgood

TOWN OF ALLGOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Allgood

TOWN OF ALLGOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council, Fire Department	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Blount County | Town of Allgood

TOWN OF ALLGOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Blount County | Town of Allgood

TOWN OF ALLGOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Allgood

TOWN OF ALLGOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Blountsville

TOWN OF BLOUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Blountsville

TOWN OF BLOUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Promote the adoption/enforcement of stormwater management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Blountsville

TOWN OF BLOUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council, Fire Department	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Blountsville

TOWN OF BLOUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Blountsville

TOWN OF BLOUNTSSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Blountsville

TOWN OF BLOUNTSSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Cleveland

TOWN OF CLEVELAND MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Cleveland

TOWN OF CLEVELAND MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Cleveland

TOWN OF CLEVELAND MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council, Fire Department	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High	

Section 6 | Mitigation Action Plan

Blount County | Town of Cleveland

TOWN OF CLEVELAND MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Blount County | Town of Cleveland

TOWN OF CLEVELAND MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Cleveland

TOWN OF CLEVELAND MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Hayden

TOWN OF HAYDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Hayden

TOWN OF HAYDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Hayden

TOWN OF HAYDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council, Fire Department	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Hayden

TOWN OF HAYDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan
Blount County | Town of Hayden

TOWN OF HAYDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Hayden

TOWN OF HAYDEN MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Consider large lot size restriction on flood prone areas designated on Flood Insurance Rate Maps.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Examine regulatory options and feasibility of requiring open space areas for recreation, landscaping, and drainage control.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials. Restrictive development of floodways, among others.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Require delineation of flood plain fringe, floodways, and wetlands on all plans submitted with a permit for development within a floodplain.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High
	1	Promote good construction practices and proper code enforcement to mitigate structural failures during natural hazard events.	All	Building Inspector	Local Funds	Ongoing	Medium	Medium
	1	Evaluate and revise as appropriate, building codes for roof construction to maximize protection against wind damage from hurricanes, tornadoes, and windstorms; encourage installation of "hurricane clips."	Severe Thunder- storms, Tornadoes, Wind- storms	Building Inspector	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Wildfires	Fire Chief	Local Funds	Ongoing	Medium	Medium
	1	Establish and enforce minimum property maintenance standards that reduce or eliminate unsafe structures.	All	Building Inspector	Local Funds	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Enact local ordinance that requires community storm shelters within sizeable residential developments, such as, mobile home parks, apartment complexes, planned residential communities, and campgrounds/RV parks.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council, Building Inspector	Local Funds	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council, Fire Chief	TBD	Ongoing	High	High
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Keep builders and developers informed of Federal wetlands permitting requirements of the Corps of Engineers.	Floods/ Flash Floods	Building Inspector	Local Funds	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Building Inspector	Local Funds	Ongoing	Medium	Medium
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Highland Lake

TOWN OF HIGHLAND LAKE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Locust Fork

TOWN OF LOCUST FORK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Locust Fork

TOWN OF LOCUST FORK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Locust Fork

TOWN OF LOCUST FORK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High	

Section 6 | Mitigation Action Plan

Blount County | Town of Locust Fork

TOWN OF LOCUST FORK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Keep builders and developers informed of Federal wetlands permitting requirements of the Corps of Engineers.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Blount County | Town of Locust Fork

TOWN OF LOCUST FORK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Locust Fork

TOWN OF LOCUST FORK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Blount County | Town of Nectar

TOWN OF NECTAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Blount County | Town of Nectar

TOWN OF NECTAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Nectar

TOWN OF NECTAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Nectar

TOWN OF NECTAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Blount County | Town of Nectar

TOWN OF NECTAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Nectar

TOWN OF NECTAR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all jurisdictions. Each plan should address natural hazards exposure and Include long-term disaster resistance measures. The vulnerability and environmental suitability of lands for future development should be clearly addressed. Local plans should assess the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	Planning Commission	TBD	Ongoing	High	High
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for jurisdictions with active comprehensive planning programs.	All	Planning Commission	Local Funds	Ongoing	Medium	Medium
	1	Prepare a five-year capital improvement plan (CIP) to include capital projects that implements the natural hazards element of the community's comprehensive plan or projects identified in the Community Mitigation Action Program of this multi-hazard mitigation plan.	All	City Manager	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Identify existing culturally or socially significant structures and critical facilities that have the most potential for losses from natural hazard events and identify needed structural upgrades.	All	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Identify program drainage areas, conduct engineering studies, evaluate feasibility, and construct drainage improvements to reduce or eliminate localized flooding.	Floods/ Flash Floods	Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider large lot size restriction on flood prone areas designated on Flood Insurance Rate Maps.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Examine regulatory options and feasibility of requiring open space areas for recreation, landscaping, and drainage control.	All	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Train local flood plain manager through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials. Restrictive development of floodways, among others.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium	
1	Require delineation of flood plain fringe, floodways, and wetlands on all plans submitted with a permit for development within a floodplain.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium	
1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium	
1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Promote good construction practices and proper code enforcement to mitigate structural failures during natural hazard events.	All	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Evaluate and revise as appropriate, building codes for roof construction to maximize protection against wind damage from hurricanes, tornadoes, and windstorms; encourage installation of "hurricane clips."	Severe Thunderstorms, Tornadoes, Windstorms	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Drought, Lightning, Severe Thunderstorms, Wildfires	Fire Chief	Local Funds	Ongoing	Medium	Medium
	1	Establish and enforce minimum property maintenance standards that reduce or eliminate unsafe structures.	All	Mayor and Council, Chief Inspector	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	1	Enact local ordinance that requires community storm shelters within sizeable residential developments, such as mobile home parks, apartment complexes, planned residential communities, and campgrounds/RV parks.	Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Review and revise as necessary, landscaping standards for parking lots that reduce the size of impervious surfaces and encourage natural infiltration of rainwater.	All	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt and implement subdivision regulations that require proper storm water infrastructure design and construction.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council, Chief Inspector	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council, Chief Inspector	Local Funds	Ongoing	High	High
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Chief Inspector, Public Works	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas, and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Fire Chief	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Chief Inspector	TBD	Ongoing	High	High
	2	Subsidize the elevation of certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	2	Provide technical advisory assistance to building owners on available building retrofits to protect against natural hazards damages.	All	Chief Inspector	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	3	Keep builders and developers informed of Federal wetlands permitting requirements of the Corps of Engineers.	Floods/ Flash Floods	Chief Inspector	Local Funds	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council, Chief Inspector	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council, Chief Inspector	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Prepare and implement standard operating procedures and guidelines for drainage system maintenance.	All	Public Works Director	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council, Chief Inspector, Public Works Director	Local Funds	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council, Chief Inspector	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council, Chief Inspector	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | City of Oneonta

CITY OF ONEONTA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council, Chief Inspector	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council, Chief Inspector	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	All	Chief Inspector	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council, Chief Inspector	Local Funds	New	High	High
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council, Chief Inspector	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council, Chief Inspector	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Rosa

TOWN OF ROSA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Blount County | Town of Rosa

TOWN OF ROSA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Rosa

TOWN OF ROSA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High	

Section 6 | Mitigation Action Plan

Blount County | Town of Rosa

TOWN OF ROSA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Blount County | Town of Rosa

TOWN OF ROSA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Rosa

TOWN OF ROSA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Snead

TOWN OF SNEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Blount County | Town of Snead

TOWN OF SNEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Blount County | Town of Snead

TOWN OF SNEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Snead

TOWN OF SNEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Blount County | Town of Snead

TOWN OF SNEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan
Blount County | Town of Snead

TOWN OF SNEAD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Susan Moore

TOWN OF SUSAN MOORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator or FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Maintain membership for locally designated floodplain managers in the Association of State Floodplain Managers and the Alabama Association of Floodplain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Actively participate in the National Flood Insurance Program as a member in good standing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Susan Moore

TOWN OF SUSAN MOORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt, and implement subdivision regulations that require proper storm water infrastructure, design, and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Support legislation to establish a State dam safety program.	Dam/ Levee Failure, Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Susan Moore

TOWN OF SUSAN MOORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Conduct wildfire vulnerability assessments, including the vulnerability of critical facilities and number of residential properties in these risk areas and prepare a comprehensive inventory to identify high and moderate wildfire risk areas.	Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Relocate buildings out of hazardous flood areas, with emphasis on pre-FIRM residential buildings, where deemed more cost effective than property acquisition or building elevation.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantial damaged structures and replace with permanent open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	TBD	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Susan Moore

TOWN OF SUSAN MOORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Repair, elevate, and weatherize existing homes for low- to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Blount County | Town of Susan Moore

TOWN OF SUSAN MOORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during period of drought to conserve water.	Drought/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Participate in the "Turn Around, Don't Drown" program by purchasing and installing signs in known flash flood overpass locations.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Continue to participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Blount County | Town of Susan Moore

TOWN OF SUSAN MOORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Conduct materials distribution via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	High	High
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Require the installation of weather radios in all public buildings and places of public assembly	All	Mayor and Council	Local Funds	Ongoing	High	High

SECTION 6.5.6 | JACKSON COUNTY MITIGATION ACTIONS

- Jackson County
- Bridgeport
- Dutton
- Hollywood
- Hytop
- Langston
- Paint Rock
- Pisgah
- Pleasant Groves
- Scottsboro
- Section
- Skyline
- Stevenson
- Woodville

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically regarding flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Jackson County leaders have been involved in ongoing discussion regarding enactment of regulations for manufactured home parks.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Examine and correct as appropriate the flooding problems as listed in the section regarding the profile and assessment of flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	5	Acquire a portable generator for the Jackson County Department of Public Works	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	5	Acquire a portable generator for Jackson County Emergency Management Agency		Jackson County Department of Public Works Engineering; Jackson County Commission	Local AEMA FEMA	Complete	High	High
	4	Develop a program for storm shelters or other protection at schools.	Tornadoes, Hail, Windstorms	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA; Jackson County Board of Education; Scottsboro City Board of Education; Northeast State Community College	Local AEMA FEMA	Ongoing	High	High

Jackson County secured funding & constructed community storm shelters at 18 County Schools; protection remains inadequate for population. This is an ongoing project that is revised and expanded and will be completed as funds become available.

Funding was secured and generator was purchased and installed at the Jackson County Courthouse.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	4	Construct a community storm shelter at Jackson County Park.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	5	Explore the development of a Rescue Center and improved access to waterways by Marine Police and other public safety agencies to improve fire protection and safety.	All	Jackson County Commission; Scottsboro City; JCEMA	Local AEMA FEMA	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High

Community shelters have been constructed in Stevenson, Bridgeport, Section, Langston, Pisgah and Paint Rock and at two County Parks. More shelters are needed as funding becomes available.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High
	5	Develop a program to assure the provision of weather sirens or radios at all schools	Tornado, Hail, Windstorms	Jackson County Board of Education and Scottsboro City Engineering; JCEMA; Northeast State Community College	Local, AEMA, FEMA	Ongoing	High	High
	6	Enhance web site access and information for general public use regarding hazard mitigation.	All	Jackson County Commission, JCEMA	Local	Ongoing	High	High
	6	Develop a hazard mitigation information center that can be stationed at high traffic areas such as shopping centers, public parks, or special events where people tend to congregate.	All	Jackson County Commission, JCEMA	Local, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Prepare hazard mitigation information to be distributed to hospitals, nursing homes, clinics, senior centers, etc.	All	Jackson County Commission, JCEMA	Local, FEMA	Ongoing	High	High
	3	Prepare and distribute information regarding best management practices regarding hazard mitigation in forest and vegetation management.	All	Jackson County Commission, JCEMA	Local, FEMA	Ongoing	High	High
	1	Assign a person at the Jackson County EMA with the responsibility of periodically reviewing the activities contained in this Plan and for performing the annual review.	All	Jackson County Commission, JCEMA	Local/ Low Cost	Ongoing	High	High
	1	Permanently establish an expanded Natural Hazard Mitigation Committee as an arm of the Jackson County EMA and develop guidelines for the conduct of business.	All	Jackson County Commission, JCEMA	Local/ Low Cost	Ongoing	High	High
	1	Expand the list of stakeholders, particularly to include the business and academic sectors, to obtain their cooperation in the implementation of mitigation activities.	All	JCEMA	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop continuing relationships with local, regional and state agencies that have roles in the hazard mitigation process.	All	JCEMA	Local	Ongoing	High	High
	1	Develop a resource catalog to be used for identifying funding sources and assistance providers.	All	JCEMA	Local/ Low Cost	Ongoing	High	High
	1	Explore non-traditional sources of both government and non-government grants and loans for mitigation activities.	All	JCEMA	Local/ Low Cost	Ongoing	High	High
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium

In progress. Jackson County entered into a Pre-Disaster Debris Contract and local municipalities can and are encouraged to join.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High

Scottsboro City installed 12 Sirens since 2010 more are needed throughout the County and towns.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County

JACKSON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6		Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium
5		Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temps.	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Community shelter(s) have been constructed in Bridgeport. More shelters are needed as funding becomes available.

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures , Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures , Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Bridgeport

TOWN OF BRIDGEPORT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures , Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures , Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Dutton

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Section 6 | Mitigation Action Plan

Jackson County | Hollywood

TOWN OF HOLLYWOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hollywood

TOWN OF HOLLYWOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Hollywood

TOWN OF HOLLYWOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Hollywood

TOWN OF HOLLYWOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	4	Construct a community storm shelter in the Hollywood Community.	Tornado, Hail, Windstorms	Hollywood Town, JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	5	Provide for storage space and emergency supplies in Hollywood.	All	Hollywood Town, JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Hollywood

TOWN OF HOLLYWOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Provide weather sirens specifically in the Hollywood Community.	Tornado, Hail, Windstorms	Hollywood Town, JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hollywood

TOWN OF HOLLYWOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hollywood

TOWN OF DUTTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hollywood

TOWN OF HOLLYWOOD MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	FEMA, JCEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Hytop

TOWN OF HYTOP MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Langston

TOWN OF LANGSTON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	FEMA, JCEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Paint Rock

TOWN OF PAINT ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Pisgah

TOWN OF PISGAH MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	FEMA, JCEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Pisgah

TOWN OF PISGAH MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan

Jackson County | Pisgah

TOWN OF PISGAH MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Pisgah

TOWN OF PISGAH ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Pisgah

TOWN OF PISGAH ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Pisgah

TOWN OF PISGAH ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Pisgah

TOWN OF PISGAH ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Pisgah

TOWN OF PISGAH MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Section 6 | Mitigation Action Plan
 Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Section 6 | Mitigation Action Plan
 Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Section 6 | Mitigation Action Plan

Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Section 6 | Mitigation Action Plan
Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Section 6 | Mitigation Action Plan

Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES ROCK MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Pleasant Groves

TOWN OF PLEASANT GROVES MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Section 6 | Mitigation Action Plan Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Section 6 | Mitigation Action Plan
Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from sitespecific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High

Section 6 | Mitigation Action Plan

Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Identify and obtain assistance to the City of Scottsboro in the implementation of the City's Stormwater Management Plan.	Flood, Flash Flood	Scottsboro City Engineering; JCEMA	Local, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Purchase generators and trailers in an effort to keep water booster stations operated by the Scottsboro Water, Sewer and Gas Board working in the event of power outage.	All	Scottsboro City Engineering; JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	5	Acquire 9 portable backup power supplies for potable water storage tanks maintained by Scottsboro Water, Sewer and Gas Board.	All	Scottsboro City Engineering; Scottsboro WSG; JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	5	Acquire back-up power supplies for the main wastewater treatment plant and pump stations operated by Scottsboro Water, Sewer and Gas Board at Goosepond Colony.	All	Scottsboro City Engineering; Scottsboro WSG; JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	5	Acquire backup power supplies for the main plant and the raw water pump at North Sauty Creek Water Filter Plant operated by Scottsboro Water, Sewer and Gas Board.	All	Scottsboro City Engineering; Scottsboro WSG; JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	5	Acquire backup power supplies and solids pumps for key wastewater pump stations transferring wastewater to the Southside Wastewater Treatment Plant operated by Scottsboro WSG.	All	Scottsboro City Engineering; Scottsboro WSG; JCEMA	Local, AEMA, FEMA	Ongoing	High	High
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Wind Storms	Jackson County Commission; JCEMA	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct a community storm shelter at Goosepond Colony.	Tornado, Hail, Wind Storms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	4	Construct a community storm shelter in the Langston community.	Tornado, Hail, Wind Storms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	5	Explore the development of a Rescue Center and improved access to waterways by Marine Police and other public safety agencies to improve fireprotection and safety.	All	Jackson County Commission; Scottsboro City; JCEMA	Local AEMA FEMA	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/Hurricanes, Wildfires, Wind Storms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Provide weather sirens specifically in the Scottsboro community.	Tornado, Hail, Windstorms	Scottsboro City Engineering Department; JCEMA	Local	Ongoing	High	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Scottsboro

CITY OF SCOTTSBORO MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	1	Review and consider the status of participation in and compliance with the National Flood Insurance Program	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	FEMA, JCEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Section

TOWN OF SECTION MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan

Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Skyline

TOWN OF SKYLINE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Stevenson

TOWN OF STEVENSON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	Jackson County Department of Public Works Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High
	1	Develop guidelines that can be used for the purpose of preparing community growth and development plans that incorporate hazard mitigation considerations.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection from weather hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigating against the risk from natural hazards specifically with regard to flooding and landslides.	Flood, Landslide	JCEMA	Local	Ongoing	High	High
	1	Develop regulations for the development on hillsides and steep slopes to aid in the reduction of storm water runoff and landslides	Flood, Landslide	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA	Ongoing	High	High
	2	Develop guidelines for the use of easements to protect private property from site specific natural hazards.	All	JCEMA	Local	Ongoing	High	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Flood	Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	3	Explore opportunities for open space preservation in conjunction with hazard mitigation objectives.	Extreme Temperatures	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of situation on flood protection and drainage facilities.	Flood, Flash Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	3	Cooperate with the Alabama Forestry Commission in the use of Wildland-Urban Interface programs to protect property from wildfire.	Wildfire	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA	Local	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that area and have been the subject of frequent and continuing flooding.	Flood	Jackson County Department of Public Works Engineering; Scottsboro City Engineering; JCEMA Floodplain Managers (County/City)	Local AEMA FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider Community Storm Shelters at dense residential areas such as apartments and mobile home parks.	Tornado, Hail, Windstorms	Jackson County Commission; JCEMA	Local	Ongoing	High	High
	6	Maintain a media, website and public information packet with shelter locations and services available in the event of a disaster.	All	JCEMA; Municipal Law Enforcement & Jackson County Law Enforcement; Scottsboro Fire Department; Red Cross	FEMA	Ongoing	Medium	High
	4	Develop and maintain a list of homeowners and/or agencies who wish to have a safe room. Secure funds to assist homeowners and agencies in constructing safe rooms.	All	JCEMA	FEMA, AEMA, Local	Ongoing	Medium	High
	4	Work with transportation providers to safely move individuals to shelter.	Landslide, Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Council on Aging; Scottsboro City Board of Education and Jackson County Board of Education	Local	Ongoing	Medium	High
	4	Obtain funding to support the construction of community shelters in areas of need and/or retrofit areas in existing schools so students can shelter in place.	Tornado, All Tropical Storms/ Hurricanes, Wildfires, Windstorms	JCEMA; Jackson County Schools; Scottsboro City Schools	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop up to date flood maps for Jackson County in digital format by participating in FEMA's Floodplain Map Modernization Program	Extreme Temperatures, Flooding, Flash Floods	Jackson County & Scottsboro City Engineering Departments & Floodplain Managers	Local AEMA	Ongoing	High	High
	5	Increase the amount of heavy equipment owned by Jackson County that can be used to respond to smaller communities to clean up after disasters.	All	Jackson County Commission, JCEMA	Local, JCEMA	Ongoing	High	Medium
	1	Integrate existing GIS data into one shareable file.	All	JCEMA; Scottsboro City; Jackson County Commission	Local	Ongoing	Medium	High
	1	Develop an up-to-date map of all current or planned private and public dams and levees in all jurisdictions	Extreme Temperatures, Flooding, Flash Floods	Jackson County Engineering; Scottsboro City JCEMA	Local	Ongoing	Low	High
	1	Develop storm water drainage plans for jurisdictions in Jackson County.	Flooding, Flash Flooding, Thunderstorms	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High
	2	Keep accurate lists of properties in Jackson County that might be candidates for full or partial buyouts, elevations and/or wind retrofits.	All	Jackson County & Scottsboro City Public Works and Engineering Departments; JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Implement a reporting system to obtain detailed damage reports from law enforcement, emergency management services, fire, rescue and other governmental entities.	All	JCEMA; Scottsboro City Law Enforcement and Jackson County Sheriff's Department Enforcement; Scottsboro Fire Department; All other Paid/Volunteer Fire Departments	Local	Ongoing	Medium	High
	5	Promote and utilize cellular and internet applications for damage reporting.	All	JCEMA	Local, State, Federal	Ongoing	High	High
	1	Continue to acquire and preserve land that is subject to repetitive flooding from landowners who are willing to participate in the program.	Flooding, Flash Flooding	JCEMA	FEMA, Local	Ongoing	Medium	High
	1	Identify and construct firebreaks around critical facilities that are vulnerable to wildfires.	Drought, Wildfire	JCEMA	FEMA, Local	Ongoing	Low	High
	5	Continue to seek and secure funding to place outdoor warning sirens in needed places throughout the county.	All	JCEMA	Local, AEMA, FEMA	Ongoing	High	Medium
	1	Continue to enhance and seek funding and/or partnerships with other agencies to implement mass automated notification systems throughout the county.	All	JCEMA; Jackson County Commission, Jackson County 911 Coordinator;	Local, AEMA, FEMA	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Seek and secure funding for NOAA Weather Radios to be placed in areas with high populations of vulnerable citizens and or where large numbers of citizens congregate.	All	JCEMA; Jackson County Commission	Local, AEMA, FEMA	Ongoing	High	High
	5	Implement Web Emergency Operations Center	All	JCEMA	Local, FEMA	Ongoing	High	High
	5	Conduct a survey of the county's emergency response agencies to identify existing needs and possible funding sources in terms of equipment, personnel, and resources.	All	JCEMA; Municipal Law Enforcement and Jackson County Sheriff's Department; Scottsboro Fire Department and Municipal Paid and Volunteer Fire Departments.	Local, FEMA	Ongoing	Medium	High
	5	Continue to offer training courses on the occurrence of natural hazards and recovery efforts associated with natural hazards.	All	JCEMA	Local	Ongoing	Medium	High
	5	Develop a database of contract personnel to send grant alerts concerning the availability of funds for equipment and training.	All	JCEMA, TARCOG	Local	Ongoing	Medium	High
	6	Distribute natural hazard information via all available outlets, including social media.	All	JCEMA	Local	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Jackson County | Woodville

TOWN OF WOODVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Hold Community Emergency Response Team (CERT) Training a .for citizens to increase their knowledge and ability to respond effectively to natural hazard events	All	JCEMA	Local	Ongoing	Medium	High
	1	All local governments will continue to participate in NFIP by: 1) Participating in floodplain identification and mapping, 2) offering assistance and encouraging property owners to participate in NFIP as protection against flood losses, and 3) Developing monitoring activities.	All	JCEMA; Scottsboro City Administrator; Jackson County Administrator; Municipal Mayors	Local	Ongoing	High	High
	6	Make current flood maps and NFIP information available social media, websites, brochures and training materials	Flood, Flash Flood	JCEMA	Local	Ongoing	Medium	High
	5	Purchase generators and trailers in an effort to keep lift stations at water distributors working in the event of power outages, ensuring that there will be the ability to have potable water.	All	JCEMA; Scottsboro WSG; Utilities Bridgeport City; Stevenson City; County Water Authority; Other water authorities within Jackson County	Local, AEMA, Federal	Ongoing	Medium	High

SECTION 6.5.7 | LIMESTONE COUNTY MITIGATION ACTIONS

- Limestone County
- Ardmore
- Athens
- Elkmont
- Lester
- Mooresville

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County

LIMESTONE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	County EMA County Engineer	USACE, EDA	Ongoing	Low	High
	1	Develop and implement storm water management regulations to improve the efficiency of flood protection and drainage facilities.	Floods, Flash Floods	County Engineer	FMA, USACE	Completed	Medium	High
	1	Assign a person at the LCEMA with the responsibility of periodically reviewing the activities contained in this Plan and for performing the annual review.	All	County EMA	Local	Completed	High	High
	1	Permanently establish an expanded Natural Hazard Mitigation Committee as an arm of the LCEMA and develop guidelines for the conduct of business.	All	County EMA	Local	Ongoing	Medium	High
	1	Develop a resource catalog to be used for identifying funding sources and assistance providers.	All	County EMA	HMGP	Ongoing	Medium	High
	1	Explore non-traditional sources of both governmental and non-governmental grants and loans for mitigation activities.	All	County EMA, Local Government	Local	Ongoing	Low	High

Text in **red** reflects corrections/adjustments made to the county mitigation items by representatives of Jackson County Emergency Management Agency.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County

LIMESTONE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform further study to ascertain the potential vulnerability of the area and particular water supply wells as they pertain to a drought even	Drought	Local Government County Engineer	USACE, Local	Ongoing	Low	High
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	All	County EMA County Engineer	USACE	Completed	Medium	High
	1	Expand the list of stakeholders, particularly to include the business and academic sectors, to obtain their cooperation in the implementation of mitigation activities.	All	County EMA	Local	Ongoing	Medium	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	Local Government	ADECA	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Floods, Flash Floods	Local Government	NFIP, ADECA, USACE, HMGP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County

LIMESTONE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Review and revise subdivision regulations countywide with the intent of better mitigation against the risk from natural hazards.	All	Local Government	HMGP, FMA, PDM	Ongoing	Medium	High
	2	Develop/ guidelines for the use of easements to protect private property from site-specific natural hazards.	All	Local Government County Engineer	DOT, HMGP	Ongoing	Low	High
	6	Prepare hazard mitigation information to be distributed to hospitals, nursing homes, clinics, etc.	All	County EMA	EMA, NFIP	Ongoing	Medium	High
	6	Enhance web site access and information for general public use regarding hazard mitigation.	All	County EMA	EMA, NFIP	Ongoing	Medium	High
	6	Develop a hazard mitigation information center that can be stationed at high traffic areas such as shopping centers, public parks, or special events where people tend to congregate.	All	County EMA	EMA, NFIP	Completed	Low	High
	3	Explore opportunities for open space reservation in conjunction with hazard mitigation objectives.	Floods, Flash Floods	County Engineer	USACE, NRCS, HMGP	Completed	Medium	High

Limestone County EMA conducts yearly all-hazard awareness talks and provides awareness safety brochures.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County

LIMESTONE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Prepare and distribute information of best management practices regarding hazard mitigation in forest and vegetation management.	Floods, Flash Floods	County EMA	FEMA, USACE, NRCS	Completed	Medium	High
	5	Work with local utility companies to perform a utility study that will include a more comprehensive inventory and vulnerability assessment that will be applicable to the needs and concerns of both the community and the service providers.	All	County EMA	HMGP	Ongoing	Low	High
	5	Install approximately twelve additional weather sirens in the areas outside the Browns Ferry "10-mile" zone.	All	County EMA	HMGP, ADECA	Ongoing	High	High
	5	Develop a program to assure the provision of weather sirens or radios at all schools.	All	County EMA	Browns Ferry, HMGP	Completed	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continuing flooding.	Floods, Flash Floods	County EMA County Engineer	RFC, SRL, HMGP	Ongoing	Medium	High
	4	Develop a program/project to protect Alabama Highway 99 in Northwest Limestone County from flooding.	Floods, Flash Floods	County EMA County Engineer	DOT, HMGP	Completed	Medium	High
	4	Develop a program/project to protect US Highway 72 east of Athens from flooding.	Floods, Flash Floods	County EMA, County Engineer	DOT, HMGP	Completed	Low	High

Text in **red** and ~~lined through~~ reflect county mitigation items that representatives of Jackson County Emergency Management Agency wish to remove from the County's mitigation action list.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County

LIMESTONE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Consider the development of a program for the provision of storm shelters at dense and vulnerable residential establishments such as apartments, dormitories and mobile home parks.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP	Ongoing	High	High
	1	Make application and/or commit/continue to participate in the NFIP.	Floods, Flash Floods	County EMA, County Engineer	HMGP, USACE	Ongoing	High	High
	5	Purchase, install and test emergency warning sirens, as needed. Upgrade existing equipment as needed.	All	County EMA, Local Government	ADECA, HMGP	Ongoing	High	High
	5	Purchase/update emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.	All	County EMA, Local Government	ADECA, HMGP	Ongoing	High	High
	4	Provide adequate safe rooms and community shelters.	Thunderstorms, Hail, Tornado, Strong Wind, High Winds	County EMA, Local Government	HMGP	Ongoing	High	Medium
	4	Construct Scour Countermeasures as recommended by ALDOT at the bridge on Nick Davis Road at Limestone Creek.	Floods, Flash Floods	County EMA, County Engineer	HMGP, DOT (\$35,000)	Ongoing	High	Medium

The county would like to see legislation pass provision for new construction and construction of new additions to require safe rooms/storm shelters. Storm shelter planning/development are underway. The action was reviewed and the HMPC wishes it to remain in this plan update.

Limestone County EMA has installed generators at their two communications towers and at their reception center. They also house and maintain generators for additional use. Generators have been purchased and installed at the following locations that serve as mass care shelters and reception and relocation centers: Ardmore High School, Elkmont High School, West Limestone High School and Athens Recreation Center.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County

LIMESTONE COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct Scour Countermeasures as recommended by ALDOT at the bridge on Capshaw Road at Limestone Creek.	Flood	County EMA, County Engineer	HMGP, DOT (\$49,000)	Ongoing	High	Medium
	4	Construct Scour Countermeasures as recommended by ALDOT at the bridges (2) on Cottonbelt Road at Sugar Creek.	Floods, Flash Floods	County EMA, County Engineer	HMGP, DOT (\$35,000)	Ongoing	High	Medium
	4	Construct Scour and Drift protection at the bridge on Elk River Mills Road over Elk River.	Floods, Flash Floods	County EMA, County Engineer	HMGP, DOT (\$410,000)	Ongoing	High	Medium
	4	Construct Scour and Drift protection at the bridge on Easter Ferry Road over Elk River.	Floods, Flash Floods	County EMA, County Engineer	HMGP, DOT (\$205,000)	Completed	High	Medium
	5	Purchase, install and test emergency warning sirens, as needed. Upgrade existing equipment as needed.	All	County EMA, Local Government	ADECA, HMGP	Ongoing	High	Medium
	5	Provide adequate shelters and community safe rooms. This includes to the schools.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP	Ongoing	High	Medium

These mitigation actions were moved from the Town of Ardmore's mitigation action section to the Limestone County mitigation section.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Ardmore

TOWN OF ARDMORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	County-EMA, TARCOC County Engineer	USACE, EDA	Ongoing	Low	High
	1	Develop and implement storm water management regulations to improve the efficiency flood protection and drainage facilities.	Floods, Flash Floods	County-EMA, County Engineer	FMA, USACE	Ongoing	Medium	High
	1	Develop guidelines that can be used for the purpose of development community growth and development plans that incorporate hazard mitigation considerations.	All	County-EMA, Local Government County Engineer	County EMA, Local Government	Ongoing	Medium	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	County-EMA, Local Government County Engineer	Local	Ongoing	Medium	High
	1	Perform further study to ascertain the potential vulnerability of the area, particularly water supply wells, from drought.	Drought	County-EMA, Local Government County Engineer	USACE	Ongoing	Low	High
	4	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	All	County EMA	USACE	Ongoing	Medium	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	County-EMA, Local Government County Engineer	Local	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Ardmore

TOWN OF ARDMORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Floods, Flash Floods	County-EMA, Local Government County Engineer	NFIP, ADECA, USACE, HMGP, RFC	Ongoing	Medium	High
	2	Develop guidelines that can be used in the review of building and development regulations, including subdivision regulations, to determine their effectiveness in mitigating against the risk from natural hazards.	All	County-EMA, Local Government County Engineer	HMGP	Ongoing	Medium	High
	2	Review and revise subdivision regulations countywide with the intent of better mitigation against the risk from natural hazards.	All	County-EMA, Local Government County Engineer	HMGP, FMA, PDM	Ongoing	Medium	High
	2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	County-EMA, Local Government County Engineer	DOT, HMGP	Ongoing	Low	High
	6	Prepare hazard mitigation information to be distributed to hospitals, nursing homes, clinics, etc.	All	County-EMA, Local Government	EMA, NFIP	Ongoing	Medium	High
	6	Enhance web-site access and information for general public use regarding hazard mitigation.	All	County-EMA, Local Government	EMA, NFIP	Ongoing	Medium	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Ardmore

TOWN OF ARDMORE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continuing flooding.	Floods, Flash Floods	County EMA	RFC, SRL, HMGP	Ongoing	Medium	High
	4	Consider the development of a program for the provision of storm shelters at dense and vulnerable residential establishments such as apartments, dormitories and mobile home parks.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP	Ongoing	High	High
	1	Make application and/or commit/continue to participate in the NFIP.	Floods, Flash Floods	County EMA, County Engineer	HMGP, USACE	Ongoing	High	High
	5	Purchase, install and test emergency warning sirens, as needed. Upgrade existing equipment as needed.	All	County EMA, Local Government	ADECA, HMGP	Ongoing	High	Medium
	5	Purchase/update emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.	All	County EMA, Local Government	ADECA, HMGP	Ongoing	High	High
	5	Provide adequate shelters and community safe rooms. This includes to the schools.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP	Ongoing	High	Medium

Limestone County EMA has provided area schools with weather radios and tone alert pagers.

An attempt was made to build safe rooms at each school; however, the school system did not have the funds to meet the 25% match for a HMGP grant.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Athens

CITY OF ATHENS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Perform a land use study that will include a more comprehensive inventory of commercial and industrial land types and uses.	All	County EMA, TARCOG Local Government	USACE, EDA	Completed	Low	High
	1	Develop and implement storm water management regulations to improve the efficiency flood protection and drainage facilities.	Floods, Flash Floods	County EMA, County Engineer Local Government	FMA, USACE	Completed	Medium	High
	1	Develop guidelines that can be used for the purpose of development community growth and development plans that incorporate hazard mitigation considerations.	All	County EMA, Local Government	County EMA, Local Government	Ongoing	Medium	High
	1	Use subdivision regulations for the regulation of the development of manufactured housing parks to make them more resistant to natural hazards.	All	County EMA, Local Government	Local	Ongoing	Medium	High
	1	Perform further study to ascertain the potential vulnerability of the area, particularly water supply wells, from drought.	Drought	County EMA, Local Government	USACE	Ongoing	Low	High

Partially complete with Athens Zoning Ordinance (Ord. 2017-2016) in R-MH district regulations regarding adequate drainage and storm shelters required for 10 spaces or more.

Athens Code of Ord. Sec. 74.63 (Ord. 99-1315) requires that new construction must not increase the degree of flooding.

The City of Athens is working with Town Planning and Urban Design Collaborative to complete and finalize a new Comprehensive Plan to replace the plan completed in 2013. Limestone County Revenue Commissioner's office also keeps land use information for assessment purposes.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Athens

CITY OF ATHENS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Contact the US Army Corp of Engineers for advice in the development of stream dumping regulations.	All	County EMA	USACE	Ongoing	Medium	High
	2	Review and consider the development and/or implementation of building regulations that aid in the protection of property from weather hazards.	All	County EMA, Local Government	Local	Ongoing	High	High
	2	Use floodplain development regulations to protect property from flooding and to protect the efficiency of the floodplain in the dissipation of floodwaters.	Floods, Flash Floods	County EMA, Local Government	NFIP, ADECA, USACE, HMGP, RFC	Ongoing	Medium	High
	2	Develop guidelines that can be used in the review of building and development regulations, including subdivision regulations, to determine their effectiveness in mitigating against the risk from natural hazards.	All	County EMA, Local Government	HMGP	Ongoing	Medium	High
	2	Review and revise subdivision regulations countywide with the intent of better mitigation against the risk from natural hazards.	All	County EMA, Local Government	HMGP, FMA, PDM	Ongoing	Medium	High
	2	Develop guidelines for the use of easements to protect private property from site-specific natural hazards.	All	County EMA, Local Government	DOT, HMGP	Ongoing	Low	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Athens

CITY OF ATHENS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Prepare hazard mitigation information to be distributed to hospitals, nursing homes, clinics, etc.	All	County EMA, Local Government	EMA, NFIP	Ongoing	Medium	High
	6	Enhance web site access and information for general public use regarding hazard mitigation.	All	County EMA, Local Government	EMA, NFIP	Ongoing	Medium	High
	6	Develop a hazard mitigation information center that can be stationed at high traffic areas such as shopping centers, public parks, or special events where people tend to congregate.	All	County EMA, Local Government	EMA, NFIP	Completed	Medium	High
	3	Develop and implement sedimentation and erosion regulations to reduce the damaging effects of siltation on flood protection and drainage facilities.	Floods, Flash Floods	County EMA, Local Government	USACE, NRCS, HMGP	Ongoing	Medium	High
	3	Explore opportunities for open space reservation in conjunction with hazard mitigation objectives.	Floods, Flash Floods	County EMA, County Engineer, Local Government	USACE, NRCS, HMGP	Ongoing	Medium	High

Partially completed. Participate in nixle and Weather Saf-T-Net to ~~get~~ tailor information to citizen and customers about service interruptions and safety information. Engage with citizens on social media. Limestone County EMA provides information on all hazards via website and social media.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Athens

CITY OF ATHENS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Work with local utility companies to perform a utility study that will include a more comprehensive inventory and vulnerability assessment that will be applicable to the needs and concerns of both the community and the service providers.	All	County EMA, Local Government	HMGP	Ongoing	High	High
	5	Obtain a detailed engineering study to determine the extent of vulnerability to flooding of the Athens- Limestone Hospital.	Floods, Flash Floods	Local Government, USACE	NFIP, USACE	Ongoing	Medium	High
	5	Develop a program to assure the provision of weather sirens radios at all schools.	All	County EMA, Local Government	Browns Ferry, HMGP	Ongoing	High	High
	4	Identify and request funding for the acquisition and/or relocation of properties that are and have been the subject of frequent and continuing flooding.	Floods, Flash Floods	County EMA, Local Government	RFC, SRL, HMGP	Ongoing	Medium	High
	4	Consider the development of a program for the provision of storm shelters at dense and vulnerable residential establishments such as apartments, dormitories and mobile home parks.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP	Ongoing	High	High
1	Make application and/or commit/continue to participate in the NFIP.	Floods, Flash Floods	County EMA, Local Government	HMGP, USACE	Ongoing	High	High	

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Limestone County | Athens

CITY OF ATHENS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Purchase, install and test emergency warning sirens, as needed. Upgrade existing equipment as needed.	All	County EMA, Local Government	ADECA, HMGP	Ongoing	High	Medium
	5	Purchase/update emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.	All	County EMA, Local Government	ADECA, HMGP	Ongoing	High	High
	4	Provide adequate shelters and community safe rooms. This includes to the schools.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP	Ongoing	High	Medium
	4	Regional stormwater reduction measures near Lindsay Lane and Pepper Road.	Floods, Flash Floods	County EMA, Local Government	HMGP	Ongoing	High	High
	4	Reduce flooding of Levert Avenue Bridge at Free Creek (just south of U. S. Highway 72).	Floods, Flash Floods	County EMA, Local Government	HMGP	Ongoing	Medium	High

Partially complete. Newer buildings are being built with emergency generators as a part of the construction such as the police department, fire stations and city hall.

Limestone County EMA tests warning sirens on the 2nd Monday of each month, completes a yearly maintenance and upgrades equipment as needed to ensure all are operational.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Limestone County | Elkmont

TOWN OF ELKMONT MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Make application and/or commit/continue to participate in the NFIP, meeting all NFIP requirements.	Floods, Flash Floods	County EMA, Local Government	HMGP	Ongoing	High	High
	2	Promote drainage improvements on local streets and develop drainage maintenance program.	Floods, Flash Floods	County EMA, Local Government	HMGP, Local	Ongoing	Medium	High
	5	Purchase emergency generators for post disaster mitigation.	All	County-EMA, Local Government	HMGP, Local (\$1,500-\$30,000)	Ongoing	High	High
	5	Purchase, install, and test emergency warning sirens, as needed.	All	County-EMA	HMGP, Local (\$1,500-\$30,000)	Ongoing	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP, ADECA, Local, GERP when available (\$4,000-\$130,000)	Ongoing	High	High

The Town continues promoting drainage improvements on local streets. No drainage maintenance program has been developed due to lack of funding, personnel and time.

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Limestone County | Lester

TOWN OF LESTER MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Make application and/or commit/continue to participate in the NFIP, meeting all NFIP requirements.	Floods, Flash Floods	County EMA, Local Government	HMGP	Ongoing	High	High
	5	Purchase emergency generators for post disaster mitigation.	All	County EMA, Local Government	HMGP, Local (\$1,500-\$30,000)	Ongoing	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP, ADECA, Local, GERP when available (\$4,000-\$130,000)	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Limestone County | Mooresville

TOWN OF MOORESVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORIT Y	BENEFIT / COST SCORE
	1	Make application and/or commit/continue to participate in the NFIP, meeting all NFIP requirements.	Floods, Flash Floods	County EMA, Local Government	HMGP	Ongoing	High	High
	5	Purchase emergency generators for post disaster mitigation.	All	County EMA, Local Government	HMGP, Local (\$1,000-\$5,000 Each)	Ongoing	High	High
	4	Provide adequate individual storm shelters and community safe rooms.	Thunderstorms, Hail, Tornadoes, Strong Winds, High Winds	County EMA, Local Government	HMGP, ADECA, Local, GERF when available (\$4,000-\$130,000)	Ongoing	High	High

SECTION 6.5.8 | MADISON COUNTY MITIGATION ACTIONS

- Madison County
- Gurley
- City of Madison
- City of New Hope
- Town of Owens Crossroads
- Town of Triana

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Madison County

MADISON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and amend existing planning documents to be certain the vulnerability and environmental suitability of lands for future development are clearly addressed; local plans should address the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	LEPC, HMPC, HUDD	EXIST	Ongoing	High	High
	1	Maintain risk assessment data in GIS, including flood zones, tornado tracks, landslide hazards, sinkhole threat areas, disaster events, and a comprehensive inventory of critical facilities within all jurisdictions.	All	HUDD, MCE	EXIST	Ongoing	High	High
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	All	HUDD, MCE,CP,CE	EXIST	Ongoing	High	High
	1	Seek a Countywide update of all FIRMs (Flood Insurance Rate Maps) in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	MCE, FP	FEMA Map Update Program	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Madison County

MADISON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Flooding	FP	EXIST	Ongoing	High	High
	1	Obtain membership for local floodplain managers in the Association of State Floodplain Managers.	Flooding	FP	EXIST	Ongoing	Low	High
	1	Evaluate the effectiveness of higher regulatory standards, such as additional building elevation and limitation of fill within floodplains, to be included in local floodplain management regulations.	Flooding	FP	EXIST	Ongoing	High	High
	1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips," where feasible.	H, T, SS	BO	EXIST	Ongoing	High	High
	1	Organizations or agencies may build community shelters. EMA will advise and review federal assistance processes with eligible organizations or agencies.	T, SS	County Commission	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Madison County

MADISON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Individual citizens are encouraged to install in-home safe rooms in their homes. The EMA will advise and assist individuals seeking federal assistance.	T, SS	EMA	HMGP	Ongoing	High	High
	1	Apply for and maintain membership in the CRS Program.	All	MCE	EXIST	Ongoing	High	High
	1	Conduct flood studies of drainage basins throughout Madison County to identify areas prone to flooding.	Flooding	FP, CE, MCE	HMGP, PDM	Ongoing	Mod.	High
	2	Provide technical assistance to owners to advise on available retrofits to protect against flood damage.	Flooding	BO, FP	EXIST	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage for flooding, earthquake, and sinkhole damages in high-risk areas by property owners and renters.	FL, SH	EMA, FP	EXIST	Ongoing	High	High
	2	Acquire or relocate high-risk, flood prone buildings and convert those properties to permanent open space with covenants that prevent future development. The emphasis should be buildings located within floodways, substantially damaged buildings, repetitive flood insurance loss properties, pre-FIRM buildings (constructed prior to the enactment of local floodplain regulations), and critical facilities. Where feasible, acquisition or relocation is preferred over elevating or flood proofing structures.	Flooding	FP	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Madison County

MADISON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate buildings, where feasible, to reduce potential flood damages. The emphasis should be on certain buildings where acquisition or relocation is not feasible and on buildings not compliant with floodplain regulations. Elevating structures may be an alternative to acquisition/relocation and is preferred over flood proofing, where most feasible	Flooding	FP	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof buildings where feasible to reduce potential flood damages. The emphasis should be on non-residential buildings constructed before the enactment of flood plain regulations (pre-FIRM buildings). Flood proofing should only be considered if acquisition/relocation or building elevation is not feasible.	Flooding	FP	HMGP	Ongoing	Low	Low
	2	Installation of emergency power generation at critical facilities, as outlined in a separate critical facilities document maintained by EMA	All	EMA	HMGP	Ongoing	High	High
	3	Publicize the availability of FIRM (Flood Insurance Rate Map) information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Establish an annual Severe Weather Awareness Day in conjunction with the NWS.	All	EMA, NWS	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Madison County

MADISON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	EMA	EXIST	Ongoing	High	High
	3	Provide speakers to educate public on certain hazard topics upon request by organizations, civic clubs, etc.	All	EMA	EXIST	Ongoing	High	High
	3	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Maintain local library repositories with the latest available publications.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Distribute hazard mitigation brochures to area schools for distribution to students.	All	EMA	EXIST	Ongoing	High	High
	4	Acquire open space, purchase easements, and accept donations of lands within environmentally significant and vulnerable locations through the Land Trust of Huntsville and North Alabama and other agencies.	All	Land Trust of North Alabama	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Madison County

MADISON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding, Land Subsidence, Wildfire	MCE	EXIST	Ongoing	High	High
	5	Establish a flood warning system at strategic locations in the county to cover vulnerable flood locations. Sensors should provide real-time access to stream flow, stream stage, and precipitation data, at the minimum. The system should link data into GIS with the ability to use measured and forecasted rainfall to predict potential flood levels and create real-time maps of flooded areas.	Flooding	EMA	HMGP	Ongoing	Low	Low
	5	Enhance the flood warning network into an All-Hazards Detection Network, including capabilities to monitor icy bridges and highways, water quality and hazardous materials spills into water ways, and air quality or hazardous air emissions. Include camera devices at select locations.	All	EMA	HMGP	Ongoing	Low	Low
	5	Install additional outdoor warning sirens as outlined in the Comprehensive Warning Study published under separate cover by the Huntsville-Madison County Emergency Management Board.	All	EMA	HMGP, PDM	Ongoing	High	High
	5	Upgrade the outdoor warning siren system's activation system to provide enhanced warning capability.	All	EMA	EXIST	Ongoing	High	High
	5	Promote the use of weather radios in households, businesses, and schools.	All	EMA	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Madison County

MADISON COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Install remote weather and camera instrumentation countywide to create a monitoring network to provide timely weather awareness information used to provide potentially early and more accurate warnings to lessen the impact on the population.	FL,T,SS, DH,WC, WF	EMA	HMGP, PDM	New	Mod.	High
	5	Install technology in public buildings to improve emergency responder communications during disaster response to enhance protection of life and property.	FL,T,SS, DH,WC, WF	EMA	HMGP, PDM	Ongoing	Mod.	High
	6	Prepare and implement standard operating procedures for drainage system maintenance.	Flooding	EMA	EXIST	Ongoing	High	High
	6	Evaluate, design, and implement cost effective flood control (structural) projects, including, but not limited to, channel expansions, bridge expansions, pipes and culverts, detention basins, and bridge demolitions within Madison County.	Flooding	MCE	HMGP	Ongoing	High	High
7	Madison County Health Department will conduct vector control measures for mosquitos within the City of Huntsville to include larvicide, street level spraying, etc. following tropical systems, heavy rains or flooding, to augment or supplement normal vector control operations in accordance with the Clean Water Act of 2011. Vector Control would provide services outside its jurisdiction with the consent of the Mayor and City Council and/or declaration from the Governor.	PH	MCHD	EXIST	Ongoing	High	High	

Two of a series of goals added to the Division F Regional Plan by Madison County. These goals align with Division F Regional Mitigation Goal Number Five, which prioritizes improvements in *Emergency Services*. (See following addenda.)

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Gurley

TOWN OF GURLEY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all municipalities.	All	CP, HUDD	EXIST	Ongoing	Low	Low
	1	Review and amend existing planning documents to be certain the vulnerability and environmental suitability of lands for future development are clearly addressed; local plans should address the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	LEPC, HMPC, HUDD	EXIST	Ongoing	High	High
	1	Maintain risk assessment data in GIS, including flood zones, tornado tracks, landslide hazards, sinkhole threat areas, disaster events, and a comprehensive inventory of critical facilities within all jurisdictions.	All	HUDD, MCE	EXIST	Ongoing	High	High
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	All	HUDD, MCE, CP, CE	EXIST	Ongoing	High	High
	1	Seek a Countywide update of all FIRMs (Flood Insurance Rate Maps) in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	MCE, FP	FEMA Map Update Program	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | Town of Gurley

TOWN OF GURLEY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Comprehensive drainage study for the Town of Gurley specifically to respond to clogging and flooding issues.	Flooding	CP, CE	EXIST, HMGP	Ongoing	High	High
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Flooding	FP	EXIST	Ongoing	High	High
	1	Obtain membership for local floodplain managers in the Association of State Floodplain Managers.	Flooding	FP	EXIST	Ongoing	Low	Low
	1	Evaluate the effectiveness of higher regulatory standards, such as additional building elevation and limitation of fill within floodplains, to be included in local floodplain management regulations.	Flooding	FP	EXIST	Ongoing	High	High
	1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips," where feasible.	Hurricane, Tornado, SS	BO	EXIST	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, libraries, community centers, and other public building, where feasible.	Hurricane, Tornado, SS	Town Council	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Gurley

TOWN OF GURLEY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Organizations or agencies may build community shelters. EMA will advise and review federal assistance processes with eligible organizations or agencies.	Tornado, SS	County Commission	HMGP	Ongoing	High	High
	1	Individual citizens are encouraged to install in-home safe rooms in their homes. The EMA will advise and assist individuals seeking federal assistance.	Tornado, SS	EMA	HMGP	Ongoing	High	High
	2	Promote the purchase of insurance coverage for flooding, earthquake, and sinkhole damages in high-risk areas by property owners and renters.	Flooding, Sinkhole	EMA, FP	EXIST	Ongoing	High	High
	2	Acquire or relocate high-risk, flood prone buildings and convert those properties to permanent open space with covenants that prevent future development. The emphasis should be buildings located within floodways, substantially damaged buildings, repetitive flood insurance loss properties, pre-FIRM buildings (constructed prior to the enactment of local floodplain regulations), and critical facilities. Where feasible, acquisition or relocation is preferred over elevating or flood proofing structures.	Flooding	FP	HMGP, PDM	Ongoing	Low	Low
	2	Elevate buildings, where feasible, to reduce potential flood damages. The emphasis should be on certain buildings where acquisition or relocation is not feasible and on buildings not compliant with floodplain regulations. Elevating structures may be an alternative to acquisition/relocation and is preferred over flood proofing, where most feasible	Flooding	FP	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Gurley

TOWN OF GURLEY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Flood proof buildings where feasible to reduce potential flood damages. The emphasis should be on non-residential buildings constructed before the enactment of flood plain regulations (pre-FIRM buildings). Flood proofing should only be considered if acquisition/relocation or building elevation is not feasible.	Flooding	FP	HMGP	Ongoing	Low	Low
	2	Installation of emergency power generation at critical facilities, as outlined in a separate critical facilities document maintained by EMA	All	EMA	HMGP	Ongoing	High	High
	3	Publicize the availability of FIRM (Flood Insurance Rate Map) information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Establish an annual Severe Weather Awareness Day in conjunction with the NWS.	All	EMA, NWS	EXIST	Ongoing	High	High
	3	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	EMA	EXIST	Ongoing	High	High
	3	Provide speakers to educate public on certain hazard topics upon request by organizations, civic clubs, etc.	All	EMA	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Gurley

TOWN OF GURLEY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Maintain local library repositories with the latest available publications.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Distribute hazard mitigation brochures to area schools for distribution to students.	All	EMA	EXIST	Ongoing	High	High
	4	Acquire open space, purchase easements, and accept donations of lands within environmentally significant and vulnerable locations through the Land Trust of Huntsville and North Alabama and other agencies.	All	Land Trust of North Alabama	EXIST	Ongoing	High	High
	4	Enforce dumping regulations.	Flooding	BO, MCE	HMGP	Ongoing	High	High
	4	Enforce erosion and sedimentation control regulations.	Flooding, L	MCE	EXIST	Ongoing	High	High
	4	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding, L, Wildfire	MCE	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Gurley

TOWN OF GURLEY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Establish a flood warning system at strategic locations in the county to cover vulnerable flood locations. Sensors should provide real-time access to stream flow, stream stage, and precipitation data, at the minimum. The system should link data into GIS with the ability to use measured and forecasted rainfall to predict potential flood levels and create real-time maps of flooded areas.	Flooding	EMA	HMGP	Ongoing	Low	Low
	5	Enhance the flood warning network into an All-Hazards Detection Network, including capabilities to monitor icy bridges and highways, water quality and hazardous materials spills into water ways, and air quality or hazardous air emissions. Include camera devices at select locations.	All	EMA	HMGP	Ongoing	Low	Low
	5	Install additional outdoor warning sirens as outlined in the Comprehensive Warning Study published under separate cover by the Huntsville-Madison County Emergency Management Board.	All	EMA	HMGP, PDM	Ongoing	High	High
	5	Upgrade the outdoor warning siren system's activation system to provide enhanced warning capability.	All	EMA	EXIST	Ongoing	High	High
	5	Promote the use of weather radios in households, businesses, and schools.	All	EMA	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Gurley

TOWN OF GURLEY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Prepare and implement standard operating procedures for drainage system maintenance.	Flooding	EMA	EXIST	Ongoing	High	High
	6	Implement drainage improvement plan for the Town of Gurley.	Flooding	TBD	HGMP	Ongoing	High	High
	7	Madison County Health Department will conduct vector control measures for mosquitos within the City of Huntsville to include larviciding, street level spraying, etc. following tropical systems, heavy rains or flooding, to augment or supplement normal vector control operations in accordance with the Clean Water Act of 2011. Vector Control would provide services outside its jurisdiction with the consent of the Mayor and City Council and/or declaration from the Governor.	PH	MCHD	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all municipalities.	All	CP, HUDD	EXIST	Ongoing	Low	Low
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for the City of Huntsville.	All	HUDD	EXIST	Ongoing	High	High
	1	Review and amend existing planning documents to be certain the vulnerability and environmental suitability of lands for future development are clearly addressed; local plans should address the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	LEPC, HMPC, HUDD	EXIST	Ongoing	High	High
	1	Continue to implement the action items included in the adopted City of Huntsville Flood Mitigation Plan, which are incorporated into this Plan in their entirety here by reference.	Flooding	HUDD	EXIST	Ongoing	High	High
	1	Maintain risk assessment data in GIS, including flood zones, tornado tracks, landslide hazards, sinkhole threat areas, disaster events, and a comprehensive inventory of critical facilities within all jurisdictions.	All	HUDD, MCE	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	All	HUDD, MCE, CP, CE	EXIST	Ongoing	High	High
	1	Update landslide hazard maps. Identify those areas of greatest risk for new landslides or reactivation of previous landslides within the City of Huntsville. Develop mitigation program for sites at highest risk.	Landslide SH	HUDD-Planning	EXIST	Ongoing	Low	Low
	1	City of Huntsville- Create accurate field-based measurements sinkhole map specific to COH.	Landslide SH	Engineering	EXIST	Ongoing	Moderate	Moderate
	1	Seek a Countywide update of all FIRMs (Flood Insurance Rate Maps) in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	MCE, FP	FEMA Map Update Program	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Monitor known landslides that have exhibited movement within the last 20 years.	Landslide	HUDD- Planning	EXIST	Ongoing	High	High
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials, restrictive development of flood ways, among others.	Flooding	FP	EXIST	Ongoing	Low	Low
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Flooding	FP	EXIST	Ongoing	High	High
	1	Obtain membership for local floodplain managers in the Association of State Floodplain Managers.	Flooding	FP	EXIST	Ongoing	Low	Low
	1	Evaluate the effectiveness of higher regulatory standards, such as additional building elevation and limitation of fill within floodplains, to be included in local floodplain management regulations.	Flooding	FP	EXIST	Ongoing	High	High
	1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips," where feasible.	Hurricane, Tornadoes, SS	BO	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Require the construction of safe rooms within new public buildings, libraries, community centers, and other public building, where feasible.	Hurricane, Tornado, SS	Town Council	EXIST	Ongoing	High	High
	1	Organizations or agencies may build community shelters. EMA will advise and review federal assistance processes with eligible organizations or agencies.	Tornados, SS	County Commission	HMGP	Ongoing	High	High
	1	Individual citizens are encouraged to install in-home safe rooms in their homes. The EMA will advise and assist individuals seeking federal assistance.	Tornados, SS	EMA	HMGP	Ongoing	High	High
	2	Provide technical assistance to owners to advise on available retrofits to protect against flood damage.	Flooding	BO, FP	EXIST	Ongoing	Low	Low
	2	Seek funding such as Community Development Block Grant funds, to assist low-income homeowners with building retrofits to protect against flood damage.	Flooding	HUDD-Engineering	CDBG	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage for flooding, earthquake, and sinkhole damages in high-risk areas by property owners and renters.	Flooding, Sinkhole	EMA, FP	EXIST	Ongoing	High	High
	2	Acquire or relocate high-risk, flood prone buildings and convert those properties to permanent open space with covenants that prevent future development. The emphasis should be buildings located within floodways, substantially damaged buildings, repetitive flood insurance loss properties, pre-FIRM buildings (constructed prior to the enactment of local floodplain regulations), and critical facilities. Where feasible, acquisition or relocation is preferred over elevating or flood proofing structures.	Flooding	FP	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Acquire all floodway properties within the City of Huntsville and/or remove all structures from the floodway.	Flooding	HUDD-Engineering, Planning	HMGP, PDM	Ongoing	High	High
	2	Elevate buildings, where feasible, to reduce potential flood damages. The emphasis should be on certain buildings where acquisition or relocation is not feasible and on buildings not compliant with floodplain regulations. Elevating structures may be an alternative to acquisition/relocation and is preferred over flood proofing, where most feasible	Flooding	FP	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof buildings where feasible to reduce potential flood damages. The emphasis should be on non-residential buildings constructed before the enactment of flood plain regulations (pre-FIRM buildings). Flood proofing should only be considered if acquisition/relocation or building elevation is not feasible.	Flooding	FP	HMGP	Ongoing	Low	Low
	2	Installation of emergency power generation at critical facilities, as outlined in a separate critical facilities document maintained by EMA	All	EMA	HMGP	Ongoing	High	High
	3	Publicize the availability of FIRM (Flood Insurance Rate Map) information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	All	EMA. FP	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Establish an annual Severe Weather Awareness Day in conjunction with the NWS.	All	EMA, NWS	EXIST	Ongoing	High	High
	3	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	EMA	EXIST	Ongoing	High	High
	3	Provide speakers to educate public on certain hazard topics upon request by organizations, civic clubs, etc.	All	EMA	EXIST	Ongoing	High	High
	3	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Maintain local library repositories with the latest available publications.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Distribute hazard mitigation brochures to area schools for distribution to students.	All	EMA	EXIST	Ongoing	High	High
	4	Acquire open space, purchase easements, and accept donations of lands within environmentally significant and vulnerable locations through the Land Trust of Huntsville and North Alabama and other agencies.	All	Land Trust of North Alabama	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Enforce dumping regulations.	Flooding	BO, MCE	HMGP	Ongoing	High	High
	4	Enforce erosion and sedimentation control regulations.	Flooding, Landslide	MCE	EXIST	Ongoing	High	High
	4	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding, Land field, Wildfire	MCE	EXIST	Ongoing	High	High
	5	Establish a flood warning system at strategic locations in the county to cover vulnerable flood locations. Sensors should provide real-time access to stream flow, stream stage, and precipitation data, at the minimum. The system should link data into GIS with the ability to use measured and forecasted rainfall to predict potential flood levels and create real-time maps of flooded areas.	Flooding	EMA	HMGP	Ongoing	Low	Low
	5	Enhance the flood warning network into an All-Hazards Detection Network, including capabilities to monitor icy bridges and highways, water quality and hazardous materials spills into water ways, and air quality or hazardous air emissions. Include camera devices at select locations.	All	EMA	HMGP	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Install additional outdoor warning sirens as outlined in the Comprehensive Warning Study published under separate cover by the Huntsville-Madison County Emergency Management Board.	All	EMA	HMGP, PDM	Ongoing	High	High
	5	Upgrade the outdoor warning siren system's activation system to provide enhanced warning capability.	All	EMA	EXIST	Ongoing	High	High
	6	Prepare and implement standard operating procedures for drainage system maintenance.	Flooding	EMA	EXIST	Ongoing	High	High
	6	Evaluate, design, and implement cost effective flood control (structural) projects, including, but not limited to, channel expansions, bridge expansions, pipes and culverts, detention basins, and bridge demolitions within the City of Huntsville.	Flooding	HUDD- Planning	EXIST	Ongoing	High	High
	6	Aldridge Creek and Four Mile Post Road flood control project (bridge expansion and channel improvements): engineering design and construction project to modify and expand the existing bridge opening in order to increase the hydraulic capacity of the existing bridge structure.	Flooding	HUDD- Planning and Engineering	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Brogan Branch and Clinton Avenue flood control project (bridge expansion and channel improvements): engineering design and construction project to replace the existing undersized bridge structure in order to maximize the hydraulic capacity of the bridge.	Flooding	HUDD-Planning and Engineering	HMGP	Ongoing	High	High
	6	Brogan Branch flood control project bridge expansion and channel improvements): engineering design and construction project to increase the capacity of Brogla Branch between Holmes Avenue and Clubview Drive. Project includes channel improvements along the project limits and bridge expansion at University Drive and possible acquisition of property and homes	Flooding	HUDD-Planning and Engineering	HMGP	Ongoing	High	High
	6	Peavy Creek flood control project bridge expansion and channel improvements): engineering study, design, and construction project to decrease the peak flood discharges along Peavy Creek. Project will include acquisition of property (see mitigation measure # 2.3.2), construction of a detention/retention facility, channel improvements and replacement of existing undersized bridge structure at Little Cove Road.	Flooding	HUDD-Planning and Engineering	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Governors Drive/U.S. Hwy 431 drainage improvements: engineering design and construction project to increase capacity of the existing undersized drainage facilities that drain Governors Drive and convey flood waters from Governors Drive to Fagan Creek.	Flooding	HUDD-Planning and Engineering	HMGP	Ongoing	High	High
	6	Pinhook Creek Flood Mitigation Project: flood control project in conjunction with the U.S. Army Corps of Engineers; on Pinhook Creek from Memorial Parkway north to twin RR bridge immediately north of Holmes Avenue; and in conjunction with a previous FEMA hazard mitigation grant.	Flooding	HUDD-Planning and Engineering	HMGP	Ongoing	High	High
	6	Dallas Branch and Pinhook Creek Flood Mitigation Project: on Pinhook Creek, from twin RR bridge immediately north of Holmes Avenue, north to confluence of Dallas Branch, and Dallas Branch, upstream to Coleman Street. The city is actively pursuing projects with both the Corps of Engineers and Alabama EMA/FEMA.	Flooding	HUDD-Planning and Engineering	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Huntsville

CITY OF HUNTSVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	7	Madison County Health Department will conduct vector control measures for mosquitos within the City of Huntsville to include larviciding, street level spraying, etc. following tropical systems, heavy rains or flooding, to augment or supplement normal vector control operations in accordance with the Clean Water Act of 2011. Vector Control would provide services outside its jurisdiction with the consent of the Mayor and City Council and/or declaration from the Governor.	PH	MCHD	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all municipalities.	All	CP,HUDD	EXIST	Ongoing	Low	Low
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for the cities of Huntsville and Madison.	All	HUDD	EXIST	Ongoing	High	High
	1	Review and amend existing planning documents to be certain the vulnerability and environmental suitability of lands for future development are clearly addressed; local plans should address the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	LEPC, HMPC, HUDD	EXIST	Ongoing	High	High
	1	Maintain risk assessment data in GIS, including flood zones, tornado tracks, landslide hazards, sinkhole threat areas, disaster events, and a comprehensive inventory of critical facilities within all jurisdictions.	All	HUDD, MCE	EXIST	Ongoing	High	High
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	All	HUDD, MCE,CP,CE	EXIST	Ongoing	High	High
	1	City of Madison- obtain GPS data and attribute data of all critical infrastructure within the City	L	HUDD-Planning	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	City of Madison- build and maintain risk assessment data including flood hazard zones, tornado tracks and other hazard events specific to City of Madison	SH	HUDD- Planning	EXIST	Ongoing	High	High
	1	City of Madison- integrate storm water management applications into GIS	TR	CE	EXIST	Ongoing	High	High
	1	Seek a Countywide update of all FIRMs (Flood Insurance Rate Maps) in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	MCE, FP	FEMA Map Update Program	Ongoing	High	High
	1	Study several drainage basins in the City of Madison and modify the drainage structures within each drainage basin to reduce flooding risk.	Flooding	CE	EXIST	Ongoing	Med	Med
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials, restrictive development of flood ways, among others.	Flooding	FP	EXIST	Ongoing	Low	Low
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Flooding	FP	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Propose that landowners in the City of Madison define by plat floodways and major drainage ways as Public Utility and Drainage Easements and dedicate said land to the City of Madison.	Hurricane, Tornadoes, SS	BO	EXIST	Ongoing	High	High
	1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips," where feasible.	Hurricanes, Tornadoes, SS	BO	EXIST	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, libraries, community centers, and other public building, where feasible.	Hurricane, Tornadoes, SS	CP	EXIST	Ongoing	High	High
	1	Organizations or agencies may build community shelters. EMA will advise and review federal assistance processes with eligible organizations or agencies.	Tornadoes, SS	City Council	HMGP	Ongoing	High	High
	1	Individual citizens are encouraged to install in-home safe rooms in their homes. The EMA will advise and assist individuals seeking federal assistance.	Tornadoes, SS	EMA	HMGP	Ongoing	High	High
	1	Apply for and maintain membership in the CRS Program.	All	MCE	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Provide technical assistance to owners to advise on available retrofits to protect against flood damage.	Flooding	BO	EXIST	Ongoing	Low	Low
	2	Promote the purchase of insurance coverage for flooding, earthquake, and sinkhole damages in high-risk areas by property owners and renters.	Flooding, Sinkhole	EMA, FP	EXIST	Ongoing	High	High
	2	Acquire or relocate high-risk, flood prone buildings and convert those properties to permanent open space with covenants that prevent future development. The emphasis should be buildings located within floodways, substantially damaged buildings, repetitive flood insurance loss properties, pre-FIRM buildings (constructed prior to the enactment of local floodplain regulations), and critical facilities. Where feasible, acquisition or relocation is preferred over elevating or flood proofing structures.	Flooding	FP	HMGP, PDM	Ongoing	Low	Low
	2	Elevate buildings, where feasible, to reduce potential flood damages. The emphasis should be on certain buildings where acquisition or relocation is not feasible and on buildings not compliant with floodplain regulations. Elevating structures may be an alternative to acquisition/relocation and is preferred over flood proofing, where most feasible	Flooding	FP	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Flood proof buildings where feasible to reduce potential flood damages. The emphasis should be on non-residential buildings constructed before the enactment of flood plain regulations (pre-FIRM buildings). Flood proofing should only be considered if acquisition/relocation or building elevation is not feasible.	Flooding	FP	HMGP	Ongoing	Low	Low
	2	Installation of emergency power generation at critical facilities, as outlined in a separate critical facilities document maintained by EMA	All	EMA	HMGP	Ongoing	High	High
	3	Publicize the availability of FIRM (Flood Insurance Rate Map) information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Establish an annual Severe Weather Awareness Day in conjunction with the NWS.	All	EMA, NWS	EXIST	Ongoing	High	High
	3	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	EMA	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Provide speakers to educate public on certain hazard topics upon request by organizations, civic clubs, etc.	All	EMA	EXIST	Ongoing	High	High
	3	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Maintain local library repositories with the latest available publications.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Distribute hazard mitigation brochures to area schools for distribution to students.	All	EMA	EXIST	Ongoing	High	High
	4	Acquire open space, purchase easements, and accept donations of lands within environmentally significant and vulnerable locations through the Land Trust of Huntsville and North Alabama and other agencies.	All	Land Trust of North Alabama	EXIST	Ongoing	High	High
	4	Enforce dumping regulations.	Flooding	BO, MCE	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Enforce erosion and sedimentation control regulations.	Flooding, Land field	MCE	EXIST	Ongoing	High	High
	4	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding, Land field, Wildfire	MCE	EXIST	Ongoing	High	High
	5	Establish a flood warning system at strategic locations in the county to cover vulnerable flood locations. Sensors should provide real-time access to stream flow, stream stage, and precipitation data, at the minimum. The system should link data into GIS with the ability to use measured and forecasted rainfall to predict potential flood levels and create real-time maps of flooded areas.	Flooding	EMA	HMGP	Ongoing	Low	Low
	5	Enhance the flood warning network into an All-Hazards Detection Network, including capabilities to monitor icy bridges and highways, water quality and hazardous materials spills into water ways, and air quality or hazardous air emissions. Include camera devices at select locations.	All	EMA	HMGP	Ongoing	Low	Low
	5	Install additional outdoor warning sirens as outlined in the Comprehensive Warning Study published under separate cover by the Huntsville-Madison County Emergency Management Board.	All	EMA	HMGP, PDM	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of Madison

CITY OF MADISON MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Upgrade the outdoor warning siren system's activation system to provide enhanced warning capability.	All	EMA	EXIST	Ongoing	High	High
	6	Prepare and implement standard operating procedures for drainage system maintenance.	Flooding	EMA	EXIST	Ongoing	High	High
	6	Bradford Creek-bridge replacements on Mill Road and Palmer Road, channel improvements at railroad crossing adjacent to Palmer Road in the City of Madison.	Flood/ Flash Flood	EMA	HMGP	Ongoing	High	High
	6	Bradford Creek- Greenway Extension Phase II from Palmer Road to I-565	Flood/ Flash Flood	EMA	HMGP	Ongoing	High	High
	7	Madison County Health Department will conduct vector control measures for mosquitos within the City of Huntsville to include larviciding, street level spraying, etc. following tropical systems, heavy rains or flooding, to augment or supplement normal vector control operations in accordance with the Clean Water Act of 2011. Vector Control would provide services outside its jurisdiction with the consent of the Mayor and City Council and/or declaration from the Governor.	PH	MCHD	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of New Hope

CITY OF NEW HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all municipalities.	All	CP, HUDD	EXIST	Ongoing	Low	Low
	1	Update the comprehensive plan, zoning ordinance, and subdivision regulations for the City of New Hope.	All	HUDD	EXIST	Ongoing	High	High
	1	Review and amend existing planning documents to be certain the vulnerability and environmental suitability of lands for future development are clearly addressed; local plans should address the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	LEPC, HMPC, HUDD	EXIST	Ongoing	High	High
	1	Maintain risk assessment data in GIS, including flood zones, tornado tracks, landslide hazards, sinkhole threat areas, disaster events, and a comprehensive inventory of critical facilities within all jurisdictions.	All	HUDD, MCE	EXIST	Ongoing	High	High
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	All	HUDD, MCE, CP, CE	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of New Hope

CITY OF NEW HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Seek a Countywide update of all FIRMs (Flood Insurance Rate Maps) in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	MCE, FP	FEMA Map Update Program	Ongoing	High	High
	1	Prepare a Countywide HAZUS-MH risk assessment of earthquakes, floods, and hurricanes.	Flooding, Earthquake, Hurricane	CP	HMGP	Ongoing	High	High
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Flooding	FP	EXIST	Ongoing	High	High
	1	Obtain membership for local floodplain managers in the Association of State Floodplain Managers.	Flooding	FP	EXIST	Ongoing	Low	Low
	1	Evaluate the effectiveness of higher regulatory standards, such as additional building elevation and limitation of fill within floodplains, to be included in local floodplain management regulations.	Flooding	FP	EXIST	Ongoing	High	High
	1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips," where feasible.	Hurricanes, Tornadoes, SS	BO	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of New Hope

CITY OF NEW HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Require the construction of safe rooms within new public buildings, libraries, community centers, and other public building, where feasible.	Hurricane, Tornado, SS	Town Council	EXIST	Ongoing	High	High
	1	Organizations or agencies may build community shelters. EMA will advise and review federal assistance processes with eligible organizations or agencies.	Tornado, SS	County Commission	HMGP	Ongoing	High	High
	1	Individual citizens are encouraged to install in-home safe rooms in their homes. The EMA will advise and assist individuals seeking federal assistance.	Tornado, SS	EMA	HMGP	Ongoing	High	High
	2	Promote the purchase of insurance coverage for flooding, earthquake, and sinkhole damages in high-risk areas by property owners and renters.	Flooding, Sinkholes	EMA, FP	EXIST	Ongoing	High	High
	2	Acquire or relocate high-risk, flood prone buildings and convert those properties to permanent open space with covenants that prevent future development. The emphasis should be buildings located within floodways, substantially damaged buildings, repetitive flood insurance loss properties, pre-FIRM buildings (constructed prior to the enactment of local floodplain regulations), and critical facilities. Where feasible, acquisition or relocation is preferred over elevating or flood proofing structures.	Flooding	FP	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of New Hope

CITY OF NEW HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Elevate buildings, where feasible, to reduce potential flood damages. The emphasis should be on certain buildings where acquisition or relocation is not feasible and on buildings not compliant with floodplain regulations. Elevating structures may be an alternative to acquisition/relocation and is preferred over flood proofing, where most feasible	Flooding	FP	HMGP, PDM	Ongoing	Low	Low
	2	Flood proof buildings where feasible to reduce potential flood damages. The emphasis should be on non-residential buildings constructed before the enactment of flood plain regulations (pre-FIRM buildings). Flood proofing should only be considered if acquisition/relocation or building elevation is not feasible.	Flooding	FP	HMGP	Ongoing	Low	Low
	2	Installation of emergency power generation at critical facilities, as outlined in a separate critical facilities document maintained by EMA	All	EMA	HMGP	Ongoing	High	High
	3	Publicize the availability of FIRM (Flood Insurance Rate Map) information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	All	EMA, FP	EXIST	Ongoing	High	High
3	Establish an annual Severe Weather Awareness Day in conjunction with the NWS.	All	EMA, NWS	EXIST	Ongoing	High	High	

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of New Hope

CITY OF NEW HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	EMA	EXIST	Ongoing	High	High
	3	Provide speakers to educate public on certain hazard topics upon request by organizations, civic clubs, etc.	All	EMA	EXIST	Ongoing	High	High
	3	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Maintain local library repositories with the latest available publications.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Distribute hazard mitigation brochures to area schools for distribution to students.	All	EMA	EXIST	Ongoing	High	High
	4	Acquire open space, purchase easements, and accept donations of lands within environmentally significant and vulnerable locations through the Land Trust of Huntsville and North Alabama and other agencies.	All	Land Trust of North Alabama	EXIST	Ongoing	High	High
	4	Enforce dumping regulations.	Flooding	BO, MCE	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | City of New Hope

CITY OF NEW HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Enforce erosion and sedimentation control regulations.	Flooding, Landslide	MCE	EXIST	Ongoing	High	High
	4	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding, Landslide, Wildfire	MCE	EXIST	Ongoing	High	High
	5	Establish a flood warning system at strategic locations in the county to cover vulnerable flood locations. Sensors should provide real-time access to stream flow, stream stage, and precipitation data, at the minimum. The system should link data into GIS with the ability to use measured and forecasted rainfall to predict potential flood levels and create real-time maps of flooded areas.	Flooding	EMA	HMGP	Ongoing	Low	Low
	5	Enhance the flood warning network into an All-Hazards Detection Network, including capabilities to monitor icy bridges and highways, water quality and hazardous materials spills into water ways, and air quality or hazardous air emissions. Include camera devices at select locations.	All	EMA	HMGP	Ongoing	Low	Low
	5	Install additional outdoor warning sirens as outlined in the Comprehensive Warning Study published under separate cover by the Huntsville-Madison County Emergency Management Board.	All	EMA	HMGP, PDM	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | City of New Hope

CITY OF NEW HOPE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Upgrade the outdoor warning siren system's activation system to provide enhanced warning capability.	All	EMA	EXIST	Ongoing	High	High
	5	Promote the use of weather radios in households, businesses, and schools.	All	EMA	EXIST	Ongoing	High	High
	6	Prepare and implement standard operating procedures for drainage system maintenance.	Flooding	EMA	EXIST	Ongoing	High	High
	6	Implement drainage improvement project within the City of New Hope.	Flooding	MCHD	HMGP	Ongoing	High	High
	7	Madison County Health Department will conduct vector control measures for mosquitos within the City of Huntsville to include larviciding, street level spraying, etc. following tropical systems, heavy rains or flooding, to augment or supplement normal vector control operations in accordance with the Clean Water Act of 2011. Vector Control would provide services outside its jurisdiction with the consent of the Mayor and City Council and/or declaration from the Governor.	PH	MCHD	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Owens Crossroads

TOWN OF OWENS CROSSROADS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all municipalities.	All	CP, HUDD	EXIST	Ongoing	Low	Low
	1	Review and amend existing planning documents to be certain the vulnerability and environmental suitability of lands for future development are clearly addressed; local plans should address the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	LEPC, HMPC, HUDD	EXIST	Ongoing	High	High
	1	Maintain risk assessment data in GIS, including flood zones, tornado tracks, landslide hazards, sinkhole threat areas, disaster events, and a comprehensive inventory of critical facilities within all jurisdictions.	All	HUDD, MCE	EXIST	Ongoing	High	High
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	All	HUDD, MCE, CP, CE	EXIST	Ongoing	High	High
	1	Seek a Countywide update of all FIRMs (Flood Insurance Rate Maps) in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	MCE, FP	FEMA Map Update Program	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Owens Crossroads

TOWN OF OWENS CROSSROADS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1.5.1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Flooding	FP	EXIST	Ongoing	High	High
	1.5.2	Obtain membership for local floodplain managers in the Association of State Floodplain Managers.	Flooding	FP	EXIST	Ongoing	Low	Low
	1.5.3	Evaluate the effectiveness of higher regulatory standards, such as additional building elevation and limitation of fill within floodplains, to be included in local floodplain management regulations.	Flooding	FP	EXIST	Ongoing	High	High
	1.6.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips," where feasible.	Hurricane, Tornado, SS	BO	EXIST	Ongoing	High	High
	1.7.1	Require the construction of safe rooms within new public buildings, libraries, community centers, and other public building, where feasible.	Hurricane, Tornado, SS	Town Council	EXIST	Ongoing	High	High
	1.7.2	Organizations or agencies may build community shelters. EMA will advise and review federal assistance processes with eligible organizations or agencies.	Tornado, SS	County Commission	HMGP	Ongoing	High	High
	1.7.3	Individual citizens are encouraged to install in-home safe rooms in their homes. The EMA will advise and assist individuals seeking federal assistance.	Tornado, SS	EMA	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Owens Crossroads

TOWN OF OWENS CROSSROADS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Promote the purchase of insurance coverage for flooding, earthquake, and sinkhole damages in high-risk areas by property owners and renters.	Flooding, Sinkhole	EMA, FP	EXIST	Ongoing	High	High
	2	Acquire or relocate high-risk, flood prone buildings and convert those properties to permanent open space with covenants that prevent future development. The emphasis should be buildings located within floodways, substantially damaged buildings, repetitive flood insurance loss properties, pre-FIRM buildings (constructed prior to the enactment of local floodplain regulations), and critical facilities. Where feasible, acquisition or relocation is preferred over elevating or flood proofing structures.	Flooding	FP	HMGP, PDM	Ongoing	Low	Low
	2	Elevate buildings, where feasible, to reduce potential flood damages. The emphasis should be on certain buildings where acquisition or relocation is not feasible and on buildings not compliant with floodplain regulations. Elevating structures may be an alternative to acquisition/relocation and is preferred over flood proofing, where most feasible	Flooding	FP	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | Town of Owens Crossroads

TOWN OF OWENS CROSSROADS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Flood proof buildings where feasible to reduce potential flood damages. The emphasis should be on non-residential buildings constructed before the enactment of flood plain regulations (pre-FIRM buildings). Flood proofing should only be considered if acquisition/relocation or building elevation is not feasible.	Flooding	FP	HMGP	Ongoing	Low	Low
	2	Installation of emergency power generation at critical facilities, as outlined in a separate critical facilities document maintained by EMA	All	EMA	HMGP	Ongoing	High	High
	3	Publicize the availability of FIRM (Flood Insurance Rate Map) information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Establish an annual Severe Weather Awareness Day in conjunction with the NWS.	All	EMA, NWS	EXIST	Ongoing	High	High
	3	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	EMA	EXIST	Ongoing	High	High
	3	Provide speakers to educate public on certain hazard topics upon request by organizations, civic clubs, etc.	All	EMA	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | Town of Owens Crossroads

TOWN OF OWENS CROSSROADS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Maintain local library repositories with the latest available publications.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Distribute hazard mitigation brochures to area schools for distribution to students.	All	EMA	EXIST	Ongoing	High	High
	4	Acquire open space, purchase easements, and accept donations of lands within environmentally significant and vulnerable locations through the Land Trust of Huntsville and North Alabama and other agencies.	All	Land Trust of North Alabama	EXIST	Ongoing	High	High
	4	Enforce dumping regulations.	Flooding	BO, MCE	HMGP	Ongoing	High	High
	4	Enforce erosion and sedimentation control regulations.	Flooding, Landslide	MCE	EXIST	Ongoing	High	High

Section 6 | Mitigation Action Plan

Madison County | Town of Owens Crossroads

TOWN OF OWENS CROSSROADS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding, Landslide, Wildfire	MCE	EXIST	Ongoing	High	High
	5	Establish a flood warning system at strategic locations in the county to cover vulnerable flood locations. Sensors should provide real-time access to stream flow, stream stage, and precipitation data, at the minimum. The system should link data into GIS with the ability to use measured and forecasted rainfall to predict potential flood levels and create real-time maps of flooded areas.	Flooding	EMA	HMGP	Ongoing	Low	Low
	5	Enhance the flood warning network into an All-Hazards Detection Network, including capabilities to monitor icy bridges and highways, water quality and hazardous materials spills into water ways, and air quality or hazardous air emissions. Include camera devices at select locations.	All	EMA	HMGP	Ongoing	Low	Low
	5	Install additional outdoor warning sirens as outlined in the Comprehensive Warning Study published under separate cover by the Huntsville-Madison County Emergency Management Board.	All	EMA	HMGP, PDM	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Owens Crossroads

TOWN OF OWENS CROSSROADS MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Upgrade the outdoor warning siren system's activation system to provide enhanced warning capability.	All	EMA	EXIST	Ongoing	High	High
	5	Promote the use of weather radios in households, businesses, and schools.	All	EMA	EXIST	Ongoing	High	High
	6	Prepare and implement standard operating procedures for drainage system maintenance.	Flooding	EMA	EXIST	Ongoing	High	High
	6	Implement improvements to the Town of Owens Cross Roads sewer system to improve capacity against flooding.	Flooding	EMA	HMGP, PDM	New	Mod.	High
7	Madison County Health Department will conduct vector control measures for mosquitos within the City of Huntsville to include larviciding, street level spraying, etc. following tropical systems, heavy rains or flooding, to augment or supplement normal vector control operations in accordance with the Clean Water Act of 2011. Vector Control would provide services outside its jurisdiction with the consent of the Mayor and City Council and/or declaration from the Governor.	PH	MCHD	EXIST	Ongoing	High	High	

One of a series of goals added to the Division F Regional Plan by Madison County. These goals align with Division F Regional Mitigation Goal Number Five, which prioritizes improvements in *Emergency Services*. (See following addenda.)

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | Town of Triana

TOWN OF TRIANA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all municipalities.	All	CP, HUDD	EXIST	Ongoing	Low	Low
	1	Review and amend existing planning documents to be certain the vulnerability and environmental suitability of lands for future development are clearly addressed; local plans should address the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	LEPC, HMPC, HUDD	EXIST	Ongoing	High	High
	1	Maintain risk assessment data in GIS, including flood zones, tornado tracks, landslide hazards, sinkhole threat areas, disaster events, and a comprehensive inventory of critical facilities within all jurisdictions.	All	HUDD, MCE	EXIST	Ongoing	High	High
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	All	HUDD, MCE, CP, CE	EXIST	Ongoing	High	High
	1	Seek a Countywide update of all FIRMs (Flood Insurance Rate Maps) in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	MCE, FP	FEMA Map Update Program	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Madison County | Town of Triana

TOWN OF TRIANA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Flooding	FP	EXIST	Ongoing	High	High
	1	Obtain membership for local floodplain managers in the Association of State Floodplain Managers.	Flooding	FP	EXIST	Ongoing	Low	Low
	1	Evaluate the effectiveness of higher regulatory standards, such as additional building elevation and limitation of fill within floodplains, to be included in local floodplain management regulations.	Flooding	FP	EXIST	Ongoing	High	High
	1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips," where feasible.	Hurricane, Tornado, SS	BO	EXIST	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, libraries, community centers, and other public building, where feasible.	Hurricane, Tornado, SS	Town Council	EXIST	Ongoing	High	High
	1	Organizations or agencies may build community shelters. EMA will advise and review federal assistance processes with eligible organizations or agencies.	Tornado, SS	County Commission	HMGP	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Triana

TOWN OF TRIANA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Individual citizens are encouraged to install in-home safe rooms in their homes. The EMA will advise and assist individuals seeking federal assistance.	Tornados, SS	EMA	HMGP	Ongoing	High	High
	2	Promote the purchase of insurance coverage for flooding, earthquake, and sinkhole damages in high-risk areas by property owners and renters.	Flooding, Sinkhole	EMA, FP	EXIST	Ongoing	High	High
	2	Acquire or relocate high-risk, flood prone buildings and convert those properties to permanent open space with covenants that prevent future development. The emphasis should be buildings located within floodways, substantially damaged buildings, repetitive flood insurance loss properties, pre-FIRM buildings (constructed prior to the enactment of local floodplain regulations), and critical facilities. Where feasible, acquisition or relocation is preferred over elevating or flood proofing structures.	Flooding	FP	HMGP, PDM	Ongoing	Low	Low
	2	Elevate buildings, where feasible, to reduce potential flood damages. The emphasis should be on certain buildings where acquisition or relocation is not feasible and on buildings not compliant with floodplain regulations. Elevating structures may be an alternative to acquisition/relocation and is preferred over flood proofing, where most feasible	Flooding	FP	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Triana

TOWN OF TRIANA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Flood proof buildings where feasible to reduce potential flood damages. The emphasis should be on non-residential buildings constructed before the enactment of flood plain regulations (pre-FIRM buildings). Flood proofing should only be considered if acquisition/relocation or building elevation is not feasible.	Flooding	FP	HMGP	Ongoing	Low	Low
	2	Installation of emergency power generation at critical facilities, as outlined in a separate critical facilities document maintained by EMA	All	EMA	HMGP	Ongoing	High	High
	3	Publicize the availability of FIRM (Flood Insurance Rate Map) information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Establish an annual Severe Weather Awareness Day in conjunction with the NWS.	All	EMA, NWS	EXIST	Ongoing	High	High
	3	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	EMA	EXIST	Ongoing	High	High
	3	Provide speakers to educate public on certain hazard topics upon request by organizations, civic clubs, etc.	All	EMA	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Triana

TOWN OF TRIANA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Maintain local library repositories with the latest available publications.	All	EMA, FP	EXIST	Ongoing	High	High
	3	Distribute hazard mitigation brochures to area schools for distribution to students.	All	EMA	EXIST	Ongoing	High	High
	4	Acquire open space, purchase easements, and accept donations of lands within environmentally significant and vulnerable locations through the Land Trust of Huntsville and North Alabama and other agencies.	All	Land Trust of North Alabama	EXIST	Ongoing	High	High
	4	Enforce dumping regulations.	Flooding	BO, MCE	HMGP	Ongoing	High	High
	4	Enforce erosion and sedimentation control regulations.	Flooding, Landslide	MCE	EXIST	Ongoing	High	High
	4	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding, Landslide, Wildfire	MCE	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Triana

TOWN OF TRIANA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Establish a flood warning system at strategic locations in the county to cover vulnerable flood locations. Sensors should provide real-time access to stream flow, stream stage, and precipitation data, at the minimum. The system should link data into GIS with the ability to use measured and forecasted rainfall to predict potential flood levels and create real-time maps of flooded areas.	Flooding	EMA	HMGP	Ongoing	Low	Low
	5	Enhance the flood warning network into an All-Hazards Detection Network, including capabilities to monitor icy bridges and highways, water quality and hazardous materials spills into water ways, and air quality or hazardous air emissions. Include camera devices at select locations.	All	EMA	HMGP	Ongoing	Low	Low
	5	Install additional outdoor warning sirens as outlined in the Comprehensive Warning Study published under separate cover by the Huntsville-Madison County Emergency Management Board.	All	EMA	HMGP, PDM	Ongoing	High	High
	5	Upgrade the outdoor warning siren system's activation system to provide enhanced warning capability.	All	EMA	EXIST	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Madison County | Town of Triana

TOWN OF TRIANA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	5	Promote the use of weather radios in households, businesses, and schools.	All	EMA	EXIST	Ongoing	High	High
	6	Prepare and implement standard operating procedures for drainage system maintenance.	Flooding	EMA	EXIST	Ongoing	High	High
	7	Madison County Health Department will conduct vector control measures for mosquitos within the City of Huntsville to include larviciding, street level spraying, etc. following tropical rains or flooding, to augment or supplement normal vector control operations in accordance with the Clean Water Act of 2011. Vector Control would provide services outside its jurisdiction with the consent of the Mayor and City Council and/or declaration from the Governor.	PH	MCHD	EXIST	Ongoing	High	High

Appendix 17

Addenda to the 2016 Madison County Natural Hazards Mitigation Plan

The Madison County Natural Hazards Mitigation Planning Committee met on November 16, 2021 and approved the addition of a mitigation measure to the Madison County Natural Hazards Mitigation Plan. A motion was made, seconded, and carried unanimously to add the following mitigation measure to the plan globally (for all jurisdictions):

5.3 Communications Technology. Improve emergency response communications within public buildings.

Mitigation Measure

- 5.3.1 Install technology in public buildings to improve emergency responder communications during disaster response to enhance protection of life and property.

The Madison County Natural Hazards Mitigation Planning Committee met on December 14, 2021 and approved the addition of a mitigation measure to the Madison County Natural Hazards Mitigation Plan. A motion was made, seconded, and carried unanimously to add the following mitigation measure to the plan for the Town of Owens Cross Roads jurisdiction:

6.3 Sewer System Improvements. Improve the resiliency of sewer system against flooding impacts.

Mitigation Measure

- 6.3.1 Implement improvements to the Town of Owens Cross Roads sewer system to improve capacity against flooding.

Madison County Mitigation Measures Global Changes for 2021 Regional Hazard Mitigation Plan

1.3.6 Conduct flood studies of drainage basins throughout Madison County to identify areas prone to flooding.

Goal: Prevention

Objective: Detailed Plans and Targeted Studies

Priority: Moderate

Lead Responsibility: FP, CE, MCE

Hazard(s): FL

Timeline: Ongoing

Possible Funding Source: HMGP, PDM

5.1.4 Upgrade to outdoor warning siren system's activation system had been completed

5.1.7 or 5.1.4 Install remote weather and camera instrumentation countywide to create a monitoring network to provide timely weather awareness information used to provide potentially early and more accurate warnings to lessen the impact on the population.

Goal: Emergency Services

Objective: Disaster Warning

Priority: Moderate

Lead Responsibility: EMA

Hazard(s): FL,T,SS,DH,WC,WF

Timeline: Ongoing

Possible Funding Source: HMGP, PDM

SECTION 6.5.9 | MORGAN COUNTY MITIGATION ACTIONS

- Morgan County
- Decatur
- Eva
- Hartselle
- Priceville
- Somerville
- Trinity

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Morgan County

MORGAN COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all jurisdictions. Each plan should address natural hazards exposure and include long term disaster resistance measures. The vulnerability and environmental suitability of lands for future development should be clearly addressed. Local plans should assess the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	County Commission	Local Funds	Ongoing	Medium	Medium
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for jurisdictions with active comprehensive planning programs.	All	County Commission	Local Funds	Ongoing	Medium	Medium
	1	Identify existing culturally or socially significant structures and critical facilities within participating jurisdictions that have the most potential for losses from natural hazard events and identify needed structural upgrades.	All	County Engineer	Local Funds	Ongoing	Medium	Medium
	1	Develop an inventory of public and commercial building vulnerable to earthquake damage, focusing on pre 1940 construction and buildings with cripple wall foundations.	Earthquakes	County Commission	Local Funds	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Morgan County

MORGAN COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Consider large lot size restrictions on flood prone areas designated on Flood Insurance Rate Maps.	Floods/ Flash Floods	County Commission	Local Funds	Ongoing	Low	Low
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	County Commission	Local Funds	Ongoing	Low	Low
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Medium	Medium
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	Flooding, Tornadoes, Hurricanes, Severe Storms and Earthquakes	TBD	HMGP, PDM	Ongoing	High	High
	2	Acquire and relocate or demolish structures located in Landslide Hazard Areas and enforce permanent restrictions after land acquisition and structure removal.	Landslides	County Engineer	HMGP, PDM	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Morgan County

MORGAN COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Enforce water use restrictions during periods of drought to conserve existing water supplies.	Droughts/ Excessive Heat, Wildfires	County Commission	Local Funds	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	County Commission	HMGP, PDM	Ongoing	High	High
	4	Establish a program for subsidizing individual and community safe room construction in appropriate locations and facilities.	All	County Commission	HMGP, PDM	Ongoing	High	High
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	County Commission	Local Funds	Ongoing	High	High
	5, 6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	County Commission, County EMA	Local Funds	Ongoing	High	High
	5, 6	Distribute hazard mitigation brochures to students through area schools.	All	County Commission, County EMA	Local Funds	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Morgan County

MORGAN COUNTY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Educate homeowners about structural and non-structural retrofitting of vulnerable homes.	All	County Commission	Local Funds	Ongoing	Medium	Medium
	5, 6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	County Commission, County EMA	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	County Commission	Local Funds	Ongoing	Medium	Medium
	6	Encourage the construction of safe rooms in new and existing homes and buildings.	All	County Commission	Local Funds	Ongoing	Medium	Medium
	6	Install weather radios in all public buildings and places of public assembly.	All	County Commission	Local Funds	Ongoing	High	High
	5, 6	Distribute weather radios and emergency response instructions to area residents.	All	County Commission, County EMA	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	County Commission	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade critical communications infrastructure.	All	County Commission	HMGP, PDM	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all jurisdictions. Each plan should address natural hazards exposure and include long term disaster resistance measures. The vulnerability and environmental suitability of lands for future development should be clearly addressed. Local plans should assess the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	Community Development Planning	Local Funds	Ongoing	Medium	Medium
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for jurisdictions with active comprehensive planning programs.	All	Community Development Planning	Local Funds	Ongoing	Medium	Medium
	1	Identify existing culturally or socially significant structures and critical facilities within participating jurisdictions that have the most potential for losses from natural hazard events and identify needed structural upgrades.	All	Planning/ Engineering	Local Funds	Ongoing	Medium	Medium
	1	Maintain inventory and map of existing fire hydrants throughout the county and identify areas in need of new fire hydrants.	Wildfires	E-911	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Carry out detailed planning and engineering studies for sub-basins in critical flood hazard areas to determine watershed-wide solutions to flooding.	Floods/ Flash Floods	Planning/ Engineering	Local Funds	Ongoing	Medium	Medium
	1	Evaluate elevation and culvert sizing of existing roadways in flash flood-prone areas to ensure compliance with current standards for design year floods and develop a program for construction upgrades as appropriate.	Floods/ Flash Floods	Public Works	Local Funds	Ongoing	Medium	Medium
	1	Identify problem drainage areas, conduct engineering studies, evaluate feasibility, and construct drainage improvements to reduce or eliminate localized flooding.	Floods/ Flash Floods	Planning/ Engineering	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider large lot size restrictions on flood prone areas designated on Flood Insurance Rate Maps.	Floods/ Flash Floods	Community Development Planning	Local Funds	Ongoing	Low	Low
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials, restrictive development of flood ways, among others.	Floods/ Flash Floods	Community Development Planning	Local Funds	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	CITY OF DECATUR MITIGATION ACTION PLAN	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Community Development Planning/ Engineering	Local Funds	Ongoing	Low
	1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator and FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain membership for locally designated flood plain managers in the Association of State Flood Plain Managers and the Alabama Association Flood Plain Managers and encourage active participation.	Floods/ Flash Floods	Community Development Planning/ Engineering	Local Funds	Ongoing	Medium	Medium
	1	Improve flood risk assessment by documenting high water marks post event, verification of FEMA's repetitive loss inventory and revising and updating regulatory floodplain maps.	Floods/ Flash Floods	Community Development Planning/ Engineering	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Low	Low
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	Flooding, Tornadoes, Hurricanes, Severe Storms and Earthquakes	TBD	Local Funds	Ongoing	Medium	Medium
	1	Maintain a centralized, countywide natural hazards and risk assessment database in GIS that is accessible to local planners and emergency management personnel, including such data as, flood zones, geohazards, major drainages structures, dams/levees, hurricane surge areas, tornado tracks, disaster events and their extents, and a comprehensive inventory of critical facilities within all jurisdictions.	All	Community Develop- ment Planning	Local Funds	Ongoing	Medium	Medium
	1	Maintain membership for locally designated flood plain managers in the Association of State Flood Plain Managers and the Alabama Association Flood Plain Managers and encourage active participation.	Floods/ Flash Floods	Community Develop- ment Planning/ Engineering	Local Funds	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	Earthquakes, Floods/ Flash Floods, Windstorms	Community Development Planning	Local Funds	Ongoing	Medium	Medium
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Planning	Local Funds	Ongoing	Low	Low
	1	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Droughts/ Excessive Heat, Wildfires	Fire Department	Local Funds	Ongoing	High	High
	1	Establish and enforce minimum property maintenance standards that reduce or eliminate unsafe structures.	All	Codes	Local Funds	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Codes/ Community Development	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Promote the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	City Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt and implement subdivision regulations that require proper stormwater infrastructure design and construction.	Floods/ Flash Floods	City Council	Local Funds	Ongoing	Low	Low
	2	Acquire and relocate or demolish structures located in Landslide Hazard Areas and enforce permanent restrictions after land acquisition and structure removal.	Droughts/ Excessive Heat, Wildfires	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Retrofit existing buildings, critical facilities, and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Establish a program for subsidizing individual and community safe room construction in appropriate locations and facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	Local Funds	Ongoing	High	High
	4	Prepare and implement standard operating procedures and guidelines for drainage system maintenance.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Improve and retrofit water supply systems to save water during drought events and to eliminate breaks and leaks.	Droughts/ Excessive Heat	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	6	Participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as City/County Day, Hurricane Awareness Week, and Severe Weather Week.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Distribute materials, via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Install weather radios in all public buildings and places of public assembly.	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Distribute weather radios and emergency response instructions to area residents.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade critical communications infrastructure.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Install weather radios in all public buildings and places of public assembly.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute weather radios and emergency response instructions to area residents.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan
Morgan County | City of Decatur

CITY OF DECATUR MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Upgrade critical communications infrastructure.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	6	Arrange with the Multiple Listing Service (MLS) to require floodplain location disclosure as a condition for each real estate listing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
Morgan County | Town of Eva

TOWN OF EVA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain inventory and map of existing fire hydrants throughout the county and identify areas in need of new fire hydrants.	Wildfires	Fire Department	Local Funds	Ongoing	Low	Low
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	Local Funds	Ongoing	High	High
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	TBD	HMGP, PDM	Ongoing	High	High
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Enforce water use restrictions during periods of drought to conserve existing water supplies.	Drought/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	Low	Low
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan
Section 6 | Mitigation Action Plan
 Morgan County | Town of Eva

TOWN OF EVA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Improve and retrofit water supply systems to save water during drought events and to eliminate breaks and leaks.	Droughts/ Excessive Heat	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	6	Participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as City/County Day, Hurricane Awareness Week, and Severe Weather Week.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute materials, via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | Town of Eva

TOWN OF EVA MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Distribute public education materials to farmers on soil and water conservation practices.	Droughts/ Excessive Heat	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Install weather radios in all public buildings and places of public assembly.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute weather radios and emergency response instructions to area residents.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade critical communications infrastructure.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | Town of Falkville

TOWN OF FALKVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Maintain membership for locally designated flood plain managers in the Association of State Flood Plain Managers and the Alabama Association Flood Plain Managers and encourage active participation.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Improve flood risk assessment by documenting high water marks post event, verification of FEMA's repetitive loss inventory and revising and updating regulatory floodplain maps.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote good construction practices and proper code enforcement to mitigate structural failures during natural hazard events.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Droughts/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | Town of Falkville

TOWN OF FALKVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as City/County Day, Hurricane Awareness Week, and Severe Weather Week.	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | Town of Falkville

TOWN OF FALKVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Distribute materials, via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute public information brochures.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | Town of Falkville

TOWN OF FALKVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Install weather radios in all public buildings and places of public assembly.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute weather radios and emergency response instructions to area residents.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all jurisdictions. Each plan should address natural hazards exposure and include long term disaster resistance measures. The vulnerability and environmental suitability of lands for future development should be clearly addressed. Local plans should assess the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for jurisdictions with active comprehensive planning programs.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium	
1	Identify existing culturally or socially significant structures and critical facilities within participating jurisdictions that have the most potential for losses from natural hazard events and identify needed structural upgrades.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium	
1	Maintain inventory and map of existing fire hydrants throughout the county and identify areas in need of new fire hydrants.	Wildfires	Mayor and Council	Local Funds	Ongoing	Low	Low	

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Carry out detailed planning and engineering studies for sub-basins in critical flood hazard areas to determine watershed-wide solutions to flooding.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Evaluate elevation and culvert sizing of existing roadways in flash flood-prone areas to ensure compliance with current standards for design year floods and develop a program for construction upgrades as appropriate.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Identify problem drainage areas, conduct engineering studies, evaluate feasibility, and construct drainage improvements to reduce or eliminate localized flooding.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider large lot size restrictions on flood prone areas designated on Flood Insurance Rate Maps.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials, restrictive development of flood ways, among others.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
1	Train local flood plain managers through programs offered by the State Flood Plain Coordinator and FEMA's training center in Emmitsburg, Maryland.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	
1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Medium	Medium	
1	Improve flood risk assessment by documenting high water marks post event, verification of FEMA's repetitive loss inventory and revising and updating regulatory floodplain maps.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium	

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Droughts/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	High	High
	1	Establish and enforce minimum property maintenance standards that reduce or eliminate unsafe structures.	All	Mayor and Council	Local Funds	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	Local Funds	Ongoing	High	High
	1	Promote good construction practices and proper code enforcement to mitigate structural failures during natural hazard events.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Develop, adopt and implement subdivision regulations that require proper stormwater infrastructure design and construction.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Perform vulnerability assessments of critical facilities to identify retrofit projects to improve the safety of occupants and mitigate damages from hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	1	Maintain a centralized, countywide natural hazards and risk assessment database in GIS that is accessible to local planners and emergency management personnel, including such data as, flood zones, geohazards, major drainages structures, dams/levees, hurricane surge areas, tornado tracks, disaster events and their extents, and a comprehensive inventory of critical facilities within all jurisdictions.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	Earthquakes, Floods/ Flash Floods, Windstorms	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Review and revise as necessary, landscaping standards for parking lots that reduce the size of impervious surfaces and encourage natural infiltration of rainwater.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Acquire and demolish flood prone or substantially damaged structures and replace with permanent open space including the purchase of developed land in mapped floodway along Hickory Street NW (Hartselle) and conversion to open space.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Mitigate flood prone areas along Unnamed Tributary #1 to Town Branch from Stewart St, NW to Main St, West.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	High	High
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	3	Keep builders and developers informed of Federal wetlands permitting requirements of the Corps of Engineers.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	3	Enforce water use restrictions during periods of drought to conserve existing water supplies.	Droughts/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Establish a program for subsidizing individual and community safe room construction in appropriate locations and facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	Local Funds	Ongoing	High	High
	4	Prepare and implement standard operating procedures and guidelines for drainage system maintenance.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Improve and retrofit water supply systems to save water during drought events and to eliminate breaks and leaks.	Droughts/ Excessive Heat	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	6	Participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as City/County Day, Hurricane Awareness Week, and Severe Weather Week.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute materials, via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Install weather radios in all public buildings and places of public assembly.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade critical communications infrastructure.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Hartselle

CITY OF HARTSELLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	6	Arrange with the Multiple Listing Service (MLS) to require floodplain location disclosure as a condition for each real estate listing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all jurisdictions. Each plan should address natural hazards exposure and include long term disaster resistance measures. The vulnerability and environmental suitability of lands for future development should be clearly addressed. Local plans should assess the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for jurisdictions with active comprehensive planning programs.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Identify existing culturally or socially significant structures and critical facilities within participating jurisdictions that have the most potential for losses from natural hazard events and identify needed structural upgrades.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain inventory and map of existing fire hydrants throughout the county and identify areas in need of new fire hydrants.	Wildfires	Mayor and Council	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Carry out detailed planning and engineering studies for sub-basins in critical flood hazard areas to determine watershed-wide solutions to flooding.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Evaluate elevation and culvert sizing of existing roadways in flash flood-prone areas to ensure compliance with current standards for design year floods and develop a program for construction upgrades as appropriate.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Identify problem drainage areas, conduct engineering studies, evaluate feasibility, and construct drainage improvements to reduce or eliminate localized flooding.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider large lot size restrictions on flood prone areas designated on Flood Insurance Rate Maps.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials, restrictive development of flood ways, among others.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	All	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Droughts/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	High	High
	1	Establish and enforce minimum property maintenance standards that reduce or eliminate unsafe structures.	All	Mayor and Council	Local Funds	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	Local Funds	Ongoing	High	High
	1	Evaluate and revise as appropriate, building codes for roof construction to maximize protection against wind damage from hurricanes, tornadoes, and windstorms; encourage installation of "hurricane clips."	Severe Thunderstorms, Tornadoes, Windstorms	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Promote the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	City Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt and implement subdivision regulations that require proper stormwater infrastructure design and construction.	Floods/ Flash Floods	City Council	Local Funds	Ongoing	Low	Low
	1	Apply for/maintain membership in the CRS Program; continue to upgrade rating.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Medium	Medium
	1	Review and revise as necessary, landscaping standards for parking lots that reduce the size of impervious surfaces and encourage natural infiltration of rainwater.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Retrofit existing buildings, critical facilities, and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Provide technical advisory assistance to building owners on available building retrofits to protect against natural hazards damages.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Repair, elevate and weatherize existing homes for low-to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Enforce water use restrictions during periods of drought to conserve existing water supplies.	Drought/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Establish a program for subsidizing individual and community safe room construction in appropriate locations and facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	Local Funds	Ongoing	High	High
	4	Prepare and implement standard operating procedures and guidelines for drainage system maintenance.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Improve and retrofit water supply systems to save water during drought events and to eliminate breaks and leaks.	Droughts/ Excessive Heat	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	6	Participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as City/County Day, Hurricane Awareness Week, and Severe Weather Week.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute materials, via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Install weather radios in all public buildings and places of public assembly.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade critical communications infrastructure.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | City of Priceville

CITY OF PRICEVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | Town of Somerville

TOWN OF SOMERVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all jurisdictions. Each plan should address natural hazards exposure and include long term disaster resistance measures. The vulnerability and environmental suitability of lands for future development should be clearly addressed. Local plans should assess the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for jurisdictions with active comprehensive planning programs.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	Local Funds	Ongoing	High	High
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Repair, elevate and weatherize existing homes for low-to moderate-income families.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan

Morgan County | Town of Somerville

TOWN OF SOMERVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	6	Participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as City/County Day, Hurricane Awareness Week, and Severe Weather Week.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute materials, via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute public information brochures.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute public education materials to farmers on soil and water conservation practices.	Drought/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan

Morgan County | Town of Somerville

TOWN OF SOMERVILLE MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute weather radios and emergency response instructions to area residents.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Upgrade critical communications infrastructure.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	6	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain up-to-date comprehensive plans for all jurisdictions. Each plan should address natural hazards exposure and include long term disaster resistance measures. The vulnerability and environmental suitability of lands for future development should be clearly addressed. Local plans should assess the vulnerability of designated hazard areas and encourage open space planning to create amenities for recreation and conservation of fragile resources.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Integrate the findings and recommendations of this plan into comprehensive plan amendments for jurisdictions with active comprehensive planning programs.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Identify existing culturally or socially significant structures and critical facilities within participating jurisdictions that have the most potential for losses from natural hazard events and identify needed structural upgrades.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain inventory and map of existing fire hydrants throughout the county and identify areas in need of new fire hydrants.	Wildfires	Mayor and Council	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan
 Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Carry out detailed planning and engineering studies for sub-basins in critical flood hazard areas to determine watershed-wide solutions to flooding.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Evaluate elevation and culvert sizing of existing roadways in flash flood-prone areas to ensure compliance with current standards for design year floods and develop a program for construction upgrades as appropriate.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Identify problem drainage areas, conduct engineering studies, evaluate feasibility, and construct drainage improvements to reduce or eliminate localized flooding.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	1	Consider large lot size restrictions on flood prone areas designated on Flood Insurance Rate Maps.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials, restrictive development of flood ways, among others.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Promote the adoption of uniform flood hazard prevention ordinance among all NFIP communities. The ordinance standards should encourage flood plain management that maintains the natural and beneficial functions of flood plains by maximizing the credits that could be obtained for "Higher Regulatory Standards" under the Community Rating System (CRS) Program.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Maintain a library of technical assistance and guidance materials to support the local floodplain manager.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Improve flood risk assessment by documenting high water marks post event, verification of FEMA's repetitive loss inventory and revising and updating regulatory floodplain maps. .	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	1	Relocate existing utility lines underground, where feasible and cost effective, and require, through local subdivision and land development regulations, the placement of all new utility lines underground for large residential subdivisions and commercial developments.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low

Section 6 | Mitigation Action Plan

Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Ensure fire safety ordinances properly regulate open burning, the use of liquid fuel and electric space heaters.	Droughts/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	High	High
	1	Establish and enforce minimum property maintenance standards that reduce or eliminate unsafe structures.	All	Mayor and Council	Local Funds	Ongoing	High	High
	1	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	All	Mayor and Council	Local Funds	Ongoing	High	High
	1	Promote good construction practices and proper code enforcement to mitigate structural failures during natural hazard events.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Promote the adoption/enforcement of storm water management regulations that maintain pre-development runoff rates.	Floods/ Flash Floods	City Council	Local Funds	Ongoing	Medium	Medium
	1	Develop, adopt and implement subdivision regulations that require proper stormwater infrastructure design and construction.	Floods/ Flash Floods	City Council	Local Funds	Ongoing	Low	Low

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	1	Maintain a centralized, countywide natural hazards and risk assessment database in GIS that is accessible to local planners and emergency management personnel, including such data as, flood zones, geohazards, major drainages structures, dams/levees, hurricane surge areas, tornado tracks, disaster events and their extents, and a comprehensive inventory of critical facilities within all jurisdictions.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	1	Review and revise as necessary, landscaping standards for parking lots that reduce the size of impervious surfaces and encourage natural infiltration of rainwater.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Utilize the most recent NFIP repetitive loss property list, and other appropriate sources, to create and maintain a prioritized list of acquisition mitigation projects based on claims paid.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Flood proof pre-FIRM non-residential buildings, where feasible.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Promote the purchase of insurance coverage by property owners and renters for flood damages in high-risk areas.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	2	Install backup power generators for critical facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Elevate certain buildings in flood prone areas where acquisition or relocation is not feasible, with emphasis on Pre-FIRM buildings; where feasible, elevation is preferable to flood proofing.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	2	Retrofit existing buildings, critical facilities, and infrastructure against potential damages from natural and manmade hazards.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	2	Provide technical advisory assistance to building owners on available building retrofits to protect against natural hazards damages.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	3	Adopt and/or enforce regulations prohibiting dumping and littering within river and stream corridors.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Keep builders and developers informed of Federal wetlands permitting requirements of the Corps of Engineers.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	3	Increase open space acquisitions through the FEMA HMA Grant Programs and other flood plain acquisition efforts.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	3	Utilize technical assistance available from the Alabama Cooperative Extension System with Best Management Practices (BMP).	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	3	Enforce water use restrictions during periods of drought to conserve existing water supplies.	Drought/ Excessive Heat, Wildfires	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	4	Construct new community safe rooms in accessible locations and add safe rooms within new and existing public and institutional buildings, such as schools, colleges and universities, senior centers, community centers, hospitals, and government buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Establish a program for subsidizing individual and community safe room construction in appropriate locations and facilities.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Encourage the construction of safe rooms in new and existing homes and buildings.	All	Mayor and Council	HMGP, PDM	Ongoing	High	High
	4	Prepare and implement standard operating procedures and guidelines for drainage system maintenance.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Medium	Medium

Section 6 | Mitigation Action Plan
 Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	4	Construct drainage improvements to reduce or eliminate localized flooding in identified problem drainage areas.	Floods/ Flash Floods	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
	4	Improve and retrofit water supply systems to save water during drought events and to eliminate breaks and leaks.	Droughts/ Excessive Heat	Mayor and Council	HMGP, PDM	Ongoing	Low	Low
	6	Participate in environmental awareness events to provide the public information on hazard exposure and mitigation measures, such as City/County Day, Hurricane Awareness Week, and Severe Weather Week.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute materials, via the internet and other media, and other outreach activities and workshops to encourage families and individuals to implement hazard mitigation measures in their homes.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Promote disaster resilience within the business community through workshops, educational materials and planning guides, intended to assist business owners in recovering from a disaster event in a timely manner.	All	Mayor and Council	Local Funds	Ongoing	High	High

Section 6 | Mitigation Action Plan
Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Distribute outreach materials to citizens, builders and business owners inquiring about a flood problem, a building permit or other natural hazard related questions.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute public information brochures.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute public education materials to farmers on soil and water conservation practices.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Distribute hazard mitigation brochures to students through area schools.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Maintain appropriate media relationships to ensure the public is informed of hazard threats and means to mitigate property damages and loss of life.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Promote the use of weather radios in households and businesses.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Install weather radios in all public buildings and places of public assembly.	All	Mayor and Council	Local Funds	Ongoing	High	High
	6	Upgrade siren-warning systems to provide complete coverage to all jurisdictions.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium
6	Upgrade critical communications infrastructure.	All	Mayor and Council	HMGP, PDM	Ongoing	Medium	Medium	

Division F Regional Hazard Mitigation Plan

Section 6 | Mitigation Action Plan

Morgan County | Town of Trinity

TOWN OF TRINITY MITIGATION ACTION PLAN	GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
	6	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Floods/ Flash Floods	Mayor and Council	Local Funds	Ongoing	Low	Low
	6	Through local libraries, maintain and distribute free and current publications from FEMA, NWS, USGS, and other federal and state agencies.	All	Mayor and Council	Local Funds	Ongoing	Medium	Medium
	6	Distribute the 2021 plan to local officials, stakeholders, and interested individuals through internet download.	All	Mayor and Council	Local Funds	New	Medium	Medium
	6	Provide technical assistance to homeowners, builders, and developers on flood protection alternatives.	Floods/ Flash Floods	Floodplain Manager	Local Funds	Ongoing	Low	Low

Section 7 - Plan Maintenance

SECTION 7 | PLAN MAINTENANCE

7.1 Hazard Mitigation Monitoring, Evaluation, and Update Process

- Annual Review Process
- Emergency Review Process
- Five-Year Plan Update

7.2 Hazard Mitigation Plan Incorporation

7.3 Public Awareness and Participation

SECTION 7 | PLAN MAINTENANCE

7.1. Hazard Mitigation Monitoring, Evaluation, and Update Process

The Top of Alabama Regional Council of Governments (TARCOG) will facilitate plan maintenance activities with assistance from the AEMA Division F Regional Coordinator, Division F County EMA Directors, and the North Central Alabama Regional Council of Governments (NARCOG) through the five-year framework of the Hazard Mitigation Plan. County EMA Directors will continue to serve as liaisons to participating jurisdictions with their respective counties through their current mitigation processes, such as convening Local Emergency Planning Committees (LEPCs) or other similar stakeholder groups. Periodic review and revision of the Hazard Mitigation Plan is important to ensure the plan's currency and compliance with applicable regulations and to assess the progress of local mitigation actions. Review and revision of the AEMA Division F Regional Hazard Mitigation plan may occur through the following two procedures:

Annual Review Process

On at least an annual basis, each participating county EMA official shall facilitate a meeting in their respective county to include local jurisdictions and other stakeholders, such as the Local Emergency Planning Committee. The exact meeting process in each participating county will be slightly different. At a minimum, the scope of each county-level plan review meeting will be to review and evaluate completed mitigation actions for effectiveness, discuss potential changes to hazard vulnerability or other elements of the risk assessment, assess any significant land use changes, and discuss any other relevant issues pertaining to the Regional Hazard Mitigation Plan. Division F residents and other local stakeholders will be invited to attend this meeting and encouraged to provide their input into the annual plan review through the public outreach methods further explained in Section 7.3 below.

Subsequently, a regional meeting among the core AEMA Division F hazard mitigation planning committee members (TARCOG, NARCOG, RPCGB, the Division F EMA Directors, the AEMA Division F Regional Coordinator, and other regional stakeholders) will be held to review information collected at the county-level meetings and revise the plan. This meeting will likely take place during or in coordination with an AEMA Division F quarterly meeting. Any major revision made to the Division F Regional Hazard Mitigation Plan that affects the entire region will be distributed to all jurisdictions for adoption in a public session as an amendment to the current plan.

Otherwise, any added or revised project on a specific jurisdictional mitigation action plan will be adopted by that specific jurisdiction in a public session with a plan amendment describing the specific action plan revisions. After any local amendment, the local jurisdiction shall coordinate with their respective county EMA official to submit documentation of the local amendment to the core planning team for filing with AEMA and incorporating into the next five-year plan.

7.2 Public Awareness and Participation

Emergency Review Process

In certain instances, such as a disaster occurrence impacting a participating jurisdiction, the annual review process may not be timely enough to address unforeseen issues created by a particular event. In these situations, a county EMA official may facilitate a county-level plan review meeting, similar to the process described above, with the requisite public outreach. Once this meeting is completed, a local amendment may be adopted by a participating jurisdiction that only pertains to the revision of their specific Jurisdictional Mitigation Action Plan in a public session. After any local amendment, the local jurisdiction shall coordinate with their respective county EMA official to submit documentation of the local amendment to the core planning team for filing with AEMA and incorporating into the next five-year plan.

Five-Year Plan Update

Before the five-year expiration of the Division F Regional Hazard Mitigation Plan, a thorough review, beginning approximately 18 months prior to plan expiration, shall be held to determine any significant changes in the AEMA Division F planning area that may affect the region's vulnerability to hazard impacts, and to conduct an evaluation of the current mitigation strategy and jurisdictional mitigation action plans developed as part of this process. It is anticipated that this review process will be initiated by the Directors of the Division F Emergency Management Agencies (specifically, the Directors of each participating County EMA) with the assistance of the AEMA Division F Coordinator.

The five-year update shall incorporate any changes to federal or state regulations that may affect the Hazard Mitigation Plan contents. The plan update process will follow a locally driven, public process, similar to the plan review processes outlined above. In addition, multiple state, regional, and local partners will be consulted to provide data or consultation in plan formation. Consulting entities will include: the U.S. Army Corps of Engineers, Alabama Forestry Commission, Geological Survey of Alabama (GSA), Alabama Department of Public Health (ADPH), Alabama Department of Transportation (ALDOT), Alabama Department of Environmental Management (ADEM), Alabama Historical Commission (AHC), neighboring county EMA officials, as well as local and regional utility providers, educational institutions, and private sector entities such as local chambers of commerce and business associations. Upon completion of this review and update, the updated Division F Regional Hazard Mitigation Plan will be submitted to AEMA and FEMA for formal review and approval.

7.2. Hazard Mitigation Plan Incorporation

Every effort to incorporate goals and objectives identified in both phases of the Division F Regional Hazard Mitigation Plan in future local and regional planning efforts will be made by the core planning committee. It is essential that local and regional planning efforts such as local comprehensive planning, countywide emergency operations planning, regional economic development planning, and other related planning efforts need to incorporate hazard mitigation principles. With the increased frequency and devastation of natural disasters, hazard mitigation must play an integral role in community and regional planning especially in terms of growth, development, and land use outcomes. One example of how the Division F Regional Hazard Mitigation Plan will be incorporated into a subsequent planning effort is through the update of the Top of Alabama Regional Council of Governments (TARCOG) 5-Year Comprehensive Economic Development Strategy (CEDS). As the CEDS is updated, TARCOG's planning staff will take into consideration the location, vulnerability, and severity of regional hazards as it relates to regional economic development priorities.

7.3 Public Awareness and Participation

Public awareness and participation are important aspects of the hazard mitigation planning process, and the public should be included in the monitoring and review of the existing plan and the development and adoption of future plan updates. Because of the extremely condensed timeline to complete the first phase of the Division F regional hazard mitigation plan update and due to the complications of the COVID-19 pandemic impacting all traditional public participation methods for both Phase I and Phase II, public participation was not nearly as robust as it should have been during both phases of the Division F Regional Hazard Mitigation plan update.

However, because of these unprecedented constraints, the planning team developed a comprehensive public participation survey (see Appendix) which was provided to each participating County EMA for dissemination on social media platforms and County EMA websites (during both Phase I and Phase II planning processes). From the public participation survey outreach efforts, nearly 700 responses were received, and the information obtained was incorporated into the hazard profile and vulnerability assessment sections of the plan.

In addition, once the first phase of the Division F Regional Hazard Mitigation Plan was completed the draft plan was posted on all participating county EMA and regional planning council websites and all participating jurisdictions were encouraged to advertise the opportunity to review and comment on the plan during the two-week public comment period. The core planning team also notified (via email) a comprehensive list of regional stakeholders including, but not limited to chambers of commerce, local hospitals and medical centers, utility boards, educational institutions, community associations and non-profits, neighboring EMA officials, and other relevant stakeholders to review the plan and provide comments and feedback. The same public comment and review process took place when the Phase II draft plan was completed. For a full list of local and regional entities solicited for plan review and comments, see Appendix.

As described in the Monitoring, Evaluation, and Update process (Section 7.1), any significant changes, amendments, or updates to the Division F Regional Hazard Mitigation Plan shall be discussed in open public meetings prior to any adoption procedures. Any plan updates or major revisions will be adopted during a public session. The public will be informed of public hearings and other related meetings through a variety of media sources, including but not limited to: local newspaper advertisements and notices, radio advertising, postings at high traffic community areas (e.g., libraries, post offices, and municipal government buildings), social media platforms such as local Facebook pages, telephone messages, and various websites such as Division F County EMA websites, planning commission websites, and Open Meetings websites. The core planning committee members will keep public copies and provide copies of the Division F Regional Hazard Mitigation Plan to each County Commission office, seats of government in each municipality, and other appropriate public locations. TARCOCG will post a copy of the Division F Regional Hazard Mitigation Plan on the Regional Planning Agency section of its website. Press releases will be published via various media to inform the general public and stakeholders that the Division F Regional Hazard Mitigation Plan is available for review, where to find the plan, and how they can play a role in its creation and future revisions.

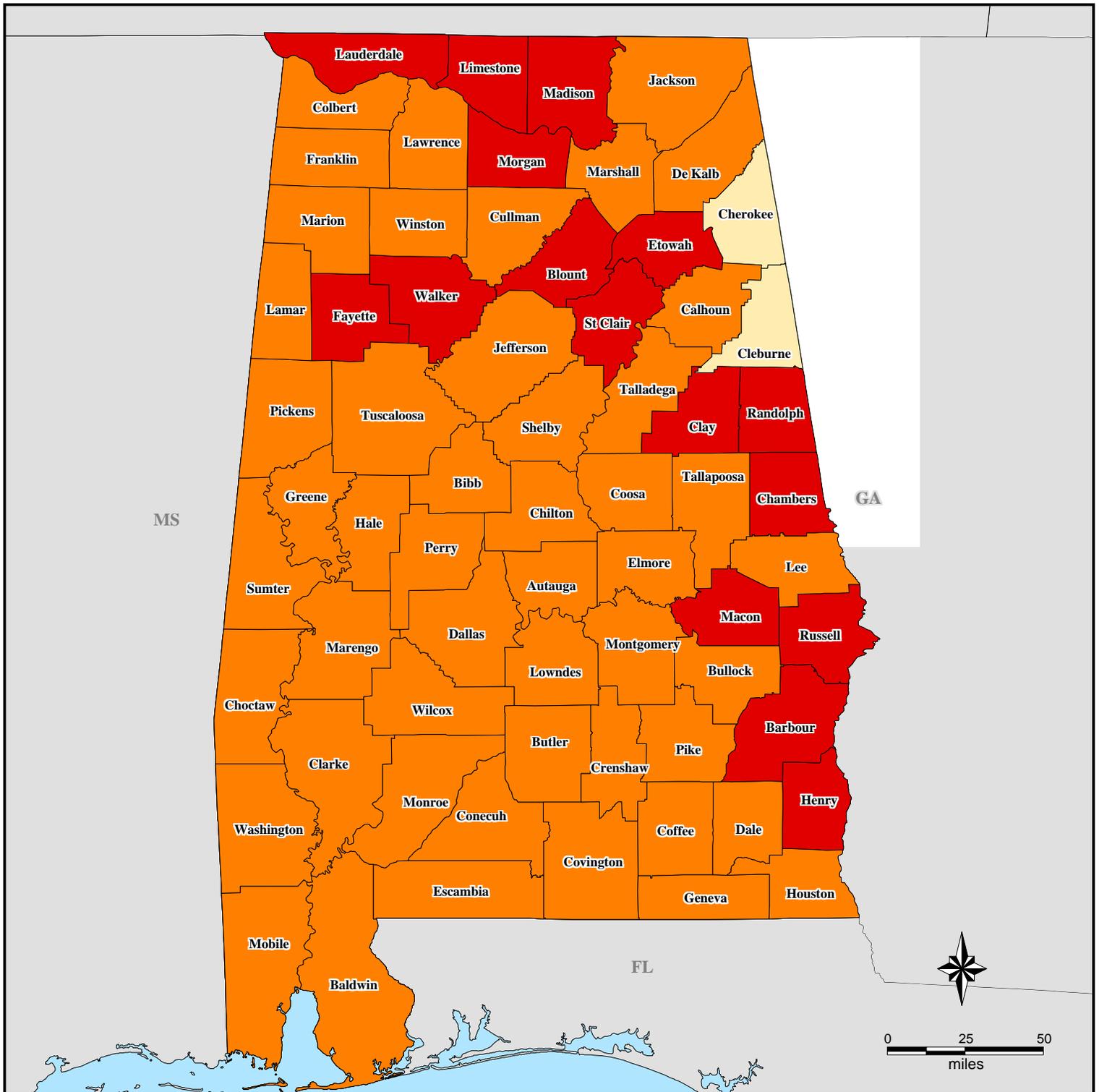
Appendices

DISASTER DECLARATION MAPS FOR ALABAMA

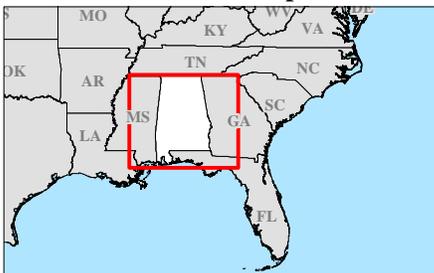
SECTION 4 – HAZARD PROFILES

FEMA-1549-DR, Alabama

Disaster Declaration as of 12/03/2004



Location Map



Legend

Designated Counties
(All counties are eligible for Hazard Mitigation)

- Individual Assistance
- Individual & Public Assistance
- Public Assistance



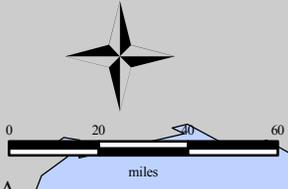
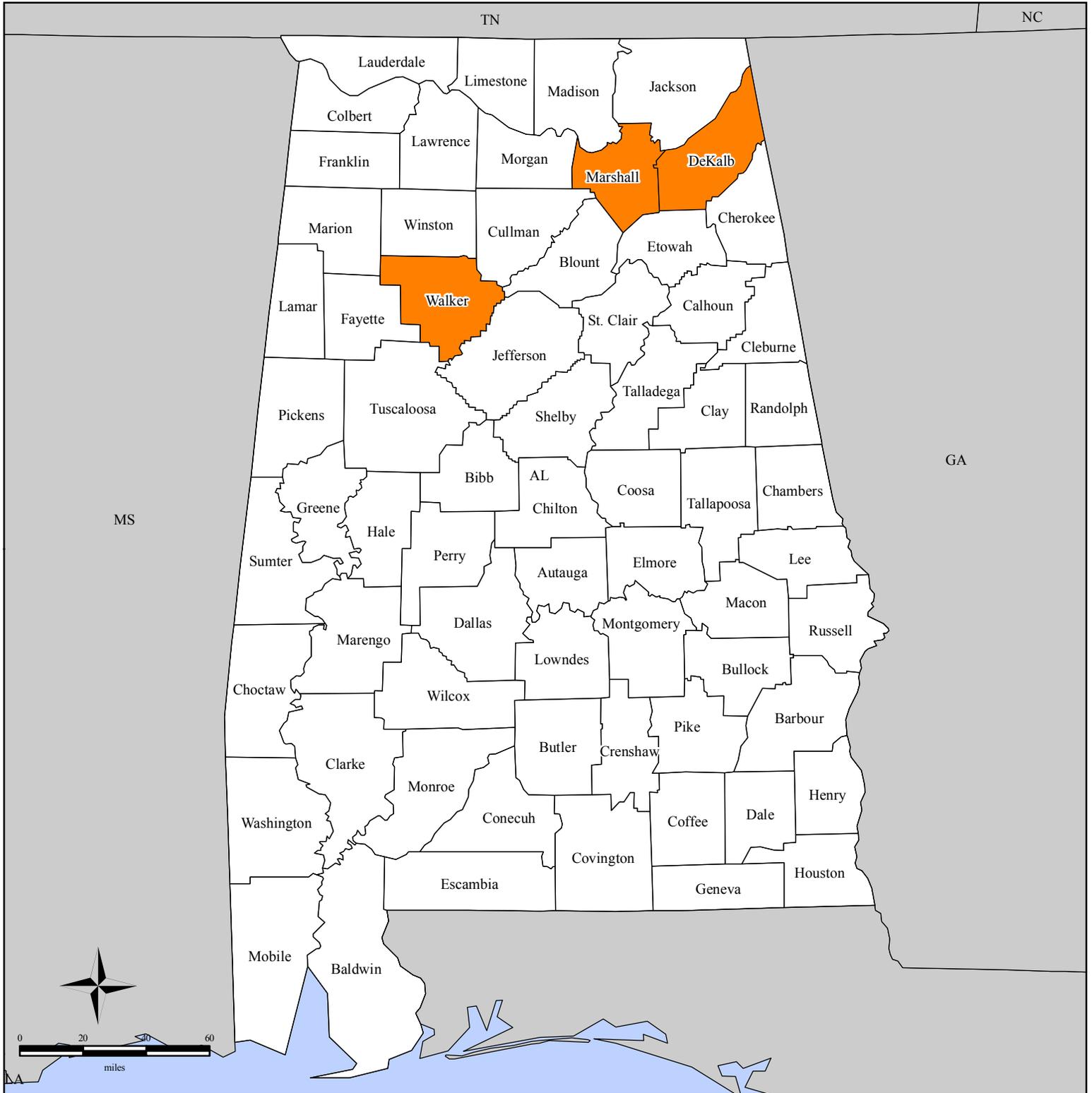
FEMA

ITS Mapping and Analysis Center
Washington, DC

12/03/2004 -- 15:29:28 EST

FEMA-1908-DR, Alabama

Disaster Declaration as of 05/07/2010



Location Map



Legend

Designated Counties

- No Designation
- Individual Assistance and Public Assistance

All counties in the State of Alabama are eligible to apply for assistance under the Hazard Mitigation Grant Program.



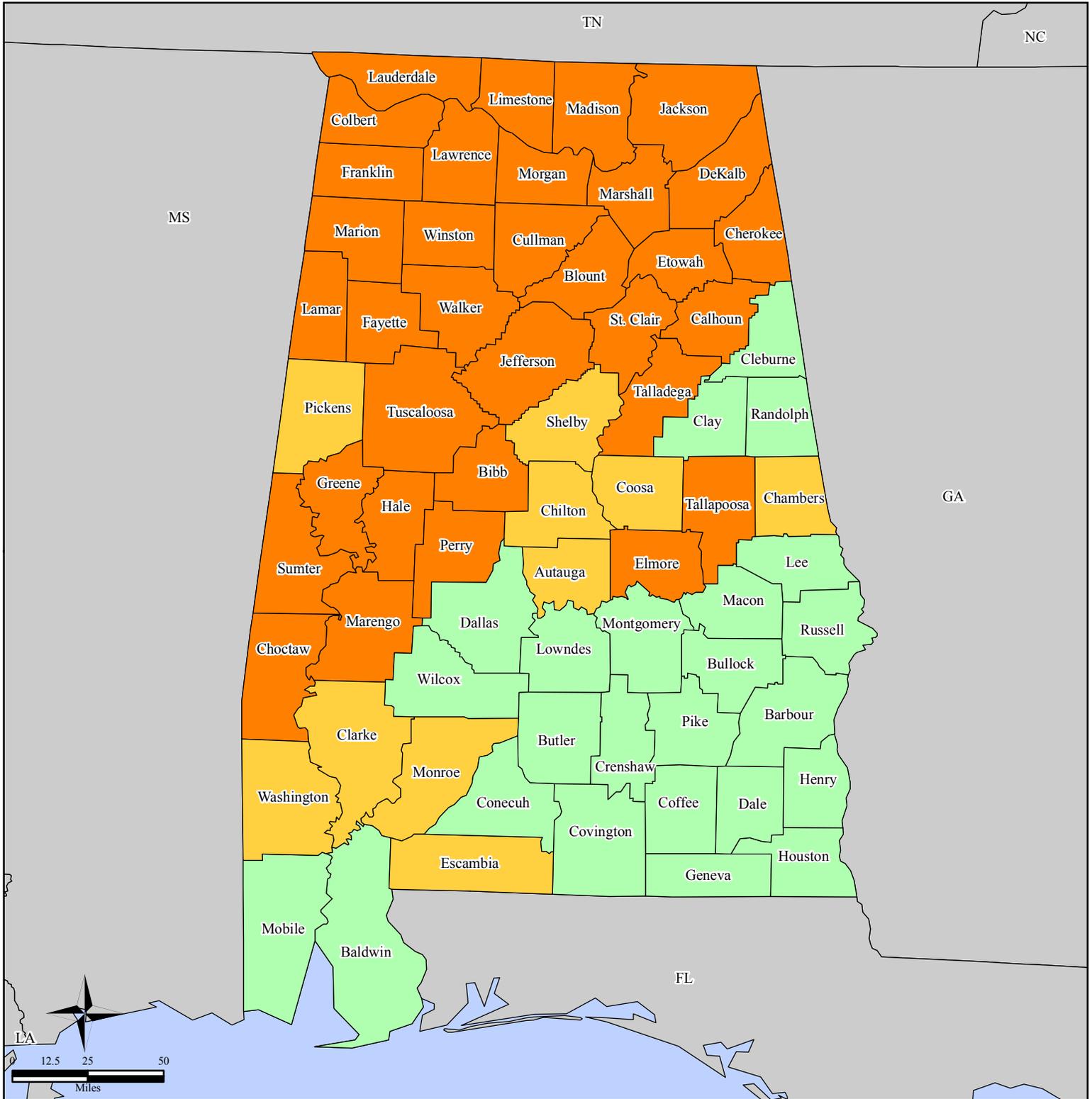
FEMA

ITS Mapping & Analysis Center
Washington, DC
05/08/10 -- 8:22 AM EDT

Source: Disaster Federal Registry Notice
Amendment No. 1 - 05/07/2010

FEMA-1971-DR, Alabama

Disaster Declaration as of 06/01/2011



Location Map



Legend

Designated Counties

- Public Assistance (Categories A & B)
- Individual Assistance and Public Assistance (All Categories)
- Individual Assistance & Public Assistance (Categories A & B)

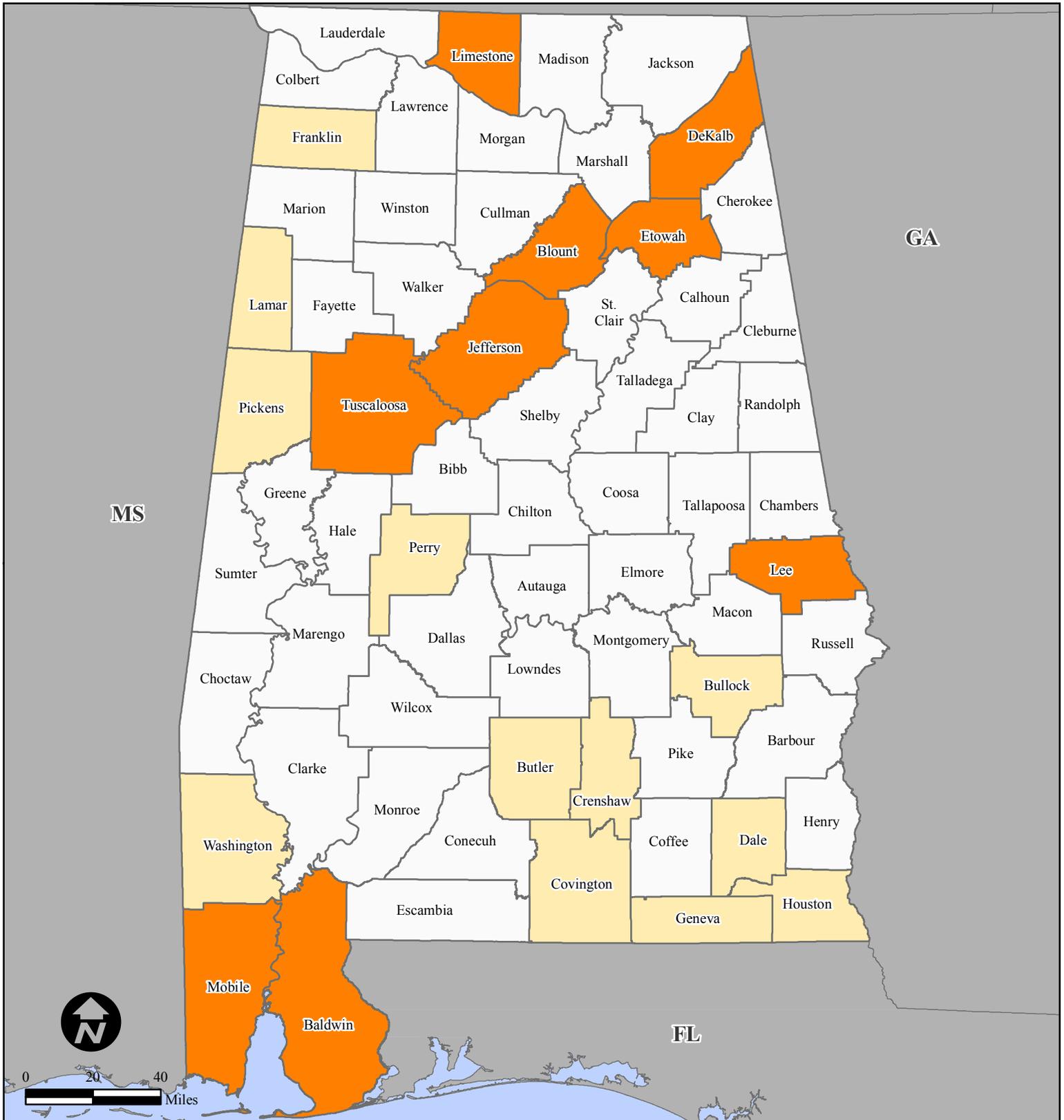


ITS Mapping & Analysis Center
Washington, DC
06/01/11 -- 5:06 PM EDT

Source: Disaster Federal Registry Notice
Amendment No. 16: 06/01/2011

All counties are eligible for Hazard Mitigation

FEMA-4176-DR, Alabama Disaster Declaration as of 06/05/2014



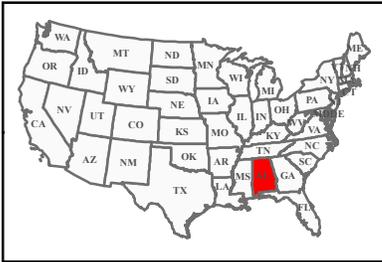
MS

GA

FL



Location Map



All counties in the State of Alabama are eligible to apply for assistance under the Hazard Mitigation Grant Program.

Designated Counties

- No Designation
- Public Assistance
- Individual Assistance and Public Assistance

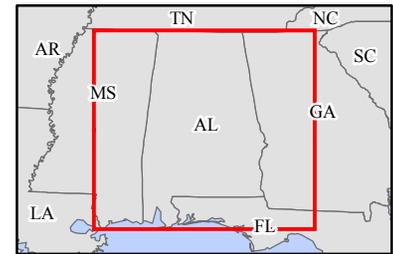
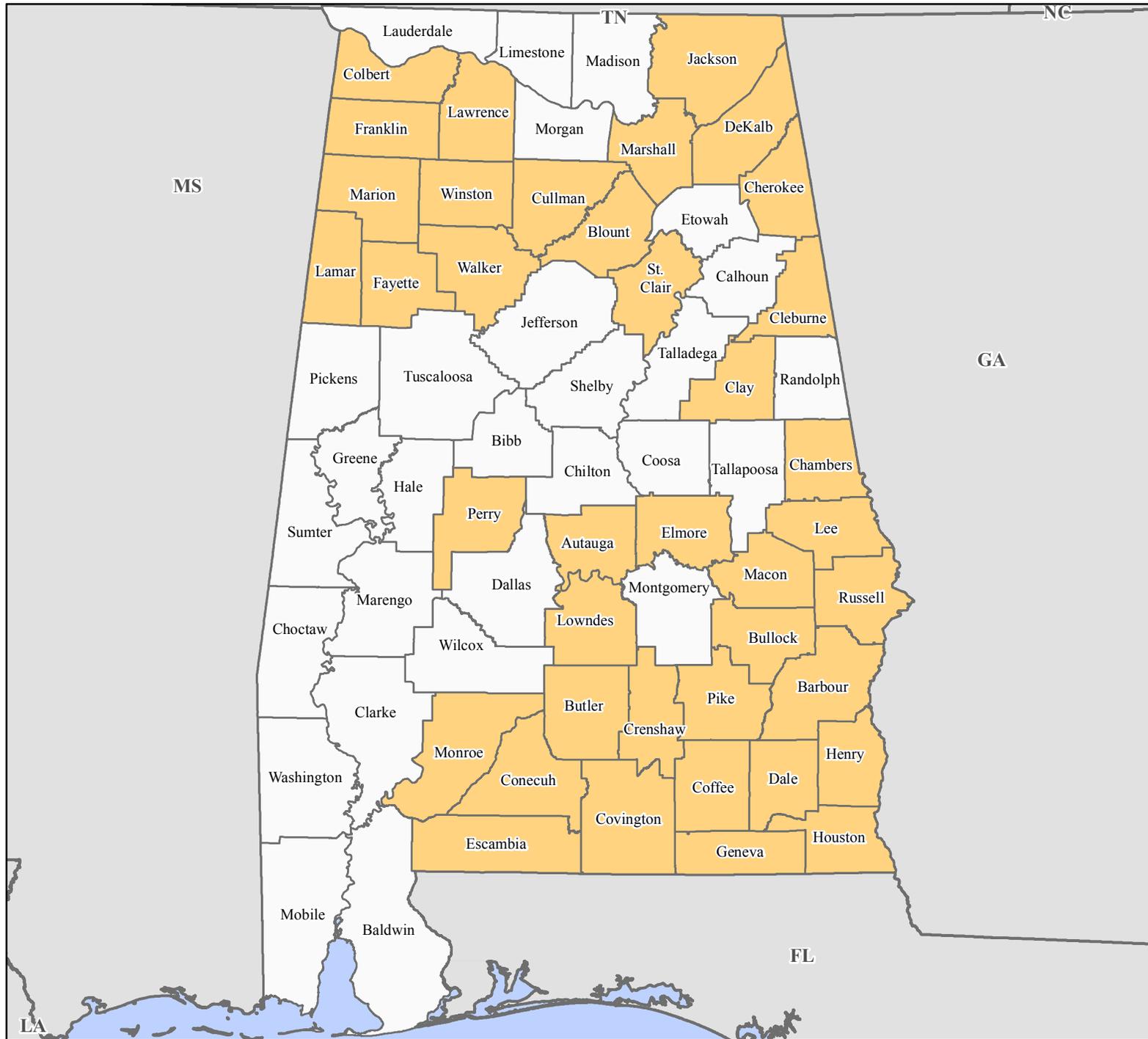


MSB-OCIO-AEES
 Enterprise Geospatial Information Services (EGIS)
 06/05/14 -- 3:51 PM EST
 Source: Disaster Federal Registry Notice Amendment No. 5: 06/05/2014

FEMA-4251-DR, Alabama Disaster Declaration as of 01/22/2016



FEMA

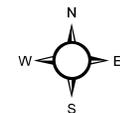


Data Layer/Map Description:
The types of assistance that have been designated for selected areas in the State of Alabama.

All designated areas in the State of Alabama are eligible to apply for assistance under the Hazard Mitigation Grant Program.

Designated Counties

- No Designation
- Public



Data Sources:
FEMA, ESRI;
Initial Declaration: 01/21/2016
Disaster Federal Registry Notice: 01/21/2016
Datum: North American 1983
Projection: Transverse Mercator

HAZUS SCENARIO MODELS

EARTHQUAKES – FLOODS – HURRICANES (WIND EVENTS)

PHASE I COUNTIES



Hazus: Flood Global Risk Report

Region Name: DIVISION_F_Area

Flood Scenario: 100YRev

Print Date: Friday, July 10, 2020

Disclaimer:

This version of Hazus utilizes 2010 Census Data.

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



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Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	
General Building Stock	4
Essential Facility Inventory	5
Flood Scenario Parameters	6
Building Damage	
General Building Stock	7
Essential Facilities Damage	9
Induced Flood Damage	10
Debris Generation	
Social Impact	10
Shelter Requirements	
Economic Loss	12
Building-Related Losses	
Appendix A: County Listing for the Region	15
Appendix B: Regional Population and Building Value Data	16



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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 4 county(ies) from the following state(s):

- . Alabama

Note:

Appendix A contains a complete listing of the counties contained in the region .

The geographical size of the region is approximately 2,682 square miles and contains 16,339 census blocks. The region contains over 111 thousand households and has a total population of 281,934 people (2010 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B .

There are an estimated 133,244 buildings in the region with a total building replacement value (excluding contents) of 25,628 million dollars. Approximately 92.40% of the buildings (and 71.46% of the building value) are associated with residential housing.



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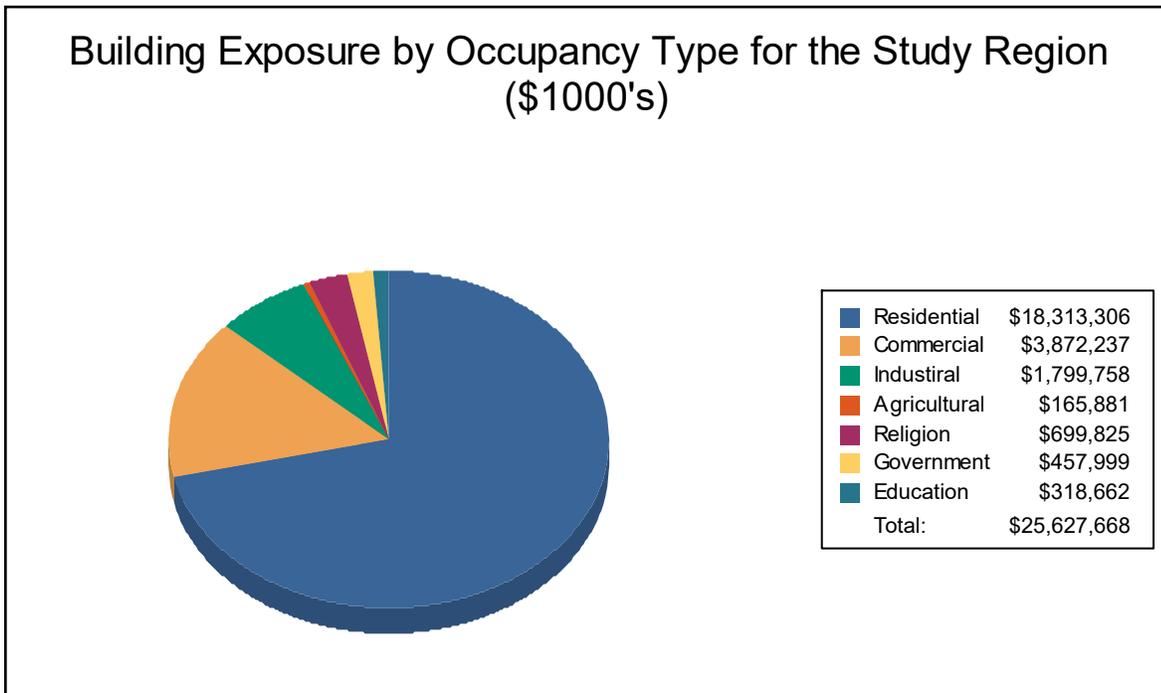
Building Inventory

General Building Stock

Hazus estimates that there are 133,244 buildings in the region which have an aggregate total replacement value of 25,628 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	18,313,306	71.5%
Commercial	3,872,237	15.1%
Industrial	1,799,758	7.0%
Agricultural	165,881	0.6%
Religion	699,825	2.7%
Government	457,999	1.8%
Education	318,662	1.2%
Total	25,627,668	100%



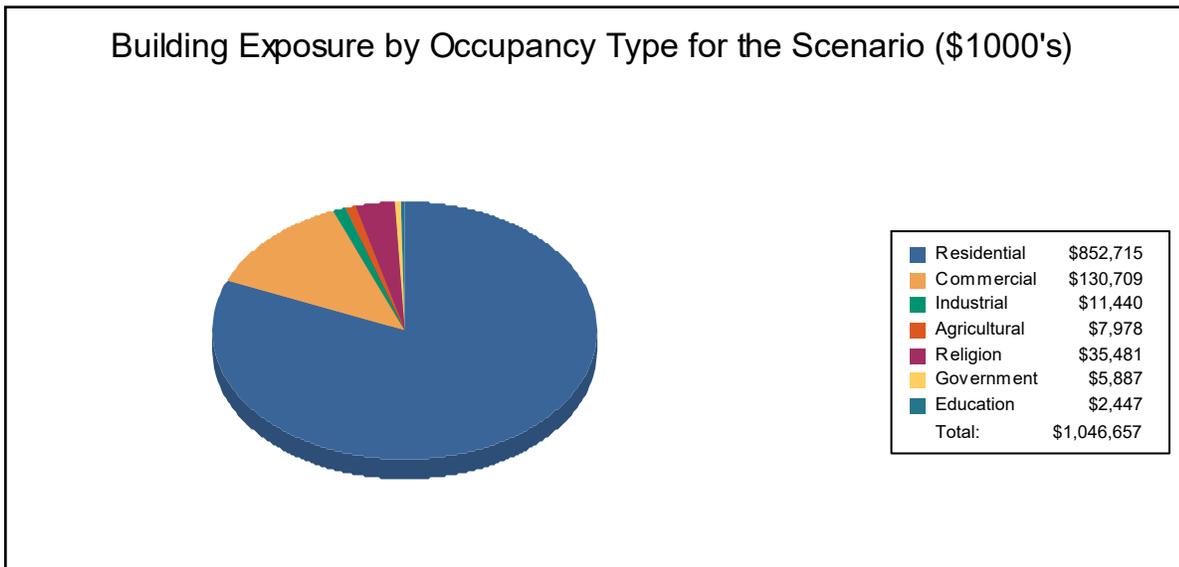
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**Table 2
Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	4,533,253	74.6%
Commercial	990,900	16.3%
Industrial	299,166	4.9%
Agricultural	29,696	0.5%
Religion	147,155	2.4%
Government	32,045	0.5%
Education	45,900	0.8%
Total	6,078,115	100%



Essential Facility Inventory

For essential facilities, there are 9 hospitals in the region with a total bed capacity of 1, 118 beds. There are 126 schools, 138 fire stations, 37 police stations and 5 emergency operation centers.



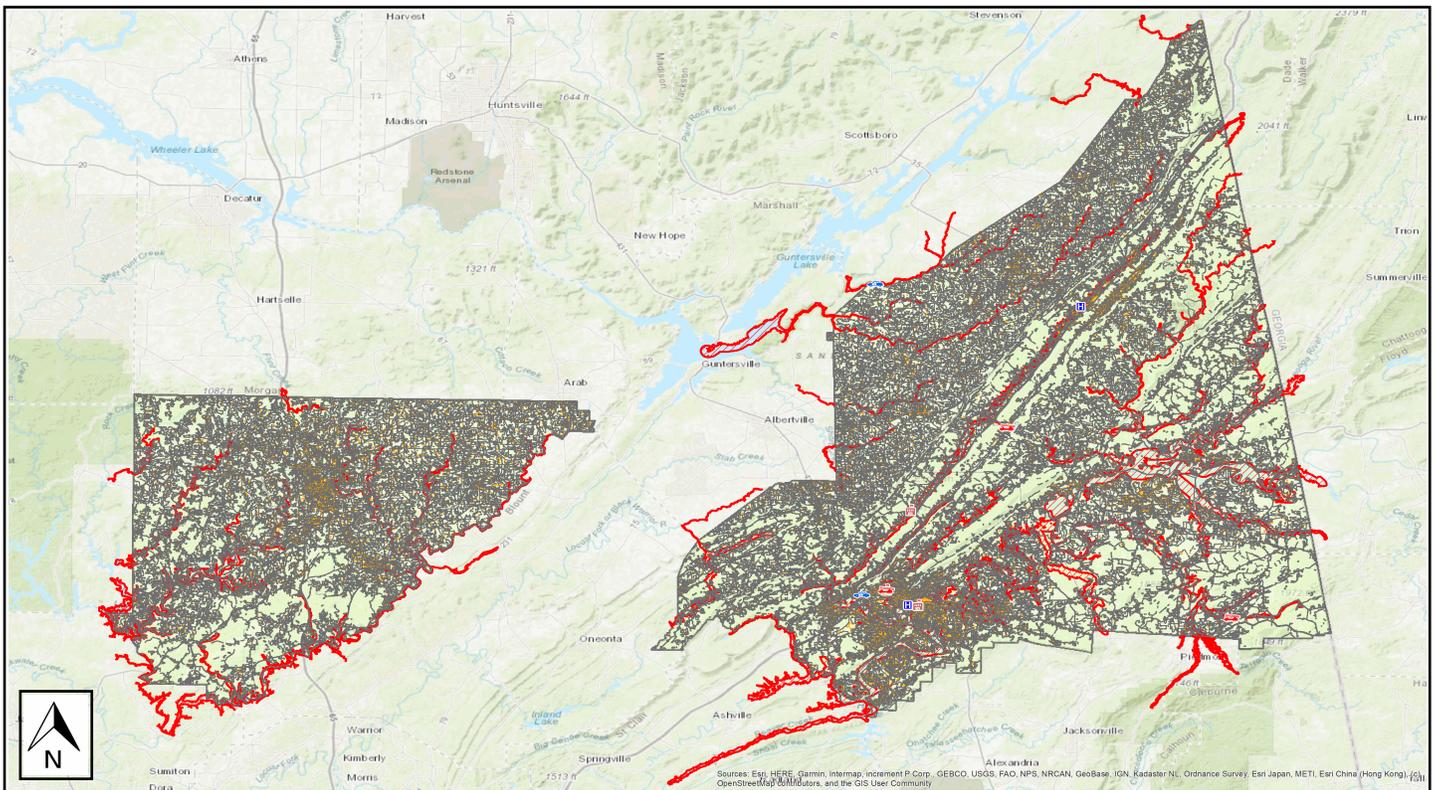
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	DIVISION_F_Area
Scenario Name:	100YRev
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



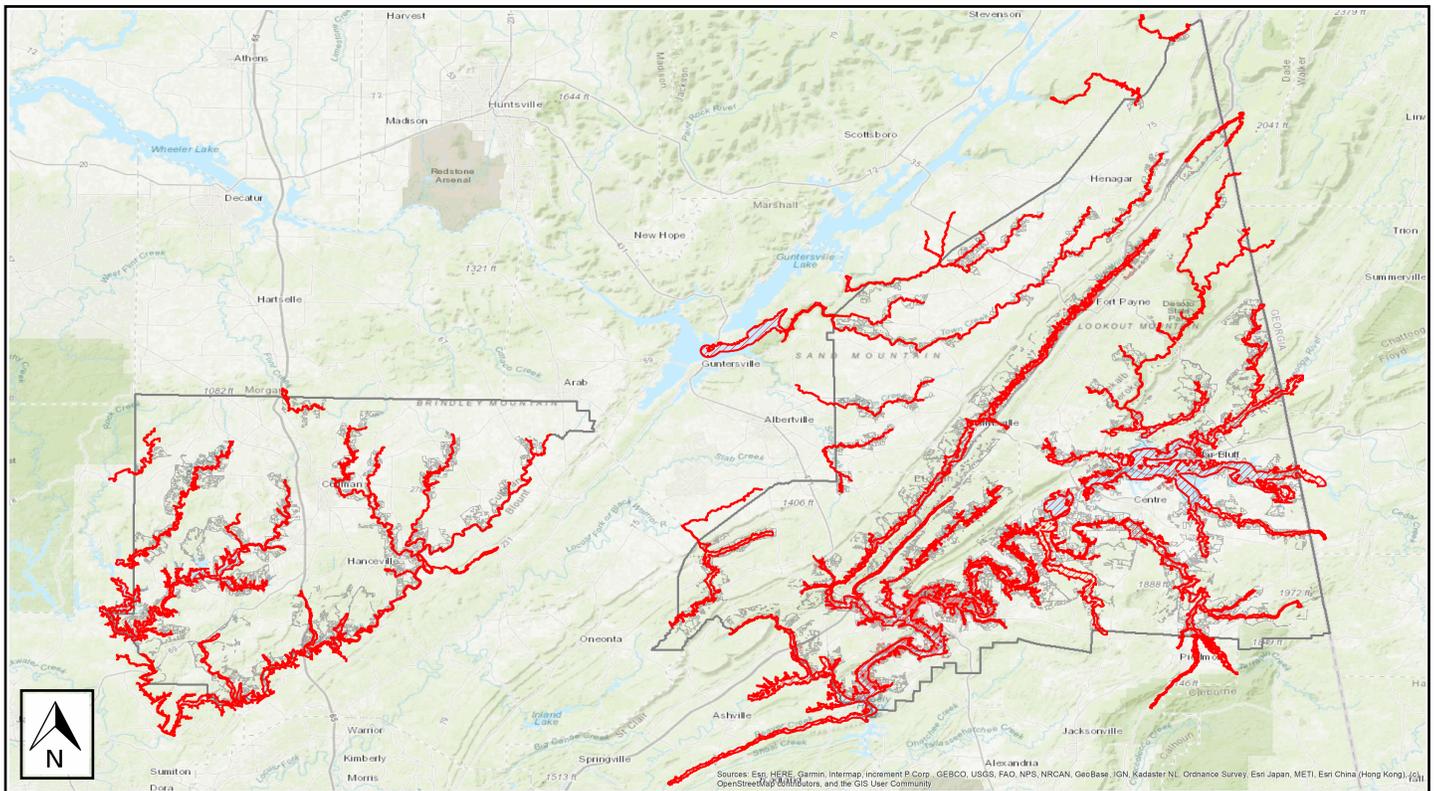


Building Damage

General Building Stock Damage

Hazus estimates that about 1,641 buildings will be at least moderately damaged. This is over 29% of the total number of buildings in the scenario. There are an estimated 804 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map



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Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	2	7	14	52	6	22	1	4	2	7	2	7
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Religion	0	0	1	100	0	0	0	0	0	0	0	0
Residential	96	6	238	14	201	12	187	11	187	11	802	47
Total	98		253		207		188		189		804	

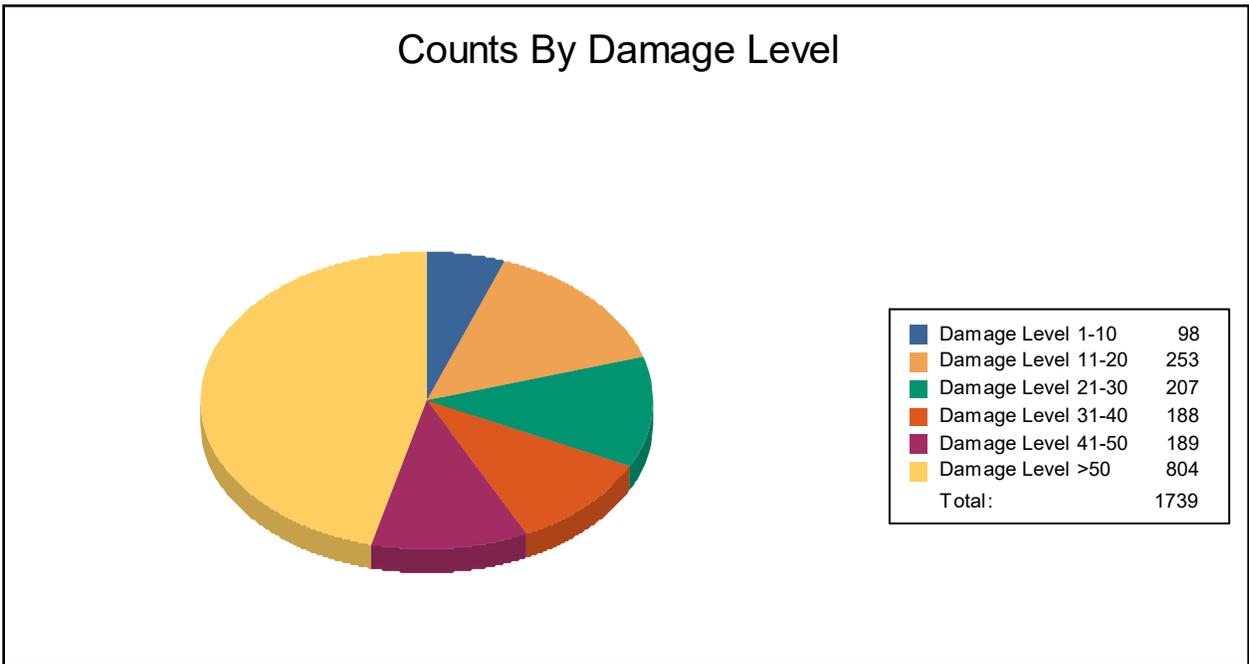




Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)										
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
ManufHousing	3	4	4	5	1	1	0	0	4	5	62	84
Masonry	0	0	4	17	1	4	2	9	7	30	9	39
Steel	2	13	8	50	3	19	1	6	1	6	1	6
Wood	93	6	235	15	198	12	186	11	175	11	733	45



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Essential Facility Damage

Before the flood analyzed in this scenario, the region had 1,118 hospital beds available for use. On the day of the scenario flood event, the model estimates that 837 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	# Facilities			
	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	5	1	0	1
Fire Stations	138	3	0	3
Hospitals	9	2	0	1
Police Stations	37	3	0	3
Schools	126	3	0	3

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.



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Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

Analysis has not been performed for this Scenario.



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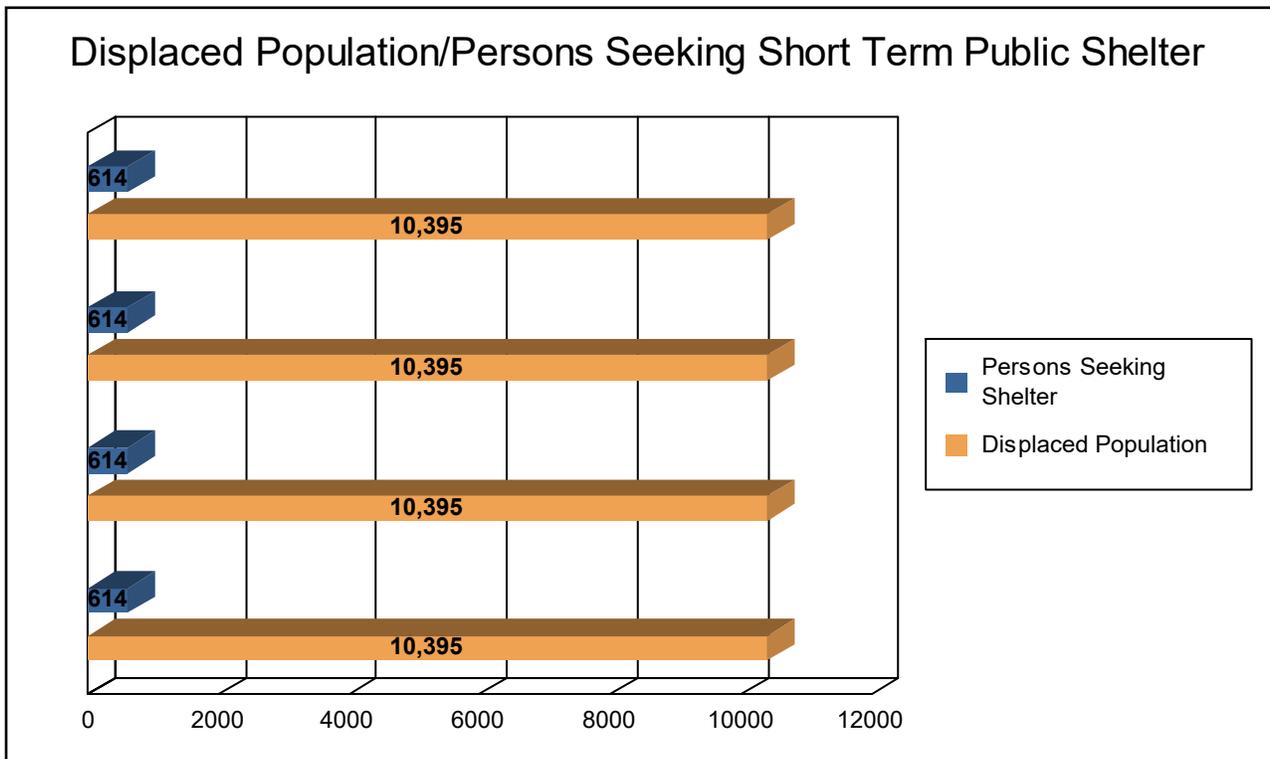
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Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 3,465 households (or 10,395 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 614 people (out of a total population of 281,934) will seek temporary shelter in public shelters.



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Economic Loss

The total economic loss estimated for the flood is 1,677.96 million dollars, which represents 27.61 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 992.87 million dollars. 41% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 36.80% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.



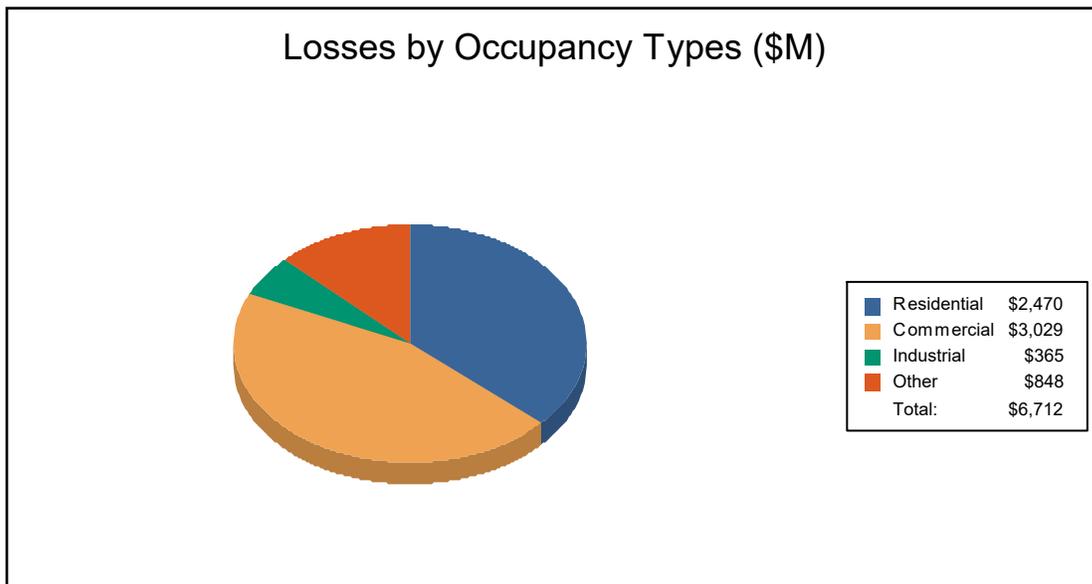
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Table 6: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	1,318.94	392.47	88.09	41.90	1,841.39
	Content	669.14	1,015.95	214.52	164.74	2,064.36
	Inventory	0.00	22.52	41.72	1.49	65.74
	Subtotal	1,988.08	1,430.94	344.34	208.12	3,971.48
<u>Business Interruption</u>						
	Income	13.76	563.18	5.15	43.80	625.89
	Relocation	310.56	178.61	5.26	22.18	516.62
	Rental Income	125.19	108.07	1.28	2.94	237.49
	Wage	32.36	748.34	8.62	571.05	1,360.37
	Subtotal	481.87	1,598.20	20.32	639.97	2,740.36
ALL	Total	2,469.95	3,029.14	364.66	848.10	6,711.84



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Appendix A: County Listing for the Region

Alabama

- Cherokee
- Cullman
- DeKalb
- Etowah



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Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Alabama				
Cherokee	25,989	2,084,138	652,363	2,736,501
Cullman	80,406	5,181,389	2,070,693	7,252,082
DeKalb	71,109	3,872,024	1,964,823	5,836,847
Etowah	104,430	7,175,755	2,626,483	9,802,238
Total	281,934	18,313,306	7,314,362	25,627,668
Total Study Region	281,934	18,313,306	7,314,362	25,627,668



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Hazus: Earthquake Global Risk Report

Region Name: DIVISION_F_Area

Earthquake Scenario: Subl_Test

Print Date: July 16, 2020

Disclaimer:

This version of Hazus utilizes 2010 Census Data.

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

Table of Contents

Section	Page #
General Description of the Region	3
Building and Lifeline Inventory	4
Building Inventory	
Critical Facility Inventory	
Transportation and Utility Lifeline Inventory	
Earthquake Scenario Parameters	7
Direct Earthquake Damage	8
Buildings Damage	
Essential Facilities Damage	
Transportation and Utility Lifeline Damage	
Induced Earthquake Damage	14
Fire Following Earthquake	
Debris Generation	
Social Impact	15
Shelter Requirements	
Casualties	
Economic Loss	17
Building Related Losses	
Transportation and Utility Lifeline Losses	
 Appendix A: County Listing for the Region	
Appendix B: Regional Population and Building Value Data	



FEMA

General Description of the Region

Hazus-MH is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 4 county(ies) from the following state(s):

Alabama

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 2,681.60 square miles and contains 68 census tracts. There are over 111 thousand households in the region which has a total population of 281,934 people (2010 Census Bureau data). The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 133 thousand buildings in the region with a total building replacement value (excluding contents) of 25,627 (millions of dollars). Approximately 92.00 % of the buildings (and 71.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 7,937 and 4,377 (millions of dollars) , respectively.



FEMA

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 133 thousand buildings in the region which have an aggregate total replacement value of 25,627 (millions of dollars) . Appendix B provides a general distribution of the building value by Total Region and County.

In terms of building construction types found in the region, wood frame construction makes up 70% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 9 hospitals in the region with a total bed capacity of 1,118 beds. There are 126 schools, 138 fire stations, 37 police stations and 5 emergency operation facilities. With respect to high potential loss facilities (HPL), there are no dams identified within the inventory. The inventory also includes 142 hazardous material sites, no military installations and no nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 12,314.00 (millions of dollars). This inventory includes over 723.90 miles of highways, 969 bridges, 22,145.66 miles of pipes.

Table 1: Transportation System Lifeline Inventory

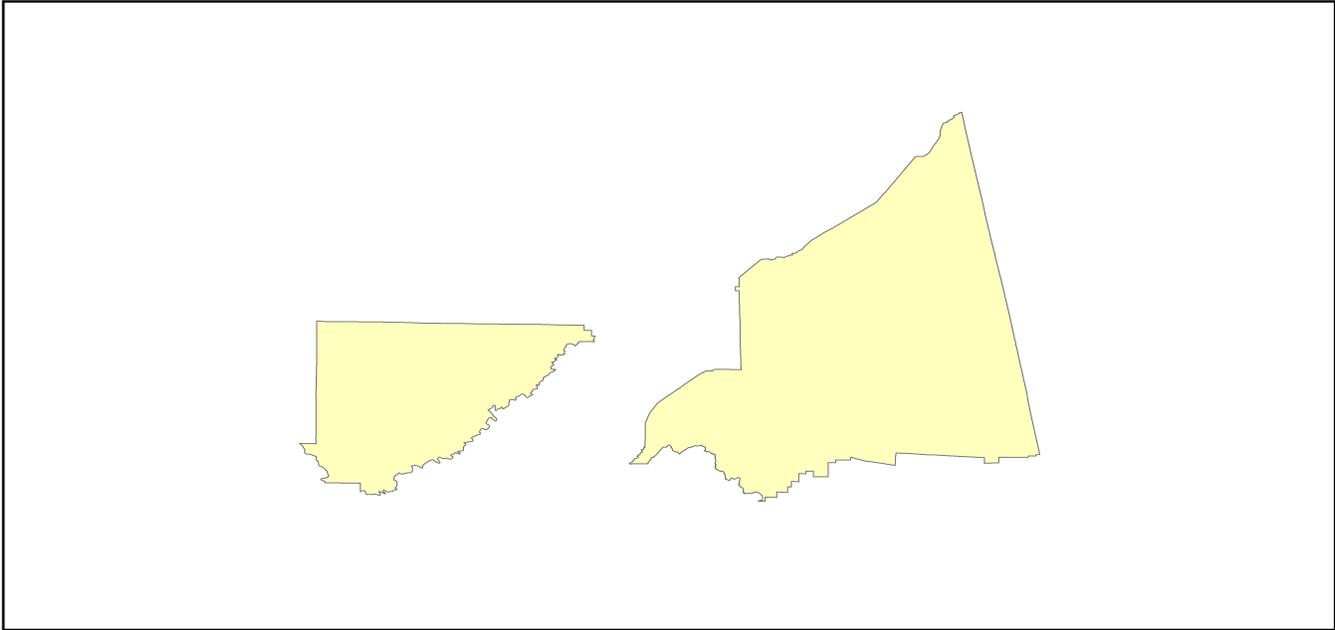
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	969	1185.4428
	Segments	242	5580.9746
	Tunnels	0	0.0000
		Subtotal	6766.4174
Railways	Bridges	130	552.3059
	Facilities	1	2.6630
	Segments	145	308.2484
	Tunnels	0	0.0000
		Subtotal	863.2173
Light Rail	Bridges	0	0.0000
	Facilities	0	0.0000
	Segments	0	0.0000
	Tunnels	0	0.0000
		Subtotal	0.0000
Bus	Facilities	2	2.7190
		Subtotal	2.7190
Ferry	Facilities	2	2.6620
		Subtotal	2.6620
Port	Facilities	0	0.0000
		Subtotal	0.0000
Airport	Facilities	4	16.9940
	Runways	6	285.5353
		Subtotal	302.5293
		Total	7,937.50

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	444.5393
	Facilities	4	119.8800
	Pipelines	0	0.0000
	Subtotal		564.4193
Waste Water	Distribution Lines	NA	266.7236
	Facilities	20	2430.1462
	Pipelines	0	0.0000
	Subtotal		2696.8698
Natural Gas	Distribution Lines	NA	177.8157
	Facilities	0	0.0000
	Pipelines	4	44.6761
	Subtotal		222.4918
Oil Systems	Facilities	0	0.0000
	Pipelines	0	0.0000
	Subtotal		0.0000
Electrical Power	Facilities	2	891.3368
	Subtotal		891.3368
Communication	Facilities	22	1.9800
	Subtotal		1.9800
		Total	4,377.10

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	Subl_Test
Type of Earthquake	Probabilistic
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	100.00
Longitude of Epicenter	NA
Latitude of Epicenter	NA
Earthquake Magnitude	5.00
Depth (km)	NA
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	NA

Direct Earthquake Damage

Building Damage

Hazus estimates that about 210 buildings will be at least moderately damaged. This is over 0.00 % of the buildings in the region. There are an estimated 0 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage Categories by General Occupancy Type

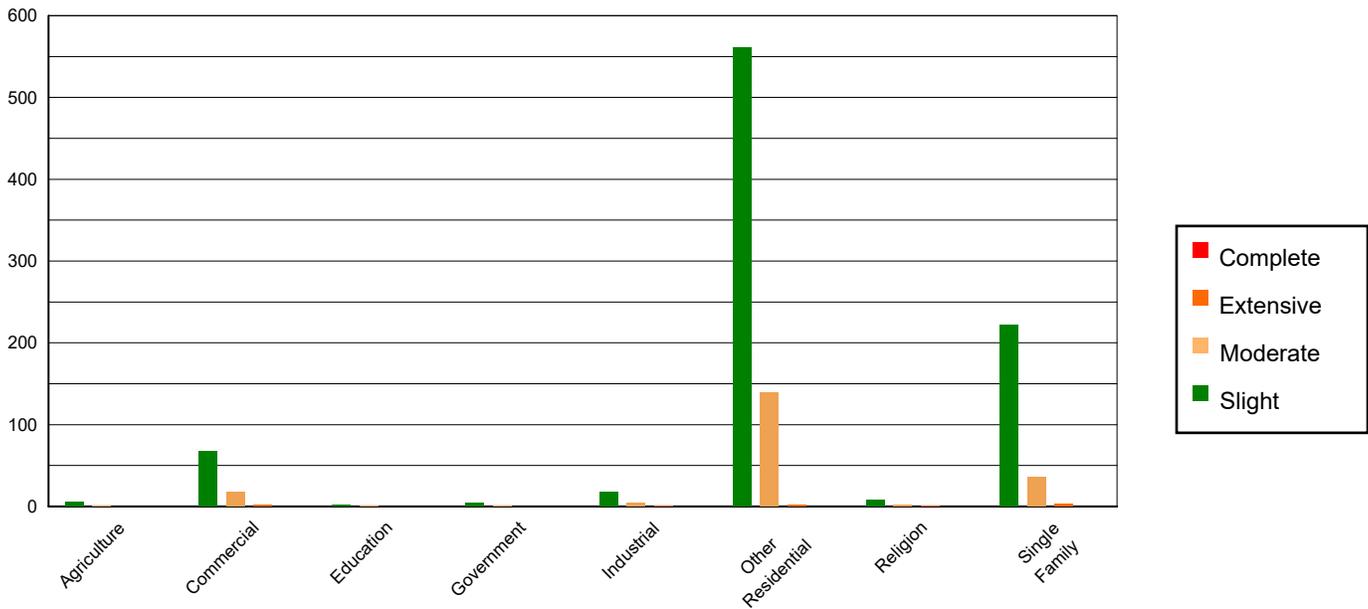


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	597.62	0.45	5.90	0.66	1.34	0.66	0.13	1.68	0.01	1.34
Commercial	6137.49	4.64	67.59	7.61	17.97	8.87	1.85	23.12	0.11	25.22
Education	180.78	0.14	1.73	0.20	0.44	0.22	0.04	0.54	0.00	0.71
Government	393.61	0.30	4.24	0.48	1.05	0.52	0.10	1.22	0.00	0.97
Industrial	1872.20	1.42	17.80	2.01	4.54	2.24	0.44	5.45	0.02	4.83
Other Residential	28294.98	21.41	560.75	63.18	138.81	68.52	2.43	30.37	0.04	9.40
Religion	802.02	0.61	8.20	0.92	2.49	1.23	0.27	3.39	0.02	4.96
Single Family	93866.70	71.03	221.40	24.94	35.95	17.74	2.73	34.22	0.22	52.55
Total	132,145		888		203		8		0	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	92919.36	70.32	157.94	17.79	12.53	6.18	0.00	0.00	0.00	0.00
Steel	4518.10	3.42	37.12	4.18	8.03	3.96	0.63	7.83	0.00	0.00
Concrete	727.44	0.55	5.22	0.59	0.93	0.46	0.03	0.41	0.00	0.00
Precast	299.80	0.23	4.64	0.52	2.16	1.07	0.28	3.46	0.00	0.00
RM	1025.78	0.78	8.65	0.97	3.09	1.52	0.32	3.98	0.00	0.00
URM	7181.89	5.43	132.48	14.93	42.32	20.89	4.86	60.78	0.42	100.00
MH	25473.03	19.28	541.55	61.01	133.54	65.91	1.88	23.54	0.00	0.00
Total	132,145		888		203		8		0	

*Note:

- RM Reinforced Masonry
- URM Unreinforced Masonry
- MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 1,118 hospital beds available for use. On the day of the earthquake, the model estimates that only 1,086 hospital beds (97.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 99.00% of the beds will be back in service. By 30 days, 100.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	9	0	0	9
Schools	126	0	0	126
EOCs	5	0	0	5
PoliceStations	37	0	0	37
FireStations	138	0	0	138

Transportation Lifeline Damage

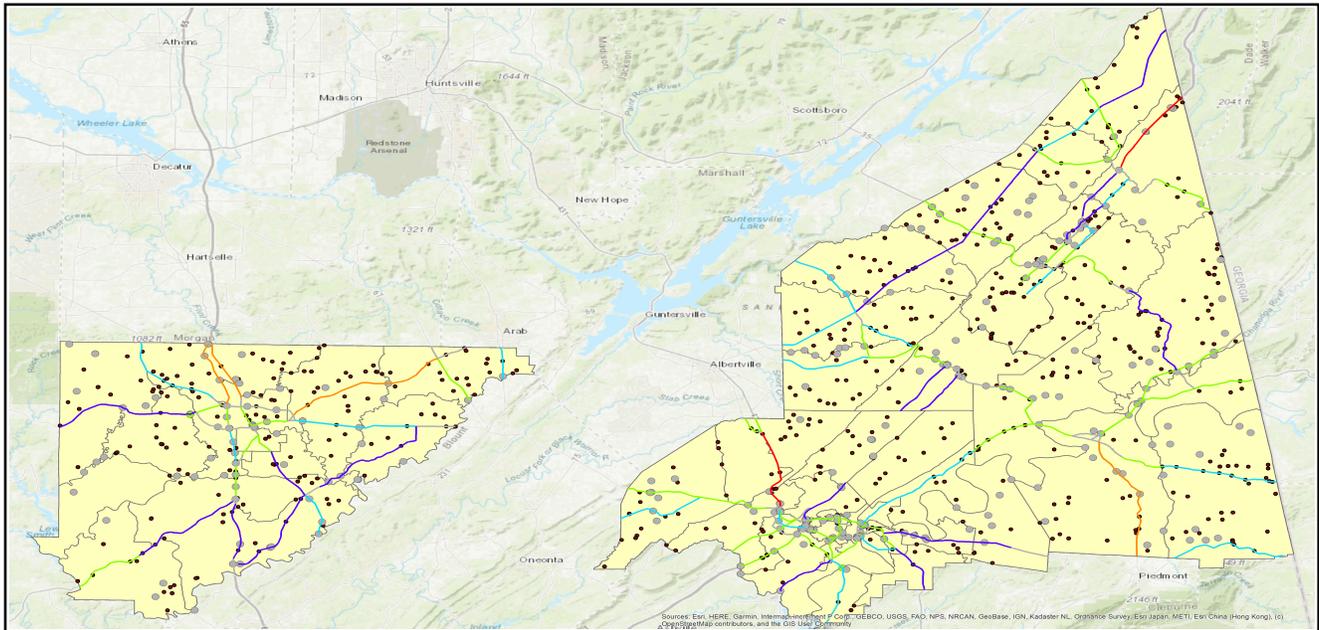


Table 6: Expected Damage to the Transportation Systems

System	Component	Number of Locations_				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	242	0	0	242	242
	Bridges	969	0	0	969	969
	Tunnels	0	0	0	0	0
Railways	Segments	145	0	0	145	145
	Bridges	130	0	0	130	130
	Tunnels	0	0	0	0	0
	Facilities	1	0	0	1	1
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	2	0	0	2	2
Ferry	Facilities	2	0	0	2	2
Port	Facilities	0	0	0	0	0
Airport	Facilities	4	0	0	4	4
	Runways	6	0	0	6	6

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	4	0	0	4	4
Waste Water	20	0	0	0	0
Natural Gas	0	0	0	0	0
Oil Systems	0	0	0	0	0
Electrical Power	2	0	0	0	0
Communication	22	0	0	0	0

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	13,811	0	0
Waste Water	8,287	0	0
Natural Gas	48	0	0
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water						
Electric Power						

Induced Earthquake Damage

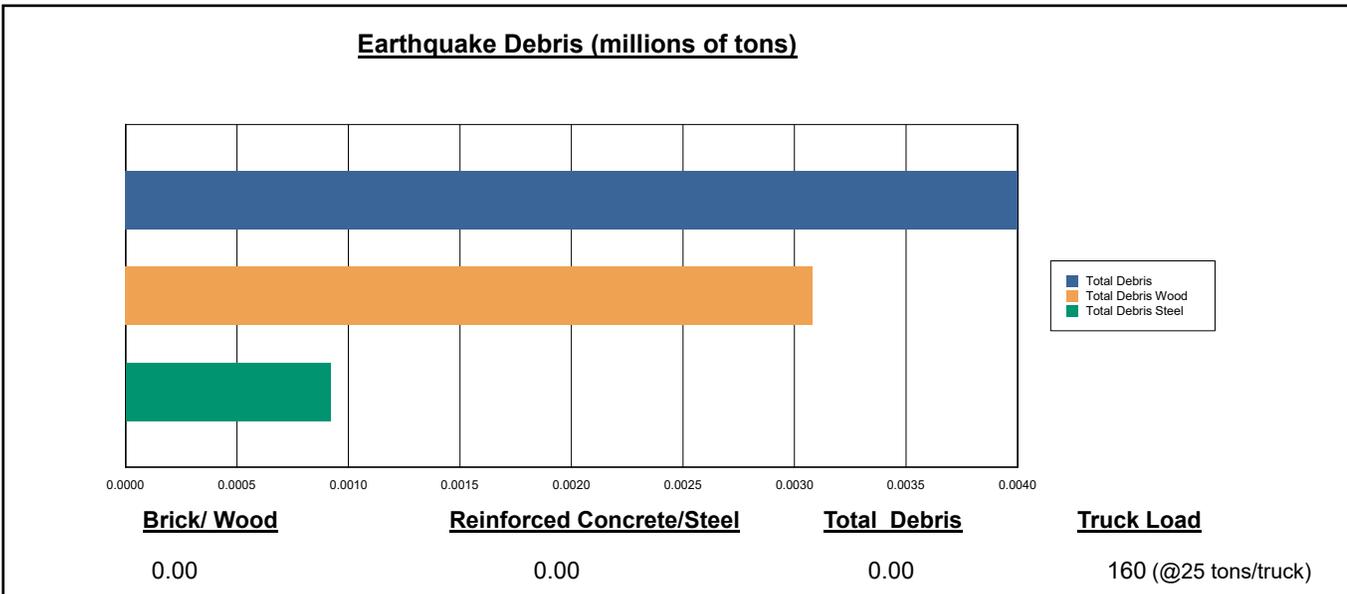
Fire Following Earthquake

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 0 ignitions that will burn about 0.00 sq. mi 0.00 % of the region's total area.) The model also estimates that the fires will displace about 0 people and burn about 0 (millions of dollars) of building value.

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

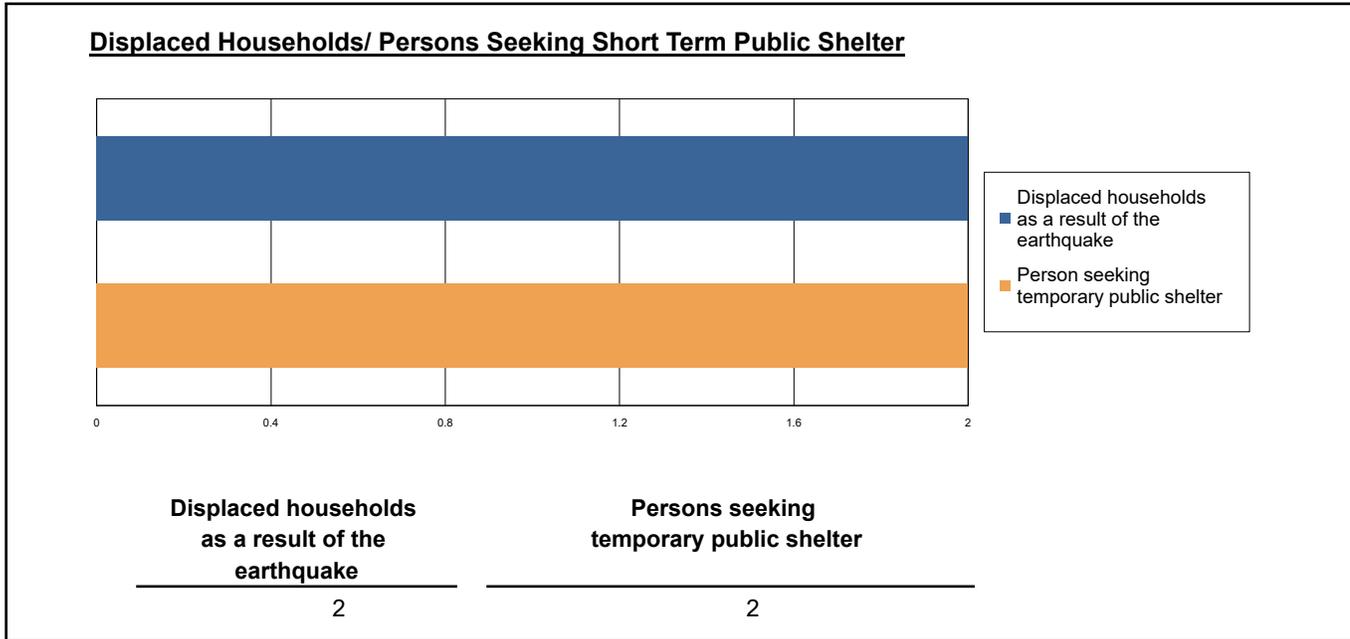
The model estimates that a total of 4,000 tons of debris will be generated. Of the total amount, Brick/Wood comprises 77.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 160 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 2 households to be displaced due to the earthquake. Of these, 2 people (out of a total population of 281,934) will seek temporary shelter in public shelters.



Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	0.03	0.00	0.00	0.00
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.05	0.01	0.00	0.00
	Other-Residential	1.35	0.11	0.00	0.01
	Single Family	0.74	0.07	0.01	0.01
	Total	2	0	0	0
2 PM	Commercial	2.23	0.23	0.01	0.03
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.64	0.07	0.00	0.01
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.39	0.04	0.00	0.00
	Other-Residential	0.32	0.03	0.00	0.00
	Single Family	0.19	0.02	0.00	0.00
	Total	4	0	0	0
5 PM	Commercial	1.65	0.17	0.01	0.02
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.04	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.24	0.02	0.00	0.00
	Other-Residential	0.49	0.04	0.00	0.00
	Single Family	0.29	0.03	0.00	0.00
	Total	3	0	0	0



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Economic Loss

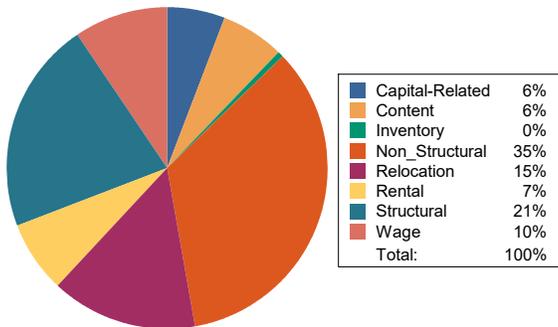
The total economic loss estimated for the earthquake is 8.08 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 7.98 (millions of dollars); 37 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 43 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type (\$ millions)



Earthquake Losses by Occupancy Type (\$ millions)

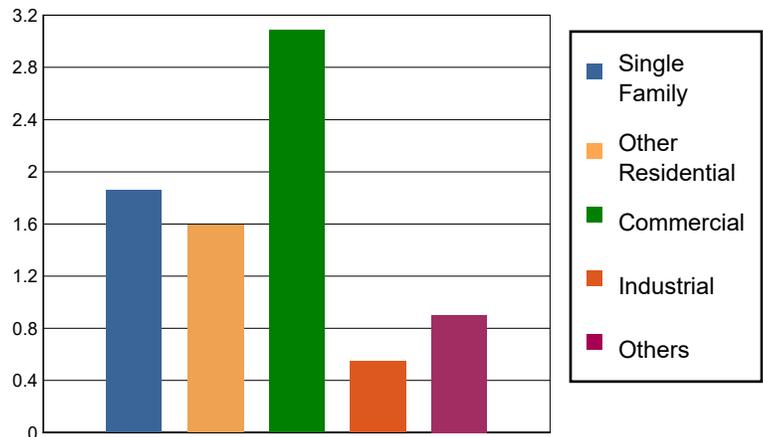


Table 11: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	0.0512	0.5627	0.0347	0.1104	0.7590
	Capital-Related	0.0000	0.0217	0.4130	0.0210	0.0146	0.4703
	Rental	0.0711	0.1170	0.3311	0.0134	0.0361	0.5687
	Relocation	0.2331	0.2582	0.4369	0.0529	0.2010	1.1821
	Subtotal	0.3042	0.4481	1.7437	0.1220	0.3621	2.9801
Capital Stock Losses							
	Structural	0.3653	0.4252	0.5349	0.1669	0.2136	1.7059
	Non_Structural	1.0238	0.6751	0.6342	0.1594	0.2620	2.7545
	Content	0.1653	0.0407	0.1648	0.0787	0.0643	0.5138
	Inventory	0.0000	0.0000	0.0054	0.0182	0.0008	0.0244
	Subtotal	1.5544	1.1410	1.3393	0.4232	0.5407	4.9986
	Total	1.86	1.59	3.08	0.55	0.90	7.98

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	5580.9746	0.0000	0.00
	Bridges	1185.4428	0.0011	0.00
	Tunnels	0.0000	0.0000	0.00
	Subtotal	6766.4174	0.0011	
Railways	Segments	308.2484	0.0000	0.00
	Bridges	552.3059	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	2.6630	0.0122	0.46
	Subtotal	863.2173	0.0122	
Light Rail	Segments	0.0000	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Bus	Facilities	2.7190	0.0122	0.45
	Subtotal	2.7190	0.0122	
Ferry	Facilities	2.6620	0.0000	0.00
	Subtotal	2.6620	0.0000	
Port	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Airport	Facilities	16.9940	0.0585	0.34
	Runways	285.5353	0.0000	0.00
	Subtotal	302.5293	0.0585	
Total		7,937.55	0.08	

Table 13: Utility System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	119.8800	0.0199	0.02
	Distribution Lines	444.5393	0.0000	0.00
	Subtotal	564.4193	0.0199	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	2430.1462	0.0000	0.00
	Distribution Lines	266.7236	0.0000	0.00
	Subtotal	2696.8698	0.0000	
Natural Gas	Pipelines	44.6761	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	177.8157	0.0000	0.00
	Subtotal	222.4918	0.0000	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Electrical Power	Facilities	891.3368	0.0000	0.00
	Subtotal	891.3368	0.0000	
Communication	Facilities	1.9800	0.0000	0.00
	Subtotal	1.9800	0.0000	
	Total	4,377.10	0.02	



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Appendix A: County Listing for the Region

Cherokee,AL

Cullman,AL

DeKalb,AL

Etowah,AL

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Alabama	Cherokee	25,989	2,084	652	2,736
	Cullman	80,406	5,181	2,070	7,252
	DeKalb	71,109	3,872	1,964	5,836
	Etowah	104,430	7,175	2,626	9,802
Total Region		281,934	18,312	7,312	25,626



RiskMAP
Increasing Resilience Together

Hazus: Hurricane Global Risk Report

Region Name: DIVISION_F_Area

Hurricane Scenario: OPAL

Print Date: Sunday, July 12, 2020

Disclaimer:

*This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.*

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Hurricane. These results can be improved by using enhanced inventory data.



Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Hurricane Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Hurricane Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11



General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The hurricane loss estimates provided in this report are based on a region that includes 4 county(ies) from the following state(s):

- Alabama

Note:

Appendix A contains a complete listing of the counties contained in the region .

The geographical size of the region is 2,682.30 square miles and contains 68 census tracts. There are over 111 thousand households in the region and a total population of 281,934 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B .

There are an estimated 133 thousand buildings in the region with a total building replacement value (excluding contents) of 25,628 million dollars (2014 dollars). Approximately 92% of the buildings (and 71% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

Hazus estimates that there are 133,244 buildings in the region which have an aggregate total replacement value of 25,628 million (2014 dollars). Table 1 presents the relative distribution of the value with respect to the general occupancies. Appendix B provides a general distribution of the building value by State and County.

Building Exposure by Occupancy Type

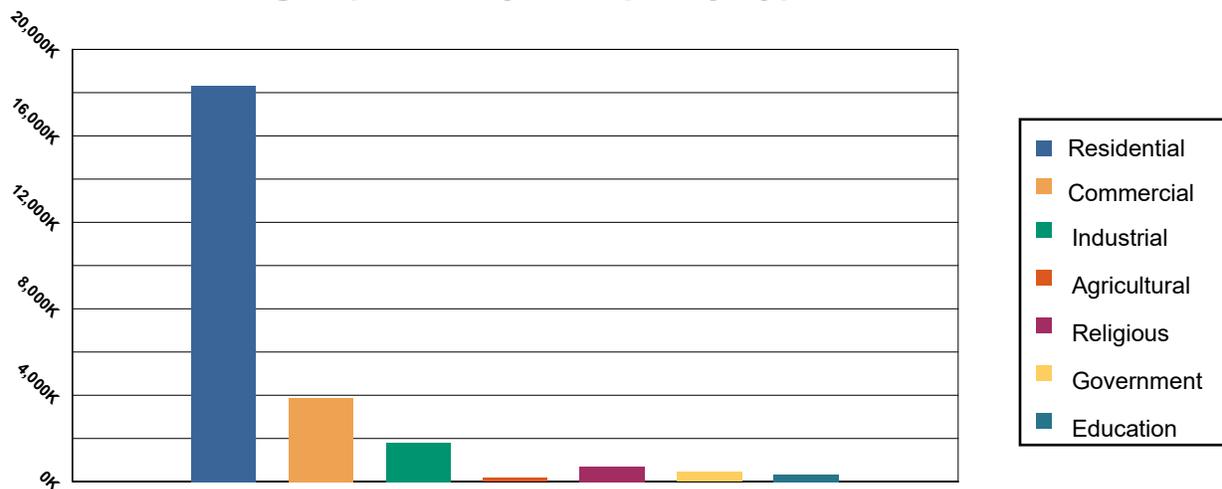


Table 1: Building Exposure by Occupancy Type

Occupancy	Exposure (\$1000)	Percent of Tot
Residential	18,313,306	71.46%
Commercial	3,872,237	15.11%
Industrial	1,799,758	7.02%
Agricultural	165,881	0.65%
Religious	699,825	2.73%
Government	457,999	1.79%
Education	318,662	1.24%
Total	25,627,668	100.00%

Essential Facility Inventory

For essential facilities, there are 9 hospitals in the region with a total bed capacity of 1,118 beds. There are 126 schools, 138 fire stations, 37 police stations and 5 emergency operation facilities.



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Hurricane Scenario

Hazus used the following set of information to define the hurricane parameters for the hurricane loss estimate provided in this report.

Scenario Name:	OPAL
Type:	Historic
Max Peak Gust in Study Region:	84 mph

Building Damage

General Building Stock Damage

Hazus estimates that about 56 buildings will be at least moderately damaged. This is over 0% of the total number of buildings in the region. There are an estimated 2 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Hurricane technical manual. Table 2 below summarizes the expected damage by general occupancy for the buildings in the region. Table 3 summarizes the expected damage by general building type.

Expected Building Damage by Occupancy

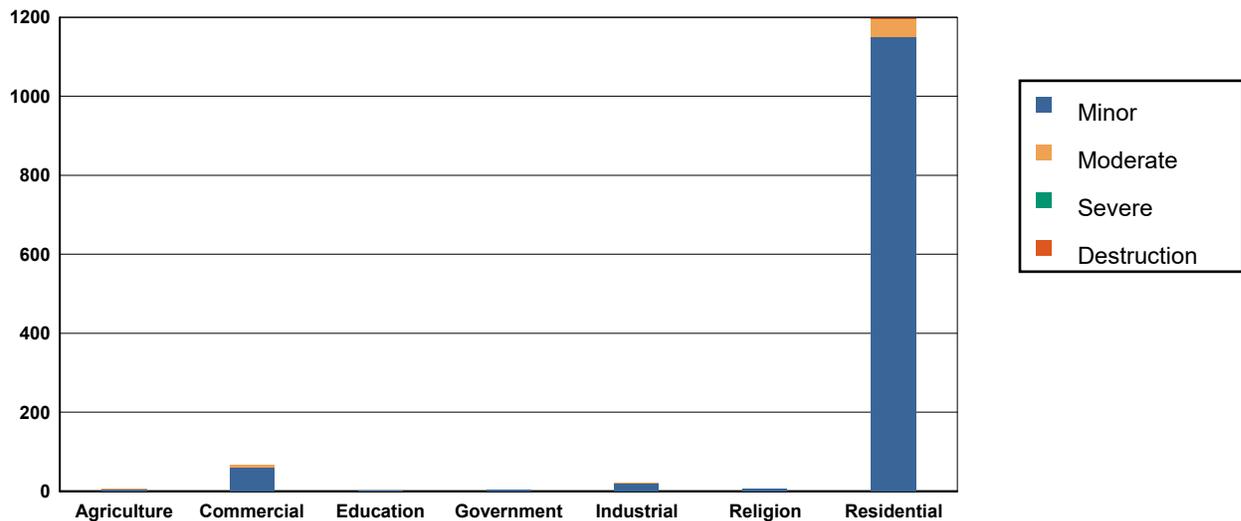


Table 2: Expected Building Damage by Occupancy

Occupancy	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	598.05	98.85	6.01	0.99	0.72	0.12	0.21	0.03	0.01	0.00
Commercial	6,158.96	98.94	60.20	0.97	5.69	0.09	0.15	0.00	0.00	0.00
Education	181.48	99.17	1.48	0.81	0.04	0.02	0.00	0.00	0.00	0.00
Government	395.91	99.23	3.02	0.76	0.07	0.02	0.00	0.00	0.00	0.00
Industrial	1,874.52	98.92	19.02	1.00	1.19	0.06	0.25	0.01	0.01	0.00
Religion	806.06	99.15	6.64	0.82	0.29	0.04	0.02	0.00	0.00	0.00
Residential	121,927.77	99.03	1,149.20	0.93	44.78	0.04	0.09	0.00	2.16	0.00
Total	131,942.75		1,245.58		52.78		0.71		2.18	



Table 3: Expected Building Damage by Building Type

Building Type	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	277	98.85	3	1.11	0	0.04	0	0.00	0	0.00
Masonry	4,598	98.91	46	0.98	5	0.10	0	0.01	0	0.00
MH	26,128	99.89	21	0.08	6	0.02	0	0.00	2	0.01
Steel	3,470	98.96	34	0.97	2	0.07	0	0.00	0	0.00
Wood	91,050	98.88	1,002	1.09	30	0.03	0	0.00	0	0.00



Essential Facility Damage

Before the hurricane, the region had no hospital beds available for use. On the day of the hurricane, the model estimates that 1118 hospital beds (0%) are available for use by patients already in the hospital and those injured by the hurricane. After one week, none of the beds will be in service. By 30 days, none will be operational.

Thematic Map of Essential Facilities with greater than 50% moderate

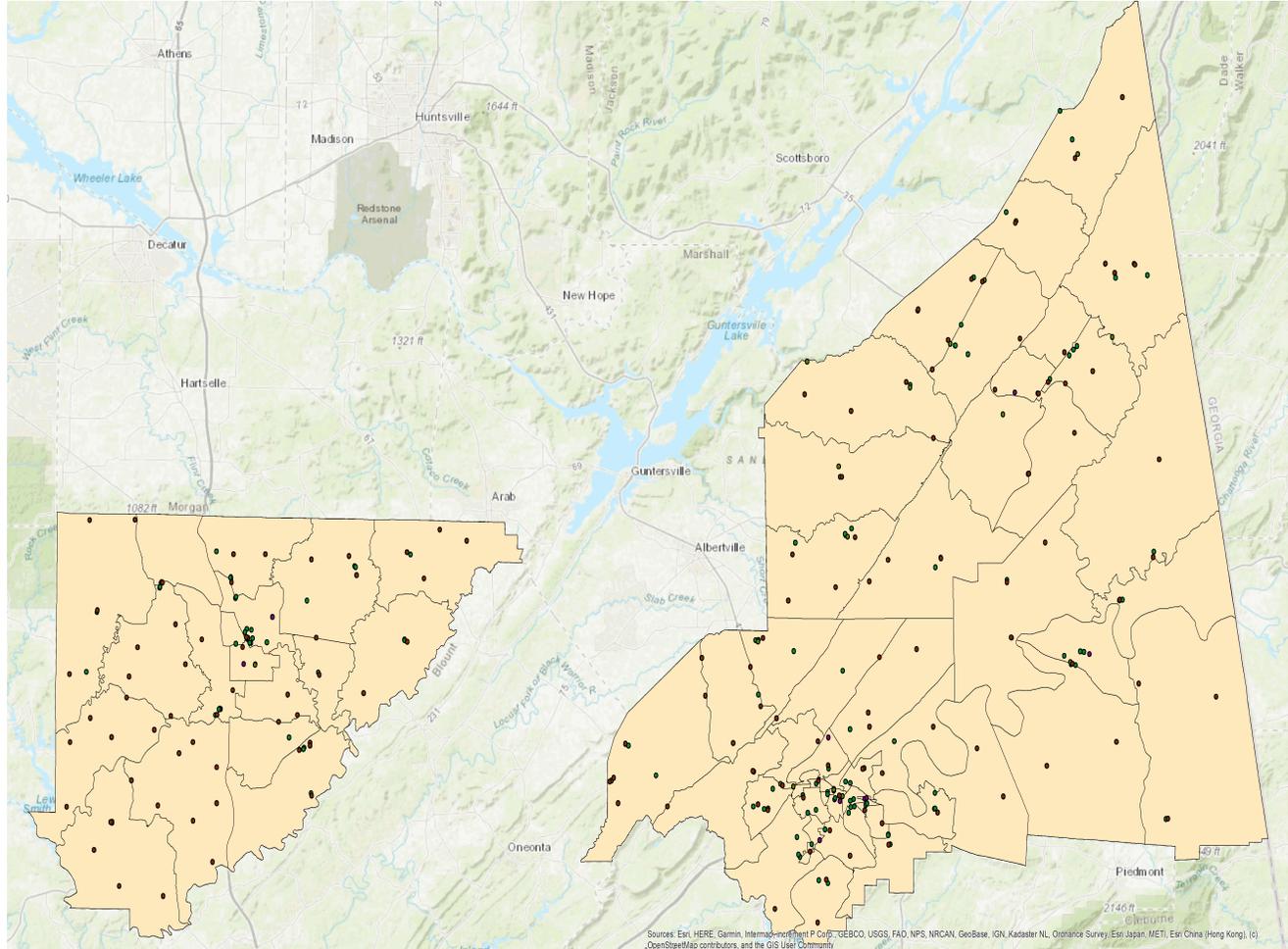


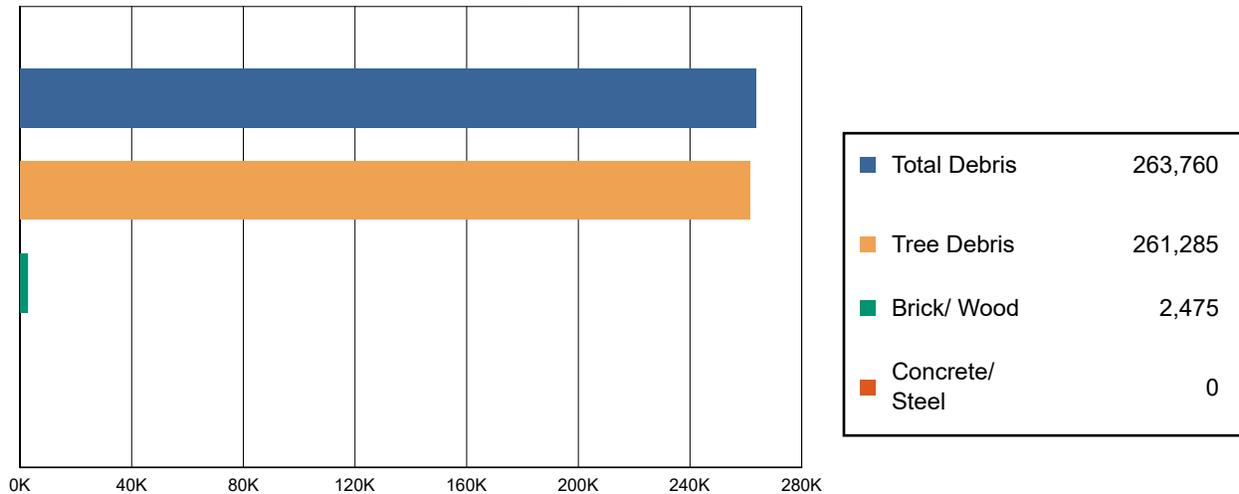
Table 4: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		Probability of at Least Moderate Damage > 50%	Probability of Complete Damage > 50%	Expected Loss of Use < 1 day
EOCs	5	0	0	5
Fire Stations	138	0	0	138
Hospitals	9	0	0	9
Police Stations	37	0	0	37
Schools	126	0	0	126

Induced Hurricane Damage

Debris Generation

Estimated Debris (Tons)

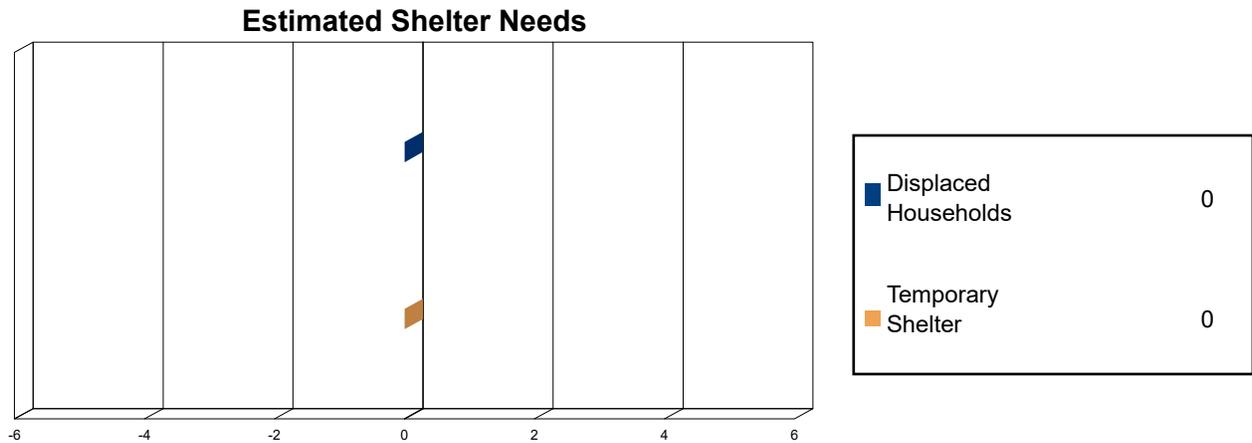


Hazus estimates the amount of debris that will be generated by the hurricane. The model breaks the debris into four general categories: a) Brick/Wood, b) Reinforced Concrete/Steel, c) Eligible Tree Debris, and d) Other Tree Debris. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 263,760 tons of debris will be generated. Of the total amount, 240,621 tons (91%) is Other Tree Debris. Of the remaining 23,139 tons, Brick/Wood comprises 11% of the total, Reinforced Concrete/Steel comprises of 0% of the total, with the remainder being Eligible Tree Debris. If the building debris tonnage is converted to an estimated number of truckloads, it will require 99 truckloads (@25 tons/truck) to remove the building debris generated by the hurricane. The number of Eligible Tree Debris truckloads will depend on how the 20,664 tons of Eligible Tree Debris are collected and processed. The volume of tree debris generally ranges from about 4 cubic yards per ton for chipped or compacted tree debris to about 10 cubic yards per ton for bulkier, uncompacted debris.

Social Impact

Shelter Requirement



Hazus estimates the number of households that are expected to be displaced from their homes due to the hurricane and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 0 households to be displaced due to the hurricane. Of these, 0 people (out of a total population of 281,934) will seek temporary shelter in public shelters.



Economic Loss

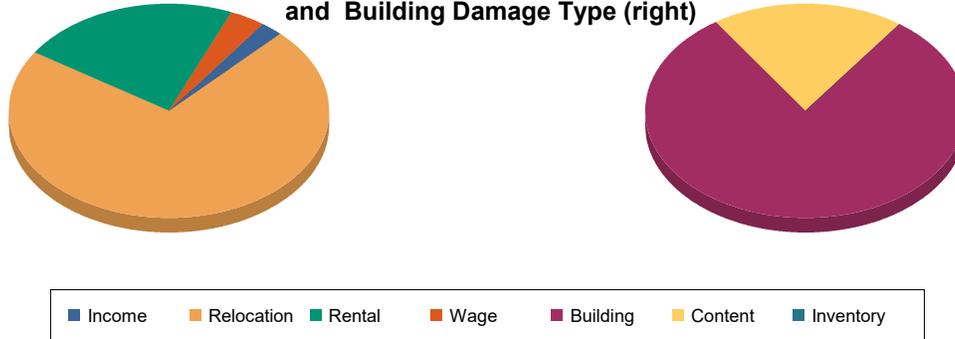
The total economic loss estimated for the hurricane is 50.8 million dollars, which represents 0.20 % of the total replacement value of the region's buildings.

Building-Related Losses

The building related losses are broken into two categories: direct property damage losses and business interruption losses. The direct property damage losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the hurricane. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the hurricane.

The total property damage losses were 51 million dollars. 4% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 96% of the total loss. Table 5 below provides a summary of the losses associated with the building damage.

Loss by Business Interruption Type (left) and Building Damage Type (right)



Loss Type by General Occupancy

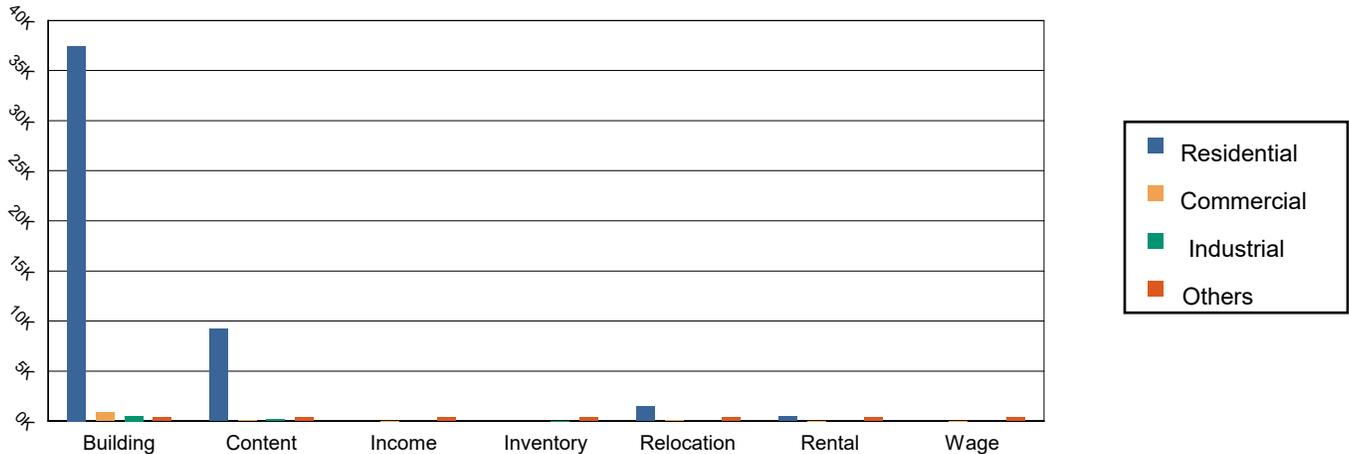


Table 5: Building-Related Economic Loss Estimates
(Thousands of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Property Damage						
	Building	37,452.37	876.55	503.28	299.32	39,131.52
	Content	9,169.02	82.36	177.95	24.34	9,453.68
	Inventory	0.00	2.07	38.51	2.37	42.95
	Subtotal	46,621.39	960.98	719.74	326.03	48,628.14
Business Interruption Loss						
	Income	0.00	45.33	0.43	2.69	48.44
	Relocation	1,476.60	58.48	3.56	19.36	1,558.00
	Rental	460.99	22.83	0.33	1.39	485.55
	Wage	0.00	23.24	0.72	53.21	77.16
	Subtotal	1,937.60	149.87	5.03	76.65	2,169.15



FEMA

Total

Total	48,558.99	1,110.85	724.78	402.68	50,797.30
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FEMA

Appendix A: County Listing for the Region

Alabama

- Cherokee
- Cullman
- DeKalb
- Etowah



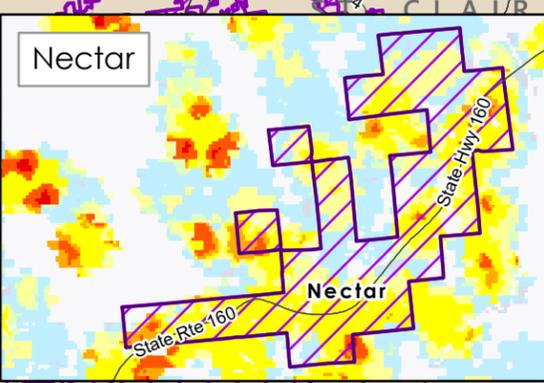
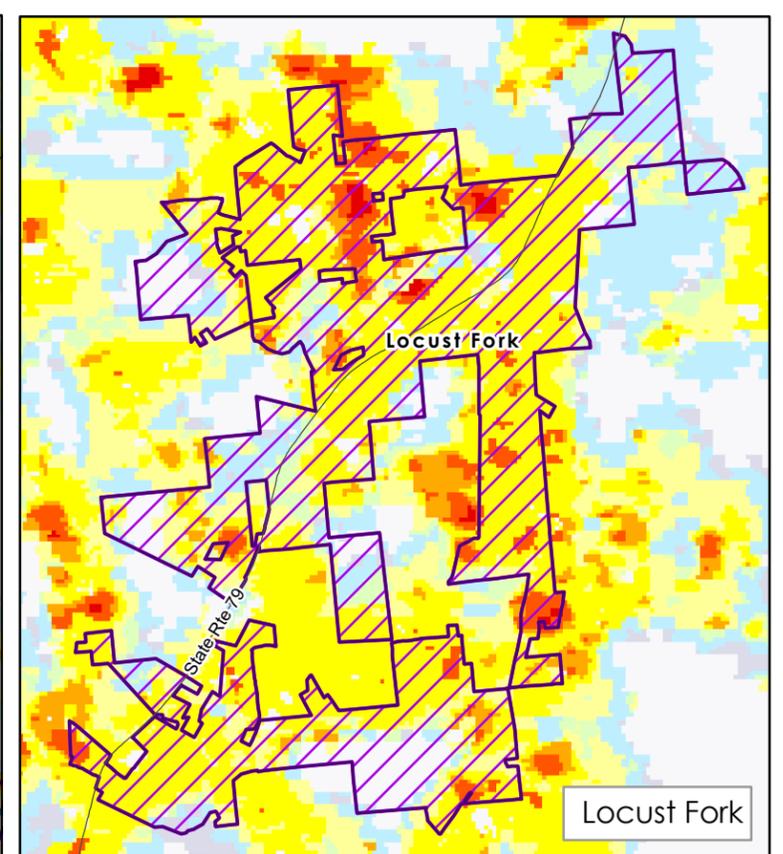
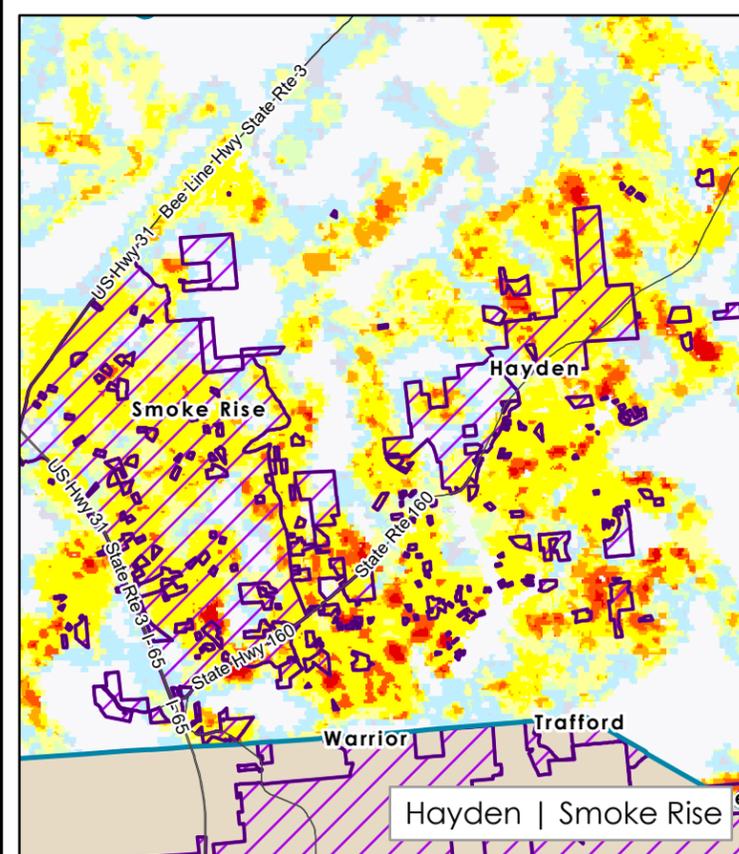
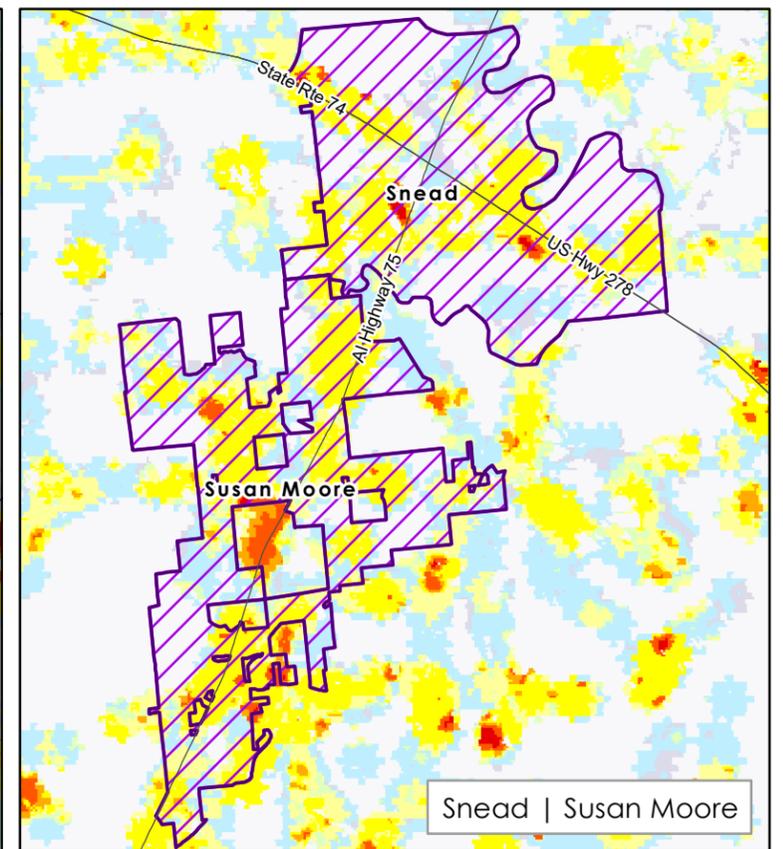
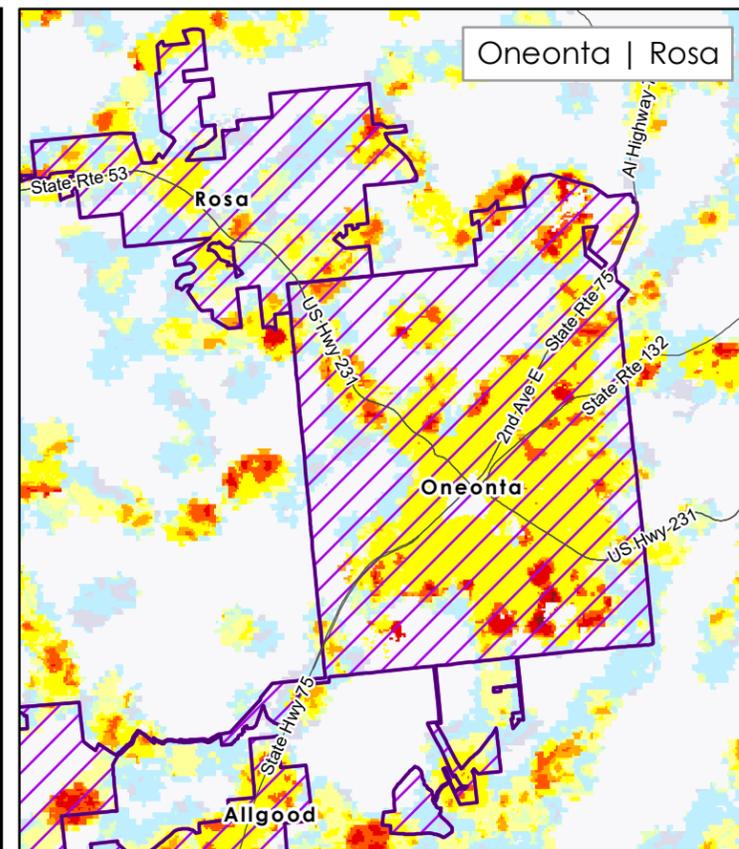
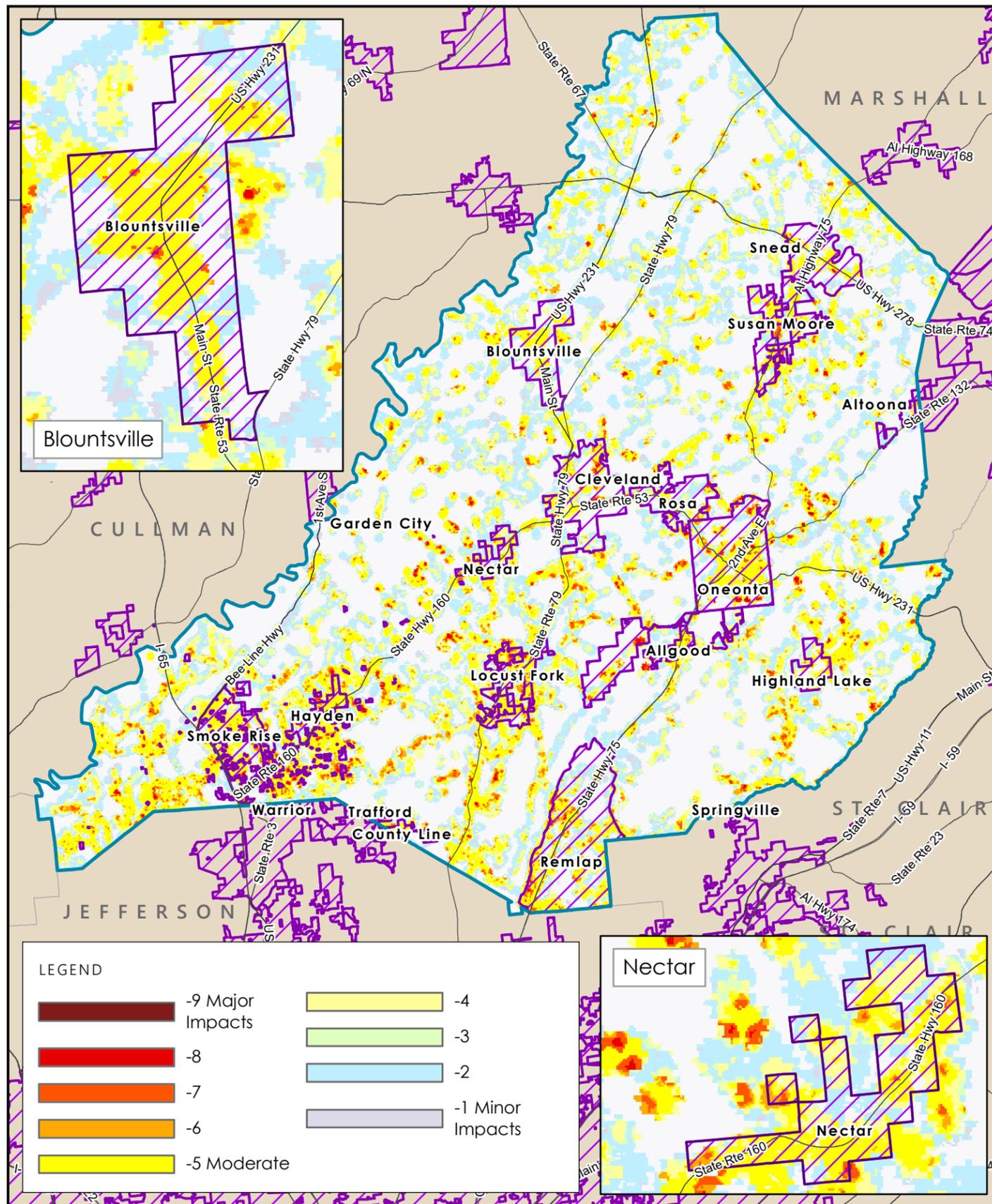
Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Alabama				
Cherokee	25,989	2,084,138	652,363	2,736,501
Cullman	80,406	5,181,389	2,070,693	7,252,082
DeKalb	71,109	3,872,024	1,964,823	5,836,847
Etowah	104,430	7,175,755	2,626,483	9,802,238
Total	281,934	18,313,306	7,314,362	25,627,668
Study Region Total	281,934	18,313,306	7,314,362	25,627,668

WILDLAND URBAN INTERFACE (WUI) RISK INDEX - WILDFIRE MAPS

SECTION 4 – HAZARD PROFILES

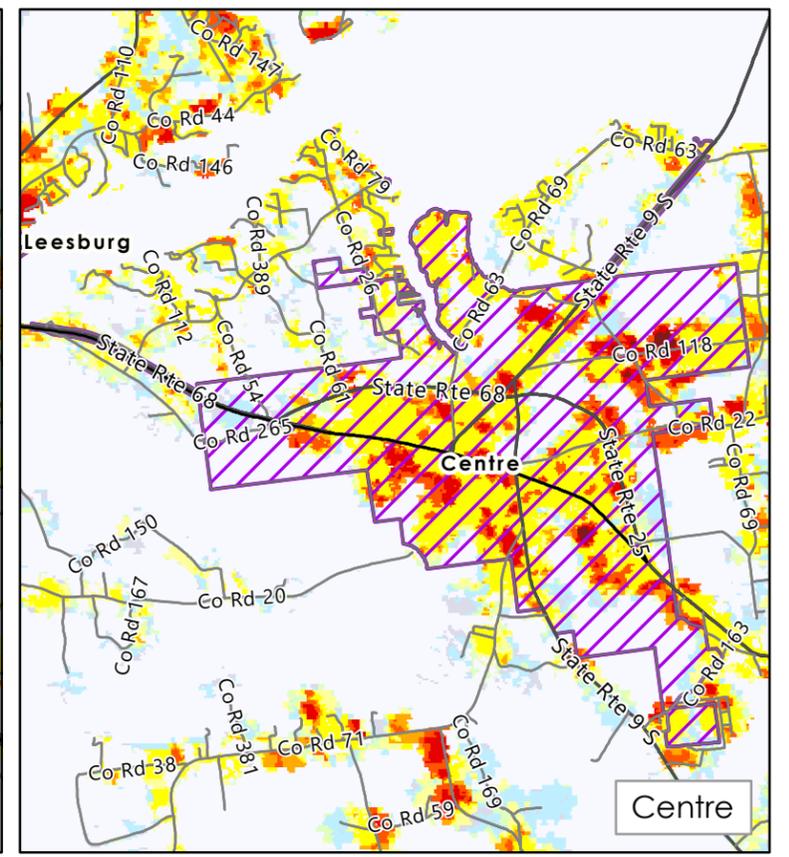
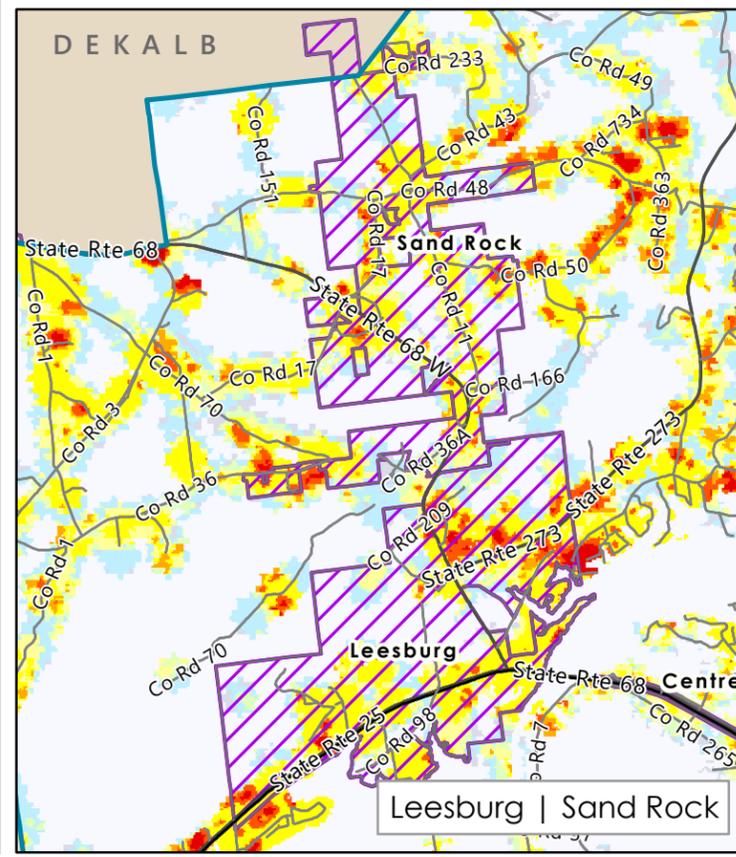
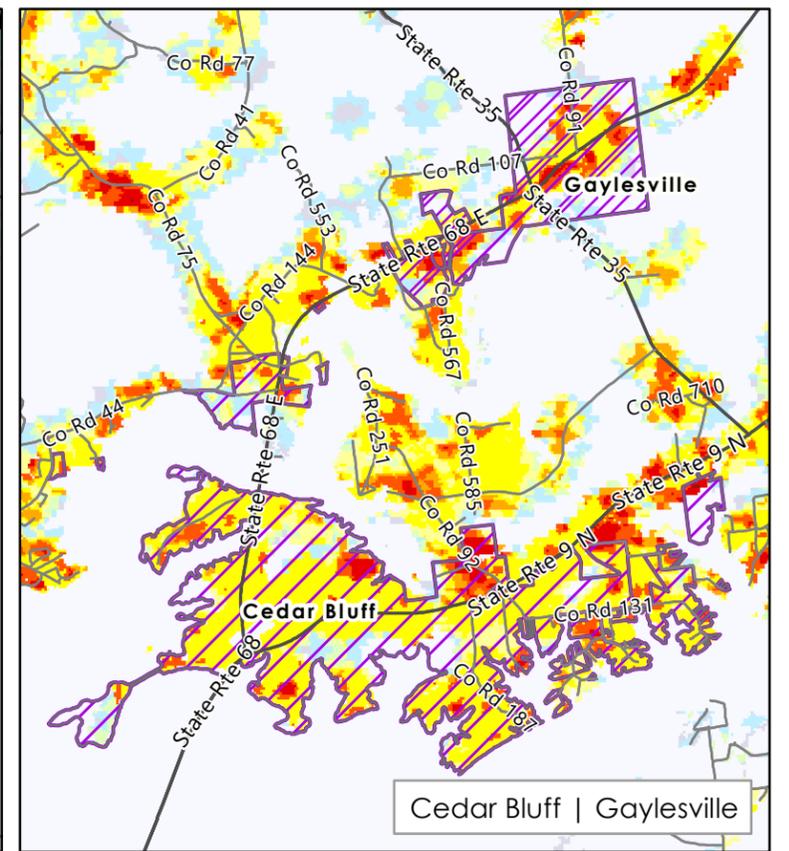
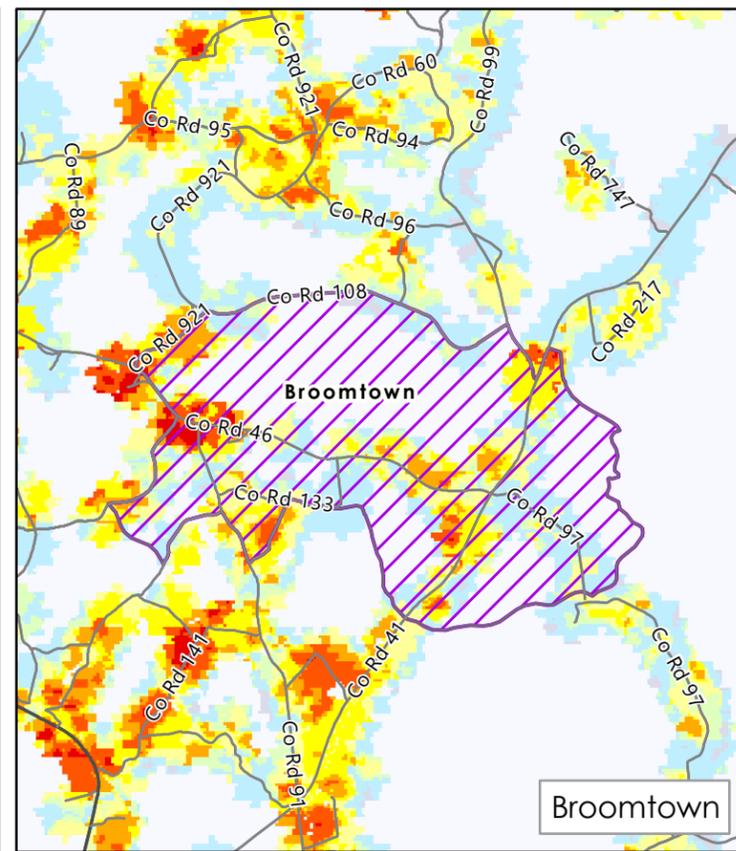
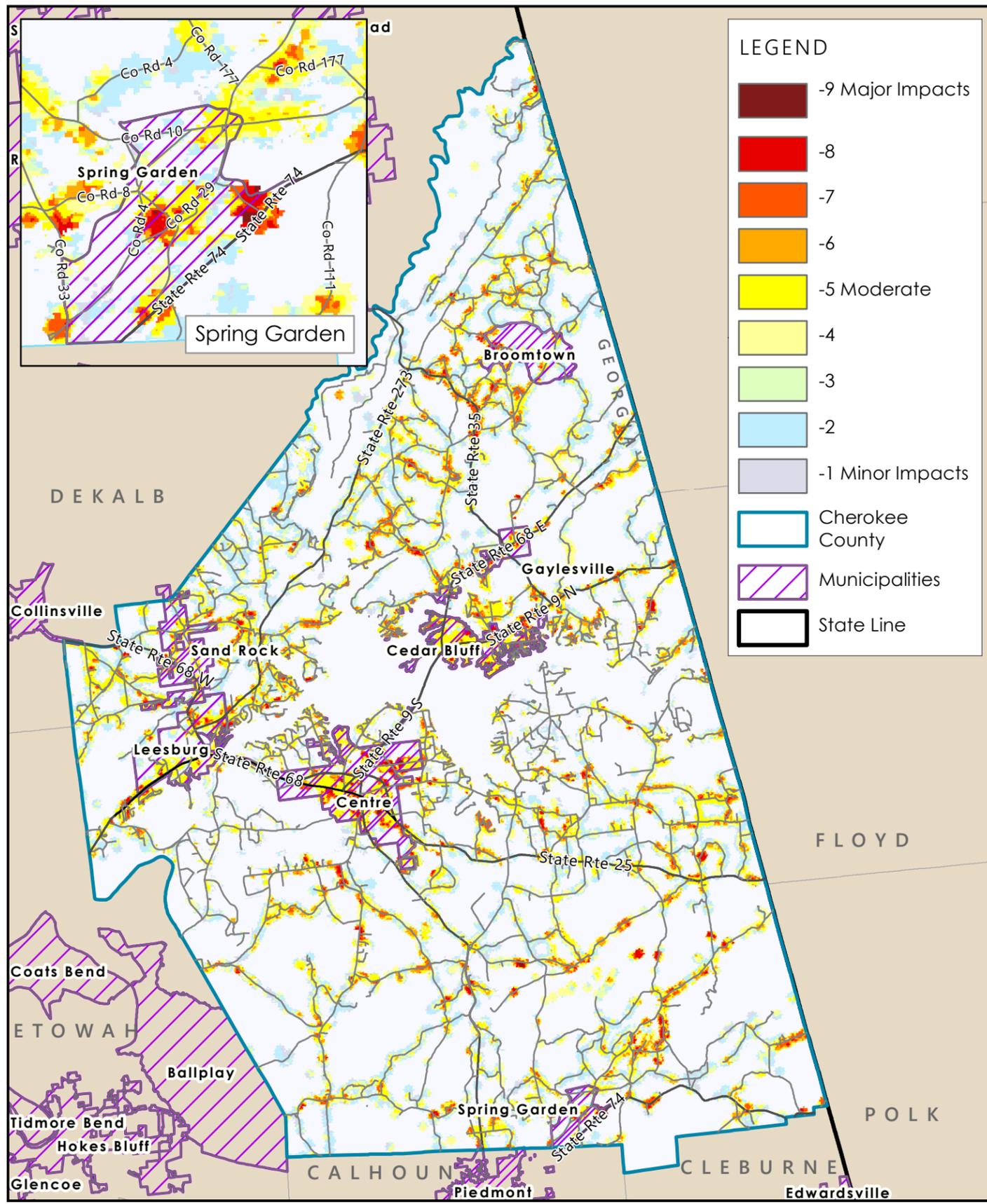
4.10 WILDFIRES



BLOUNT COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX

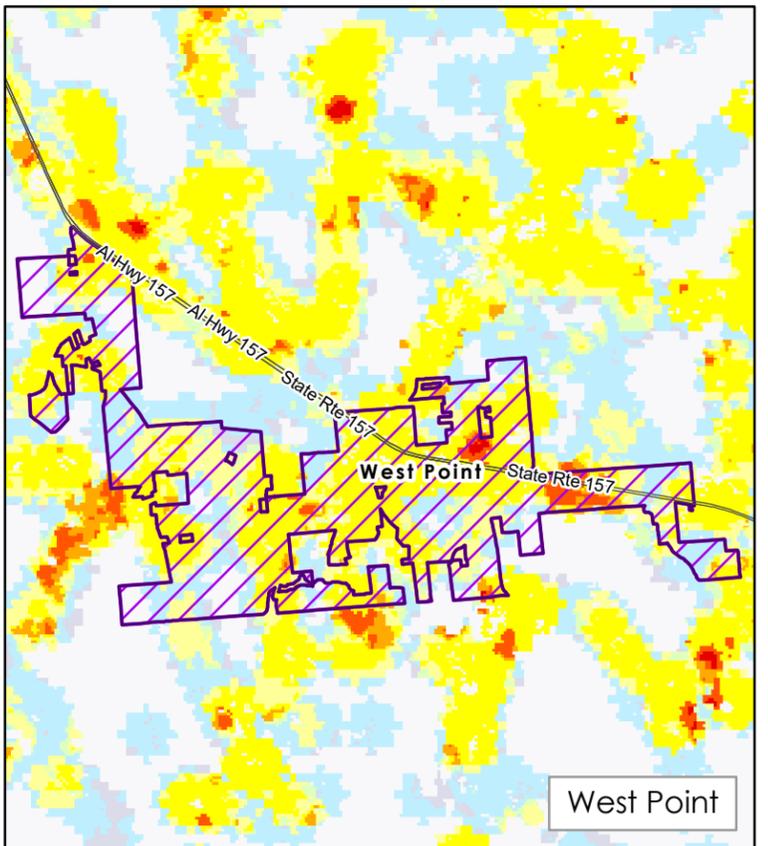
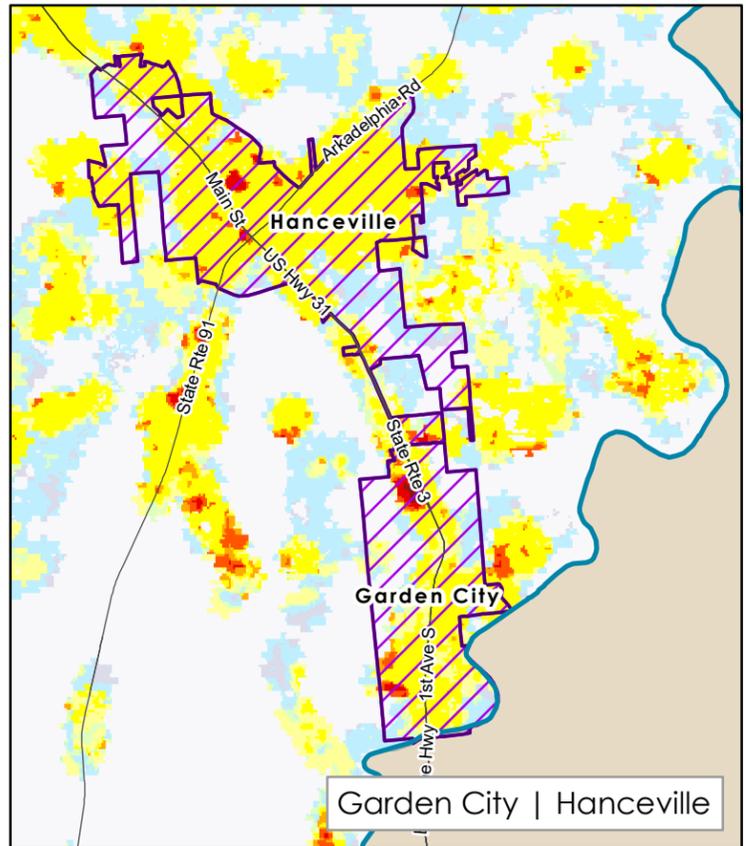
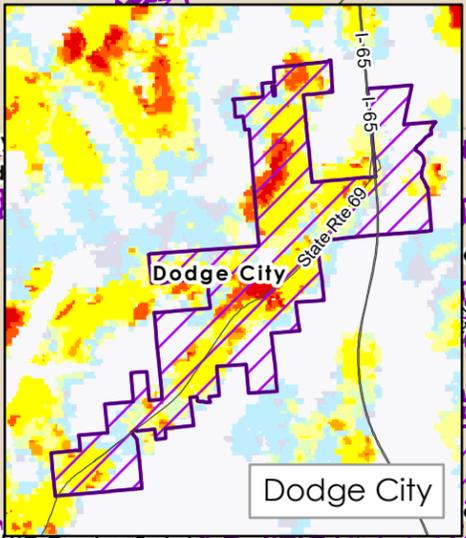
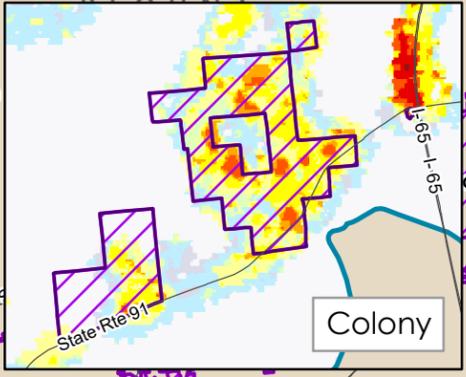
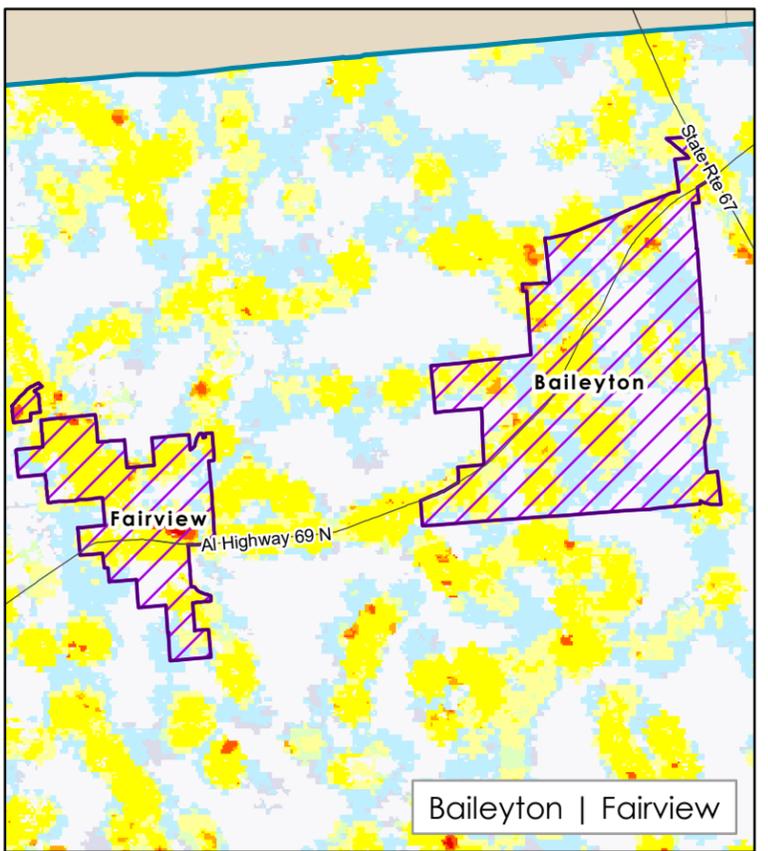
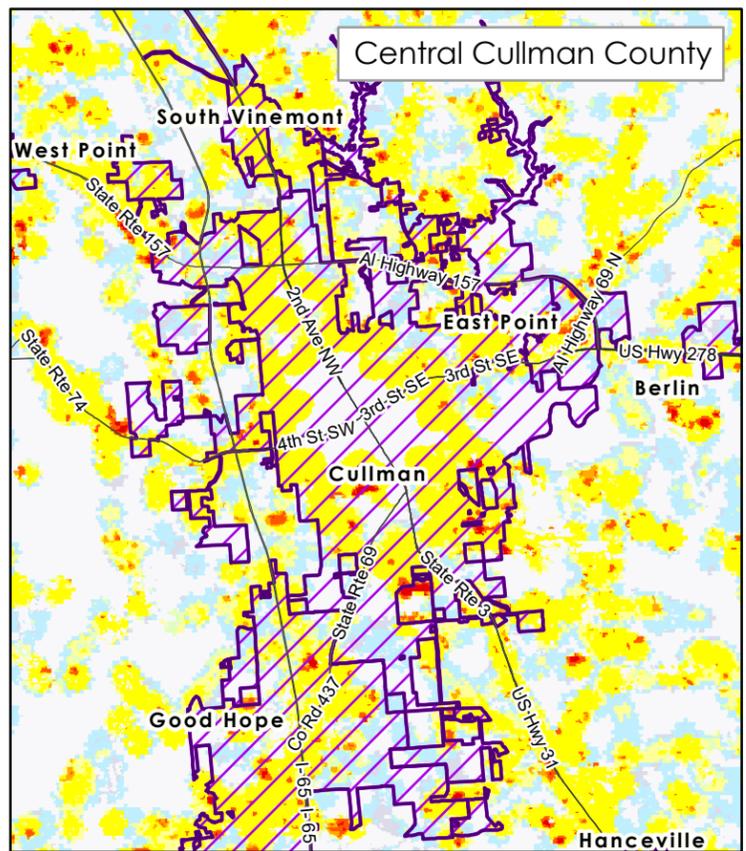
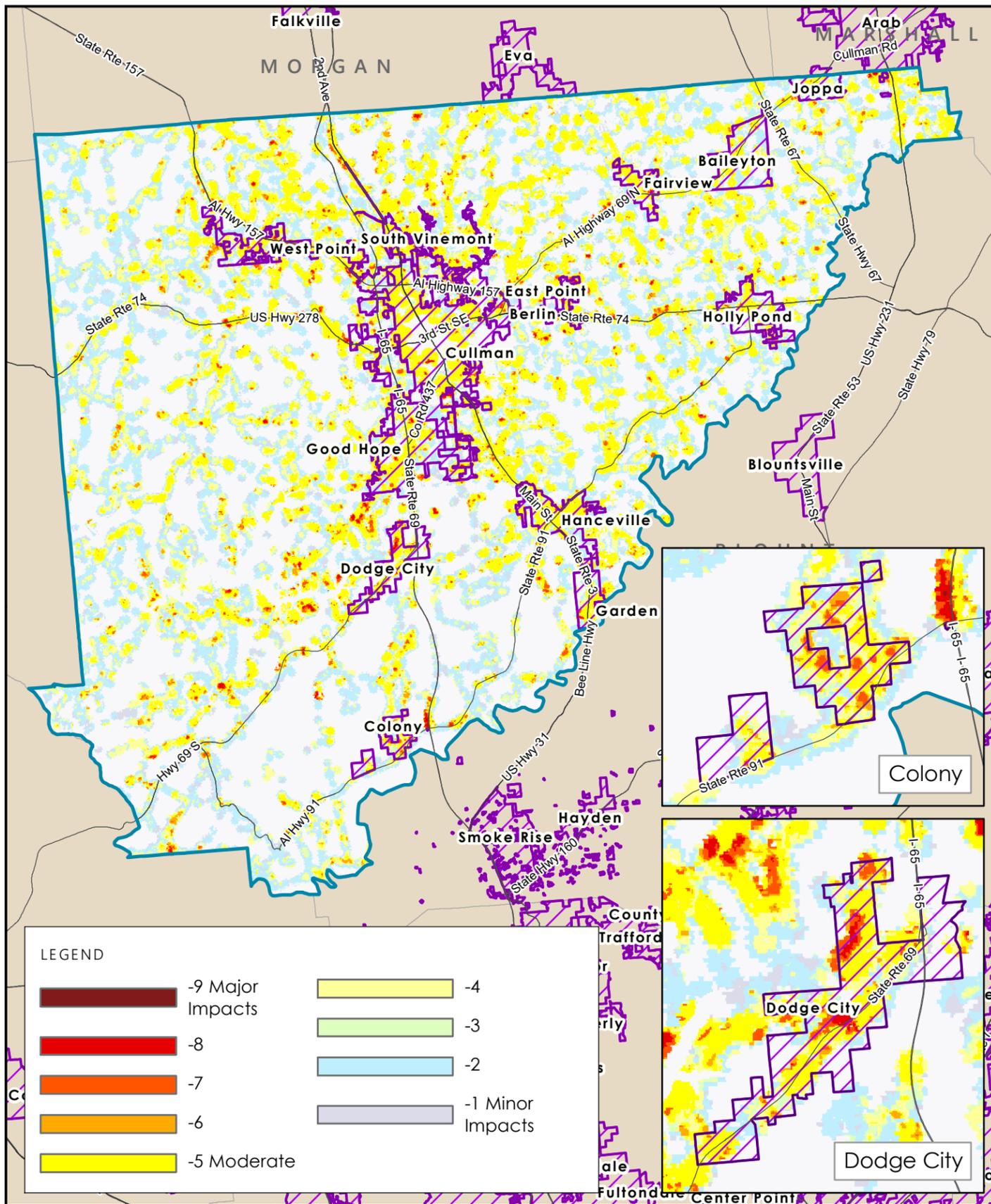
DIVISION F REGIONAL HAZARD MITIGATION PLAN





CHEROKEE COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX
 DIVISION F REGIONAL HAZARD MITIGATION PLAN

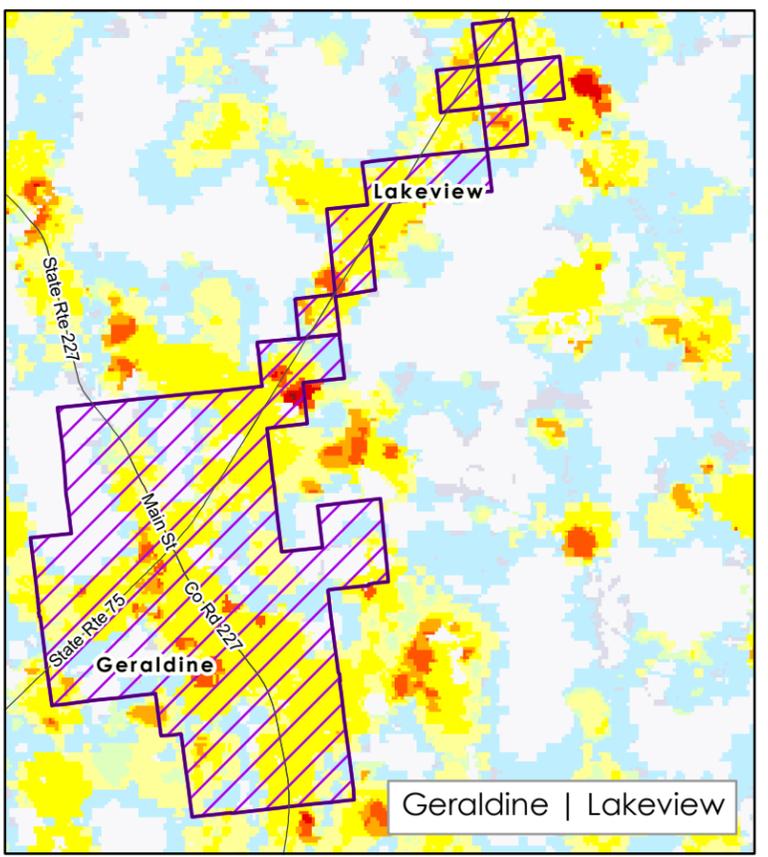
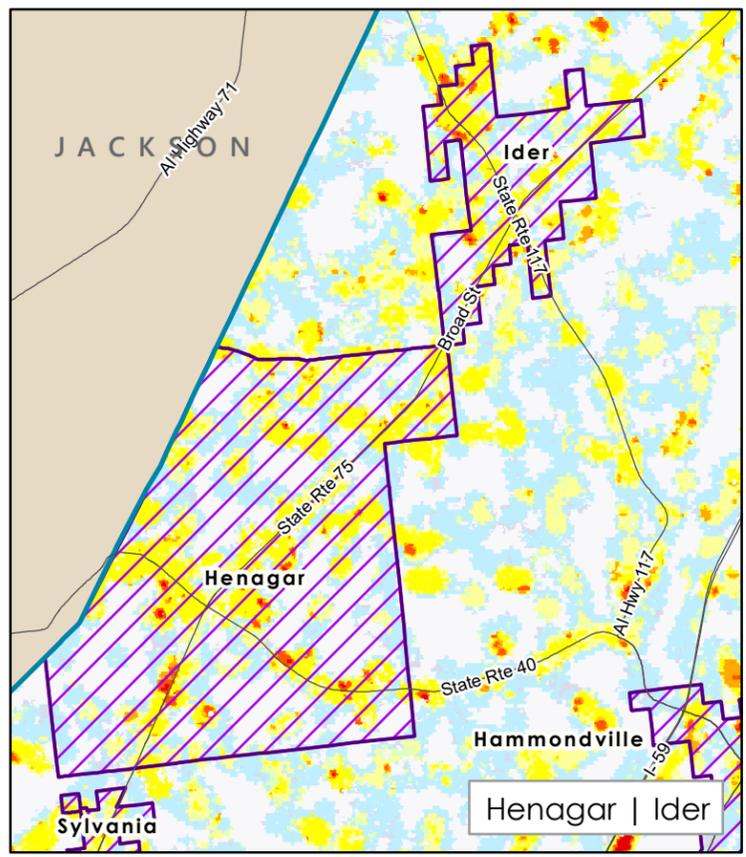
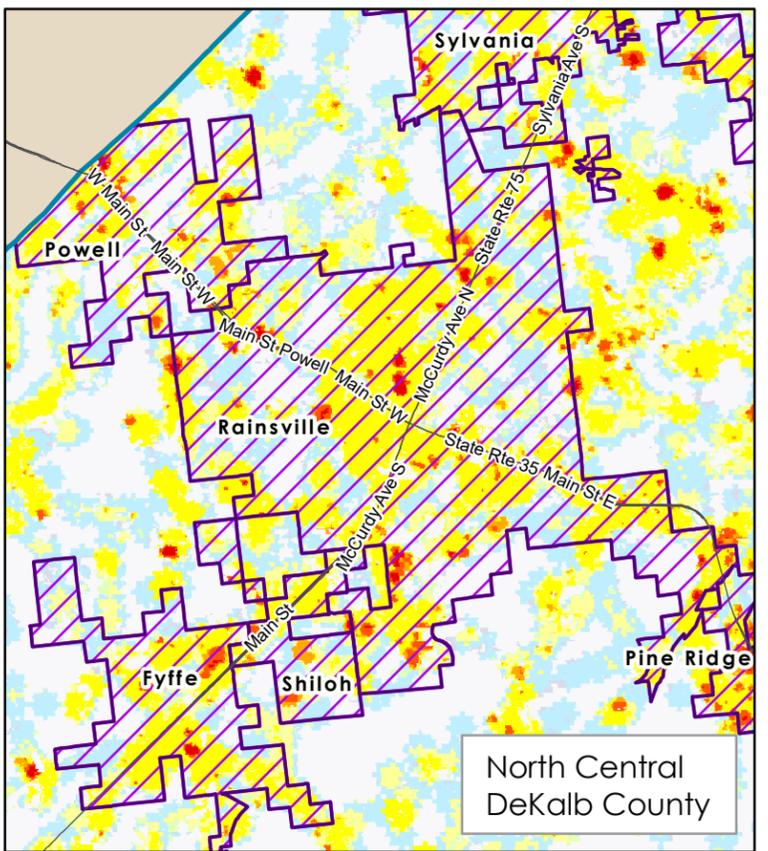
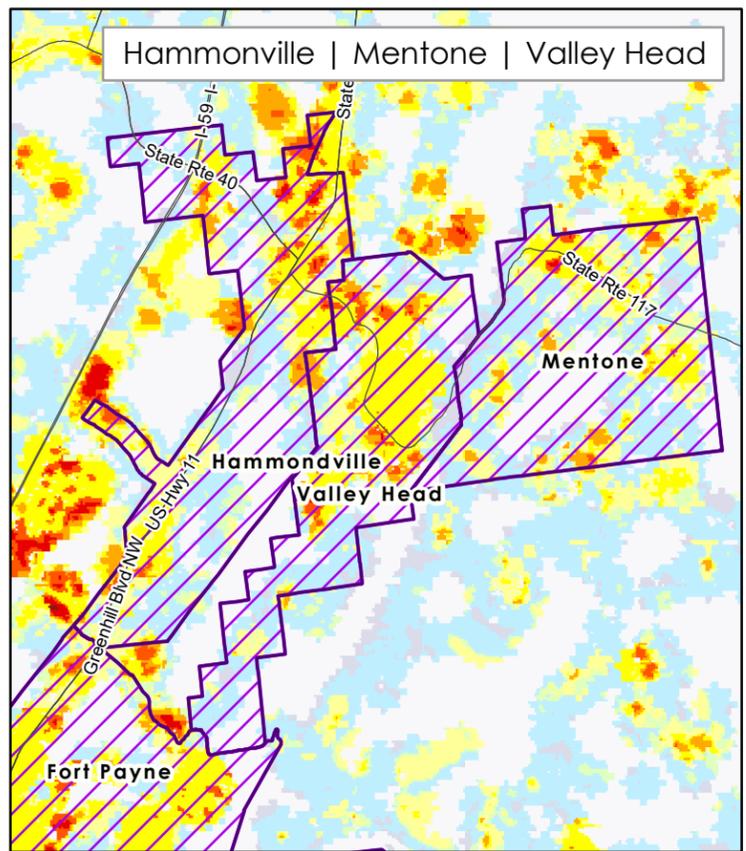
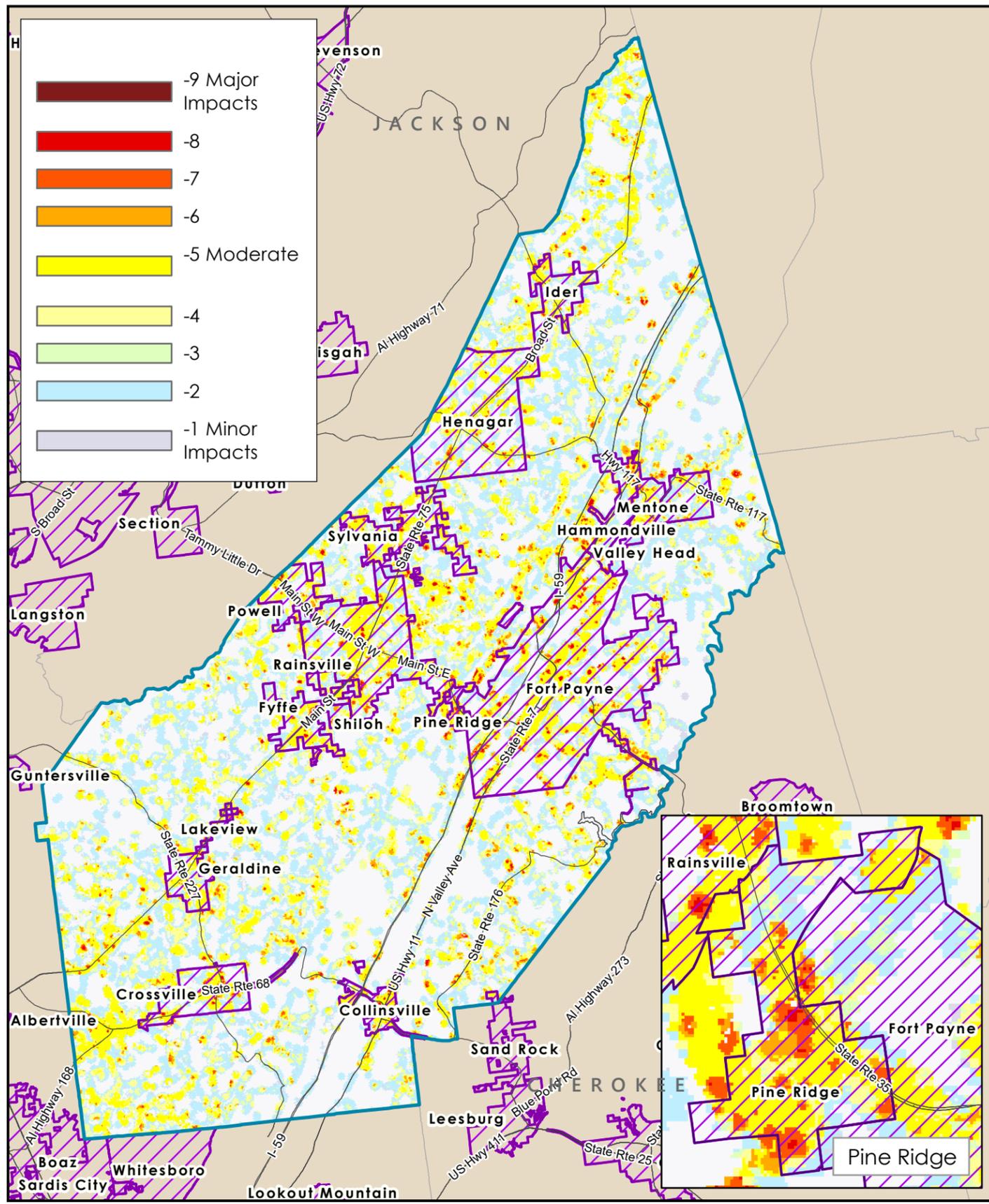




CULLMAN COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX

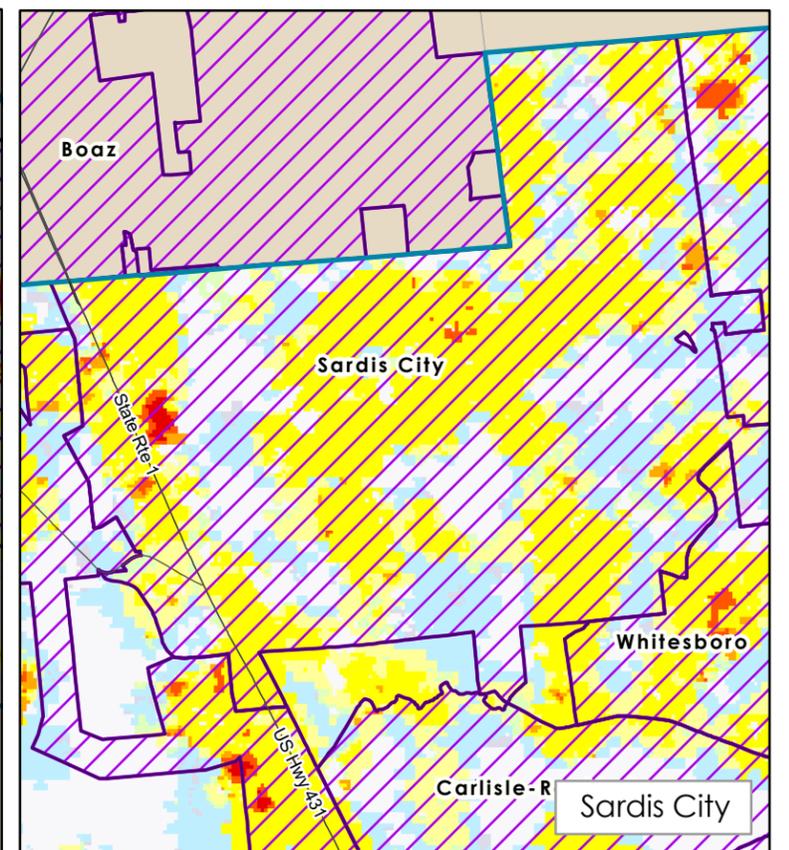
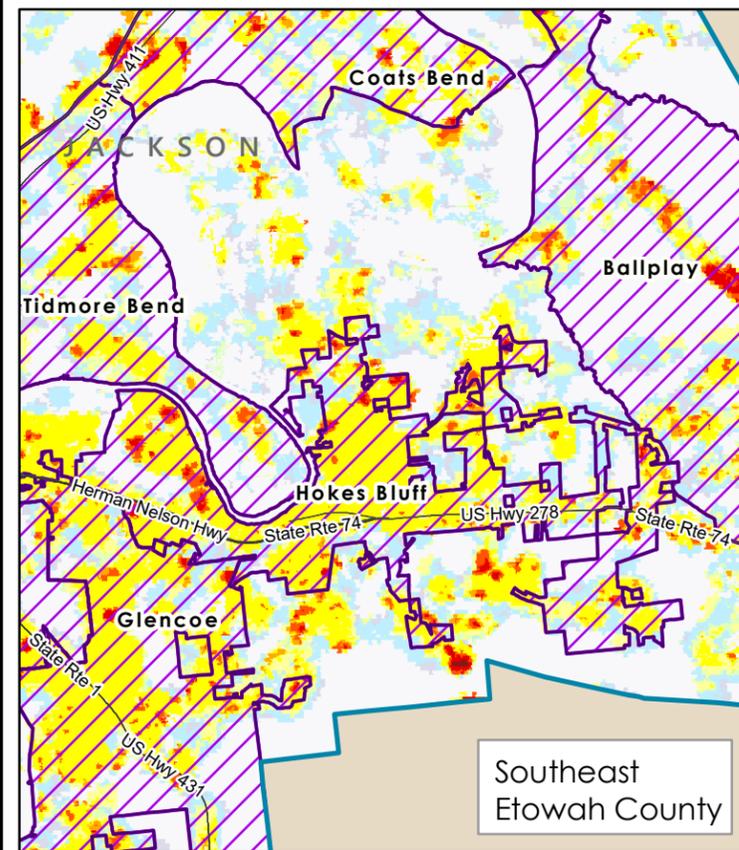
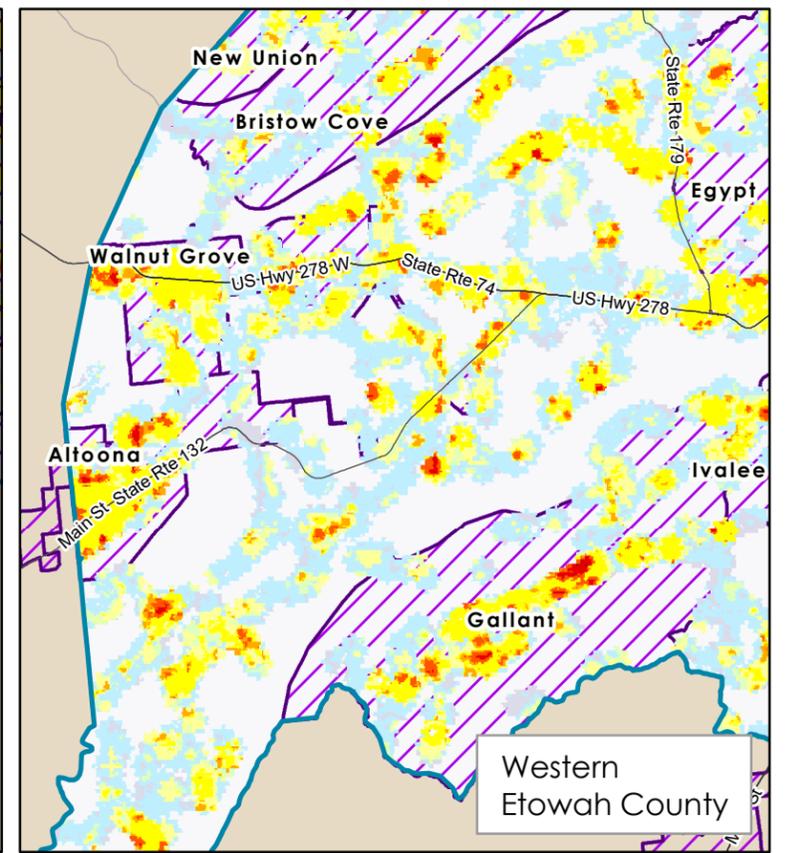
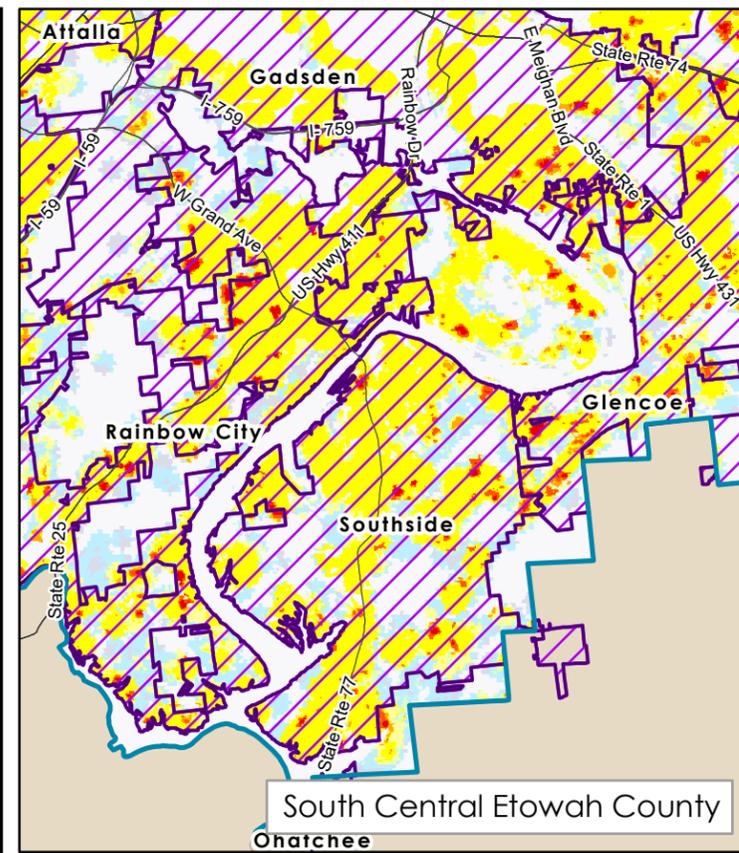
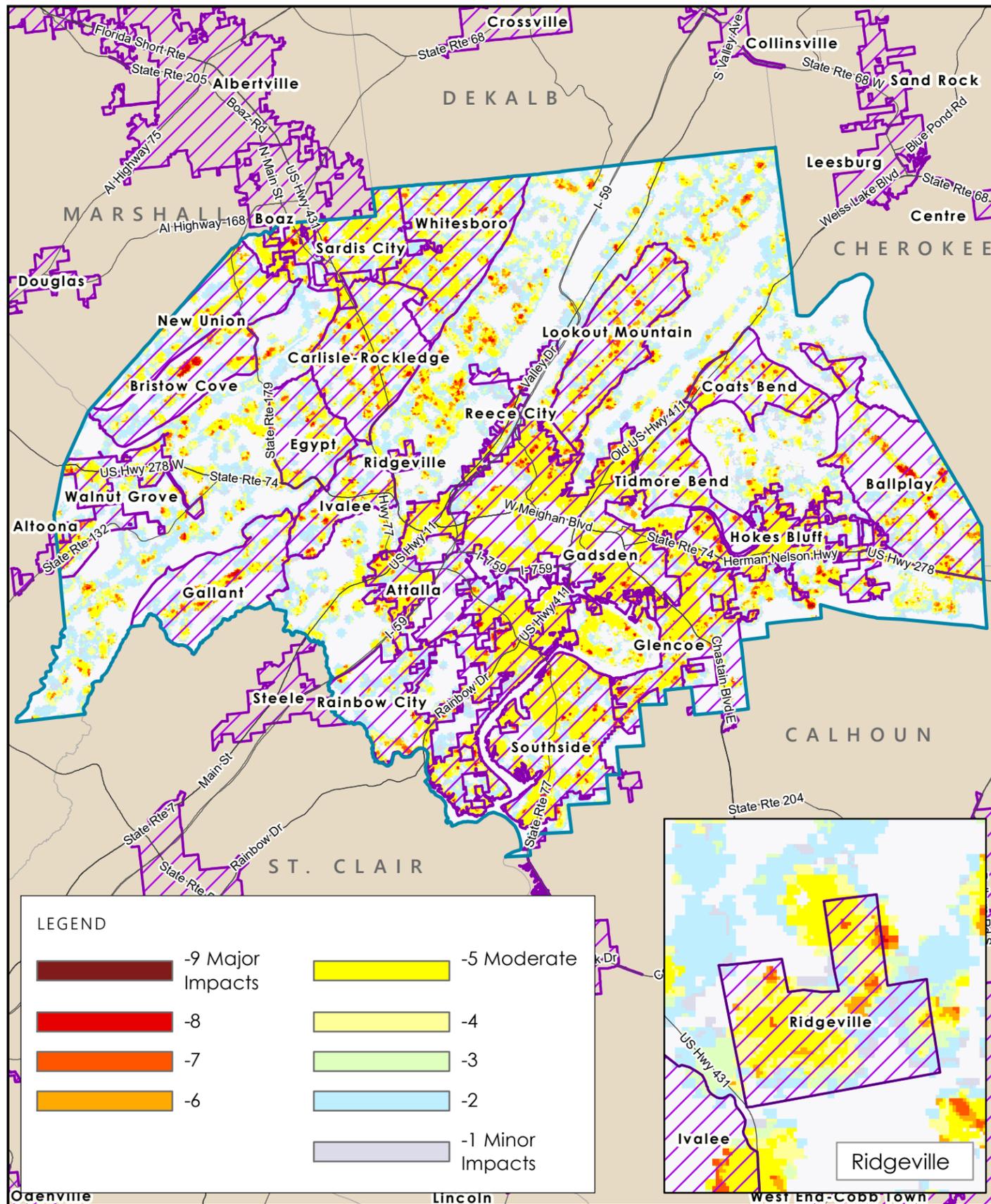
DIVISION F REGIONAL HAZARD MITIGATION PLAN





DEKALB COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX
 DIVISION F REGIONAL HAZARD MITIGATION PLAN

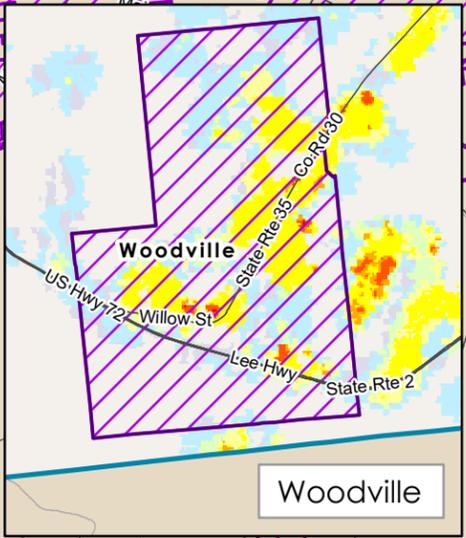
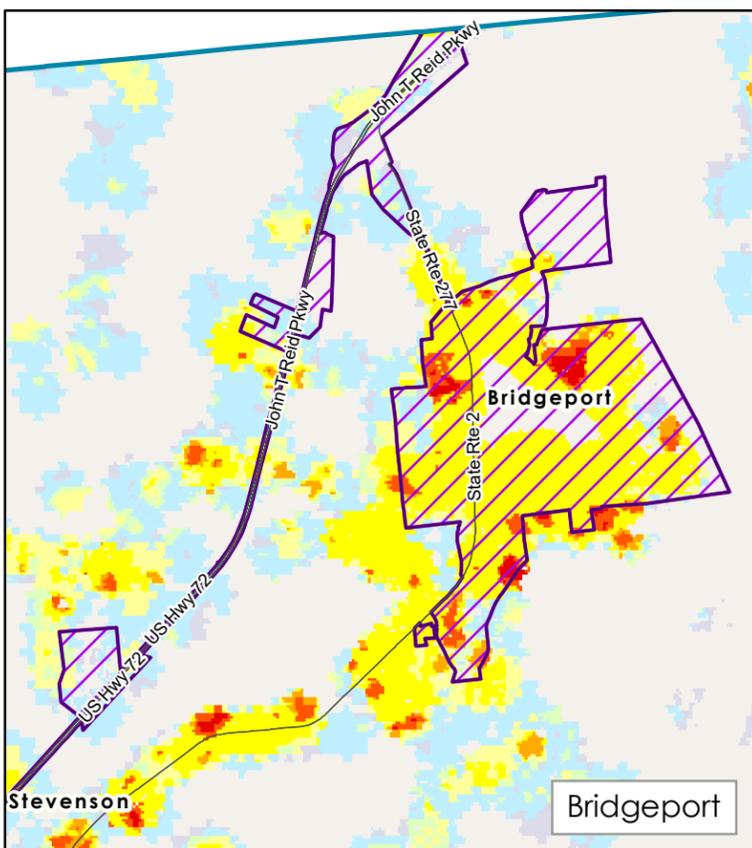
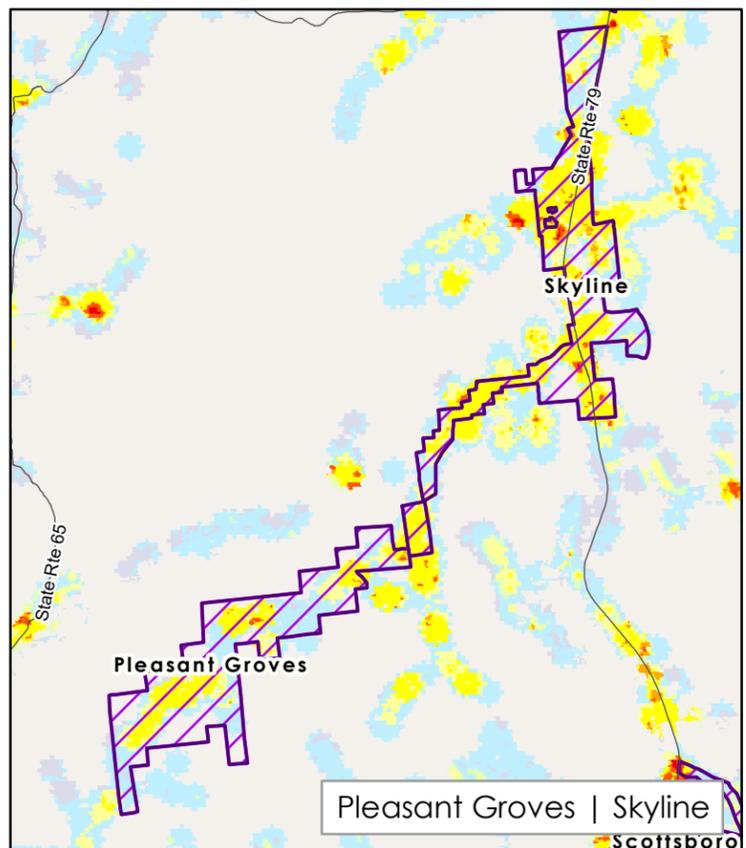
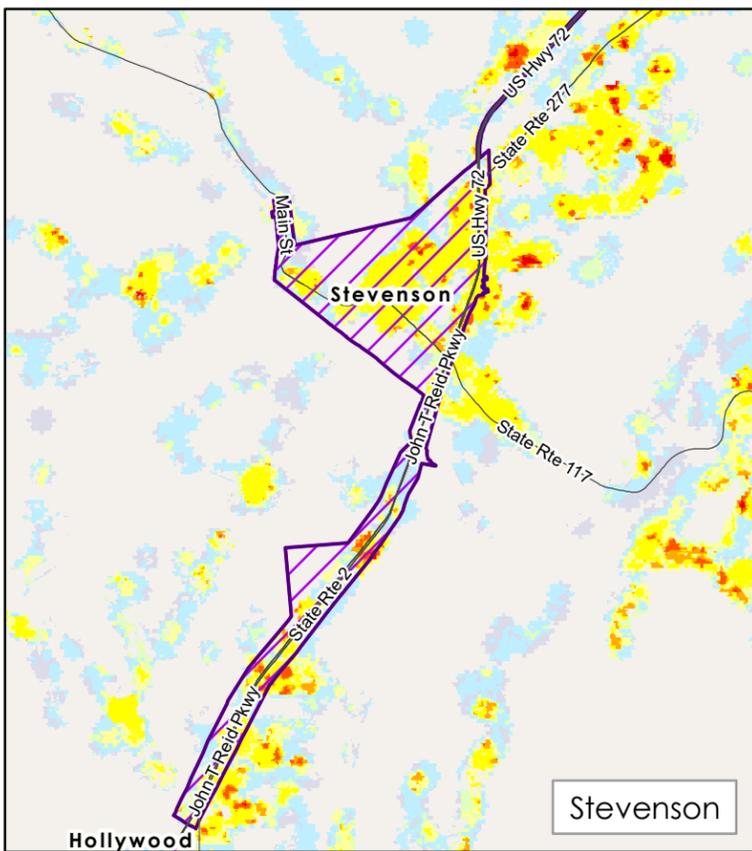
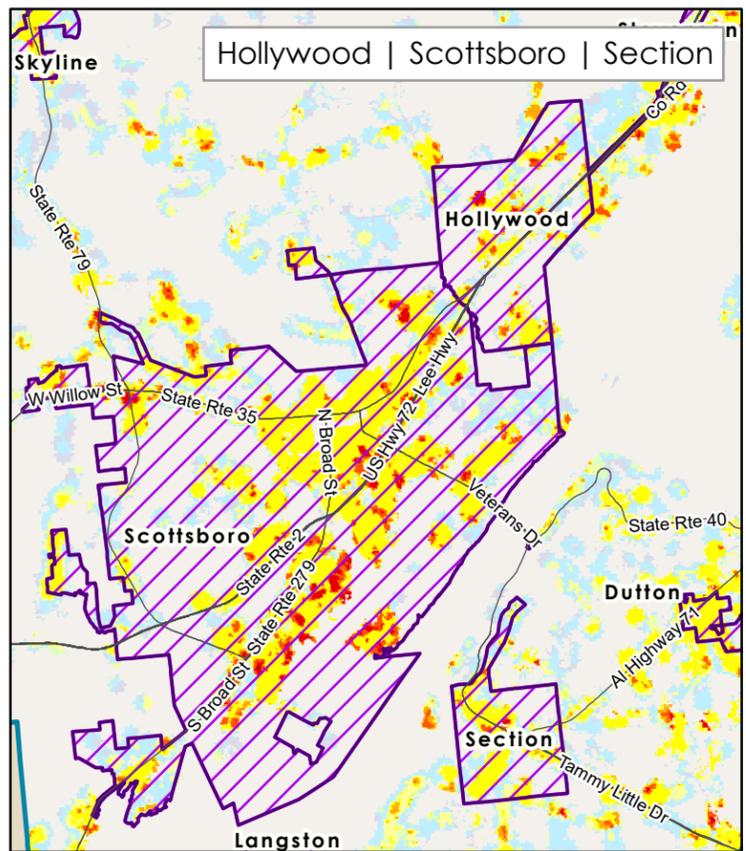
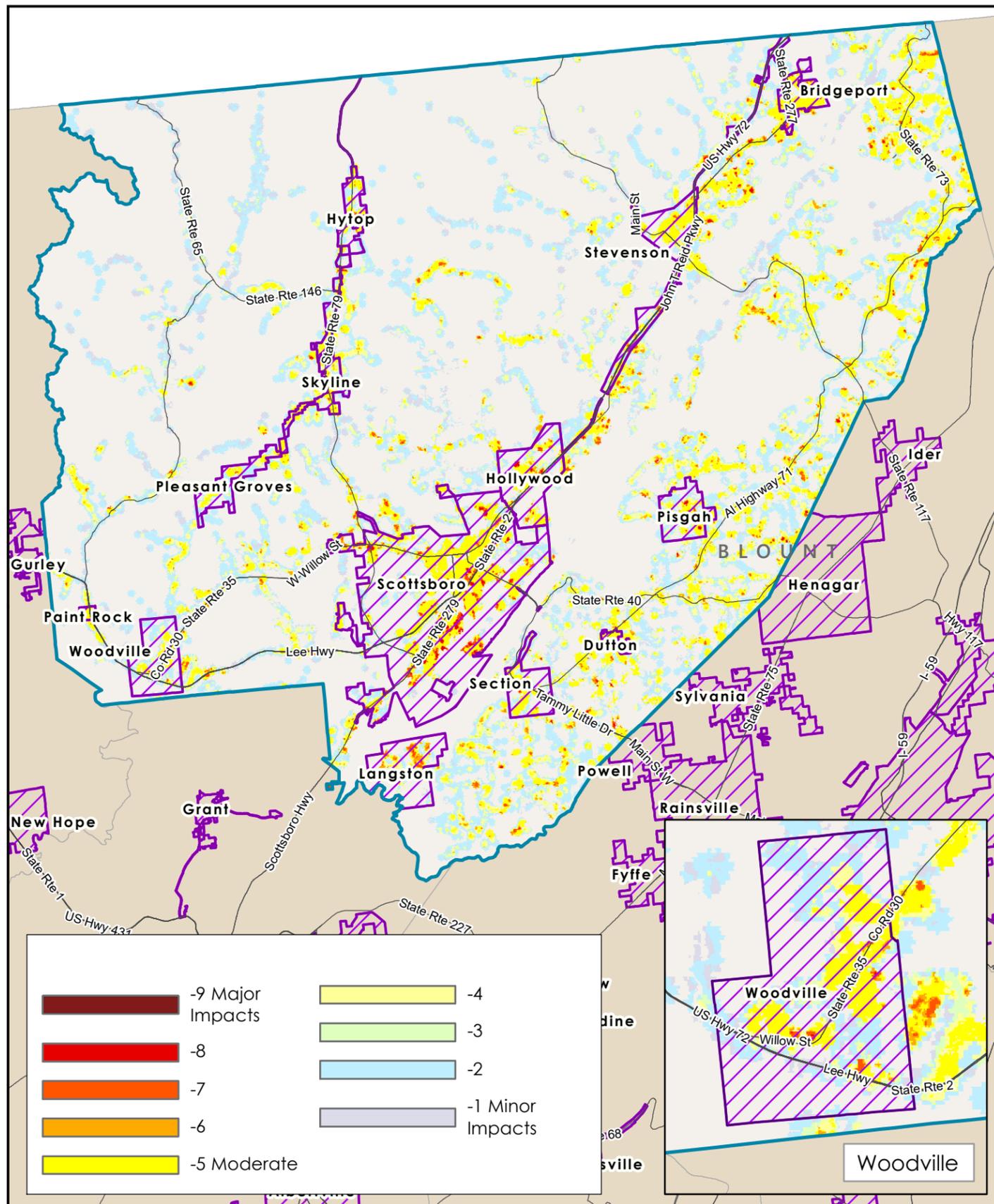




ETOWAH COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX

DIVISION F REGIONAL HAZARD MITIGATION PLAN

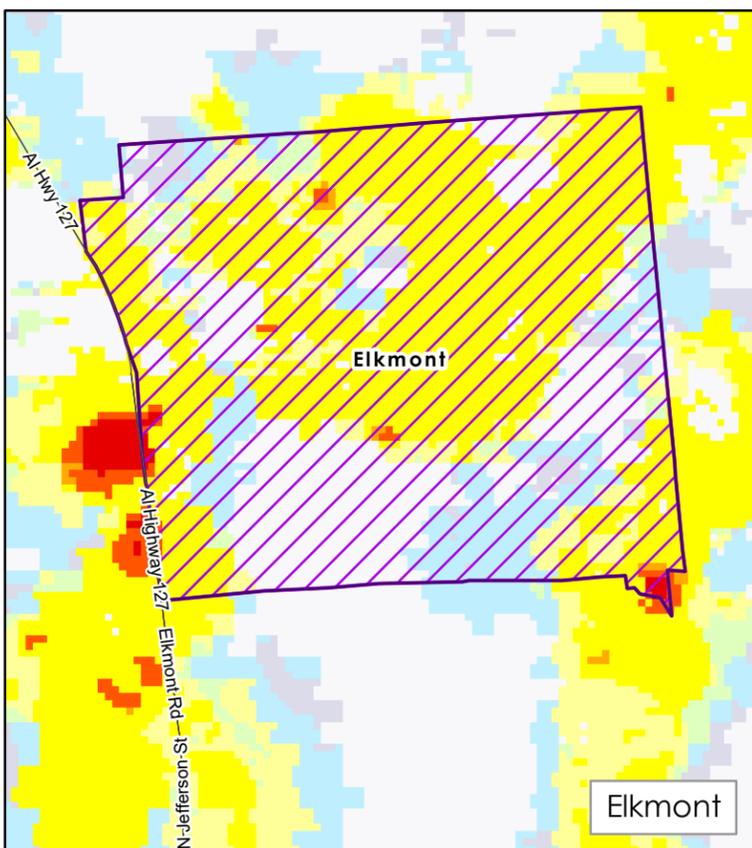
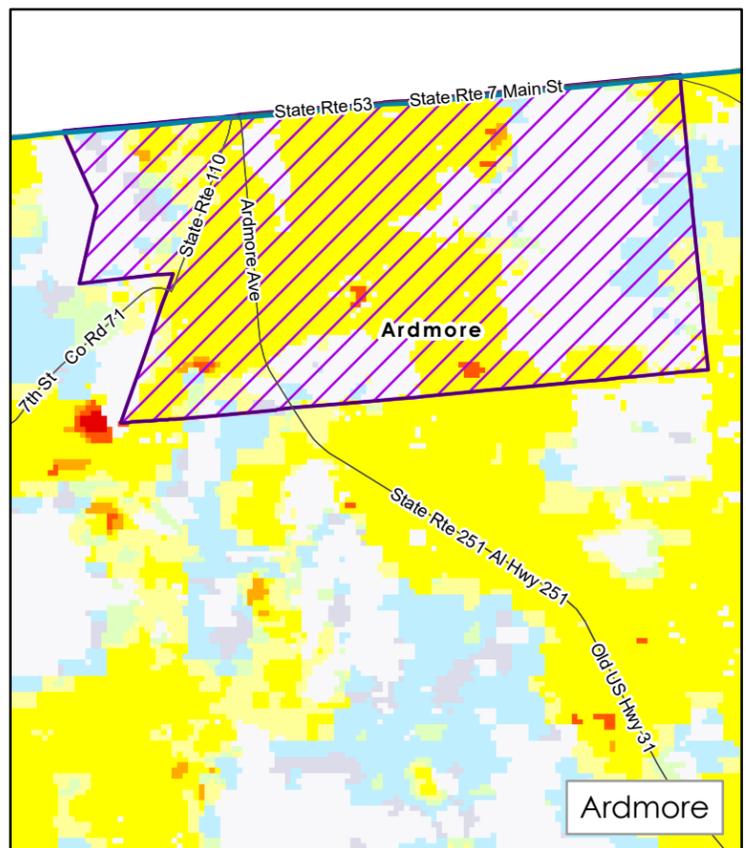
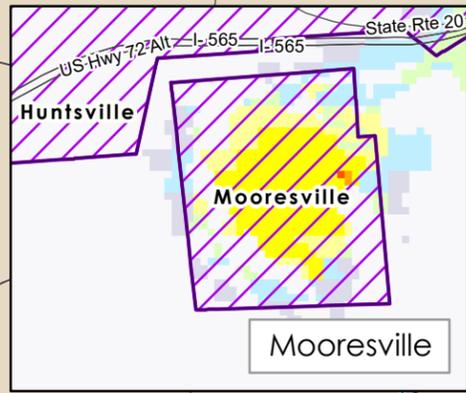
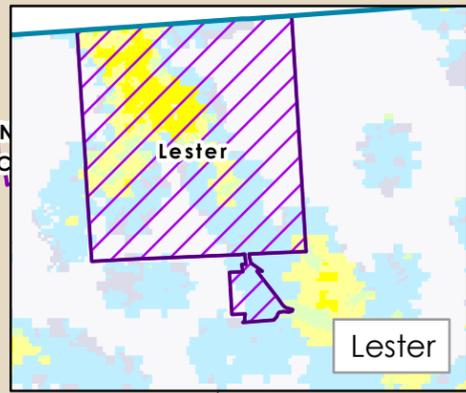
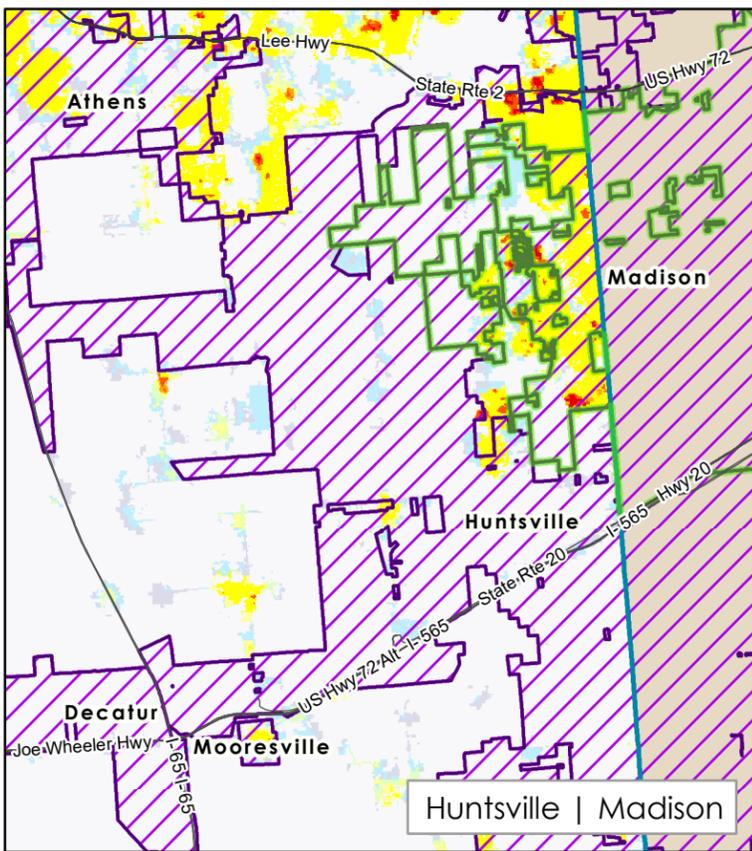
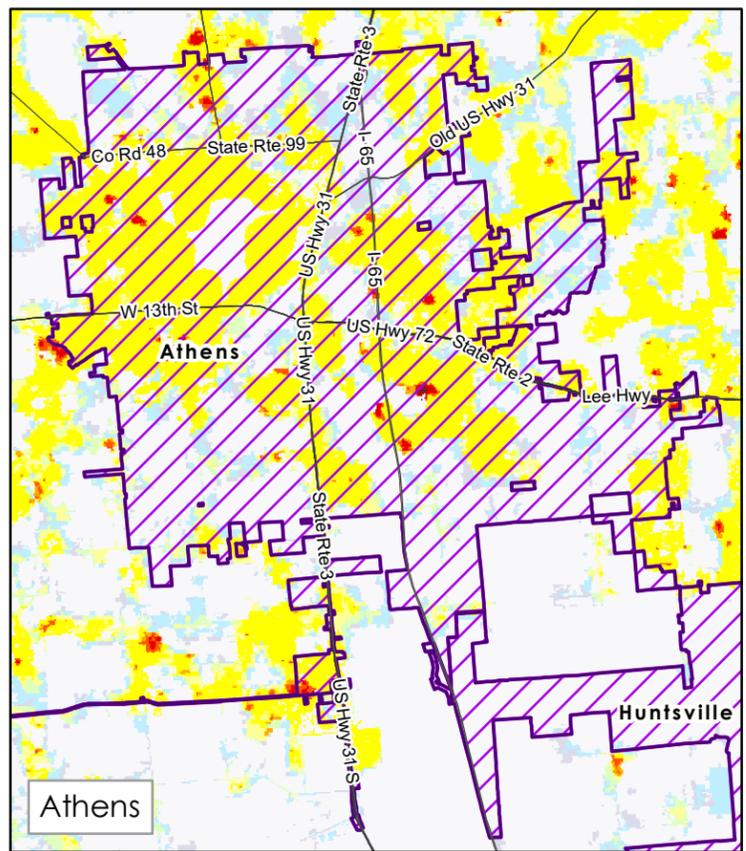
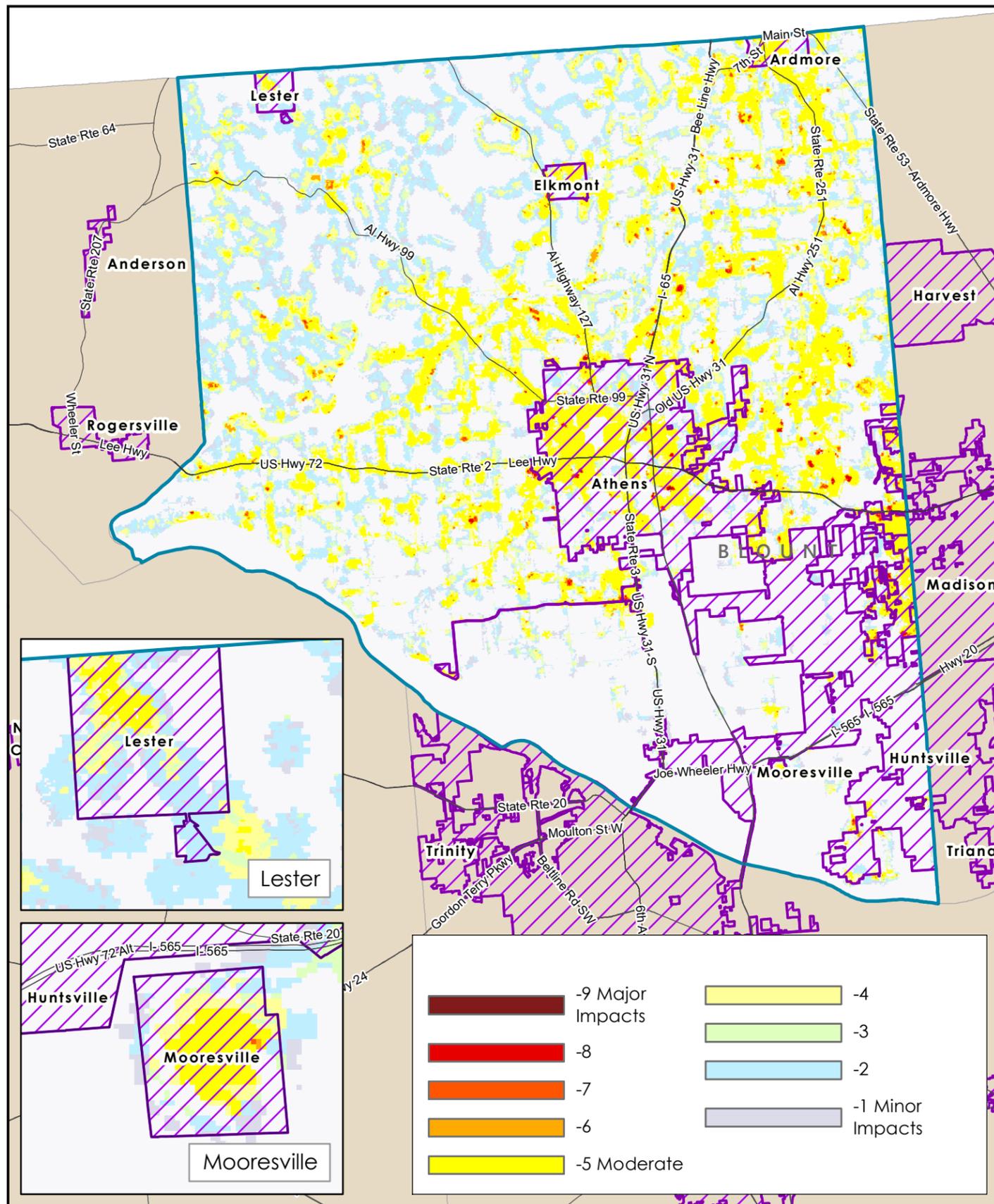




JACKSON COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX

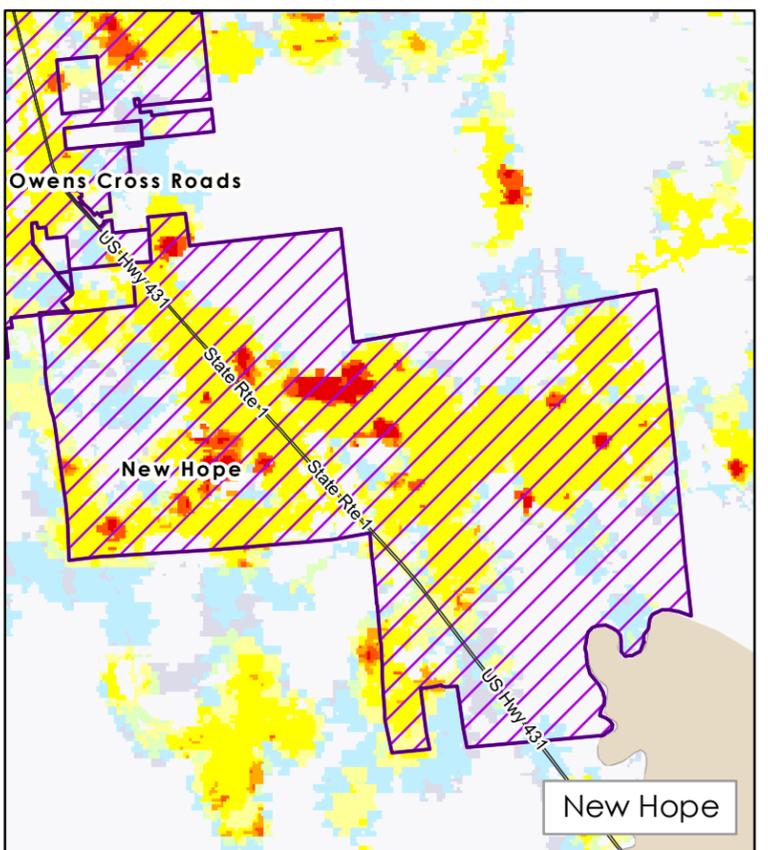
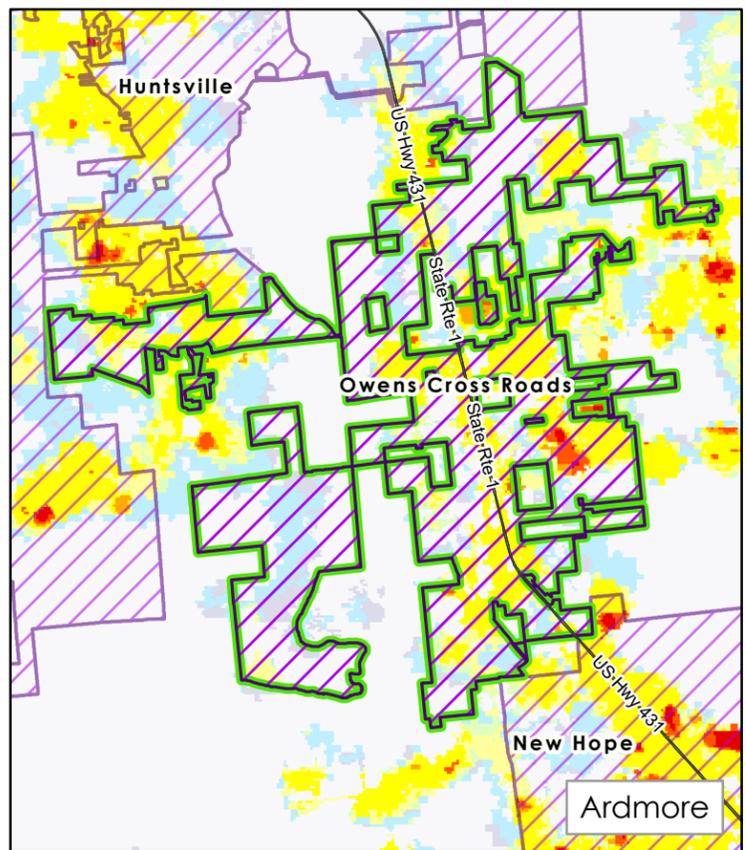
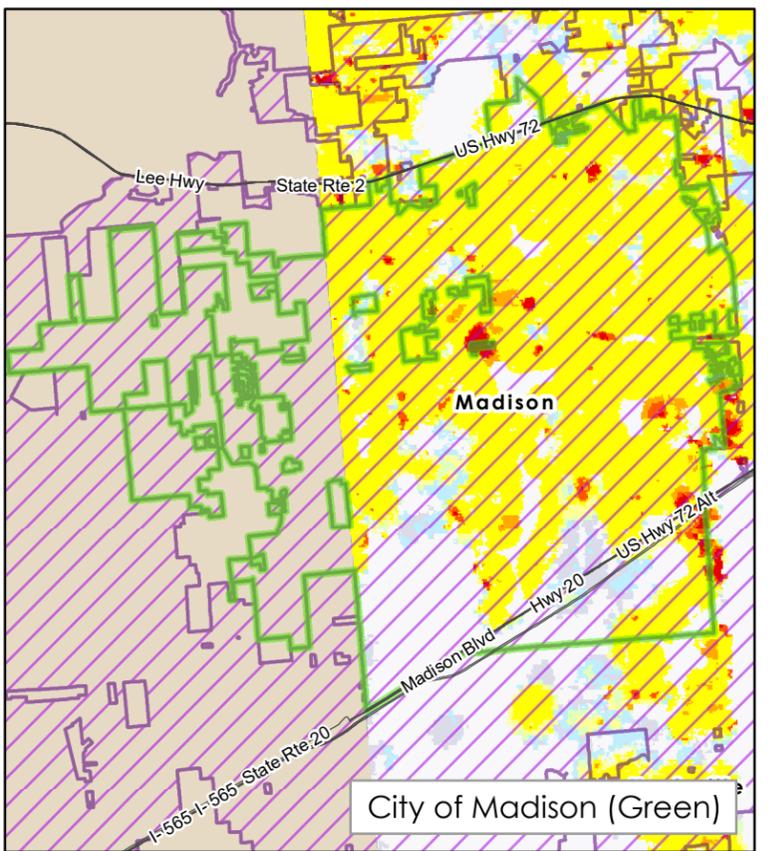
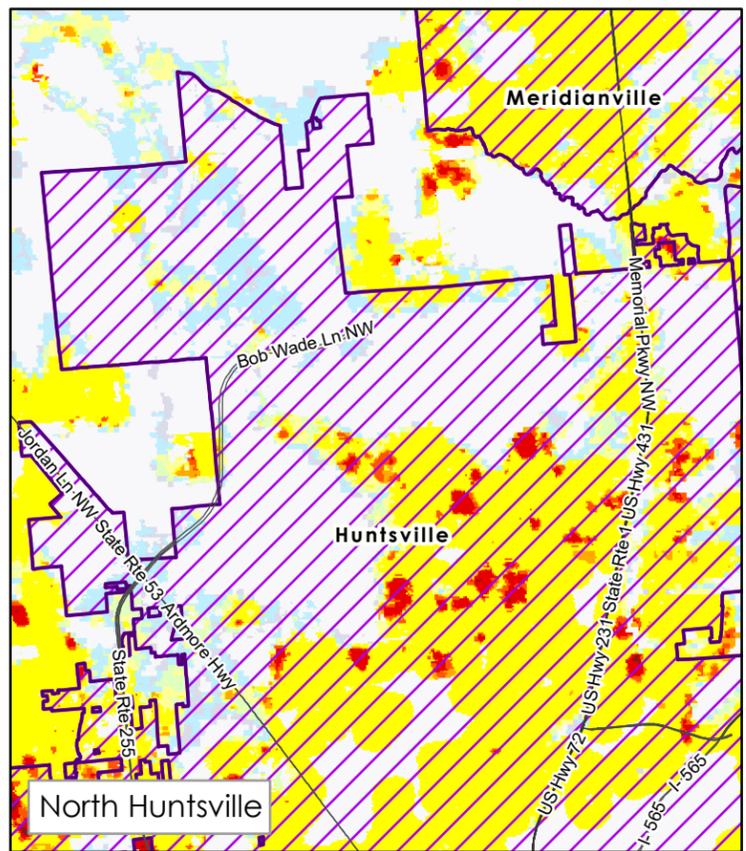
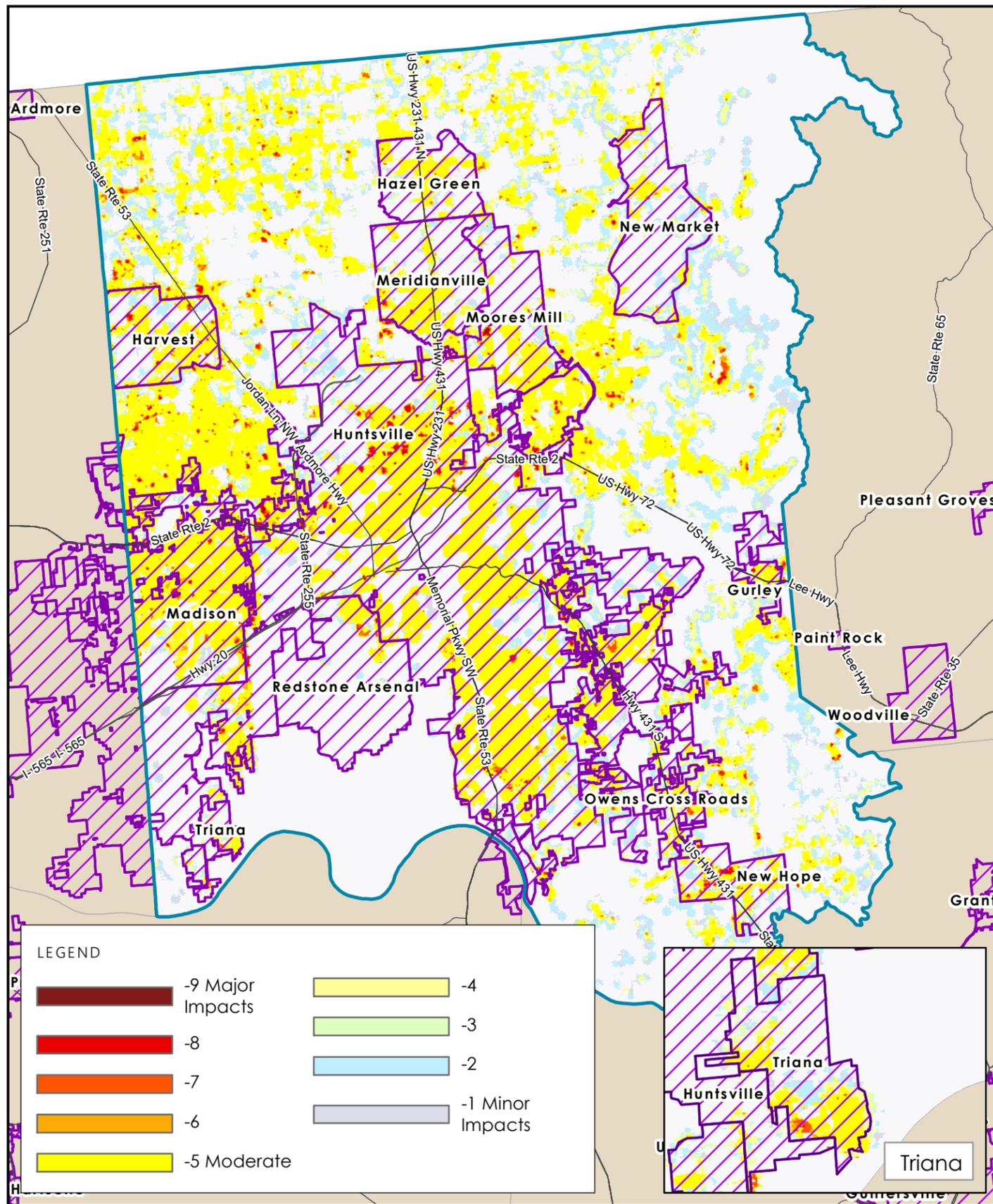
DIVISION F REGIONAL HAZARD MITIGATION PLAN





LIMESTONE COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX
 DIVISION F REGIONAL HAZARD MITIGATION PLAN

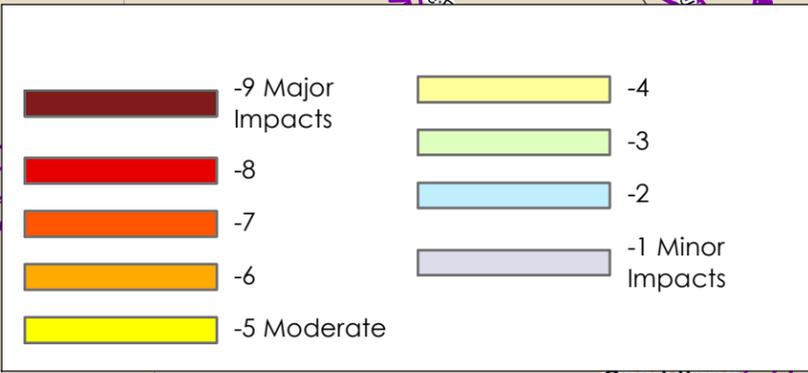
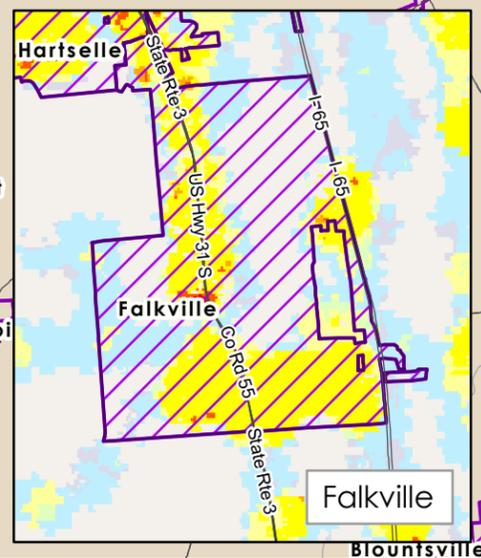
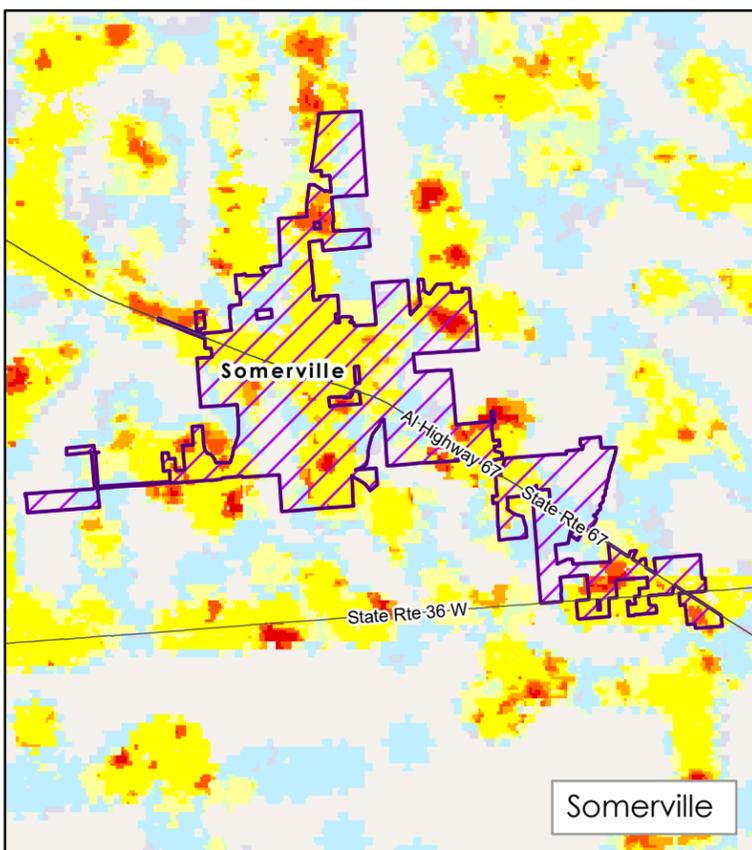
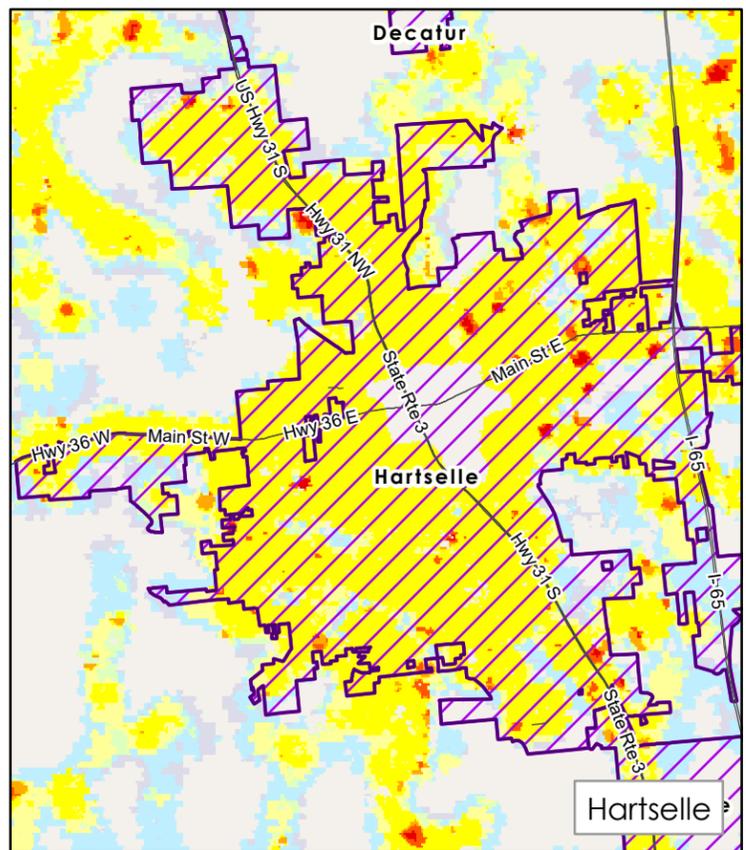
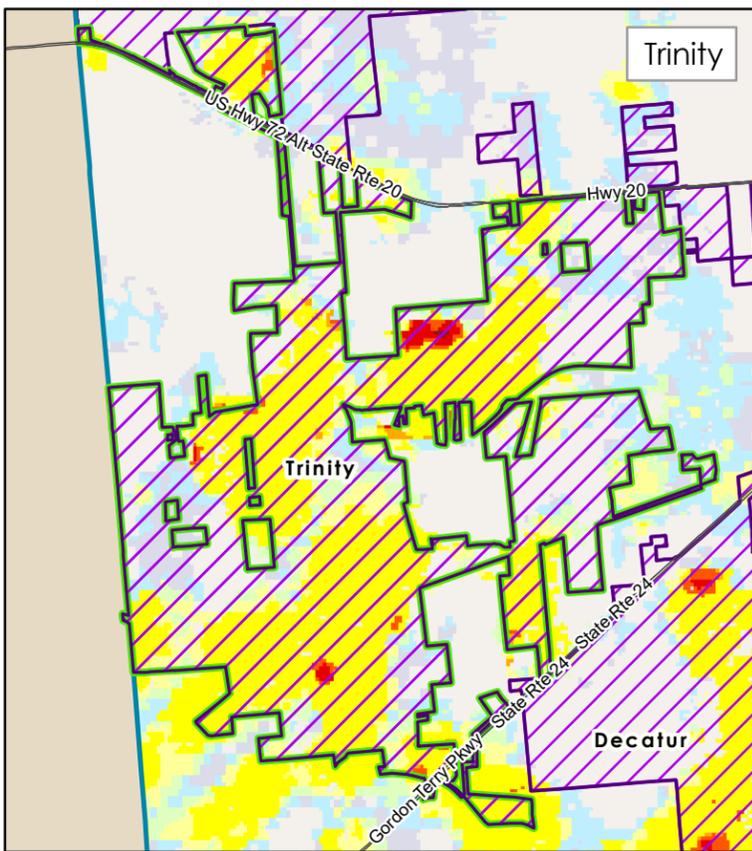
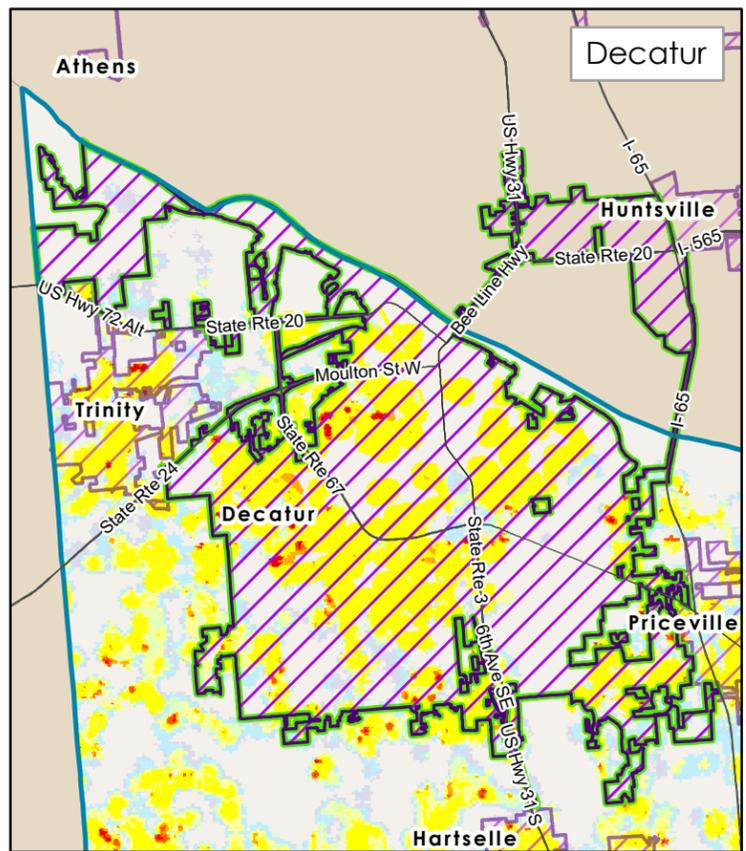
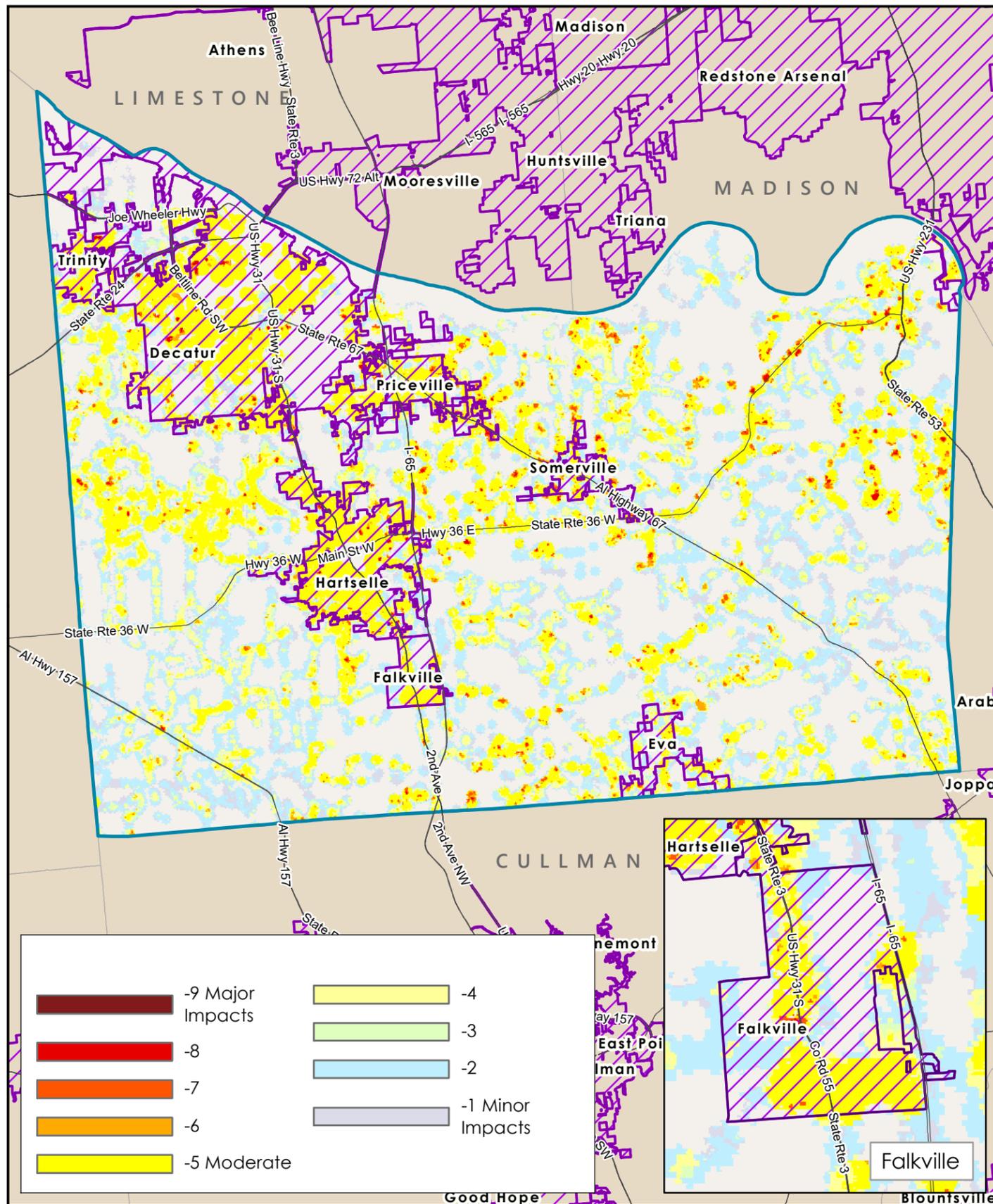




MADISON COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX

DIVISION F REGIONAL HAZARD MITIGATION PLAN





MORGAN COUNTY WILDLAND URBAN INTERFACE (WUI) RISK INDEX
 DIVISION F REGIONAL HAZARD MITIGATION PLAN

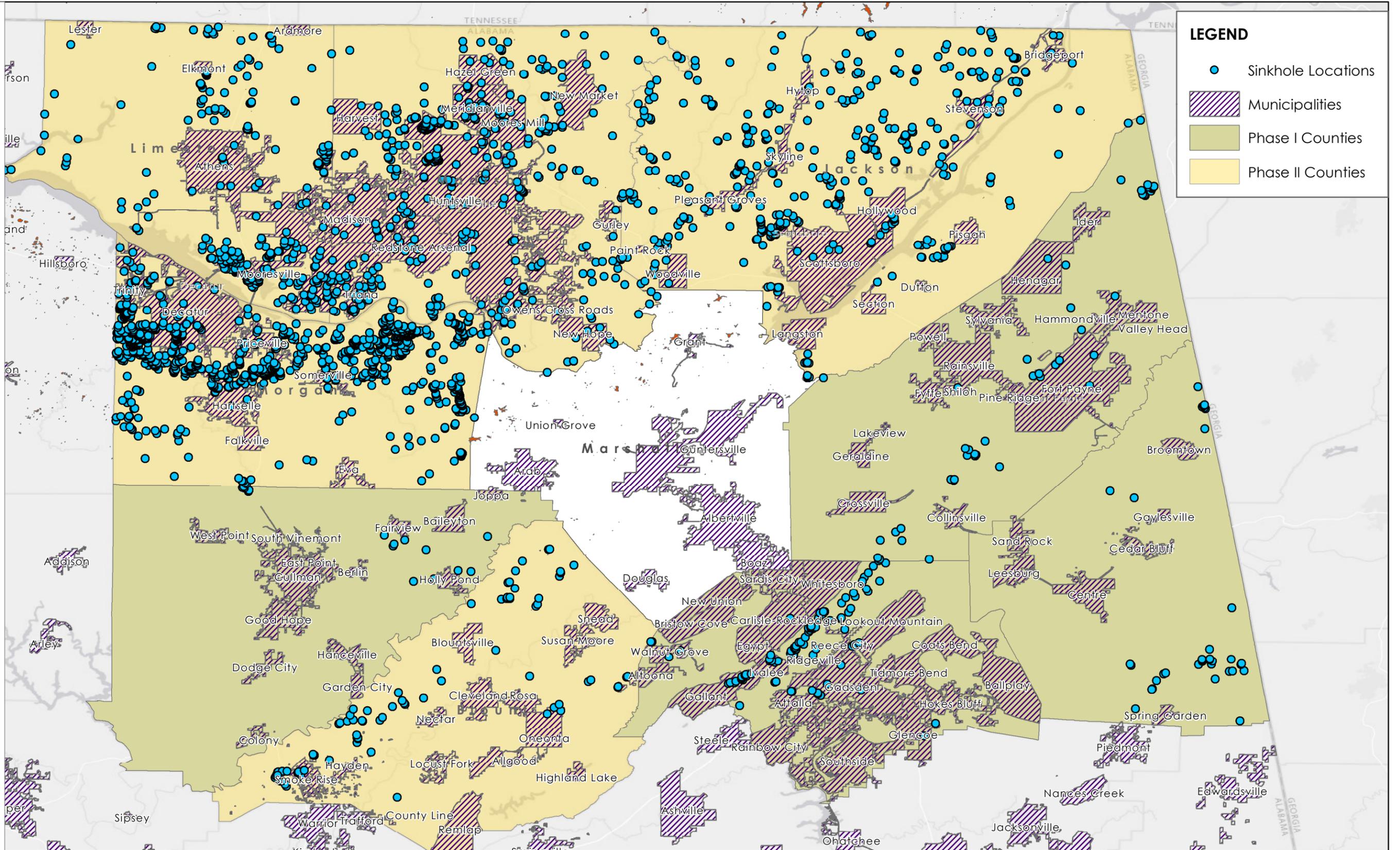


SINKHOLE LOCATION MAPS

SECTION 4 – HAZARD PROFILES 4.13 LAND SUBSIDENCE + SINKHOLES

DIVISION F REGION SINKHOLE LOCATIONS

Blount | Cherokee | Cullman | DeKalb | Etowah | Jackson | Limestone | Madison | Morgan



LEGEND

- Sinkhole Locations
- Municipalities
- Phase I Counties
- Phase II Counties





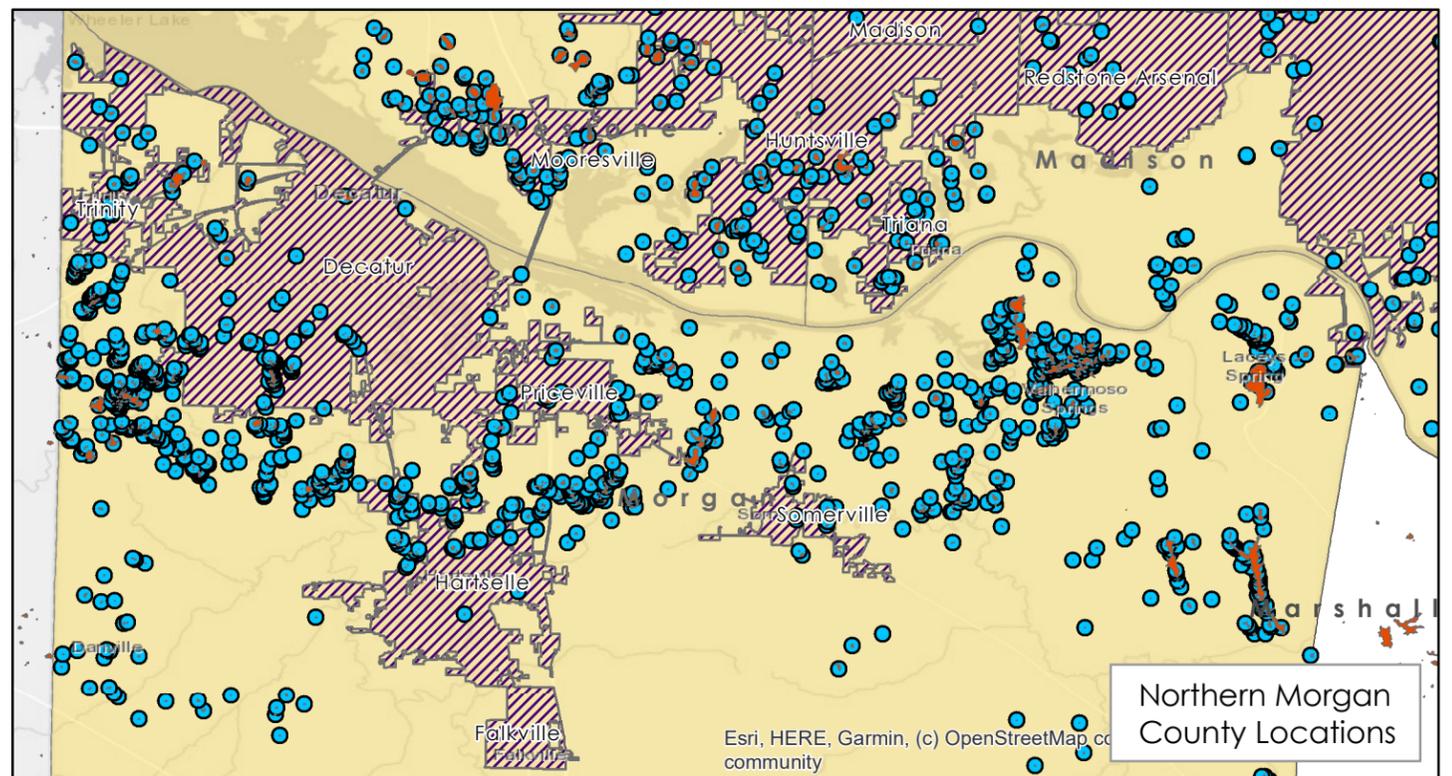
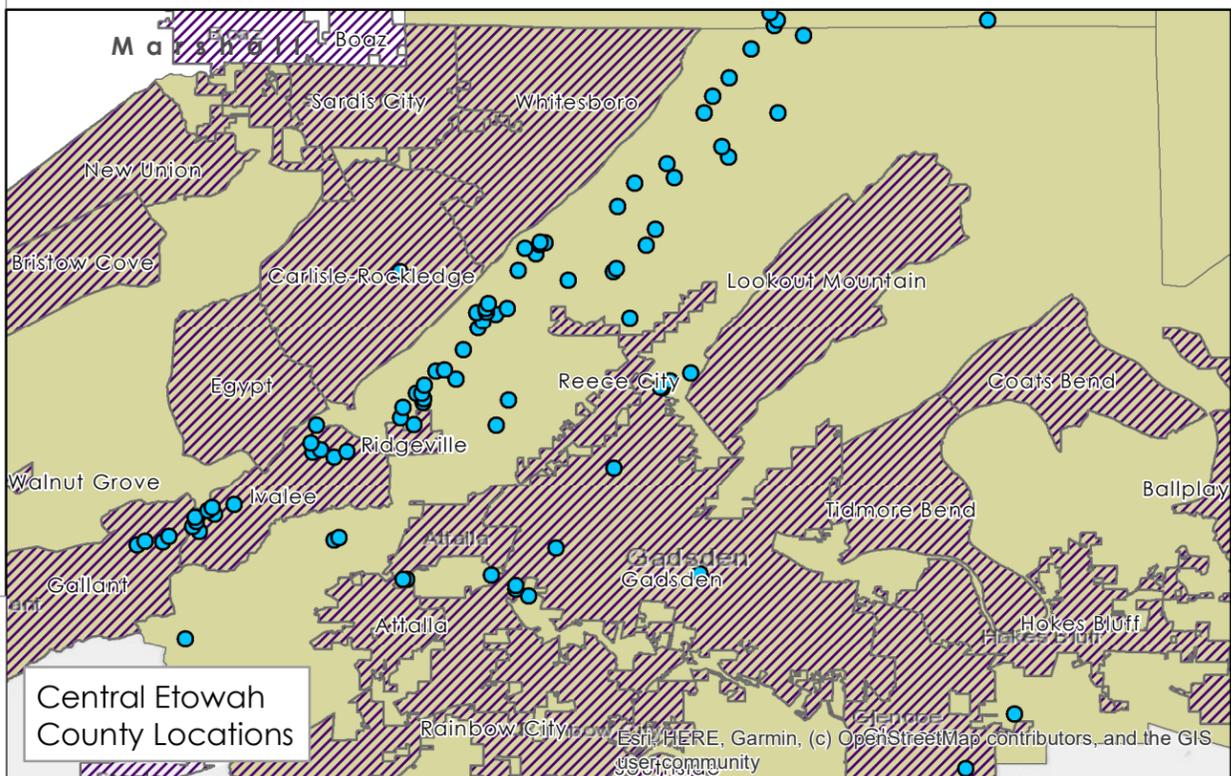
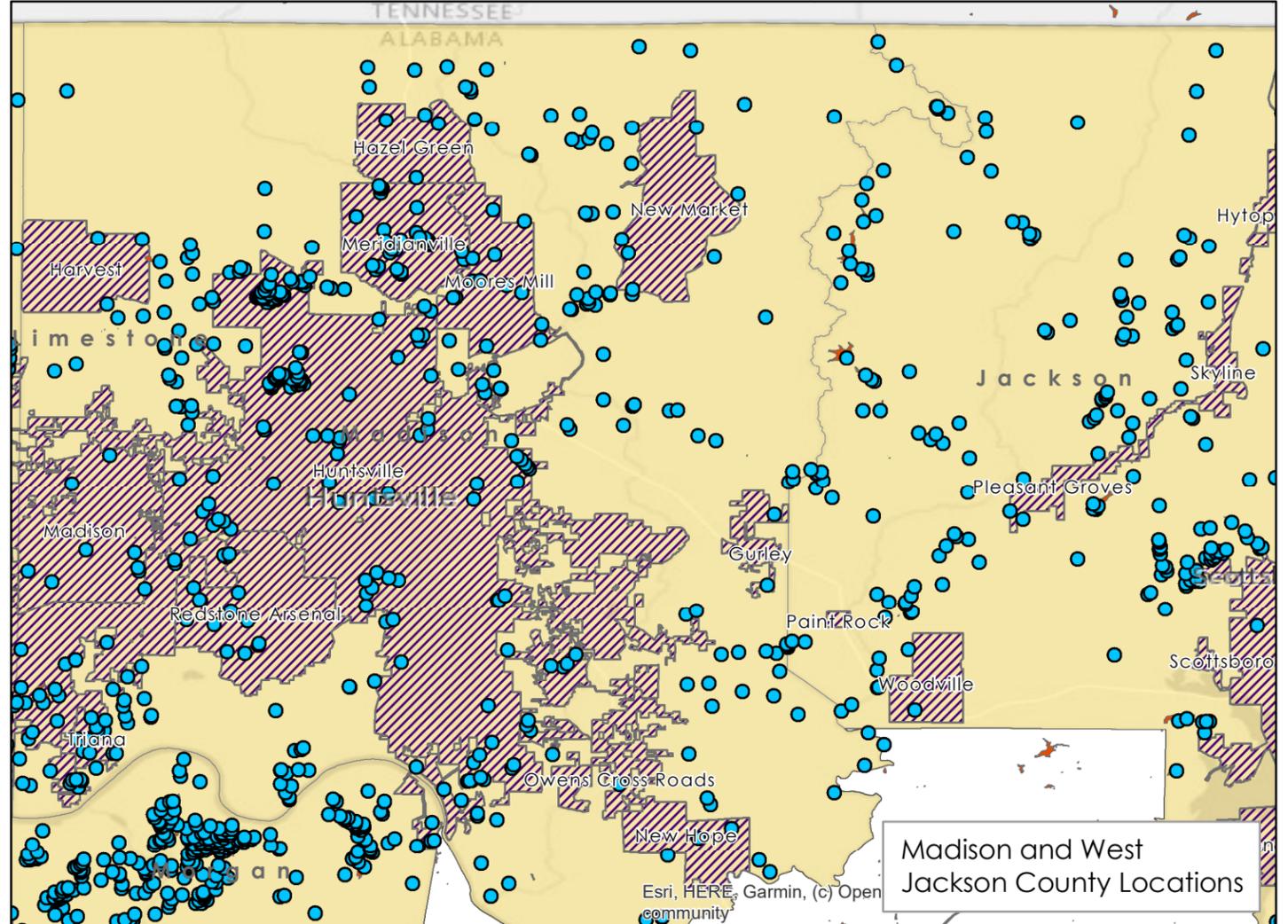
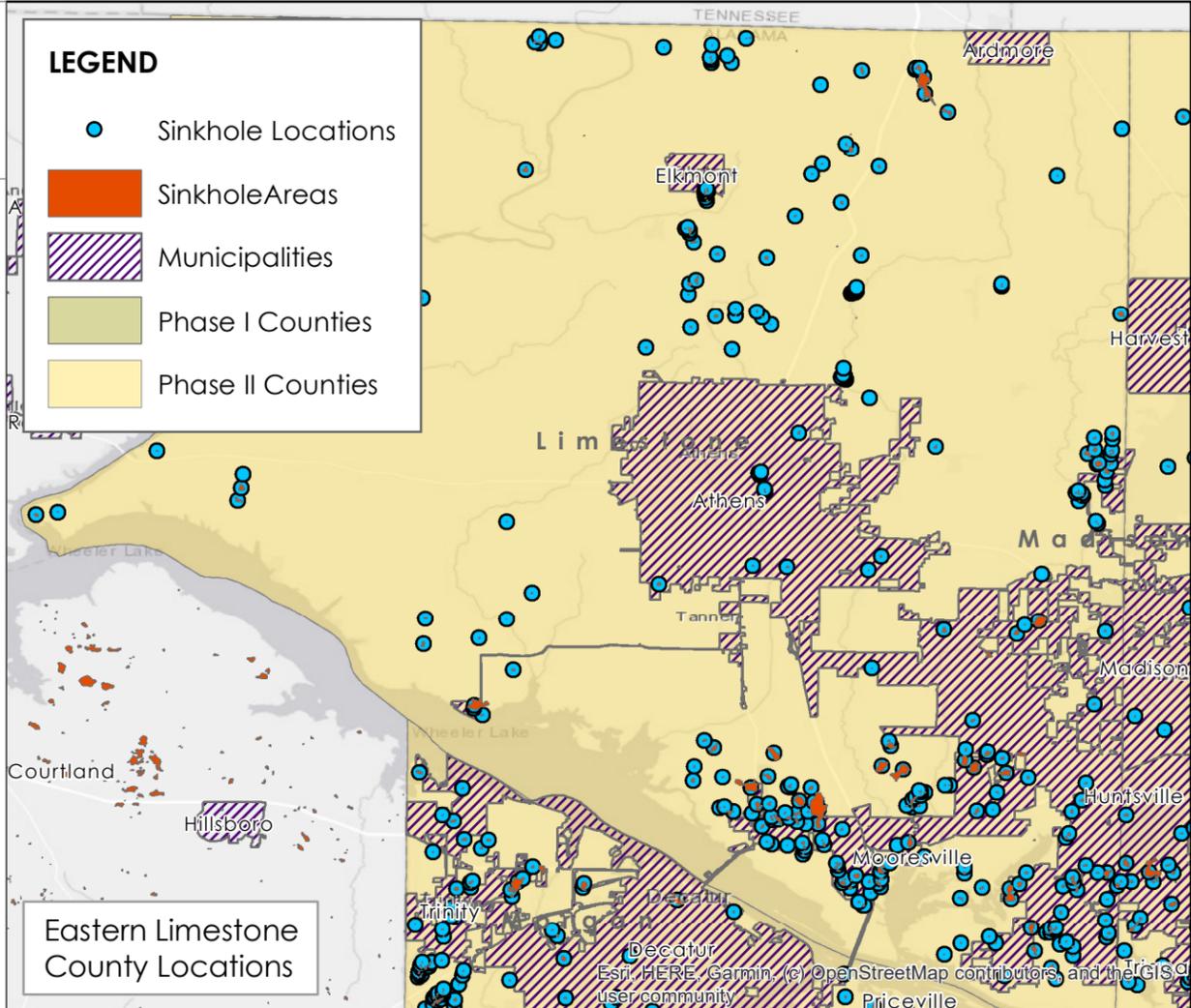
DIVISION F REGION SINKHOLE LOCATIONS

Blount | Cherokee | Cullman | DeKalb | Etowah | Jackson | Limestone | Madison | Morgan



LEGEND

- Sinkhole Locations
- Sinkhole Areas
- Municipalities
- Phase I Counties
- Phase II Counties



LANDSLIDE LOCATION MAPS

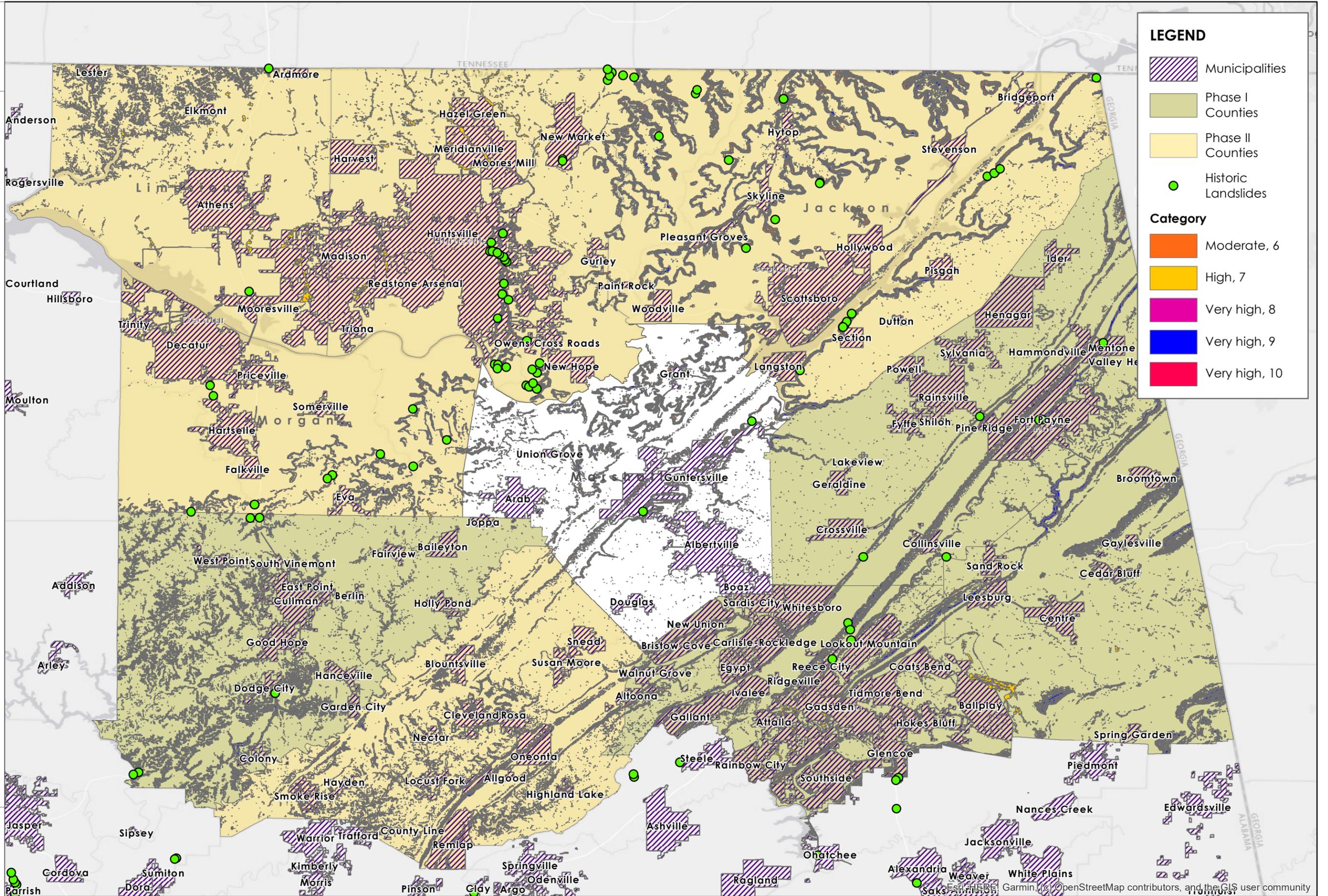
SECTION 4 – HAZARD PROFILES

4.14 LANDSLIDES



DIVISION F REGION LANDSLIDE LOCATIONS

Blount | Cherokee | Cullman | DeKalb | Etowah | Jackson | Limestone | Madison | Morgan

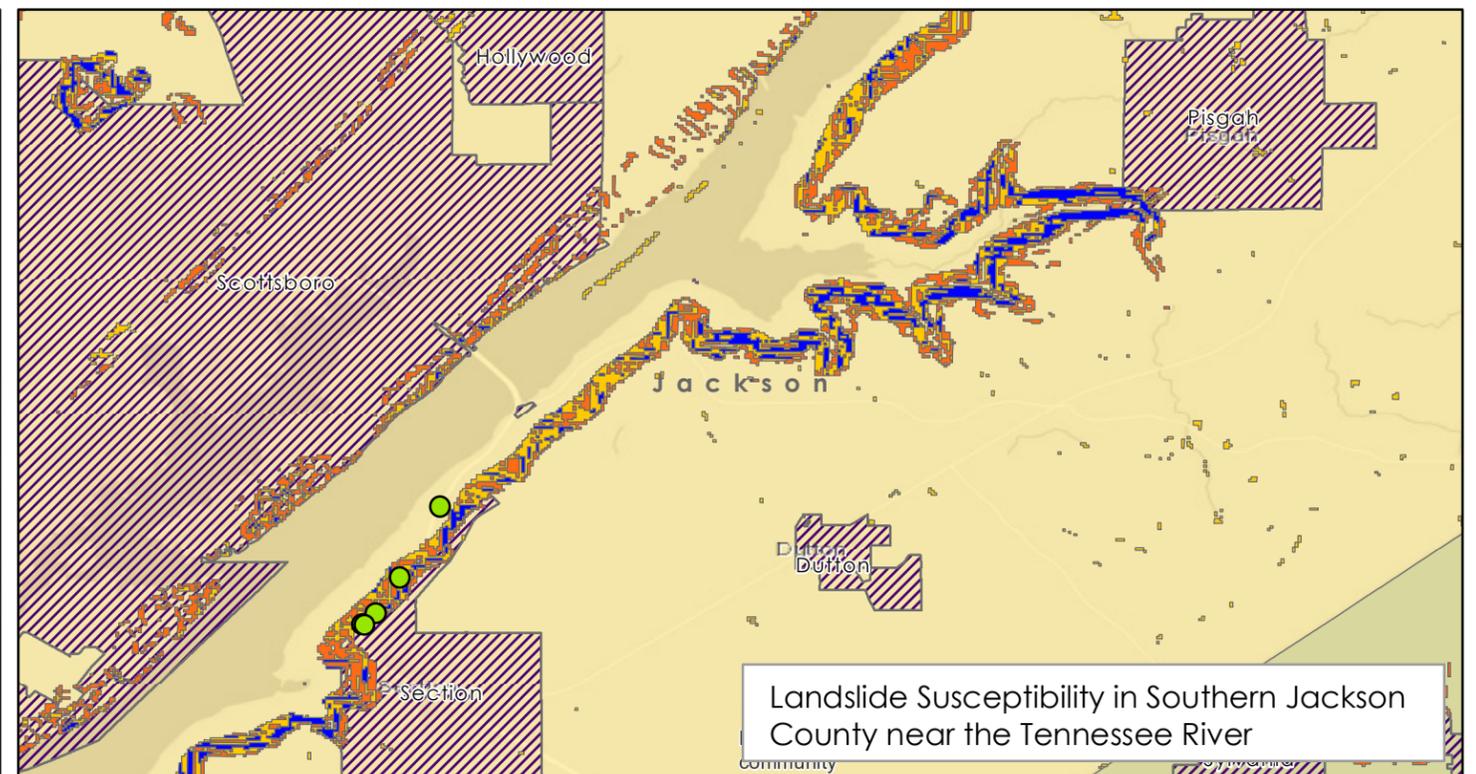
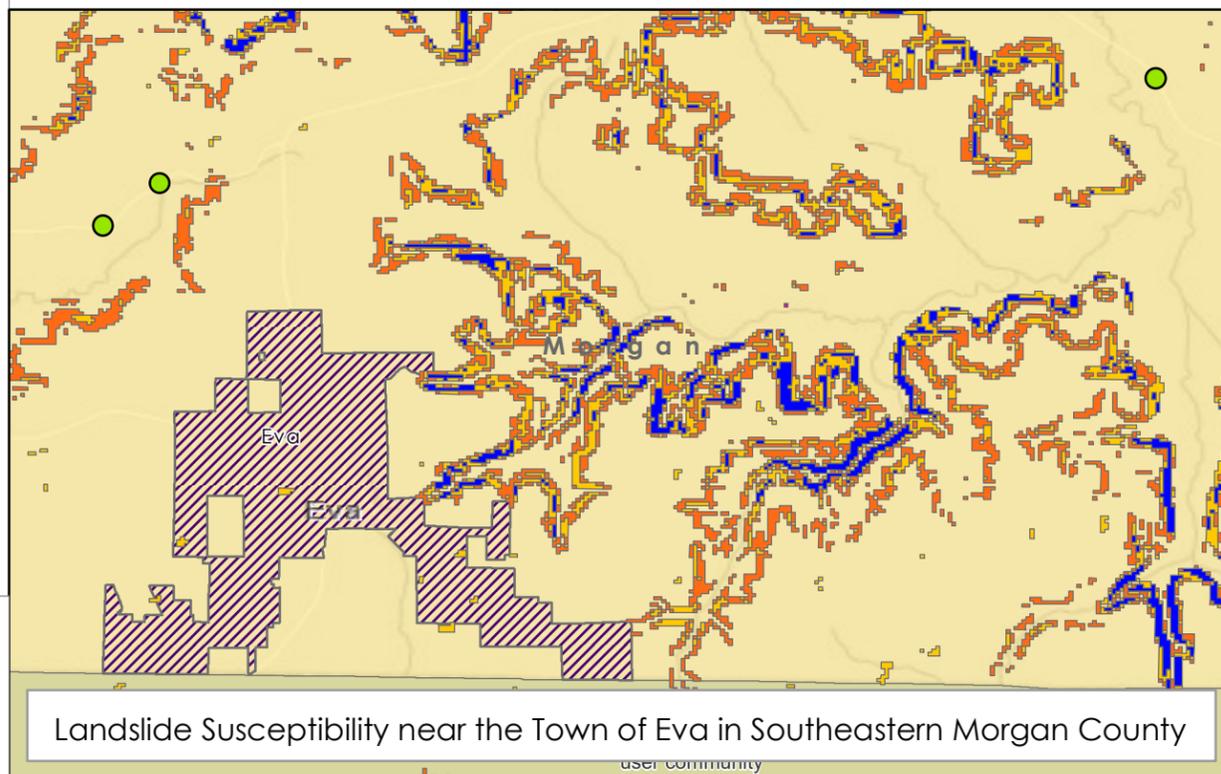
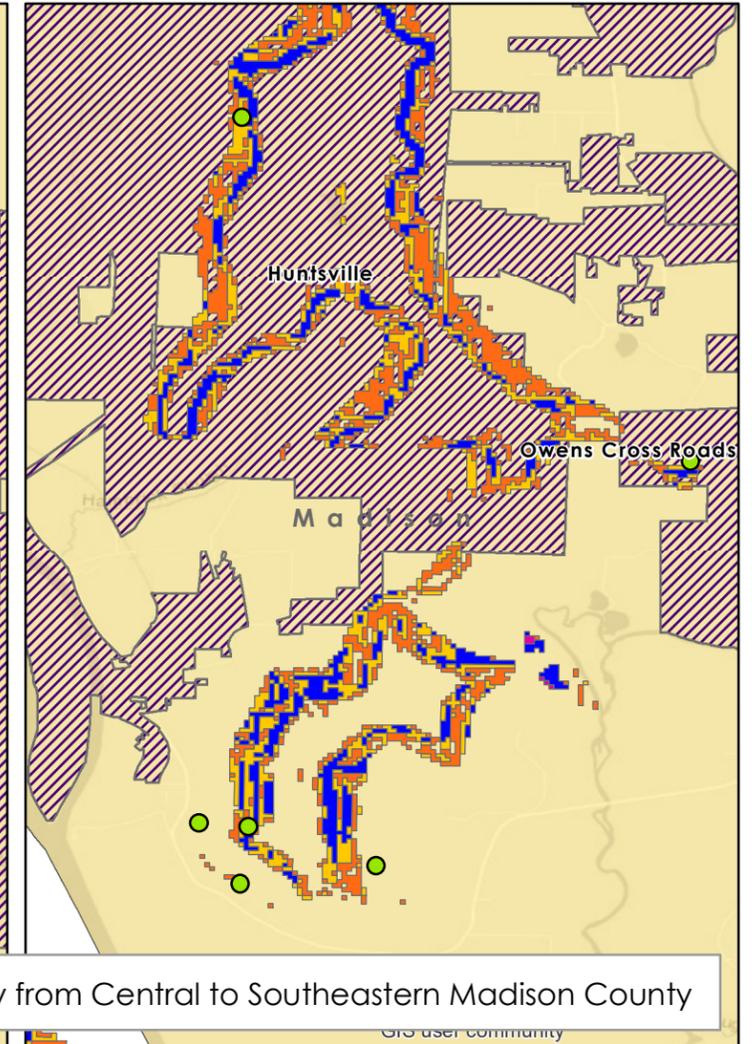
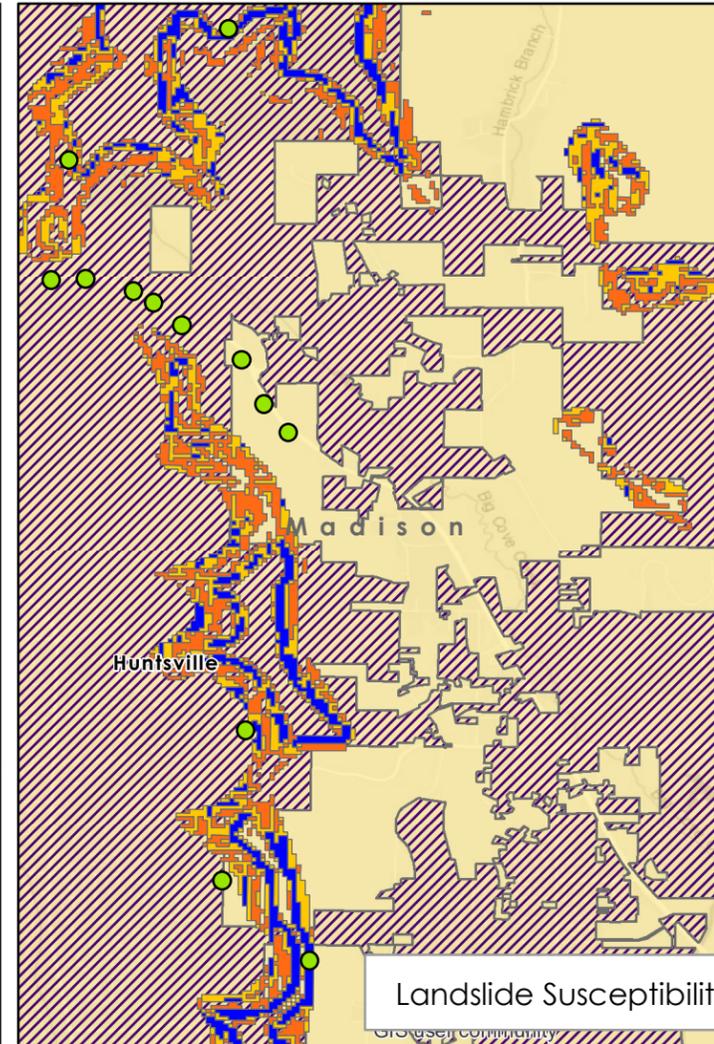
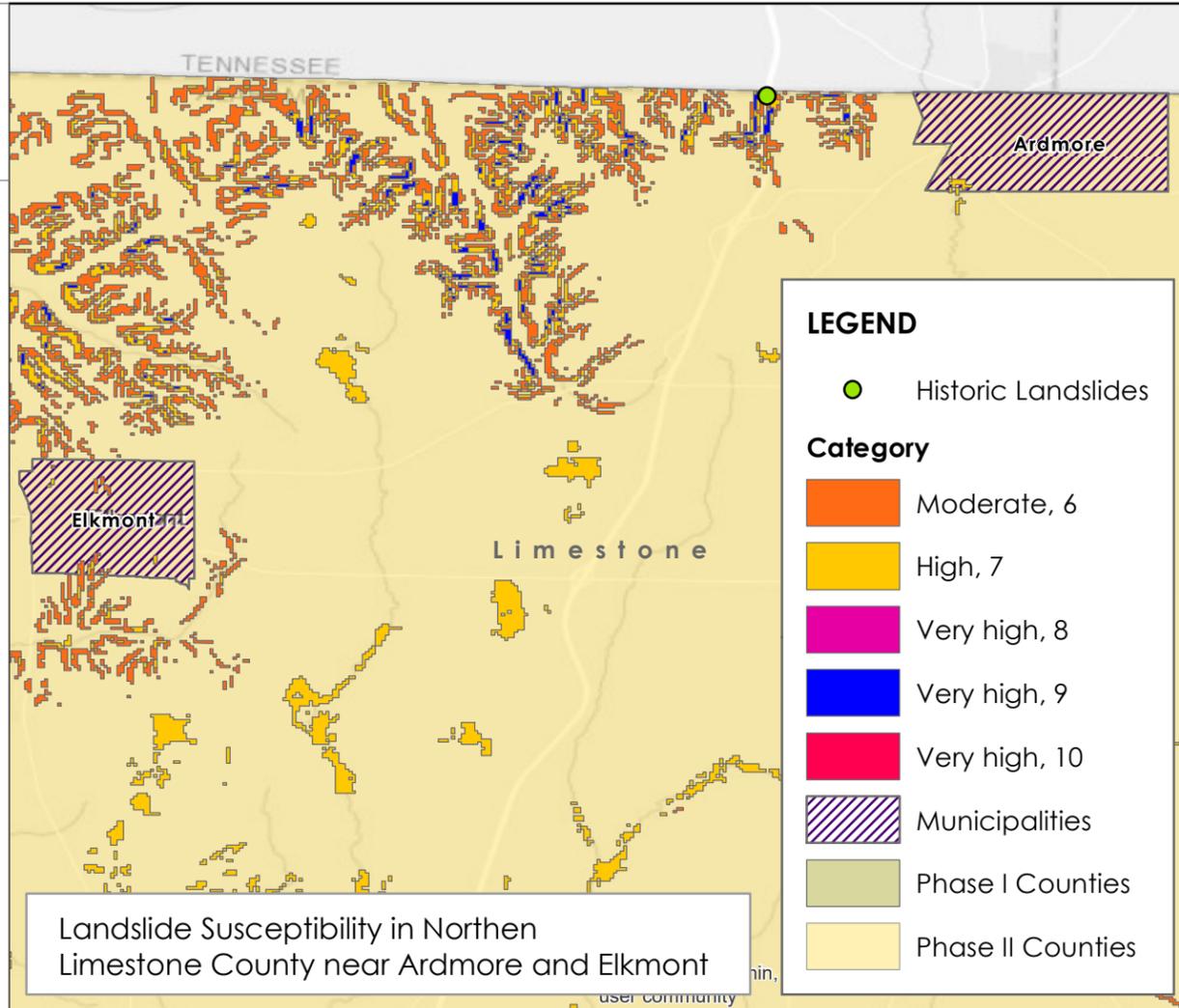


LEGEND

- Municipalities
- Phase I Counties
- Phase II Counties
- Historic Landslides

Category

- Moderate, 6
- High, 7
- Very high, 8
- Very high, 9
- Very high, 10



Section Appendices

CRITICAL FACILITIES LISTS

JACKSON, LIMESTONE, MADISON, MORGAN COUNTIES
SECTION 5 – VULNERABILITY

Appendix C

Jackson County Critical Facilities Listing



*Jackson County Courthouse
Scottsboro, Alabama*

CRITICAL FACILITIES LIST - JACKSON COUNTY NATURAL HAZARDS MITIGATION PLAN

Type of Asset	Name	GPS	
Essential/Shelter/School	Bridgeport Elementary School Storm Shelter	34.939601	-86.720227
Essential/Shelter/School	Bridgeport Middle School Storm Shelter	34.943905	-85.714633
Essential/Shelter/School	Bryant Elementary School Storm Shelter	34.939478	-85.628424
Essential/Shelter/School	Dutton Elementary School Storm Shelter	34.607442	-85.91736
Essential/Shelter/School	Flat Rock Elementary School Storm Shelter	34.769435	-85.694814
Essential/Shelter/School	Hollywood Elementary School Storm Shelter	34.721922	-85.969777
Essential/Shelter/School	Macedonia Elementary School Storm Shelter	34.516296	-86.000386
Essential/Shelter/School	North Jackson High School Storm Shelter	34.898521	-85.789058
Essential/Shelter/School	North Sand Mountain High School - Storm Shelter	34.848432	-85.62436
Essential/Shelter/School	Paint Rock Valley High School Storm Shelter	34.842837	-86.244633
Essential/Shelter/School	Pisgah High School Storm Shelter	34.680362	-85.84527
Essential/Shelter/School	Rosalie Elementary School Storm Shelter	34.70015	-85.762844
Essential/Shelter/School	Section High School - Storm Shelter	34.581031	-85.98166
Essential/Shelter/School	Skyline High School Storm Shelter	34.815714	-86.123942
Essential/Shelter/School	Stevenson Elementary School Storm Shelter	34.877628	-85.816281
Essential/Shelter/School	Stevenson Middle School Storm Shelter	34.862867	-85.83531
Essential/Shelter/School	Woodville High School Storm Shelter	34.623524	-86.271452
Essential/Shelter/School	Ernest Pruet Center of Technology Storm Shelter	34.721789	-85.958276
Essential/Law Enforcement/Sheriff DEPT	Jackson County Sheriff's DEPT	34.671985	-86.033918
Essential/Law Enforcement/Detention	Jackson County JAIL & Detention Facility	34.666055	-86.046988
Essential/Law Enforcement/Police DEPT	Scottsboro Police Department	34.662036	-86.035571
Essential/Law Enforcement/Police DEPT	Bridgeport Police Department	34.94861	-85.712414
Essential/Law Enforcement/Police DEPT	Stevenson Police Department	34.867917	-85.50153378
Essential/Law Enforcement/Police DEPT	Hollywood Police Department	34.717686	-85.961177
Essential/Law Enforcement/Police DEPT	Skyline Police Department	34.80065	-86.12068
Essential/Law Enforcement/Police DEPT	Section Town Hall/ Police Department	34.581288	-85.987596
Essential/Law Enforcement/Police DEPT	Woodville Police Department	34.627075	-86.27126
Essential/Law Enforcement/Police DEPT	Pisgah Police Department	34.68142	-85.848192

CRITICAL FACILITIES LIST - JACKSON COUNTY NATURAL HAZARDS MITIGATION PLAN

Type of Asset	Name	GPS	
Essential/Governmental/City/Town Hall	Bridgeport, City of	34.94861	-85.712414
Essential/Governmental/City/Town Hall	Dutton, Town of	34.609261	-85.917146
Essential/Governmental/City/Town Hall	Hollywood, Town of	34.717686	-85.961177
Essential/Governmental/City/Town Hall	Hytow, Town of	34.920733	-85.083347
Essential/Governmental/City/Town Hall	Langston, Town of	34.537847	-86.076729
Essential/Governmental/City/Town Hall	Paint Rock, Town of	34.665726	-86.329642
Essential/Governmental/City/Town Hall	Pisgah, Town of	34.68142	-85.848192
Essential/Governmental/City/Town Hall	Pleasant Groves, Town of	34.7300484	-86.218658
Essential/Governmental/City/Town Hall	Scottsboro, City of	34.671296	-86.035108
Essential/Governmental/City/Town Hall	Section, Town of	34.578611	-85.986389
Essential/Governmental/City/Town Hall	Skyline, Town of	34.80065	-86.12068
Essential/Governmental/City/Town Hall	Stevenson, City of	34.86829	-85.83762
Essential/Governmental/City/Town Hall	Woodville, Town of	34.627075	-86.27126
Essential/Governmental/Utilities-Water	Cumberland Mountain Water Authority	34.783537	-86.119018
Essential/Governmental/Utilities-Water	Jackson County Water Authority	34.622026	-86.164459
Essential/Governmental/Utilities-Water	The Waterworks Board of Dutton & Section	34.497719	-85.850402
Essential/Governmental/Utilities-Water Sewerage & Natural Gas	Stevenson Utilities Water & Sewage & Natural Gas	34.862605	-85.818776
Essential/Governmental/Utilities-Water Sewerage & Natural Gas	Bridgeport Utilities	34.947128	-85.718328
Essential/Governmental/Utilities-Water Sewerage & Natural Gas	Scottsboro WSG (Water Sewer and Gas)	34.672992	-86.030704
Essential/Utilities-Propane	CDNAG Propane (Board Owned)	34.5147102	-85.496276
Essential/Fire	Bridgeport Fire DEPT	34.94845	-85.715571
Essential/Fire	Bryant Fire DEPT	34.921744	-85.638148
Essential/Fire	Crow Mountain Fire Department	34.856216	-86.034999
Essential/Fire	Dutton Fire DEPT	34.609169	-85.917326
Essential/Fire	Fabius Fire DEPT		
Essential/Fire	Fackler VOL Fire Department	34.791865	-85.910563

CRITICAL FACILITIES LIST - JACKSON COUNTY NATURAL HAZARDS MITIGATION PLAN

Type of Asset	Name	GPS	
Essential/Fire	Higdon Fire DEPT	34.847916	-85.622515
Essential/Fire	Hollywood Fire Department	34.717686	-85.961177
Essential/Fire	Hytov VOL Fire Department	34.920733	-85.083347
Essential/Fire	Langston Fire Department	34.537772	-86.076689
Essential/Fire	Limrock/Aspel VOL Fire Department	34.671297	-86.186838
Essential/Fire	Macedonia Fire Department	34.521242	-85.99972
Essential/Fire	Paint Rock Fire Department	34.665958	-86.329458
Essential/Fire	Pisgah Fire DEPT	34.681053	-85.849344
Essential/Fire	Pleasant Groves Fire Department	34.732699	-86.214837
Essential/Fire	Scottsboro Fire DEPT Station #1	34.367142	-86.035899
Essential/Fire	Scottsboro Fire DEPT Station #2	34.614551	-86.064763
Essential/Fire	Scottsboro Fire DEPT Station #3	34.651063	-85.993259
Essential/Fire	Section Fire DEPT	34.580331	-85.989149
Essential/Fire	Skyline VOL Fire Department	34.808077	-86.118846
Essential/Fire	Stevenson Fire DEPT Station #1	34.870532	-85.8321
Essential/Fire	Tri-Community Flat Rock Station Fire DEPT	34.803543	-85.677027
Essential/Fire	Valley #1 Fire DEPT	34.843454	-86.24253
Essential/Fire	Valley #2 Fire DEPT	34.745305	-86.250481
Essential/Fire	Valley #3 Fire DEPT	34.921466	-86.165665
Essential/Fire	Woodville Fire Department	34.62653	-86.272536
Essential/Fire	Forestry Office (Scottsboro)	34.66209	-86.047411
Essential/Medical	Highlands Medical Center	34.66209	-86.047411
Essential/Medical	Highlands Ambulance #1	34.662725	-86.0484
Essential/Medical	Highlands Ambulance #2	34.914611	-85.773375
Essential/Medical	Highlands Ambulance #3	34.680982	-85.849241
Essential/Medical	Highlands Ambulance #4	34.855886	-86.100628
Essential/Medical	Highlands Ambulance #5	34.856059	-85.614992
Essential/Medical	Rosewood Manor	34.645592	-86.029163
Essential/Medical	Cloverdale	34.665368	-86.049677

CRITICAL FACILITIES LIST - JACKSON COUNTY NATURAL HAZARDS MITIGATION PLAN

Type of Asset	Name	GPS	
Essential/Medical	Cumberland Health & Rehab	34.912732	-85.769638
Essential/Medical	Highlands Nursing Facility	34.661881	-86.048161
Essential/Education	Bridgeport Elementary School	34.939601	-86.720227
Essential/Education	Bridgeport Middle School	34.943905	-85.714633
Essential/Education	Bryant Elementary School	34.939478	-85.628424
Essential/Education	Dutton Elementary School	34.607442	-85.91736
Essential/Education	Flat Rock Elementary School	34.769435	-85.694814
Essential/Education	Hollywood Elementary School	34.721922	-85.969777
Essential/Education	Macedonia Elementary School	34.516296	-86.000386
Essential/Education	North Jackson High School	34.898521	-85.789058
Essential/Education	North Sand Mountain High School -	34.848432	-85.62436
Essential/Education	Paint Rock Valley High School	34.842837	-86.244633
Essential/Education	Pisgah High School	34.680362	-85.84527
Essential/Education	Rosalie Elementary School	34.70015	-85.762844
Essential/Education	Scottsboro High School	34.672618	-86.602787
Essential/Education	Scottsboro Junior High School	34.654375	-86.040566
Essential/Education	James Ray Collins Intermediate School	34.650151	-86.039085
Essential/Education	Caldwell Elementary School	34.65964	-86.032056
Essential/Education	Brownwood Elementary School	34.67038	-86.018571
Essential/Education	Thurston T. Nelson Elementary School	34.622441	-86.052868
Essential/Education	Section High School -	34.581031	-85.98166
Essential/Education	Skyline High School	34.815714	-86.123942
Essential/Education	Stevenson Elementary School	34.877628	-85.816281
Essential/Education	Stevenson Middle School	34.862867	-85.83531
Essential/Education	Woodville High School	34.623524	-86.271452
Essential/Education	Ernest Pruett Center of Technology	34.721789	-85.958276
Essential/Education	Alternative School	34.729921	-85.964027
Essential/Education	Northeast State Community College	34.545429	-85.9118889
Essential/Education	Jackson County Bus Garage	34.672744	-86.053625

CRITICAL FACILITIES LIST - JACKSON COUNTY NATURAL HAZARDS MITIGATION PLAN

Type of Asset	Name	GPS	
Essential/Education	Jackson County BOE Central Office	34.675236	-86.061625
Essential/Emergency Agency	American Red Cross		
Essential/Emergency Agency	Salvation Army		
Transportation/Highways	US 72 East and West through Jackson County		
Transportation/Highways	Alabama Highway 35 North and South through Jackson County		
Transportation/Highways	Alabama Highway 79		
Transportation/Highways	Alabama Highway 279		
Transportation/Highways	Alabama Highway 71		
Transportation/Highways	Alabama Highway 117		
Transportation/Highways	Alabama Highway 40		
Transportation/Highways	Alabama Highway 73		
Transportation/Highways	Alabama Highway 65		
Essential/National Protected Areas	Fern Cave National Wildlife Refuge		
Essential/National Protected Areas	Russell Cave National Monument		
Essential/National Protected Areas	Sauta Cave National Wildlife Refuge		
Essential/Medical /Coroner	Jackson County Coroner's Office		
Essential/Governmental	Jackson County Health Department		
Essential/Emer. Operation Centers	Jackson County Emergency Management Agency		
Essential/Governmental	Jackson County Courthouse		
Transportation/Bridges	Stevenson Railroad Bridge (Viaduct) Stevenson AL		
Transportation/Bridges	B. B. Comer Bridge, Scottsboro AL		
Transportation/Bridges	John Snodgrass Bridge, Stevenson AL		
Transportation/Bridges	Little Crow Creek Bridge, AL HWY 117		
Transportation/Railways	Norfolk Southern Railway		
Transportation/Railways	CSX Transportation		
Transportation/Waterway	Tennessee River		
Transportation/Motor Freight and Air Carriers	FEDEX Freight		
Transportation/Motor Freight and Air Carriers	Freightliners		
Transportation/Motor Freight and Air Carriers	Trucking		

CRITICAL FACILITIES LIST - JACKSON COUNTY NATURAL HAZARDS MITIGATION PLAN

Type of Asset	Name	GPS
Transportation/Motor Freight and Air Carriers	Motor Freight	
Transportation/Motor Freight and Air Carriers	AAA Cooper Transportation	
Infrastructure/Communications	Scottsboro Cable Facilities (Scottsboro Electric Power Board)	
Infrastructure/Communications	Farmers TeleCommunications	
Infrastructure/Communications	Bellsouth Phone	
Infrastructure/Communications	Verizon Cellular	
Infrastructure/Communications	Southern Link	
Infrastructure/Communications	Nextel	
Infrastructure Systems/Electricity	Scottsboro Electric Power Board (EPB)	
Infrastructure Systems/Electricity	North Alabama Rural Electric Cooperative	
Infrastructure Systems/Electricity	Sand Mountain Electric	
Essential/Evacuation	Scottsboro Airport	
Essential/Evacuation	Rec*Com	
Essential/Evacuation	Jackson County Fairgrounds	
Essential/Evacuation	Veterans Post Home Complex	
Essential/Evacuation/Education	North Jackson High School – Stevenson AL	
Essential/Evacuation	United Methodist Church	
Essential/Evacuation	First Baptist Church - Scottsboro City	
Essential/Evacuation	National Guard Armory - Scottsboro City	
Infrastructure Systems/Utility	_____ Gas	
Infrastructure Systems/Utility/Pipeline	_____ Natural Gas Pipeline	
Communication Tower Coordinates	_____ Communication Tower	
Communication Tower Coordinates	_____ Communication Tower	

Table 4-40: Limestone County's Critical Facilities

CRITICAL FACILITIES – LIMESTONE COUNTY	
FACILITY TYPE	REPLACEMENT VALUE
East Limestone High School, 15641 East Limestone Rd., Athens	\$5,000,000
Limestone County High School/Elkmont High School, 25630 Evans St., Elkmont	\$2,000,000
Creekside Elementary School, 16049 Sanderson Rd., Harvest	\$13,077,100
Limestone County Career Technical Center, 505 Sanderfer Rd., Athens	\$3,500,000
Tanner High School, 12060 Sommers Rd., Tanner	\$12,609,040
West Limestone County High School, 10945 School House Rd., Lester	\$3,000,000
Limestone County Commission (Bldg. 1), 310 West Washington St., Athens	\$607,300
Limestone County Commission, Clinton St. Annex, 100 S. Clinton St., Athens	\$2,618,300
Limestone County Commission, Market St. Annex, 1109 W. Market St., Athens	\$224,000
Limestone County Court House (Bldg. 3), 300 Washington St. W., Athens	\$5,278,400
Limestone County Court House, 200 Washington St. W., Athens	\$4,900
Limestone County EMA, 1011 W. Market St., Athens	\$536,520
Limestone County Health Dept., 20371 Clyde Mabry Dr., Athens (owned by the AL Public Health Care Authority)	\$1,249,500
Limestone County Mental Health Center, 1307 E. Elm St., Athens	\$304,200
Limestone County New Mental Health Bldg., Athens	\$131,000
Limestone County Sheriff's Office/Jail, 309 Green St., Athens	\$1,260,000
Limestone County Water Authority (Bldg. 3), 2415 Hwy. 72 W., Athens	\$318,700
Limestone County Water Authority (Bldg. 4), 2415 Hwy. 72 W., Athens	\$69,100
Limestone County Water Authority, 2415 Hwy. 72 W., Athens	\$2,370
Limestone County Water Authority, 2415 Hwy. 72 W.,	\$12,270

Athens	
Limestone County Water Authority/Treatment Plant, 17762 Lott Rd., Veto	\$1,260,000
Capshaw Post Office (Bldg. 3), 1108 Old Railroad Bed Rd., Capshaw (owned by Gielle Properties, LLC)	\$142,600
Capshaw Post Office, 1108 Old Railroad Bed Rd., Capshaw (owned by Gielle Properties, LLC)	\$11,560
Tanner Post Office (Bldg. 3), 20236 Huntsville – Brownsferry Rd., Tanner	\$90,300
Limestone Correctional Facility, 28779 Nick Davis Rd., Capshaw (owned by the St. of AL)	\$10,000,000
Limestone Correctional Facility (Bldg. 3), 28779 Nick Davis Rd., Capshaw (owned by the St. of AL)	\$23,800
Limestone Co. Dept. of Human Resources (Bldg. 1), 1007 W. Market St., Athens (owned by Prince Investments, LLC)	\$1,473,600
Limestone Co. Dept. of Human Resources, 1007 W. Market St., Athens (owned by Prince Investments, LLC)	\$16,500
Limestone Co. Dept. of Human Resources, 1007 W. Market St., Athens (owned by Prince Investments, LLC)	\$32,100
Limestone Co. Dept. of Human Resources, 1007 W. Market St., Athens (owned by Prince Investments, LLC)	\$1,650
Athens-Limestone Hospital, 700 W. Market St., Athens	\$20,318,130
Browns Ferry Nuclear Power Plant, 10835 Shaw Rd., Athens (owned by TVA)	\$1,260,000
Tanner VFD	\$1,260,000
South Limestone VFD	\$1,260,000
Total	\$88,952,940

(Sources: Local; HAZUS MH 2.1, Accessed 2016)

Table 4-41: Critical Roadways Vulnerable to Flooding and Landslides

(Source: Limestone County Engineering Department, reviewed 2016)

CRITICAL ROADWAYS			
NAME	TYPE	FLOOD TYPE	DESCRIPTION
Nick Davis Road @ Limestone Creek	Major Collector Route	Zone A	This is the primary access to the Limestone Correctional Facility and has a history of flooding every 5-10 years. When Nick Davis, Capshaw Road, and Highway 72 are flooded, the detour is approximately 7 miles to bypass this section of roadway. The bridge at this location has been classified by ALDOT as Scour Critical and in need of scour countermeasures to protect the structure in a flood.
Capshaw Road @ Limestone Creek	Local Rural	Zone A	Due to growth in the area, and the location of a school nearby on Sanderson Road, this road has become very busy. This road has a history of flooding every 5-10 years. The bridge at this location has been classified by ALDOT as Scour Critical and in need of scour countermeasures to protect the structure in a flood.
U. S. Highway 72 @ Limestone Creek	Principal Arterial	Zone A	Highway 72 is the principal route between Athens and Huntsville. Water has crossed this road a couple of times in the last 25 years.
Liberty Way @ Little Limestone Creek	Local Rural	Zone A	When this area floods, access to the area is completely cut off by four residences and there are no alternate detour routes.
Mooresville Road near Old Highway 20	Major Collector	Zone A	Area floods generally 2-3 times per year. When the road floods, the detour is approximately 10 miles around this area.
Pryor Road near Swancott	Local Rural	Zone A	If this area were to flood, there are approximately 40 residences that would have no access to the area.
Bethel Road West of Oak Grove Road	Local Rural	Zone X	This area floods 1-2 times per year. The detour around this area is approximately 8 miles.
Huber Road East of Hays Mill Road	Local Rural	Zone A	This area floods 1-2 times per year. The detour around this area is approximately 4.5 miles.
Cowford Road South of Brownsferry Road	Local Rural	Zone A	This area floods 1-2 times per year. The detour around this area is approximately 5 miles.
Alabama Highway 99 between Dupree Hollow	Major Collector	Zone A	This area floods every 2-3 years closing Alabama Highway 99. The detour route around this area is about 7 miles.
Cottonbelt Road @ Sugar Creek	Major Collector	Zone A	This road has 2 bridges that are classified by ALDOT as Scour Critical and in need of scour countermeasures to protect the bridge structure in a flood. If one of these bridges were to fail, the detour route would be 15 miles. In this case, a detour could last for several months until the bridge could be restored.
Shoal Creek Road near Leggtown	Local Rural	Zone A	This area floods every 5-10 years. The detour route around this area is 8.5 miles.

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Madison County Mitigation Measures Global Changes for 2021 Regional Hazard Mitigation Plan

1.3.6 Conduct flood studies of drainage basins throughout Madison County to identify areas prone to flooding.

Goal: Prevention

Objective: Detailed Plans and Targeted Studies

Priority: Moderate

Lead Responsibility: FP, CE, MCE

Hazard(s): FL

Timeline: Ongoing

Possible Funding Source: HMGP, PDM

5.1.4 Upgrade to outdoor warning siren system's activation system had been completed

5.1.7 or 5.1.4 Install remote weather and camera instrumentation countywide to create a monitoring network to provide timely weather awareness information used to provide potentially early and more accurate warnings to lessen the impact on the population.

Goal: Emergency Services

Objective: Disaster Warning

Priority: Moderate

Lead Responsibility: EMA

Hazard(s): FL,T,SS,DH,WC,WF

Timeline: Ongoing

Possible Funding Source: HMGP, PDM

Key to Abbreviations Used in Tables 6-2 through 6-9

Hazards

<i>FL</i>	Flood
<i>T</i>	Tornado
<i>SS</i>	Severe Storm
<i>EQ</i>	Earthquake
<i>H</i>	Hurricane
<i>L</i>	Landslide
<i>SH</i>	Land Subsidence/Sinkholes
<i>DH</i>	Drought/Heat Wave/Extreme Heat
<i>WC</i>	Winter Storm/Extreme Cold
<i>WF</i>	Wildfire
<i>DF</i>	Dam Failure
<i>ALL</i>	All hazards

Responsible Party

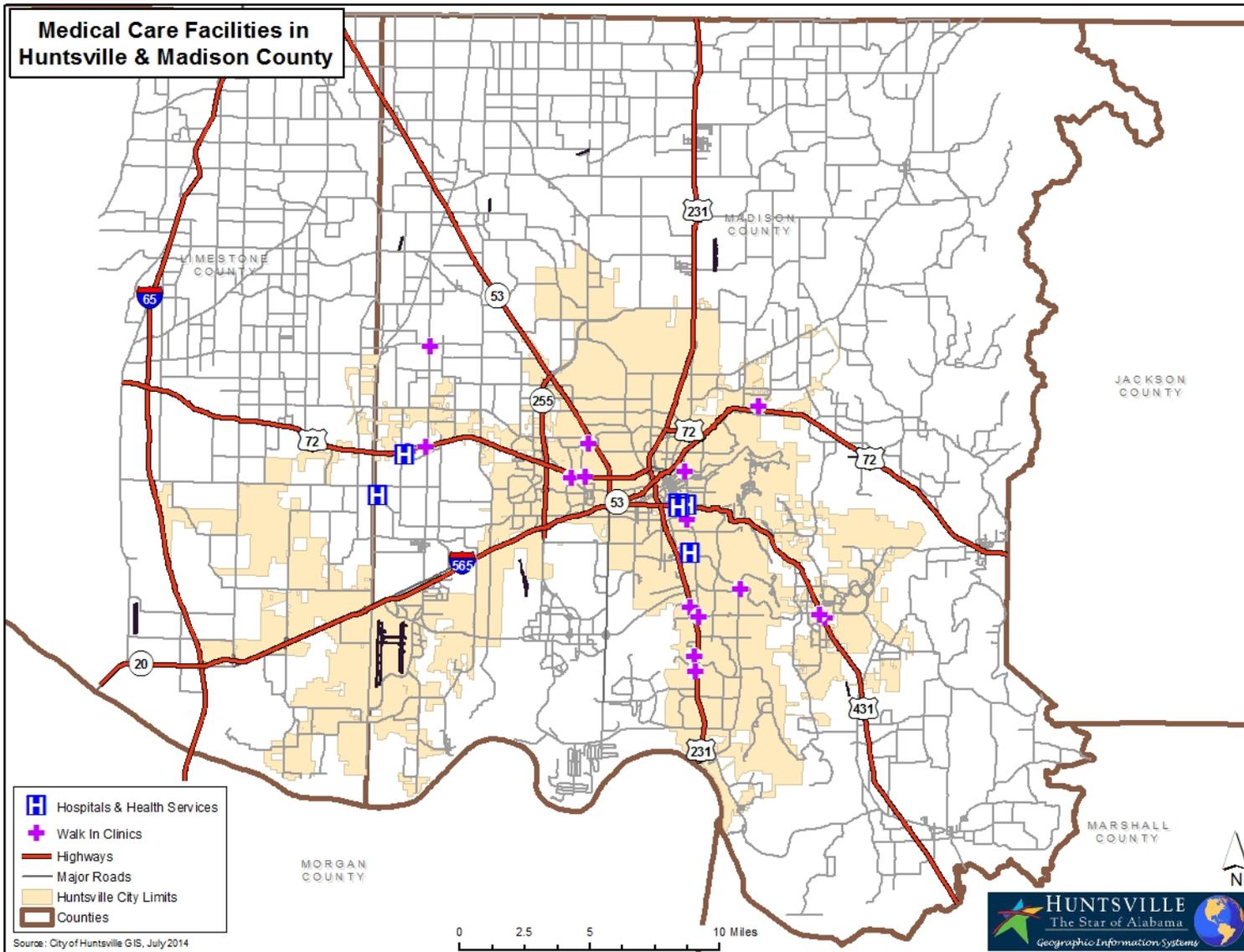
<i>EMA</i>	Huntsville-Madison County EMA
<i>MCE</i>	Madison County Engineer
<i>FP</i>	Local Flood Plain Manager
<i>BO</i>	Building Official
<i>HWPCD</i>	Huntsville Water Pollution Control Department
<i>HUDD</i>	Huntsville Urban Development Department
<i>MED</i>	City of Madison Engineering Department
<i>CE</i>	City/Town Engineer
<i>MCDD</i>	City of Madison Community Development Department
<i>CP</i>	City/Town Planning Consultant
<i>AFC</i>	Alabama Forestry Commission
<i>TVA</i>	Tennessee Valley Authority
<i>COE</i>	Corps of Engineers
<i>MCHD</i>	Madison County Health Department
<i>TBD</i>	Responsible party to be determined

Timeline

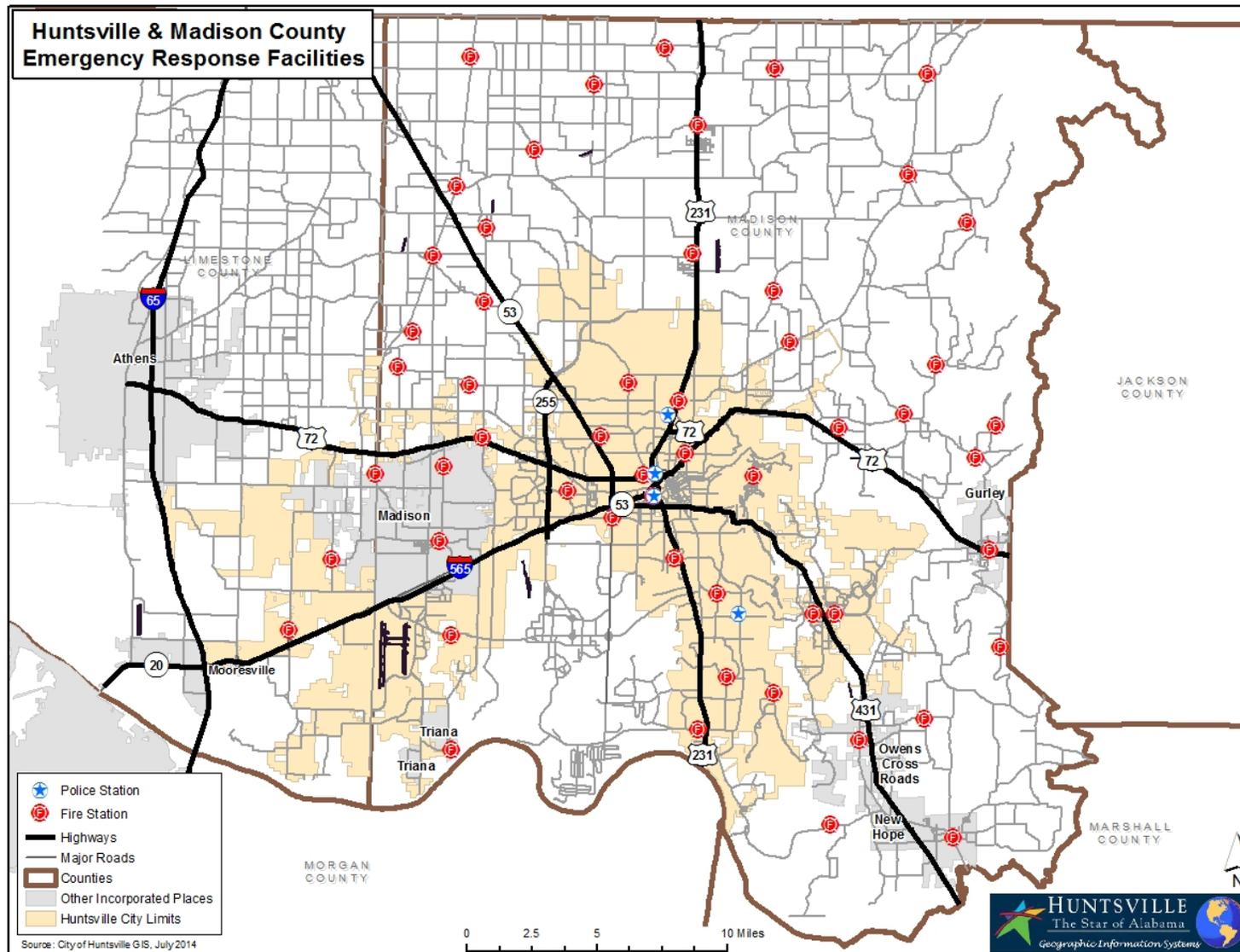
<i>200x</i>	Target Year for Implementation
<i>200x+</i>	Target Implementation after this Year
<i>TBD</i>	Timeline to be Determined

Funding

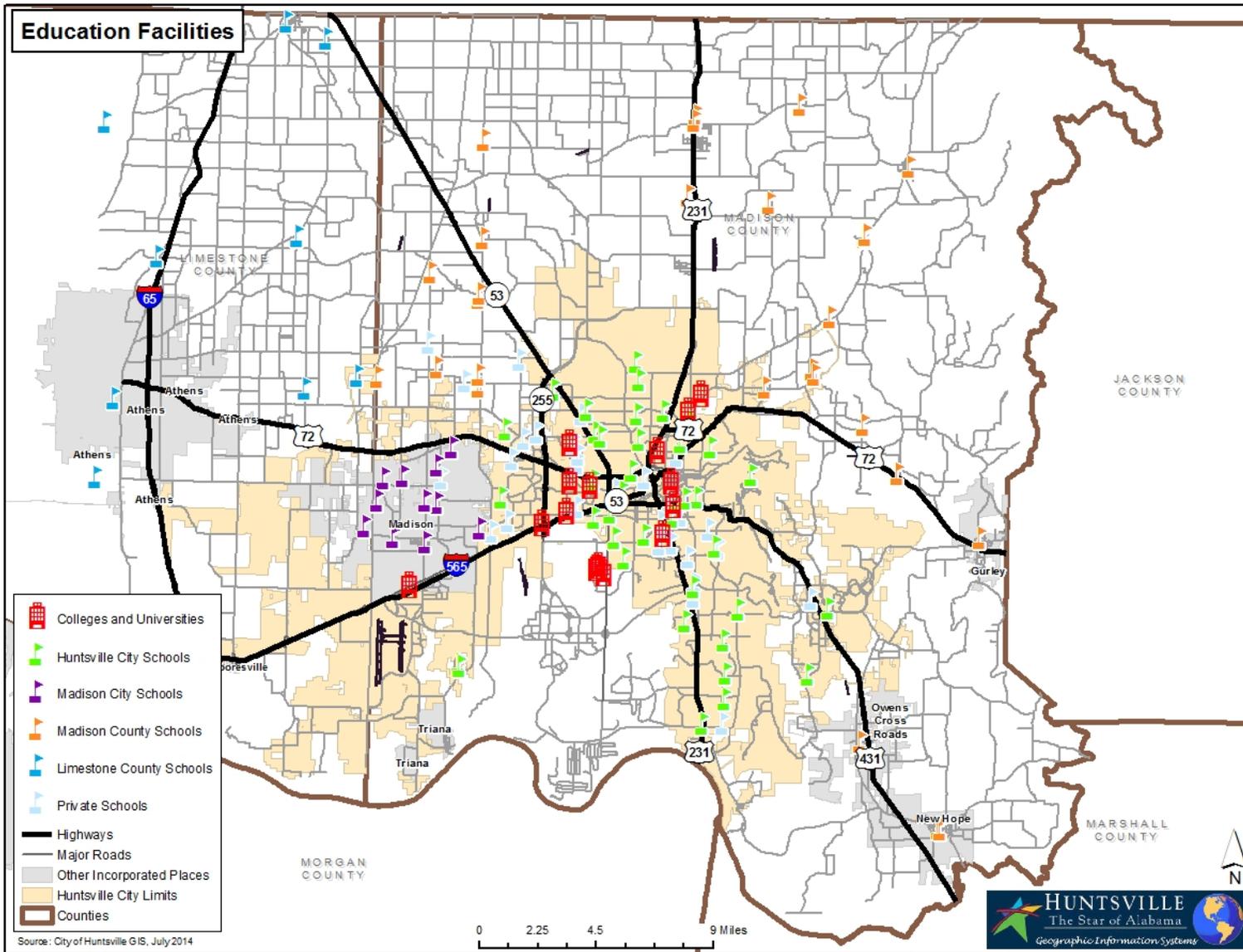
<i>HMGP</i>	FEMA Hazard Mitigation Grant Program (HMGP)
<i>PDM</i>	FEMA Pre-Disaster Mitigation Grant Program (PDM)
<i>FMA</i>	FEMA Flood Mitigation Assistance Grant Program (FMA)
<i>FEMA</i>	FEMA Grant Program – HMGP, PDM, or FMA
<i>EXIST</i>	Existing Local Funds
<i>ADECA</i>	Alabama Department of Economic and Community Affairs Funds
<i>COE</i>	U.S. Army Corps of Engineers
<i>AEMA</i>	Alabama Emergency Management Agency Funds
<i>OTHER</i>	Other FEMA or AEMA funding program
<i>TBD</i>	Funding to be Determined



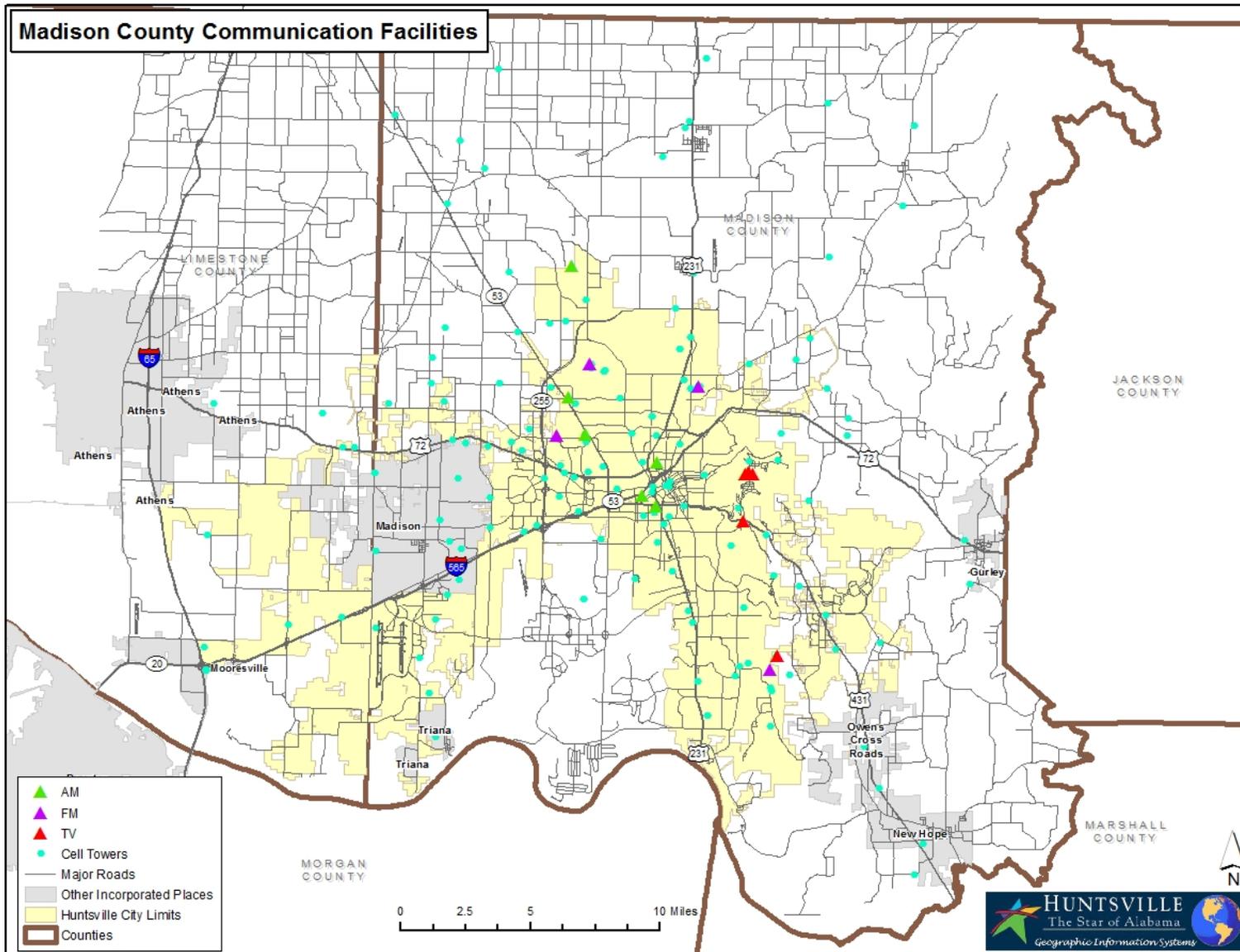
Map 4-12. Emergency Care



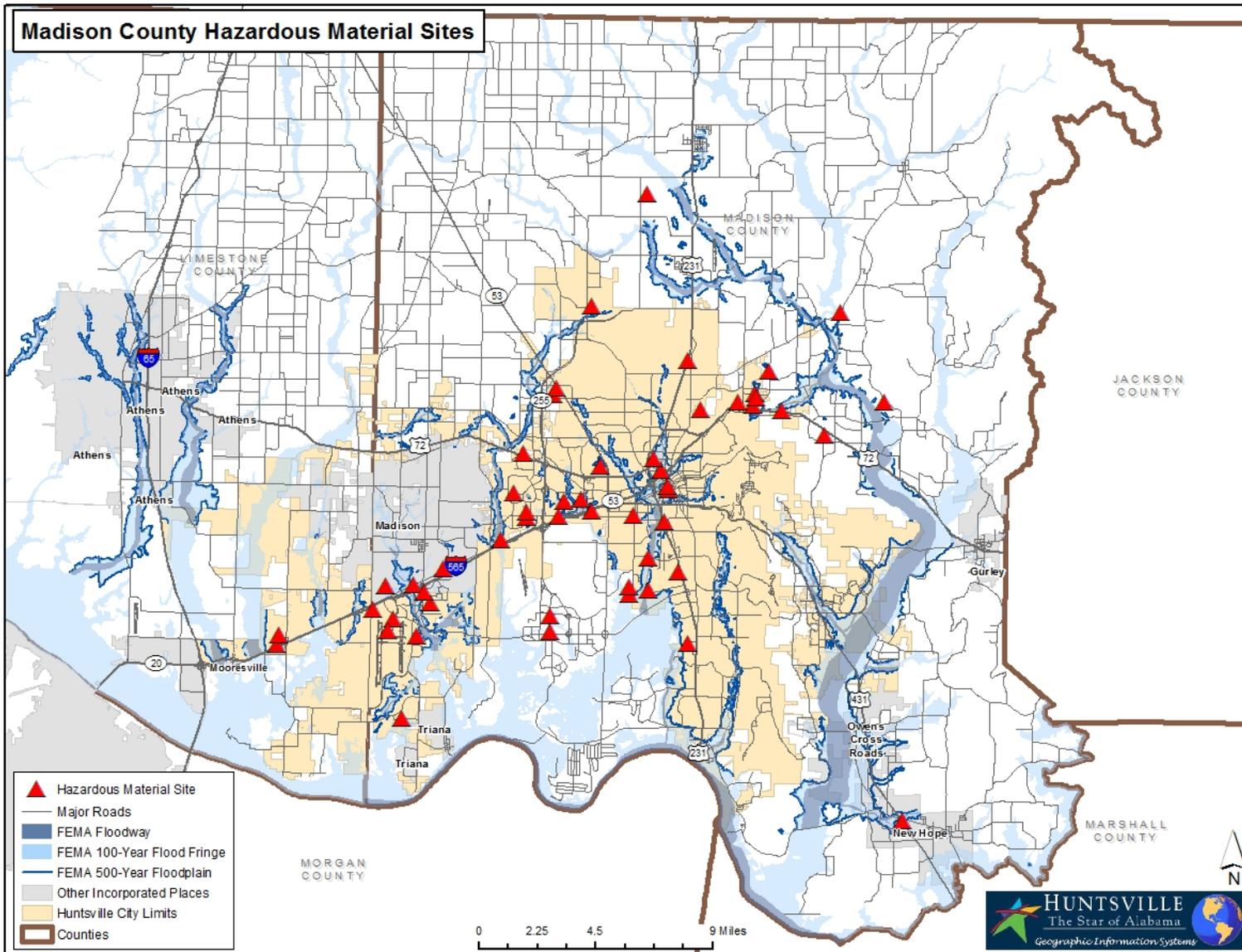
Map 4-13. Emergency Response



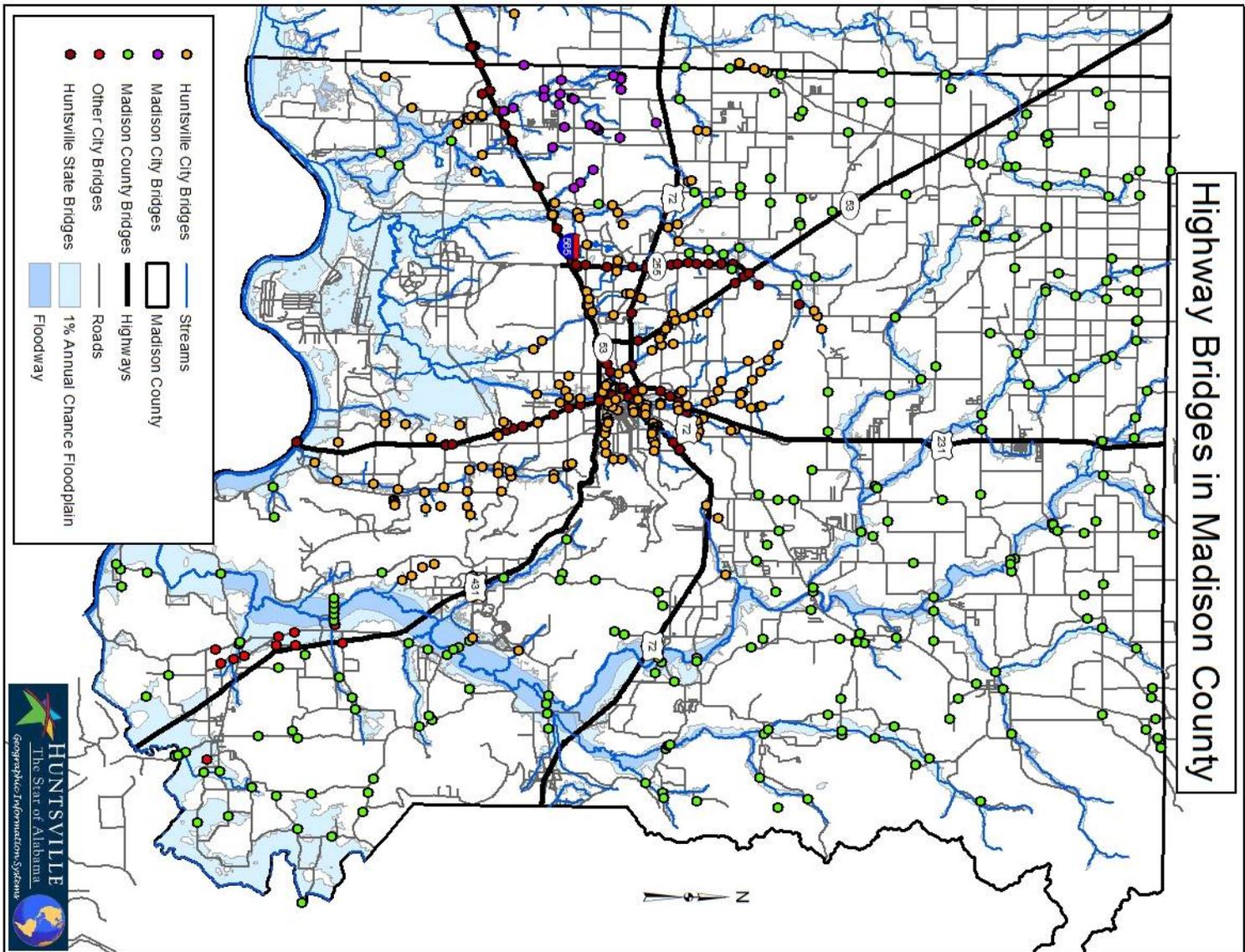
Map 4-14. Education



Map 4-15. Communication



Map 4-16. Hazardous Material Sites



Map 4-17. Highway Bridges

Table 5.5-8 Morgan County's Critical Facilities' Values

CRITICAL FACILITIES – MORGAN COUNTY	
FACILITY TYPE	REPLACEMENT VALUE
Ryan School, 11001 Hwy. 67 South, Joppa, AL 35087-6210	\$1,632,420
Albert P. Brewer Voc., 59 Eva Road, Somerville, AL 35670	\$4,555,580
Albert P. Brewer High School, 59 Eva Road, Somerville, AL 35670-6423	\$10,715,110
Union Hill School, 2221 Union Hill Road, Somerville, AL 35670-6619	\$4,375,260
Cotaco School, 100 Cotaco School Road, Somerville, AL 35670-5329	\$5,798,880
Eva School, 20 School Road, Eva, AL 35621	\$4,308,820
Laceys Spring Elementary School, 48 School Road, Laceys Spring, AL 35754-4001	\$3,625,490
Danville-Neel Elementary School, 8688 Danville Road, Danville, AL 35619-6419	\$4,783,360
Morgan County Sheriff Dist. Station, 100 Neel School Road, Danville, AL 35619-6115	\$1,260,000
Morgan County Sheriff, 1865 Highway 231, Laceys Spring, AL 35754-3432	\$1,260,000
Somerville Police Department, Broad Street, Somerville, AL 35670-0000	\$1,260,000
Morgan County Sheriff – Patrol, 10001 W. Main Street, Somerville, AL 35670-0000	\$1,260,000
Florette Fire Department, 10 Florette Park Road, Somerville, AL 35670-6934	\$540,000
Cotaco Fire Department, 168 Benson Road, Somerville, AL 35670-5300	\$540,000
Somerville Fire Department, Broad Street, Somerville, AL 35670-0000	\$540,000
Talucah Volunteer Fire Department, Sharps Ford Rd., Valhermoso Springs, AL 35775-0000	\$540,000
Neel Volunteer Fire Department, 70 Neel School Road, Danville, AL 35619-6113	\$540,000
Fire Department, 4238 Eva Road, Eva, AL 35621-7629	\$540,000
Brindle Mountain Volunteer Fire Department, 4434 Hwy. 231, Union Grove, AL 35175-5270	\$540,000
Total	\$48,614,920

Source: HAZUS 2009

Table 5.5-9 Decatur’s Critical Facilities’ Values

CRITICAL FACILITIES – CITY OF DECATUR	
FACILITY TYPE	REPLACEMENT VALUE
St. Ann School, 240 Johnston Street, SE, Decatur, AL 35601	\$1,955,100
Montessori School, 402 Johnston Street, SE, Decatur, AL 35601-3008	\$474,540
Decatur Heritage Christian Academy, 2014 Sandlin Rd., Decatur, AL 35601	\$3,198,400
Cedar Ridge Middle School, 2715 Danville Road, SW, Decatur, AL 35603-4265	\$7,488,240
Calvary Christian Academy, 1413 Glenn Street, SW, Decatur, AL 35603	\$1,613,440
Cornerstone Christian School, 3211 Spring Ave., SW, Decatur, AL 35603	\$901,630
Priceville School, 317 Highway 67 South, Decatur, AL 35603-5403	\$8,285,470
Decatur High School, 1011 Prospect Dr., SE, Decatur, AL 35601-3229	\$10,155,160
Oak Park Middle School, 1218 16 th Ave., SE, Decatur, AL 35601-4325	\$6,102,580
Somerville Road Elementary School, 910 Somerville Road, SE, Decatur, AL 35601-3293	\$4,071,550
Eastwood Elementary School, 1802 26 th Ave., SE, Decatur, AL	\$2,752,330
Walter Jackson Elementary School, 1950 Park St., SE, Decatur, AL 35601-5262	\$1,869,690
Gordon-Bibb Elementary School, 211 Gordon Dr., SE, Decatur, AL 35601-2527	\$3,169,930
Leon Sheffield Elementary School, 801 Wilson St., NW, Decatur, AL 35601-1037	\$2,078,490
Benjamin Davis Elementary, 417 Monroe Dr., NW, Decatur, AL 35601-1515	\$2,325,250
West Decatur Elementary School, 708 Memorial Drive, NW, Decatur, AL 35601-2917	\$3,169,930
Brookhaven Middle School, 1302 5 th Ave., SW, Decatur, AL 35601-3838	\$5,988,690
Austinville Elementary School, 2320 Clara Ave., S. W., Decatur, AL 35601-6316	\$4,223,410
Austin High School, 1625 Danville Rd., SW, Decatur, AL 35601-5462	\$12,508,870
Woodmeade Elementary School, 1400 19 th Ave., SW, Decatur, AL 35601-4651	\$3,075,020



Austin High Area Voc. School, 1625 Danville Rd., SW, Decatur, AL 35601	\$4,555,580
Julian Harris Elementary School, 1922 McAuliffe Dr., SW, Decatur, AL 35603-1051	\$4,498,640
Frances Nungester Elementary School, 726 Tammy St., SW, Decatur, AL 35603-1328	\$4,821,330
Chestnut Grove Elementary School, 3205 Cedarhurst Dr., SW, Decatur, AL 35603-3127	\$5,191,470
Sheriff Drug Unit, 214 Oak St., NE, Decatur, AL 35601- 1828	\$1,260,000
Sheriff Internal Affairs, 302 Lee St., NE, Decatur, AL 35601-1926	\$1,260,000
Decatur Police Department, 402 Lee St., NE, Decatur, AL 35601-1928	\$1,260,000
Alabama State Troopers, 4204 U. S. Highway 31, Decatur, AL 35603-5000	\$1,260,000
Priceville Town Police Department, 520 Highway 67 South, Decatur, AL 35603-6302	\$1,260,000
Decatur Fire Department, 205 Gordon Drive, SE, Decatur, AL 35601-2527	\$540,000
Flint City Fire Department, 214 Oxmore Flint Road, Decatur, aL 35603-4804	\$540,000
Mud Tavern Volunteer Fire Department, 2278 Kirby Bridge Road, Decatur, AL 35603-3800	\$540,000
Decatur Fire Chief, 4119 Old Highway 31, Decatur, AL 35603-4864	\$540,000
Morgan County Rescue Squad, 4403 Old Highway 31, Decatur, AL 35603-4811	\$540,000
Decatur General Hospital, 1201 Seventh Street, SE, Decatur, AL 35601	\$51,499,420
Parkway Medical Center Hospital, 1874 Beltline Road, SW, Decatur, AL 35601	\$18,909,940
North Alabama Regional Hospital, 4218 Highway 31 South, Decatur, AL 35603	\$14,886,550
Total	\$210,110,650

Source: HAZUS 2009

Table 5.5-10 Hartselle's Critical Facilities' Values

CRITICAL FACILITIES – CITY OF HARTSELLE	
FACILITY TYPE	REPLACEMENT VALUE
Bethel Baptist School, 1301 Bethel Rd. NE, Hartselle, AL 35640	\$1,243,290
Sparkman Elementary School, 72 Plainview, Hartselle, AL 35640-5502	\$2,866,220
Barkley Bridge Elementary School, 2333 Barkley Bridge Rd., Hartselle, AL 35640-5119	\$3,986,140
F. E. Burluson Elementary School, 305 E. College Street, Hartselle, AL 35640	\$3,464,140
Hartselle Junior High School, 130 Petain St. SW, Hartselle, AL 35640-3228	\$6,757,450
Hartselle Area Voc. Center, 904 South Sparkman Street, Hartselle, AL 35640	\$4,555,580
Crestline Elementary School, 600 Crestline Drive, SW, Hartselle, AL 35640-2611	\$5,732,440
Hartselle High School, 904 South Sparkman Street, Hartselle, AL 35640-3198	\$8,294,960
Hartselle City Police Department, 150 Chestnut St., NW, Hartselle, AL 35640-2450	\$1,260,000
Hartselle Fire Department, 150 Chestnut St., NW, Hartselle, AL 35640-2450	\$540,000
Hartselle Fire Department, 200 Main Street, E, Hartselle, AL 35640-2437	\$540,000
Oak Ridge Volunteer Fire Department, 200 Simmons Road, Hartselle, AL 35640-4954	\$540,000
Hartselle Medical Center, 201 Pine Street, NW, Hartselle, AL 35640	\$10,058,480
Total	\$49,838,700

Source: HAZUS 2009

Table 5.5-11 Falkville’s Critical Facilities’ Values

CRITICAL FACILITIES – CITY OF FALKVILLE	
FACILITY TYPE	REPLACEMENT VALUE
Falkville Elementary School, 43 Clark Drive, Falkville, AL 35622-0388	\$4,622,020
Falkville High School, 43 Clark Drive, Falkville, AL 35622-0388	\$4,185,440
Falkville Police Department, 21 N. First Ave., Falkville, AL 35622-0000	\$1,260,000
Massey Fire Department, 3815 Nanceford, Falkville, AL 35622-000	\$540,000
Falkville Fire Department, E. Main Street, Falkville, AL 35622-0000	\$540,000
Ebenezer Fire Department	\$540,000
4 Wastewater Pumping Stations	\$80,000
2 Fresh water intakes from Hartselle/West Morgan	\$200,000
Joe Wheeler Power Stations	\$(gathering data)
Fairview Church (backup location for operations of the City of Falkville)	\$1,500,000
Police Firing Range	\$600,000
Total	\$14,067,460+

Source: HAZUS 2009 and Chief Chris Free, Falkville Police and Fire Department

Table 5.5-12 Trinity's Critical Facilities' Values

CRITICAL FACILITIES – TOWN OF TRINITY	
FACILITY TYPE	REPLACEMENT VALUE
West Morgan High School, 261 South Greenway Drive, Trinity, AL 35673-6002	\$4,147,480
West Morgan Elementary School, 261 South Greenway Drive, Trinity, AL 35673-9514	\$5,125,030
Trinity Police Department, 35 Preston Drive, Trinity, AL 35673-6552	\$1,260,000
Trinity Fire Department, 41 N. Seneca Drive, Trinity, AL 35673-5739	\$540,000
Total	\$11,072,510

Source: HAZUS 2009

Table 5.5-13 Critical Roadways Vulnerable to Flooding and Landslides

CRITICAL ROADWAYS			
NAME	TYPE	FLOOD TYPE	DESCRIPTION
Interstate 65			Major Highway
US Route 31			Major Highway
US Highway 72 Alt			Major Highway
US Highway 231			Major Highway
State Route 20			Major Highway
State Route 24			Major Highway
State Route 36			Major Highway
State Route 67			Major Highway
CSX Transportation Railway			Major Railway
Norfolk Southern Railway			Major Railway
Tennessee River			Major Waterway
Robinson Creek Road			Critical Roadway that often floods (Falkville)
Douglas Road			Critical Roadway that often floods (Falkville)
Buster Road			Critical Roadway that often floods (Falkville)
Culver Road			Critical Roadway that often floods (Falkville)
Townsend Road			Critical Roadway that often floods (Falkville)
Cedar Creek Road			Critical Roadway that often floods (Falkville)

Source: Chief Chris Free, Falkville Police and Fire Department

5.5.4 Seismic Risk

The county used FEMA’s HAZUS software to determine risk in Morgan County.

5.5.4.1 Summary of Local Risk Assessments

There are no potential loss estimates for earthquakes due to a lack of data and historical damages.

5.5.4.2 Countywide Risk Assessment for Earthquakes

Earthquake Methodology – HAZUS Calculation of Losses

FEMA’s HAZUS software was used to estimate seismic risk for Morgan County in Alabama. The methodology uses HAZUS default data about seismic hazards across the county in conjunction with countywide essential facility information, and the software’s standard algorithms. The calculation algorithms estimate annual seismic risk (expected losses) using information about “shake” probabilities and soil characteristics, among other parameters. To convert the estimated annual losses, the methodology uses a present value coefficient of 12.41 multiplied by the annual losses. The coefficient combines the required 7 percent discount rate with a standard 30-year time horizon to calculate future losses probable losses over that period.

Strengths, Biases and Limitations of the Methodology



Stakeholder Engagement

DIVISION F RHMP STAKEHOLDER OUTREACH + HANDOUTS

AEMA DIVISION F
REGIONAL HAZARD MITIGATION PLAN

STAKEHOLDER ENGAGEMENT MEETING

The Top of Alabama Regional Council of Governments (TARCOG) is leading a regional hazard mitigation plan update for AEMA Division F which includes Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, and Morgan counties.

Join us to learn more about the regional planning effort and to provide input and insights on hazard mitigation as it relates to your organization.

Monday, January 11, 2021
10:00 - 11:00 a.m.

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=m45603be1c036098cbc9c75e97552c52d>

Contact Phoenix Robinson with any questions
(phoenix.robinson@tarcog.us)

From: [Sara James](#)
To: [Sara James](#)
Cc: ["Phyllis Little"](#); [Don Roybal](#); ["Deborah Gaither"](#); ["Breonna Cole"](#); [Jesslan Wilson](#); [Hester, Joey](#); [Selman, Shelby](#); [Phoenicia Robinson](#); [Erin Tidwell](#)
Bcc: [agraves@co.cullman.al.us](#); [baileytownhall@cyberbroadband.net](#); [battleground1r@aol.com](#); [bbradberry@cullmanal.gov](#); [berlinal@outlook.com](#); [bj1@cullmancity.org](#); [bklein@ccboe.org](#); [bobby.morris@crmchospital.com](#); [boydwyman.wm@gmail.com](#); [chaney@co.cullman.al.us](#); [chiefbarnett@aol.com](#); [cityhall@CullmanAl.gov](#); [clerk@berlinal.org](#); [clerk@goodhopeal.com](#); [colonyclerk@gmail.com](#); [colonymayor@gmail.com](#); [cturner@cullmanrecreation.org](#); [cullmanpd@cullmanpd.com](#); [dcmayor@bellsouth.net](#); [dctown@bellsouth.net](#); [dougw1@bellsouth.net](#); [dshedd2003@yahoo.com](#); [ecwkeith@bellsouth.net](#); [eskew7@bellsouth.net](#); [firemanjoe@yahoo.com](#); [fisher165527@gmail.com](#); [gardencitytownhall@gmail.com](#); [gardencityvfd@gmail.com](#); [gmarchman@co.cullman.al.us](#); [goodhopefr@bellsouth.net](#); [gsandlin@cullman911.org](#); [hanceville201@yahoo.com](#); [hfd312@gmail.com](#); [hollypondfire@att.net](#); [hrtofdxe@bellsouth.net](#); [info@townofsouthvinemont.com](#); [james.curtis@crmchospital.com](#); [jbullard@co.cullman.al.us](#); [jeromespeeple@hotmail.com](#); [jfolson@cullmanal.gov](#); [jhadley@co.cullman.al.us](#); [joneschapelfire@bellsouth.net](#); [kgable04@yahoo.com](#); [kristi.barnett@wallacestate.edu](#); [kwalker@co.cullman.al.us](#); [logan01toby@gmail.com](#); [ltnail@yahoo.com](#); [mayor@berlinal.org](#); [mayor@CullmanAl.gov](#); [mayor@goodhopeal.com](#); [mayorcurtisjohnson@gmail.com](#); [mgentry@cullmansheriff.org](#); [mikemanning@cullmanpowerboard.com](#); [nathanf@hiwaay.net](#); [oliver936@bellsouth.net](#); [rchambers@cullmansheriff.org](#); [rdgr270@yahoo.com](#); [reevescr@aol.com](#); [rgjmlaney@att.net](#); [Robert.abbott93@yahoo.com](#); [rwaldrp@co.cullman.al.us](#); [sardisvfd01@gmail.com](#); [sbarnette@ccboe.org](#); [spatterson@cullmancats.net](#); [stephenmoody51@yahoo.com](#); [swhittle@vawwater.com](#); [timc@cullmanec.com](#); [tmartinwp05@yahoo.com](#); [townofbaileyton@gmail.com](#); [townofhollypond@outlook.com](#); [townofwestpoint@gmail.com](#); [tsears@co.cullman.al.us](#); [vickiegardon28@gmail.com](#); [vinemonttownhall@bellsouth.net](#); [vpfd309@gmail.com](#); [weaver.matt@ymail.com](#); [wilcoxcityclerk@yahoo.com](#); [windellcall@gmail.com](#); [wjacobs@cullmanal.gov](#); [andyvelliismayorofrosa@gmail.com](#); [mtnsf@otelco.net](#); [rbox174@otelco.net](#); [mayor@cityofoneonta.us](#); [allgoodtownhall@otelco.net](#); [mayor_tnhldlk@otelco.net](#); [rnsawmill@hotmail.com](#); [dbbaker650@gmail.com](#); [aqua4@hopper.net](#); [haydentownhall@yahoo.com](#); [hughesfarms@yahoo.com](#); [barbara@blountoneontachamber.org](#); [mneel@blountboe.net](#); [dmitchell@blountedc.com](#); [rgreen@blountboe.net](#); [dsmith@ocsredskins.com](#); [billing@blountcountywater.com](#); [wscconeonta@wallacestate.edu](#); [adixon@cityofgadsden.com](#); [Altoona102@yahoo.com](#); [achambers@cityofgadsden.com](#); [afdchief302@yahoo.com](#); [attallafire35954@bellsouth.net](#); [cityclerk@rbcalabama.com](#); [blakeragsdale@cityofsouthside.com](#); [scottholderfield@rbcalabama.com](#); [carrie.washington1@outlook.com](#); [chare@gadsdenwater.org](#); [mayor@cityofglencoe.net](#); [policechief@cityofglencoe.net](#); [mhill@etowahcounty.org](#); [jbryant@rbcalabama.com](#); [firechief@cityofglencoe.net](#); [tyler.roe@cityofhokesbluff.com](#); [info@cityofattalla.org](#); [citycouncil@cityofgadsden.com](#); [dannyyagnon@cityofglencoe.net](#); [dlanier@sardiscityval.gov](#); [attalla203@yahoo.com](#); [dksteele03@gmail.com](#); [walnutgrovefire@gmail.com](#); [ewright@cityofgadsden.com](#); [doran.eric@yahoo.com](#); [firechief@cityofsouthside.com](#); [fdavis@cityofgadsden.com](#); [gjackson@cityofgadsden.com](#); [hawkins116@yahoo.com](#); [jharp@live.com](#); [jason.attalla@gmail.com](#); [jward@cityofgadsden.com](#); [firechief@cityofhokesbluff.com](#); [jcsardisvfd@yahoo.com](#); [ljaggears@gadsdenpd.org](#); [lmeans1106@gmail.com](#); [rcityclerk@comcast.net](#); [mayorgsreeves@cityofhokesbluff.com](#); [pcody@gadsdenpd.org](#); [philcolgrove@gmail.com](#); [rjohnson@gadsdenpd.org](#); [firechief@rbcalabama.com](#); [rmail@etowahcounty.org](#); [ramos@sardiscityval.gov](#); [jmittchell@gadsdenpd.org](#); [jhorton@etowahcounty.org](#); [sguyton@cityofgadsden.com](#); [scarroll@cityofgadsden.com](#); [tbean@etowahcounty.org](#); [tashiablackerby@cityofglencoe.net](#); [altoonaclerk@yahoo.com](#); [mayor@rbcalabama.com](#); [tgraves@etowahcounty.org](#); [altoonafire760@yahoo.com](#); [wade.buckner.71@gmail.com](#); [wburns@cityofsouthside.com](#); [gcline316@gmail.com](#); [walnutg@hopper.net](#); [wreed@cityofgadsden.com](#); [wkeener@gadsdenpd.org](#); [davidhooks@gadsdenida.org](#); [greeneb@gadsdenida.org](#); [heather.new@etowahchamber.org](#); [treddick@gadsdencityschools.org](#); [hbaeza@gadsdencityschools.org](#); [alan_cosby@ecboe.org](#); [chris_winningham@ecboe.org](#); [gbennett@atn.org](#)
Subject: Reminder: Invitation: Virtual Hazard Mitigation Stakeholder Meeting
Date: Friday, January 8, 2021 3:37:00 PM
Attachments: [image001.png](#)
[image002.png](#)
[Blount, Cullman, Etowah RHMP Stakeholder Meeting Invitation \(January 11\).pdf](#)

Hi all,

Just a quick reminder of our **Division F Regional Hazard Mitigation Stakeholder Engagement Meeting** taking place Monday (January 11) at **10:00 a.m.** I hope you can join us. Also, please feel free to share this invitation with your colleagues and/or partner organizations. I've provided the meeting link below again, for your convenience. Please reach out with any questions.

Division F RHMP Virtual Stakeholder Meeting (Blount, Cullman, Etowah Counties)

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=m45603be1c036098cbc9c75e97552c52d>

Join from a mobile device (US Toll):

+1-415-655-0001

Meeting ID #: 1269825153#

Participant Passcode*: 34837467#

**Some mobile devices may ask attendees to enter a numeric meeting password.*

From: Sara James

Sent: Tuesday, December 29, 2020 9:44 AM

To: Sara James <Sara.James@tarcog.us>

Cc: 'Phyllis Little' <plittle@cullmanema.org>; Hester, Joey <Joey.Hester@adss.alabama.gov>;

Selman, Shelby <shelby.selman@adss.alabama.gov>; Phoenicia Robinson

<Phoenix.Robinson@tarcog.us>; Erin Tidwell <Erin.Tidwell@tarcog.us>

Subject: Invitation: Virtual Hazard Mitigation Stakeholder Meeting

Good Morning Cullman County Stakeholders,

I hope this email finds you well. I am writing to invite you to participate in a **Stakeholder Engagement Meeting** for the Alabama Emergency Management Agency (AEMA) **Division F Regional Hazard Mitigation Plan** update.

The Top of Alabama Regional Council of Governments (TARCOG) is leading the planning process to update Cullman County's hazard mitigation plan and incorporate it into a regional hazard mitigation plan encompassing the AEMA Division F Region which includes Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, Marshall, and Morgan counties. AEMA and FEMA require that hazard mitigation plans are updated every five years. Each AEMA division throughout the state is preparing a division-wide plan that incorporates each county's update into one regional hazard mitigation plan for each AEMA division. TARCOG is partnering with Cullman County Emergency Management Agency (EMA) and the other Division F EMAs as well as our fellow regional planning commissions, Regional Planning Commission of Greater Birmingham (RPCGB) and North-Central Alabama Regional Council of Governments (NARCOG), to conduct this planning process.

While the COVID-19 pandemic has made this regional plan update process challenging, we want to ensure we are able to engage with key stakeholders throughout the Division F region to provide you with important information about the plan update, share an overview of Division F's regional hazard mitigation goals and objectives, and to gain insight and input from participating stakeholders on how natural disasters and hazard mitigation actions impact your organizations.

Please join us on **Monday, January 11 at 10:00 a.m.** for a virtual stakeholder engagement meeting ([see attached invitation](#)). The meeting will be held virtually on WebEx – the hyperlink/call-in details are provided below:

[Division F RHMP Virtual Stakeholder Meeting \(Blount, Cullman, Etowah Counties\)](#)

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=m45603be1c036098cbc9c75e97552c52d>

Join from a mobile device (US Toll):

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Meeting ID #: 1269825153#

Participant Passcode*: 34837467#

**Some mobile devices may ask attendees to enter a numeric meeting password.*

Please forward this invitation to your colleagues or partner organizations – anyone you think would benefit from attending. We welcome any/all participation.

Feel free to contact me with any questions.

Sincerely,

Sara James

Economic Development & Planning Director

Top of Alabama Regional Council of Governments

5075 Research Drive NW, Huntsville, Alabama 35805

(256) 716-2483 sara.james@tarcog.us



AEMA DIVISION F
REGIONAL HAZARD MITIGATION PLAN

STAKEHOLDER ENGAGEMENT MEETING

The Top of Alabama Regional Council of Governments (TARCOG) is leading a regional hazard mitigation plan update for AEMA Division F which includes Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, and Morgan counties.

Join us to learn more about the regional planning effort and to provide input and insights on hazard mitigation as it relates to your organization.

Wednesday, January 6, 2021
10:00 - 11:00 a.m.

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=mddca0c875c60215c6ea78e84117a7dad>

Contact Phoenix Robinson with any questions
(phoenix.robinson@tarcog.us)

From: [Sara James](#)
To: [Sara James](#)
Cc: "Shawn Rogers"; aclifton@dekalbcountyal.us; mposey@dekalbcountyal.us; "EMA 2"; Paul Smith; Erin Tidwell; Phoenicia Robinson
Bcc: tburgess@cherokeecounty-al.gov; danielsteele@cherokeecounty-al.gov; cchdcc@tds.net; leesburg@tds.net; cedarblufftownclerk@gmail.com; centreal@tds.net; mayor@sandrocks-al.org; clerk@sandrocks-al.org; mguice@cherokeek12.org; cherokeecountyida@gmail.com; info@cherokee-chamber.org; thulgan@cherokee-chamber.org; Pam.Dorsett@Cherokee.Coop; jharrell@cedarbluffutilities.com; cityclerk@collinsvillealabama.net; bbaine@fortpayne.org; aparker@fortpayne.org; cityclerk10@farmerstel.com; chiefmail@yahoo.com; brad.graben@yahoo.com; yhtownhall@farmerstel.com; rlingerfelt@farmerstel.com; mayor@crossvillealabama.com; civilletownclerk@crossvillealabama.com; fyffetownclerk@farmerstel.com; townofgeraldine@farmerstel.com; cityofhenagar@farmerstel.com; davisfarms95@gmail.com; fyffemayor@farmerstel.com; mayorchuck@farmerstel.com; hammondvilletownclerk@gmail.com; townofiderclerk@farmerstel.com; mentone5al@yahoo.com; pineridge12003@yahoo.com; townofpowell@farmerstel.com; clerk@sylvanialabama.com; vhmayor@farmerstel.com; jdurham@dekalbcountyal.us; info@fortpaynechamber.com; info@fortpaynemainstreet.org; chamber@farmerstel.com; johnjordan@neawater.com; campbelld@nacc.edu; stringerb@nacc.edu; rharcrow@dekalbcountyal.us; msharp@dekalbcountyal.us; jhughes@bridgeportutilities.com; bridgeportcit126@bellsouth.net; Jim.McCamy; wphillips@cityofscottsboro.com; s35772@aol.com; tidesandy@aol.com; dukesk@jackson.k12.al.us; popej@jackson.k12.al.us; bobmanning@jcch.net; jasonvenable@jcch.net; bpurdy@naecoop.com; josh@cityofscottsboro.com; sectionpd@yahoo.com; jimmy@scottsboro.org; duttonto@farmerstel.com; townofhollywood@yahoo.com; hytoptown@centurytel.net; langstontownhall@centurytel.net; daveandlorajohnson@yahoo.com; poneal@kaplanindustries.com; shirleyjohnson424@msn.com; pisgahtownhall@farmerstel.com; devedacain@gmail.com; sectional@farmerstel.com; townofskyline23@yahoo.com; woodvilletownhall@outlook.com; patrickallen793@gmail.com; nathanlee@jacksoncountyeda.org; roden@scottsboro.org; sdra@scottsborodra.com; jreyes@scottsboroschools.net; dukesk@jacksonk12.org; jclegislativelegation@gmail.com
Subject: RE: Invitation: Virtual Hazard Mitigation Stakeholder Meeting
Date: Tuesday, January 5, 2021 3:28:00 PM
Attachments: [image001.png](#)
[image002.png](#)
[Cherokee, DeKalb, Jackson RHMP Stakeholder Meeting Invitation \(January 6\).pdf](#)

Hi all,

Just a quick reminder of our **Division F Regional Hazard Mitigation Stakeholder Engagement Meeting** taking place tomorrow (January 6) at **10:00 a.m.** I hope you can join us. Also, please feel free to share this invitation with your colleagues and/or partner organizations. I've provided the meeting link below again, for your convenience. Please reach out with any questions.

Division F RHMP Virtual Stakeholder Meeting (Cherokee, DeKalb, Jackson Counties)

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=mddca0c875c60215c6ea78e84117a7dad>

Join from a mobile device (US Toll):

+1-415-655-0001

Meeting ID #: 1260326233#

Participant Passcode*: 34837467#

**Some mobile devices may ask attendees to enter a numeric meeting password.*

Look forward to connecting tomorrow.

Sincerely,

Sara James

Economic Development & Planning Director
Top of Alabama Regional Council of Governments
5075 Research Drive NW, Huntsville, Alabama 35805
(256) 716-2483 sara.james@tarcog.us



From: Sara James

Sent: Monday, December 28, 2020 2:57 PM

To: Sara James <Sara.James@tarcog.us>

Cc: 'Shawn Rogers' <srogers@cherokeecounty.net>; Phoenicia Robinson <Phoenix.Robinson@tarcog.us>; Erin Tidwell <Erin.Tidwell@tarcog.us>

Subject: Invitation: Virtual Hazard Mitigation Stakeholder Meeting

Good afternoon Cherokee County Stakeholders,

I hope this email finds you well. I am writing to invite you to participate in a **Stakeholder Engagement Meeting** for the Alabama Emergency Management Agency (AEMA) **Division F Regional Hazard Mitigation Plan** update.

The Top of Alabama Regional Council of Governments (TARCOG) is leading the planning process to update Cherokee County's hazard mitigation plan and incorporate it into a regional hazard mitigation plan encompassing the AEMA Division F Region which includes Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, Marshall, and Morgan counties. AEMA and FEMA require that hazard mitigation plans are updated every five years. Each AEMA division throughout the state is preparing a division-wide plan that incorporates each county's update into one regional hazard mitigation plan for each AEMA division. TARCOG is partnering with Cherokee County Emergency Management Agency (EMA) and the other Division F EMAs as well as our fellow regional planning commissions, Regional Planning Commission of Greater Birmingham (RPCGB) and North-Central Alabama Regional Council of Governments (NARCOG), to conduct this planning process.

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Division F RHMP Virtual Stakeholder Meeting (Cherokee, DeKalb, Jackson Counties)

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=mddca0c875c60215c6ea78e84117a7dad>

Join from a mobile device (US Toll):

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Feel free to contact me with any questions.

Sincerely,

Sara James

Economic Development & Planning Director

Top of Alabama Regional Council of Governments

5075 Research Drive NW, Huntsville, Alabama 35805

(256) 716-2483 sara.james@tarcog.us



AEMA DIVISION F
REGIONAL HAZARD MITIGATION PLAN

STAKEHOLDER ENGAGEMENT MEETING

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Join us to learn more about the regional planning effort and to provide input and insights on hazard mitigation as it relates to your organization.

Friday, January 8, 2021
10:00 - 11:00 a.m.

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<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=m1553aae0533413b69f5e064efd5ce935>

Contact Phoenix Robinson with any questions
(phoenix.robinson@tarcog.us)

From: [Sara James](#)
To: [Sara James](#)
Cc: "[White, Rita](#)"; [Birdwell, Jeffrey](#); "[Cassidy, Jared](#)"; [Brandy Davis](#); [Hester, Joey](#); [Selman, Shelby](#); [Phoenicia Robinson](#); [Erin Tidwell](#)
Bcc: collin.daly@limestonecounty-al.gov; marc.massey@limestonecounty-al.gov; dwilliamson@lcwsa.com; bshockney@lceda.com; jennifer@tourathens.com; rmarks@athensal.us; jrich@athensal.us; mgriffin@athensal.us; bdavis@athens-utilities.com; tererichardson@athensmainstreet.org; billy.shannon@aol.com; ardmorefire@mchsi.com; elkmontown@ardmore.net; joeyrussell@outlook.com; moorevillemayor@gmail.com; beth.patton@acs-k12.org; mike.orear@acs-k12.org; randy.shearouse@lcsk12.org; mtyson@madisoncountyal.gov; dwebster@hensi.org; cfaulkner@madisoncountyal.gov; lgwest@madisoncountyal.gov; cheryl.clay@adph.state.al.us; dennis.madsen@huntsvilleal.gov; harrison.diamond@huntsvilleal.gov; gary.gleason@huntsvilleal.gov; marty.calvert@huntsvilleal.gov; ben.ferrill@huntsvilleal.gov; amy.kenum@huntsvilleal.gov; paul.finley@madisonal.gov; Mike.Gentle@madisonal.gov; greg.bates@madisonal.gov; craigtony610@gmail.com; scott.worsham@huntsvilleal.gov; townofgurley@gmail.com; agurley2019@yahoo.com; butchtaylor29@yahoo.com; nhcityclerk@nehp.net; caudletriana@bellsouth.net; hump7674@bellsouth.net; deden.rukmana@aamu.edu; brian.k.kotrous@nasa.gov; todd.barron@noaa.gov; Jessica.Chace@noaa.gov; cscott@hsvairport.org; bennetkl@uah.edu; Jeffrey.Wilson@hsv-k12.org; ed.nichols@madisoncity.k12.al.us; mminsky@mcscsk12.org; jcuzzort@mcscsk12.org; Gary.Whitley@hsvutil.org; Joe.Gehrdes@hsvutil.org; edebord@madisonutilities.org; mharris@oakwood.edu; cotton@oakwood.edu; moliver@hmwater.org; dmccarley@nagd.com; info@southhuntsvillemain.org; lcape@hsvchamber.org; jreeves@co.morgan.al.us; sgilley@decatur-al.gov; rliee@hartselle.org; townofeva@bellsouth.net; destes@falkville.org; cindylivingston@cityofpriceville.com; bjones@trinityal.gov; rlong@co.morgan.al.us; tbowling@decatur-al.gov; Garylivingston53@gmail.com; mayor@falkville.org; destes@falkville.org; rgarrison@hartselle.org; rliee@hartselle.org; jgriffith@hartselle.org; samheflin@cityofpriceville.com; darrentucker64@gmail.com; vgoodwin@trinityal.gov; rhardin@decaturutilities.com; custservice@nemorganws.com; john@dcc.org; rpaler@decaturdowntown.org; rllelliott@morgank12.org; cfgoode@morgank12.org; jwn@mceda.org; townofsomerville@aol.com
Subject: Reminder: Virtual Hazard Mitigation Stakeholder Meeting
Date: Thursday, January 7, 2021 12:57:00 PM
Attachments: [image001.png](#)
[image002.png](#)
[Limestone, Madison, Morgan RHMP Stakeholder Meeting Invitation \(January 8\).pdf](#)

Hi all,

Just a quick reminder of our **Division F Regional Hazard Mitigation Stakeholder Engagement Meeting** taking place tomorrow (January 8) at **10:00 a.m.** I hope you can join us. Also, please feel free to share this invitation with your colleagues and/or partner organizations. I've provided the meeting link below again, for your convenience. Please reach out with any questions.

[Division F RHMP Virtual Stakeholder Meeting \(Limestone, Madison, Morgan Counties\)](#)

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=m1553aae0533413b69f5e064efd5ce935>

Join from a mobile device (US Toll):

+1-415-655-0001

Meeting ID #: 1265491377#

Participant Passcode*: 34837467#

**Some mobile devices may ask attendees to enter a numeric meeting password.*

Look forward to connecting tomorrow.

Sincerely,

Sara James

Economic Development & Planning Director
Top of Alabama Regional Council of Governments
5075 Research Drive NW, Huntsville, Alabama 35805

(256) 716-2483 sara.james@tarcog.us



From: Sara James

Sent: Monday, December 28, 2020 3:36 PM

To: Sara James <Sara.James@tarcog.us>

Cc: 'White, Rita' <rita.white@limestonecounty-al.gov>; daphne.ellison@limestonecounty-al.gov; Phoenicia Robinson <Phoenix.Robinson@tarcog.us>; Erin Tidwell <Erin.Tidwell@tarcog.us>

Subject: Invitation: Virtual Hazard Mitigation Stakeholder Meeting

Good afternoon Limestone County Stakeholders,

I hope this email finds you well. I am writing to invite you to participate in a **Stakeholder Engagement Meeting** for the Alabama Emergency Management Agency (AEMA) **Division F Regional Hazard Mitigation Plan** update.

The Top of Alabama Regional Council of Governments (TARCOG) is leading the planning process to update Limestone County's hazard mitigation plan and incorporate it into a regional hazard mitigation plan encompassing the AEMA Division F Region which includes Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, Marshall, and Morgan counties. AEMA and FEMA require that hazard mitigation plans are updated every five years. Each AEMA division throughout the state is preparing a division-wide plan that incorporates each county's update into one regional hazard mitigation plan for each AEMA division. TARCOG is partnering with Limestone County Emergency Management Agency (EMA) and the other Division F EMAs as well as our fellow regional planning commissions, Regional Planning Commission of Greater Birmingham (RPCGB) and North-Central Alabama Regional Council of Governments (NARCOG), to conduct this planning process.

While the COVID-19 pandemic has made this regional plan update process challenging, we want to ensure we are able to engage with key stakeholders throughout the Division F region to provide you with important information about the plan update, share an overview of Division F's regional hazard mitigation goals and objectives, and to gain insight and input from participating stakeholders on how natural disasters and hazard mitigation actions impact your organizations.

Please join us on **Friday, January 8 at 10:00 a.m.** for a virtual stakeholder engagement meeting ([see attached invitation](#)). The meeting will be held virtually on WebEx – the hyperlink/call-in details are provided below:

Division F RHMP Virtual Stakeholder Meeting (Limestone, Madison, Morgan Counties)

Join from the WebEx meeting link:

<https://tarcog.my.webex.com/tarcog.my/j.php?MTID=m1553aae0533413b69f5e064efd5ce935>

Join from a mobile device (US Toll):

+1-415-655-0001

Meeting ID #: 1265491377#

Participant Passcode*: 34837467#

**Some mobile devices may ask attendees to enter a numeric meeting password.*

Please forward this invitation to your colleagues or partner organizations – anyone you think would benefit from attending. We welcome any/all participation.

Feel free to contact me with any questions.

Sincerely,

Sara James

Economic Development & Planning Director

Top of Alabama Regional Council of Governments

5075 Research Drive NW, Huntsville, Alabama 35805

(256) 716-2483 sara.james@tarcoq.us



PUBLIC COMMENT OUTREACH LIST

In addition to the participating jurisdictions and public participation solicitations, the following entities were provided with the draft Division F Phase I Regional Hazard Mitigation Plan and invited to provide comment:

All Division F Phase II County EMA Directors:

- Blount County
- Jackson County
- Limestone County
- Madison County
- Morgan County
- AEMA Division F Coordinator Ricky Little

AEMA Division Regional Hazard Mitigation Planning Partners:

- Division B: Southeast Alabama Regional Planning & Development Commission (SEARPDC)
- Division D: Lee-Russell Council of Governments (LRCOG)
- Division E: Northwest Alabama Council of Local Governments (NACOLG)
- Division G: East Alabama Regional Planning and Development Commission (EARPDC)

Cherokee County Stakeholders:

- Cherokee County Industrial Development Authority
- Cherokee County Chamber of Commerce
- Cherokee County Water & Sewer Authority
- Cherokee Electric Co-op
- Town of Cedar Bluff Utility Board
- Water Works & Sewer Board of Centre

Cullman County Stakeholders:

- Cullman County Industrial Development Authority
- Cullman Area Chamber of Commerce
- Cullman Downtown Merchants Association (Main Street Association)
- Calhoun Community College

DeKalb County Stakeholders:

- DeKalb County Economic Development Authority
- Fort Payne Chamber of Commerce
- Fort Payne Main Street Association
- Rainsville Chamber of Commerce
- NE Alabama Water
- Sand Mountain Water
- Waterworks Board of Section & Dutton
- Marshall DeKalb Electric Co-Op
- Northeast Alabama Community College

Etowah County Stakeholders:

- Gadsden-Etowah Industrial Development Authority
- The Chamber of Gadsden/Etowah County
- Downtown Gadsden (Main Street Association)
- Waterworks & Sewer Board of Gadsden
- City of Atalla Water Works Board
- Gadsden State Community College

**Division F Regional Hazard Mitigation Plan
Kick-Off Meeting Agenda**

Thursday, May 7, 2020 (10:30 – 11:30 a.m.)

TARCOG Conference Line: 888-808-6929

Participant Passcode: 814426#

1. Introduction: Virtual Sign-In Sheet
 - a. Roll Call by County/Agency Present
2. Plan Overview
 - a. Once completed the Division F Regional Hazard Mitigation Plan will include: Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, and Morgan Counties
 - i. **Phase I (July 2020)**: Cherokee, Cullman, DeKalb, and Etowah Counties
 - ii. **Phase II (January 2021)**: Blount, Jackson, Limestone, Madison, and Morgan Counties, culminating in a plan that represents all nine participating counties.
3. Participating Jurisdictions List
 - a. Please reference the attached Division F jurisdiction spreadsheet
4. Goals and Strategies Discussion
 - a. Please reference the attached draft goals and strategies document
5. Public Input Survey Discussion
 - a. Please reference the attached draft surveys (long and short format options)
6. In-Kind Contribution
 - a. Please reference the attached in-kind guidance
 - i. Stakeholder meetings/interactions
 - ii. TARCOG's requested research questions
7. Questions/Comments

**Division F Regional Hazard Mitigation Plan
Kick-Off Meeting Agenda**

Thursday, May 7, 2020 (10:30 – 11:30 a.m.)

TARCOG Conference Line: 888-808-6929

Participant Passcode: 814426#

Virtual Attendee List:

- Michelle Jordan, TARCOG
- Sara James, TARCOG
- Phoenix Robinson, TARCOG
- Joey Hester, NARCOG
- Shelby Selman, NARCOG
- Jesslan Wilson, RPCGB
- D. Roybal, Blount County EMA
- Shawn Rogers, Cherokee County EMA
- Phyllis Little, Cullman County EMA
- Anthony Clifton, DeKalb County EMA
- Deborah Gaither, Etowah County EMA
- Breonna Cole, Etowah County EMA
- Paul Smith, Jackson County EMA
- Joshua Whitcomb, Jackson County EMA
- Rita White, Limestone County EMA
- Jared Cassidy, Madison County EMA
- Brandy Davis, Morgan County EMA

DIVISION F RHMP PLAN PRESENTATION

FOR REVIEW BY REGIONAL STAKEHOLDERS



**Division F
Regional
Hazard
Mitigation
Plan [RHMP]**

JAN.2021

01



02

Discussion Points

Summary

Welcome + Introductions

Overview | Hazard Mitigation Planning Process + Status

Discussion | Stakeholders + Participating Jurisdictions

Next Steps

We Are TARCOG

Division F Regional Hazard Mitigation Plan (RHMP) Initiative Lead Agency

TARCOG is a regional planning council that serves the five-county planning area that consists of DeKalb, Jackson, Limestone, Madison, and Marshall Counties.

We are working in partnership with the Regional Planning Commission of Greater Birmingham (RPCGB) and the North Central Alabama Regional Council of Governments (NARCOG) to create a regional hazard mitigation strategy that covers all of all counties in Division F:

*Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Limestone, Madison, and Morgan.**

*Marshall County is a part of Division F, however, information on this jurisdiction will be included in a subsequent update of the Division F RHMP.



TARCOG SERVICE AREA

AEMA Division F

Funding for RHMP provided through the Hazard Mitigation Grant Program (HMGP) via AEMA.

AEMA has seven emergency management divisions across the State; northeast Alabama constitutes **Division F**.

Each one of the ten counties in Division F has a current county hazard mitigation plan.

Division-wide (regional) plans incorporating county HMP updates encouraged by AEMA.

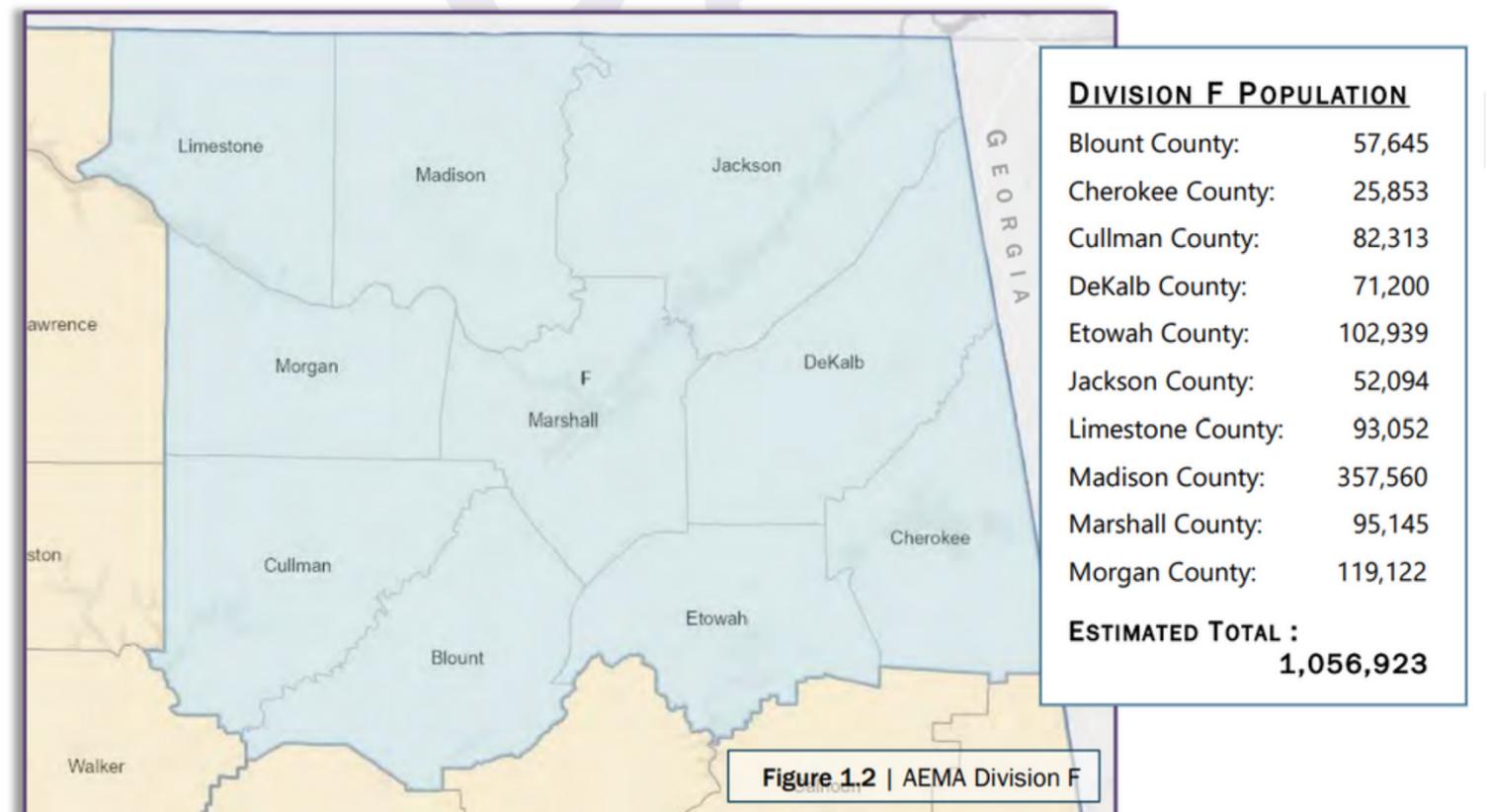
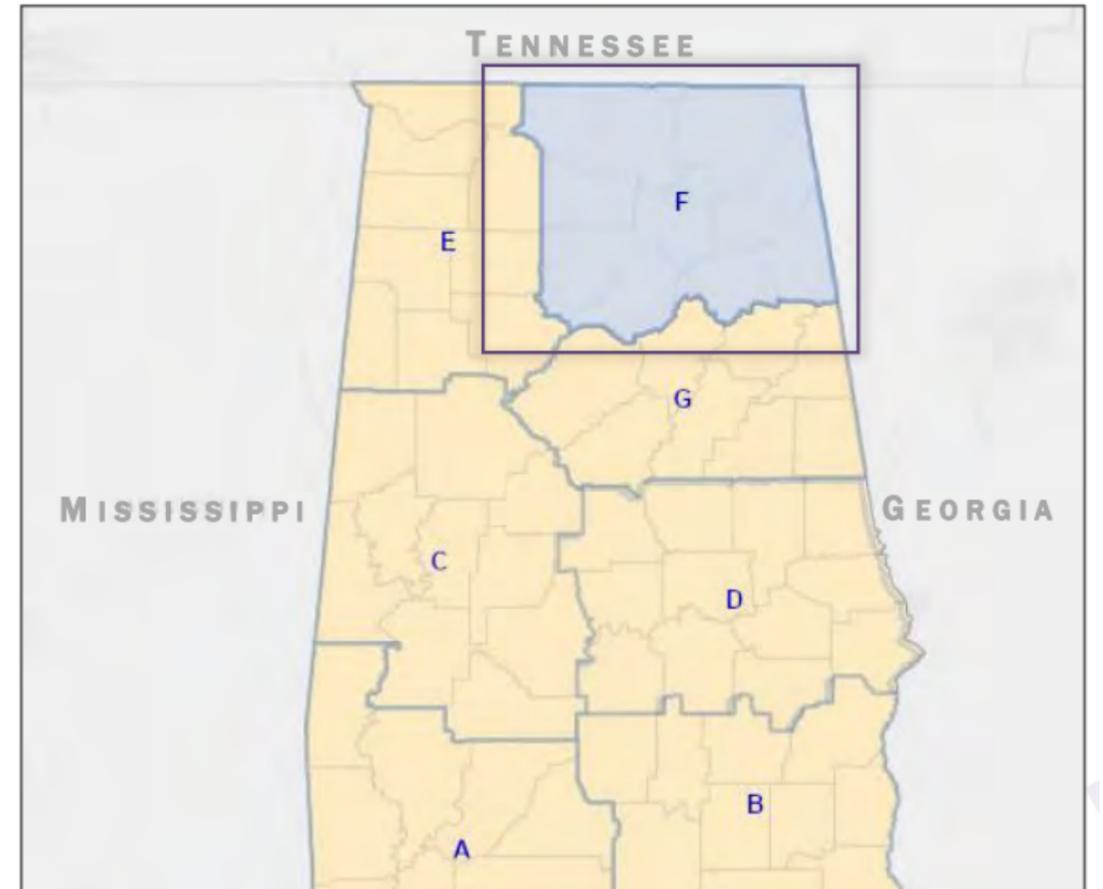


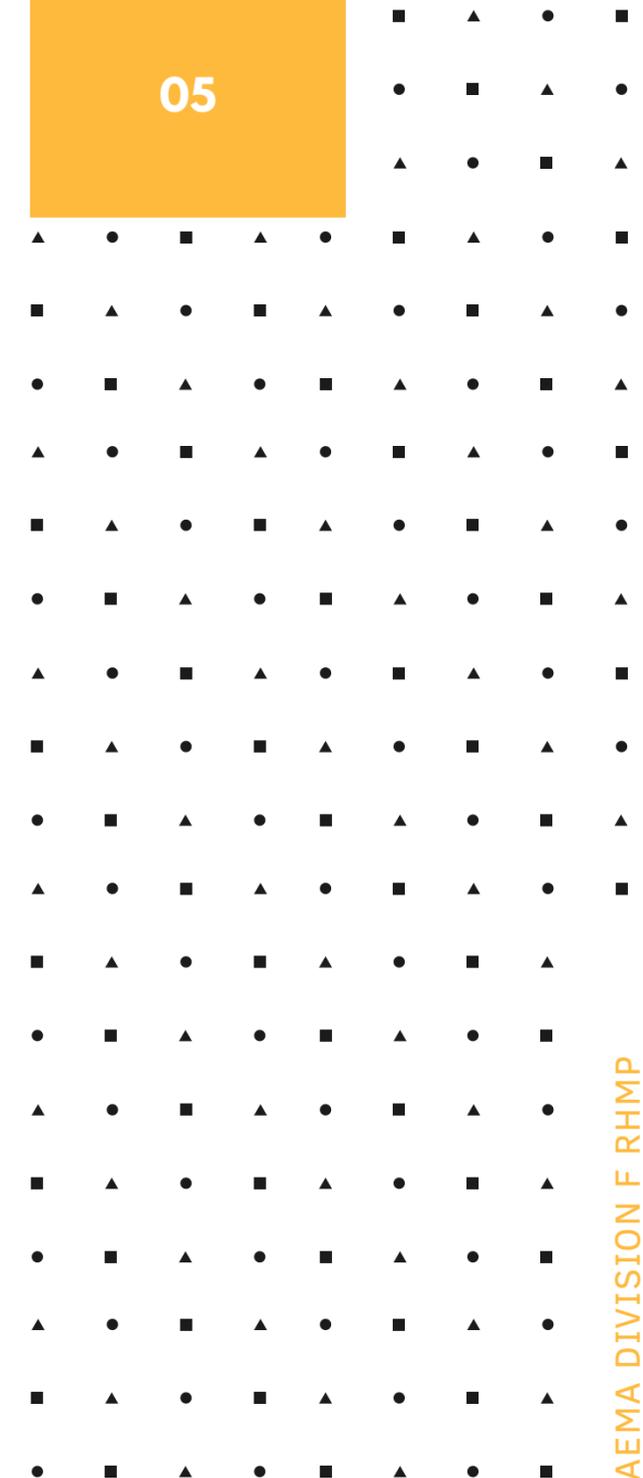
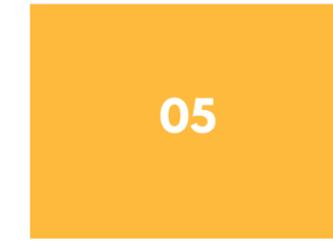
Figure 1.2 | AEMA Division F

Overview

01 FEMA Guidelines on HMPs
How the plan fulfills requirements set forth by DMA 2000

02 Division F Phase I + Findings
Examples of information included in Phase I of the Division F Regional Hazard Mitigation Plan

03 FEMA Phase I Review + TARCOG Response
Brief overview of FEMA's feedback on RHMP Phase I draft



FEMA Guidelines I Regulations

Disaster Mitigation Act of 2000

"... to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters."

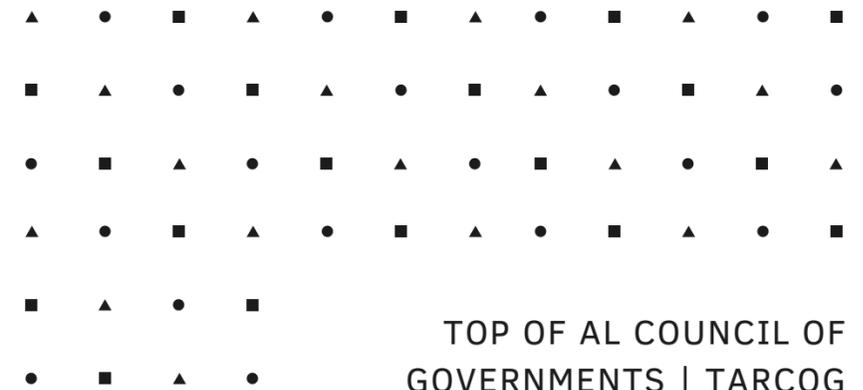
Section 322 of the Act specifically addresses mitigation planning and requires state and local governments to prepare mitigation plans as a precondition for receiving FEMA mitigation projects grants.

https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf



Local Mitigation Planning Handbook

March 2013



TOP OF AL COUNCIL OF
GOVERNMENTS | TARCOG

07

Emergency Management Activities

Prevention

Actions necessary to avoid, prevent, or stop an imminent threat or actual of terrorism.

Protection

Actions necessary to secure the homeland against acts of terrorism and manmade or natural disasters.

Preparedness

Actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that post the greatest risk to the security of the Nation.

Response

Actions necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

Recovery

Actions necessary to assist communities affected by an incident to recover effectively.

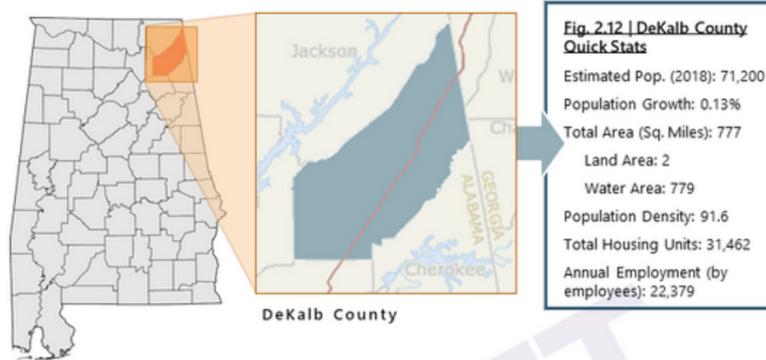
TOP OF AL REGIONAL COUNCIL
OF GOVERNMENTS

The purpose of mitigation planning is to identify local policies and actions that can be implemented over the long term to reduce risk and future losses from hazards.

FEMA Guidelines I Mitigation Planning

DIVISION F PHASE I + FINDINGS

Division F Regional Hazard Mitigation Plan (Phase I) Section 2.3 | DeKalb County, Alabama



General Characteristics [Location, Land Mass, Municipalities, Local Roads, and Utilities]

DeKalb County, known as the “Alabama Gateway to the Appalachian Mountains,” is in the northeast corner of Alabama bordering the State of Georgia. It is bordered by, clockwise from the east, Dade, Walker and Chattooga counties in Georgia, and by Cherokee, Etowah, Marshall and Jackson counties in Alabama. DeKalb County has 777 square miles of land area and approximately 2 square miles of water area for a total of 779 total square miles. Current figures estimate that there are 92 persons per square mile. The County contains sixteen (16) municipalities: the Town of Collinsville; the Town of Crossville; the City of Fort Payne; the Town of Fyffe; the Town of Geraldine; the Town of Hammondville; the City of Henagar; the Town of Ider; the Town of Lakeview; the Town of Mentone; the Town of Pine Ridge; the Town of Powell; the City of Rainsville; the Town of Shiloh; the Town of Sylvania; and the Town of Valley Head.

The major highways in DeKalb County are Interstate 59 and U.S. Highway 11 that run parallel northeast and southwest, connecting the areas to Birmingham to the southwest and to Chattanooga to the northeast. Alabama Highway 35 connects the County to Scottsboro and west to Huntsville. The primary railroad in DeKalb County is the Norfolk Southern Railroad that runs through Big Wills Valley area of the county. There is one airport and airstrip in the County – Isbell Field Airport at Fort Payne is in the northwest section of Fort Payne in the central section of DeKalb County near Interstate 59. Cloudmont Airpark is a recreational airstrip near the town of Mentone. Utilities for the county are provided by various boards and co-ops.

General Physiography

The land in DeKalb County is characterized by extremes of topography. Landforms within the county generally trend northeast and southwest following the parallel mountains of Sand Mountain to the west and Lookout Mountain to the east with Big Wills Valley running between them. Sand Mountain is a sandstone plateau, while Lookout Mountain is distinguished by high bluffs. Little River flows along the top of Lookout Mountain, forming Little River Canyon before it empties into Weiss Lake. Elevations rise to just over approximately 1,900 feet above sea level in the north portions of the county on Lookout Mountain and Fox Mountain.

Source: DeKalb County Hazard Mitigation Plan | 2015 Final Plan

Division F Regional Hazard Mitigation Plan (Phase I) Section 2.3 | DeKalb County, Alabama

Business + Industry

Table 2.5 below lists the County’s major employers. According to data provided by the DeKalb County Economic Development Authority (DCEDA), warehouse/distribution services and manufacturing are the two most prominent goods the County contributes to the Division F region. The City of Fort Payne is the county seat and home to The Children’s Place Distribution Center, PlayCore’s Southern Fulfillment Center, and Vulcraft, Inc.

Name	Product	No. of Employees
The Children’s Place	Distribution Center	1548
Heil Environmental	Garbage Truck Bodies	853
Koch Foods, Inc.	Poultry Processing	850
Renfro Corporation	Hosiery	650
Rainsville Technology, Inc. (RTI)	Injected Plastic Automotive Parts	436
GameTime (Playcore)	Playground & Park Equipment	412
GH Metal Solutions, Inc.	Plate/Sheet Metal Fabrication	400
Plasman Corp	Injected Plastic Automotive Parts	337
Vulcraft, Inc. (NUCOR)	Steel Joists	307
Polymer Corp	Industrial Plastics	280
Heritage Wire Harness	Wire Harness	255
Siemens Energy, Inc.	Electric Coils	238
D&F Equipment Sales, Inc.	Equipment Manufacturing	183
BlueScope North America	Structural Frames	154
Ferguson Distribution	Distribution Center	140

Heil Environmental

Heil Environmental, which is headquartered in Chattanooga, Tennessee, has its flagship manufacturing plant in Fort Payne, Alabama. It is the world’s largest manufacturer of refuse collection vehicles. The company was founded in Wisconsin in 1901, and since then has become a “progressive leader in the heavy equipment industry.” The Joseph F. Heil, Jr. Customer Education Center in Fort Payne was added to better support their customers through professional training. Customers receive hands-on instruction from field experts, who are the same designers and builders of Heil products. This facility includes amenities such as comprehensive hydraulic and electrical labs and multimedia classrooms, all located adjacent to Heil Parts Central and in proximity of Heil’s flagship manufacturing, R&D, and test lab facilities in Fort Payne.

Sources: DeKalb County Economic Development Authority; The City of Fort Payne

Division F Regional Hazard Mitigation Plan (Phase I) Section 2.5 | Regional Snapshot

Fig. 2.16 | DECENNIAL POPULATION (2000-2010) AND ESTIMATED POPULATION (2018)

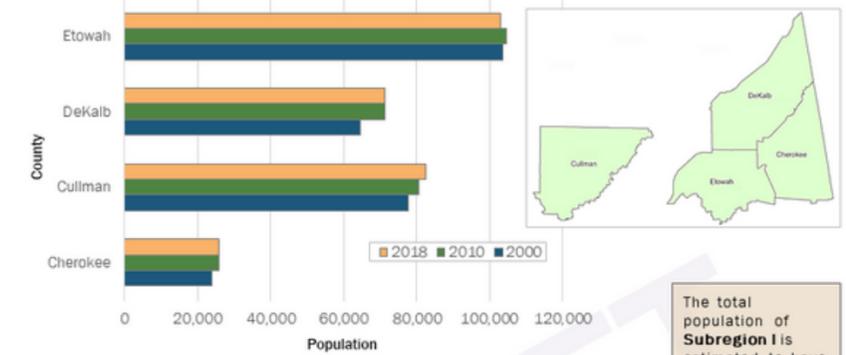
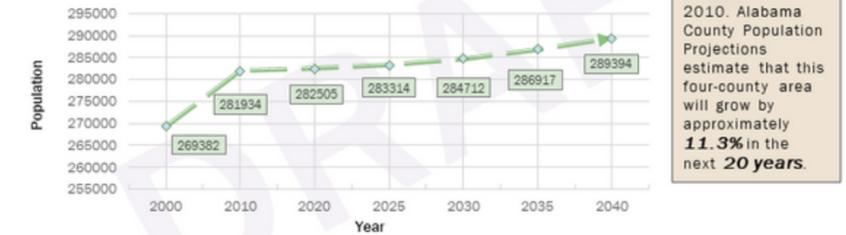
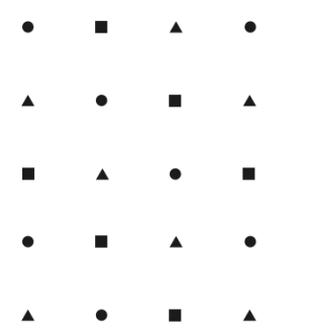
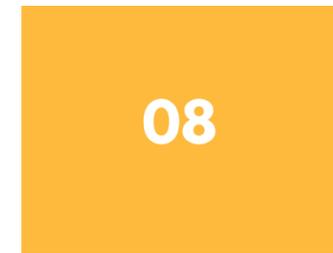
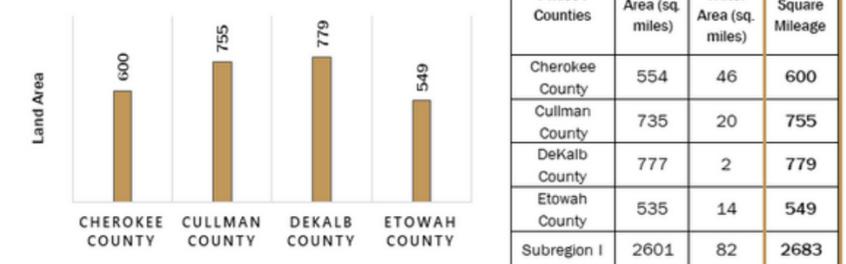


Fig. 2.17 | SUBREGION I POPULATION PROJECTIONS (2020-2040)

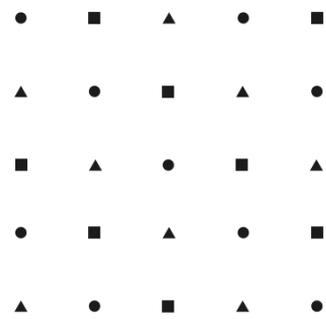
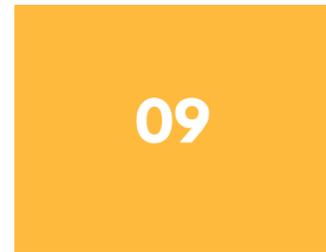


The total population of Subregion I is estimated to have increased by **0.13%** since 2010. Alabama County Population Projections estimate that this four-county area will grow by approximately **11.3%** in the next 20 years.

Fig. 2.18 | TOTAL LAND AREA (IN SQ. MILES)



DIVISION F PHASE I + FINDINGS



Division F Regional Hazard Mitigation Plan (Phase I)
Section 4 | Hazard Profiles
4.5 Earthquakes

Table 4.9 | Division F Earthquake Activity (1886 - Present) (Continued)

Event Date	Community	County	Magnitude	Depth	MMI
02.05.2003	Jackson County	Jackson	1.9	15.4 km	--
04.29.2003	Mentone	DeKalb	Multiple	Multiple	--
04.30.2003	Mentone	DeKalb	1.1	14.21 km	--
05.01.2003	Mentone	DeKalb	0.0	13.93 km	--
05.02.2003	Mentone	DeKalb	Multiple	Multiple	--
05.03.2003	Mentone	DeKalb	Multiple	Multiple	--
06.22.2003	Fort Payne	DeKalb	1.9	3.1 km	--
07.06.2003	Mentone	DeKalb	2.5	1.9 km	--
07.15.2003	Mentone	DeKalb	2.5	12.3 km	--
07.25.2003	Rainsville	DeKalb	2.0	14.8 km	--
08.16.2003	Alpine	DeKalb	2.0	4.47 km	--
12.25.2003	Collinsville	DeKalb	1.9	7.8 km	--
03.14.2004	Cedar Bluff	Cherokee	2.0	10 km	--
06.21.2004	Fort Payne	DeKalb	2.2	4 km	--
11.13.2004	Clubview Heights	Etowah	2.5	5 km	--

Earthquakes in Mentone, AL | 2003

April 29 – A 4.9 magnitude earthquake hit DeKalb County, 10 miles northeast of Fort Payne. GSA data pinpoints the Town of Mentone as the epicenter for the quake. The event, deep enough to suppress significant damage in Fort Payne, was felt in multiple southeastern states, most considerably Georgia and Tennessee. This one earthquake also caused the series of eighteen (18) aftershock events that occurred in the area from April 29th – May 3rd. A 2009 AL.com article, while discussing the 2003 incident, notes that earthquakes in Alabama are unlikely to reach magnitudes near 7.0 conditions. However, events with magnitudes between 2.0 and 3.0 occur more frequently, averaging one every six weeks during the past three decades. The article also highlights ongoing state-level efforts to respond to these moderate incidents.

Division F Regional Hazard Mitigation Plan (Phase I)
Section 4 | Hazard Profiles
4.6 Flooding

Previous Occurrences

According to the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, 206 incidents of flooding or flash flooding have occurred in Subregion I. Floods and flash floods occurred on 137 days out of the designated time period (1990 – 2020). Flash flood activity is the most common hazard plaguing each county.

Table 4.14 | Cherokee County, Alabama Flood Activity (1990 - 2020)

Jurisdiction	Hazard	# of Events	Injuries / Deaths	Damaged Goods / Property
Cherokee County	Flood / Flash Flood	25	0 / 0	\$5,000 / \$283,000
Countywide / Zone	Flash Flood	7	0 / 0	\$5,000 / \$241,000
Cedar Bluff	Flash Flood	1	0 / 0	\$0 / \$0
Centre	Flood / Flash Flood	6	0 / 0	\$0 / \$34,000
Collinsville	There are no reported incidents for this county's portion of the jurisdiction.			
Gaylesville	Flash Flood	2	0 / 0	\$0 / \$0
Leesburg	Flood / Flash Flood	2	0 / 0	\$0 / \$8,000
Sand Rock	There are no reported incidents for this county's portion of the jurisdiction.			
Unincorporated	Flood / Flash Flood	14	0 / 0	\$5,000 / \$241,000

*It is important to note the numbers presented in the county tables focus solely on events specified for each county jurisdiction. In this instance, countywide events are not factored into the total count of flood incidents for each jurisdiction; however, they are included in the total count for overall incidents that have occurred in the County. These figures will be adjusted when discussing vulnerability.

Flooding in Cherokee County

Cherokee County has experienced 25 flood and flash flood encounters since 1990. Most of these events were the result of above average heavy rainfall throughout the county. The most common type of flooding in this jurisdiction is flash flooding. There have been no reported deaths or injuries during this time. Seven incidents have been designated 'countywide' or were noted to take place in the Cherokee Zone; neither incident resulted in property nor crop damages. The complete total of damages due to flooding in DeKalb County during the 30-year study period is \$288,000.

Division F Regional Hazard Mitigation Plan (Phase I)
Section 4 | Hazard Profiles
4.8 High Wind Events (Windstorms, Tornadoes, Severe Thunderstorms)

Previous Occurrences

According to the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, 193 incidents of tornadic activity have occurred in Subregion I since 1950. Floods and flash floods occurred on 108 days out of the study period (1950 – 2020). While other natural hazards have had considerable impact on the planning area, tornadoes have, by far, been the most damaging and the most fatal. Table 4.26 below provides an overview of historical occurrences in the planning area by county.

Table 4.26 | Subregion I Tornadic Activity Incidents (1950 - 2020)

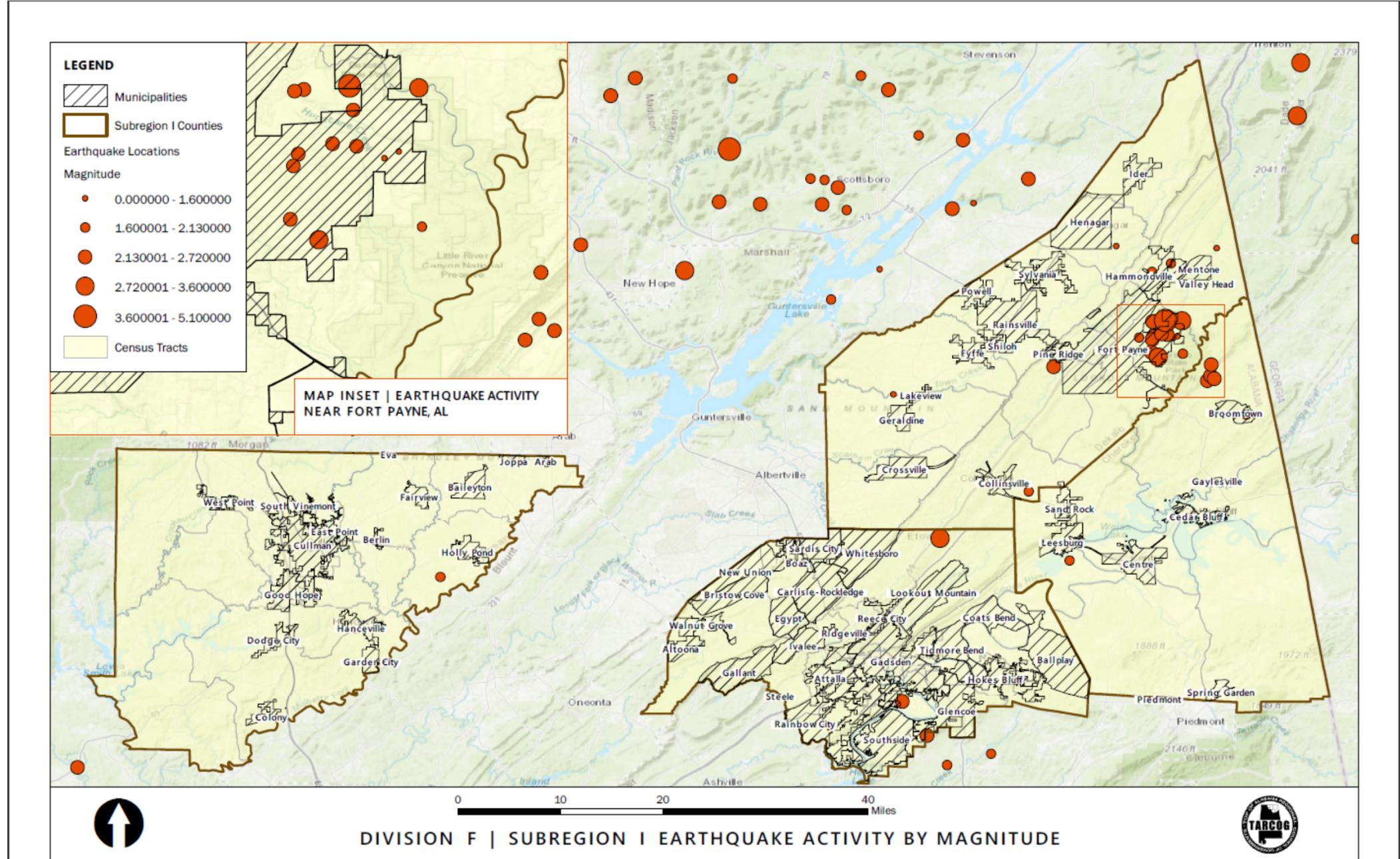
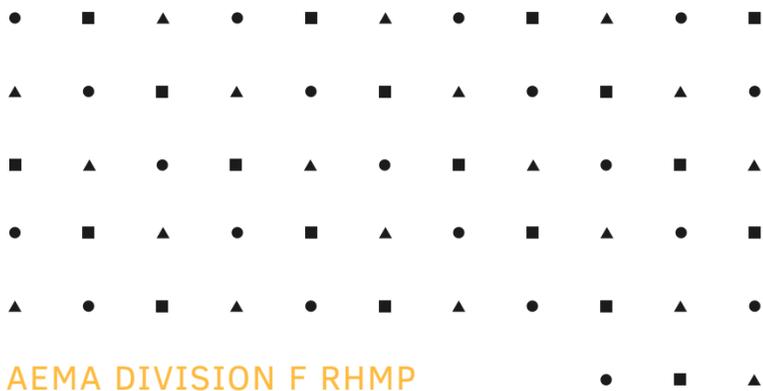
County	Hazard	# of Events	Injuries / Deaths	Damaged Crops / Property	Reporting Source(s)
Cherokee	Tornado	16	50 / 3	\$5,000 / \$21,989,000	NWS* Storm Survey
Cullman	Tornado	87	273 / 11	\$10,000 / \$97,555,280	Airplane Pilot Emergency Manager NWS Storm Survey Trained Spotter
DeKalb	Tornado	61	151 / 34	\$5,000 / \$25,218,500	Emergency Manager NWS* Storm Survey Unknown Source
Etowah	Tornado	29	41 / 0	\$73,000 / \$25,386,530	NWS* Storm Survey
Totals:		193	515 / 48	\$148,500 / \$170,149,310	*National Weather Service

Source: The National Oceanic and Atmospheric Administration (NOAA).

Note: A HAZUS hurricane scenario was conducted for the four-county planning area to provide an example of an immense windstorm event's potential damage. The scenario uses Hurricane Opal as a case study in estimating how significantly the event would have impacted the subregion. Estimated social and economic impacts are based on 2010 Census data and were produced using HAZUS estimation methodology software. A copy of the Hurricane Global Risk Report can be found in the appendix.

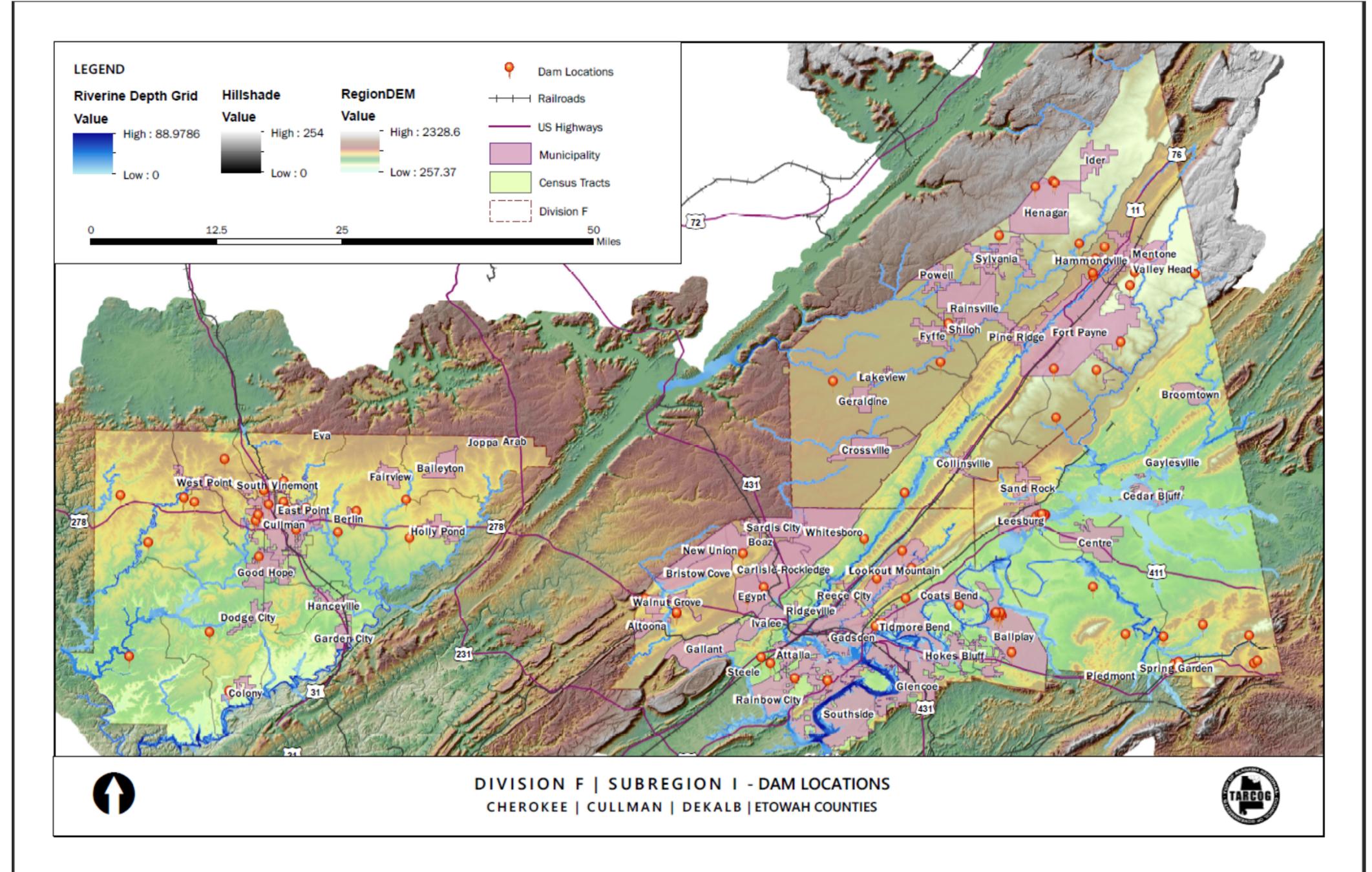
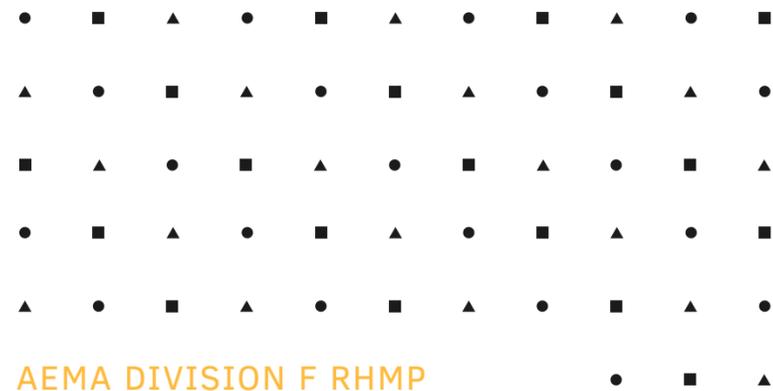
DIVISION F PHASE I + FINDINGS

10



DIVISION F PHASE I + FINDINGS

11



12

Regional Hazard Mitigation Plan Findings

5.3 Regional Mitigation Goals

Mitigation Goals are broad statements that focus on long-term visions to reduce or avoid vulnerabilities to identified hazards within the Division F region. Provided below, are goal areas that align with FEMA's program categories for managing a successful mitigation program. These categories are useful guidelines for identifying and sorting regional mitigation measures. As such, they provide the framework for the goals and objectives expected to be achieved by development, adoption, and implementation of the Division F Regional Hazard Mitigation plan.

Table 5.4 | Division F Regional Mitigation Goals

GOAL	GOAL	DESCRIPTION
GOAL 1	Prevention	Manage the development of land and buildings to minimize risk of life and property loss due to hazard events.
GOAL 2	Property Protection	Protect structures and their occupants and contents from the damaging effects of hazard events
GOAL 3	Natural Resource Protection	Preserve, rehabilitate, and enhance the beneficial functions of the natural environment to promote a balance between natural systems and social and economic demands.
GOAL 4	Structural Mitigation	Apply engineered structural modifications to natural systems and public infrastructure to reduce the potentially damaging impacts of hazards, where those modifications are feasible and environmentally suitable.
GOAL 5	Emergency Services	Improve the efficiency, timing, and effectiveness of response and recovery efforts for hazard events.
GOAL 6	Public Education & Awareness	Educate and foster public awareness of hazards and techniques available for mitigation

5.4 Regional Mitigation Strategies

Mitigation strategies build upon the broad goal statements described above to provide further definition through specific actions items. The mitigation strategies of the previous (2015/2016) county hazard mitigation plans were evaluated on their ability and impact to help achieve the established mitigation goals emphasizing mitigation concerning new and existing buildings and infrastructure. These strategies also provide additional insight and understanding to addressing any specific hazard concerns. The mitigation strategies that are associated with each goal area are described in more detail below, as well as identifying appropriate hazard(s) that are mitigated through these approaches.

GOAL	ACTION	HAZARDS	LEAD AGENCY	FUNDING SOURCE	STATUS	PRIORITY	BENEFIT / COST SCORE
1	TARCOG (with assistance from NARCOG and RPCGB) will maintain the mitigation plan by seeking additional grant funding, as needed.	All	TARCOG	HMGP / Local	New	High	High
1	TARCOG will work to incorporate Blount, Jackson, Limestone, Madison, Marshall, and Morgan counties and their jurisdictions into phase II of this plan as their plans expire.	All	TARCOG	HMGP / Local	New	High	High
1.6	TARCOG will facilitate multi-jurisdictional collaboration by attending AEMA Division F meetings on at least an annual basis.	All	TARCOG	Local	New	High	High
1	TARCOG will conduct an annual review of the mitigation plan and update plan information, as needed.	All	TARCOG	Local	New	High	High
1	TARCOG will support DeKalb, Jackson, Limestone, Madison, and Marshall counties (TARCOG's service area) in applying for hazard mitigation grant funding to support implementation of identified mitigation actions.	All	TARCOG	Local	New	High	High
1.6	TARCOG will incorporate hazard mitigation actions into other local and regional planning efforts including, but not limited to, local comprehensive plans, regional transportation planning, and the Northeast Alabama Comprehensive Economic Development Strategy (CEDs).	All	TARCOG	Local	New	Medium	High

Phase II of the Division F Regional Hazard Mitigation Plan will be completed in early 2021 and will include all nine participating counties.

The CEDs must be comprehensively updated every five years. The next TARCOG CEDs update will take place in 2022 and will include an added emphasis on resilience to natural disasters and other economic shocks.

FEMA Phase I Review + TARCOG Response

Clarity on Stakeholders + Participating Jurisdictions

"It is not clear whether the school boards, utilities, and VFDs listed in Table 3.3... are stakeholders or participating jurisdictions."

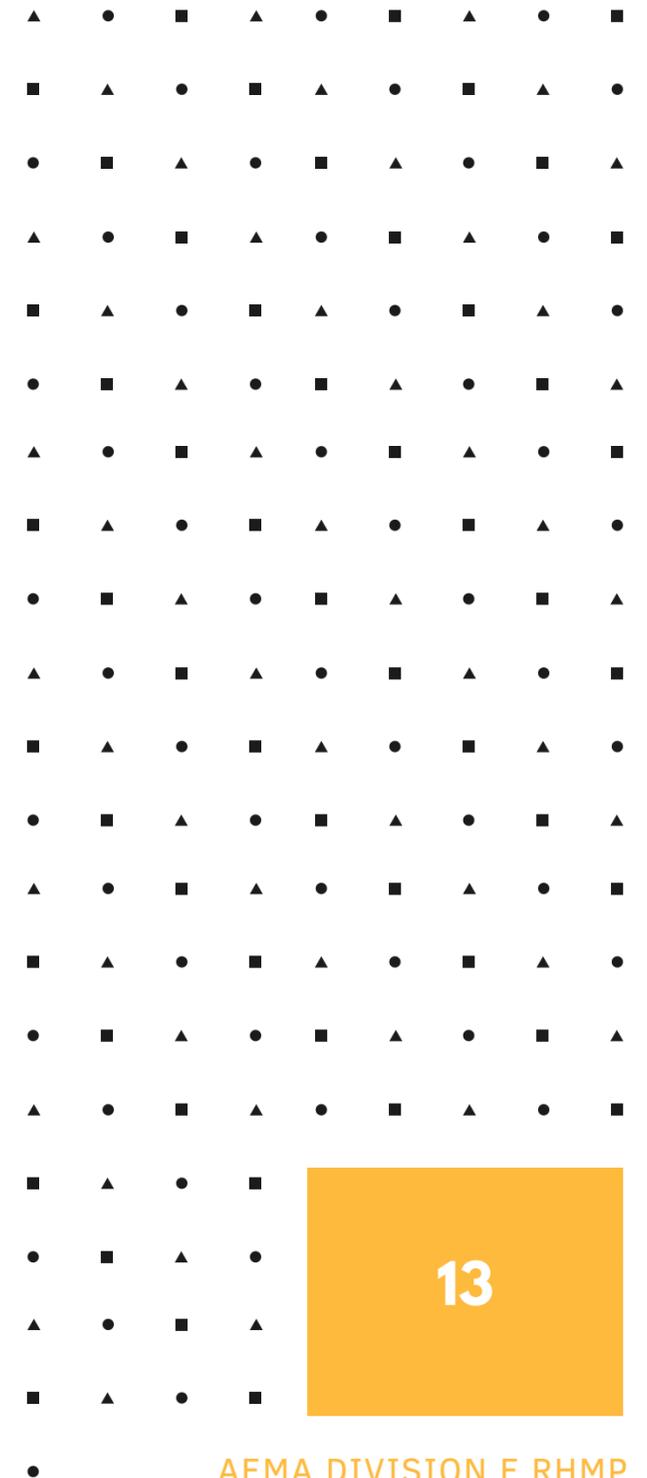
Expand Probability + Vulnerability of Jurisdictions to Natural Hazards

"HAZUS analyses were run for earthquake, hurricane winds, and flooding for the subregion as a whole, but jurisdictional information or maps are not presented."

Addressing Changes in Development + Impact on Vulnerability

Address whether changes in development have increased or decreased vulnerability.

If changes in development have not impacted the jurisdiction's overall vulnerability, the plan must state this.



14

FEMA PHASE I REVIEW + TARCOG RESPONSE

Division F Regional Hazard Mitigation Plan (Phase I)
Section 4 | Hazard Profiles
 4.6 Flooding

Local Community Impact | Subregion I 100-Year Flood Scenario

Social Impact | HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. The program also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates **3,465** households (or **10,395** of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these **614** people (out of a total population of **281,934**) will seek temporary shelter in public shelters.

Economic Loss | The total economic loss estimated for the flood is \$1,677.96 million which represents 27.61% of the total replacement value of the scenario buildings. Total building-related losses were \$992.87 million dollars. 41% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 36.8% of the total loss.

Table 4.14 | Building-Related Economic Loss Estimates (in Millions)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	1,318,940	392,470	88,090	41,900	1,841,390
	Content	669,140	1,015,950	214,520	164,740	2,064,360
	Inventory	0	22,520	41,720	1,490	65,740
	Subtotal	1,988,080	1,430,940	344,340	208,120	3,971,480
Business Interruption						
	Income	13,760	563,180	5,150	43,800	625,890
	Relocation	310,560	178,610	5,260	22,180	516,620
	Rental Income	125,190	108,070	1,280	2,940	237,490
	Wage	32,360	748,340	8,620	571,050	1,360,370
	Subtotal	481,870	1,598,200	20,320	639,970	2,740,360
Total		2,469,950	3,029,140	364,660	848,100	6,711,840

Probability of Future Events

As outlined in the Local Community Impact section, flood activity inevitably affects local built and natural environments. However, flood hazards also create social and economic challenges for communities that many are often ill-equipped to handle. While flooding occurs throughout the subregion, DeKalb and Cullman Counties are especially prone to flood activity as is evident when through analysis of each county's extensive history with this hazard. Thus, the probability of floods occurring across the subregion varies and will be explored in the probability and vulnerability sections of this plan.

Division F Regional Hazard Mitigation Plan (Phase I)
Section 4 | Hazard Profiles

4.9 Jurisdictional Vulnerability Overview

Vulnerability describes the **extent to which something is damaged by a natural hazard**. It is often based on studies of how buildings perform when they are exposed to hazards. Injury and mortality functions (how many people are injured or die during events) are also used as indicators of vulnerability. However, these indicators are generally not used to describe physical assets as they entail more variables.

The *Hazard Profiles* segment of the Division F Regional Hazard Mitigation Plan began by measuring primary impacts and hazardous results for the most substantial hazards occurring in Cherokee, Cullman, DeKalb, and Etowah Counties. Section 4.9 will delve into the future probability of these hazards and the extent to which the counties and the communities therein are vulnerable. Tables 4.26 to 4.28 depict jurisdictional vulnerability to each natural hazard by county.

Table 4.26 | Hazard Vulnerability by Jurisdiction in Cherokee County, Alabama

	Natural Hazards	Municipalities					
		Cedar Bluff	Centre	Gaylesville	Leesburg	Sand Rock	Unincorporated County
Cherokee County	Dam Failure	L	L	L	M	L	L
	Drought / Extreme Temps.	L	L	L	L	L	L
	Earthquakes	L	L	L	L	L	L
	Flooding	M	L	M	L	M	M
	Hail	Hazard will be expanded in Phase II					
	High Winds - High / Strong Winds	L	L	L	L	L	L
	High Winds - Tornadoes	H	H	H	H	H	H
	High Winds - Severe T-storms	H	H	H	H	H	H
	Landslides	Hazards will be expanded in Phase II					
	Land Subsidence / Sinkholes						
	Lightning						
	Wildfire						
	Winter Storms / Snow						

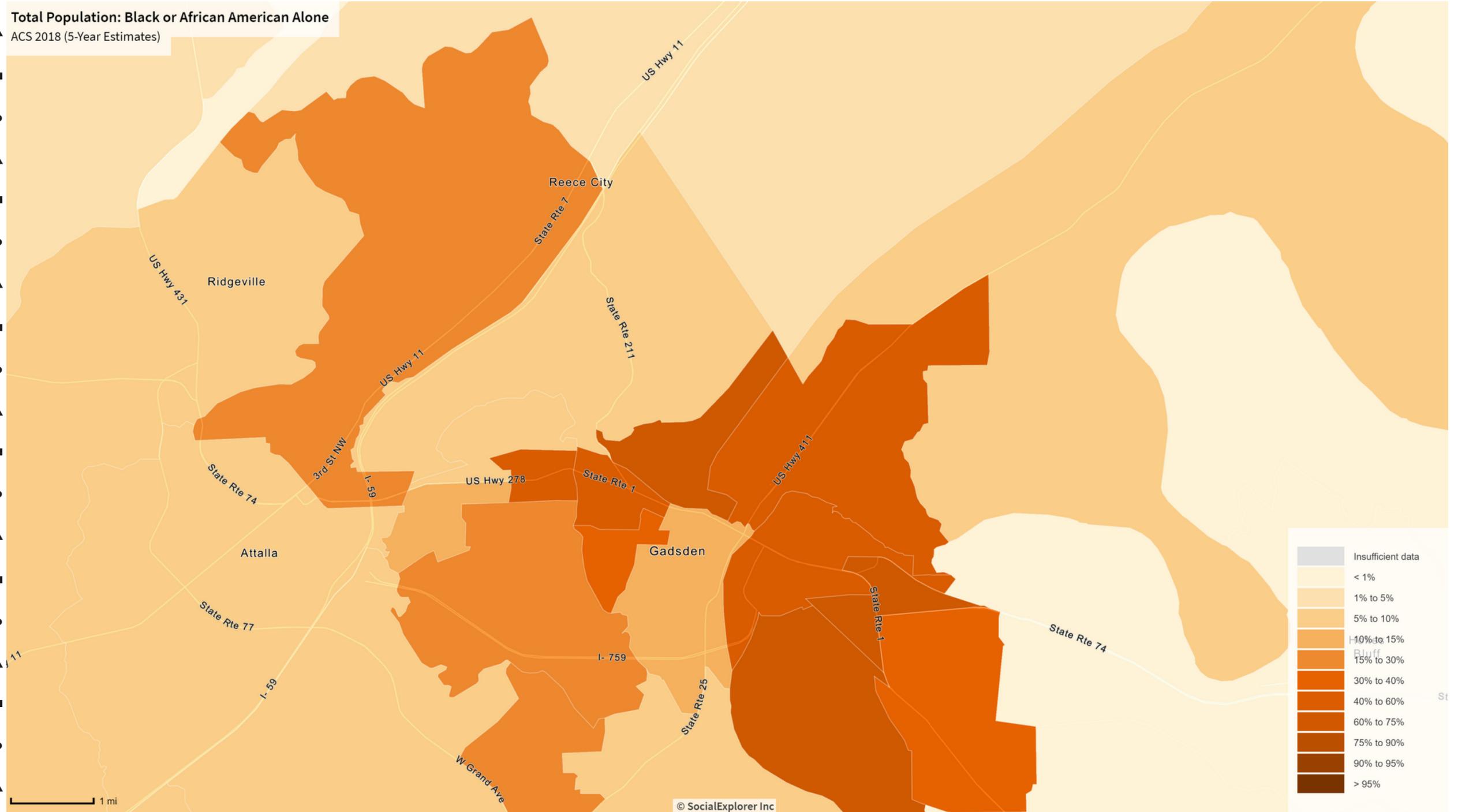
Natural Hazard Vulnerability in Cherokee County

Dam Failure | There are eleven dams in Cherokee County: ten (10) earth dams and one concrete gravity dam. The dam that is noted by the U.S. Corps of Engineers as having a "high hazard" impact is Weiss Dam, meaning that failure or maloperation of this dam would likely result in the loss of human life. The reservoir for the dam covers **30,200** acres, reaches a maximum depth of **62'** and has a watershed of **5,273** square miles.

15

FEMA PHASE I REVIEW + TARCOG RESPONSE

AEMA DIVISION F RHMP



16

FEMA PHASE I REVIEW + TARCOG RESPONSE

Division F Regional Hazard Mitigation Plan (Phase I)
Section 4 | Hazard Profiles

4.9 Jurisdictional Vulnerability Overview

Natural Hazard Vulnerability in Cherokee County (Continued)

The roads affected in the event of a failure are secondary highways and lesser roads. The Adams Ferry Bridge would receive a floods wave in approximately **1** minute and **21** seconds in normal condition failure; a flood wave would reach Garrett Bridge in **24** seconds. Primary effects from dam failure in Cherokee County would include loss of life; destruction of property; unregulated water flow to surrounding areas; and increased amount of disease and disease-carrying animals in the area. Hazardous results would include chemical spills from local factories caused by rushing water and heavy flooding that causes many deaths by injuring or trapping people in structures or vehicles.

Drought / Extreme Temperatures | In 2006, Cherokee County experienced **D2** Severe Drought events and **D3** Extreme Drought events. Impacts of such events include crop and/or pasture losses; water shortages; and imposing water restrictions. In 2007 and 2008, Cherokee County experienced **D1** Moderate Drought events, **D2** Severe Drought events, **D3** Extreme Drought events, and **D4** Exceptional Drought events. Impacts of such events included exceptional and widespread crop and/or pasture losses; water shortages, especially in reservoirs, streams, and wells; water restrictions; and water emergencies.

Extreme summer heat is the combination of very high temperatures and exceptionally humid conditions. Conditions like these that persist for extensive periods of time are called heat waves. Heat stress can be indexed by combining the effects of temperatures and humidity. The human risks associated with extreme heat include heatstroke, heat exhaustion, heat syncope, and heat cramps. Young children and senior citizens are among the most vulnerable populations to these risks. Fortunately, there have been no extreme heat events reported in the Cherokee County during the 15-year study period.

Earthquakes | Cherokee County is at risk for earthquakes, however, earthquakes occurring in Cherokee County are predominantly low magnitude events. The risk of a significant, damage-causing earthquake in Cherokee County is low to moderate. Two zones of frequent earthquake activity that could potentially impact Cherokee County are the New Madrid Seismic Zone and the Southern Appalachian Seismic Zone. Damage could be significant in Cherokee County if a powerful earthquake were to occur because buildings in this part of the county have not been constructed to withstand such a powerful force, according to the County's 2015 Hazard Mitigation Plan. Cherokee County's historical earthquake activity is slightly below Alabama's state average. The largest earthquake within 30 miles of Centre, Alabama was a 4.6 magnitude that occurred in 2015. Primary effects from earthquakes in Cherokee County would include property damage; underground infrastructure damage; collapsing buildings; and triggers for other natural disasters. Hazardous results from earthquakes in Cherokee County would include shifting of underlying soil and breaching of dams are examples of possible results from an earthquake and tremors that cause cracking of roads, bridges, or buildings, which may also lead to collapse.

Flooding | Flash flooding can occur anywhere in the county due to inadequate or clogged drainage systems and excessive rainfall. Unpaved dirt roads, common in the rural areas, are particularly vulnerable. In addition to damaging homes, flooding can adversely impact crops, water and sewer systems, and dams and levees. All jurisdictions are vulnerable to flood events. The primary flooding problems occur along Weiss Lake and its tributaries. The Town of Cedar Bluff has flooding along its town limits. The northern border of Centre is the most susceptible to flooding; Park Street in downtown Centre is of particular concern for flood activity. La Rue Finis Road in Leesburg has been subject to repeated flooding. The intersection of State Highway 35 and County Road 68 in Gaylesville experiences repeated flooding. Flood impacts include property and crop damage, contamination or failure of water and sewer systems, increase in waterborne disease, and possible dam or levee failure.

Division F Regional Hazard Mitigation Plan (Phase I)
Section 4 | Hazard Profiles
4.7 Dam/Levee Failure

Hazard [Extent]

The potential extent of dam failure is categorized by each event's "hazard potential." The "hazard potential" for dams indicates the probable damage that would occur if the dam were to fail, specifically to human life or property. Table 4.15 explains each potential risk category and catalogs each county's dam inventory by risk. DeKalb County has the largest number of high-risk dams; Cullman County has the largest number of significant-risk dams; and Etowah County has the largest number of low-risk dams. Cherokee County has the least number of dams overall.

Table 4.16 | Subregion I Dam Inventory by Risk Category

Risk Categories		Number of Dams		
High – Loss of one human life is likely if the dam fails		27		
Significant – Possible loss of human life and likely significant property or environmental destruction if the dam fails		9		
Low – No loss of life and low economic or environmental damage.		47		
Total		83		

County	No. of Dams	High Risk	Significant Risk	Low Risk
Cherokee	15	6	1	8
Cullman	23	7	7	9
DeKalb	20	8	1	11
Etowah	25	6	0	19
Total	83	27	9	47

Previous Occurrences

To date, there have been **no dam failures** in the planning area. However, there has been an instance where a dam had to shut down for repairs. In 2019, the Duck River Dam in Cullman County became a point of contention between the City of Cullman and the dam's construction company and design engineers. The main issue with the dam was "excessive leakage" flowing into the dam's gallery, the thoroughfare that allows inspections and repairs inside the dam. It was later discovered that water was damaging electrical wiring, thus causing the dam's gates and valves to malfunction. This dam is not included in Table 4.15 figures as it has not yet been rated.

Source: The Cullman Tribune – October 16, 2019

Probability of Future Events

There are **no documented occurrences** of dam failure within the planning area. However, high- and significant-risk dams are potential threats for local communities with every heavy rainfall incident. Moreover, inconsistent inspection and maintenance of existing dams increases the likelihood that a dam failure will occur. Thus, the probability of future dam failure events in the subregion is presumably low.

Discussion

Differentiating Stakeholders and Participating Jurisdictions

Stakeholder Impact From + Vulnerability to Hazards

Stakeholder Mitigation Action / Planning

Community Outreach Across Division F

Next Steps

Submission of Phase I Revisions (In Progress)

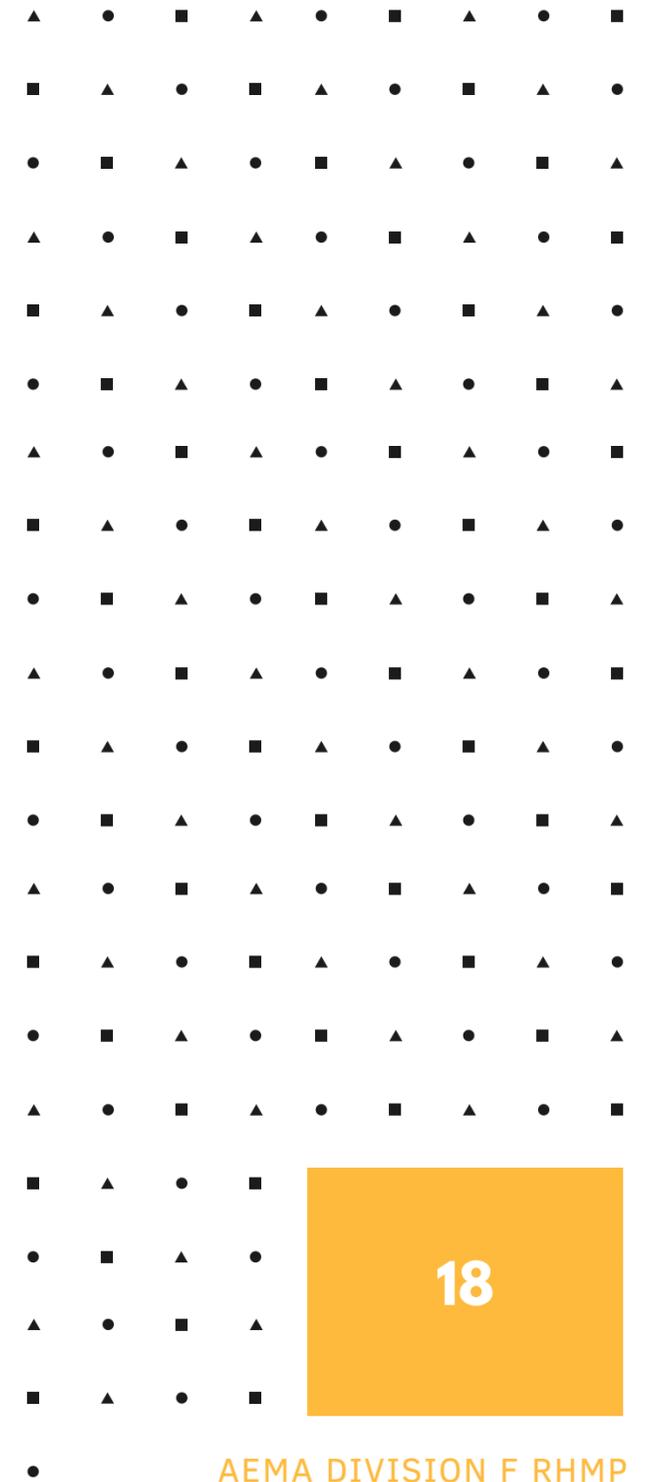
Continued Community Outreach + Plan Update Facilitation

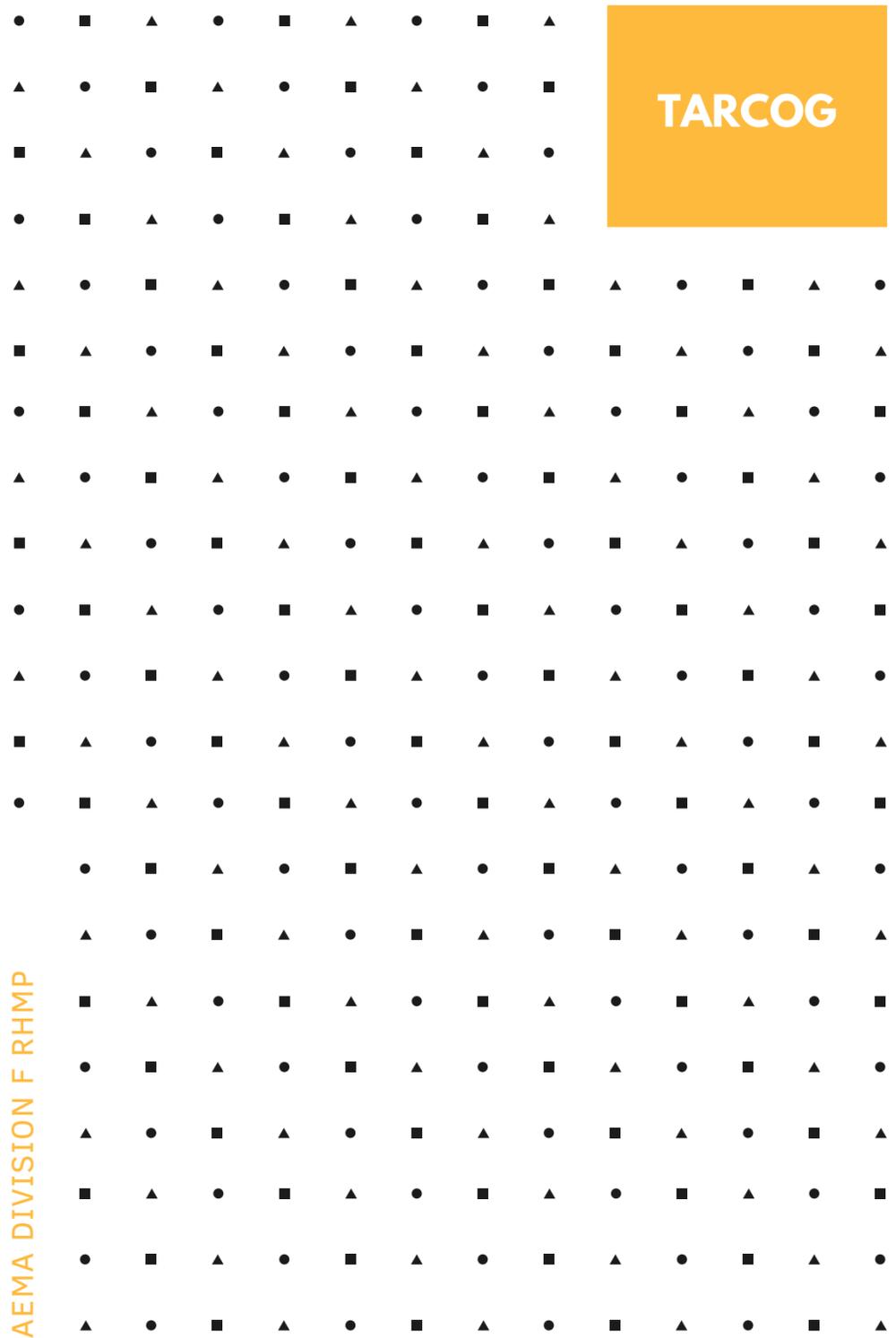
Phase II County Incorporation into Division F RHMP

Phase II Draft Public Comment Period

Submission of Phase II to AEMA + FEMA

Plan Adoption by Participating Jurisdictions





Thanks for attending!

Thank you for being an integral part of this process!
Email us at phoenix.robinson@tarcog.us or sara.james@tarcog.us with comments or questions!

**DIVISION F RHMP
CORE CAPABILITY ASSESSMENT
WORKSHEET (CCAW)
FOR USE BY REGIONAL STAKEHOLDERS**

Core Capability Assessment Worksheet

County: _____ Municipality: _____

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Plan Year	Does the plan address hazards? Does the plan identify projects to that can be included in the regional mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan		
Capital Improvement Plan		
Stormwater Management Plan		
Other Special Plans (i.e. corridor redevelopment, downtown redevelopment, etc.)		

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code		Version/ Year:
Fire Department ISO Rating		Rating:
Site Plan Review Requirements		

Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning Ordinance		
Subdivision Regulations		
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire, etc.)		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following **administrative and technical capabilities**. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at a higher-level government that can provide technical assistance, such as *regional planning commissions/councils of governments*, indicate so in your comments.

Administration	Yes/No	Describe capability. Is coordination effective?
Planning Commission		
Maintenance programs to reduce risk (i.e., tree trimming, cleaning drainage systems, etc.)		
Mutual Aid Agreements		

Staff	Yes/No	Full-Time/ Part-Time	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official			
Emergency Manager			
Community Planner			
GIS Coordinator			
Other			

Technical	Yes/No	Describe capability. Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals, etc.)		
Grant Writing		
Other		

How can these capabilities be expanded and improved to reduce risk?

Financial

Identify whether your jurisdiction has access to or is eligible to use the following **funding resources** for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what types of activities? Could the resource be used to fund future mitigation actions?
Capital Improvements Project Funding		
Authority to levy taxes for specific purposes		
Fees for water, sewer, gas, or electric services		
Community Development Block Grant		
Other federal funding programs		
State funding programs		
Other		
<p>◀ How can these capabilities be expanded and improved to reduce risk?</p>		
<p></p>		

Education and Outreach

Identify **education and outreach programs and methods** already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how it relates to disaster resilience and mitigation? Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.		
Ongoing public education or information program (i.e., responsible water use, fire safety, household preparedness, environmental education)		
Natural disaster or safety related school programs		
Public-private partnership initiatives addressing disaster-related issues		
Other programs/organizations		
State funding programs		
Other		
<p>◀ How can these capabilities be expanded and improved to reduce risk?</p>		
<p></p>		