

# Lowndes County Hazard Mitigation Plan

A Multi-Jurisdictional Plan  
2015

ADOPTION, PENDING FEMA APPROVAL:  
LOWNDES COUNTY COMMISSION  
TOWN OF BENTON  
TOWN OF FORT DEPOSIT  
TOWN OF GORDONVILLE  
TOWN OF HAYNEVILLE  
TOWN OF LOWNDESBORO  
TOWN OF MOSSES  
TOWN OF WHITE HALL

## SCADC

SOUTH CENTRAL ALABAMA  
DEVELOPMENT COMMISSION

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## Acknowledgements

The Lowndes County Hazard Mitigation Plan was funded, in part, by a grant from the Alabama Emergency Management Agency (AEMA) with funds from the Hazard Mitigation Grant Program. Matching funds were provided by the Lowndes County Commission and the in-kind donations of time from the Lowndes County Local Emergency Planning Committee (LEPC), members of which are listed on the following page. The LEPC also provided guidance and oversight to the development of the plan.

Copies of the 2015 Lowndes County Hazard Mitigation Plan are available in an electronic format from the Lowndes County Emergency Management Office and online at the addresses shown below.

Mr. David Butts, Director  
Lowndes County Emergency Management Agency  
Charles E. Smith Courthouse Annex  
205A East Tuskeena Street  
P.O. Box 67  
Hayneville, AL 36040  
334-548-5375 or 334-548-5103  
[http://scadc.net/planning\\_economic\\_development/planning](http://scadc.net/planning_economic_development/planning)

The 2015 Lowndes County Hazard Mitigation Plan was resubmitted to AEMA on March 17, 2016; and was approved by the Federal Emergency Management Agency (FEMA) on (Date). Following approval by FEMA, the plan will be presented for adoption to the Lowndes County Commission and to the seven municipalities located in Lowndes County during the month of (Date). Copies of resolutions are found in Appendix C.



## Lowndes County Local Emergency Planning Committee

### **Adopting Jurisdictions:**

Leola Bell, Financial Administrator, Mosses VFD,  
Town of Mosses  
David Butts, County Engineer and EMA Director,  
Lowndes County Emergency Management  
Willie C. Davis, Mayor, Town of Gordonville  
Robert Harris, Chairman, Lowndes County  
Commission  
Edie Hornsby, Clerk, Town of Benton  
Kevin J. Lawrence, Mayor, Town of Hayneville  
Shanavia Sellers, Clerk, Town of White Hall  
David Spooner, Councilman, Town of  
Lowndesboro  
William E. Stiener, Chairman, Planning  
Commission, Town of Fort Deposit

### **Hazard Mitigation Stakeholders:**

Hubert (Bo) Ansley, Chief, Emergency Mgmt  
Branch, U.S. Army Corps of Engineers  
Willie Arnold, Fire Chief, Collirene VFD  
Jimmy Black, Manager, Southeast Alabama Gas  
District  
Daniel Boyd, PhD., Superintendent, Lowndes  
County Public Schools  
Beverly Brown, Director, Emergency Services,  
American Red Cross  
Tony Bufford, Police Chief, Town of Mosses and  
Town of White Hall Police Departments  
Ellen Burkett, Co-Owner, Priester Pecan  
Company, Inc.  
Jason Burroughs, Assistant Superintendent,  
Lowndes County Public Schools  
Nora Canon, Director, Ark of Love Ministries

Rod Cater, Manager, Alabama Power Company  
Donny Cooper, Mayor, Town of Benton  
Brent Crenshaw, Chief, Braggs VFD; Service  
Manager, Hayneville Communications  
Brenda Davis, Clerk, Town of Gordonville  
Eric Ellis, Owner, Ellis Oil Co.  
Thomas Ellis, Chair, Lowndes County Economic  
Development Commission  
Wynn Ellis, Water Operator, Lowndesboro  
Water Authority  
Barbara Etheridge, Emergency Preparedness  
Coordinator, Alabama Dept. of Public Health  
Ernie Faulkner, District Manager, Dixie Electric  
Cooperative  
Diana Fendley, R.N., Lowndes County Health  
Department  
Fletcher Fountain, Sr., Mayor, Town of Fort  
Deposit  
Jackie Greene, Administrator, Orchard  
Healthcare  
Fred Guarino, Reporter, Lowndes Signal  
Ernest Grady, Title, Daehan Solutions Alabama  
Lamar Hall, Fire Chief, Burkeville Volunteer Fire  
Department  
Rufus Haralson, Warden, Lowndes County Jail  
Jerome Hardy, Fire Chief, Mosses Volunteer Fire  
Department  
Wayne Hatcher, Manager, Pintlala Water & Fire  
Protection Authority  
Feltvher Haynes, Fire Chief, Calhoun Volunteer  
Fire Department  
Bonita Heartsill, Clerk, Town of Lowndesboro  
Walter Hill, Mayor, Town of Mosses

Jerome Hinson, Water and Sewer Supervisor,  
Town of Hayneville; Member, Mosses Water  
Board

Bob Hood, Water/Sewer Manager, Ft. Deposit  
Water System; Chief, Ft. Deposit Volunteer  
Fire Dept.

Alicia Howard, Clerk, Town of Mosses

Brian Hudson, Fire Chief, Lowndesboro  
Volunteer Fire Department

Ben Huguley, Plant Manager, Sejong Alabama,  
LLC

Cynthia Jones, Town Clerk, Town of Fort Deposit

Joe Jordan, Title, Lowndes County Highway  
Department

Kevin Kim, Manager, Daehan Solutions Alabama,  
LLC

David Lee, Title, Priester Pecan Company, Inc.

Jamie Lee, Area Operations Supervisor, CARE  
Ambulance

Steve Logan, Chairman, Mosses Water Sewer &  
Fire Protection Authority

Richard Mayberry, General Manager, FerrellGas

Aaron McCall, Director, Faith in Action Outreach  
Ministries

Jesse McCall, Fire Chief, Hayneville Volunteer  
Fire Department

Tamare McCord, Administrative Assistant, Town  
of Hayneville

Courtney Meadows, Pastor, First Missionary  
Baptist Church

Kelvin Mitchell, Police Chief, Town of Hayneville  
Police Department

Orbuty Ozier, Chairman, Lowndes County Water  
Authority

Rick Pate, Mayor, Town of Lowndesboro

Tom Powell, Selma Operations Manager,  
Pioneer Electric Cooperative

Howard S. Powell, III, President, Hayneville  
Communications

James L. Price, Pastor, Mt. Moriah #1 Baptist  
Church

LaRue Pringle, Chair, Fort Deposit Industrial  
Development Board

Jennifer Roberts, Public Health  
Environmentalist, Lowndes County Health  
Department

Santina Rodgers, Director, Lowndes County  
E911

Rodney Rudolph, President, Lowndes County  
Firefighters Association

Darrell Self, Headmaster, Lowndes Academy

Billy Smith, Fire Chief, Sandy Ridge Volunteer  
Fire Department

Susie Smith, Clerk, Town of Hayneville

David Spooner, Lowndesboro Volunteer Fire  
Department

Paul Stuckey, Forester, Alabama Forestry  
Commission

Raymond Surles, Public Works Director, Town of  
Hayneville

Brandon Thomas, Police Chief, Town of Ft.  
Deposit Police Department

Jacqueline Thomas, County Administrator,  
Lowndes County

Larry G. Townsend, Pastor, Mt. Moriah Baptist  
Church #2

Sharon Trippany, Senior Environmental  
Engineer/Emergency Response, SABIC  
Innovative Plastics

James Walker, Mayor, Town of White Hall

LaKendra Walker, Water Clerk, White Hall Water  
System

Rachel A. Waters, Director, Lowndes County  
Department of Human Resources

Ben Waits, Senior Manager, Environment,  
Health, Safety and Security, SABIC  
Innovative Plastics

Stanley Watson, Fire Chief, White Hall Volunteer  
Fire Department

John Williams, Sheriff, Lowndes County Sheriff's  
Department

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## List of Acronyms

ABFE	Advisory Base Flood Elevation	FIRM	Flood Insurance Rate Map
ACS	American Community Survey	FIS	Flood Insurance Study
ADA	Americans with Disabilities Act	FMA	Flood Mitigation Assistance
ADR	Alternative Dispute Resolution	FY	Fiscal Year
AEMA	Alabama Emergency Management Agency	GAR	Governor's Authorized Representative
ALDOT	Alabama Department of Transportation	GIS	Geographic Information System GSTF Greatest Savings to the Fund
ASCE	American Society of Civil Engineers	Hazus	Hazards United States
BCA	Benefit-Cost Analysis BCR Benefit-Cost Ratio	HMA	Hazard Mitigation Assistance
BFE	Base Flood Elevation	HMGP	Hazard Mitigation Grant Program
BIA	Bureau of Indian Affairs	HUD	U.S. Department of Housing and Urban Development
BLM	Bureau of Land Management	HVAC	Heating, Ventilation, and Air Conditioning
CBRA	Coastal Barrier Resource Act	IBC	International Building Code
CBRS	Coastal Barrier Resource System	ICC	Increased Cost of Compliance
CDBG	Community Development Block Grant	IRS	Internal Revenue Service
CFDA	Catalog of Federal Domestic Assistance	ITP	Independent Third Party
CFR	Code of Federal Regulations	LEPC	Local Emergency Planning Committee
CRS	Community Rating System	NAP	Non-Insured Crop Disaster Assistance Program
DHS	Department of Homeland Security	NEMIS	National Emergency Management Information System
DMA	Disaster Mitigation Act of 2000	NEPA	National Environmental Policy Act
DOB	Duplication of Benefits	NFIA	National Flood Insurance Act
DOI	Department of the Interior	NFIF	National Flood Insurance Fund
DOP	Duplication of Programs	NFIP	National Flood Insurance Program
DOT	U.S. Department of Transportation	NFPA	National Fire Protection Association
eGrants	Electronic Grants	NHPA	National Historic Preservation Act
EHP	Environmental Planning and Historic Preservation	NOAA	National Oceanic and Atmospheric Administration
EO	Executive Order	NPS	National Park Service
EOC	Emergency Operations Center	NRCS	Natural Resources Conservation Service
EMA	Emergency Management Agency	O&M	Operations and Maintenance
EPA	U.S. Environmental Protection Agency	OMB	Office of Management and Budget
ESA	Endangered Species Act	OPA	Otherwise Protected Area
FCO	Federal Coordinating Officer	PARS	Payment and Reporting System
FEMA	Federal Emergency Management Agency		
FHWA	Federal Highway Administration		
FIMA	Flood Insurance and Mitigation Administration		

PDM	Pre-Disaster Mitigation
PNP	Private Non-profit
POC	Point of Contact
POP	Period of Performance
SBA	Small Business Administration
SCADC	South Central Alabama Development Commission
SEI	Structural Engineering Institute
SF	Standard Form
SFHA	Special Flood Hazard Area
SFM	Strategic Funds Management
SHMO	State Hazard Mitigation Officer

SOW	Scope of Work
SRIA	Sandy Recovery Improvement Act of 2013
	Stafford Act Robert T. Stafford Disaster Relief and Emergency Assistance Act
TB	Technical Bulletin
URA	Uniform Relocation Assistance and Real Property Acquisition Act of 1970
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WUI	Wildland-Urban Interface Area

# Chapter 1

## Purpose and Process

A hazard can be defined as the threat of a naturally occurring event that has the potential to cause a negative effect on people or on the environment. These hazards can cause disasters resulting in loss of life and cause damage to buildings, infrastructure, crops, livestock and other property -- all of which can have devastating consequences on a community's economic, social and environmental well-being. Hazard mitigation reduces disaster damages from hazards and is defined as a sustained action taken to reduce or eliminate the long term risk to human life and property from hazards. Examples of hazard mitigation actions include outreach programs that increase risk awareness, projects to protect critical facilities, and the removal of structures from flood hazard areas.

### **Purpose of the Hazard Mitigation Plan**

The hazard mitigation process begins with a hazard mitigation planning process in which hazards are identified and analyzed to determine their potential impact on a community or region. Then, steps and actions are outlined to avoid or minimize undesired effects. The purpose of the hazard mitigation plan and planning process is to develop a mitigation strategy with specific actions that can be implemented with as little conflict or duplication of efforts by responsible agencies and individuals.

In 2000, the 106th U.S. Congress adopted the Disaster Mitigation Act of 2000 (DMA) to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act to authorize a program for predisaster mitigation, to streamline the administration of disaster relief, to control the Federal costs of disaster assistance, and for other purposes. In short, Congress found that the recovery costs of natural disasters were escalating in all parts of the country without any reduction in anticipated costs from future disasters. Congress stated that more emphasis should be placed on hazard mitigation activities, especially at the state and local levels where mitigation efforts would have the greatest impact. Additionally, Congress stated that a unified effort of economic incentives, awareness and education, technical assistance, and demonstrated federal support would result in community-based partnerships that could effectively implement local hazard mitigation measures to reduce potential damage from natural disasters and ensure the continued functionality of critical services.

Among many other things, a result of the DMA 2000 was the requirement for state and local governments to prepare local hazard mitigation plans and to update those plans every five years in order to remain eligible for federal disaster recovery assistance should a disaster occur. The requirements for local hazard mitigation plans are outlined in the Code of Federal Regulations, Title

44, Chapter 1, Subchapter D, Part 201, Section 201.6: Local Mitigation Plans (44 CFR 201.6). The opening paragraph of 44 CFR 201.6 states that *the local mitigation plan is a representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effect of natural hazards*. A copy of the 44 CFR 201.6 is included in Appendix A, while the text of the Disaster Mitigation Act 2000 may be found Appendix B. Also, a glossary of definitions of terms used in this plan and general hazard mitigation activities is provided in Appendix D.

In accordance with the requirements of the Disaster Mitigation Act 2000 and FEMA guidelines provided in the *Local Mitigation Planning Handbook*, October 2013, Lowndes County has developed this update to their 2008 hazard mitigation plan. The 2015 Lowndes County Hazard Mitigation Plan is a stand-alone document; is not dependent on the 2008 plan; and supersedes the 2008 plan. Pending FEMA approval, the 2015 Lowndes County Hazard Mitigation Plan will be adopted by the Lowndes County Commission and the seven municipalities located within Lowndes County within two months of notification of plan approval.

#### **Congressional Findings Leading to Disaster Mitigation Act of 2000**


- (1) natural disasters, ..., pose great danger to human life and to property...;
- (2) greater emphasis needs to be placed on (a) identifying and assessing the risks...from natural disasters; (b) implementing adequate measures to reduce losses...; and (c) ensuring that the critical services and facilities of communities will continue to function after a natural disaster;
- (3) expenditures for postdisaster assistance are increasing without commensurate reductions in the likelihood of future losses from natural disasters;
- (4) in the expenditure of Federal funds... high priority should be given to mitigation of hazards at the local level; and
- (5) with a unified effort of economic incentives, awareness and education, technical assistance, and demonstrated Federal support, States and local governments (including Indian tribes) will be able to: (a) form effective community-based partnerships for hazard mitigation purposes; (b) implement effective hazard mitigation measures that reduce the potential damage from natural disasters; (c) ensure continued functionality of critical services; (d) leverage additional non-Federal resources in meeting natural disaster resistance goals; and (e) make commitments to long-term hazard mitigation efforts to be applied to new and existing structures.

#### **Lowndes County Hazard Mitigation Planning Process**

In preparation of an update to the existing 2008 hazard mitigation plan, the Lowndes County Emergency Management Agency (EMA) requested the assistance of the South Central Alabama Development Commission (SCADC) in obtaining funding for the plan and, subsequently, in the plan's development. SCADC was awarded mitigation planning funds on behalf of Lowndes County for the preparation of an update to the 2008 plan through the Hazard Mitigation Grant Program (HMGP) administered through the Alabama Emergency Management Agency (AEMA). Local matching funds were provided through the in-kind donation of time in the preparation of the plan and a cash match from the Lowndes County Commission from the county's general fund.

The Lowndes County Natural Hazard Mitigation Plan is multi-jurisdictional in scope and covers the geographical area of the 725 square miles of land and water that are located within the boundaries of Lowndes County. The planning area includes both the unincorporated areas of Lowndes County and the incorporated area located within the municipal boundaries of the Town of Benton, the Town of Fort Deposit, the Town of Gordonville, the Town of Hayneville, the Town of Lowndesboro, the Town of Mosses, and the Town of White Hall. Just prior to the planning process, Lowndes County has a change in emergency management directors. Emergency management records and LEPC membership were not available to the new director. Therefore, to develop the 2015 Lowndes County Hazard Mitigation Plan, the Lowndes County Local Emergency Planning Committee (LEPC) was re-established and utilized as an oversight committee to guide the development of the plan and lend individual expertise to the planning process. The Lowndes County LEPC is now a standing committee comprised of 85 active members representing all local governments, law enforcements, emergency services, healthcare services, education, natural resources, business, industry, communications, utility services, and non-profit and faith-based organizations.

Notices of LEPC meetings and public meetings provided opportunities for persons, organizations, neighboring communities, non-profits and academic interests to participate in the planning process, in addition to a number of these organizations being represented on the LEPC, directly. Participants were notified by mailed meeting notices, emailed meeting notices, newspaper advertisements and posted flyers. All hazard mitigation planning meetings were open to the public and all interested citizens were invited to attend in each meeting notice. Representatives of Lowndes County EMA were present at all meetings. While representatives of all communities and interests were not present at each meeting, meeting summaries and additional information were emailed to committee members and documents were available for review and comment as part of the planning process. Citizens of Lowndes County and surrounding communities were provided ample opportunities to participate in the hazard mitigation planning process.



**PLANNING FOR NATURAL DISAS**

The Lowndes County Local Emergency Planning Committee is updating the county's hazard mitigation plan to further establish hazard mitigation policies and actions that will help reduce risk and create a safer, more disaster resistant environment in Lowndes County.

**The next Hazard Mitigation Plan meetings will be held on:**  
**Wednesday, June 11, 2014 at 10:00 AM**  
**and**  
**Wednesday, June 28, 2014 at 10:00 AM**  
in the Lowndes County Commission Board Room  
located at Charles E. Smith Courthouse Annex  
205A East Tuskeena Street, Hayneville, Alabama

All Hazard Mitigation Planning meetings are open to the public and all interested citizens are encouraged to attend. If you have questions or need special accommodations to attend the meeting, please contact Mr. David Butts, Lowndes County EMA Director, at 334-548-5103.

**PUBLIC HEARING NOTICE**

The Lowndes County EMA will conduct a public hearing to hear citizen comments on the Lowndes County Hazard Mitigation Plan Update on

**Monday, July 28, 2014 at 5:30 PM**  
**in the Lowndes County Commission Board Room**  
located at Charles E. Smith Courthouse Annex  
205A East Tuskeena Street, Hayneville, Alabama 36040

The Lowndes County Emergency Management Agency (EMA) is updating the county's hazard mitigation plan to further establish proactive hazard mitigation policies and actions that will help reduce risk and create a safer, more disaster resistant environment in Lowndes County. The plan is available for review at the Lowndes County EMA office located in the Charles E. Smith Courthouse Annex at 205 East Tuskeena Street, Hayneville, Alabama. The draft plan is also available online at [http://scadc.net/planning\\_economic\\_development/planning](http://scadc.net/planning_economic_development/planning)

The public hearing is open to the public and all interested citizens are encouraged to attend. If you have questions or need special accommodations to attend the public hearing, please contact Mr. David Butts, Lowndes County EMA Director, at 334-548-5103.

**Examples of  
Public Involvement Notices  
in the Lowndes County Signal**

In a series of four planning workshops and one public hearing, the 2008 Lowndes County Hazard Mitigation Plan was reviewed and revised, as necessary, resulting in the 2015 Lowndes County Hazard Mitigation Plan. The hazard mitigation planning workshops were conducted at the Charles E. Smith Courthouse Annex, located at 205A East Tuskeena Street in Hayneville, Alabama, which is the Lowndes County Seat and a central location for all stakeholders. Dates for the planning workshops were Wednesday, May 21, 2014; Wednesday, May 28, 2014; Wednesday, June 11, 2014; and Wednesday, June 25, 2014. Additionally, a public hearing was conducted at the same location on Wednesday, July 30, 2014 at which time an overview of the 2015 Lowndes County Hazard Mitigation Plan was presented by the SCADC and attendees were provided with ample opportunity for questions and comments. As with the planning workshops, the Lowndes County community was notified of the public hearing through emailed meeting notices, newspaper advertisements and posted flyers.

In general, attendance at the hazard mitigation workshops and public hearing was not good, ranging from nine to 23 persons. Following the first workshop with low attendance, efforts were increased by SCADC and David Butts, the Lowndes County EMA Director, to contact stakeholders personally to notify them of the next meeting. Listed in the table below are representatives who attended meetings for each of the adopting jurisdictions. Full attendance at the meetings can be found in the meeting summaries located in Appendix E. A representative of each adopting jurisdiction was present for at least one of the five meetings, with the exception of the Towns of Benton and White Hall. These very small towns have both part-time mayors and clerks.

#### **Attendance at Hazard Mitigation Planning Workshops by Adopting Jurisdictions**

<b>Jurisdiction Attendance</b>	<b>Workshop #1 May 21, 2014</b>	<b>Workshop #2 May 28, 2014</b>	<b>Workshop #3 June 11, 2014</b>	<b>Workshop #4 June 25, 2014</b>	<b>Public Hearing July 30, 2014</b>
<b>Lowndes County</b>	David Butts, EMA Director; Joe Jordan, Highway Dept.	Brenson Crenshaw, County Comm; Joe Jordan, Highway Dept.	David Butts, EMA Director; Joe Jordan, Highway Dept; John Williams, Sheriff	David Butts, EMA Director; Jacqueline Lee, Human Resources	David Butts, EMA Director; Jacqueline Lee, Human Resources
<b>Town of Benton</b>	X	X	X	X	X
<b>Town of Fort Deposit</b>	X	William Stiener, Planning Commission Chair	Fletcher Fountain, Mayor William Stiener, PC Chair	William Stiener, Planning Commission Chair	X
<b>Town of Gordonville</b>	X	X	X	Willie C. Davis, Mayor	Willie C. Davis, Mayor
<b>Town of Hayneville</b>	X	Tamare McCord, Admin. Assistant	Jerome Hinson, Water/Sewer Supervisor	Jerome Hinson, Water/Sewer Supervisor; Tamare McCord, Admin. Assistant	X
<b>Town of Lowndesboro</b>	David Spooner, Councilman	David Spooner, Councilman	David Spooner, Councilman	David Spooner, Councilman	David Spooner, Councilman
<b>Town of Mosses</b>	X	X	Alicia Howard, Clerk	Leola Bell, Mosses VFD, Town of Mosses	X
<b>Town of White Hall</b>	X	X	X	X	X

To offset the low attendance at the hazard mitigation planning meetings, meeting summaries were emailed to all stakeholders to ensure that all jurisdictions were made aware of the discussions and plans; and further, had opportunities to respond to meeting discussions in lieu of attendance at the hazard mitigation planning workshops and public hearing. The hazard mitigation stakeholder list included 85 representatives from the eight local governments; law enforcement; emergency services; education; healthcare; natural resources; business, industry and communication; utility services; and, non-profit and faith-based organizations. Significant effort was made to ensure that all stakeholders were aware of meeting times and locations and were also updated on the proceedings at each of the meetings. Although the meetings were advertised in the local newspaper and were open to the public, the emergency management directors in those counties surrounding Lowndes County were not issued a separate notification or invitation to attend. The surrounding jurisdictions, however, will be included in the next update planning process.

One of the first tasks in the hazard mitigation planning workshops was to review the 2008 Mitigation Strategy Goals to provide direction to the remainder of the meetings. The Lowndes County LEPC stated that the goals were still valid and approved those goals, as listed below, from the 2008 plan as the primary guidance for mitigation actions.

- Goal 1: Promote natural hazard mitigation as a means to decrease loss of life, property damage and economic loss during a disaster occurrence.**
- Goal 2: Provide on-going support of the Lowndes County Emergency Management efforts to make Lowndes County less vulnerable to natural disasters.**
- Goal 3: Educate general population about natural hazards and hazard mitigation options.**

As part of and following the public workshops, citizen comments were documented, considered by the LEPC and used to finalize the plan. The draft document was available for public review and comment. The plan was then submitted to the Alabama Emergency Management Agency for review, comments and revisions prior to adoption by the local governments in Lowndes County. Documentation of the adoption of the plan can be found in Appendix C. Further opportunities for public input are provided through the consideration of the plan on County Commission and Council meetings that are all conducted under Alabama's Open Meeting Laws.

During the planning process, a review was conducted of known historical and current plans, ordinances, and studies that were prepared for Lowndes County and the municipalities therein. These plans were researched for ideas and relevance in terms of disaster mitigation and preparedness, and a short list of findings were presented, which concluded that there was little data or information directly related to hazard mitigation found in the reviewed documents. The information found in these plans was used to help identify hazards and risks, determine vulnerabilities, and provide ideas for mitigation strategies and activities. A description of this review and the results can be found the Hazard Identification chapter. Previous plans and studies were utilized to help determine assets, critical facilities, data for documenting, priority hazards as well as current and potential development trends.

The public involvement process allowed a specialized committee (the Lowndes County LEPC) with specific ties in terms of both benefits and responsibilities to work directly on the preparation of the

Lowndes County Hazard Mitigation Plan, providing suggestions from both an individual or agency perspective and for the overall welfare of the citizens of Lowndes County. Following the public workshops, a public hearing and review by the local governments insured that the citizens were aware of the process, had ample opportunity to comment, and that the plan was not biased in the direction of any one agency or segment of the population. Revisions and updates from the 2008 Lowndes County Hazard Mitigation Plan that are included in the 2015 hazard mitigation plan update planning process are listed below.

## **2015 Hazard Mitigation Plan Updates and Revisions**

### **Chapter 2: Community Profile**

- Demographics, economic and housing data were updated.
- Land Use data was updated.
- Inventory maps and information were reviewed and updated as needed.

### **Chapter 3: Hazard Identification and Assessment**

- List of federally declared disasters was updated.
- List of hazard events for 12 hazards was updated through April 2014.
- Hazard profiles were combined with past occurrence and damage data to provide a hazard identification and assessment tool.
- LEPC revised hazard priorities based on profile and assessment information and discussions.

### **Chapter 4: Community Profile**

- An overview of hazard vulnerability and impact for Priority I hazards was provided.
- Probability of hazard events and anticipated damages for each jurisdiction for Priority I hazards was updated.
- Critical facilities were reviewed, revised and expanded.
- A new section on community capacity was added that included a Hazard Mitigation Community Capacity Assessment for each jurisdiction.

### **Chapter 5: Hazard Mitigation Strategy**

- Mitigation strategies were reviewed in detail and revised as necessary to reflect a more clear focus for hazard mitigation efforts over the next five years.
- More focus was directed towards mitigation strategies for local planning tools and education and outreach efforts.
- Mitigation Strategy Cost Summary and Prioritization were updated to reflect current costs and LEPC focus for future mitigation priorities.

### **Chapter 6: Plan Review and Maintenance**

- Local Mitigation Plan Review Tool Checklist was completed and included in plan.
- Local Mitigation Multi-Jurisdiction Summary Sheet was completed and included in plan.



## Chapter 2

### Community Profile

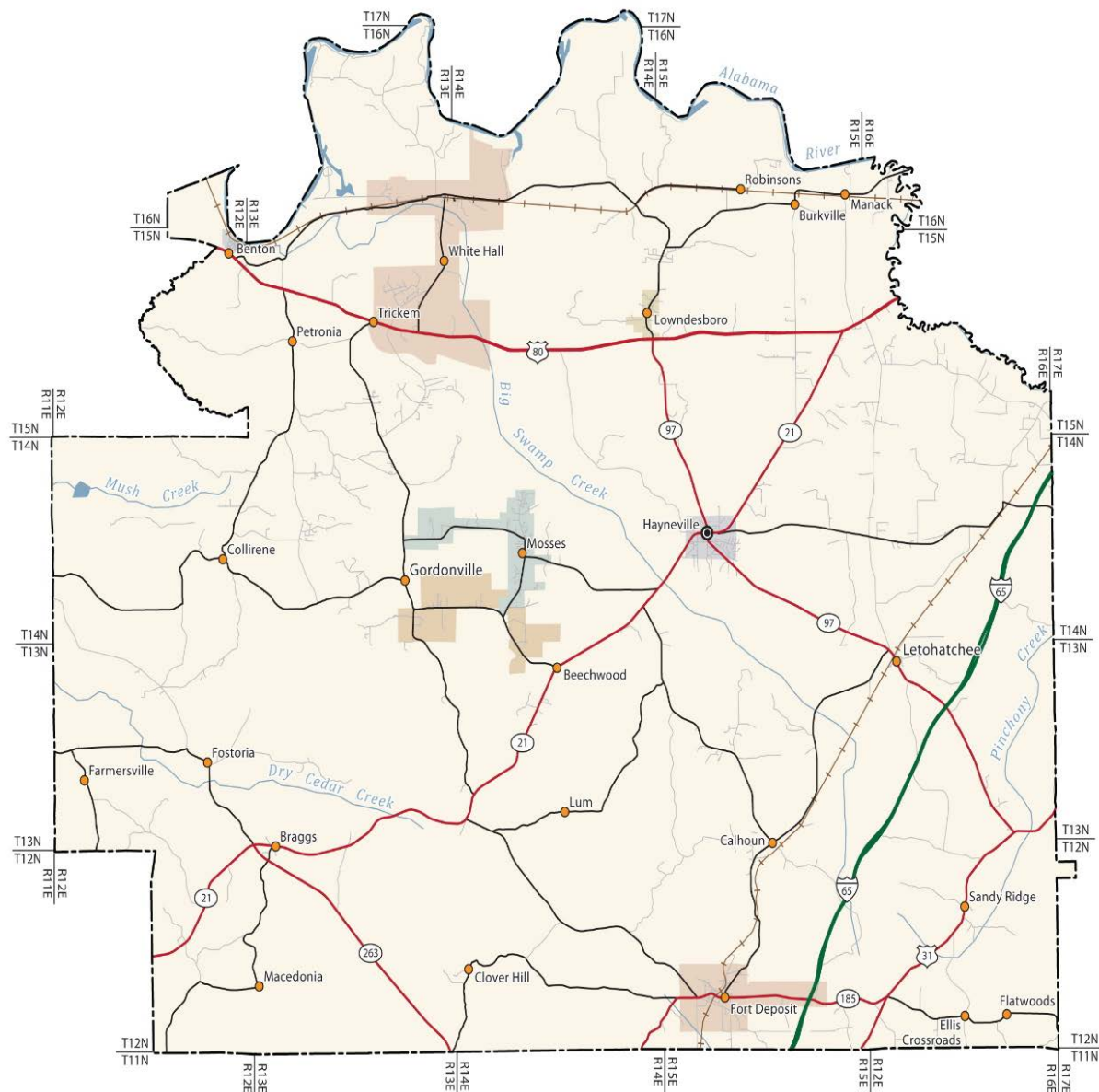
Lowndes County, located in south central Alabama, is a rural county with seven incorporated municipalities: Benton, Fort Deposit, Hayneville, Hayneville, Lowndesboro, Mosses, and White Hall. Lowndes County was created by an act of the Alabama General Assembly on January 20, 1830 from parts of Montgomery, Dallas and Butler Counties. The county is named for a South Carolina statesman, William Lowndes. Lowndes County was once a center of plantation life in Alabama. Hayneville, located in the central eastern part of the county, is the county seat. Lowndes County is located within 50 miles of Montgomery, Troy, and Selma. Major Alabama cities within a 200-mile radius include Birmingham, Dothan, Huntsville, Mobile, and Tuscaloosa. Other cities within a 200-mile radius include Atlanta, Columbus, and Macon, Georgia; Meridian and Biloxi, Mississippi; and Fort Walton, Panama City, Pensacola, and Tallahassee, Florida. Lowndes County encompasses 718 square miles of land and is accessed by Interstate 65, which begins in Montgomery located northeast of Lowndes County and runs in a southwesterly route through the eastern part of the county. Lowndes County also has regional access by U.S. Highways 31 and 80, and Alabama Highways 21, 97, 185, and 263. A CSX rail line also bisects the county, running virtually parallel with Interstate 65 and U.S. Highway 31. Another CSX rail line runs from Montgomery west to Selma.

Lowndes County has subtropical climate with mild winters and hot, wet summers. The average elevation is 257 feet above sea level. The county gets an average of 51.4 inches of rain per year. The national average is 36.5 inches per year. Snowfall is rare with an average of 0.3 inches per year. The average city in the United States gets 25 inches of snow per year. The average number of days in Lowndes County with any measurable precipitation is 92 days per year as compared to 100 days nationally. On average, there are 214 sunny days per year in Lowndes County. The average July high is around 92° Fahrenheit and the average January low is 35° Fahrenheit. On the national level, the average July high is 86.5° Fahrenheit and the average January low is 20.5° Fahrenheit. A comfort index, based on humidity during the hot months, ranges from 0 to 100 where higher is more comfortable. Lowndes County has a comfort index of 28 out of 100 while the national average comfort index is 44. The UV Index is a measure of an area's exposure to the sun's ultraviolet rays. This is most often a combination of sunny weather, altitude and latitude. The average national UV index is 4.3 while the average UV index is higher in Lowndes County, at 5.4.

## Regional Accessibility and Land Use

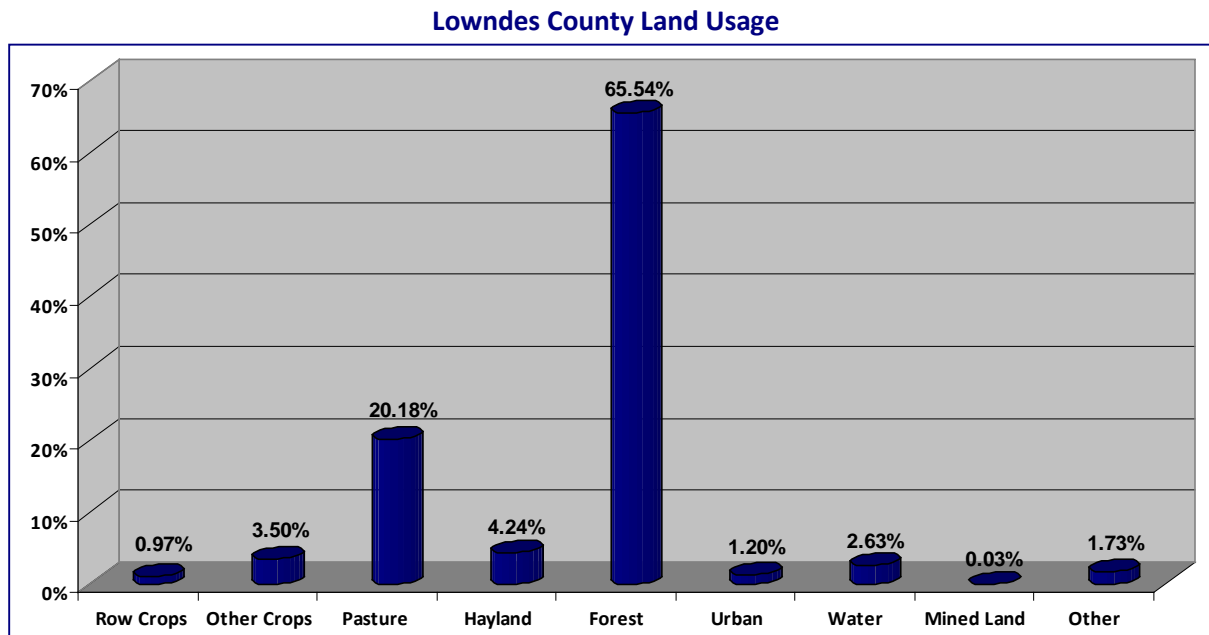
As shown in the map below, much of the regional access to Lowndes County is located in the northern and eastern parts of the county. Transportation access in the western and southern parts of the county is available through a network of smaller state highways and county roads. General land use patterns follow the transportation system, with the majority of structural development being located along the Interstate 65, U.S. Highway 31 and U.S. Highway 80 corridors. Municipalities that are located or near the major transportation routes include Fort Deposit, Hayneville, Lowndesboro, and White Hall. Municipalities located on or near minor transportation routes include Benton, Gordonville, and Mosses.

**Lowndes County Municipalities and Major Transportation Routes**



Source: The University of Alabama, Department of Geography, 2014  
<http://alabamamaps.ua.edu/contemporarymaps/alabama/counties/lowndes.html>

County land use data was obtained from the Alabama Soil and Water Conservation Committee through watershed assessments. The most recent assessment was conducted in 2007. This is also the most recent detailed land use data available for Lowndes County. Forestry is the primary land use in Lowndes County with approximately 65.5 percent, equivalent to 301,150 acres, of the total land area being used for active or passive forestry purposes. Forested land is located throughout the county, but the greatest concentrations are found primarily in the southeastern half. Of the total forest area, the greatest percentage, at 46.3 percent, is privately owned and non-commercial forest area. Approximately 36.1 percent of the forest area is used in the forest industry for commercial purposes. In 2013, the Alabama Forestry Commission's Forest Resource Report estimated that Lowndes County produced more than \$114.9 million board feet of forest products for the year, resulting in stumpage revenue of more than \$6.6 million. Of the total forest products generated in Lowndes County in 2013, 63.9 percent was pine pulpwood with a revenue of \$2.1 million; 23.2 percent was hardwood pulpwood with a revenue of \$1.2 million; 12.2 percent was pine sawtimber with a revenue of \$2.9 million; 0.7 percent was hardwood sawtimber with a revenue of \$474,000; and, 0.1 percent was poles and piles with a revenue of \$46,000.



Source: Alabama Soil and Water Conservation Committee, 2007 Watershed Assessment,  
[http://swcc.alabama.gov/pages/2007\\_data.aspx](http://swcc.alabama.gov/pages/2007_data.aspx)

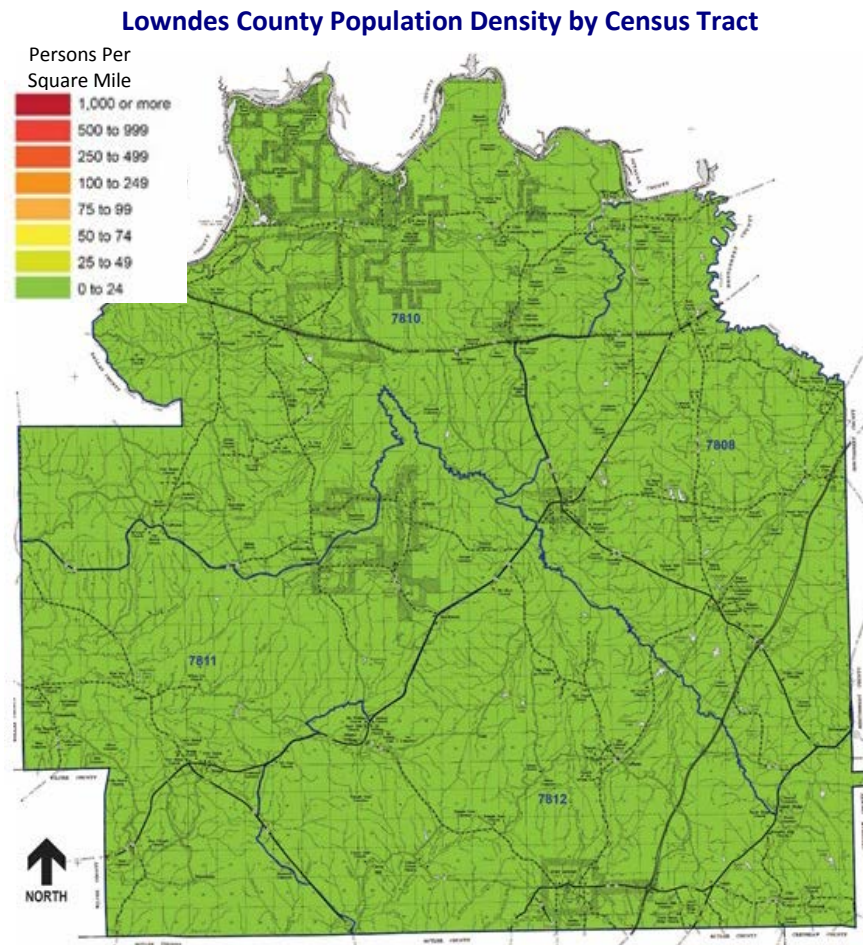
Following forestry, agricultural land uses occupy 28.9 percent of the land area in Lowndes County, which is equivalent to 132,733 acres of agricultural land uses. The most concentrated areas in crop and pasture land uses are found in the northeastern half of the county. The predominant agricultural land use is pasture land (20.2 percent of the total land area), while principle row crops make up less than 1 percent of the county's total land area. According to the 2012 Census of Agriculture, there are 411 farms in Lowndes County. The average farm size in the county is 494 acres; and, there are 50 farms in the county that are larger than 1,000 acres. The average net income per farm is \$26,618, although the average value of farm products sold was \$173,051. It is estimated that the primary crops

were grain corn, with 234,107 bushels harvested, and soybeans, with 202,092 bushels harvested. Animal production in 2013 resulted in 13.5 million meat chickens sold, and 21,807 cows and 568 layer chickens in inventory.

Urban land uses only account for 1.2 percent of the county's total land area. Residential land uses throughout most of Lowndes County are low density single family housing, with a small percentage of medium and high density housing mainly found in the Hayneville and Fort Deposit areas. In addition to forest, agricultural and urban land uses, water bodies make up at 2.63 percent of the total land area; mined land comprises 0.03 percent; and other land uses make up 1.73 percent. The "other land uses" category includes infrastructure and utilities, as well as other miscellaneous land uses.

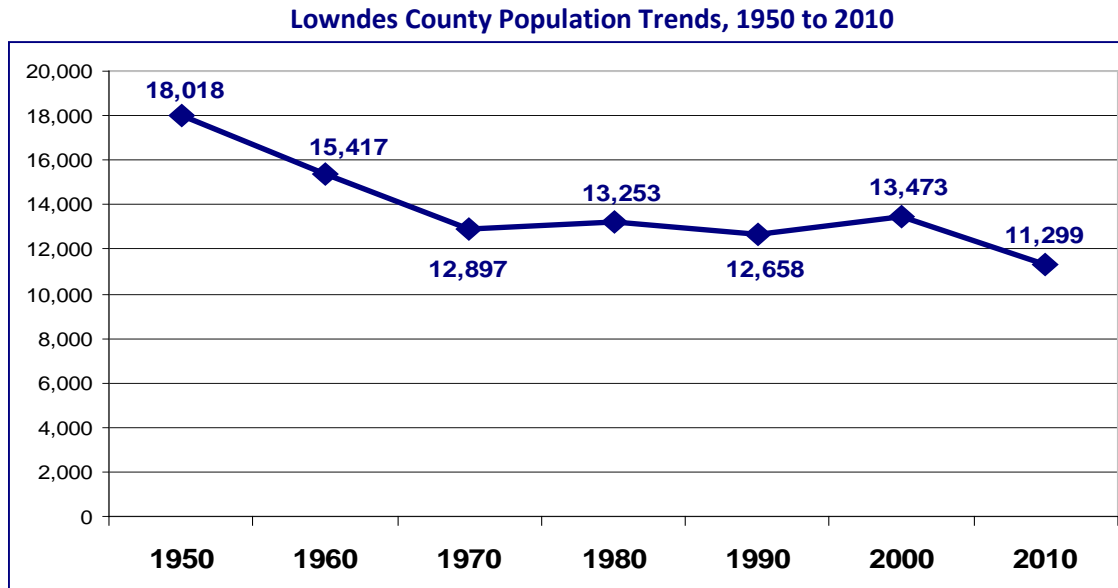
## Population and Housing

Lowndes County is sparsely populated with a population density, according to 2014 Census estimates of 14.8 persons per square mile, as compared to the State of Alabama with 95.8 persons per square mile. In the 4-year time span between 2010 and 2014, population density in Lowndes County decreased by 6.4 percent from 15.8 persons per square mile, in comparison to the State which increased by 1.5 percent from 94.4 persons per square mile in 2010. According to the 2013 ACS, population density in the county ranges from 22.4 persons per square mile in Census Tract (CT) 7808 to 10.6 persons per square mile in CT7811.



Source: SCADC Human Services Coordinated Transportation Plan, 2015

As of 2013 census estimates, Lowndes County has a population of 11,086 persons, which is a 1.9 population decrease from the county's 2010 population of 11,299 persons. During the last 60 years, there are only two decades in which Lowndes County has not suffered a population loss. Between 1970 and 1980, the county had a population increase of 2.8 percent; and between 1990 and 2000, the population increased by 6.4 percent. Overall, in the 60 year time frame from 1950 to 2010, Lowndes County has experienced a 37.3 percent decline in population.



Source: U.S. Bureau of Census, 1950 Census to 2010 Census

The 2013 ACS Lowndes County population of 11,086 persons, 62.4 percent live in the unincorporated areas of the county. Of the remaining total county population living within a municipality, 0.5 percent live in Benton; 11.1 percent live in Fort Deposit; 2.7 percent live in Gordonville; 9.9 percent live in Hayneville; 2.1 percent live in Lowndesboro; 9.0 percent live in Mosses; and 7.9 percent live in White Hall. The majority of the population of Lowndes County is female, at 52.3 percent, and 47.7 percent are male.

**Total Population and Percent of County Total**

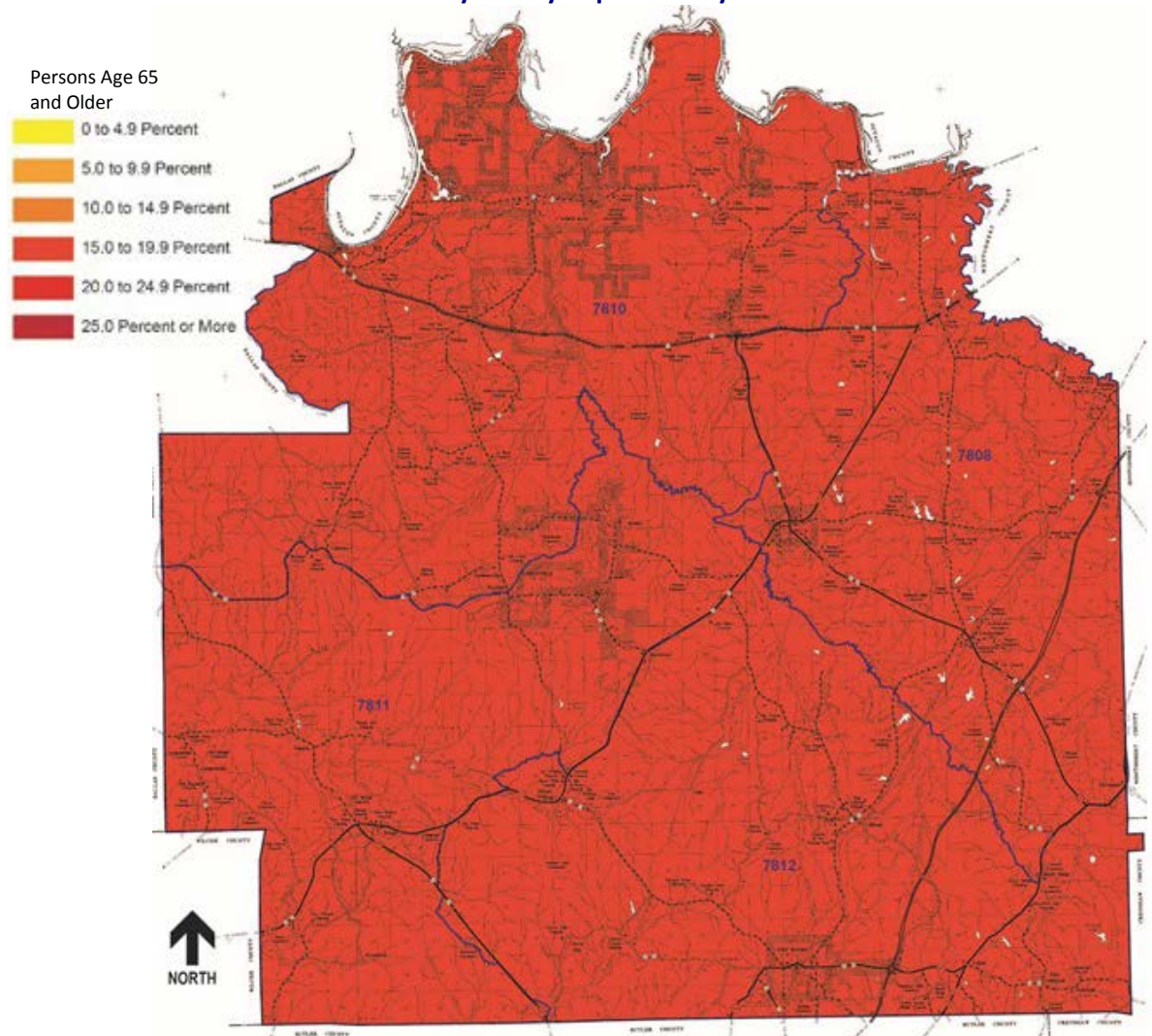
	Total Population	% of Total Population	Median Age	Percent Female
Lowndes County	11,304	100.0%	40.7	53.3%
Benton	47	0.4%	41.5	57.4%
Fort Deposit	1,266	11.2%	33.5	56.2%
Gordonville	303	2.7%	39.8	47.2%
Hayneville	934	8.3%	34.6	49.1%
Lowndesboro	290	2.6%	43.0	65.5%
Mosses	1,052	9.3%	33.4	49.6%
White Hall	793	7.0%	36.9	53.0%
Unincorporated Lowndes County	6,619	58.6%	N/A	53.6%

Source: U.S. Bureau of Census, 2009-2013 American Community Survey



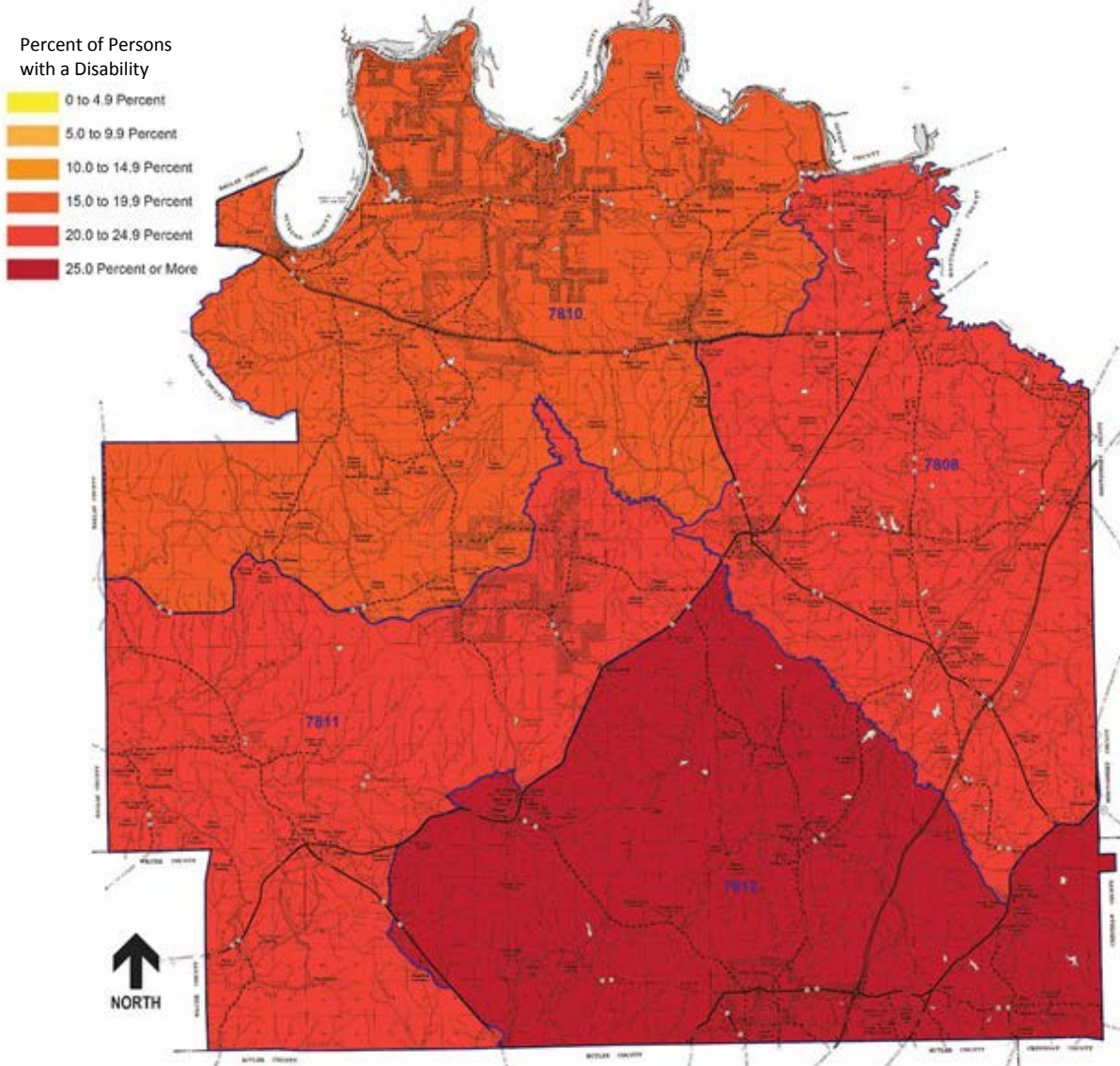
The median age in Lowndes County increased from 33.9 in 2000 to 41.0 in 2013, ranging from 38.7 in CT7811 to 42.7 in CT7808. Census estimates from 2014 report that 23.1 percent of the population is under the age of 18 and 17.4 percent is age 65 and older. The remaining 59.5 percent of the population is between the ages of 18 and 64 and is considered to be the primary working age population. As of 2013 ACS, 6.2 percent of the total population is under 5 years old and 15.2 percent is age 65 or older. The elderly population is spread fairly evenly throughout Lowndes County, with the percentage of persons age 65 and older ranging from 15.0 in CT7811 to 15.4 percent in CT7808. There are also 2,339 persons, or 21.1 percent of the total population, with disabilities in the county. Of the total population, 1.4 percent of the population under the age of five have a disability, 5.1 percent of the population between the ages of 5 and 17 have a disability, 21.3 percent of the population between 18 and 64 have a disability, and 47.4 percent of persons age 65 and older have a disability. As with the elderly population, the three southern census tracts have the highest concentrations of disabled persons, with CT7812 being the highest, at 25.4 percent. The highest concentration of disabled persons are located in the northeastern part of the county in CT9634, at 27.7 percent.

### Lowndes County Elderly Population by Census Tract



Source: SCADC Human Services Coordinated Transportation Plan, 2015

### Lowndes County Disability by Census Tract



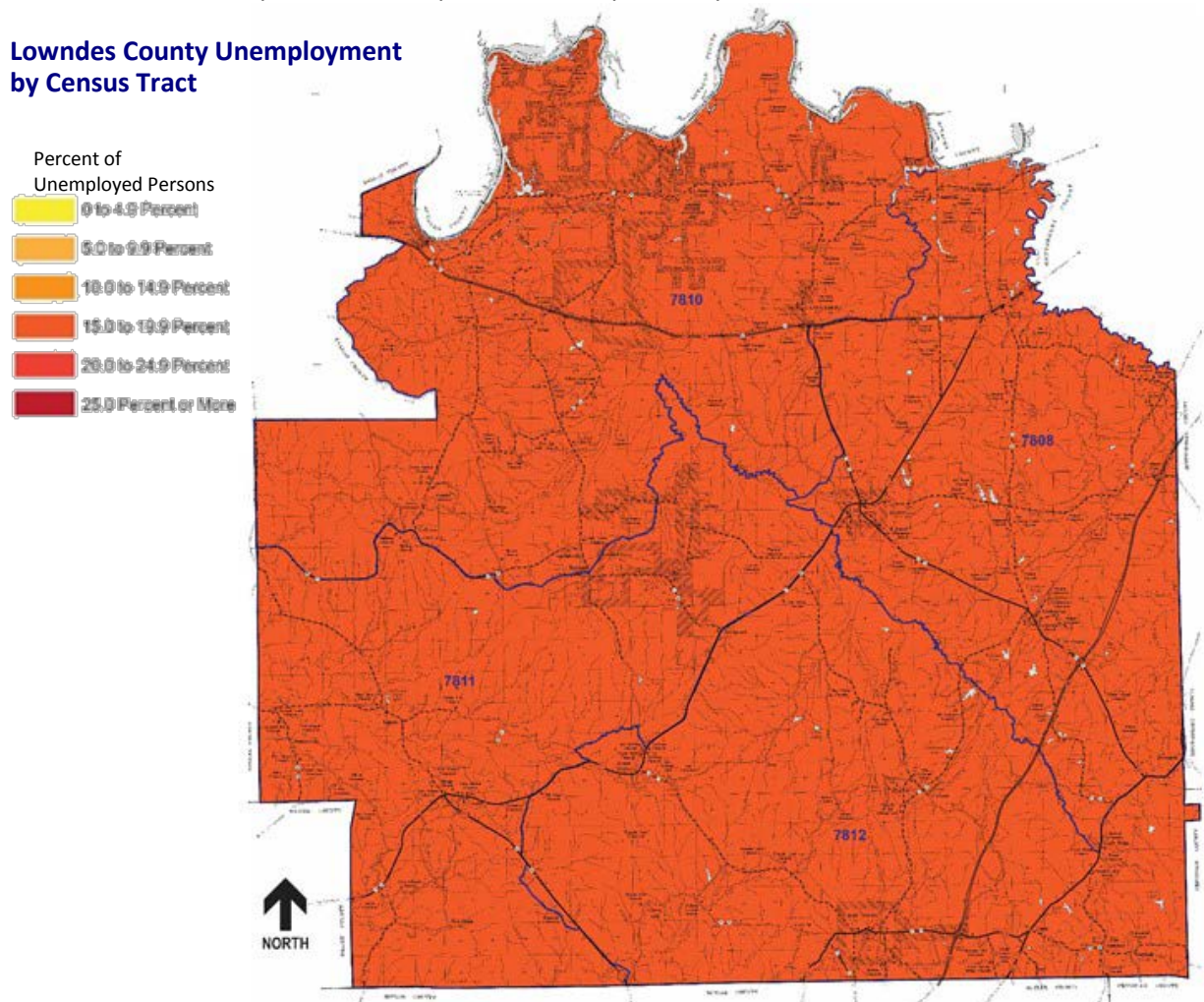
Source: SCADC Human Services Coordinated Transportation Plan, 2015

Of the total Lowndes County population, 46.7 percent is male and 53.3 percent is female. Within the incorporated areas, 47.2 percent of population is male and 52.8 percent is female. In the unincorporated area, 46.4 percent is male and 53.6 percent is female. The racial composition of Lowndes County is 25.6 percent white, 74.0 percent African American, 0.4 percent American Indian or Alaska Native, and 0.2 percent is persons of some other race. In the unincorporated area of the county, the racial composition is 29.6 percent white, 70.3 percent African American, and 0.5 percent American Indian or Alaska Native. The racial composition in the incorporated areas is 20.0 percent white, 79.3 percent African American, 0.2 percent American Indian or Alaska Native, and 0.4 percent is persons of some other race. Gordonville is the only municipality that has a population that is 100 percent African American and Lowndesboro is the only municipality that has a majority white population, at 97.6 percent.



The 2013 ACS reports that Lowndes County has a civilian labor force of 4,316 workers, of which 17.4 percent are unemployed. Unemployment data available from the Alabama Department of Labor reports that, as of May 2014, Lowndes County has a labor force of 3,899 workers, of which 11.9 percent are unemployed. Unemployment was highest in Hayneville, at 38.4 percent, and in White Hall, at 30.7 percent. Primary occupations of the labor force in the county are production, transportation and material moving, at 30.0 percent of all occupations. The industry with the largest percentage of employees in Lowndes County is manufacturing, with 25.9 percent, distantly followed by educational services, health care and social assistance, with 16.1 percent. The average commute time for Lowndes County workers is 30.4 minutes. Lowndes County has a labor force of 4,316 persons, which is 49.0 percent of the working age population age 16 and older. The 2009-2013 ACS reports that there are 751 unemployed persons, which is 17.4 percent of the total labor force. Unemployment is high throughout the county, ranging from 19.9 percent in CT7810 in the northern part of the county to 15.9 percent in CT7811, located in the southwestern part of the county. CT7811 also has the highest percentage of households with no vehicle available, at 29.0 percent, followed by CT7810, at 18.3 percent. Countywide, 13.7 percent of all households do not have a vehicle available. With an average household size of 2.6 persons, 1,519 persons are impacted by lack of a vehicle.

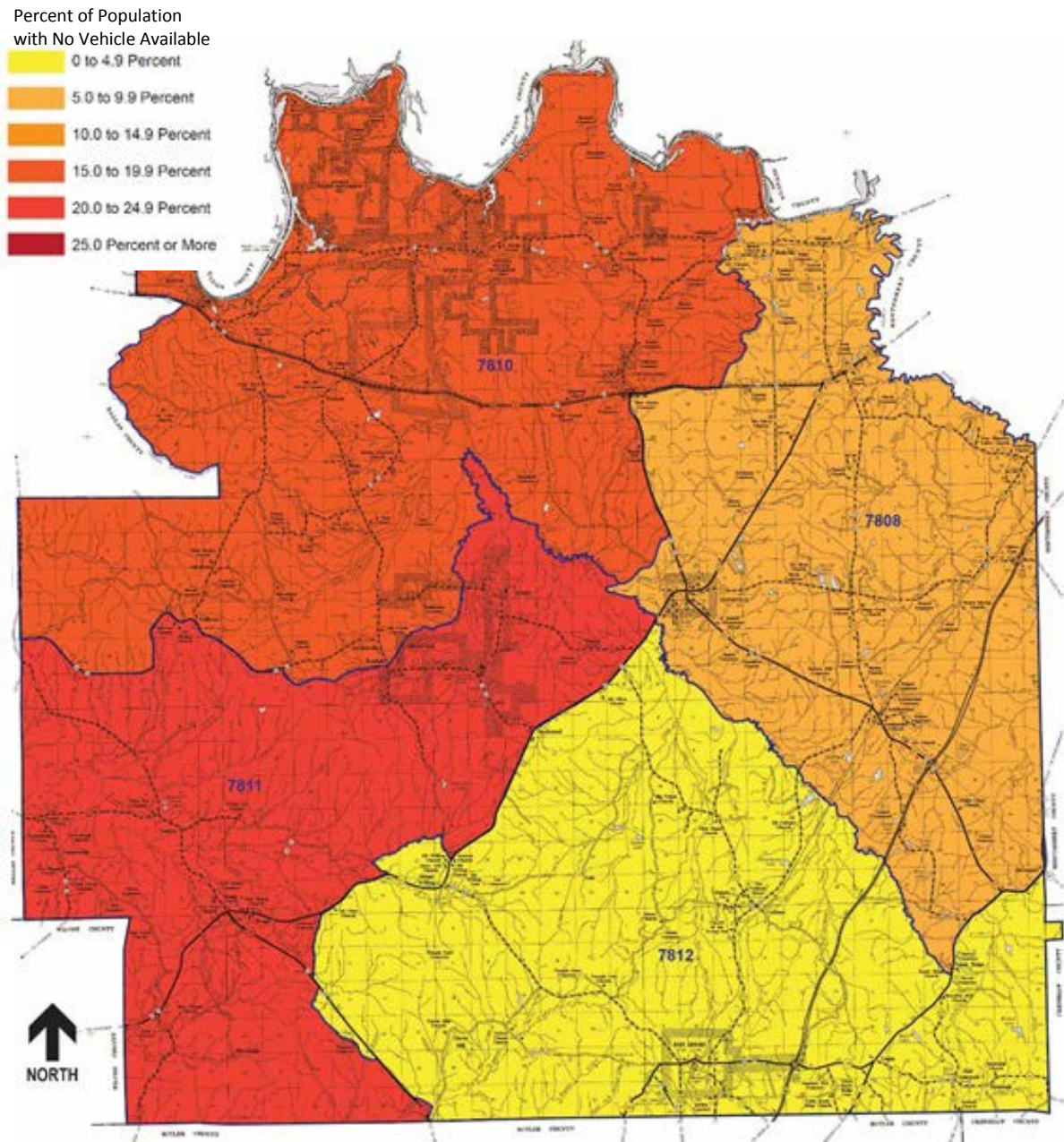
#### Lowndes County Unemployment by Census Tract



Source: SCADC Human Services Coordinated Transportation Plan, 2015



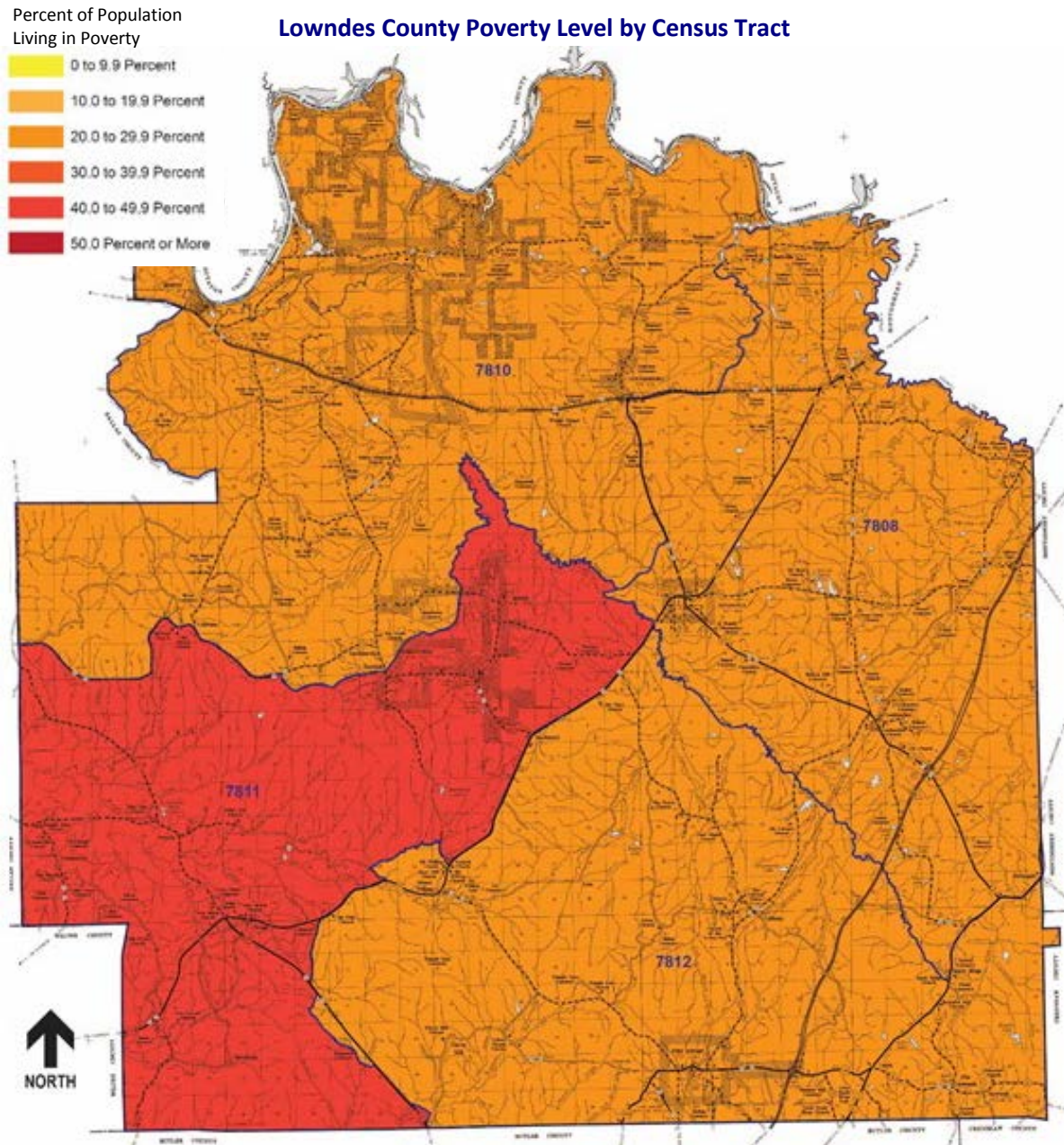
### Lowndes County Households with No Vehicle Available by Census Tract



Source: SCADC Human Services Coordinated Transportation Plan, 2015

As a result of high unemployment rates, income levels in Lowndes County are very low, with 23.6 percent of the total population living below poverty level. In comparison, 18.1 percent of all persons in Alabama live below poverty, and in the nation 14.9 percent of all persons live below poverty level. By the 2013 ACS, the percentage of individuals living below poverty level in Lowndes County had increased to 26.7 percent of the total population, while the poverty rate for the State of Alabama increased to 18.6 percent. CT7811, located in the southwest corner of the county, has the highest concentration of economically-disadvantaged population by far, at 41.1 percent. In comparison, the percentage of persons living below poverty level ranges from 20.4 percent in CT7812 to 25.6 percent

in CT7808. Per capita income in Lowndes County is \$17,895, as compared to \$23,587 in Alabama and \$28,051 nationally. Per capita income is highest in Benton, at \$35,498, and Lowndesboro, at \$31,038. Per capita income is lowest in Mosses, at \$9,817, followed by Gordonville, at \$14,004, and Hayneville, at \$14,304. The per capita income is \$15,373 in Fort Deposit, and \$16,886 in White Hall.



Source: SCADC Human Services Coordinated Transportation Plan, 2015

As would be expected, the median household income in Lowndes County, at \$28,023, is much, much lower than that of the state, at \$43,160, and the nation, at \$53,046. As with per capita income, median household income is highest in Benton, at \$85,313, and Lowndesboro, at \$60,625. Median household income is lowest in Mosses, at \$16,713, and Hayneville, at \$16,890, followed by



Gordonville, at \$18,500. The median household income in Fort Deposit is \$27,986, and it is \$21,250 in White Hall. Of the total households in Lowndes County, only 62.1 percent have earnings. The median earnings for all workers in the county is \$24,163. The 2012 ACS also reports that 41.3 percent of households have social security income, 20.7 percent have retirement income, 12.2 percent have supplemental security income, 3.5 percent have cash public assistance income, and 23.1 percent have food stamp or SNAP benefits.

The target population groups from the 2015 South Central Alabama Human Services Coordinated Transportation Plan include those persons who have transportation barriers, such as the elderly, disabled, or poverty-ridden populations. In other words, these persons are dependent upon someone else for transportation services. These population groups are also important to hazard mitigation studies because of the dependency factor, which makes their level of risk higher than those persons who more self-sufficient. Based on the target population data, it is estimated that there are 9,258 individual incidences of transportation barriers in the county. A large portion of the target population groups, however, experiences multiple transportation barriers, such as being disabled, unemployed and living below the poverty level. A conservative estimate might be half of the identified number of persons with transportation barriers which equates to 4,629 persons, or 41.8 percent of the total population has a higher risk level than normal.

#### **Summary of Population Potentially At Risk to Hazards**

<b>Population Segment</b>	<b>Number</b>	<b>Percent of Total</b>
Age 65 and over	1,689	15.20%
Persons with a Disability	2,339	21.10%
Persons Below Poverty Level	2,960	26.70%
Unemployed	751	17.40%
Households Without a Vehicle (average household size = 2.6 persons)	577 Households 1,519 Persons*	13.70%
<b>Lowndes County Total Population</b>		<b>11,086</b>
<b>Total Potentially Impacted by Unmet Transportation Needs</b>		<b>9,258</b>
<b>Percent Impacted</b>		<b>83.5%</b>

*Source: U.S. Census, American Community Survey 2009-2013*

*\*Number of persons in households with no vehicle available was derived by multiplying the number of households with no vehicle available by the average household size.*

Of the total 4,252 households in Lowndes County, 57.8 percent, or 2,559 households, are located in the unincorporated part of the county. The average household size countywide is 2.67 persons per household. The majority of households are family households, at 66.0 percent; however, 30.8 percent are single householders. Of the total households, 26.1 percent are female householders with no husband present. The average family size in Lowndes County is 3.4 persons.

There are 5,176 housing units in Lowndes County, according to the 2012 ACS, which represents a 10.8 percent decrease in total housing units since 2000 when there were 5,801 housing units in the county. Of the total housing units, 41.6 percent are located within municipal boundaries and 58.4 percent are located in the unincorporated area of the county. Fort Deposit has the most housing of

the municipalities with 11.4 percent of the total housing stock, followed by Hayneville, with 8.6 percent; Mosses and White Hall each have 7.7 percent of the total housing stock within their corporate boundaries. As shown on the map on the following page, population and housing density are highest in the southeastern part of the county, stretching from Hayneville to Fort Deposit. Population and housing density are lowest in the southwestern part of the county around the Mt. Willing, Braggs, Farmersville and Macedonia communities and in the northern part of the county, including Lowndesboro and White Hall.

Of the total housing stock in Lowndes County, 82.1 percent is occupied and 17.9 percent is vacant. Within the combined municipalities, 83.3 percent of the housing stock is occupied and 16.7 percent is vacant. In the unincorporated part of the county, 81.3 percent of the housing stock is occupied and 18.7 percent is vacant. Housing vacancy is highest in Benton, at 67.5 percent, and White Hall, at 25.6 percent. Housing vacancy is lowest in Gordonville, at 2.8 percent, and Mosses, at 6.8 percent. Countywide, homeowner vacancy is 1.2 percent while renter vacancy is 28.1 percent.

The majority of the housing units in Lowndes County are single attached or unattached units, at 59.2 percent of the total housing stock. Multi-family housing only makes 8.7 percent of the total housing stock, with most of the multi-family housing being smaller two-, three- and four-unit structures. Manufactured housing comprises 32.0 percent of the housing stock. In the combined municipal areas, manufactured housing accounts for 28.8 percent of the housing units, as compared to 38.5 percent in the unincorporated areas of the county.

An exceptionally large percentage of the housing in Lowndes County, at 88.2 percent countywide and 92.6 percent in the unincorporated area, were built in the last 50 years since 1960 -- however, only 10.5 percent and 12.4 percent of the housing units, respectively, have been built since 2000. The amount of substandard housing, determined by a lack of adequate facilities and overcrowded conditions, is higher in Lowndes County than statewide levels. The 2012 ACS data estimates that 81 housing units in Lowndes County, or 1.9 percent, do not have complete plumbing facilities; and, 32 housing units, or 0.8 percent all units do have complete kitchen facilities. Overcrowded housing, at more than 1.01 persons per room, often leads to adverse health and social conditions for those impacted. In Lowndes County, there are 208 overcrowded units (4.9 percent of the housing stock) as compared to only 1.8 percent of the State's housing stock. It is also estimated that 23 housing units in Lowndes County have no source of heat. The remaining households are heavily dependent upon electricity, at 46.4 percent, or propane gas, at 41.8 percent.

As of 2012, the median housing value of owner-occupied in Lowndes County is \$70,200, as compared to \$122,300 in the State of Alabama and \$181,400 in the nation. With the low income levels and high poverty rates in Lowndes County, it is not surprising that a large percentage of households experience a housing cost burden. Of owner households, 75.4 percent experience a housing cost burden by spending 30 percent or more on housing costs. Just over half of renter households, at 51.4 percent, experience a housing cost burden. The only public housing in Lowndes County is found in the Town of Hayneville.

## Physical Characteristics

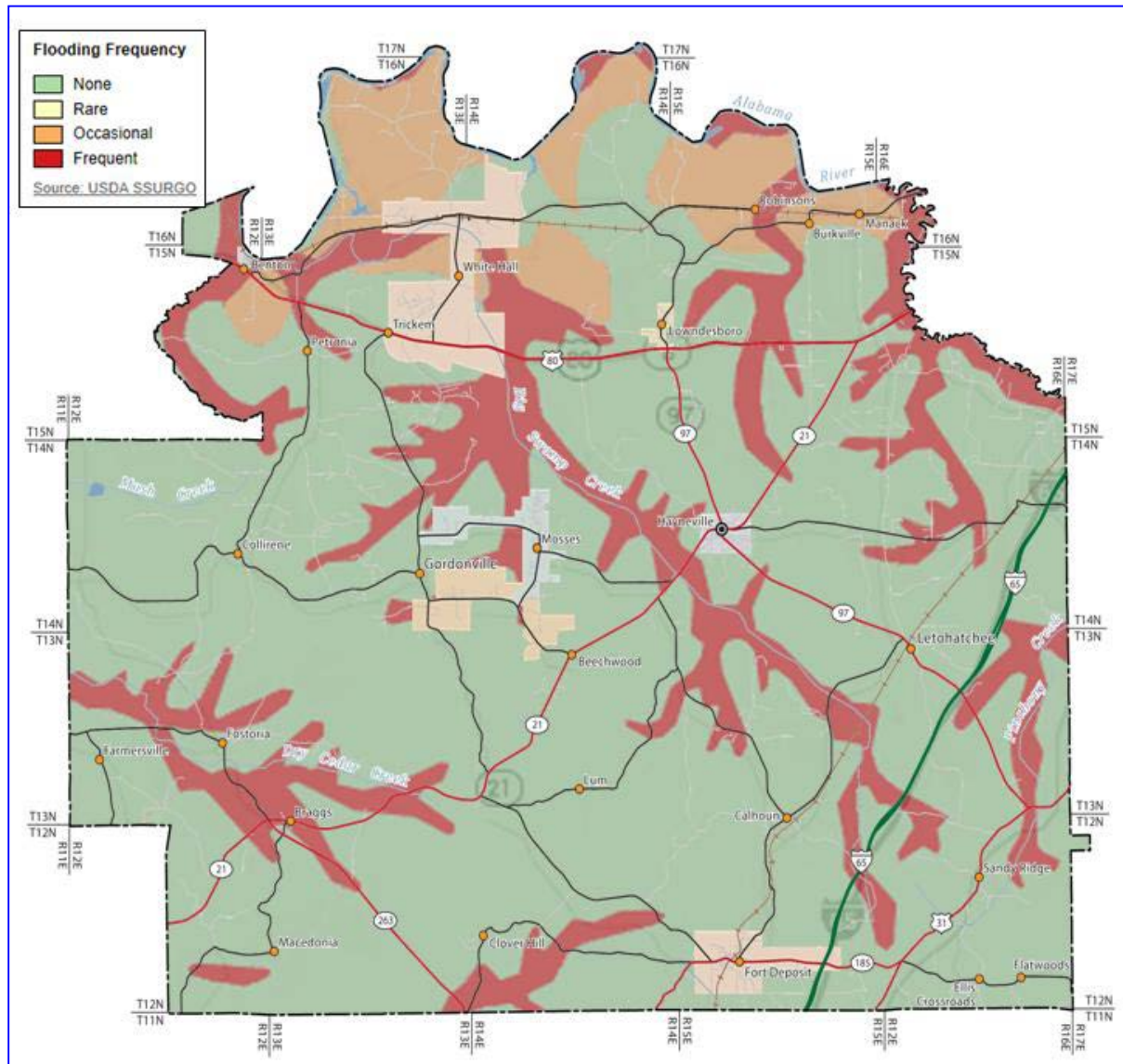
The physical conditions that were assessed include topography, hydrology/hydrography, soils, and mineral resources. Lowndes County contains three physiographic sub-regions: Terrace and Flood Plain, Black Prairie, and the Chunnennuggee Hills. Based on these sub-regions, the topography of the county is divided into two general sections: one encompassing the Terrace and Flood Plain elevations and the other encompassing both the Black Belt and Chunnennuggee Hills with elevations of 250 feet and 500 feet. These last two sub-regions form a wide “U” shaped band covering much of the western, southern, and eastern portions of the county. The terrace and flood plain cover the remaining portions of the county.

Most of Lowndes County is level to gently rolling. However, the Chunnennuggee Hills in the southern part of the county create more broken terrain. Especially steep slopes are found in the southwestern corner of the county near the county line. In the vicinity of Fort Deposit, rough topography is found along Fort Deposit Creek immediately north of the developed area and along Ballard’s Creek east of Town. Rougher topography and steep slopes are found in the vicinity of the Collirene and Petronia communities in the western end of the county. Excessive slopes are also present along sections of the county’s major streams where the alluvial terraces have been deeply eroded. Rough terrain is not a significant factor in the Hayneville, Lowndesboro, and Benton vicinities.

There are broad flood plains adjoining the Alabama River and Big Swamp Creek. Smaller flood plains are present along Pintlala Creek, Tallawassee Creek, Steep Creek, Pinchony Creek, Cedar Creek, and their tributaries. As shown on the map on the following page, only limited flooding occurs along the streams in the vicinity of Fort Deposit. The flood plains of Big Swamp Creek lies in the southwest of the corporate limits of Hayneville, and there is minor flooding along tributaries of Big Swamp Creek in the vicinity of Hayneville, there is no significant problem with flooding in the Lowndesboro planning area, but the Town of Benton can be severely affected by periodic flooding of the Alabama River.

Ground water is that water below the land surface that occurs in a zone where the enclosing material is fully saturated. It is ground water that can be pumped from wells or that flows from springs and is obtained primarily from precipitation. In Lowndes County, there is an abundant quantity of ground water, but unfortunately the ground water found in broad sections of the county is of poor quality. This aspect is particularly relevant to future residential development in the county. The mineral content of ground water may limit its usefulness. Most domestic users are concerned with dissolved solids content, hardness, chloride, and dissolved iron concentrations in the water. Water quality requirements for industry vary depending on the use. Some industries such as food processing and canning frequently require lower levels of minerals than municipal supply requirements. Conversely, when the water is used for cooling purposes, higher levels of dissolved minerals can be tolerated. The water quality of streams in Lowndes County generally is good, and the water is suitable for most uses. Results of chemical analyses indicate that contents of total dissolved solids range from 36 to 250 mg/L, and hardness ranges from 65 to 85 mg/L of CaCO<sub>3</sub>, which is considered moderately hard to hard. The dissolved iron content is high, ranging from 200 to 930 micrograms per liter, but that is not considered a hazard to health. The overall chloride content is low, ranging from 0.2 to 15 mg/L.

## Flooding Frequency



Source: The University of Alabama, Department of Geography, USDA SSURGO, 2014  
<http://alabamamaps.ua.edu/Interactive%20Maps/Physical/Flooding.html>

Soils are evaluated with respect to limitations presented for various types of uses. A detailed examination of soil characteristics can aid in determining the most compatible arrangement of industrial, commercial, residential, and recreational uses. Evaluation of soil types within the county assist in identifying area with high water tables, area with bedrock near the surface and in delineating areas that are subject to periodic flooding. A majority of the soils in Lowndes County have moderate to severe limitations for all types of urban development.

The north-central portion of the county is typified mainly by the Bama- Goldsboro-Lucedale soils group. Where the slope is less than 12 percent, these soils have slight to moderate restrictions to septic tank field absorption and dwelling foundations. The Leaf-McQueen-Wickham group is primarily located in the Alabama River floodplain. Because of the high water table and frequent flooding, these

soils have severe restrictions for all urban land uses. Similarly, the Leeper Association, located primarily in the Big Swamp Creek region, is severely restrictive to all urban uses.

Scattered throughout the middle region of the county are the Sumter-Oktibbeha and Oktibbeha-Luverne groups. These upland soils also have restrictions for urban uses. Located in the southern portion of the county is the Luverne-Lucy soils association. These soils present general moderate to severe limitations for most types of urban development.

In contrast to the problems posed for urban development, the Bama-Goldsboro- Lucedale and Leeper associations are desirable locations for forestry and agricultural uses. Both are particularly well suited for pasture and (along with the Leaf-McQueen-Wickham association) woodland. The Bama-Goldsboro-Lucedale and Leeper associations are also the most suitable areas in the county for croplands.

With the exception of the quaternary and recent geological ages, all geologic formations in the county were formed during the cretaceous and tertiary ages. These formations are sedimentary in origin and generally slope downward to the south-southeast at a rate of 30 to 50 feet per mile. They are composed chiefly of clay, chalk, limestone, mud, sand, and gravel. The formations are: 1.) Clayton Formation, 2.) Providence Sand Formation, 3.) Prairie Bluff Chalk, 4.) Ripley Formation, 5.) Demopolis Formation, 6.) Mooreville Chalk, 7.) Gordo Formation, and the 8.) Coker Formation. These last two formations comprise the Tuscaloosa Group. Below these formations beginning at approximately 950 feet in depth are crystalline rocks.

Lowndes County is not endowed with extensive commercially exploitable mineral deposits. The only known deposits with commercial potential are clay, limestone, sand, and gravel. The commercially valuable clay deposits in Lowndes County occur near the base of the Ripley formation in southeastern Lowndes County. This clay is composed of up to 95 percent calcium montmorillonite and is used as a binder for foundry molding sand. Although the clays in Lowndes County are too sandy for ceramic use, some deposits of the residual soils can be used to make attractive dark-red brick and tile.

Limestone deposits are present in the western part of Lowndes County. These potentially profitable economic deposits, which generally result from the accumulation of calcium carbonate in a marine environment and the eventual crystallization and hardening into limestone, occur in the upper part of the Clayton Formation in Lowndes County. Sand and gravel deposits are found in the extreme northern part of the county in the vicinity of the Alabama River and throughout the southern half of the county.





## **Chapter 3**

### **Hazard Identification and Assessment**

Natural hazards that have the potential to impact Lowndes County were identified using a variety of resources. Using a general list of natural hazards as available through FEMA, research was conducted into past disaster occurrences in Lowndes County and the physical characteristics of the county that lend themselves to natural hazard occurrences, along with a review of historical and existing plans and regulations in Lowndes County that identify the potential for natural hazards. In the initial review of the list of natural hazards, five of hazards were eliminated due to a lack of applicability in Lowndes County. The five hazards that were discounted were avalanche, coastal erosion, earthquake, tsunami, and volcano. It was further determined that the 2015 Lowndes County Hazard Mitigation Plan would address 12 hazards as listed below:

- Dam Failure
- Drought
- Extreme Temperatures
- Floods
- Hail
- High Winds
- Landslides
- Sinkholes and Subsidence
- Wildfire
- Winter / Ice Storms
- Thunderstorms and Lightening
- Tropical Storms and Hurricanes

A review of past disaster declarations (available through FEMA) in Lowndes County revealed that 11 federally declared disasters have occurred in Lowndes County since 1953, of which eight events were major disaster declarations and three events were emergency declarations. Of the 11 federally declared disaster events, five events were hurricanes, four events were severe storms - three of which had associated flooding, and there was one event each for winter storms and drought. In each of the 11 declared disaster events during the 62-year period, federal assistance was provided to Lowndes County. In five declarations, both public and individual assistance was provided. In the remaining six declarations, only public assistance was provided. Beyond financial assistance, federal assistance was provided in the form of crisis counseling, disaster housing, disaster unemployment assistance, and individual, and family grants.

### Federally Declared Disasters, 1953 to 2014

Date	Hazard	Declaration	Type of Assistance	
			Public	Individual
March 1975	Severe Storm/Flooding	Major Disaster	X	X
July 1977	Drought	Emergency	X	
March 1990	Severe Storm	Major Disaster	X	X
March 1993	Winter Storm	Emergency	X	
October 1995	Hurricane Opal	Major Disaster	X	X
September 1998	Hurricane Georges	Major Disaster	X	X
September 2004	Hurricane Ivan	Major Disaster	X	X
July 2005	Hurricane Dennis	Major Disaster	X	
August 2005	Hurricane Katrina	Emergency	X	
April 2011	Severe Storm/Flooding	Major Disaster	X	
April 2011	Severe Storm/Flooding	Emergency	X	

Source: Federal Emergency Management Agency, FEMA Disaster Declarations Summary – Open Government Dataset, February 26, 2015, <http://www.fema.gov/media-library/assets/documents/28318>

Information available through the National Climatic Data Center (NCDC) – an agency of the National Oceanographic and Atmospheric Administration (NOAA) – shows that Lowndes County suffered a total of 226 weather events from January 1950 through April 2014, which is an average of 3.53 events per year. Per data from the National Weather Service (NWS) – another NOAA agency – an additional seven tornado events occurred between 1897 and 1956. Combined, the disaster events resulted in one death, 43 injuries, \$6.2 million in property damage and \$1.3 million in crop damage. The most frequent weather events during the 1950-2014 period were severe thunderstorms and windstorms, with 84 event occurrences, resulting in more than \$3.75 million in damages, followed by hail with 51 occurrences, resulting in \$101,000 in damages. Thunderstorms/windstorms and hail were followed by tornados, with 20 events resulting in over \$1.76 million in property damage, two fatalities, and 39 injuries. Of the remaining weather events profiled by the NCDC during the same period, Lowndes County suffered 15 flood events, eight winter storms, four heat events, and five tropical cyclones.

### Hazard Events, 1950 to April 30, 2014

Total Number of Reported Events	228
Number of Days with Event	178
Number of Days with Event and Death	1
Number of Days with Event and Death or Injury	8
Number of Days with Event and Property Damage	63
Number of Days with Event and Crop Damage	7
Total Number of Deaths	1
Total Number of Injuries	43
Total Property Damage Estimate	6.2 M
Total Crop Damage Estimate	1.3 M

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center  
[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#)

## Lowndes County Hazard Profiles

An assessment is provided for each of the 12 hazards that were identified as having the potential to impact Lowndes County. The hazard assessments, as required by the Code of Federal Regulations Interim Final Rule Section 201.6 (c) (2), *“provide a description of the type, location, and extent of all natural hazards that can affect the jurisdiction”*. Therefore, in the following section, each identified hazard assessment includes, in this order: (1) a description of the hazard, (2) where the hazard is located when applicable, (3) the extent of potential damage from the hazard, and (4) a list or description of previous occurrences, when available. Probability of future hazard events and community vulnerability to future hazard events is covered in Chapter 4: Vulnerability Analysis.

### Dam Failure

**Description.** A dam is a “barrier across flowing water that obstructs, directs or slows down the flow, often creating a reservoir, lake or impoundments”. Most dams have a section that is called a spillway or a weir that water may flow through or over either intermittently or continuously. Dam failure occurs when the structural dam no longer creates a sound barrier to the flowing water. Dam failure can occur with little to no warning. Further, dam failure does not always occur during a storm event. Dam failure can result in flash flooding or severe inundation depending on the severity of the dam failure. Breaching can occur very quickly after the beginning of a storm event or can occur over an extended period of time up to a couple of weeks after a storm event from increased water pressure on the dam structure. Flooding can also occur from if a dam operator releases excess water downstream to relieve the water pressure on a dam.

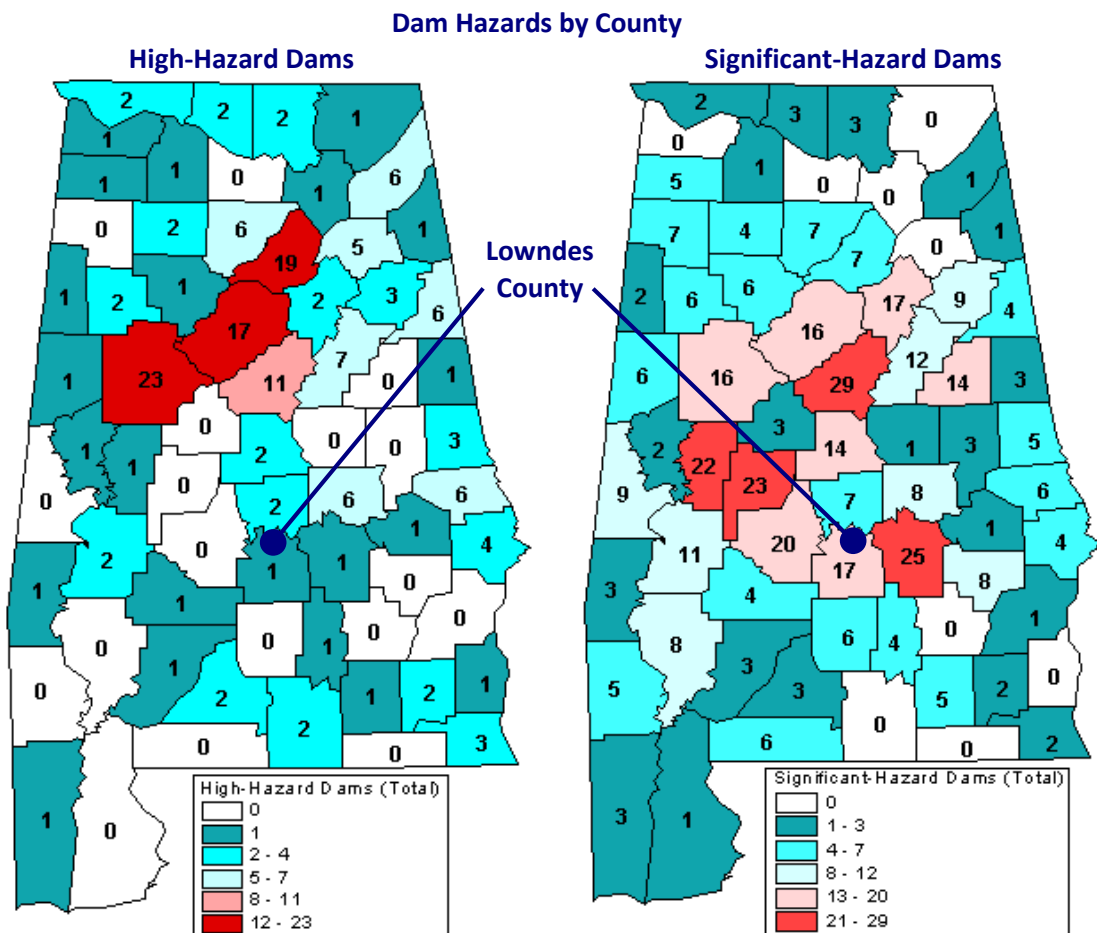
**Location.** There are a total of 43 dams in Lowndes County, of which one, the Robert F. Henry Lock and Dam, is rated as a high-hazard dam and 17 privately owned dams are rated as significant hazard dams. According to the U.S. Army Corps of Engineers Alabama-Coosa River Basin Water Control Manual, Appendix G, the Robert F. Henry Lock and Dam project is located in the south central part of the State of Alabama on the Alabama River at a point 245.4 miles above its mouth. It is approximately 15 miles east-southeast of Selma and 35 miles west of Montgomery. The dam and the first 32.9 miles of the R. E. “Bob” Woodruff Lake are in Autauga County, which is along the north side of the river, and Lowndes County, which is along the south side of the river. For the next 9.7 miles the northwest side of the lake is still in Autauga County but the southeast side is in Montgomery County. The remainder of the lake is in Elmore County on the north side and Montgomery County on the south side.



**Robert F. Henry Lock and Dam**

Source: U.S. Army Corps of Engineers Digital Visual Library

*Extent.* According to NCDC data, Lowndes County has never experienced a dam failure. The potential, however, does exist primarily due to the presence of the Robert F. Henry Lock and Dam (formerly known as Jones Bluff) which spans the Alabama River between Autauga and Lowndes Counties. The National Dam Inventory (NDI) identifies one high-hazard dam in Lowndes County, the Robert F. Henry Lock and Dam, and 17 significant-hazard dams located throughout the county. The NDI consists of dams meeting at least one of the following criteria: 1) High hazard classification - loss of one human life is likely if the dam fails, 2) Significant hazard classification - possible loss of human life and likely significant property or environmental destruction, 3) Equal or exceed 25 feet in height and exceed 15 acre-feet in storage, 4) Equal or exceed 50 acre-feet storage and exceed 6 feet in height. In addition to the Robert F. Henry Dam, there are 42 smaller dams located in the county. All of these dams are privately owned and are used to form ponds and small lakes. Should failure occur at one of the smaller, privately owned dams, local impact would be minimal and primarily concentrated on the owner's property. There could, however, be significant damage to surrounding property, crops and livestock, since many of the private impoundments are for irrigation purposes.



Data Source: Federal Emergency Management Agency, U.S. Census Bureau, Wessex, Inc.

[http://webapp1.dlib.indiana.edu/virtual\\_disk\\_library/index.cgi/4288138/FID1019/htm/dam.htm](http://webapp1.dlib.indiana.edu/virtual_disk_library/index.cgi/4288138/FID1019/htm/dam.htm)

Dam Classification Data Source: National Inventory of Dams (1995-96). Hazard status indicates potential hazard to downstream area resulting from failure or mis-operation of the dam or facilities. Terms used are: Low, Significant, or High

Robert F. Henry Lock and Dam is a multiple purpose project. The River and Harbor Act of 1945, Public Law 79-14, authorized flood control, navigation, and hydropower. The operating purposes include navigation and hydropower. There is no flood control storage in this project. The Flood Control Act of 1944, Public Law 78-854, authorized recreation. Access and facilities are provided for recreation, but water is not normally controlled for that purpose. The Robert F. Henry project consists of a gravity-type dam with gated spillway supplemented by earth dikes, a navigation lock and control station, and an 82,000 kW power plant. At normal pool elevation 125.0 the reservoir formed by the dam extends upstream a maximum distance of 80.5 miles to Wetumpka on the Coosa River. The USACE has a water control manual and emergency operations procedures in place to ensure safe operating procedures at all times. Therefore, risk of dam failure in the county is minimal.

*Previous Occurrences.* According to NCDC data, Lowndes County has never experienced a dam failure.

### **Drought and Extreme Heat**

*Description.* The National Weather Service defines drought as a persistent and abnormal moisture deficiency having adverse impacts on vegetation, animals, and people. Meteorological, hydrological, and agricultural are the three types of droughts. Meteorological droughts occur when precipitation departs from normal amounts. High temperatures may also play a role in this type of drought. Hydrological droughts are deficiencies in surface or subsurface water levels. Agricultural droughts occur when there is not enough soil moisture to support crop growth. Drought conditions are prevalent in much of the United States during the summer months. High, subtropical temperatures are common to central Alabama. Under normal conditions, frequent afternoon thunderstorms produce enough precipitation to alleviate drought concerns.

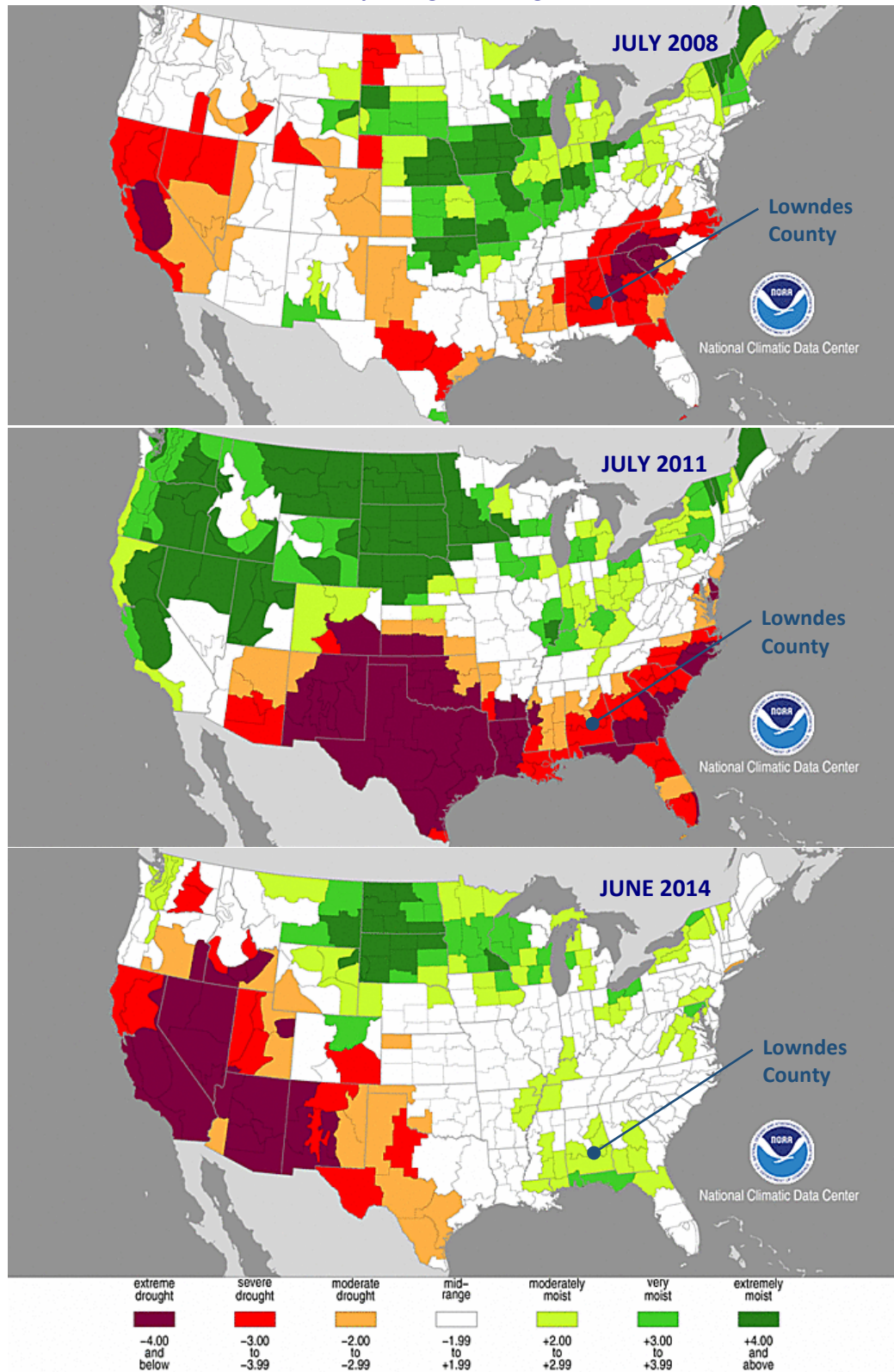
Extreme heat is defined as temperatures that are ten or more degrees or higher than average daily temperatures and last for several weeks. A heat wave is an extended period of extreme heat, and is often accompanied by high humidity. These conditions can be dangerous and even life-threatening for humans who don't take the proper precautions. Extreme heat can damage an area economically by resulting in crop losses. The health of persons living and working within the area is also threatened. Health conditions that result from extreme heat range from mild to severe. These conditions include sunburn, heat cramps, heat exhaustion, and heat stroke.

*Location.* Since 2006, Lowndes County has experienced 38 instances of drought and four instances of extreme heat. In all instances, the entire county was affected by the drought and extreme heat conditions.

*Extent.* Although Lowndes County has experienced moderate to severe drought since 2006, none of the drought events resulted in injury, death, property or crop damage disaster claims. The same cannot be said for events of extreme heat. The highest temperature recorded in Alabama was 112° Fahrenheit on September 6, 1925 in Centreville. The Montgomery Airport is the closest weather station to Lowndes County. The Alabama Office of the State Climatologist in Huntsville shows records for 11 days between July 1901 and August 2007 that had temperatures higher than at or higher than 105° Fahrenheit. Some were single day occurrences. In July 1952, there were two consecutive days with temperatures at 105° Fahrenheit; and in August 2007, there were five consecutive days with temperatures at 105° and 106° Fahrenheit. As shown on the drought index maps on the following page, hydrological drought conditions that were severe in July 2008 were moderately moist by 2014.



## Palmer Hydrological Drought Indices



Source: National Oceanic and Atmospheric Agency, National Climatic Data Center, Historical Palmer Drought Indices, 2014  
<http://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/psi/200801-201411>

*Previous Occurrences.* Although Lowndes County has only experienced four events of extreme heat, one of those events in August 2007 did result in a fatality. All drought and heat events were countywide events and not restricted to one locality within the county.

#### Profile of Drought and Extreme Heat Events in Lowndes County

<b>DROUGHT EVENTS</b>							
<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Mag</b>	<b>Dth</b>	<b>Inj</b>	<b>PrD</b>	<b>CrD</b>
Lowndes	7/11/2006	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	8/1/2006	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	9/1/2006	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	5/22/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	6/1/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	7/1/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	8/1/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	9/1/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	10/1/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	11/1/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	12/1/2007	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	1/1/2008	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	2/1/2008	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	3/1/2008	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	4/1/2008	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	5/1/2008	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	6/1/2008	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	9/21/2010	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	10/1/2010	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	12/1/2010	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	2/22/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	3/1/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	4/5/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	5/10/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	6/1/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	7/1/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	8/23/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	9/1/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	10/1/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	11/1/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	12/1/2011	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	1/1/2012	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	2/1/2012	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	3/1/2012	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	4/1/2012	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	5/1/2012	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	7/3/2012	Drought	n/a	0	0	\$0.00	\$0.00
Lowndes	8/1/2012	Drought	n/a	0	0	\$0.00	\$0.00
<b>TOTAL</b>		<b>38 Events</b>		<b>0</b>	<b>0</b>	<b>\$0.00</b>	<b>\$0.00</b>

HEAT EVENTS							
Location	Date	Type	Mag	Dth	Inj	PrD	CrD
Lowndes	2/23/1996	Heat	n/a	0	0	\$0.00	\$0.00
Lowndes	8/8/2007	Heat	n/a	1	0	\$0.00	\$0.00
Lowndes	7/1/2012	Heat	n/a	0	0	\$0.00	\$0.00
Lowndes	8/1/2012	Heat	n/a	0	0	\$0.00	\$0.00
TOTAL		4 Events		1	0	\$0.00	\$0.00
JURISDICTIONAL SUMMARY: DROUGHT AND HEAT							
Location		Number of Events		Dth	Inj	PrD	CrD
Countywide		42 Events		1	0	\$0.00	\$0.00
Benton		0 Events		0	0	0	0
Fort Deposit		0 Events		0	0	0	0
Gordonville		0 Events		0	0	0	0
Hayneville		0 Events		0	0	0	0
Lowndesboro		0 Events		0	0	0	0
Mosses		0 Events		0	0	0	0
White Hall		0 Events		0	0	0	0

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014

[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#)

## Flooding

*Description.* On their website, floodsmart.gov, FEMA defines a flood as a general and temporary condition of partial or complete inundation of two or more acres of normally dry land or two or more properties are inundated by water or mudflow. Conditions that can result in a flood include, but are not limited to, hurricanes, overtopped levees, outdated or clogged drainage systems, and rapid accumulation of rainfall. Most floods fall into one of three major categories: (1) Riverine Flooding; (2) Coastal Flooding; or (3) Shallow Flooding.

When a river channel receives too much water, the excess flows over its banks and into the adjacent floodplain. Flooding that occurs along a channel is called riverine flooding. Riverine flooding includes overbank flooding, flash flooding, and riverine erosion. Overbank flooding occurs when downstream channels receive more rain or snowmelt from their watershed than normal, or a channel is blocked by an ice jam or debris. For either reason, excess water overloads the channels and flows out onto the floodplain. A severe storm that drops much rainfall in a short time can generate a flash flood. All flash floods strike quickly and end swiftly. Flash floods are more prevalent in areas with steep slopes and narrow stream valleys and along banks of small tributary streams. In hilly areas, the high-velocity flows and short warning time make flash floods hazardous and very destructive. In urban areas, flash flooding can occur where impervious surfaces, gutters and storm sewers speed runoff. River channels change as water moves downstream, acting on the channel banks and on the channel bottom. This force is made more potent during a flood, when the river's velocity increases. Several features along a river are affected by this flow of water in different ways. A meander is a curve in a channel. On the outside of a meander, the banks are subject to erosion as the water scours against them. On the other hand, areas on the inside of meanders receive deposits of sand and sediment transferred from the eroded sites. Properties on the outside of curves face a double threat of inundation and undercutting from riverine erosion during floods.



Lowndes County is not susceptible to coastal storms and coastal erosion due to the county's location more than 150 miles away from the Gulf Coast. The county is susceptible to shallow flooding which occurs in flat areas where a lack of channels prevents water from draining easily. Shallow flood problems include flooding and drainage issues related to land development, including sheet flow, ponding and urban drainage. Sheet flow occurs where there are inadequate drainage channels and floodwater spreads out over a large area at a somewhat uniform depth. Sheet flows occur after an intense or prolonged rainfall during which the rain cannot soak into the ground. During sheet flow, the floodwaters move downhill and cover a wide area. In some flat areas, runoff collects in depressions and cannot drain out, creating a ponding effect. Ponding floodwaters do not move or flow away. Floodwaters will remain in the temporary ponds until they infiltrate into the soil, evaporate or are pumped out. An urban drainage system is generally made up of the ditches, storm sewers, retention ponds and other facilities constructed to store runoff or carry it to a receiving stream, lake or the ocean. Other man-made features in such a system include yards and swales that collect runoff and direct it to the sewers and ditches. When larger storms overload an urban drainage system, the result is backed-up sewers and overloaded ditches that produce shallow flooding.

Lowndes County and all municipalities located in the county except the Town of Gordonville are participants in the National Flood Insurance Program (NFIP) as shown in the chart below. Gordonville, however, does not have any special flood hazards located within the municipal boundaries.

#### **Lowndes County Participation in the National Flood Insurance Program**

<b>Communities Participating in the National Flood Program</b>					
<b>Community Name</b>	<b>County</b>	<b>Init FHBM Identified</b>	<b>Init FIRM Identified</b>	<b>Curr Eff Map Date</b>	<b>Reg-Emer Date</b>
BENTON, TOWN OF	LOWNDES COUNTY		7/1/1974	9/3/2014	4/6/1973
FORT DEPOSIT, TOWN OF	LOWNDES COUNTY	9/29/1978	11/4/2009	11/04/09(M)	6/13/2012
HAYNEVILLE, TOWN OF	LOWNDES COUNTY		11/4/2009	11/04/09(M)	2/12/2013
LOWNDES COUNTY *	LOWNDES COUNTY	11/29/1974	8/15/1984	9/3/2014	8/15/1984
MOSESSES, TOWN OF	LOWNDES COUNTY		11/4/2009	11/04/09(M)	8/1/2013
WHITE HALL, TOWN OF	LOWNDES COUNTY	11/4/2009	9/3/2014	9/9/2010	
<b>Communities Not in the National Flood Program</b>					
<b>Community Name</b>	<b>County</b>	<b>Init FHBM Identified</b>	<b>Init FIRM Identified</b>	<b>Curr Eff Map Date</b>	<b>Sanction Date</b>
GORDONVILLE, TOWN OF	LOWNDES COUNTY		11/4/2009	11/4/2009	11/4/2010

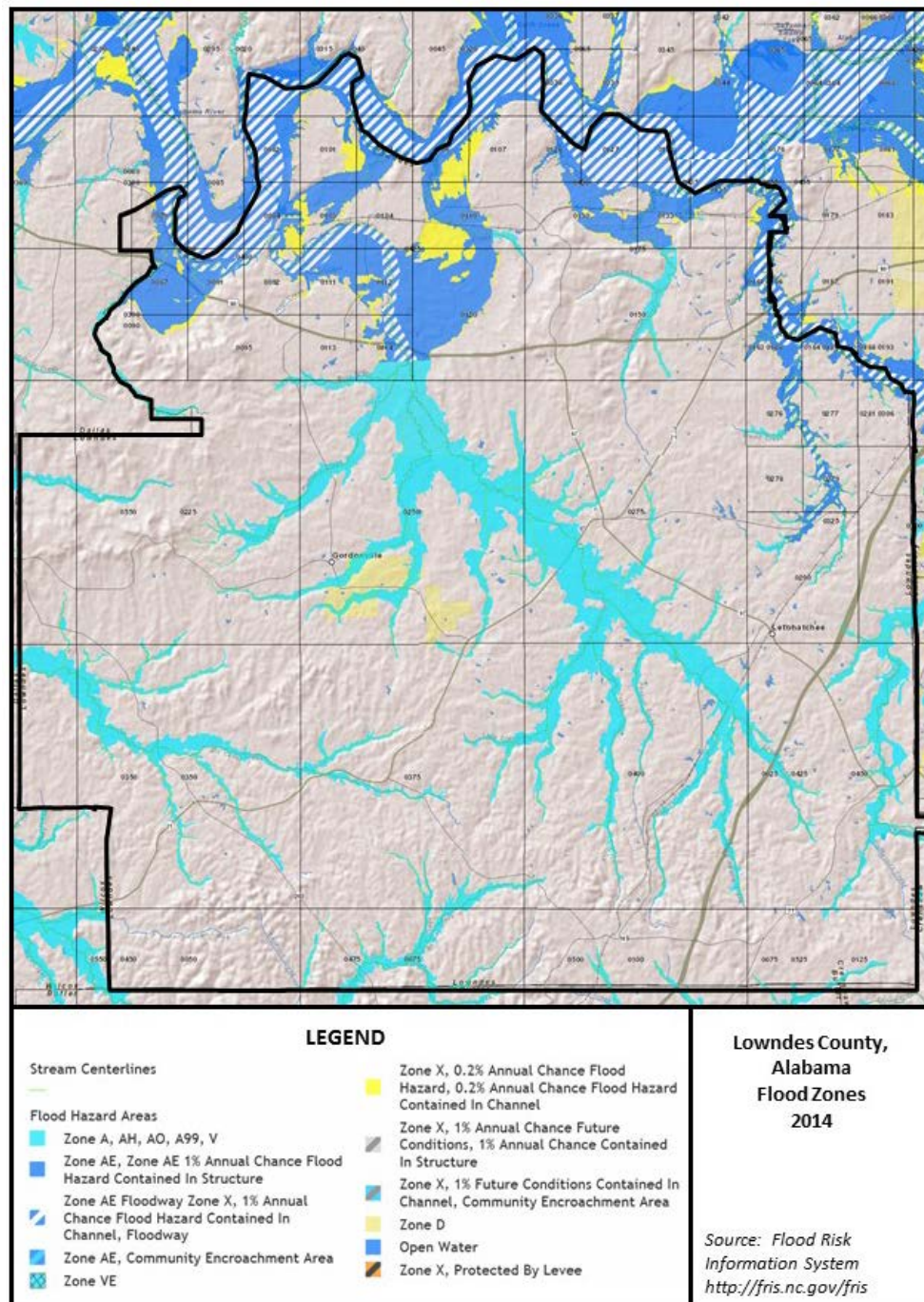
Source: Federal Emergency Management Agency, Community Status Book Report, Updated July 24, 2014

<https://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book>

**Location.** Flood-hazard maps have been created to show different degrees of risk for a community. Based on a review of Flood Insurance Rate Maps (FIRM), flooding in Lowndes County is most likely to occur in the floodplain areas found along the Alabama River and several major streams and their tributaries. For the most part, the Alabama River is substantially below the land mass and borders primarily agricultural or vacant land. Some periodic riverine flooding occurs from the Alabama

River and Big Swamp Creek around the White Hall vicinity. Big Swamp Creek traverses the central part of the county, from White Hall, to Mosses and Hayneville and further to the Letohatchee community. With the exceptions of the Alabama River and Big Swamp Creek, most of the floodplain areas tend to be narrow and linear in nature, following stream beds and to some degree larger tributaries of the Beaver, Big Swamp, Dry Cedar, Mush, Pinchony, Pintlala, Steep, and Tallawassee Creeks. The floodplains are generally not expansive, with the widest areas being approximately two miles in width (mainly along the Alabama River and Big Swamp Creek areas).

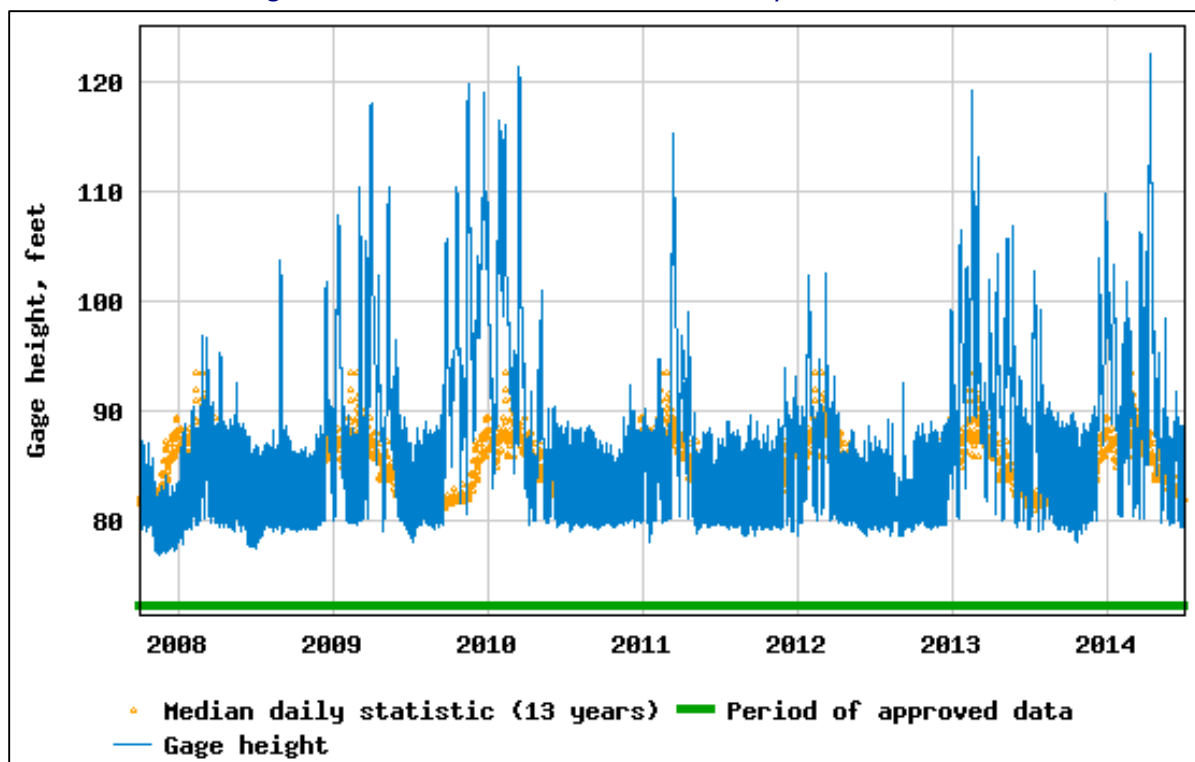
#### Lowndes County Flood Plains, 2014



*Extent.* The NCDC reports that 16 flood events occurred in Lowndes County from 1998 through 2014. Additionally, local residents report occasional minor flooding and road washing and erosion as a result of heavy rains and localized flash floods. To date, there are no reported instances of repetitive loss due to flooding in the county. The magnitude of flooding for each of the 16 events is not available through the National Climatic Data Center and there are no local official records of flooding magnitude on file. Based on USGS stream gauge data from 2008 to 2014, however, the Alabama River water level is usually between 85 feet and 95 feet. During the 7-year reporting period from 2008 to 2014, the Alabama River water level has risen above 110 feet on several occasions, but not more 125 feet, as shown in the USGS chart below. Therefore, the risk of a significant damage causing flood in Lowndes County is minimal with the strongest magnitude expected to be 125 feet.

#### Recorded Alabama River Water Level, 2008 to 2014

USGS Stream Gauge on Alabama River below Robert F. Henry Lock and Dam near Benton, AL



Source: U.S. Geological Survey National Water Information System.

[http://nwis.waterdata.usgs.gov/nwis/uv?cb\\_00065=on&format=gif\\_stats&site\\_no=02421351&period=&begin\\_date=2007-10-01&end\\_date=2014-06-30](http://nwis.waterdata.usgs.gov/nwis/uv?cb_00065=on&format=gif_stats&site_no=02421351&period=&begin_date=2007-10-01&end_date=2014-06-30)

*Previous Occurrences.* Per NCDC data, 16 flood events occurred in the county from 1998 through 2014 that resulted in \$146,500 in property damage and \$15,000 in crop damage. Of the flooding events, seven events were countywide, four events were in the unincorporated part of the county, two events were in Fort Deposit, two events were in Hayneville and one event was in White Hall. Listed below is a profile of flooding events in Lowndes County.

### Profile of Flooding Events in Lowndes County

Location	Date	Type	Mag	Dth	Inj	PrD	CrD
Lowndes	1/7/1998	Flash Flood	n/a	0	0	\$25,000	\$5,000
Lowndes	9/29/1998	Flash Flood	n/a	0	0	\$50,000	\$10,000
Lowndes	3/3/2001	Flash Flood	n/a	0	0	\$18,000	\$0
Lowndes	3/12/2001	Flash Flood	n/a	0	0	\$5,000	\$0
Lowndes	8/6/2001	Heavy Rain	n/a	0	0	\$0	\$0
Lowndes	4/7/2003	Flash Flood	n/a	0	0	\$20,000	\$0
Lowndes	4/1/2005	Flood	n/a	0	0	\$0	\$0
Hayneville	7/10/2005	Flash Flood	n/a	0	0	\$2,000	\$0
Hayneville	1/7/2007	Flash Flood	n/a	0	0	\$0	\$0
Unincorp. Lowndes: Collirene	3/4/2008	Flash Flood	n/a	0	0	\$0	\$0
Unincorp. Lowndes: Mt. Willing	11/10/2009	Flood	n/a	0	0	\$15,000	\$0
Fort Deposit	8/8/2010	Heavy Rain	n/a	0	0	\$1,500	\$0
Unincorp. Lowndes: Palmyra	7/27/2011	Flash Flood	n/a	0	0	\$10,000	\$0
White Hall	9/20/2011	Flash Flood	n/a	0	0	\$0	\$0
Unincorp. Lowndes: Lum	3/23/2012	Flash Flood	n/a	0	0	\$0	\$0
Fort Deposit	9/4/2012	Flash Flood	n/a	0	0	\$0	\$0
<b>TOTAL</b>		<b>16 Events</b>		<b>0</b>	<b>0</b>	<b>\$146,500</b>	<b>\$15,000</b>
<b>JURISDICTIONAL SUMMARY: FLOODING</b>							
Countywide	6 Events			0	0	\$180,000	\$15,000
Benton	0 Events			0	0	\$0	\$0
Fort Deposit	2 Events			0	0	\$1,500	\$0
Gordonville	0 Events			0	0	\$0	\$0
Hayneville	2 Events			0	0	\$2,000	\$0
Lowndesboro	0 Events			0	0	\$0	\$0
Mosses	0 Events			0	0	\$0	\$0
White Hall	1 Events			0	0	\$0	\$0
Unincorporated Lowndes County	5 Events			0	0	\$25,000	\$0

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014

[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#)

### Hail, High Winds, and Thunderstorms and Lightening

Although incident reports categorize hail, high winds, thunderstorms and lightening as separate events, they are discussed together here because of the similarity of the events and often coinciding timing of these events.

*Description.* Hail is a form of solid precipitation that forms in strong thunderstorm clouds, particularly those with intense updrafts, high liquid water content, great vertical extent, large water droplets, and where a good portion of the cloud layer is below freezing. Hailstones generally fall at

higher speeds as they grow in size, though complicating factors such as melting, friction with air, wind, and interaction with rain and other hailstones can slow their descent through Earth's atmosphere. Severe weather warnings are issued for hail when the stones reach a damaging size, as it can cause serious damage to human-made structures and, most commonly, farmers' crops.

Thunderstorms are generated by atmospheric imbalance due to the combination of unstable warm air rising rapidly into the atmosphere, sufficient moisture to form clouds and rain, and an upward lift of air currents caused by colliding water fronts, sea breezes, or mountains. Thunderstorms can produce tornados and floods, hail, and high winds. As defined by FEMA, a tornado is a violently rotating column of air extending from a thunderstorm to the ground. The most violent of tornados are capable of tremendous destruction with wind speeds of 250 miles per hour or more. Damage paths can be in excess of one mile wide and 50 miles long.

*Location.* The occurrence of hail, high winds, thunderstorms and lightening, and tornadoes has not been isolated to any one part of Lowndes County, with the county experiencing a combined total of 135 such events. There have been 52 combined high wind, tornado, thunderstorm and lightening events that impacted the entire county and another 52 combined events that impacted the unincorporated areas of Lowndes County. Of the municipalities, Hayneville has suffered the most events, at 14 combined storms, followed by White Hall with seven events, and Lowndesboro with five events. Fort Deposit has had three combined storm events and Gordonville has had two events. The Towns of Benton and Mosses do not have any reported storm events.

*Extent.* Hail and thunderstorms have been common events for Lowndes County and its municipalities in the past and will continue to be so in the future. Between 1950 and 2005, 84 severe thunderstorms and wind events occurred in Lowndes County causing an estimated \$3.75 million in property damages. In the past, there has been a minimal loss of critical facilities; however, there have been reports of minor property damage, most of which were a result of lightning strikes or hail. Overall, the impacts of severe thunderstorms, wind, and hail on Lowndes County have been negligible. As a result, it was determined that future impacts will most likely continue to be negligible meaning minor injuries may occur; critical facilities may be shut down for 24 hours or less, and less than ten percent of the property in the community would be damaged. Nonetheless, due to frequency in occurrence, the Lowndes County LEPC has ranked severe thunderstorms, wind, and hail as a Priority 1 natural hazard that has substantial potential to impact Lowndes County. The following tables describe the extent for hailstorms and thunderstorms as they might occur in Lowndes County.

**TORRO Hailstorm Intensity Scale**

Size Code	Intensity Category	Typical Hail Diameter *	Description	Probable Kinetic Energy, J-m <sup>2</sup>	Typical Damage Impacts
H0	Hard Hail	5-9 mm	Pea	0-20	No damage
H1	Potentially Damaging	10-15 mm	Mothball	>20	Slight general damage to plants, crops
H2	Significant	16-20 mm	Marble, grape	>100	Significant damage to fruit, crops, vegetation
H3	Severe	20-30 mm	Walnut	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored



<b>H4</b>	Severe	25- <b>40</b> mm	Pigeon's egg > squash ball	>500	Widespread glass damage, vehicle bodywork damage
<b>H5</b>	Destructive	30- <b>50</b> mm	Golf ball > Pullet's egg	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
<b>H6</b>	Destructive	40- <b>60</b> mm	Hen's egg		Bodywork of grounded aircraft dented, brick walls pitted
<b>H7</b>	Destructive	50- <b>75</b> mm	Tennis ball > cricket ball		Severe roof damage, risk of serious injuries
<b>H8</b>	Destructive	60- <b>90</b> mm	Large orange > Soft ball		(Severest recorded in the British Isles) Severe damage to aircraft bodywork
<b>H9</b>	Super Hailstorms	75- <b>100</b> mm	Grapefruit		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
<b>H10</b>	Super Hailstorms	>100	Melon		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

\*Approximate range (typical maximum size in bold), since other factors (e.g. number and density of hailstones, hail fall speed and surface wind speeds) affect severity.

Source: TORRO, The Tornado and Storm Research Organization; <http://www.torro.org.uk/hscale.php>

### Thunderstorm Spectrum

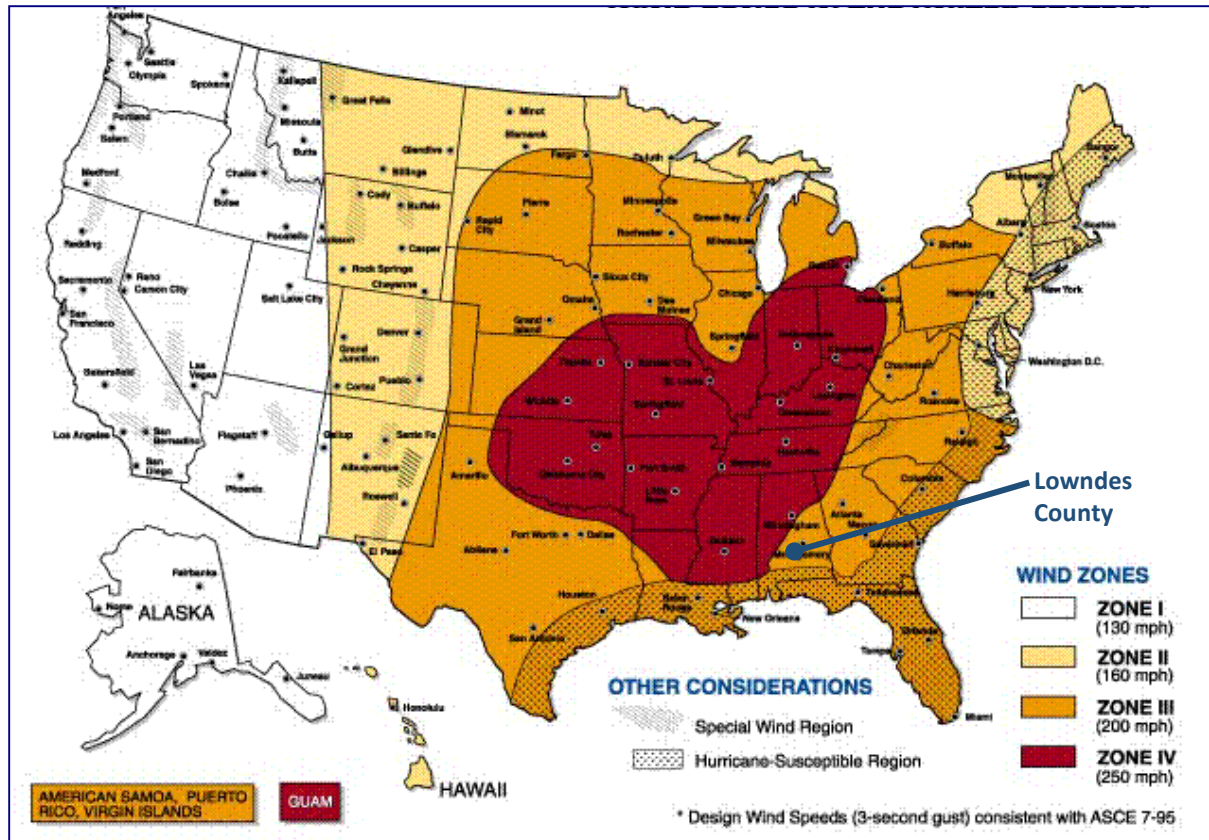
Type	Description	Severity
Single Cell	Single cell storms typically do not produce severe weather and usually last for 20-30 minutes. Also known as pulse storms, single cell storms seem quite random in the production of brief severe events such as downbursts, hail, some heavy rainfall, and occasional weak tornadoes.	Non-Severe to Severe
Multi-Cell	A multi-cell cluster consists of a group of cells moving as a single unit, with each cell in a different stage of the thunderstorm life cycle. As the multi-cell cluster evolves, individual cells take turns at being the most dominant. New cells tend to form along the upwind (typically western or southwestern) edge of the cluster, with mature cells located at the center and dissipating cells found along the downwind (east or northeast) portion of the cluster.	Non-Severe to Severe
Multi-Cell Line (Squall Line)	Multi-cell line storms consist of a line of storms with a continuous, well developed gust front at the leading edge of the line. An approaching multi-cell line often appears as a dark bank of clouds covering the western horizon. The great number of closely-spaced updraft/downdraft couplets qualifies this complex as multicellular, although storm structure is quite different from that of the multi-cell cluster storm.	Non-Severe to Severe
Super Cell	A super cell thunderstorm is a storm with a deep rotating updraft (mesocyclone). The major difference between supercell and multi-cell storms is the element of rotation in supercells. Circumstances keep some supercells from producing tornadoes, even with the presence of a mesocyclone. Even though it is the rarest of storm types, the supercell is the most dangerous because of the extreme weather generated.	Severe

Source: University of Illinois, Weather World 2010 Project (WW2010);

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/svr/type/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/svr/type/home.rxml)

Tornados are also a significant hazard risk for Lowndes County, not due to the frequency of events, but instead, due to the severity of destruction and the limited warning time for response. Lowndes County is located in Wind Zone III, as shown Wind Zones of the United States map, which is associated with 200 miles per hour wind speeds. Tornado paths are not localized and have the potential to affect any portion of the entire county during a given event.

#### Wind Zones in the United States



Source: Federal Emergency Management Agency, July 2014; <https://www.fema.gov/safe-rooms/wind-zones-united-states>

#### The Enhanced Fujita Tornado Scale

Scale	Estimated Wind speed			Relative frequency	Class	Description
	mph	km/h	m/s			
EF0	65–85	105–137	29–37	53.50%	Weak	Gale
EF1	86–110	138–177	38–49	31.60%	Weak	Moderate
EF2	111–135	178–217	50–60	10.70%	Strong	Significant
EF3	136–165	218–266	61–73	3.40%	Strong	Severe
EF4	166–200	267–322	74–90	0.70%	Violet	Devastating
EF5	>200	>322	>90	<0.1%	Violent	Incredible

Source: NOAA, National Weather Service, <http://www.srh.noaa.gov/jetstream/tstorms/tornado.htm>

*Previous Occurrences.* Lowndes County has been particularly susceptible to hail storms in the past with 51 recorded events since 1984, resulting in more than \$101,000 in property damage. Severe thunderstorms and strong winds have also been a common event for Lowndes County and its municipalities in the past and will continue to be so in the future. Between 1950 and 2005, 84 severe thunderstorms and wind events occurred in Lowndes County causing an estimated \$3.75 million in property damages. And finally, the NCDC reports 20 tornado events in Lowndes County since 1957 resulting in 39 injuries, \$1.76 million in property damage and \$29,000 in crop damage. The tables below provide an historical overview of past events for hail storms, thunderstorms and strong winds and tornados in Lowndes County.

#### **Profile of Hail Events in Lowndes County**

<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Mag</b>	<b>Dth</b>	<b>Inj</b>	<b>PrD</b>	<b>CrD</b>
Unincorp. Lowndes: Braggs	3/30/2005	Hail	1.75 in.	0	0	\$18,000	\$0
Unincorp. Lowndes: Braggs	4/21/2005	Hail	1.00 in.	0	0	\$1,000	\$0
Unincorp. Lowndes: Braggs	4/22/2005	Hail	0.75 in.	0	0	\$1,000	\$0
Unincorp. Lowndes: Braggs	5/10/2006	Hail	1.75 in.	0	0	\$0	\$0
Unincorp. Lowndes: Collirene	4/4/2008	Hail	0.75 in.	0	0	\$0	\$0
Unincorp. Lowndes: Collirene	2/24/2012	Hail	0.88 in.	0	0	\$0	\$0
Fort Deposit	6/16/1997	Hail	0.75 in.	0	0	\$3,000	\$0
Fort Deposit	3/9/2003	Hail	1.75 in.	0	0	\$5,000	\$0
Fort Deposit	3/9/2003	Hail	0.75 in.	0	0	\$0	\$0
Fort Deposit	5/2/2003	Hail	0.88 in.	0	0	\$0	\$0
Fort Deposit	3/27/2005	Hail	1.75 in.	0	0	\$11,000	\$0
Fort Deposit	3/27/2005	Hail	1.75 in.	0	0	\$8,000	\$0
Fort Deposit	3/27/2005	Hail	0.75 in.	0	0	\$0	\$0
Fort Deposit	3/27/2005	Hail	0.75 in.	0	0	\$0	\$0
Fort Deposit	4/22/2005	Hail	1.75 in.	0	0	\$4,000	\$0
Fort Deposit	5/14/2006	Hail	0.75 in.	0	0	\$0	\$0
Hayneville	3/16/1996	Hail	1.75 in.	0	0	\$15,000	\$0
Hayneville	4/30/1998	Hail	0.75 in.	0	0	\$0	\$0
Hayneville	3/27/2005	Hail	0.88 in.	0	0	\$0	\$0
Hayneville	4/22/2005	Hail	1.00 in.	0	0	\$1,000	\$0
Hayneville	11/28/2005	Hail	1.75 in.	0	0	\$1,000	\$0
Hayneville	3/1/2007	Hail	1.00 in.	0	0	\$0	\$0
Hayneville	4/14/2007	Hail	0.88 in.	0	0	\$0	\$0
Hayneville	3/10/2010	Hail	0.75 in.	0	0	\$0	\$0
Hayneville	2/24/2012	Hail	0.75 in.	0	0	\$0	\$0
Hayneville	2/24/2012	Hail	1.00 in.	0	0	\$0	\$0
Hayneville	5/21/2012	Hail	0.88 in.	0	0	\$0	\$0
Lowndes	6/12/1974	Hail	0.75 in.	0	0	\$0	\$0
Lowndes	5/3/1984	Hail	1.75 in.	0	0	\$0	\$0
Lowndes	4/15/1985	Hail	0.75 in.	0	0	\$0	\$0
Lowndes	5/2/1985	Hail	0.75 in.	0	0	\$0	\$0



Lowndes	2/10/1986	Hail	0.75 in.	0	0	\$0	\$0
Lowndes	3/16/1986	Hail	0.75 in.	0	0	\$0	\$0
Lowndes	4/25/1988	Hail	0.75 in.	0	0	\$0	\$0
Lowndes	4/4/1989	Hail	0.75 in.	0	0	\$0	\$0
Lowndes	5/27/1989	Hail	0.75 in.	0	0	\$0	\$0
Lowndes	3/27/1994	Hail	1.75 in.	0	0	\$0	\$0
Lowndesboro	3/8/1998	Hail	1.00 in.	0	0	\$0	\$0
Lowndesboro	3/20/1998	Hail	1.25 in.	0	0	\$0	\$0
Lowndesboro	5/3/1998	Hail	0.75 in.	0	0	\$0	\$0
Lowndesboro	1/9/2000	Hail	0.88 in.	0	0	\$0	\$0
Lowndesboro	4/2/2000	Hail	1.00 in.	0	0	\$0	\$0
Lowndesboro	4/30/2002	Hail	1.00 in.	0	0	\$0	\$0
Lowndesboro	4/25/2003	Hail	1.00 in.	0	0	\$20,000	\$0
Lowndesboro	2/22/2005	Hail	1.00 in.	0	0	\$0	\$0
Lowndesboro	3/26/2005	Hail	0.88 in.	0	0	\$0	\$0
White Hall	4/2/2000	Hail	1.00 in.	0	0	\$3,000	\$0
White Hall	4/25/2003	Hail	1.00 in.	0	0	\$0	\$0
White Hall	3/27/2005	Hail	0.75 in.	0	0	\$0	\$0
White Hall	4/22/2005	Hail	1.75 in.	0	0	\$5,000	\$0
White Hall	4/22/2005	Hail	1.75 in.	0	0	\$5,000	\$0
<b>TOTAL</b>		<b>51 Events</b>		<b>0</b>	<b>0</b>	<b>\$101,000</b>	<b>\$0.00</b>

#### JURISDICTIONAL SUMMARY: HAIL

Countywide	10 Events	0	0	\$7,000	\$0
Benton	0 Events	0	0	\$0	\$0
Fort Deposit	10 Events	0	0	\$31,000	\$0
Gordonville	0 Events	0	0	\$0	\$0
Hayneville	11 Events	0	0	\$17,000	\$0
Lowndesboro	9 Events	0	0	\$20,000	\$0
Mosses	0 Events	0	0	\$0	\$0
White Hall	5 Events	0	0	\$13,000	\$0
Unincorporated Lowndes County	6 Events	0	0	\$20,000	\$0.00

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014

[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#)

#### Profile of Thunderstorms and Strong Winds Events in Lowndes County

Location	Date	Type	Mag	Dth	Inj	PrD	CrD
Lowndes	9/16/2004	High Wind	77 kts. EG	0	0	\$3,500,000	\$200,000
Lowndes	6/11/2005	Strong Wind	40 kts. EG	0	0	\$2,000	\$0
Lowndes	1/29/2008	Strong Wind	39 kts. EG	0	0	\$20,000	\$0
Unincorp. Lowndes: Barton	5/3/2009	T'storm/Wind	50 kts. EG	0	0	\$1,000	\$0
Unincorp. Lowndes: Braggs	10/19/2004	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
Unincorp. Lowndes: Braggs	7/10/2007	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
Unincorp. Lowndes: Burkville	1/23/2012	T'storm/Wind	60 kts. EG	0	0	\$0	\$0
Unincorp. Lowndes: Calhoun	8/8/2010	T'storm/Wind	55 kts. EG	0	0	\$3,000	\$0

Unincorp. Lowndes: Collirene	4/7/2003	T'storm/Wind	55 kts. EG	0	0	\$5,000	\$0
Unincorp. Lowndes: Davenport	2/24/2012	T'storm/Wind	50 kts. EG	0	0	\$0	\$0
Fort Deposit	3/27/2005	T'storm/Wind	50 kts. EG	0	0	\$4,000	\$0
Fort Deposit	4/14/2007	T'storm/Wind	50 kts. EG	0	0	\$5,000	\$0
Fort Deposit	2/26/2008	T'storm/Wind	50 kts. EG	0	0	\$5,000	\$0
Unincorp. Lowndes: Fostoria	10/23/2007	T'storm/Wind	50 kts. EG	0	0	\$5,000	\$0
Gordonville	10/23/2007	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
Hayneville	7/11/1995	T'storm/Wind	0 kts.	0	0	\$3,000	\$0
Hayneville	11/21/1997	T'storm/Wind	50 kts.	0	0	\$35,000	\$0
Hayneville	6/20/1998	T'storm/Wind	50 kts.	0	0	\$5,000	\$0
Hayneville	3/3/1999	T'storm/Wind	55 kts.	0	0	\$15,000	\$0
Hayneville	8/10/2000	T'storm/Wind	50 kts. E	0	0	\$1,000	\$0
Hayneville	1/19/2001	T'storm/Wind	50 kts. E	0	0	\$3,000	\$0
Hayneville	4/7/2003	T'storm/Wind	50 kts. EG	0	0	\$5,000	\$0
Hayneville	4/30/2005	T'storm/Wind	60 kts. EG	0	4	\$100,000	\$0
Hayneville	6/28/2008	T'storm/Wind	39 kts. EG	0	0	\$500	\$0
Hayneville	6/29/2008	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
Hayneville	5/3/2009	T'storm/Wind	50 kts. EG	0	0	\$10,000	\$0
Hayneville	11/16/2011	T'storm/Wind	50 kts. EG	0	0	\$5,000	\$0
Hayneville	2/24/2012	T'storm/Wind	50 kts. EG	0	0	\$0	\$0
Lowndes	4/12/1962	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	4/13/1964	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	3/6/1967	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	4/7/1973	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	5/23/1973	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	11/26/1973	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	2/21/1974	T'storm/Wind	51 kts.	0	0	\$0	\$0
Lowndes	3/21/1974	T'storm/Wind	56 kts.	0	0	\$0	\$0
Lowndes	6/12/1974	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	1/10/1975	T'storm/Wind	65 kts.	0	0	\$0	\$0
Lowndes	7/23/1976	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	7/10/1981	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	12/3/1983	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	12/3/1983	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	12/6/1983	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	5/3/1984	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	5/3/1984	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	5/3/1984	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	5/2/1985	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	6/7/1985	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	9/23/1985	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	3/12/1986	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	3/12/1986	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	3/12/1986	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	5/18/1986	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	6/14/1989	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	2/10/1990	T'storm/Wind	0 kts.	0	0	\$0	\$0

Lowndes	4/1/1990	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	8/20/1990	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	3/1/1991	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	3/29/1991	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	4/29/1991	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	3/18/1992	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	4/20/1992	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	4/20/1992	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	7/3/1992	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	8/27/1992	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	12/4/1993	T'storm/Wind	0 kts.	0	0	\$0	\$0
Lowndes	8/15/1995	T'storm/Wind	0 kts.	0	0	\$3,000	\$0
Lowndes	3/7/2005	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
Lowndes	6/21/2011	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
Lowndesboro	3/6/1996	T'storm/Wind	50 kts.	0	0	\$15,000	\$0
Lowndesboro	4/7/2003	T'storm/Wind	55 kts. EG	0	0	\$20,000	\$0
Lowndesboro	11/24/2004	T'storm/Wind	52 kts. EG	0	0	\$14,000	\$0
Lowndesboro	11/16/2011	T'storm/Wind	65 kts. EG	0	0	\$1,000	\$0
Unincorp. Lowndes: Manack	11/16/2011	T'storm/Wind	52 kts. EG	0	0	\$2,000	\$0
Unincorp. Lowndes: Mt. Willing	2/27/2009	T'storm/Wind	50 kts. EG	0	0	\$1,000	\$0
Unincorp. Lowndes: Mt. Willing	4/4/2011	T'storm/Wind	50 kts. EG	0	0	\$8,000	\$0
Unincorp. Lowndes: Petronia	8/30/2007	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
Unincorp. Lowndes: Sandy Ridge	10/23/2007	T'storm/Wind	50 kts. EG	0	0	\$7,000	\$0
White Hall	8/10/2000	T'storm/Wind	50 kts. E	0	0	\$2,000	\$0
White Hall	4/21/2005	T'storm/Wind	51 kts. EG	0	0	\$3,000	\$0
White Hall	4/30/2005	T'storm/Wind	55 kts. EG	0	0	\$26,000	\$0
White Hall	7/10/2007	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
White Hall	6/29/2008	T'storm/Wind	50 kts. EG	0	0	\$2,000	\$0
White Hall	7/13/2008	T'storm/Wind	50 kts. EG	0	0	\$1,000	\$0
<b>TOTAL</b>		<b>84 Events</b>		<b>0</b>	<b>0</b>	<b>\$3,853,500</b>	<b>\$200,000</b>
<b>JURISDICTIONAL SUMMARY: THUNDERSTORMS AND WIND</b>							
Countywide	44 Events			0	0	\$3,529,000	\$200,000
Benton	0 Events			0	0	\$0	\$0
Fort Deposit	3 Events			0	0	\$14,000	\$0
Gordonville	1 Events			0	0	\$2,000	\$0
Hayneville	13 Events			0	0	\$184,500	\$0
Lowndesboro	4 Events			0	0	\$50,000	\$0
Mosses	0 Events			0	0	\$0	\$0
White Hall	6 Events			0	0	\$36,000	\$0
Unincorporated Lowndes County	13 Events			0	0	\$38,000	\$0

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014

[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitButton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitButton=Search&statefips=1%2CALABAMA#)

### Profile of Tornado Events in Lowndes County

Location	Date	Type	Mag	Dth	Inj	PrD	CrD
Unincorp. Lowndes: Beechwood	12/25/2012	Tornado	EF0	0	0	\$0	\$0
Unincorp. Lowndes: Braggs	3/2/2012	Tornado	EF1	0	0	\$0	\$0
Unincorp. Lowndes: Braggs	12/25/2012	Tornado	EF1	0	0	\$0	\$0
Unincorp. Lowndes: Collirene	2/17/2008	Tornado	EF2	0	10	\$215,000	\$0
Gordonville	3/18/1996	Tornado	F2	0	2	\$100,000	\$25,000
Hayneville	12/25/2012	Tornado	EF2	0	0	\$0	\$0
Unincorp. Lowndes: Letohatchee	9/28/1998	Tornado	F0	0	0	\$45,000	\$4,000
Lowndes	6/28/1957	Tornado	F2	0	0	\$25,000	\$0
Lowndes	6/28/1957	Tornado	F1	0	8	\$250,000	\$0
Lowndes	4/29/1963	Tornado	F2	0	0	\$250,000	\$0
Lowndes	4/28/1964	Tornado	F2	0	0	\$250,000	\$0
Lowndes	11/10/1966	Tornado	F2	0	0	\$25,000	\$0
Lowndes	4/18/1978	Tornado	F0	0	0	\$0	\$0
Lowndes	11/25/1979	Tornado	F2	0	12	\$25,000	\$0
Lowndes	8/27/1992	Tornado	F1	0	2	\$250,000	\$0
Lowndesboro	10/23/2007	Tornado	EF1	0	0	\$85,000	\$0
Unincorp. Lowndes: Sandy Ridge	3/1/2007	Tornado	EF2	0	4	\$50,000	\$0
Unincorp. Lowndes: Tyson	2/28/2011	Tornado	EF1	0	0	\$60,000	\$0
Unincorp. Lowndes: Tyson	4/15/2011	Tornado	EF0	0	0	\$21,000	\$0
White Hall	4/30/2005	Tornado	F1	0	1	\$110,000	\$0
<b>TOTAL</b>		<b>20 Events</b>		<b>0</b>	<b>39</b>	<b>\$1,761,000</b>	<b>\$29,000</b>
<b>JURISDICTIONAL SUMMARY: TORNADO</b>							
Countywide	8 Events			0	0	\$1,075,000	\$0
Benton	0 Events			0	0	\$0	\$0
Fort Deposit	0 Events			0	0	\$0	\$0
Gordonville	1 Events			0	0	\$100,000	\$25,000
Hayneville	1 Events			0	0	\$0	\$0
Lowndesboro	1 Events			0	0	\$85,000	\$0
Mosses	0 Events			0	0	\$0	\$0
White Hall	1 Events			0	0	\$110,000	\$0
Unincorporated Lowndes County	8 Events			0	39	\$391,000	\$4,000

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014

[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#)

### **Landslides, Sinkholes, Subsidence, Earthquakes**

*Description.* In a landslide, masses of rock, earth or debris move down a slope. Debris and mud flows are rivers of rock, earth, and other debris saturated with water. They develop when water rapidly accumulates in the ground, during heavy rainfall or rapid snowmelt, changing the earth into a flowing river of mud or “slurry.” They can flow rapidly, striking with little or no warning at avalanche speeds. They also can travel several miles from their source, growing in size as they pick up trees, boulders, cars and other materials. Landslides can be caused by a variety of factors including earthquakes, storms, volcanic eruptions, fire and by human modification of land. Landslides can occur quickly, often with little notice and the best way to prepare is to stay informed about changes in and around your home that could signal that a landslide is likely to occur.

Subsidence is the motion of a surface (usually, the Earth's surface) as it shifts downward relative to a datum such as sea-level. The opposite of subsidence is uplift, which results in an increase in elevation. Subsidence frequently causes major problems in karst terrains, where dissolution of limestone by fluid flow in the subsurface causes the creation of voids (i.e. caves). If the roof of these voids becomes too weak, it can collapse and the overlying rock and earth will fall into the space, causing subsidence at the surface. This type of subsidence can result in sinkholes which can be many hundreds of meters deep. Sinkholes are caused by a loss of support, roof collapse and/or raveling in the ground's surface layers. Loss of support occurs when decreases of groundwater reduce the buoyant support of groundwater cavities. The collapse of the cavity's roof causes a subsurface breach. Raveling is the erosion of unconsolidated sediments and soils moving from one area into another underground gap. A visible sinkhole is created when the collapse of an unsupported cavity results in the magnification of the opening beyond the ability of the covering soil or rock material to bridge the opening.

An earthquake is ground shaking caused by a sudden movement of rock in the earth's crust. Such movements occur along faults, which are thin zones of crushed rock separating blocks of crust. When one block suddenly slips and moves relative to the other along a fault, the energy released creates vibrations called seismic waves that radiate up through the crust to the earth's surface, causing the ground to shake. Earthquakes may last only a few seconds or may continue for up to several minutes. They can occur at any time of the day or night and at any time of the year. They are caused by stress that builds up over time as blocks of crust attempt to move but are held in place by friction along a fault. (The earth's crust is divided into large plates that continually move over, under, alongside or apart from one another atop the partly molten outer layer of the earth's core.) When the pressure to move becomes stronger than the friction holding them together, adjoining blocks of crust can suddenly slip, rupturing the fault and creating an earthquake.

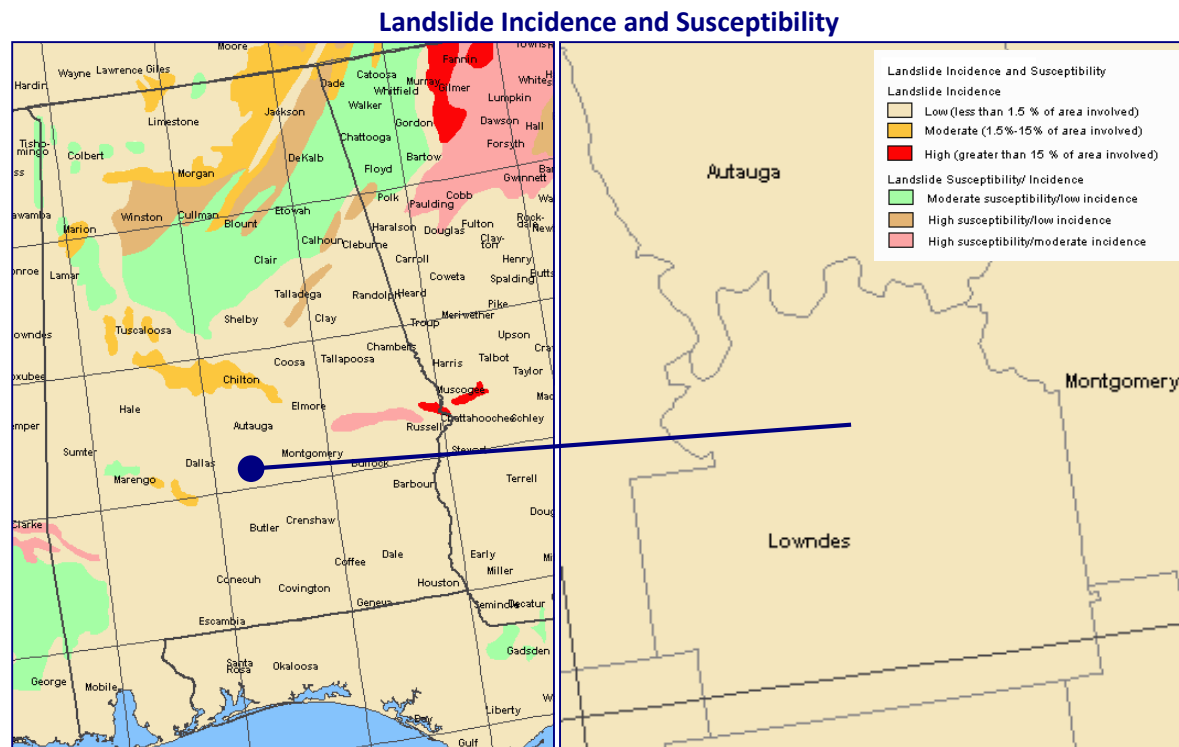
*Location.* Per the Geological Survey of Alabama (GSA) information, the southern edge of Lowndes County is located in an area of limestone and carbonate rock outcroppings that could be subject to sinkholes. Given the soil and geological characteristics in the county, most sinkhole impact may be expected in the northern one third of the county. Subsidence may also be considered to be of greater impact in this part of the county, especially in steeper areas near the river. Expansive soils impact the entire county, however, due to the history of such conditions in the county, building and construction methods generally allow for this potential risk, which is minimal.

*Extent.* GSA data indicates that there have been no reported prior occurrences of sinkholes since the agency has been recording such events. The Lowndes Emergency Management Agency is also not

aware of any known locations where active sinkholes have occurred in recent years. However, the carbonate/limestone rock outcroppings in Lowndes County that could be subject to sinkholes tend to all be located along the valleys of streams and creeks where natural erosion also occurs. Since many of these streams also have associated floodplains, sinkholes and expansive soils are a concern.

GSA information also reveals that Lowndes County has a low incidence probability of landslides occurring in the county. There are outcrops of carbonate, limestone, and other rocks in the extreme southern edge of Lowndes County that exhibit karst and/or pseudokarst terrain characteristics. Although these area are susceptible to sinkholes, currently there are no have active sinkholes or land subsidence. Since there are no known locations of sinkhole activity, and the location and foundations of structures can be planned based on site specific soil data, there is no need to modify land use and development trends at this time. Furthermore, no buildings, infrastructure or cultural facilities are considered subject to sinkholes due to the lack of such activity during the recorded period. Based on discussions with the county Engineer, the greatest impact from sinkholes, land subsidence or landslides is the occasional rupture of county road paving in the unincorporated areas of the county, where standards and construction of roads and drives might be less stringent than town streets, with longer histories of subdivision regulations and other development regulations.

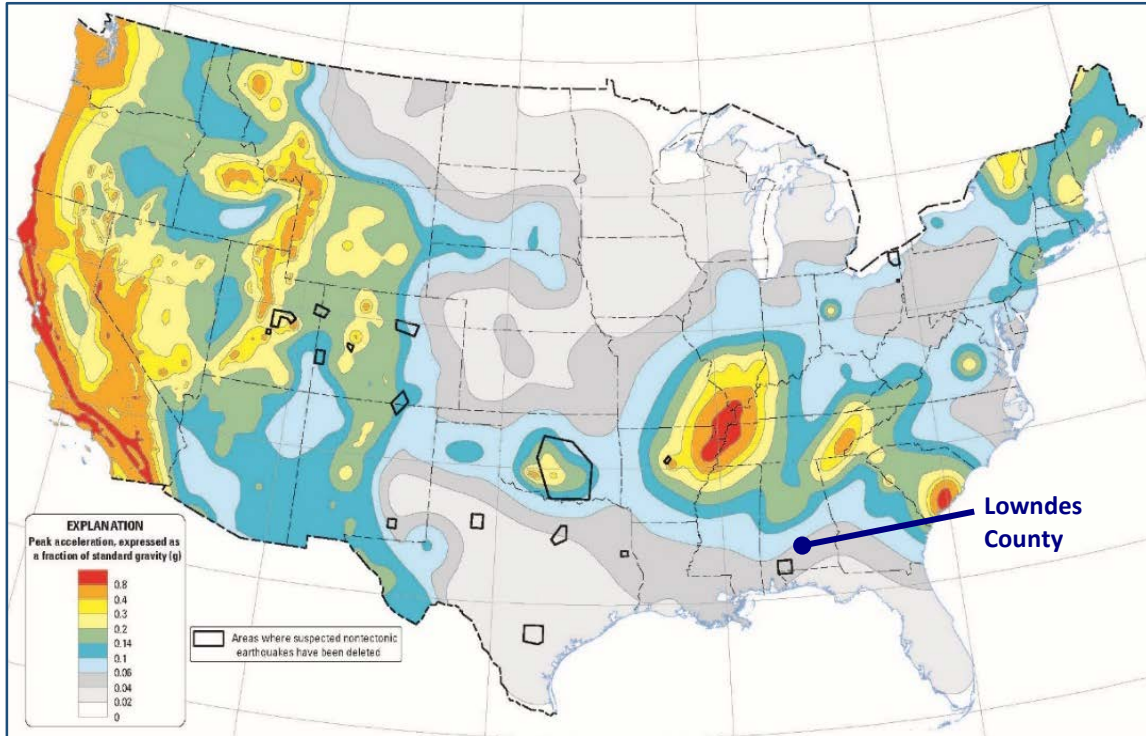
Lowndes County has a very low probability of experiencing an earthquake based on USGS national seismic hazard maps, as shown on the following page. These maps display earthquake ground motions for various probability levels across the United States and are applied in seismic provisions of building codes, insurance rate structures, risk assessments, and other public policy. For Lowndes County, the earthquake peak ground acceleration (PGA) that has a 2 percent chance of being exceeded in 50 years has a value between 4 and 6% g.



Source: National Atlas, U.S. Geological Survey, 2014. <http://nationalatlas.gov/mapmaker>



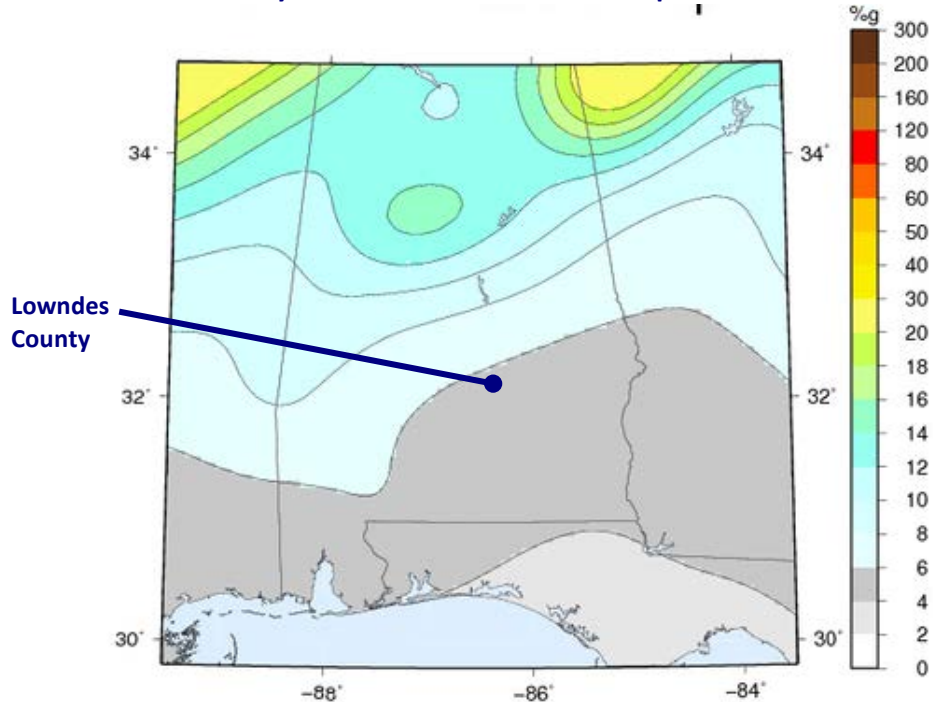
**Earthquake Probability – Lower 48 States**  
**Two-Percent Probability of Exceedance in 50 Years Map of Peak Ground Acceleration**



Source: U.S. Geological Survey, Earthquake Hazards Program, 2014

[http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014\\_lg.jpg](http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014_lg.jpg)

**Earthquake Probability – Alabama and Lowndes County**  
**Two-Percent Probability of Exceedance in 50 Years Map of Peak Ground Acceleration**



Source: U.S. Geological Survey, Earthquake Hazards Program, 2014; <http://geohazards.usgs.gov/hazards/apps/cmaps/>

### Modified Mercalli Scale of Earthquake Intensity

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: USGS Earthquake Hazards Program; <http://earthquake.usgs.gov/learn/topics/mercalli.php>

*Previous Occurrences.* Information available from the Geological Survey of Alabama (GSA) shows that Lowndes County has never been impacted by an earthquake in the reporting period from 1886 through 2005. Further, NCDC tabulations do not report any losses associated with sinkholes or expansive soils in Lowndes County, and there is no known local database estimating actual or potential losses due to this type of hazard.

### Tropical Storms and Hurricanes

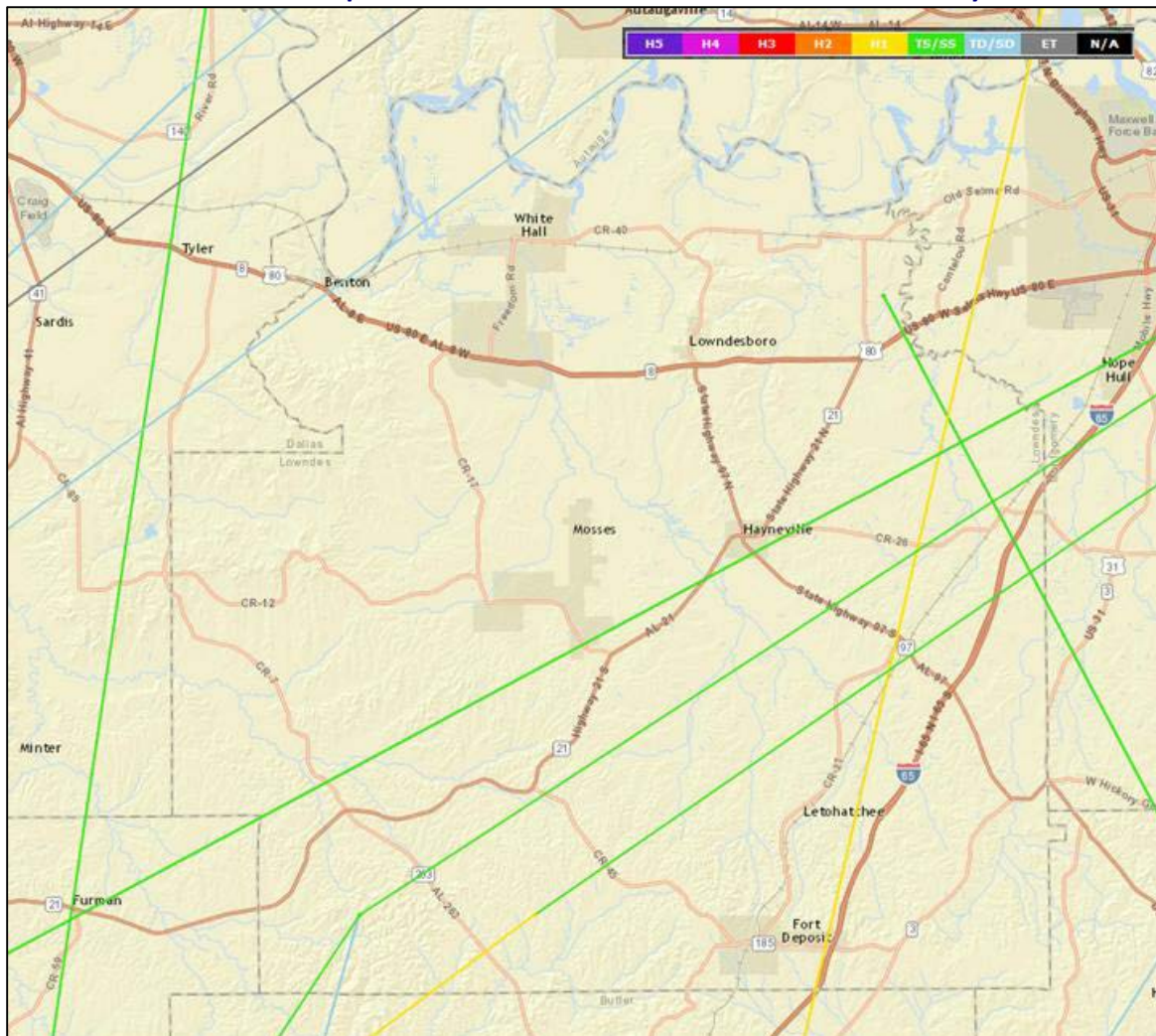
*Description.* As defined by the Federal Emergency Management Agency, a tropical cyclone is a generic term for a cyclonic, low-pressure system over tropical or subtropical waters. Hurricanes are intense tropical systems that generate winds in excess of 74 mph. These storms are generally characterized by thunderstorms and defined surface wind circulation. They can produce high winds, heavy rains, erosion, flooding, and spawn tornados. Extra-tropical storms generate similar effects but tend to occur in the fall or winter. Because tropical and extratropical cyclones are large, moving storm systems, they can impact not only coastal areas, but inland areas as well. Hurricanes Opal (1995), Ivan (2004), and Katrina (2005), which all affected Lowndes County, are excellent examples of tropical systems having such a large impact inland.

While Lowndes County is not necessarily susceptible to the full effects of a tropical cyclone making landfall along the coast, it is highly susceptible to the other events that occur or spawn off of the

cyclonic system. Floods caused by the storm's rain can make parts of the county inaccessible by road and interrupt the delivery of services and the ability to respond in an emergency. Tornadoes spawned off of a hurricane can cause loss of life, injuries, and cause damage to buildings and infrastructure.

**Location.** For purpose of this analysis and the plan at this point, coastal storms are combined with the damage and vulnerability considerations. NCDC reports indicate that Lowndes County has experienced ten tropical storm or hurricane events, resulting in \$367,000 in property damage. Only one of the ten events was of hurricane strength. The unnamed category 1 hurricane occurred in 1859, according to the NCDC hurricane mapping program. All other storm events have been tropical depressions with wind speeds less than 38 miles per hour or tropical storms with wind speeds between 38 and 74 miles per hour. Locations of tropical storm impact may occur in any location in the county. The map on the following page indicates previous patterns of such storms, however, again, these paths are not considered predictable for future occurrences without further study. It is assumed that the greatest damage from these events will occur in the more populated and developed incorporated municipalities in the county.

### Historical Tropical Storm and Hurricane Events in Lowndes County



Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014  
<http://csc.noaa.gov/hurricanes/#>



*Extent.* The Saffir-Simpson Hurricane Wind Scale is used to categorize tropical storms and hurricanes into five categories based on sustained wind speed. Besides the hurricane categories, there are two additional classifications for tropical depressions and tropical storms before these storms reach hurricane strength. Due to Lowndes County's inland location, it is very unlikely that the county will ever experience hurricane force winds greater than a Category 1, such as occurred in 1859. While the Saffir-Simpson scale, shown to the right, outlines the wind speeds for each category, the anticipated damage sustained for each category is provided below:

<b>Saffir-Simpson Hurricane Scale</b>		
<b>Category</b>	<b>Wind speed</b>	<b>Storm surge</b>
	<b>mph (km/h)</b>	<b>ft (m)</b>
5	≥156 (≥ 250)	>18 (> 5.5)
4	131 – 155 (210 – 249)	13 – 18 (4.0 – 5.5)
3	111 – 130 (178 – 209)	9 – 12 (2.7 – 3.7)
2	96 – 110 (154 – 177)	6 – 8 (1.8 – 2.4)
1	74 – 95 (119 – 153)	4 – 5 (1.2 – 1.5)
<b>Additional classifications</b>		
Tropical storm	39 – 73 (63 – 117)	0 – 3 (0 – 0.9)
Tropical depression	0 – 38 (0 – 62)	0 (0)

Category 1: Very dangerous winds will produce some damage. Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly

rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.

Category 2: Extremely dangerous winds will cause extensive damage. Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.

Category 3: Devastating damage will occur. Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.

Category 4: Catastrophic damage will occur. Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Category 5: Catastrophic damage will occur. A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

*Previous Occurrences.* Because of its interior location, Lowndes County is not especially susceptible to direct tropical or coastal storm events; however, its history documents the fact that the county has experienced tropical cyclones, tornadoes and related flooding associated with tropical systems. Five tropical cyclones have traversed Lowndes County during the 153-year period from 1851

through 2014. As shown in the map on the following page, four of the five tracks of the tropical cyclones were minor tropical storms or depressions. However, one H1 hurricane has occurred in the county in the referenced time period. Although tropical cyclones and storms seem to have occurred in relatively random patterns in the county, local residents and officials seem to think the pattern has become more predominant along and near I-65.

#### Profile of Tropical Storm and Hurricane Events in Lowndes County

Location	Date	Type	Mag	Dth	Inj	PrD	CrD
Lowndes	8/19/1852	Tropical Storm	TS	0	0	\$0	\$0
Lowndes	9/15/1859	Hurricane	H1	0	0	\$0	\$0
Lowndes	9/27/1893	Tropical Storm	TS	0	0	\$0	\$0
Lowndes	9/27/1995	Tropical Depression	TD	0	0	\$0	\$0
Lowndesboro	3/3/2000	Funnel Cloud	n/a	0	0	\$0	\$0
Lowndes	7/10/2005	Tropical Storm	TS/SS	0	0	\$250,000	\$0
Lowndes	8/29/2005	Tropical Storm	TS/SS	0	0	\$110,000	\$0
Lowndes	8/23/2008	Tropical Depression	TS/SS	0	0	\$5,000	\$0
Lowndes	11/9/2009	Tropical Depression	TS/SS	0	0	\$2,000	\$0
Lowndes	8/10/2010	Tropical Depression	TD	0	0	\$0	\$0
<b>TOTAL</b>		<b>10 Events</b>		<b>0</b>	<b>0</b>	<b>\$367,000</b>	<b>\$0</b>
<b>JURISDICTIONAL SUMMARY: TROPICAL STORMS AND HURRICANES</b>							
Countywide	9 Events			0	0	\$367,000	\$0
Benton	0 Events			0	0	\$0	\$0
Fort Deposit	0 Events			0	0	\$0	\$0
Gordonville	0 Events			0	0	\$0	\$0
Hayneville	0 Events			0	0	\$0	\$0
Lowndesboro	1 Events			0	0	\$0	\$0
Mosses	0 Events			0	0	\$0	\$0
White Hall	0 Events			0	0	\$0	\$0
Unincorporated Lowndes County	9 Events			0	0	\$0	\$0

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014

[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#)

#### Wildfire

**Description.** The Federal Emergency Management Agency defines a wildfire as an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. Wildfires often begin unnoticed and spread quickly and are usually signaled by dense smoke that fills the area for miles around. Naturally occurring and non-native species of grasses, brush, and trees fuel wildfires. Wildfires are a significant hazard in Lowndes County due, in large part, to the presence of an abundance of forested land in the county. Of the total land in Lowndes County, 64.54 percent is in forested land – totaling almost 306,500 acres of forest land.

Due to an expanding urban interface area, the threat of human danger from wildfires is steadily increasing in Lowndes County. Beyond loss of life, injury and property damage issues that arise from wildfires, the threat to the timber industry means that the overall economic well-being of the county can be threatened by wildfires as well. The fact that the average annual value of stumpage timber sold in Lowndes County is over \$6.6 million illustrates the point. With the available information as

presented, the Lowndes County LEPC determined that, while the risk is high, Lowndes County is moderately vulnerable to wildfires.

*Location.* Data is limited on wildfire locations, however, a review of the following three maps indicates the potential loss due to wildfires is likely to be greatest at the edges of the urbanized municipalities where the greatest population might be impacted in the case of wildfires. Wildfires also occur in the unincorporated parts of the county, however, these are likely to impact cropland and sparsely developed farm properties. The county is active in wildfire prevention and training and will continue to upgrade data on locations in future updates of the plan. Potential impacts from wildfires include loss of life and injury; severe property damage; injury to victims and response personnel; smoke inhalation and toxic fumes; decreased visibility for vehicular traffic leading to a documented increase in auto accidents; threats to utility lines and poles, phone boxes and fiber optic lines. Additionally, there is the potential for a high incidence of repetitive losses due to wildfires in Lowndes County based on relatively limited data. The chart which profiles limited wildfire history indicates the extent and magnitude of potential of the wildfire hazard, even though financial extent is difficult to determine based on available data. Secondary impacts from wildfires include a loss of tax revenue due to a loss of timber; erosion which leads to road and bridge deterioration; loss of habitat and a threat to endangered species; threatened water quality and stream sedimentation. The risks and vulnerability associated with wildfire are only increasing with continued urban sprawl.

*Extent.* With data available from the Alabama Forestry Commission, it is estimated that Lowndes County has suffered 423 wildfires between 2003 and 2014 with a total of 2,855 acres burned.

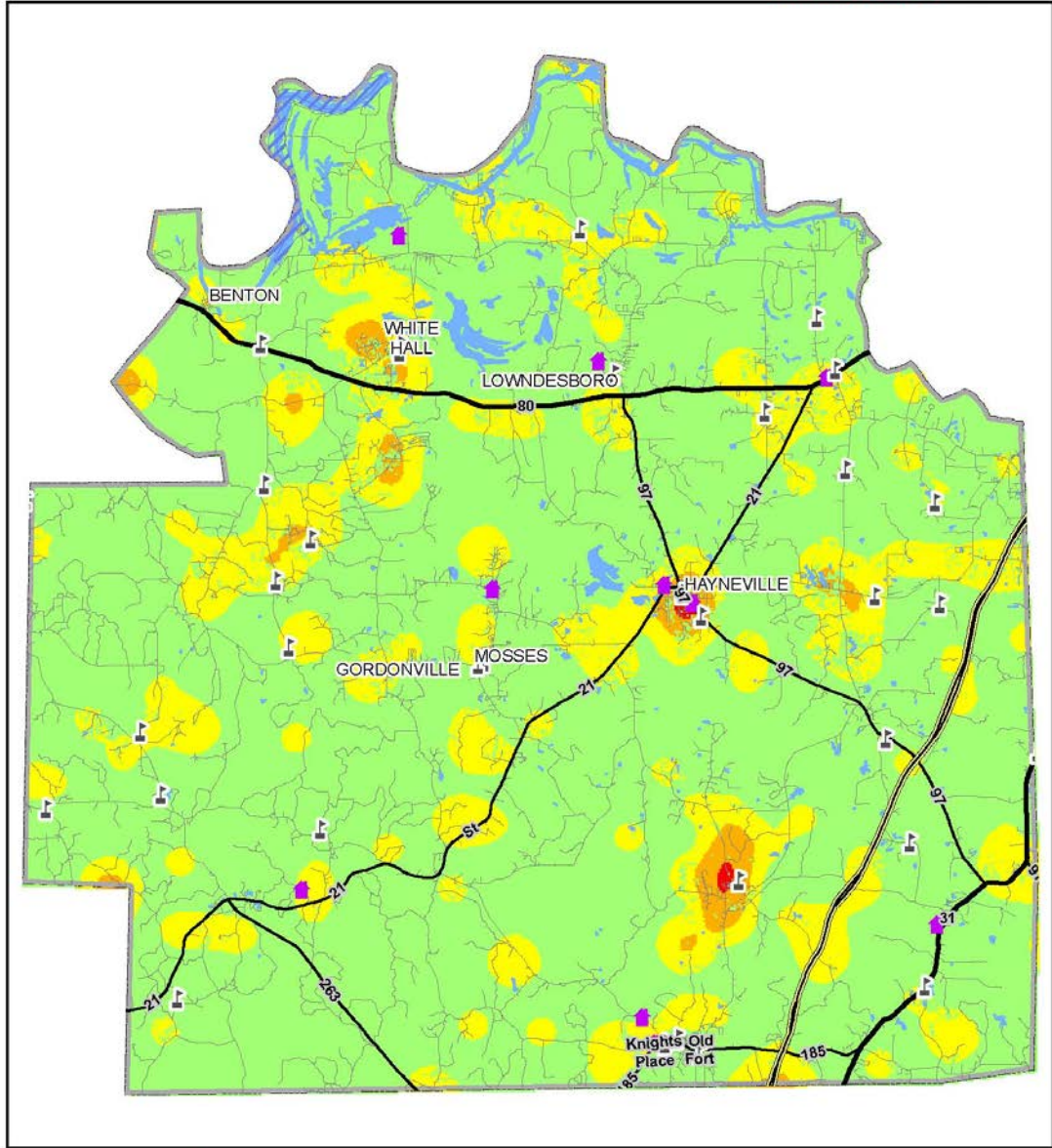
*Previous Occurrences.* According to the Alabama Forestry Commission, Lowndes County experienced 317 fire events between 1995 and 2003, which combined accounted for over 1,600 acres of land burned. In the time period since the county's last hazard mitigation plan from January 2009 to July 2014, Lowndes County has experienced 106 wildfires affecting 1,255.35 acres of land. Training and assistance in advising landowners about wildfires and how to prevent them provide ongoing prevention or lessening of this hazard potential.





# 'Fires per 1,000-Acres' County Map

Lowndes County



1 inch = 4 miles

[www.forestry.alabama.gov](http://www.forestry.alabama.gov)  
AFC GIS (09/11/08)

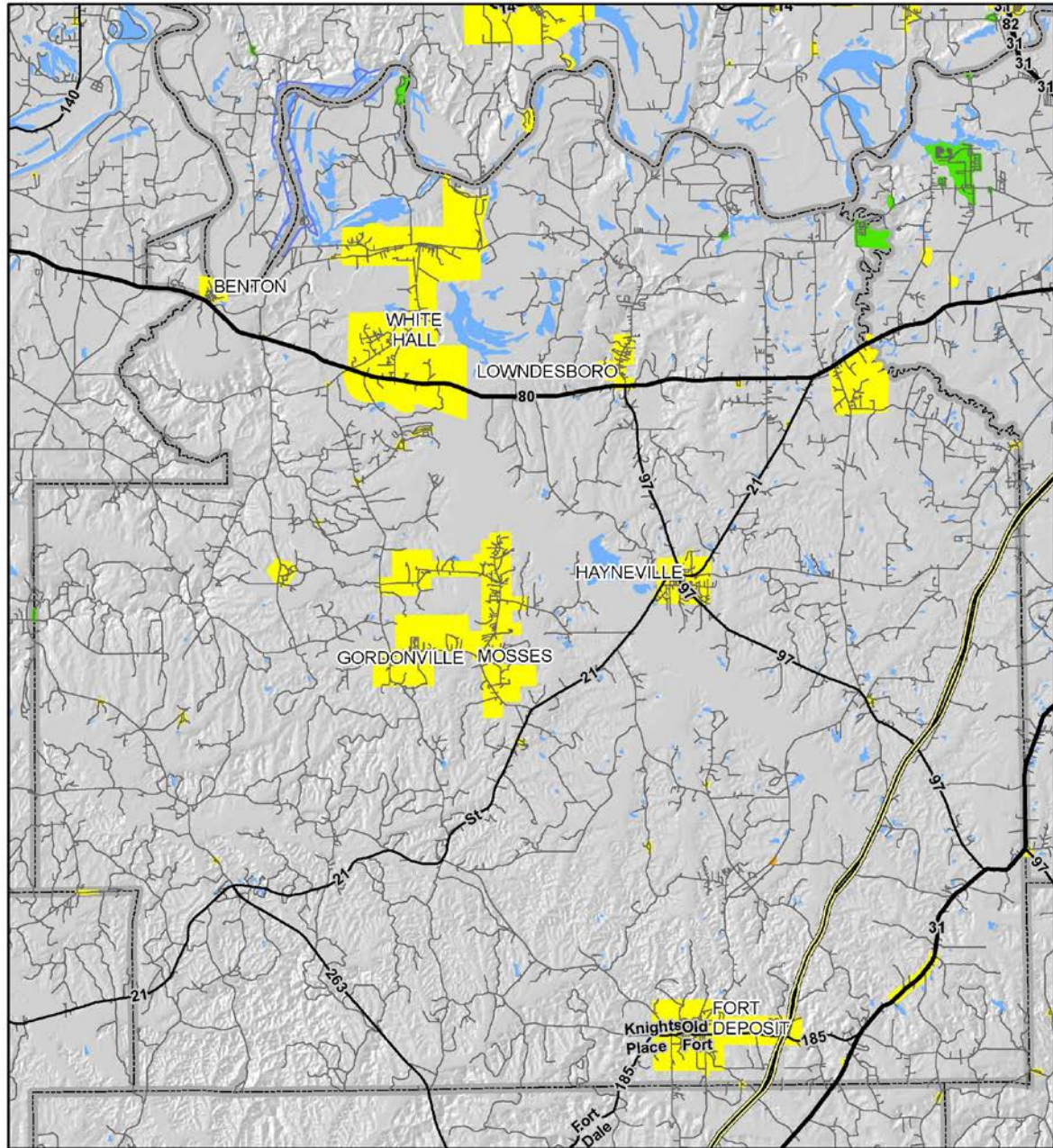
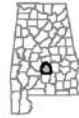
Sources: Sanborn (2006); AFC (2006)

(\*) Includes federal, state, local and volunteer entities



# 'Communities at Risk' County Map

Lowndes County



**Community Fire Risk Rating:**

<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> Low	<span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span> Moderate	<span style="display: inline-block; width: 15px; height: 15px; background-color: orange; border: 1px solid black;"></span> High	<span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></span> Very High
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**County Boundary**

**Public Lands**

1 inch = 4.2 miles

For more information, visit:  
[www.forestry.alabama.gov](http://www.forestry.alabama.gov)

AFC GIS (06/14/10)  
 Sources: Sanborn (2006), AFC (2010)

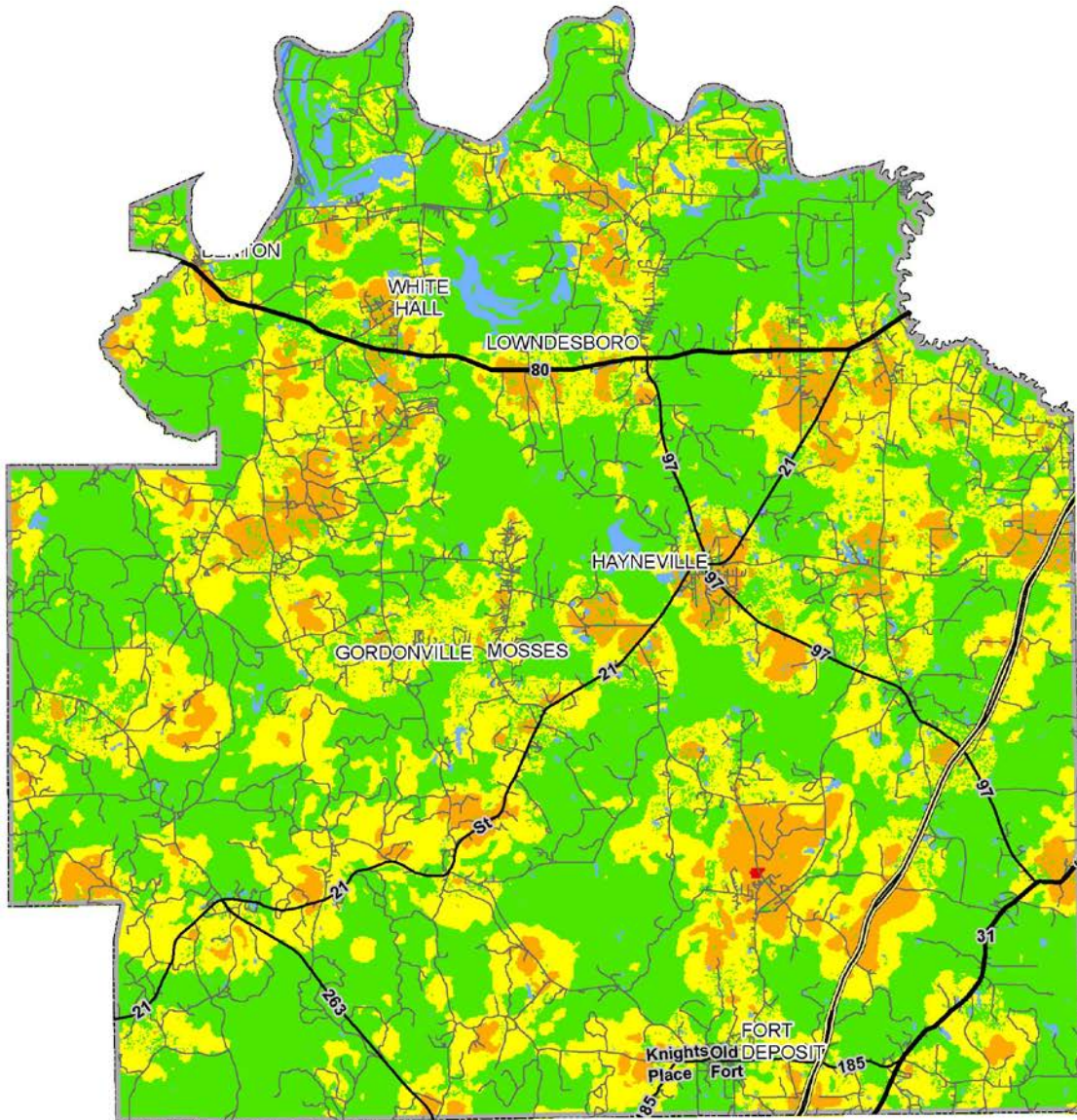
To view an interactive map viewer of this data, go to:  
[https://maps.alabama.gov/flexapps/AFC\\_CAR/](https://maps.alabama.gov/flexapps/AFC_CAR/)





## 'Wildland Fire Risk' County Map

Lowndes County



Wildland Fire  
Risk Rating:



Low



Moderate



High



Very High



County Boundary



Public Lands

1 inch = 4.2 miles

For more information, visit:  
[www.forestry.alabama.gov](http://www.forestry.alabama.gov)

AFC GIS (06/14/10)

Sources: Sanborn (2006); AFC (2010)

## Winter/Ice Storms

*Description.* As defined by FEMA, winter storms can range from a normal snow over a few hours to a blizzard with blinding, wind-driven snow that lasts for several days. Many winter storms bring dangerously low temperatures and sometimes, strong winds, icing, sleet, and freezing rain. One of the main concerns is that winter weather can knock out heat, power, and communication, sometimes for days at a time. Heavy snowfall and extreme cold can have serious effects on an entire region. Icy roadways can cause serious accidents, and sometimes people die from being in really cold temperatures for too long.

Winter storms, due to climatic and temperature conditions in central Alabama have been very limited with negligible damage. The primary issues have been power outages, downed power lines and travel limitations on roads and bridges. Most of these events impact both incorporated municipalities and unincorporated Lowndes County. Winter storms in Lowndes County are generally not characteristic of a typical winter storm. In other locations, winter storms may be accompanied by dangerously low temperatures and sometimes by strong winds, icing, sleet and freezing rain. In the mild climate of central Alabama, a winter storm in Lowndes County would most often be primarily icing, sleet and freezing rain sometimes accompanied by minimal snowfall.

*Location.* When they do occur, winter storms are not isolated to small areas of the county. Instead, all of Lowndes County and the surrounding region has been affected by winter storms in the past. Of the nine winter/ice storms that Lowndes County has experienced, all events were countywide events and not isolated to any one part of the county.

*Extent.* Although a winter or ice storm is not a frequent occurrence in Lowndes County, the impact of even a small winter storm can be hugely significant due to the lack of equipment and other resources to handle those conditions. Additionally, winter storms have the ability to cause power and communication outages, resulting in loss of heat and closing of businesses. Further, Lowndes County's agricultural economy cannot withstand the extreme temperatures and freezing conditions without financial loss. So, while Lowndes County is not highly susceptible to frequent winter or ice storms, the county and its residents are very vulnerable when these events occur.

*Previous Occurrences.* According to NCDC data, Lowndes County has experienced nine winter/ice storm events, resulting in more than \$1 million in damages. The greatest losses were experienced by agricultural communities in crop damages.

### Profile of Winter/Ice Storm Events in Lowndes County

Location	Date	Type	Dth	Inj	PrD	CrD
Lowndes	2/3/1996	Cold/wind Chill	0	0	\$0	\$0
Lowndes	3/7/1996	Cold/wind Chill	0	0	\$0	\$1,000,000
Lowndes	1/24/2003	Extreme Cold/wind Chill	0	0	\$0	\$0
Lowndes	1/2/2002	Heavy Snow	0	0	\$0	\$0
Lowndes	2/12/2010	Heavy Snow	0	0	\$0	\$0
Lowndes	1/9/2011	Ice Storm	0	0	\$0	\$0
Lowndes	12/18/1996	Winter Storm	0	0	\$15,000	\$20,000
Lowndes	1/19/2008	Winter Weather	0	0	\$0	\$0
<b>Total</b>		<b>9 Events</b>	<b>0</b>	<b>0</b>	<b>\$15,000</b>	<b>\$1,020,000</b>

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center, July 2014

[http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=01&beginDate\\_dd=01&beginDate\\_yyyy=1950&endDate\\_mm=04&endDate\\_dd=30&endDate\\_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#](http://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=04&endDate_dd=30&endDate_yyyy=2014&county=LOWNDES&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=1%2CALABAMA#)

## Hazard Prioritization

A review of historical and existing plans and regulations for Lowndes County and its municipalities revealed that there is very little current information that is directly related to hazard identification or natural hazard mitigation. Existing information does include limited police and fire protection services and needs; and statements as to the need for road and bridge improvements, and limitations to development in flood-prone areas. The review of past and existing plans shows that the potential for disaster events must have received some consideration in past growth and development planning for the county, which is evident in the relative lack of development that has occurred in the flood-prone areas of the county. This review also resulted in a short list of available tools that can be utilized to facilitate or complement current and future hazard mitigation activities. These tools include: participation in the National Flood Insurance Program (NFIP), flood damage prevention ordinances, storm water management guidelines, subdivision regulations, zoning ordinances, capital improvement programs, and proposed dangerous buildings ordinances.

Historical plans and studies that were reviewed include: Areawide Plan: Fire Protection Study, 1974; Areawide Study: Environmental Assets, 1975; Areawide Plan: Rural Land Use Analysis, 1977; Areawide Study: Environmental Review Manual, 1977; Areawide Land Development Plan, 1978; Areawide Rural County Highway Development Plan, 1992; Mid-South Resource Conservation & Development Area Plan, 1994; South Central Alabama Development Commission (SCADC) Regional Solid Waste Needs Assessment, 2003; Lowndes County Historic Assets, 1975; Lowndes County Industrial Sites & Community Environment, 1975; Lowndes County Land Use & Transportation Plan, 1976; Lowndes County Housing Plan, 1977; Lowndes County Community Development Target Area Study, 1980; Lowndes County Solid Waste Management Plan, 1990; Alabama Economic Enhancement Strategy for Lowndes County, 1991; Lowndes County Housing Plan, 1993; and the Lowndes County Water and Sewer Planning Report, 2002. Lowndes County and the municipalities located therein have only participated in planning activities in the last two decades. Current plans that were reviewed include: SCADC/District Comprehensive Economic Development Strategy, 2012; Lowndes County Emergency Operations Plan; Lowndes County Industry and Community Data; Hayneville Development Guide, 2004; Mosses Comprehensive Plan, and proposed Subdivision Regulations and Zoning Ordinance, 2008; the Lowndesboro Comprehensive Plan, 1999; and the Lowndesboro Land Use Plan, 2013. Lowndes County has also participated in the South Central Alabama Rural Transportation Planning Organization (RPO) since 2007. The South Central RPO produces a report each year that outlines the rural transportation needs and issues in each of the six counties of the region. For Lowndes County, the rural transportation needs and issues primarily consist of road improvements and transit needs. Lowndes County is also in the process of developing an economic development strategic plan that includes both the unincorporated area of the county, as well as the land area within the boundaries of each of the seven municipalities in the county.

With the information from past documents combined with data available in the hazard identification and assessment process, the Lowndes County LEPC was able to identify and prioritize hazards that have the most potential to impact Lowndes County and its municipalities. As a result of the committee discussions about the previous information, hazards were divided into three categories: Priority I, Priority II and Priority III. Within each category, hazards further prioritized and given a numeric priority number as shown in the table below.

**Hazard Identification and Prioritization for Lowndes County and All Municipalities**

<b>Hazard</b>	<b>Priority I</b>	<b>Priority II</b>	<b>Priority III</b>
Dam Failure		10	
Drought		7	
Extreme Temperatures		9	
Floods	4		
Hail		6	
High Winds (including Tornadoes)	1		
Landslides			12
Sinkholes and Subsidence/ Earthquakes			11
Thunderstorms and Lightening	2		
Tropical Storms and Hurricanes	3		
Wildfire	5		
Winter/Ice Storms		8	



## Chapter 4

### Vulnerability Analysis

The risk assessment and vulnerability analysis is based on the following Priority I hazards as identified by the Lowndes County LEPC and described in the previous chapter: high winds and tornadoes; thunderstorms and lightening; tropical storms and hurricanes; flooding; and wildfire. The *State of Alabama Hazard Risk and Vulnerability Analysis*, prepared by the Alabama Emergency Management Agency defines **risk** as the probability that damage to life and property will occur due to impacts from a particular natural hazard. This can include an analysis of: the **magnitude**, or how big or strong the event may be, the **duration** or how long the event will last, the **frequency**, or how often the event may occur, and the **area affected**, or where and how much area may be impacted by an event. The same document defines **vulnerability** as the degree of **exposure** to a hazard – how susceptible an area is to a hazard and the losses likely to result from a disaster.

In this chapter, each of the hazard categories are assessed in terms of risk and vulnerability, as defined. Information provided for each category includes a definition of the hazard; the degree of risk as noted by the priority rating given to each hazard by the Lowndes County Local Emergency Planning Committee upon identification of the hazard; historical and financial loss data, if available; and the degree of impact (vulnerability) on Lowndes County and its residents, with comments regarding how the hazard might or could affect the county.

The maps in Chapter 3 are used in the planning process to assist in assessing risk and vulnerability. These key maps include those used to identify where the priority hazards are most likely, given that some hazardous conditions exist county-wide, with little geographic predictability, such as thunderstorms or windstorms. With respect to certain Priority II and Priority III hazards, specific geographic locations are limited, since information is not readily available on their location. Future updates of the plan will continue to identify locations of these hazards, as appropriate. As mentioned, land subsidence is limited due to soils and topography to banks along the river, where there is limited property to be affected at present. This could be a problem in the future if riverfront development continues to increase in this part of the state. Dam failures are going to be generally associated with locations along and within flooding areas delineated on the floodplain map that is included.

## **Overview of Hazard Vulnerability and Impact**

### **High Winds and Tornadoes**

High winds and tornadoes are the number one hazard risk for Lowndes County, not due to the frequency of events, but instead, due to the severity of destruction and the limited warning time for response. There are two tornado seasons in Alabama; these are in May and November. Tornadoes are not constrained to follow any definite path, so every area and every resident of Lowndes County is at risk. A tornadoes path is generally 300-400 yards wide and four miles long (NOAA 1973). Areas within that path may suffer from slight to severe damage depending on the tornadoes strength. Injury and death can occur as a result of even the weakest tornado. Lowndes County is located in Wind Zone III, which is associated with 200 miles per hour wind speeds. Tornado paths are not localized and have the potential to affect any portion of the entire county during a given event. In Lowndes County, historically there have been F0, F1, F2, tornadoes recorded. The NCDC data reports that there have been three events of strong winds along and 20 tornado events, resulting in 39 injuries and a combined damages totaling more than \$5.2 million.

The effects of any tornado may be far reaching. Life, property, and personal items are all at risk. Interruption of electric, telephone and other utility and communications services may occur. Transportation corridors may be blocked or in some cases destroyed. Debris must be removed and this is often a costly task. Citizens may suffer from posttraumatic syndrome, depression, anxiety, and grief for lost loved ones. Also another concern in rural areas, such as Lowndes County, is the lack of emergency response personnel. When large storms with widespread damage and injuries occur, these areas have a more difficult time responding to all calls they receive.

The highest potential for death or injuries resulting from tornadoes occurs in areas with higher population densities. As reviewed in the County Profile section of this report, the areas that are the most densely populated are Fort Deposit, Hayneville and Mosses. The occurrence of dense housing also increases the probability of not only death or injury, but also property damage. Other areas that are more vulnerable to damage from a tornado include areas with high percentages of mobile homes. These structures are not capable of withstanding the strong winds associated with tornadoes as well as traditional housing. In Lowndes County there are high percentages of mobile homes throughout the county, comprising 32.0 percent of the total housing stock. The percentage of manufactured housing, or mobile homes, in the unincorporated part of the county is higher, at 38.2 percent.

### **Thunderstorms and Lightning**

Damage from severe storms can have a wide range of severity. Common incidences are a result of falling trees and flying debris. Lightning can cause substantial property damage and death. Utility disruption and blocked roadways are common. Historically, Lowndes County has experienced these storms every year with varying frequency and intensity. Winds of 65 to 77 knots have been recorded during these events within the county. Generally severe storms follow no common track or an exact pathway; therefore, the whole county is at risk.

Thunderstorms are generated by atmospheric imbalance due to the combination of unstable warm air rising rapidly into the atmosphere, sufficient moisture to form clouds and rain, and an upward lift of air currents caused by colliding waterfronts, sea breezes, or mountains. Thunderstorms can produce tornadoes and floods (both discussed in other portions of this plan), hail, and high winds.

Severe thunderstorms, wind, and hail have been a common event for Lowndes County and its municipalities in the past and will continue to be so in the future. Between 1950 and 2005, 97 severe thunderstorms and lightening events have occurred in Lowndes County and its municipalities, causing an estimated \$3.8 million in property and crop damages. In the past, there has been a minimal loss of critical facilities. However, the loss of critical facilities as a result of severe thunderstorms, wind, and hail are rare. In addition, there have been reports of minor property damage most being a result of lightning strikes or hail.

### **Tropical Storms and Hurricanes**

Atlantic hurricane season is from June 1 to November 30 of each year. According to NOAA (<http://www.aoml.noaa.gov/hrd/tcfaq/E10.html>), the highest number of Atlantic major hurricanes to make landfall in the United States is seven in 2005, while the lowest is zero, which has occurred often and most recently in 2013. Severe storms, tornadoes, high winds, hail, torrential rains, river flooding, and flash flooding are all associated with hurricanes, putting all of Lowndes County potentially at risk. The effects of a hurricane are like those of a tornado. The loss of life, property and possessions is common. Interruption of utility and communication service is expected. Lowndes County is far enough inland that advance warning of the approaching storm can be heeded and residents can prepare themselves. In instances such spawned tornadoes and flash flooding where warning time may be short or nonexistent the risk factors are higher. In addition, low-lying areas and areas prone to flooding are at higher risk of hurricane related damage. Another concern regarding hurricanes is the large amount of debris that results. Debris blocks roadways and makes travel unsafe. Debris removal is a major cost with regards to hurricanes.

Since 2000, Lowndes County has been affected by five tropical storm/hurricane events, resulting in \$367,000 in property damages. Four of these events were either a tropical depression or tropical storm by the time that they reached inland to Lowndes County. In 2000, however, there was a reported funnel cloud even as far north from the gulf coast as Lowndes County is located.

### **Flooding**

As defined by the Federal Emergency Management Agency, a flood is a natural event for rivers and streams. Excess water from snowmelt, rainfall, or storm surge accumulates and overflows onto the banks and adjacent floodplains. Floodplains are lowlands, adjacent to rivers, lakes and oceans that are subject to recurring floods. In Lowndes County, broad flood plains are found in the northern part of the county following the Alabama River and along Big Swamp Creek which flows northwest from the Letohatchee area to the Alabama River near White Hall. Smaller flood plains are also present along Pintlala Creek, Tallawassee Creek, Steep Creek, Pinchony Creek, Cedar Creek, and their tributaries. Limited flooding occurs along the streams in the vicinity of Fort Deposit. The flood plains of Big Swamp Creek lies in the southwest of the corporate limits of Hayneville, and there is minor flooding along tributaries of Big Swamp Creek in the vicinity of Hayneville, there is no significant problem with flooding in the Lowndesboro planning area, but the Town of Benton can be severely affected by periodic flooding of the Alabama River.

Flooding is one of the most common hazards in the United States and kills an average of 150 people a year nationwide. While Lowndes County is not highly susceptible to severe inundation of flood waters, it is highly susceptible to the rapid occurrence of flash floods that make parts of the

county inaccessible by road and interrupt the delivery of services and the ability to respond in an emergency. Flooding is number one on the list of natural hazards that have the greatest potential to impact Lowndes County. According to NCEM data, Lowndes County has experienced 16 flooding events, resulting in \$176,500 in total damages. The majority of the events were flash floods.

### **Wildfire**

As defined by the Federal Emergency Management Agency, a wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. Wildfires often begin unnoticed and spread quickly and are usually signaled by dense smoke that fills the area for miles around. Naturally occurring and non-native species of grasses, brush, and trees fuel wildfires. Wildfires are a Priority I hazard in Lowndes County due, in large part, to the presence forested land in the county. Of the total land in Lowndes County, 64.54 percent is in forested land – totaling almost 306,500 acres of forest land. According the Alabama Wildland Fire Risk and Communities at Risk maps produced by the Alabama Forestry Commission, and found in Chapter 3 of this plan, all of Lowndes County's municipalities are at moderate risk of being impacted by wildfire. Data available from the Alabama Forestry Commission indicates that between 1995 and 2003, Lowndes County experienced 317 wildfire events, burning a total of 1,652.4 acres. The average wildfire size was 5.2 acres. In recent years, however, the average size of wildfires has grown to 12.0 acres. Since 2008, Lowndes County has suffered 130 wildfire events, burning a total of 1,561.25 acres.

### **Probability of Hazard Events**

Flooding is one of the most common hazards in the United States and kills an average of 150 people a year nationwide. While Lowndes County is not highly susceptible to severe inundation of flood waters, it is highly susceptible to the rapid occurrence of flash floods that make parts of the county inaccessible

The probability (%) that an identified hazard of Priority I status will occur on an annual basis was determined using the following formula:

$$\begin{aligned} & \text{Number of historical or reported events} / \text{Number of years incidents occurred within} \\ & = \text{Probability of A Future Annual Event} \end{aligned}$$

A similar formula was used to determine an estimate of the expected damages from each event:

$$\begin{aligned} & \text{Total damages in dollars for each reported event} / \text{Number of damage causing events} \\ & = \text{Damage Expectations Per Damaging Event} \end{aligned}$$

### Probability and Anticipated Damages of Future Hazard Events by Jurisdiction

Event	Number of Occurrences	Probability of a Future Event	Damage Expectations Per Damaging Event
Countywide			
High Winds and Tornadoes	8	14.3%	\$153,571.43
Thunderstorms and Lightening	44	86.3%	\$621,500.00
Tropical Storms and Hurricanes	9	5.7%	\$40,777.78
Flooding	6	40.0%	\$32,500.00
Wildfire	Cannot be calculated due to lack of information		
Benton			
High Winds and Tornadoes	0	0.0%	\$0.00
Thunderstorms and Lightening	0	0.0%	\$0.00
Tropical Storms and Hurricanes	0	0.0%	\$0.00
Flooding	0	0.0%	\$0.00
Wildfire	Cannot be calculated due to lack of information		
Fort Deposit			
High Winds and Tornadoes	0	0.0%	\$0.00
Thunderstorms and Lightening	3	5.9%	\$4,666.67
Tropical Storms and Hurricanes	0	0.0%	\$0.00
Flooding	2	66.7%	\$750.00
Wildfire	Cannot be calculated due to lack of information		
Gordonville			
High Winds and Tornadoes	1	100.0%	\$125,000.00
Thunderstorms and Lightening	1	2.0%	\$2,000.00
Tropical Storms and Hurricanes	0	0.0%	\$0.00
Flooding	0	0.0%	\$0.00
Wildfire	Cannot be calculated due to lack of information		
Hayneville			
High Winds and Tornadoes	1	100.0%	\$0.00
Thunderstorms and Lightening	13	25.5%	\$14,192.31
Tropical Storms and Hurricanes	0	0.0%	\$0.00
Flooding	2	66.7%	\$1,000.00
Wildfire	Cannot be calculated due to lack of information		
Lowndesboro			
High Winds and Tornadoes	1	100.0%	\$85,000.00
Thunderstorms and Lightening	4	7.8%	\$12,500.00
Tropical Storms and Hurricanes	1	100.0%	\$0.00
Flooding	0	0.0%	\$0.00
Wildfire	Cannot be calculated due to lack of information		
Mosses			
High Winds and Tornadoes	0	0.0%	\$0.00
Thunderstorms and Lightening	0	0.0%	\$0.00
Tropical Storms and Hurricanes	0	0.0%	\$0.00
Flooding	0	0.0%	\$0.00
Wildfire	Cannot be calculated due to lack of information		

**White Hall**

High Winds and Tornadoes	1	100.0%	\$110,000.00
Thunderstorms and Lightening	6	11.8%	\$6,000.00
Tropical Storms and Hurricanes	0	0.0%	\$0.00
Flooding	1	100.0%	\$0.00
Wildfire	Cannot be calculated due to lack of information		

**Unincorporated Lowndes County**

High Winds and Tornadoes	39	69.6%	\$10,972.22
Thunderstorms and Lightening	13	25.5%	\$2,923.08
Tropical Storms and Hurricanes	0	0.0%	\$0.00
Flooding	5	100.0%	\$5,000.00
Wildfire	Cannot be calculated due to lack of information		

**Identification and Location of Critical Facilities**

The process of determining Lowndes County's risk and vulnerability to hazards enabled the Lowndes County LEPC to identify critical facilities that would be impacted in the event of a disaster event. The LEPC identified critical facilities located in Lowndes County, based on two types of criteria: (1) Buildings or locations vital to the response and recovery effort, such as police and fire stations and telephone exchanges; and (2) Buildings or locations that, if damaged, would create secondary disasters, such as hazardous materials facilities and nursing homes. The critical facilities were grouped into one of seven categories as shown in the list on the following page.

As of the submission of this plan, a complete inventory of critical facilities susceptible to the identified Priority I hazards within Lowndes County has been attempted, but not completed. Exact locations and facility values are still being researched and assessed. All of the critical facilities are vulnerable to all of the identified Priority I hazards. The appropriate utility companies and departments, and the local governments, have been asked for this information, and several are still researching this information. The Lowndes County EMA and LEPC intend to have this information collected and analyzed by the next five-year major update. In future updates of the Plan, critical facility structures will be specifically located and that data will be incorporated into more accurate estimates of potential loss and estimated costs.

**Continuity of Government**

- Lowndes County Courthouse
- Lowndes County Courthouse Annex
- Benton Town Hall
- Fort Deposit Town Hall
- Gordonville Town Hall
- Hayneville Town Hall
- Lowndesboro Town Hall
- Mosses Town Hall
- White Hall Town Hall
- Board of Education
- U.S. Army Corps of Engineers (Highway 80)

**Water, Sewer, and Solid Waste Utilities**

- Butler County Water System
- Fort Deposit Water & Sewer Board
- Hayneville Water Department
- Lowndes County Water Authority
- Lowndesboro Water Authority
- Mosses Water & Fire Protection Authority



- Pintlala Water & Fire Protection Authority
- Sellers Station Water System

- White Hall Water System
- Advanced Disposal

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#### **Law Enforcement**

- Lowndes County Sheriff's Office
- Lowndes County Jail
- Fort Deposit Police Department
- Hayneville Police Department
- White Hall Police Department

#### **Hospitals / Health Care Agencies**

- CARE Ambulance Service
- Lowndes County Health Department
- Yearwood Medical Center (Ft. Deposit)

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#### **Electric Power & Gas Utilities**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Acme Propane</li> <li>• Alabama Power</li> <li>• Alagasco</li> <li>• Casey Propane</li> </ul> | <ul style="list-style-type: none"> <li>• Dixie Electric Cooperative</li> <li>• Pioneer Electric Cooperative</li> <li>• Southeast Alabama Gas District</li> <li>• Suburban Propane</li> </ul> |
|--|--|

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#### **Water Sources**

- Aquifers: Eutaw, Gordo, Nanafalia, Ripley, Tuscaloosa, and Watercourse formations

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#### **Disaster Coordination and Support Agencies**

- Lowndes County Emergency Management Agency
- Lowndes County Department of Human Resources

#### **Telephone, Cable, & Communications**

- AT&T
- Hayneville Communications

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#### **Fire Protection**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Braggs VFD</li> <li>• Burkville VFD</li> <li>• Calhoun VFD</li> <li>• Collirene VFD</li> <li>• Fort Deposit VFD</li> </ul> | <ul style="list-style-type: none"> <li>• Hayneville VFD</li> <li>• Lowndesboro VFD</li> <li>• Mosses VFD</li> <li>• Sandy Ridge VFD</li> <li>• White Hall VFD</li> </ul> |
|---|--|

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#### **Transportation**

- All Public Schools Church buses (various)
- Lowndes County Board of Education
- West Alabama Rural Transportation (Hayneville)

#### **Mass Care Shelters**

- All Public Schools

#### **Adult and Child Daycare**

- Orchard Health care
- First Years Daycare

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#### **Schools**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Lowndes Co. Board of Education(Hayneville)</li> <li>• Calhoun High School (Letohatchee)</li> </ul> | <ul style="list-style-type: none"> <li>• Central Elementary School (Gordonsville)</li> <li>• Central High School (Gordonsville)</li> </ul> |
|---|--|

- Fort Deposit Elementary School (Ft. Deposit)
- Hayneville Middle School (Hayneville)
- Jackson-Steele Elementary School (White Hall)
- Lowndes County Career & Technical Center (Hayneville)
- Lowndes County Middle School (Ft. Deposit)
- Lowndes Academy (Lowndesboro)

#### Other

- Ark of Love Skills Training Center (Mosses)
- Bancorp (Hayneville & Fort Deposit)
- Bell Enterprises (Hayneville)
- Bell Funeral Home (Hayneville)
- D&K Pharmacy (Ft. Deposit)
- Farm & Home Supply (Ft. Deposit)
- First Lowndes Bank (Hayneville & Ft. Deposit)
- Green Chapel (Hayneville)
- Hayneville Drug (Hayneville)
- First Citizens Bank
- Grocery Stores
- Major Industries
- 58 EPA Regulated Facilities as of May 2014

### Community Capacity

As discussed in the community profile section of this plan (Chapter 2), Lowndes County has significant obstacles to overcome in terms of securing adequate resources to effectively mitigate potential hazards. Chapter 2 also identified concentrations of vulnerable populations in terms of disabilities, age, lack of vehicles, poverty and unemployment. These population groups are considered to be dependent population groups because of their lack of mobility or income to be self-sufficient should of a hazard event occur. Based on the target population data, it is estimated that there are 9,258 individual incidences of persons with self-sufficiency barriers in Lowndes County. A large portion of the target population groups, however, experiences multiple, such as being disabled, unemployed and living below the poverty level. A conservative estimate might be half of the identified number of persons with barriers which equates to 4,629 persons, or 41.8 percent of the total population has a higher risk level than normal to sustain a hazard event.

#### Summary of Population Potentially At Risk to Hazards

Population Segment	Number	Percent of Total
Age 65 and over	1,689	15.20%
Persons with a Disability	2,339	21.10%
Persons Below Poverty Level	2,960	26.70%
Unemployed	751	17.40%
Households Without a Vehicle (average household size = 2.6 persons)	577 Households 1,519 Persons*	13.70%
<b>Lowndes County Total Population</b>		<b>11,086</b>
<b>Total Potentially Impacted by Unmet Transportation Needs</b>		<b>9,258</b>
<b>Percent Impacted</b>		<b>83.5%</b>

Source: U.S. Census, American Community Survey 2009-2013

\*Number of persons in households with no vehicle available was derived by multiplying the number of households with no vehicle available by the average household size.

A community capacity assessment was conducted to measure the ability of Lowndes County communities to mitigate hazards with their existing resources. Each community was given a numeric score out of a total of 55 possible points. Only Hayneville scored even half of the points at 50.9 percent. Hayneville was closely followed by Lowndesboro, Mosses, and Lowndes County. Benton and Gordonville each had a 36.4 percent rating, indicating that they are very poorly prepared to mitigate future disasters.

#### Hazard Mitigation Community Capacity Assessment

General	Lowndes County	Benton	Fort Deposit	Gordonville	Hayneville	Lowndesboro	Mosses	White Hall	Date of Adoption/Enforcement and Adequacy
Comprehensive/Master Plan	0	0	0	0	1	1	1	0	
Capital Improvements Plan	0	0	0	0	0	0	0	0	
Economic Development Plan	1	0	0	0	1	1	1	0	
Local Emergency Operations Plan	1	1	1	1	1	1	1	1	
Continuity of Operations Plan	0	0	0	0	0	0	0	0	
Transportation Plan	0	0	0	0	0	0	0	0	
Stormwater Management Plan	0	0	0	0	0	0	0	0	
Community Wildfire Protection Plan	0	0	0	0	0	0	0	0	
Other special plans (e.g., brownfields, redevelopment, disaster recovery, coastal zone mgmt, climate change adaptation)	1	1	1	1	1	1	1	1	Industrial Hazard Mitigation Plans, BOE Strategic Plan, BOE Crisis Mgmt Plan, County Floodplain Management Ordinance
<b>Score out of 9 possible points</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>2</b>	
Building Code, Permitting and Inspections	Lowndes County	Benton	Fort Deposit	Gordonville	Hayneville	Lowndesboro	Mosses	White Hall	Date of Adoption/Enforcement and Adequacy
Building Code	0	0	1	0	0	0	0	0	
Building Code Effectiveness Grading Schedule (BCEGS) Score	0	0	0	0	0	0	0	0	
Fire department ISO rating	1	1	1	1	1	1	1	1	High throughout county, except Burkeville (5/5)
Site plan review requirements	0	0	1	0	1	1	1	0	
<b>Score out of 4 possible points</b>	<b>1</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>4</b>	

<b>Land Use Planning and Ordinances</b>	<b>Lowndes County</b>	<b>Benton</b>	<b>Fort Deposit</b>	<b>Gordonville</b>	<b>Hayneville</b>	<b>Lowndesboro</b>	<b>Mosses</b>	<b>White Hall</b>	<b>Date of Adoption/Enforcement and Adequacy</b>
Zoning ordinance	n/a	0	1	0	1	1	1	0	
Subdivision ordinance	1	0	1	0	1	1	1	0	
Floodplain ordinance	1	0	0	0	0	0	0	0	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	0	0	0	0	0	0	0	0	
Flood insurance rate maps	1	1	1	1	1	1	1	1	
Acquisition of land for open space and public recreation areas	1	1	1	1	1	1	1	1	
Other									Private hunting lands, timber land
<b>Score out of 7 possible points</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	
<b>Administration and Staff</b>	<b>Lowndes County</b>	<b>Benton</b>	<b>Fort Deposit</b>	<b>Gordonville</b>	<b>Hayneville</b>	<b>Lowndesboro</b>	<b>Mosses</b>	<b>White Hall</b>	<b>Date of Adoption/Enforcement and Adequacy</b>
Planning Commission	n/a	0	1	0	0	1	1	0	
Mitigation Planning Committee	1	1	1	1	1	1	1	1	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	1	0	0	0	1	0	0	0	
Mutual aid agreements	1	1	1	1	1	1	1	1	Volunteer Fire Departments work together
Chief Building Official	1	0	0	0	0	0	0	0	
Floodplain Administrator	1	0	0	0	0	0	0	0	
Emergency Manager	1	0	0	0	0	0	0	0	
Community Planner	0	0	0	0	0	0	0	0	SCADC
Civil Engineer	1	0	0	0	0	0	0	0	
GIS Coordinator	0	0	0	0	0	0	0	0	SCADC
Other									
<b>Score out of 11 possible points</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	

Technical	Lowndes County	Benton	Fort Deposit	Gordonville	Hayneville	Lowndesboro	Mosses	White Hall	Date of Adoption/Enforcement and Adequacy
Warning systems/services (Reverse 911, outdoor warning signals)	1	1	1	1	1	1	1	1	
Hazard data and information	1	1	1	1	1	1	1	1	
Grant writing	0	0	0	0	0	0	0	0	SCADC
Hazus analysis	0	0	0	0	0	0	0	0	
Other									BOE Call System, Ham Radio Operators, 211, VFDs
<b>Score out of 6 possible points</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	
<b>Funding Resources</b>									
Capital improvements project funding	1	0	0	0	0	0	0	0	Highway Department
Authority to levy taxes for specific purposes	1	1	1	1	1	1	1	1	
Fees for water, sewer, gas, or electric services	0	0	1	0	1	1	1	1	
Impact fees for new development	0	0	0	0	0	0	0	0	
Storm water utility fee	0	0	0	0	0	0	0	0	
Incur debt through general obligation bonds and/or special tax bonds	1	1	1	1	1	1	1	1	
Incur debt through private activities	0	0	0	0	0	0	0	0	
Community Development Block Grant	1	1	1	1	1	1	1	1	
Other federal funding programs	1	1	1	1	1	1	1	1	FEMA Mitigation
State funding programs	1	1	1	1	1	1	1	1	
Other									
<b>Score out of 11 possible points</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	

<b>Education and Outreach</b>	<b>Lowndes County</b>	<b>Benton</b>	<b>Fort Deposit</b>	<b>Gordonville</b>	<b>Hayneville</b>	<b>Lowndesboro</b>	<b>Mosses</b>	<b>White Hall</b>	<b>Date of Adoption/Enforcement and Adequacy</b>
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	1	1	1	1	1	1	1	1	LEPC, VFDs, ACWP, Tawasee Point HOA, Lowndes Citizens United for Action
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	0	0	0	0	0	0	0	0	BOE health and science classes
Natural disaster or safety related school programs	1	1	1	1	1	1	1	1	BOE Severe weather week, monthly drills
StormReady certification	0	0	0	0	0	0	0	0	
Firewise Communities certification	0	0	0	0	0	0	0	0	
Public-private partnership initiatives addressing disaster-related issues	1	1	1	1	1	1	1	1	Local Industries
Other									
<b>Score out of 7 possible points</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	
<b>Community Composite Score</b>	<b>Lowndes County</b>	<b>Benton</b>	<b>Fort Deposit</b>	<b>Gordonville</b>	<b>Hayneville</b>	<b>Lowndesboro</b>	<b>Mosses</b>	<b>White Hall</b>	
<b>Composite Score out of 55 Possible Points</b>	<b>26</b>	<b>20</b>	<b>24</b>	<b>20</b>	<b>28</b>	<b>27</b>	<b>27</b>	<b>21</b>	
<b>Percentage Score</b>	<b>47.3%</b>	<b>36.4%</b>	<b>43.6%</b>	<b>36.4%</b>	<b>50.9%</b>	<b>49.1%</b>	<b>49.1%</b>	<b>38.2%</b>	



## **Development Patterns**

Lowndes County is centrally located in the State and is largely rural, with the primary land uses being agriculture. There has been little to no change in land development patterns in Lowndes County since the last hazard mitigation plan was adopted in 2008. Fort Deposit, the largest municipality, is located in the southeastern corner of the county, along Interstate 65. Other land uses in the county consist of: industrial areas, located primarily along major highways (e.g., GE Plastics near U.S. Highway 80 in Burkville and the various Hyundai automotive suppliers, such as Daehan Solution Corporation, located near Interstate 65); commercial located in each of the seven municipalities, in downtown areas and along major roads; residential areas, mostly located throughout the seven municipalities, and in very small pockets throughout the county; farmland, which is located throughout the county, but usually near streams and lower elevations; forests, located throughout the county, but especially in the southwestern half of the county; and various specialized lands uses (institutional, mixed, etc.) located in the seven municipalities, but especially in municipalities like Fort Deposit, Hayneville, and White Hall. Land uses within the municipalities are generally in conformance with current zoning and land use regulations, and are expected to remain in the current use for the foreseeable future.

Due to the rural nature of the county and the limited amount of industrial development forecasted for the next ten years, the land development pattern and population are expected to grow very modestly. Most of the growth is expected along the I-65 corridor, near the major interchanges, along US 84 towards the Montgomery airport and adjacent to the existing municipalities along the eastern side of the county such as Fort Deposit. The remainder of the county is not expected to undergo significant development pressure and there are not any anticipated changes in land use for the near future. Most of the industry and commercial development is located in the eastern end of the county near the US 84 and I-65.



## **Chapter 5**

### **Hazard Mitigation Strategy**

The 2015 Hazard Mitigation Strategy outlines methods, or action steps, for implementation of the Lowndes County Hazard Mitigation Plan over a five year time period. The strategy includes goals and objectives that were developed to guide the development of the plan and the subsequent mitigation efforts. The goals and objectives are followed by specific mitigation action steps to be implemented. The list of action steps includes an estimated cost per item and designates who the responsible agency or agencies should be. With input by from the governments and non-governmental organizations represented on the LEPC, and from public input received at the public meetings, the following goals and objectives were established by the LEPC to guide hazard mitigation efforts on an on-going basis beyond the five-year time frame of the implementation strategy. The goals, objectives and action steps were reviewed during the 2015 update planning process and amended as necessary to clearly define tasks that are both essential and attainable for the citizens of Lowndes County. A table outlining the review of the goals, objectives and mitigation measures is available in Appendix E in the meeting summary for the third meeting that was conducted on Wednesday, June 11, 2014. The table shows which mitigation measures were completed, remained valid, or were amended. The 2014 goals and objectives were confirmed for all of Lowndes County and all of its municipalities. The goals and objectives are listed below, followed by a detailed action strategy.

Due to the change in the change in the Lowndes County Emergency Management Directors and the lack of availability of emergency management records for legal reasons, it is unclear exactly how many times the LEPC met since 2008 and exactly which mitigation measures were accomplished. With the re-establishment of a local emergency planning committee in 2014, there was some local knowledge of progress on mitigation measures, which is reflected in the review of the mitigation strategy as included in the meeting minutes from the third workshop. Moving forward, the LEPC does intend to meet on an annual basis to review the Lowndes County Hazard Mitigation Plan; and will meet within six months of any declared disaster event. The full plan for monitoring and maintenance of the Lowndes County Hazard Mitigation Plan is provided in Chapter 6.

**Goal 1: Promote natural hazard mitigation as a means to decrease loss of life, property damage and economic loss during a disaster occurrence.**

Objective 1.1: Establish a full warning system for notification of impending disasters throughout Lowndes County.

Objective 1.2: Ensure that adequate protection shelters are available for use during disaster occurrences.

Objective 1.3: Develop and adopt, or amend, and enforce land use regulations and ordinances and modern building codes that support natural hazard mitigation efforts throughout Lowndes County.

Objective 1.4: Implement fire protection measures to decrease potential for loss of life and property damage.

Objective 1.5: Limit impact of heat and drought on human health, property damage, and agricultural losses.

Objective 1.6: Improve infrastructural facilities and remove at-risk commercial and residential buildings to limit the impact of natural hazard events.

Objective 1.7: Investigate, prepare, and provide for mitigation and emergency services and activities before, during, and after a disaster event.

**Goal 2: Provide on-going support of the Lowndes County Emergency Management efforts to make Lowndes County less vulnerable to natural disasters.**

Objective 2.1: Ensure that the Lowndes County Hazard Mitigation Plan remains current and is implemented.

Objective 2.2: Improve coordination and communication between emergency response organizations and highly vulnerable entities.

Objective 2.3: Enhance the county's and municipalities' capability to conduct further hazard risk assessments, better demonstrate funding needs, and track mitigation activities throughout the county.

**Goal 3: Educate general population about natural hazards and hazard mitigation options.**

Objective 3.1: Establish and implement hazard mitigation public awareness programs.

Objective 3.2: Establish and promote disaster prevention education programs, utilizing all forms of media (e.g., print, TV, internet websites - government and related non-governmental) to help distribute information and materials.

## Lowndes County Hazard Mitigation Action Steps

**Goal 1: Promote natural hazard mitigation as a means to decrease loss of life, property damage and economic loss during a disaster occurrence.**

<b>1.1. Establish a full warning system for notification of impending disasters throughout Lowndes County.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Install warning sirens as possible to ensure adequate coverage of population throughout Lowndes County, at a rate of one siren every two years and an estimated cost of \$17,500 per siren.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	\$52,500.00	Federal, State, Municipal	Lowndes County EMA
Designate a central emergency coordinator in each municipality and community to better facilitate communications with the Lowndes County Emergency Management Agency.	Countywide, All Municipalities	All Hazards	\$0.00	County, Municipal	Lowndes County EMA, Municipal Councils
Investigate use of phone messaging system to provide warning of all impending hazardous conditions.	Countywide, All Municipalities	All Hazards	\$0.00	County, Municipal	Lowndes County E911
<b>Total</b>			<b>\$52,500.00</b>		



<b>1.2 Ensure that adequate protection shelters are available for use during disaster occurrences.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Maintain and expand existing shelter facilities to provide adequate pre-disaster care and space, as needed.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	\$3,000.00	Federal, State, County, Municipal	Lowndes County EMA, Shelter Operators
Designate and upgrade/retrofit, as necessary, existing public and institutional facilities to provide shelter in areas of Lowndes County where there currently are no shelters, primarily targeting schools, churches, and community centers, at a rate of one site every two years.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	\$37,500.00	Federal, State, County, Municipal	Lowndes County EMA, Shelter Operators
Purchase emergency power generators for shelters and for distribution to provide emergency power during natural disaster events. -- How Many?	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	\$0.00	County	Lowndes County EMA
Partner with non-profit and private organizations, as possible, to construct new public shelter facilities in those areas of the county with no shelter facilities.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	\$15,000 per shelter	State	Lowndes County EMA, Non-Profits, Private Entities
Secure funds to continue efforts to assist citizens in constructing private shelters on their land at a rate of seven shelters per year. (Approx. \$5,000 per shelter)	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	\$175,000.00	Federal, Private	Lowndes County EMA
Work with developers, homebuilders and contractors to promote construction of a safe room in all new residential development.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	\$0.00	County, Municipal	Lowndes County EMA, City Building Officials
Publicize information on locations of existing public shelters and when to use them.	Countywide, All Municipalities	All Hazards	\$2,500.00	County	Lowndes County EMA

**Total**

**\$218,000.00**

<b>1.3 Develop and adopt, or amend, and enforce land use regulations and ordinances and modern building codes that support natural hazard mitigation efforts throughout Lowndes County.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Incorporate and enforce flood management provisions in all county and municipal land use regulations and zoning ordinances.	Countywide, All Municipalities	Flooding	<b>\$0.00</b>	County, Municipal	Building Officials
Promote the best use of flood plain areas for environmental management, recreational development, and aesthetic enjoyment in all future land use and development plans and policies.	Countywide, All Municipalities	Flooding	<b>\$0.00</b>	County, Municipal	County and Municipal Building Officials
Develop long-range growth and development plan for Lowndes County to address permitting and construction process in unincorporated areas.	Unincorporated Communities	All Hazards	<b>\$30,000.00</b>	Federal, State, County	County Engineer
Adopt and enforce modern building codes (e.g., the 2003 International Building Code or the NFPA 5000) at the county and municipal levels.	Countywide, All Municipalities	All Hazards	<b>\$0.00</b>	County, Municipal	County and Municipal Building Officials
Ensure that the Lowndes County Emergency Management Agency is involved in the review of all local future growth and development plans.	Countywide, All Municipalities	All Hazards	<b>\$0.00</b>	County, Municipal	County and Municipal Building Officials
Identify and obtain properties in floodplains to be used for greenways, open spaces, parks, trails, and other recreational activities.	Countywide, All Municipalities	Flooding	<b>TBD</b>	Federal, State, County, Municipal	Lowndes County, All Municipal Planning Officials
Promote and encourage the County and municipalities that are located in known floodplains, and that are not participating in and/or are sanctioned by FEMA's National Flood Insurance Program (NFIP), to join/rejoin the NFIP.	Countywide, All Municipalities	Flooding	<b>\$0.00</b>	County, Municipal	Lowndes County Engineering, Councils
Consider road signage program to ensure that citizens and travelers are aware of location of flood-prone areas.	Countywide, All Municipalities	Flooding	<b>\$500 per sign</b>	County, State	County Engineering

Total

**\$30,000.00**

<b>1.4 Implement fire protection measures to decrease potential for loss of life and property damage.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Establish education program to provide information on methods to construct buffers and fire breaks on private property in wild land interface areas.	Countywide, All Municipalities	Wildfires	<b>\$0.00</b>	Federal, State, County	Lowndes County EMA, All VFDs
Support Alabama Forestry Commission efforts to help educate private landowners to protect their own and other's property through construction of fire lanes and fire breaks on forested property, making landowners aware of both their responsibility and liability.	Countywide, All Municipalities	Wildfires	<b>\$0.00</b>	County, Municipal	Lowndes County EMA, All VFDs
Total			<b>\$0.00</b>		

<b>1.5 Limit impact of heat and drought on human health, property damage and agricultural losses.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Work with the county and municipalities to implement public awareness and education efforts about water conservation and water quality.	Countywide, All Municipalities	Extreme Heat, Drought	<b>\$0.00</b>	Municipal, Water Providers	Water Providers
Work with Lowndes County medical providers to develop emergency supplies and education program.	Countywide, All Municipalities	All Hazards	<b>\$0.00</b>	County, Medical Providers	Lowndes County Health Department
Work with Lowndes County Farm Service Agency and County Extension Service to establish a drought information center.	Countywide, All Municipalities	Extreme Heat, Drought	<b>\$0.00</b>	Federal, State, County	Lowndes County
Develop a drought and heat indicator plan and warning system that includes a response strategy.		Extreme Heat, Drought	<b>\$0.00</b>	State, County	Farm Service Agency
Develop print public service announcements.	Countywide, All Municipalities	Extreme Heat, Drought	<b>\$2,500.00</b>	State, County	Farm Service Agency
Total			<b>\$2,500.00</b>		

<b>1.6 Improve infrastructural facilities and remove at-risk commercial and residential buildings to limit the impact of natural hazard events.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Identify roads that require elevation and paving, and that have a high potential for flooding and/or washing during flood events, to provide access and limit erosion and sedimentation.	Countywide, All Municipalities	Flooding	<b>\$0.00</b>	State, County, Municipal	ALDOT, Lowndes County Engineering
Continue bridge inspection and improvement efforts to prevent washing and/or failure during flood events.	Countywide, All Municipalities	Flooding	<b>\$7,000,000.00</b>	Federal, State, County	ALDOT, Lowndes County Engineering
Maintain all county roads to allow constant access for emergency response, recovery and repair, and continuity of delivery services at eight roads per year. Also, the LEPC will continue to work with the county and other jurisdictions to improve drainage systems in the unincorporated and incorporated parts of the county.	County Unincorporated Communities	All Hazards	<b>\$5,000,000.00</b>	Federal, State, County	ALDOT, Lowndes County Engineering
Utilize AEMA Flood Relocation Program and other appropriate FEMA and/or AEMA programs to remove at-risk commercial and residential structures from flood prone and other natural hazard areas, if necessary in the future.	Countywide, All Municipalities	All Hazards	<b>\$500,000.00</b>	Federal, State, County, Municipal	Lowndes County EMA, Lowndes County, All Municipalities
<b>Total</b>			<b>\$12,500,000</b>		

<b>1.7 Investigate, prepare, and provide for mitigation and emergency services and activities before, during, and after a disaster event.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Investigate need for emergency water supply during disaster events.	Countywide, All Municipalities	All Hazards	<b>\$0.00</b>	State, Water Providers	All Water Providers
Limit non-critical water consumption during severe drought conditions.	Countywide, All Municipalities	Extreme Heat, Drought	<b>\$0.00</b>	Water Providers	All Water Providers
Inventory the county's emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment, or required resources.	Countywide, All Municipalities	All Hazards	<b>\$0.00</b>	County, Municipal	Lowndes County EMA, All VFDs
Investigate the need and feasibility of establishing a local reserve fund for repairing and/or incorporating hazard mitigation measures for public and private facilities and infrastructure that are at risk of being damaged or have been damaged by natural hazards.	Countywide, All Municipalities	All Hazards	<b>\$0.00</b>	County, Municipal, Private	County Commission, All Municipal Councils
Continue to research and provide hazard mitigation, emergency preparedness, and disaster recovery grant writing and/or administration services for available grant and loan programs (e.g., AFGP, FMA, HMGP, PDM, etc.).	Countywide, All Municipalities	All Hazards	<b>\$0.00</b>	County, Municipal	Lowndes County EMA
Investigate the need for and acquire emergency electrical power generation equipment to provide back-up emergency electrical power to critical facilities.	Countywide, All Municipalities	All Hazards	<b>\$150,000.00</b>	Federal, State, County, Municipal	Lowndes County EMA , Lowndes County Commission, All Municipalities

Total

**\$150,000**

GRAND TOTAL FOR GOAL 1

**\$12,953,000**

**Goal 2: Provide ongoing support of the Lowndes County Emergency Management efforts to make Lowndes County less vulnerable to natural disasters.**

<b>2.1 Ensure that the Lowndes County Hazard Mitigation Plan remains current and is implemented.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Update the Lowndes County Hazard Mitigation Plan every five years as required by regulations.	Countywide, All Municipalities	All Hazards	\$30,000.00	Federal, State, County	Lowndes County EMA
Communicate with the general public at least annually to provide a status report of the plan and any project or programs that are a result of the plan and its implementation.	Countywide, All Municipalities	All Hazards	\$12,500.00	County	Lowndes County EMA
Municipalities should provide local human resources and other resources, such as materials and supplies, to assist in implementation of the Lowndes County Hazard Mitigation Plan and its regular update.	Countywide, All Municipalities	All Hazards	\$25,000.00	Municipal	All Municipalities

**Total**

**\$67,500.00**

<b>2.2 Improve coordination and communication between emergency response organizations and highly vulnerable entities.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Designate a central emergency coordinator in each municipality and community to better facilitate communications with the Lowndes County Emergency Management Agency.	Countywide, All Municipalities	All Hazards	\$0.00	County, Municipal	County Commission, All Municipal Governments
Provide for incident command training for the local emergency coordinators and other responders.	Countywide, All Municipalities	All Hazards	\$2,000.00	Federal, State, County	Lowndes County EMA
Develop an on-going cycle to provide regular updates to the Lowndes County Commission, municipal councils, fire protection and law enforcement officials, utility boards, and other emergency responders.	Countywide, All Municipalities	All Hazards	\$7,500.00	County	Lowndes County EMA
Investigate the need and feasibility of upgrading communications systems and increasing coverage and compatibility across the county and municipalities.	Countywide, All Municipalities	All Hazards	\$0.00	County, Municipal	Lowndes County EMA

**Total**

**\$9,500.00**



<b>2.3 Enhance the county's and municipalities' capability to conduct further hazard risk assessments, better demonstrate funding needs, and track mitigation activities throughout the county.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Continue to identify the county's most at-risk critical facilities, and evaluate the potential mitigation techniques and activities for protecting each facility to the maximum extent possible.	Countywide, All Municipalities	All Hazards	\$0.00	County, Municipal & All Utilities	Lowndes County EMA, LEPC, Local Governments, Utilities
Incorporate (or continue) development of a Geographic Information System (GIS) to maintain current cadastral and spatial data for purposes of inventorying critical facilities and infrastructure, conducting more detailed hazard risk assessments, and for tracking permitting and land use patterns.	Countywide, All Municipalities	All Hazards	\$176,000.00	State, SCADC, County, Municipal	State, SCADC, Lowndes County EMA, E-911, County Tax Assessor, County and Municipal Building Officials, Utilities

**Total**

**\$176,000.00**

**GRAND TOTAL FOR GOAL 2**

**\$253,000.00**

**Goal 3: Education general population about natural hazards and hazard mitigation options.**

<b>3.1 Establish and implement hazard mitigation public awareness program.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Cooperate and coordinate with various agencies and entities to assist with distribution of information and materials, including Chambers of Commerce, DHR, Lowndes County Board of Education, churches, municipalities, etc.	Countywide, All Municipalities	All Hazards	\$2,500.00	County, Municipal, Private	Lowndes County EMA, LEPC
Develop a portable information booth for display at local fairs and public events to distribute materials.	Countywide, All Municipalities	All Hazards	\$5,500.00	County, Municipal	Lowndes County EMA, LEPC
Create and distribute magnets that list all emergency contact information of local responding agencies.	Countywide, All Municipalities	All Hazards	\$2,500.00	County, Municipal, Private	Lowndes County EMA, LEPC, All Municipalities
<b>Total</b>			<b>\$10,500.00</b>		

<b>3.2 Establish and promote disaster prevention education programs, utilizing all forms of media (e.g., print, TV, internet websites - government and related non-governmental) to help distribute information and materials.</b>	<b>Geographic Beneficiaries</b>	<b>Hazards Addressed</b>	<b>Estimated Cost Over 5 Years</b>	<b>Funding Source</b>	<b>Responsible Agency</b>
Investigate working with Lowndes County Extension System to develop adult training/certification courses on land management (best management practices) to decrease property damage during natural disaster events.	Countywide, All Municipalities	All Hazards	\$20,000.00	USDA, County	Lowndes County EMA, LEPC
Develop broadcast public service announcements for airing on local television and radio stations.	Countywide, All Municipalities	All Hazards	\$15,000.00	County, Municipal	Lowndes County EMA, LEPC
Develop print public service announcements for publication in local newspaper and agency newsletters.	Countywide, All Municipalities	All Hazards	\$2,500.00	County, Municipal	Lowndes County EMA, LEPC
Develop information website with links from Lowndes County Commission and municipal websites.	Countywide, All Municipalities	All Hazards	\$4,400.00	County, Municipal, Private	Lowndes County EMA, LEPC
Incorporate hazard awareness and mitigation into the curricula of local schools.	Countywide, All Municipalities	All Hazards	\$7,000.00	State & County	Lowndes County BOE
Develop coloring and activity books at four appropriate age levels for widespread annual distribution.	Countywide, All Municipalities	All Hazards	\$6,500.00	Federal, State, County, Municipal	Lowndes County EMA, Lowndes County BOE
<b>Total</b>			<b>\$55,400.00</b>		
<b>GRAND TOTAL FOR GOAL 3</b>			<b>\$65,900.00</b>		

## **Lowndes County Hazard Mitigation Plan Action Prioritization**

In considering the appropriate precedence of mitigation activities to undertake, the Lowndes County LEPC reviewed the hazard profiles and prioritization, and the hazard risk assessment and vulnerability analysis. Factors considered by the LEPC included social impact, technical feasibility, financial costs, administrative capabilities, possible political and legal affects, as well as other issues. The resulting priorities reflect the thinking of the LEPC relative to the cost and potential benefit of the actions recommended. Included in the process is the awareness by the LEPC of the availability of federal, state and local program funding and priorities. It was determined by the LEPC that all of the proposed actions would benefit citizens of Lowndes County and each of its municipalities. It was also decided that formal cost-benefit evaluations for specific actions should be completed when and if required (e.g., when applying for certain FEMA grant funds). Following this review and discussion, the following prioritization proposal was completed by the LEPC in order to assist the jurisdictions with the implementation of the Plan.

The prioritization program shown on the following pages lists each mitigation measure, indicates which hazards are addressed by the mitigation measure, assigns a priority level of low, moderate or high priority, and a target completion date. Priority levels for mitigation actions are defined below:

- High Priority:        These mitigation actions are those that measures that should be implemented immediately or that will have the most significant impact on the Lowndes County population.
- Moderate Priority:   Mitigation activities that are a moderate priority include those actions that are highly needed but the impact is not as significant as the high priority actions.
- Low Priority:        These mitigation measures are those activities that will enhance the hazard mitigation capacity of Lowndes County, but are not necessary to protect individuals and properties from impending disaster events.

Many of the listed mitigation measures are ongoing activities that should continue from year to year and should be included in all future hazard mitigation plan updates. The warning sirens are again an example of a high priority activity that will take several years to fully implement at the proposed rate of one siren every two years. With respect to determining priorities, the LEPC paid attention to the likely cost benefit of various strategies and projects given the relative impact of hazards in the county and the cost of mitigating that impact. In future updates of the plan, the LEPC, the county and municipalities will emphasize the cost and benefit of various projects and strategies in determining and revising priorities. This will be possible as more detailed data is incorporated into future updates.

**Goal 1: Promote natural hazard mitigation as a means to decrease loss of life, property damage and economic loss during a disaster occurrence.**

<b>1.1. Establish a full warning system for notification of impending disasters throughout Lowndes County.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Install warning sirens as possible to ensure adequate coverage of population throughout Lowndes County, at a rate of one siren every two years.	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	High	10/1/2016
Designate a central emergency coordinator in each municipality and community to better facilitate communications with the Lowndes County Emergency Management Agency.	All Hazards	High	10/1/2016
Investigate use of phone messaging system to provide warning of all impending hazardous conditions.	All Hazards	High	12/30/2016

<b>1.2 Ensure that adequate protection shelters are available for use during disaster occurrences.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Maintain and expand existing shelter facilities to provide adequate pre-disaster care and space, as needed.	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	High	9/30/2017
Designate and upgrade/retrofit, as necessary, existing public and institutional facilities to provide shelter in areas of Lowndes County where there currently are no shelters, primarily targeting schools, churches, and community centers, at a rate of one site every two years.	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	Moderate	9/30/2018
Purchase emergency power generators for shelters and for distribution to provide emergency power during natural disaster events.	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	Low	9/30/2019
Partner with non-profit and private organizations, as possible, to construct new public shelter facilities in those areas of the county with no shelter facilities.	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	Low	9/30/2019
Secure funds to continue efforts to assist citizens in constructing private shelters on their land at a rate of seven shelters per year. (Approx. \$5,000 per shelter)	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	High	9/30/2017
Work with developers, homebuilders and contractors to promote construction of a safe room in all new residential development.	Tornadoes, Hurricanes, Tropical Storms, Severe Storms	Moderate	9/30/2018
Publicize information on locations of existing public shelters and when to use them.	All Hazards	High	9/30/2016

<b>1.3 Develop and adopt, or amend, and enforce land use regulations and ordinances and modern building codes that support natural hazard mitigation efforts throughout Lowndes County.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Incorporate and enforce flood management provisions in all county and municipal land use regulations and zoning ordinances.	Flooding	High	9/30/2016
Promote the best use of flood plain areas for environmental management, recreational development, and aesthetic enjoyment in all future land use and development plans and policies.	Flooding	High	Ongoing
Develop long-range growth and development plan for Lowndes County to address permitting and construction process in unincorporated areas.	All Hazards	Moderate	9/30/2017
Adopt and enforce modern building codes (e.g., the 2003 International Building Code or the NFPA 5000) at the county and municipal levels.	All Hazards	High	9/30/2017
Ensure that the Lowndes County Emergency Management Agency is involved in the review of all local future growth and development plans.	All Hazards	Moderate	9/30/2018
Identify and obtain properties in floodplains to be used for greenways, open spaces, parks, trails, and other recreational activities.	Flooding	High	3/31/2017
Promote and encourage the County and municipalities that are located in known floodplains, and that are not participating in and/or are sanctioned by FEMA's National Flood Insurance Program (NFIP), to join/rejoin the NFIP.	Flooding	High	9/30/2016
Consider road signage program to ensure that citizens and travelers are aware of location of flood-prone areas.	Flooding	Low	9/30/2019



<b>1.4 Implement fire protection measures to decrease potential for loss of life and property damage.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Establish education program to provide information on methods to construct buffers and fire breaks on private property in wild land interface areas	Wildfires	Moderate	12/31/2016
Support Alabama Forestry Commission efforts to help educate private landowners to protect their own and other's property through construction of fire lanes and fire breaks on forested property, making landowners aware of both their responsibility and liability.	Wildfires	Moderate	Ongoing

<b>1.5 Limit impact of heat and drought on human health, property damage and agricultural losses.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Work with the county and municipalities to implement public awareness and education efforts about water conservation and water quality.	Extreme Heat, Drought	Moderate	9/30/2018
Work with Lowndes County medical providers to develop emergency supplies and education program.	All Hazards	Moderate	9/30/2018
Work with Lowndes County Farm Service Agency and County Extension Service to establish a drought information center.	Extreme Heat, Drought	Moderate	9/30/2017
Develop a drought and heat indicator plan and warning system that includes a response strategy.	Extreme Heat, Drought	Moderate	9/30/2017
Develop print public service announcements.	Extreme Heat, Drought	Moderate	9/30/2017

<b>1.6 Improve infrastructural facilities and remove at-risk commercial and residential buildings to limit the impact of natural hazard events.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Identify roads that require elevation and paving, and that have a high potential for flooding and/or washing during flood events, to provide access and limit erosion and sedimentation.	Flooding	Moderate	4/30/2017
Continue bridge inspection and improvement efforts to prevent washing and/or failure during flood events.	Flooding	High	12/30/2016

Maintain county roads to allow constant access for emergency response, recovery and repair, and continuity of delivery services at eight roads per year. Also, the LEPC will continue to work with the county and other jurisdictions to improve drainage systems in the unincorporated and incorporated parts of the county.	All Hazards	High	9/30/2017
Utilize AEMA Flood Relocation Program and other appropriate FEMA and/or AEMA programs to remove at-risk commercial and residential structures from flood prone and other natural hazard areas, if necessary in the future.	All Hazards	High	9/30/2017
<b>1.7 Investigate, prepare, and provide for mitigation and emergency services and activities before, during, and after a disaster event.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Investigate need for emergency water supply during disaster events.	All Hazards	Moderate	9/30/2018
Limit non-critical water consumption during severe drought conditions.	Extreme Heat, Drought	Moderate	9/30/2018
Inventory the county's emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment, or required resources.	All Hazards	High	9/30/2016
Investigate the need and feasibility of establishing a local reserve fund for repairing and/or incorporating hazard mitigation measures for public and private facilities and infrastructure that are at risk of being damaged or have been damaged by natural hazards.	All Hazards	High	9/30/2016
Continue to research and provide hazard mitigation, emergency preparedness, and disaster recovery grant writing and/or administration services for available grant and loan programs (e.g., AFGP, FMA, HMGP, PDM, etc.).	All Hazards	Moderate	4/30/2017
Investigate the need for and acquire emergency electrical power generation equipment to provide back-up emergency electrical power to critical facilities.	All Hazards	High	12/30/2016

**Goal 2: Provide ongoing support of the Lowndes County Emergency Management efforts to make Lowndes County less vulnerable to natural disasters.**

<b>2.1 Ensure that the Lowndes County Hazard Mitigation Plan remains current and it implements</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Update the Lowndes County Hazard Mitigation Plan every five years as required by regulations.	All Hazards	Moderate	9/30/2019
Communicate with the general public at least annually to provide a status report of the plan and any project or programs that are a result of the plan and its implementation.	All Hazards	Moderate	Ongoing
Municipalities should provide local human resources and other resources, such as materials and supplies, to assist in implementation of the Lowndes County Hazard Mitigation Plan and its regular update.	All Hazards	High	Ongoing

<b>2.2 Improve coordination and communication between emergency response organizations and highly vulnerable entities.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Designate a central emergency coordinator in each municipality and community to better facilitate communications with the Lowndes County Emergency Management Agency.	All Hazards	High	9/30/2016
Provide for incident command training for the local emergency coordinators and other responders.	All Hazards	High	9/30/2017
Develop an on-going cycle to provide regular updates to the Lowndes County Commission, municipal councils, fire protection and law enforcement officials, utility boards, and other emergency responders.	All Hazards	Moderate	Ongoing
Investigate the need and feasibility of upgrading communications systems and increasing coverage and compatibility across the entire county and its municipalities.	All Hazards	Moderate	9/30/2018

<b>2.3 Enhance the county's and municipalities' capability to conduct further hazard risk assessments, better demonstrate funding needs, and track mitigation activities throughout the county.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Continue to identify the county's most at-risk critical facilities, and evaluate the potential mitigation techniques and activities for protecting each facility to the maximum extent possible.	All Hazards	High	9/30/2016
Incorporate (or continue) development of a Geographic Information System (GIS) to maintain current cadastral and spatial data for purposes of inventorying critical facilities and infrastructure, conducting more detailed hazard risk assessments, and for tracking permitting and land use patterns.	All Hazards	High	Continuous

**Goal 3: Education general population about natural hazards and hazard mitigation options**

<b>3.1 Establish and implement hazard mitigation public awareness program.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Cooperate and coordinate with various agencies and entities to assist with distribution of information and materials, including Chambers of Commerce, DHR, Lowndes County Board of Education, churches, municipalities, etc.	All Hazards	Moderate	Continuous
Develop a portable information booth for display at local fairs and public events to distribute materials.	All Hazards	Moderate	9/30/2018
Create and distribute magnets that list all emergency contact information of local responding agencies.	All Hazards	Moderate	9/30/2017

<b>3.2 Establish and promote disaster prevention education programs, utilizing all forms of media (e.g., print, TV, internet websites - government and related non-governmental) to help distribute information and materials.</b>	<b>Hazards Addressed</b>	<b>Priority</b>	<b>Target Completion Date</b>
Investigate working with Lowndes County Extension System to develop adult training/certification courses on land management (best management practices) to decrease property damage during natural disaster events.	All Hazards	Moderate	9/30/2018
Develop broadcast public service announcements for airing on local television and radio stations.	All Hazards	Moderate	9/30/2018
Develop print public service announcements for publication in local newspaper and agency newsletters.	All Hazards	Moderate	9/30/2018
Develop information website with links from Lowndes County Commission and municipal websites.	All Hazards	Moderate	9/30/2018
Incorporate hazard awareness and mitigation into the curricula of local schools.	All Hazards	Moderate	9/30/2018
Develop coloring and activity books at four appropriate age levels for widespread annual distribution.	All Hazards	Low	9/30/2019

## Chapter 6

### Plan Review and Maintenance

This chapter includes FEMA's Local Mitigation Plan Review Tool, along with a discussion of how the Lowndes County Hazard Mitigation Plan will be reviewed and maintained at the local level and a discussion of the plans strengths and opportunities for improvement. Updates to the 2015 Plan from the 2008 Plan include the addition of the 2015 Lowndes County Hazard Mitigation Plan Regulation Checklist and the 2015 Lowndes County Hazard Mitigation Plan Multi-Jurisdiction Summary Sheet. Both are included in this chapter, along with procedures for the review, maintenance and amendment of the plan.

The Local Mitigation Plan Review Tool which begins on the following page is a FEMA requirement and the worksheets are taken directly from the *FEMA Local Mitigation Plan Review Guide*, published in October 2011. The worksheets were completed based on the 2015 Lowndes County hazard mitigation planning process. The Local Mitigation Plan Review Tool will be reviewed by the AEMA and then by FEMA prior to approval of the 2015 Lowndes County Hazard Mitigation Plan. Even upon approval, the Local Mitigation Plan Review Tool will remain a part of the final plan.



## Local Mitigation Plan Review Tool

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

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

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

<b>Jurisdiction:</b> Lowndes County, Alabama including the Towns of Benton, Fort Deposit, Gordonville, Hayneville, Lowndesboro, Mosses and White Hall	<b>Title of Plan:</b>  Lowndes County Hazard Mitigation Plan Update, 2015	<b>Date of Plan:</b>  August 11, 2014 March 2015 March 17, 2016
<b>Local Point of Contact:</b> Mr. David Butts	<b>Address:</b>  P.O. Box 235 Hayneville, AL 36040	
<b>Title:</b> EMA Director / County Engineer		
<b>Agency:</b> Lowndes County Emergency Management Agency		
<b>Phone Number:</b> 334-548-5375 office 334-412-9078 (cell)	<b>E-Mail:</b> lcengr@htcnet.net	

<b>State Reviewer:</b>	<b>Title:</b>	<b>Date:</b>
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<b>FEMA Reviewer:</b>	<b>Title:</b>	<b>Date:</b>
<b>Date Received in FEMA Region</b> <i>(insert #)</i>		
<b>Plan Not Approved</b>		
Plan Approvable Pending Adoption		
<b>Plan Approved</b>		

**LOCAL MITIGATION PLAN REVIEW TOOL -- SECTION 1:  
REGULATION CHECKLIST**

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

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT A. PLANNING PROCESS</b>				
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))		LEPC - Pgs. V & vi; Ch 1, Pgs 2-6; Ch 6, Pg 97	X	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))		Ch 1, Pgs 3-4	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))		Ch 1, Pg 3, ¶ 1-2; Pgs 3-4	X	
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))		Ch 1, Pg 3, ¶1; Ch 1, Pg 5, ¶4; Ch 3, Pg 55 ¶2	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))		Ch 6, Pg 99	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))		Ch 6, Pgs 100-102	X	
<b><u>ELEMENT A: REQUIRED REVISIONS</u></b>				

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT</b>				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Discussion found in Ch 3, Pgs 26-55	X		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Ch 3, Pgs 26-55; Ch 4, Pgs 60-62	X		
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Ch 4, Pgs 59-63	X		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Ch 3, Pgs 31-32	X		
<b><u>ELEMENT B: REQUIRED REVISIONS</u></b>				
<b>ELEMENT C. MITIGATION STRATEGY</b>				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Ch 4, Pgs 65-69	X		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Ch3, Pg 32 ¶12	X		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Ch 5, Pg 73	X		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Ch 5, Pgs75-84	X		
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Ch 5, Pgs 85-92	X		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Ch 6, Pg 103	X		
<b><u>ELEMENT C: REQUIRED REVISIONS</u></b>				

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
<b>ELEMENT D. PLAN REVIEW, EVALUATION AND IMPLEMENTATION (applicable to plan updates only)</b>				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Ch 4, Pg 69	X		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Ch 5, Pg 71	X		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Ch 3, Pgs 55-56 Ch 5, Pgs 84-91	X		
<b><u>ELEMENT D: REQUIRED REVISIONS</u></b>				
<b>ELEMENT E. PLAN ADOPTION</b>				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5)) §201.6(c)(3))	Pending FEMA Review Draft Resolution, Appendix C, Pg 135	X		
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Pending FEMA Review Draft Resolution, Appendix C, Pg 135	X		
<b><u>ELEMENT E: REQUIRED REVISIONS</u></b>				
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)</b>				
F1.				
F2.				
<b><u>ELEMENT F: REQUIRED REVISIONS</u></b>				



**LOCAL MITIGATION PLAN REVIEW TOOL -- SECTION 3:  
MULTI-JURISDICTION SUMMARY SHEET**

#	Jurisdiction Name	Jurisdiction Type	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption*	F. State Requirements
1	Lowndes County, Alabama	County	David Butts	P.O. Box 67 Hayneville, AL 36040	lcengr@htcnet.net	334-548-2324	X	X	X	X	P	NA
2	Town of Benton	Municipal	Edie Hornsby	908 Houston Park Selma, AL 36701	townofbenton@gmail.com	334-875-1020	X	X	X	X	P	NA
3	Town of Fort Deposit	Municipal	William Stiener	P.O. Box 36 Fort Deposit, AL 36032	wstiener@elmore.rr.com	334-590-9263	X	X	X	X	P	NA
4	Town of Gordonville	Municipal	Willie C. Davis	404 Wall Street Hayneville, AL 36040	brenda.davis41@yahoo.com	334-563-7730	X	X	X	X	P	NA
5	Town of Hayneville	Municipal	Kevin Lawrence	P.O. Box 365 Hayneville, AL 36040	tamaremccord@yahoo.com	334-548-2128	X	X	X	X	P	NA
6	Town of Lowndesboro	Municipal	David Spooner	P.O. Box 253 Lowndesboro, AL 36752	dlsponer@gmail.com	334-549-4153	X	X	X	X	P	NA
7	Town of Mosses	Municipal	Alicia Howard	P.O. Box 296 Hayneville, AL 36040	cityofmosses45@yahoo.com	334-850-1926	X	X	X	X	P	NA
8	Town of White Hall	Municipal	Shanavia Sellers	989 Freedom Road Lowndesboro, AL 36752	citywhitehall45@msn.com	334-875-5703	X	X	X	X	P	NA

\* Plan adoption is pending (P) approval by FEMA.





## Plan Review, Maintenance and Amendments

The Lowndes County Hazard Mitigation Plan is developed on a five-year time frame. It is intended to be reviewed on an annual basis for any necessary amendments, and to undergo a major review and update every five years. In this way, Lowndes County will have an ongoing mitigation plan and process.

The Lowndes County EMA staff will continue to serve as the LEPC's facilitator responsible for holding regularly scheduled meetings, assigning specific tasks necessary to monitor and update the plan to Committee members, and serving as the Committee's liaison with those assigned implementation responsibilities. The facilitator will also serve as the Committee's liaison with participating municipalities and the county Commission. New committee members may be nominated by the EMA Coordinator and then approved by the entire committee.

After the Lowndes County Natural Hazard Mitigation Plan Update 2015 is finalized and adopted, the LEPC shall meet at least once per year to review and update the plan, as necessary.

- Each member or a designated alternate must attend at least one meeting a year.
- A list of completed and ongoing mitigation projects will be reviewed at each meeting.
- Previously implemented mitigation actions will be evaluated for effectiveness.
- There will be an update on the status of current mitigation projects.
- Changing land use patterns and new developments will be addressed.
- Any additions or changes in risk assessment and/or risk vulnerability will be identified.
- Any other concerns will be addressed, possible future mitigation plans discussed, and any new projects will be adopted.

The facilitator will schedule the meetings at a time and location convenient to all of the LEPC members. All meetings will be advertised in the local newspaper and open to the public for their comments and suggestions. In the event that modifications to the plan are required, the LEPC will oversee, recommend, and/or approve all revisions and amendments to the Lowndes County Natural Hazards Mitigation Plan. The LEPC will then submit all revisions, except for mitigation projects or activities not of a countywide nature, for adoption (via signed resolutions) by all of the jurisdictions. Any new projects or activities (developed and/or proposed prior to the first five-year and between subsequent five-year major updates), not of a countywide nature, will be added to the Lowndes County Natural Hazards Mitigation Plan upon recommendation of the LEPC and adoption (via signed resolution) by the appropriate governing body where the proposed project is to be located.

In the event that emergency modifications to the plan are required and if Lowndes County and/or any of the jurisdictions located therein are involved in an active disaster declaration at the time the modifications are needed, and if the LEPC is unable to meet in a timely fashion and prior to any AEMA and/or FEMA deadlines in order to conduct the revision and amendment process outlined in the immediately preceding paragraph above, then the Lowndes County EMA Coordinator can recommend revisions and amendments to the Lowndes County Natural Hazards Mitigation Plan. The Lowndes County EMA Coordinator can then submit any emergency revisions, except for mitigation projects or activities not of a countywide nature, for written approval by the Lowndes County Commission. The written approval of just the Chairperson of the Lowndes County Commission is acceptable if (1) the membership of the County Commission is unable to meet in a timely fashion and prior to any AEMA and/or FEMA deadlines, **and** (2) assuming that the proposed revisions do not require or involve local

financial commitments or expenditures. Any emergency projects or activities, not of a countywide nature, will be added to the Lowndes County Natural Hazard Mitigation Plan upon recommendation of the Lowndes County EMA Coordinator and written approval by the appropriate municipal council where the proposed project or activity is to be located. The written approval of just the mayor of the municipality is acceptable if (1) the membership of the respective municipal council is unable to meet in a timely fashion and prior to any AEMA and/or FEMA deadlines, and (2) assuming that the proposed revisions do not require or involve local financial commitments or expenditures. If any emergency modifications to the plan are required and are adopted or approved without the expressed approval (either via signed resolutions or letters of approval) of the memberships of the appropriate governing bodies, the said governing bodies may reserve the right to express their approval and adoption via a later vote.

A copy of and/or access to any and all adopted plan revisions will be provided to all LEPC members, the County Commission, and each of the municipalities. At the end of the five-year cycle of the Action Program, the Committee will oversee a major update to the plan that follows the Federal planning criteria in effect at the time of the update. The updated plan will again be submitted to the AEMA and FEMA for approval.

Implementation of the plan will be the responsibility of a number of local governments and agencies. For this reason, four workshop meetings and one public hearing were held to inform citizens about the contents of the plan. For each mitigation action item, a responsible agency has been identified. Furthermore, the implementation of the action items was outlined by year for the first five years. The Lowndes County Emergency Management Agency will coordinate implementation efforts with each of the local governments and with other agencies as necessary. A critical part of maintaining an effective and relevant natural hazard mitigation plan is ongoing public review and comment. The LEPC is dedicated to direct involvement of the citizens of Lowndes County in providing input on the plan throughout the five-year implementation cycle.

A hard copy of the plan will be available for viewing at all appropriate agencies throughout Lowndes County, at minimum to include: the Lowndes County Emergency Management Agency office, the Lowndes County Clerk's office, the offices of the Clerks of each municipality, and County or municipal government websites, if available. After adoption, a public information notice in the local newspaper will inform the public that the plan may be viewed at these locations. Public meetings will be held when significant modifications to the plan are required or when otherwise deemed necessary by the LEPC. The public will be able to express their ideas, concerns, and opinions at the meetings. If emergency modifications to the plan are required and if Lowndes County and/or any of the jurisdictions located therein are involved in an active disaster declaration at the time the modifications are needed, then this requirement may be waived by the LEPC and/or the appropriate governing bodies of the affected jurisdictions. At a minimum, two public hearings will be held during the drafting stage of the five-year plan update and to present the final plan to the public before adoption.

If deemed appropriate by the Coordinator of the Lowndes County Emergency Management Agency and once adopted, this plan shall be considered as an Annex to the Lowndes County Emergency Operations Plan, which is administered through the Lowndes County Emergency Management Agency office. In addition to adopting the Lowndes County Natural Hazards Mitigation Plan in its entirety, it is recommended that each adopting jurisdiction incorporate this plan or its

elements into their own respective existing or future planning documents, if and when appropriate. Examples of such existing or future planning documents may include, but are not limited to: countywide or municipal comprehensive and/or land use plans and regulations/ordinances; countywide or municipal floodplain management plans; countywide or municipal capital improvement plans and budgets; and any other county or municipal disaster, readiness, and/or contingency plans. The process and/or procedure used by each jurisdiction in adopting and incorporating the Lowndes County Natural Hazards Mitigation Plan or its elements into their own planning documents shall be the same as that delineated in the Code of Alabama and any applicable local ordinances and regulations. The Lowndes County EMA staff and/or the planning staff of the South Central Alabama Development Commission will provide technical assistance when requested.

### **Incorporation into Existing Planning Mechanisms**

The Lowndes County Hazard Mitigation Plan will be incorporated into existing planning mechanisms in all participating jurisdictions. Those jurisdictions with building codes or zoning ordinances will incorporate hazard mitigation strategies into existing codes. These updates will occur as budgets and time allow. Those jurisdictions without building codes or zoning ordinances, that decide to adopt new ordinances, will be required to reflect the goals and objectives they set forth in the plan. Those jurisdictions updating comprehensive plans will also have to reflect their hazard mitigation goals and objectives in their plan.

### **Continued Public Involvement**

Copies of the plan will be available to the public by submitting a request to the Lowndes County EMA. Copies of the plan will also be available in each jurisdiction. Information regarding where to send comments on the plan is provided inside of the front cover of the document. The Lowndes County EMA will be responsible for keeping a file of all comments received. These comments will be considered during the next regularly scheduled plan update.



## **Chapter 7**

### **Appendices**

- A. Code of Federal Regulations – Disaster Mitigation Act of 2000 (44 CFR §201.6)
- B. Interim Final Rule (44CFR PART 201)
- C. Lowndes County Hazard Mitigation Plan Local Approval
- D. Definitions
- E. Lowndes County Hazard Mitigation Planning Process Meeting Summaries





**Appendix A**  
**Code of Federal Regulations**  
**Disaster Mitigation Act of 2000**  
**(44 CFR §201.6)**



## Code of Federal Regulations

### Title 44, Chapter 1, Subchapter D, Part 201, Section 201.6 -- Local Mitigation Plans

The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding.

(a) *Plan requirements.* (1) A local government must have a mitigation plan approved pursuant to this section in order to receive HMGP project grants. The Administrator may, at his discretion, require a local mitigation plan for the Repetitive Flood Claims Program. A local government must have a mitigation plan approved pursuant to this section in order to apply for and receive mitigation project grants under all other mitigation grant programs.

(2) Plans prepared for the FMA program, described at part 79 of this chapter, need only address these requirements as they relate to flood hazards in order to be eligible for FMA project grants. However, these plans must be clearly identified as being flood mitigation plans, and they will not meet the eligibility criteria for other mitigation grant programs, unless flooding is the only natural hazard the jurisdiction faces.

(3) Regional Administrator's may grant an exception to the plan requirement in extraordinary circumstances, such as in a small and impoverished community, when justification is provided. In these cases, a plan will be completed within 12 months of the award of the project grant. If a plan is not provided within this timeframe, the project grant will be terminated, and any costs incurred after notice of grant's termination will not be reimbursed by FEMA.

(4) Multi-jurisdictional plans (*e.g.* watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan. State-wide plans will not be accepted as multi-jurisdictional plans.

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

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

(c) *Plan content.* The plan shall include the following:

(1) Documentation of the *planning process* used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

(2) A *risk assessment* that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include:

(i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:

(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate;

(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

(3) A *mitigation strategy* that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include:

(i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

(ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

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

(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

(4) *A plan maintenance process* that includes:

(i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

(ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

(iii) Discussion on how the community will continue public participation in the plan maintenance process.

(5) *Documentation* that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

(d) *Plan review.* (1) Plans must be submitted to the State Hazard Mitigation Officer (SHMO) for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. Where the State point of contact for the FMA program is different from the SHMO, the SHMO will be responsible for coordinating the local plan reviews between the FMA point of contact and FEMA.

(2) The Regional review will be completed within 45 days after receipt from the State, whenever possible.

(3) A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

(4) Managing States that have been approved under the criteria established by FEMA pursuant to 42 U.S.C. 5170c(c) will be delegated approval authority for local mitigation plans, and the review will be based on the criteria in this part. Managing States will review the plans within 45 days of receipt of the plans, whenever possible, and provide a copy of the approved plans to the Regional Office.

[67 FR 8848, Feb. 26, 2002, as amended at 67 FR 61515, Oct. 1, 2002; 68 FR 61370, Oct. 28, 2003; 69 FR 55096, Sept. 13, 2004; 72 FR 61748, Oct. 31, 2007 ; 74 FR 47482, Sept. 16, 2009]

## Appendix B

# Disaster Mitigation Act of 2000

Public Law 106-390  
106th Congress

An Act

To amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act to authorize a program for predisaster mitigation, to streamline the administration of disaster relief, to control the Federal costs of disaster assistance, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

### SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) Short Title.--This Act may be cited as the ``Disaster Mitigation Act of 2000''.

(b) Table of Contents.--The table of contents of this Act is as follows:

Sec. 1. Short title; table of contents.

#### TITLE I--PREDISASTER HAZARD MITIGATION

- Sec. 101. Findings and purpose.
- Sec. 102. Predisaster hazard mitigation.
- Sec. 103. Interagency task force.
- Sec. 104. Mitigation planning; minimum standards for public and private structures.

#### TITLE II--STREAMLINING AND COST REDUCTION

- Sec. 201. Technical amendments.
- Sec. 202. Management costs.
- Sec. 203. Public notice, comment, and consultation requirements.
- Sec. 204. State administration of hazard mitigation grant program.



- Sec. 205. Assistance to repair, restore, reconstruct, or replace damaged facilities.
- Sec. 206. Federal assistance to individuals and households.
- Sec. 207. Community disaster loans.
- Sec. 208. Report on State management of small disasters initiative.
- Sec. 209. Study regarding cost reduction.

#### TITLE III--MISCELLANEOUS

- Sec. 301. Technical correction of short title.
- Sec. 302. Definitions.
- Sec. 303. Fire management assistance.
- Sec. 304. Disaster grant closeout procedures.
- Sec. 305. Public safety officer benefits for certain Federal and State employees.
- Sec. 306. Buy American.
- Sec. 307. Treatment of certain real property.
- Sec. 308. Study of participation by Indian tribes in emergency management.

#### TITLE I--PREDISASTER HAZARD MITIGATION

##### SEC. 101. FINDINGS AND PURPOSE.

(a) Findings.--Congress finds that--

- (1) natural disasters, including earthquakes, tsunamis, tornadoes, hurricanes, flooding, and wildfires, pose great danger to human life and to property throughout the United States;
- (2) greater emphasis needs to be placed on--
  - (A) identifying and assessing the risks to States and local governments (including Indian tribes) from natural disasters;
  - (B) implementing adequate measures to reduce losses from natural disasters; and
  - (C) ensuring that the critical services and facilities of communities will continue to function after a natural disaster;
- (3) expenditures for postdisaster assistance are increasing without commensurate reductions in the likelihood of future losses from natural disasters;
- (4) in the expenditure of Federal funds under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.), high priority should be given to mitigation of hazards at the local level; and
- (5) with a unified effort of economic incentives, awareness and education, technical assistance, and demonstrated Federal support, States and local governments (including Indian tribes) will be able to--
  - (A) form effective community-based partnerships for hazard mitigation purposes;
  - (B) implement effective hazard mitigation measures that reduce the potential damage from natural disasters;
  - (C) ensure continued functionality of critical services;
  - (D) leverage additional non-Federal resources in meeting natural disaster resistance goals; and
  - (E) make commitments to long-term hazard mitigation efforts to be applied to new and existing structures.

- (b) Purpose.--The purpose of this title is to establish a national disaster hazard mitigation program--
  - (1) to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters; and
  - (2) to provide a source of predisaster hazard mitigation funding that will assist States and local governments (including Indian tribes) in implementing effective hazard mitigation measures that are designed to ensure the continued functionality of critical services and facilities after a natural disaster.

## **SEC. 102. PREDISASTER HAZARD MITIGATION.**

- (a) In General.--Title II of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5131 et seq.) is amended by adding at the end the following:

### **SEC. 203. PREDISASTER HAZARD MITIGATION.**

- (a) *Definition of Small Impoverished Community.*--In this section, the term 'small impoverished community' means a community of 3,000 or fewer individuals that is economically disadvantaged, as determined by the State in which the community is located and based on criteria established by the President.
- (b) *Establishment of Program.*--The President may establish a program to provide technical and financial assistance to States and local governments to assist in the implementation of predisaster hazard mitigation measures that are cost-effective and are designed to reduce injuries, loss of life, and damage and destruction of property, including damage to critical services and facilities under the jurisdiction of the States or local governments.
- (c) *Approval by President.*--If the President determines that a State or local government has identified natural disaster hazards in areas under its jurisdiction and has demonstrated the ability to form effective public-private natural disaster hazard mitigation partnerships, the President, using amounts in the National Predisaster Mitigation Fund established under subsection (i) (referred to in this section as the 'Fund'), may provide technical and financial assistance to the State or local government to be used in accordance with subsection (e).
- (d) *State Recommendations.*--
  - (1) *In general.*
    - (A) *Recommendations.*--The Governor of each State may recommend to the President not fewer than five local governments to receive assistance under this section.
    - (B) *Deadline for submission.*--The recommendations under subparagraph (A) shall be submitted to the President not later than October 1, 2001, and each October 1st thereafter or such later date in the year as the President may establish.
    - (C) *Criteria.*--In making recommendations under subparagraph (A), a Governor shall consider the criteria specified in subsection (g).
  - (2) *Use.*
    - (A) *In general.*--Except as provided in subparagraph (B), in providing assistance to local governments under this section, the President shall select from local governments recommended by the Governors under this subsection.

- (B) *Extraordinary circumstances.*--In providing assistance to local governments under this section, the President may select a local government that has not been recommended by a Governor under this subsection if the President determines that extraordinary circumstances justify the selection and that making the selection will further the purpose of this section.
- (3) *Effect of failure to nominate.*--If a Governor of a state fails to submit recommendations under this subsection in a timely manner, the President may select, subject to the criteria specified in subsection (g), any local governments of the State to receive assistance under this section.
- (e) *Uses of Technical and Financial Assistance.*--
  - (1) *In general.*--Technical and financial assistance provided under this section--
    - (A) shall be used by States and local governments principally to implement predisaster hazard mitigation measures that are cost-effective and are described in proposals approved by the President under this section; and
    - (B) may be used--
      - (i) to support effective public-private natural disaster hazard mitigation partnerships;
      - (ii) to improve the assessment of a community's vulnerability to natural hazards; or
      - (iii) to establish hazard mitigation priorities, and an appropriate hazard mitigation plan, for a community.
  - (2) *Dissemination.*--A State or local government may use not more than 10 percent of the financial assistance received by the State or local government under this section for a fiscal year to fund activities to disseminate information regarding cost-effective mitigation technologies.
- (f) *Allocation of Funds.*--The amount of financial assistance made available to a State (including amounts made available to local governments of the State) under this section for a fiscal year--
  - (1) shall be not less than the lesser of--
    - (A) \$500,000; or
    - (B) the amount that is equal to 1.0 percent of the total funds appropriated to carry out this section for the fiscal year;
  - (2) shall not exceed 15 percent of the total funds described in paragraph (1)(B); and
  - (3) shall be subject to the criteria specified in subsection (g).
- (g) *Criteria for Assistance Awards.*--In determining whether to provide technical and financial assistance to a State or local government under this section, the President shall take into account--
  - (1) the extent and nature of the hazards to be mitigated;
  - (2) the degree of commitment of the State or local government to reduce damages from future natural disasters;
  - (3) the degree of commitment by the State or local government to support ongoing non-Federal support for the hazard mitigation measures to be carried out using the technical and financial assistance;
  - (4) the extent to which the hazard mitigation measures be carried out using the technical and financial assistance contribute to the mitigation goals and priorities established by the State;

- (5) *the extent to which the technical and financial assistance is consistent with other assistance provided under this Act;*
- (6) *the extent to which prioritized, cost-effective mitigation activities that produce meaningful and definable outcomes are clearly identified;*
- (7) *if the State or local government has submitted a mitigation plan under section 322, the extent to which activities identified under paragraph (6) are consistent with the mitigation plan;*
- (8) *the opportunity to fund activities that maximize benefits to society;*
- (9) *the extent to which assistance will fund mitigation activities in small impoverished communities; and*
- (10) *such other criteria as President establishes in consultation with State and local governments.*
- (h) *Federal Share.*
  - (1) *In general.--Financial assistance provided under this section may contribute up to 75 percent of the total cost of mitigation activities approved by the President.*
  - (2) *Small impoverished communities.--Notwithstanding paragraph (1), the President may contribute up to 90 percent of the total cost of a mitigation activity carried out in a small impoverished community.*
- (i) *National Predisaster Mitigation Fund.*
  - (1) *Establishment.--The President may establish in the Treasury of the United States a fund to be known as the 'National Predisaster Mitigation Fund', to be used in carrying out this section.*
  - (2) *Transfers to fund.--There shall be deposited in the Fund--*
    - (A) *amounts appropriated to carry out this section, which shall remain available until expended; and*
    - (B) *sums available from gifts, bequests, or donations of services or property received by the President for the purpose of predisaster hazard mitigation.*
  - (3) *Expenditures from fund.--Upon request by the President, the Secretary of the Treasury shall transfer from the Fund to the President such amounts as the President determines are necessary to provide technical and financial assistance under this section.*
  - (4) *Investment of amounts.--*
    - (A) *In general.--The Secretary of the Treasury shall invest such portion of the Fund as is not, in the judgment of the Secretary of the Treasury, required to meet current withdrawals. Investments may be made only in interest-bearing obligations of the United States.*
    - (B) *Acquisition of obligations.--For the purpose of investments under subparagraph (A), obligations may be acquired--*
      - (i) *on original issue at the issue price; or*
      - (ii) *by purchase of outstanding obligations at the market price.*
    - (C) *Sale of obligations.--Any obligation acquired by the Fund may be sold by the Secretary of the Treasury at the market price.*
    - (D) *Credits to fund.--The interest on, and the proceeds from the sale or redemption of, any obligations held in the Fund shall be credited to and form a part of the Fund.*
    - (E) *Transfers of amounts.--*

- (i) *In general.*--The amounts required to be transferred to the Fund under this subsection shall be transferred at least monthly from the general fund of the Treasury to the Fund on the basis of estimates made by the Secretary of the Treasury.
  - (ii) *Adjustments.*--Proper adjustment shall be made in amounts subsequently transferred to the extent prior estimates were in excess of or less than the amounts required to be transferred.
- ( j) *Limitation on Total Amount of Financial Assistance.*--The President shall not provide financial assistance under this section in an amount greater than the amount available in the Fund.
- (k) *Multihazard Advisory Maps.*--
  - (1) *Definition of multihazard advisory map.*--In this subsection, the term 'multihazard advisory map' means a map on which hazard data concerning each type of natural disaster is identified simultaneously for the purpose of showing areas of hazard overlap.
  - (2) *Development of maps.*--In consultation with States, local governments, and appropriate Federal agencies, the President shall develop multihazard advisory maps for areas, in not fewer than five States, that are subject to commonly recurring natural hazards (including flooding, hurricanes and severe winds, and seismic events).
  - (3) *Use of technology.*--In developing multihazard advisory maps under this subsection, the President shall use, to the maximum extent practicable, the most cost-effective and efficient technology available.
  - (4) *Use of maps.*--
    - (A) *Advisory nature.*--The multihazard advisory maps shall be considered to be advisory and shall not require the development of any new policy by, or impose any new policy on, any government or private entity.
    - (B) *Availability of maps.*--The multihazard advisory maps shall be made available to the appropriate State and local governments for the purposes of--
      - (i) informing the general public about the risks of natural hazards in the areas described in paragraph (2);
      - (ii) supporting the activities described in subsection (e); and
      - (iii) other public uses.
  - (l) *Report on Federal and State Administration.*--Not later than 18 months after the date of the enactment of this section, the President, in consultation with State and local governments, shall submit to Congress a report evaluating efforts to implement this section and recommending a process for transferring greater authority and responsibility for administering the assistance program established under this section to capable States.
  - (m) *Termination of Authority.*--The authority provided by this section terminates December 31, 2003."
- (b) *Conforming Amendment.*--Title II of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5131 et seq.) is amended by striking the title heading and inserting the following:

**"TITLE II--DISASTER PREPAREDNESS AND MITIGATION ASSISTANCE".**

**SEC. 103. INTERAGENCY TASK FORCE.**

Title II of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5131 et seq.) (as amended by section 102(a)) is amended by adding at the end the following:

**Sec. 204. INTERAGENCY TASK FORCE.**

- (a) *In General.*--The President shall establish a Federal interagency task force for the purpose of coordinating the implementation of predisaster hazard mitigation programs administered by the Federal Government.
- (b) *Chairperson.*--The Director of the Federal Emergency Management Agency shall serve as the chairperson of the task force.
- (c) *Membership.*--The membership of the task force shall include representatives of--
  - (1) relevant Federal agencies;
  - (2) State and local government organizations (including Indian tribes); and
  - (3) the American Red Cross."

**SEC. 104. MITIGATION PLANNING; MINIMUM STANDARDS FOR PUBLIC AND PRIVATE STRUCTURES.**

- (a) *In General.*--Title III of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5141 et seq.) is amended by adding at the end the following:

**SEC. 322. MITIGATION PLANNING.**

- (a) *Requirement of Mitigation Plan.*--As a condition of receipt of an increased Federal share for hazard mitigation measures under subsection (e), a State, local, or tribal government shall develop and submit for approval to the President a mitigation plan that outlines processes for identifying the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government.
- (b) *Local and Tribal Plans.*--Each mitigation plan developed by a local or tribal government shall--
  - (1) describe actions to mitigate hazards, risks, and vulnerabilities identified under the plan; and
  - (2) establish a strategy to implement those actions.
- (c) *State Plans.*--The State process of development of a mitigation plan under this section shall--
  - (1) identify the natural hazards, risks, and vulnerabilities of areas in the State;
  - (2) support development of local mitigation plans;
  - (3) provide for technical assistance to local and tribal governments for mitigation planning; and
  - (4) identify and prioritize mitigation actions that the State will support, as resources become available.
- (d) *Funding.*--
  - (1) *In general.*--Federal contributions under section 404 may be used to fund the development and updating of mitigation plans under this section.
  - (2) *Maximum federal contribution.*--With respect to any mitigation plan, a State, local, or tribal government may use an amount of Federal contributions under section 404 not to exceed 7 percent of the amount of such contributions available to the government as of a date determined by the government.
- (e) *Increased Federal Share for Hazard Mitigation Measures.*--
  - (1) *In general.*--If, at the time of the declaration of a major disaster, a State has in effect an approved mitigation plan under this section, the President may increase to 20 percent,

*with respect to the major disaster, the maximum percentage specified in the last sentence of section 404(a).*

- (2) *Factors for consideration.--In determining whether to increase the maximum percentage under paragraph (1), the President shall consider whether the State has established--*
- (A) eligibility criteria for property acquisition and other types of mitigation measures;*
  - (B) requirements for cost effectiveness that are related to the eligibility criteria;*
  - (C) a system of priorities that is related to the eligibility criteria; and*
  - (D) a process by which an assessment of the effectiveness of a mitigation action may be carried out after the mitigation action is complete.*

### **SEC. 323. MINIMUM STANDARDS FOR PUBLIC AND PRIVATE STRUCTURES.**

*(a) In General.--As a condition of receipt of a disaster loan or grant under this Act--*

- (1) the recipient shall carry out any repair or construction to be financed with the loan or grant in accordance with applicable standards of safety, decency, and sanitation and in conformity with applicable codes, specifications, and standards; and*
- (2) the President may require safe land use and construction practices, after adequate consultation with appropriate State and local government officials.*

*(b) Evidence of Compliance.--A recipient of a disaster loan or grant under this Act shall provide such evidence of compliance with this section as the President may require by regulation.*

*(b) Losses From Straight Line Winds.--*

*The President shall increase the maximum percentage specified in the last sentence of section 404(a) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170c(a)) from 15 percent to 20 percent with respect to any major disaster that is in the State of Minnesota and for which assistance is being provided as of the date of the enactment of this Act, except that additional assistance provided under this subsection shall not exceed \$6,000,000. The mitigation measures assisted under this subsection shall be related to losses in the State of Minnesota from straight line winds.*

*(c) Conforming Amendments.--*

- (1) Section 404(a) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170c(a)) is amended--*
  - (A) in the second sentence, by striking "section 409" and inserting "section 322"; and*
  - (B) in the third sentence, by striking "The total" and inserting "Subject to section 322, the total".*

- (2) Section 409 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5176) is repealed.*

## **TITLE II--STREAMLINING AND COST REDUCTION**

### **SEC. 201. TECHNICAL AMENDMENTS.**

Section 311 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5154) is amended in subsections (a)(1), (b), and (c) by striking "section 803 of the Public Works and Economic Development Act of 1965" each place it appears and inserting "section 209(c)(2) of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3149(c)(2))".

### **SEC. 202. MANAGEMENT COSTS.**



(a) In General.--Title III of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5141 et seq.) (as amended by section 104(a)) is amended by adding at the end the following:

**SEC. 324. MANAGEMENT COSTS.**

- (a) *Definition of Management Cost.*--In this section, the term `management cost' includes any indirect cost, any administrative expense, and any other expense not directly chargeable to a specific project under a major disaster, emergency, or disaster preparedness or mitigation activity or measure.
  - (b) *Establishment of Management Cost Rates.*--Notwithstanding any other provision of law (including any administrative rule or guidance), the President shall by regulation establish management cost rates, for grantees and subgrantees, that shall be used to determine contributions under this Act for management costs.
  - (c) *Review.*--The President shall review the management cost rates established under subsection (b) not later than 3 years after the date of establishment of the rates and periodically thereafter."
- (b) *Applicability.*--
- (1) *In general.*--Subject to paragraph (2), subsections (a) and (b) of section 324 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (as added by subsection (a)) shall apply to major disasters declared under that Act on or after the date of the enactment of this Act.
  - (2) *Interim authority.*--Until the date on which the President establishes the management cost rates under section 324 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (as added by subsection (a)), section 406(f) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172(f)) (as in effect on the day before the date of the enactment of this Act) shall be used to establish management cost rates.

**SEC. 203. PUBLIC NOTICE, COMMENT, AND CONSULTATION REQUIREMENTS.**

Title III of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5141 et seq.) (as amended by section 202(a)) is amended by adding at the end the following:

**SEC. 325. PUBLIC NOTICE, COMMENT, AND CONSULTATION REQUIREMENTS.**

(a) *Public Notice and Comment Concerning New or Modified Policies.*--

- (1) *In general.*--The <<NOTE: President.>> President shall provide for public notice and opportunity for comment before adopting any new or modified policy that--
  - (A) governs implementation of the public assistance program administered by the Federal Emergency Management Agency under this Act; and
  - (B) could result in a significant reduction of assistance under the program.
- (2) *Application.*--Any policy adopted under paragraph (1) shall apply only to a major disaster or emergency declared on or after the date on which the policy is adopted.

(b) *Consultation Concerning Interim Policies.*--

- (1) *In general.*--Before adopting any interim policy under the public assistance program to address specific conditions that relate to a major disaster or emergency that has been declared under this Act, the President, to the maximum extent practicable, shall solicit the views and recommendations of grantees and subgrantees with respect to the major disaster or emergency concerning the potential interim policy, if interim policy is likely--
  - (A) to result in a significant reduction of assistance to applicants for the assistance with respect to the major disaster or emergency; or

- (B) to change the terms of a written agreement which the Federal Government is a party concerning the declaration of the major disaster or emergency.
- (2) No legal right of action.--Nothing in this subsection confers a legal right of action on any party.
- (c) Public Access.--The President shall promote public access to policies governing the implementation of the public assistance program."

**SEC. 204. STATE ADMINISTRATION OF HAZARD MITIGATION GRANT PROGRAM.**

Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170c) is amended by adding at the end the following:

- (c) Program Administration by States.--
  - (1) In general.--A State desiring to administer the hazard mitigation grant program established by this section with respect to hazard mitigation assistance in the State may submit to the President an application for the delegation of the authority to administer the program.
  - (2) Criteria.--The President, in consultation and coordination with States and local governments, shall establish criteria for the approval of applications submitted under paragraph (1). The criteria shall include, at a minimum--
    - (A) the demonstrated ability of the State to manage the grant program under this section;
    - (B) there being in effect an approved mitigation plan under section 322; and
    - (C) a demonstrated commitment to mitigation activities.
  - (3) Approval.--The President shall approve an application submitted under paragraph (1) that meets the criteria established under paragraph (2).
  - (4) Withdrawal of approval.--If, after approving an application of a State submitted under paragraph (1), the President determines that the State is not administering the hazard mitigation grant program established by this section in a manner satisfactory to the President, the President shall withdraw the approval.
  - (5) Audits.--The President shall provide for periodic audits of the hazard mitigation grant programs administered by States under this subsection.

**SEC. 205. ASSISTANCE TO REPAIR, RESTORE, RECONSTRUCT, OR REPLACE DAMAGED FACILITIES.**

- (a) Contributions.--Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (a) and inserting the following:

- (a) Contributions.--
  - (1) In general.--The President may make contributions--
    - (A) to a State or local government for the repair, restoration, reconstruction, or replacement of a public facility damaged or destroyed by a major disaster and for associated expenses incurred by the government; and
    - (B) subject to paragraph (3), to a person that owns or operates a private nonprofit facility damaged or destroyed by a major disaster for the repair, restoration, reconstruction, or replacement of the facility and for associated expenses incurred by the person.
  - (2) Associated expenses.--For the purposes of this section, associated expenses shall include--

- (A) *the costs of mobilizing and employing the National Guard for performance of eligible work;*
- (B) *the costs of using prison labor to perform eligible work, including wages actually paid, transportation to a worksite, and extraordinary costs of guards, food, and lodging; and*
- (C) *base and overtime wages for the employees extra hires of a State, local government, or described in paragraph (1) that perform eligible work, plus fringe benefits on such wages to the extent that such benefits were being paid before the major disaster.*
- (3) *Conditions for assistance to private nonprofit facilities.--*
  - (A) *In general.--The President may make contributions to a private nonprofit facility under paragraph (1)(B) only if--*
    - (i) *the facility provides critical services (as defined by the President) in the event of a major disaster; or*
    - (ii) *the owner or operator of the facility--*
      - (I) *has applied for a disaster loan under section 7(b) of the Small Business Act (15 U.S.C. 636(b)); and*
      - (II) *(aa) has been determined to ineligible for such a loan; or*  
*(bb) has obtained such a loan in the maximum amount for which the Small Business Administration determines the facility is eligible.*
  - (B) *Definition of critical services.--In this paragraph, the term 'critical services' includes power, water (including water provided by an irrigation organization or facility), sewer, wastewater treatment, communications, and emergency medical care.*
- (4) *Notification to congress.--Before making any contribution under this section in an amount greater than \$20,000,000, the President shall notify--*
  - (A) *the Committee on Environment and Public Works of the Senate;*
  - (B) *the Committee on Transportation and Infrastructure of the House of Representatives;*
  - (C) *the Committee on Appropriations of the Senate; and*
  - (D) *the Committee on Appropriations of the of Representatives.*
- (b) *Federal Share.--Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (b) and inserting the following:*
  - (b) *Federal Share.--*
    - (1) *Minimum federal share.--Except as provided in paragraph (2), the Federal share of assistance under this section shall be not less than 75 percent of the eligible cost of repair, restoration, reconstruction, or replacement carried out under this section.*
    - (2) *Reduced federal share.--The President shall promulgate regulations to reduce the Federal share of assistance under this section to not less than 25 percent in the case of the repair, restoration, reconstruction, or replacement of any eligible public facility or private nonprofit facility following an event associated with a major disaster--*
      - (A) *that has been damaged, on more than one occasion within the preceding time period, by the same type of event; and*
      - (B) *the owner of which has failed to implement appropriate mitigation measures to address the hazard that caused the damage to the facility."*
- (c) *Large In-Lieu Contributions.--Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (c) and inserting the following:*

*(c) Large In-Lieu Contributions.--*

*(1) For public facilities.--*

- (A) In general.--In any case in which a State or local government determines that the public welfare would not best be served by repairing, restoring, reconstructing, or replacing any public facility owned or controlled by the State or local government, the State or local government may elect to receive, in lieu of a contribution under subsection (a)(1)(A), a contribution in an amount equal to 75 percent of the Federal share of the Federal estimate of the cost of repairing, restoring, reconstructing, or replacing the facility and of management expenses.*
- (B) Areas with unstable soil.--In any case in which a State or local government determines that the public welfare would not best be served by repairing, restoring, reconstructing, or replacing any public facility owned or controlled by the State or local government because soil instability in the disaster area makes repair, restoration, reconstruction, or replacement infeasible, the State or local may elect to receive, in lieu of a contribution under subsection (a)(1)(A), a contribution in an amount equal to 90 percent of the Federal share of the Federal estimate of the cost of repairing, restoring, reconstructing, or replacing the facility and of management expenses.*
- (C) Use of funds.--Funds contributed to a State or local government under this paragraph may be used--*
  - (i) to repair, restore, or expand other selected public facilities;*
  - (ii) to construct new facilities; or*
  - (iii) to fund hazard mitigation measures that the State or local government determines to be necessary to meet a need for governmental services and functions in the area affected by the major disaster.*
- (D) Limitations.--Funds made available to a State or local government under this paragraph may not be used for--*
  - (i) any public facility located in a regulatory floodway (as defined in section 59.1 of title 44, Code of Federal Regulations (or a successor regulation)); or*
  - (ii) any uninsured public facility located in a special flood hazard area identified by the Director of the Federal Emergency Management Agency under the National Flood Insurance Act of 1968 (42 U.S.C. 4001 et seq.).*

*(2) For private nonprofit facilities.--*

- (A) In general.--In any case in which a person that owns or operates a private nonprofit facility determines that the public welfare would not best be served by repairing, restoring, reconstructing, or replacing the facility, the person may elect to receive, in lieu of a contribution under subsection (a)(1)(B), a contribution in an amount equal to 75 percent of the Federal share of the Federal estimate of the cost of repairing, restoring, reconstructing, or replacing the facility and of management expenses.*
- (B) Use of funds.--Funds contributed to a person under this paragraph may be used--*
  - (i) to repair, restore, or expand other selected private nonprofit facilities owned or operated by the person;*
  - (ii) to construct new private nonprofit facilities to be owned or operated by the person; or*

- (iii) to fund hazard mitigation measures that the person determines to be necessary to meet a need for the person's services and functions in the area affected by the major disaster.
  - (C) Limitations.--Funds made available to a person under this paragraph may not be used for--
    - (i) any private nonprofit facility located in a regulatory floodway (as defined in section 59.1 of title 44, Code of Federal Regulations (or a successor regulation)); or
    - (ii) any uninsured private nonprofit facility located in a special flood hazard area identified by the Director of the Federal Emergency Management Agency under the National Flood Insurance Act of 1968 (42 U.S.C. 4001 et seq.).
- (d) Eligible Cost.--
  - (1) In general.--Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (e) and inserting the following:
    - (e) Eligible Cost.--
      - (1) Determination.--
        - (A) In general.--For the purposes of this section, the President shall estimate the eligible cost of repairing, restoring, reconstructing, or replacing a public facility or private nonprofit facility--
          - (i) on the basis of the design of the facility as the facility existed immediately before the major disaster; and
          - (ii) in conformity with codes, specifications, and standards (including floodplain management and hazard mitigation criteria required by the President or under the Coastal Barrier Resources Act (16 U.S.C. 3501 et seq.)) applicable at the time at which the disaster occurred.
        - (B) Cost estimation procedures.--
          - (i) In general.--Subject to paragraph (2), the President shall use the cost estimation procedures established under paragraph (3) to determine the eligible cost under this subsection.
          - (ii) Applicability.--The procedures specified in this paragraph and paragraph (2) shall apply only to projects the eligible cost of which is equal to or greater than the amount specified in section 422.
    - (2) Modification of eligible cost.--
      - (A) Actual cost greater than ceiling percentage of estimated cost.--In any case in which the actual cost of repairing, restoring, reconstructing, or replacing a facility under this section is greater than the ceiling percentage established under paragraph (3) of the cost estimated under paragraph (1), the President may determine that the eligible cost includes a portion of the actual cost of the repair, restoration, reconstruction, or replacement that exceeds the cost estimated under paragraph (1).
      - (B) Actual cost less than estimated cost.--
        - (i) Greater than or equal to floor percentage of estimated cost.--In any case in which the actual cost of repairing, restoring, reconstructing, or replacing a facility under this section is less than 100 percent of the cost estimated under paragraph (1), but is greater than or equal to the floor percentage established under paragraph (3) of the cost estimated under paragraph (1), the State or local government or person receiving funds under this section shall use the excess funds to carry out

*cost-effective activities that reduce the risk of future damage, hardship, or suffering from a major disaster.*

*(ii) Less than floor percentage of estimated cost.--In any case in which the actual cost of repairing, restoring, reconstructing, or replacing a facility under this section is less than the floor percentage established under paragraph (3) of the cost estimated under paragraph (1), the State or local government or person receiving assistance under this section shall reimburse the President in the amount of the difference.*

*(C) No effect on appeals process.--Nothing in this paragraph affects any right of appeal under section 423.*

*(3) Expert panel.--*

*(A) Establishment.--Not later than 18 months after the date of the enactment of this paragraph, the President, acting through the Director of the Federal Emergency Management Agency, shall establish an expert panel, which shall include representatives from the construction industry and State and local government.*

*(B) Duties.--The expert panel shall develop recommendations concerning--*

*(i) procedures for estimating the cost of repairing, restoring, reconstructing, or replacing a facility consistent with industry practices; and*

*(ii) the ceiling and floor percentages referred to in paragraph (2).*

*(C) Regulations.--Taking into account the recommendations of the expert panel under subparagraph (B), the President shall promulgate regulations that establish--*

*(i) cost estimation procedures described in subparagraph (B)(i); and*

*(ii) the ceiling and floor percentages referred to in paragraph (2).*

*(D) Review by president.--Not later than 2 years after the date of promulgation of regulations under subparagraph (C) and periodically thereafter, the President shall review the cost estimation procedures and the ceiling and floor percentages established under this paragraph.*

*(E) Report to congress.--Not later than 1 year after the date of promulgation of regulations under subparagraph (C), 3 years after that date, and at the end of each 2-year period thereafter, the expert panel shall submit to Congress a report on the appropriateness of the cost estimation procedures.*

*(4) Special rule.--In any case in which the facility being repaired, restored, reconstructed, or replaced under this section was under construction on the date of the major disaster, the cost of repairing, restoring, reconstructing, or replacing the facility shall include, for the purposes of this section, only those costs that, under the contract for the construction, are the owner's responsibility and not the contractor's responsibility.*

*(2) Effective date.--The amendment made by paragraph (1) takes effect on the date of the enactment of this Act and applies to funds appropriated after the date of the enactment of this Act, except that paragraph (1) of section 406(e) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (as amended by paragraph (1)) takes effect on the date on which the cost estimation procedures established under paragraph (3) of that section take effect.*

*(e) CONFORMING AMENDMENT.—Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (f ).*

## **SEC. 206. FEDERAL ASSISTANCE TO INDIVIDUALS AND HOUSEHOLDS.**

- (a) **IN GENERAL.**—Section 408 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5174) is amended to read as follows:

**SEC. 408. FEDERAL ASSISTANCE TO INDIVIDUALS AND HOUSEHOLDS.**

(a) **IN GENERAL.**—

(1) **PROVISION OF ASSISTANCE.**—*In accordance with this section, the President, in consultation with the Governor of a State, may provide financial assistance, and, if necessary, direct services, to individuals and households in the State who, as a direct result of a major disaster, have necessary expenses and serious needs in cases in which the individuals and households are unable to meet such expenses or needs through other means.*

(2) **RELATIONSHIP TO OTHER ASSISTANCE.**—*Under paragraph (1), an individual or household shall not be denied assistance under paragraph (1), (3), or (4) of subsection (c) solely on the basis that the individual or household has not applied for or received any loan or other financial assistance from the Small Business Administration or any other Federal agency.*

(b) **HOUSING ASSISTANCE.**—

(1) **ELIGIBILITY.**—*The President may provide financial or other assistance under this section to individuals and households to respond to the disaster-related housing needs of individuals and households who are displaced from their predisaster primary residences or whose predisaster primary residences are rendered uninhabitable as a result of damage caused by a major disaster.*

(2) **DETERMINATION OF APPROPRIATE TYPES OF ASSISTANCE.**—

(A) **IN GENERAL.**—*The President shall determine appropriate types of housing assistance to be provided under this section to individuals and households described in subsection (a)(1) based on considerations of cost effectiveness, convenience to the individuals and households, and such other factors as the President may consider appropriate.*

(B) **MULTIPLE TYPES OF ASSISTANCE.**—*One or more types of housing assistance may be made available under this section, based on the suitability and availability of the types of assistance, to meet the needs of individuals and households in the particular disaster situation.*

(c) **TYPES OF HOUSING ASSISTANCE.**—

(1) **TEMPORARY HOUSING.**—

(A) **FINANCIAL ASSISTANCE.**—

(i) **IN GENERAL.**—*The President may provide financial assistance to individuals or households to rent alternate housing accommodations, existing rental units, manufactured housing, recreational vehicles, or other readily fabricated dwellings.*

(ii) **AMOUNT.**—*The amount of assistance under clause (i) shall be based on the fair market rent for the accommodation provided plus the cost of any transportation, utility hookups, or unit installation not provided directly by the President.*

(B) **DIRECT ASSISTANCE.**—

(i) **IN GENERAL.**—*The President may provide temporary housing units, acquired by purchase or lease, directly to individuals or households who,*

*because of a lack of available housing resources, would be unable to make use of the assistance provided under subparagraph (A).*

*(ii) PERIOD OF ASSISTANCE.—The President may not provide direct assistance under clause (i) with respect to a major disaster after the end of the 18-month period beginning on the date of the declaration of the major disaster by the President, except that the President may extend that period if the President determines that due to extraordinary circumstances an extension would be in the public interest.*

*(iii) COLLECTION OF RENTAL CHARGES.—After the end of the 18-month period referred to in clause (ii), the President may charge fair market rent for each temporary housing unit provided.*

**(2) REPAIRS.—**

*(A) IN GENERAL.—The President may provide financial assistance for—*

- (i) the repair of owner-occupied private residences, utilities, and residential infrastructure (such as a private access route) damaged by a major disaster to a safe and sanitary living or functioning condition; and*
- (ii) eligible hazard mitigation measures that reduce the likelihood of future damage to such residences, utilities, or infrastructure.*

*(B) RELATIONSHIP TO OTHER ASSISTANCE.—A recipient of assistance provided under this paragraph shall not be required to show that the assistance can be met through other means, except insurance proceeds.*

*(C) MAXIMUM AMOUNT OF ASSISTANCE.—The amount of assistance provided to a household under this paragraph shall not exceed \$5,000, as adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor.*

**(3) REPLACEMENT.—**

*(A) IN GENERAL.—The President may provide financial assistance for the replacement of owner-occupied private residences damaged by a major disaster.*

*(B) MAXIMUM AMOUNT OF ASSISTANCE.—The amount of assistance provided to a household under this paragraph shall not exceed \$10,000, as adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor.*

*(C) APPLICABILITY OF FLOOD INSURANCE REQUIREMENT.— With respect to assistance provided under this paragraph, the President may not waive any provision of Federal law requiring the purchase of flood insurance as a condition of the receipt of Federal disaster assistance.*

**(4) PERMANENT HOUSING CONSTRUCTION.—***The President may provide financial assistance or direct assistance to individuals or households to construct permanent housing in insular areas outside the continental United States and in other remote locations in cases in which—*

- (A) no alternative housing resources are available; and*
- (B) the types of temporary housing assistance described in paragraph (1) are unavailable, infeasible, or not cost-effective.*

**(d) TERMS AND CONDITIONS RELATING TO HOUSING ASSISTANCE.—**

**(1) SITES.—**



- (A) *IN GENERAL.*—Any readily fabricated dwelling provided under this section shall, whenever practicable, be located on a site that—
    - (i) is complete with utilities; and
    - (ii) is provided by the State or local government, by the owner of the site, or by the occupant who was displaced by the major disaster.
  - (B) *SITES PROVIDED BY THE PRESIDENT.*—A readily fabricated dwelling may be located on a site provided by the President if the President determines that such a site would be more economical or accessible.
- (2) *DISPOSAL OF UNITS.*—
- (A) *SALE TO OCCUPANTS.*—
    - (i) *IN GENERAL.*—Notwithstanding any other provision of law, a temporary housing unit purchased under this section by the President for the purpose of housing disaster victims may be sold directly to the individual or household who is occupying the unit if the individual or household lacks permanent housing.
    - (ii) *SALE PRICE.*—A sale of a temporary housing unit under clause (i) shall be at a price that is fair and equitable.
    - (iii) *DEPOSIT OF PROCEEDS.*—Notwithstanding any other provision of law, the proceeds of a sale under clause (i) shall be deposited in the appropriate Disaster Relief Fund account.
    - (iv) *HAZARD AND FLOOD INSURANCE.*—A sale of a temporary housing unit under clause (i) shall be made on the condition that the individual or household purchasing the housing unit agrees to obtain and maintain hazard and flood insurance on the housing unit.
    - (v) *USE OF GSA SERVICES.*—The President may use the services of the General Services Administration to accomplish a sale under clause (i).
  - (B) *OTHER METHODS OF DISPOSAL.*—If not disposed of under subparagraph (A), a temporary housing unit purchased under this section by the President for the purpose of housing disaster victims—
    - (i) may be sold to any person; or
    - (ii) may be sold, transferred, donated, or otherwise made available directly to a State or other governmental entity or to a voluntary organization for the sole purpose of providing temporary housing to disaster victims in major disasters and emergencies if, as a condition of the sale, transfer, or donation, the State, other governmental agency, or voluntary organization agrees—
      - (I) to comply with the nondiscrimination provisions of section 308; and
      - (II) to obtain and maintain hazard and flood insurance on the housing unit.
- (e) *FINANCIAL ASSISTANCE TO ADDRESS OTHER NEEDS.*—
- (1) *MEDICAL, DENTAL, AND FUNERAL EXPENSES.*—The President, in consultation with the Governor of a State, may provide financial assistance under this section to an individual or household in the State who is adversely affected by a major disaster to meet disaster-related medical, dental, and funeral expenses.
  - (2) *PERSONAL PROPERTY, TRANSPORTATION, AND OTHER EXPENSES.*—The President, in consultation with the Governor of a State, may provide financial assistance under this section to an individual or household described in paragraph

*(1) to address personal property, transportation, and other necessary expenses or serious needs resulting from the major disaster.*

*(f) STATE ROLE.—*

*(1) FINANCIAL ASSISTANCE TO ADDRESS OTHER NEEDS.—*

*(A) GRANT TO STATE.—Subject to subsection (g), a Governor may request a grant from the President to provide financial assistance to individuals and households in the State under subsection (e).*

*(B) ADMINISTRATIVE COSTS.—A State that receives a grant under subparagraph (A) may expend not more than 5 percent of the amount of the grant for the administrative costs of providing financial assistance to individuals and households in the State under subsection (e).*

*(2) ACCESS TO RECORDS.—In providing assistance to individuals and households under this section, the President shall provide for the substantial and ongoing involvement of the States in which the individuals and households are located, including by providing to the States access to the electronic records of individuals and households receiving assistance under this section in order for the States to make available any additional State and local assistance to the individuals and households.*

*(g) COST SHARING.—*

*(1) FEDERAL SHARE.—Except as provided in paragraph(2), the Federal share of the costs eligible to be paid using assistance provided under this section shall be 100 percent.*

*(2) FINANCIAL ASSISTANCE TO ADDRESS OTHER NEEDS.— In the case of financial assistance provided under subsection (e)—*

*(A) the Federal share shall be 75 percent; and*

*(B) the non-Federal share shall be paid from funds made available by the State.*

*(h) MAXIMUM AMOUNT OF ASSISTANCE.—*

*(1) IN GENERAL.—No individual or household shall receive financial assistance greater than \$25,000 under this section with respect to a single major disaster.*

*(2) ADJUSTMENT OF LIMIT.—The limit established under paragraph (1) shall be adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor.*

*(i) RULES AND REGULATIONS.—The President shall prescribe rules and regulations to carry out this section, including criteria, standards, and procedures for determining eligibility for assistance.*

*(b) CONFORMING AMENDMENT.—Section 502(a)(6) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5192(a)(6)) is amended by striking “temporary housing”.*

*(c) ELIMINATION OF INDIVIDUAL AND FAMILY GRANT PROGRAMS.— Section 411 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5178) is repealed.*

*(d) EFFECTIVE DATE.—The amendments made by this section take effect 18 months after the date of the enactment of this Act.*

**SEC. 207. COMMUNITY DISASTER LOANS.**

Section 417 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5184) is amended--

(1) by striking “(a) The President” and inserting the following:

“(a) IN GENERAL.—The President”;

- (2) by striking “The amount” and inserting the following:  
“(b) AMOUNT.—The amount”;
- (3) by striking “Repayment” and inserting the following:  
“(c) REPAYMENT.—  
“(1) CANCELLATION.—Repayment”;
- (4) by striking “(b) Any loans” and inserting the following:  
“(d) EFFECT ON OTHER ASSISTANCE.—Any loans”;
- (5) in subsection (b) (as designated by paragraph (2))—
  - (A) by striking “and shall” and inserting “shall”; and
  - (B) by inserting before the period at the end the following:  
“, and shall not exceed \$5,000,000”; and
- (6) in subsection (c) (as designated by paragraph (3)), by adding at the end the following:  
“(2) CONDITION ON CONTINUING ELIGIBILITY.—A local government shall not be eligible for further assistance under this section during any period in which the local government is in arrears with respect to a required repayment of a loan under this section.”.

#### **SEC. 208. REPORT ON STATE MANAGEMENT OF SMALL DISASTERS INITIATIVE.**

Not later than 3 years after the date of the enactment of this Act, the President shall submit to Congress a report describing the results of the State Management of Small Disasters Initiative, including—

- (1) identification of any administrative or financial benefits of the initiative; and
- (2) recommendations concerning the conditions, if any, under which States should be allowed the option to administer parts of the assistance program under section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172).

#### **SEC. 209. STUDY REGARDING COST REDUCTION.**

Not later than 3 years after the date of the enactment of this Act, the Director of the Congressional Budget Office shall complete a study estimating the reduction in Federal disaster assistance that has resulted and is likely to result from the enactment of this Act.

### **TITLE III—MISCELLANEOUS**

#### **SEC. 301. TECHNICAL CORRECTION OF SHORT TITLE.**

The first section of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 note) is amended to read as follows:

##### ***SECTION 1. SHORT TITLE.***

*This Act may be cited as the ‘Robert T. Stafford Disaster Relief and Emergency Assistance Act’..*

#### **SEC. 302. DEFINITIONS.**

Section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122) is amended—

- (1) in each of paragraphs (3) and (4), by striking “the Northern” and all that follows through “Pacific Islands” and inserting “and the Commonwealth of the Northern Mariana Islands”;
- (2) by striking paragraph (6) and inserting the following:  
(6) **LOCAL GOVERNMENT.**—*The term ‘local government’ means—*

- (A) a county, municipality, city, town, township, local public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government;
  - (B) an Indian tribe or authorized tribal organization, or Alaska Native village or organization; and
  - (C) a rural community, unincorporated town or village, or other public entity, for which an application for assistance is made by a State or political subdivision of a State.; and
- (3) in paragraph (9), by inserting “irrigation,” after “utility,”.

**SEC. 303. FIRE MANAGEMENT ASSISTANCE.**

(a) **IN GENERAL.**—Section 420 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5187) is amended to read as follows:

**SEC. 420. FIRE MANAGEMENT ASSISTANCE.**

- (a) **IN GENERAL.**—The President is authorized to provide assistance, including grants, equipment, supplies, and personnel, to any State or local government for the mitigation, management, and control of any fire on public or private forest land or grassland that threatens such destruction as would constitute a major disaster.
- (b) **COORDINATION WITH STATE AND TRIBAL DEPARTMENTS OF FORESTRY.**—In providing assistance under this section, the President shall coordinate with State and tribal departments of forestry.
- (c) **ESSENTIAL ASSISTANCE.**—In providing assistance under this section, the President may use the authority provided under section 403.
- (d) **RULES AND REGULATIONS.**—The President shall prescribe such rules and regulations as are necessary to carry out this section.
- (b) **EFFECTIVE DATE.**—The amendment made by subsection (a) takes effect 1 year after the date of the enactment of this Act.

**SEC. 304. DISASTER GRANT CLOSEOUT PROCEDURES.**

Title VII of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5101 et seq.) is amended by adding at the end the following:

**SEC. 705. DISASTER GRANT CLOSEOUT PROCEDURES.**

(a) **STATUTE OF LIMITATIONS.**—

- (1) **IN GENERAL.**—Except as provided in paragraph (2), no administrative action to recover any payment made to a State or local government for disaster or emergency assistance under this Act shall be initiated in any forum after the date that is 3 years after the date of transmission of the final expenditure report for the disaster or emergency.
- (2) **FRAUD EXCEPTION.**—The limitation under paragraph (1) shall apply unless there is evidence of civil or criminal fraud.

(b) **REBUTTAL OF PRESUMPTION OF RECORD MAINTENANCE.**—

- (1) **IN GENERAL.**—In any dispute arising under this section after the date that is 3 years after the date of transmission of the final expenditure report for the disaster or emergency, there shall be a presumption that accounting records were maintained that adequately identify the source and application of funds provided for financially assisted activities.

- (2) *AFFIRMATIVE EVIDENCE.*—*The presumption described in paragraph (1) may be rebutted only on production of affirmative evidence that the State or local government did not maintain documentation described in that paragraph.*
- (3) *INABILITY TO PRODUCE DOCUMENTATION.*—*The inability of the Federal, State, or local government to produce source documentation supporting expenditure reports later than 3 years after the date of transmission of the final expenditure report shall not constitute evidence to rebut the presumption described in paragraph (1).*
- (4) *RIGHT OF ACCESS.*—*The period during which the Federal, State, or local government has the right to access source documentation shall not be limited to the required 3-year retention period referred to in paragraph (3), but shall last as long as the records are maintained.*
- (c) *BINDING NATURE OF GRANT REQUIREMENTS.*—*A State or local government shall not be liable for reimbursement or any other penalty for any payment made under this Act if—*
  - (1) the payment was authorized by an approved agreement specifying the costs;*
  - (2) the costs were reasonable; and*
  - (3) the purpose of the grant was accomplished.*

**SEC. 305. PUBLIC SAFETY OFFICER BENEFITS FOR CERTAIN FEDERAL AND STATE EMPLOYEES.**

- (a) *IN GENERAL.*—Section 1204 of the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. 3796b) is amended by striking paragraph (7) and inserting the following:
  - (7) ‘public safety officer’ means—
    - (A) *an individual serving a public agency in an official capacity, with or without compensation, as a law enforcement officer, as a firefighter, or as a member of a rescue squad or ambulance crew;*
    - (B) *an employee of the Federal Emergency Management Agency who is performing official duties of the Agency in an area, if those official duties—*
      - (i) are related to a major disaster or emergency that has been, or is later, declared to exist with respect to the area under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.); and*
      - (ii) are determined by the Director of the Federal Emergency Management Agency to be hazardous duties; or*
    - (C) *an employee of a State, local, or tribal emergency management or civil defense agency who is performing official duties in cooperation with the Federal Emergency Management Agency in an area, if those official duties—*
      - (i) are related to a major disaster or emergency that has been, or is later, declared to exist with respect to the area under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.); and*
      - (ii) are determined by the head of the agency to be hazardous duties.*
- (b) *EFFECTIVE DATE.*—The amendment made by subsection (a) applies only to employees described in subparagraphs (B) and (C) of section 1204(7) of the Omnibus Crime Control and Safe Streets Act of 1968 (as amended by subsection (a)) who are injured or who die in the line of duty on or after the date of the enactment of this Act.

**SEC. 306. BUY AMERICAN.**

- (a) *COMPLIANCE WITH BUY AMERICAN ACT.*—No funds authorized to be appropriated under this Act or any amendment made by this Act may be expended by an entity unless the entity, in expending the funds, complies with the Buy American Act (41 U.S.C. 10a et seq.).

(b) **DEBARMENT OF PERSONS CONVICTED OF FRAUDULENT USE OF “MADE IN AMERICA” LABELS.—**

- (1) **IN GENERAL.**—If the Director of the Federal Emergency Management Agency determines that a person has been convicted of intentionally affixing a label bearing a “Made in America” inscription to any product sold in or shipped to the United States that is not made in America, the Director shall determine, not later than 90 days after determining that the person has been so convicted, whether the person should be debarred from contracting under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.).
- (2) **DEFINITION OF DEBAR.**—In this subsection, the term “debar” has the meaning given the term in section 2393(c) of title 10, United States Code.

**SEC. 307. TREATMENT OF CERTAIN REAL PROPERTY.**

- (a) **IN GENERAL.**—Notwithstanding the National Flood Insurance Act of 1968 (42 U.S.C. 4001 et seq.), the Flood Disaster Protection Act of 1973 (42 U.S.C. 4002 et seq.), or any other provision of law, or any flood risk zone identified, delineated, or established under any such law (by flood insurance rate map or otherwise), the real property described in subsection (b) shall not be considered to be, or to have been, located in any area having special flood hazards (including any floodway or floodplain).
- (b) **REAL PROPERTY.**—The real property described in this subsection is all land and improvements on the land located in the Maple Terrace Subdivisions in the City of Sycamore, DeKalb County, Illinois, including—
- (1) Maple Terrace Phase I;
  - (2) Maple Terrace Phase II;
  - (3) Maple Terrace Phase III Unit 1;
  - (4) Maple Terrace Phase III Unit 2;
  - (5) Maple Terrace Phase III Unit 3;
  - (6) Maple Terrace Phase IV Unit 1;
  - (7) Maple Terrace Phase IV Unit 2; and
  - (8) Maple Terrace Phase IV Unit 3.
- (c) **REVISION OF FLOOD INSURANCE RATE LOT MAPS.**—As soon as practicable after the date of the enactment of this Act, the Director of the Federal Emergency Management Agency shall revise the appropriate flood insurance rate lot maps of the agency to reflect the treatment under subsection (a) of the real property described in subsection (b).

**SEC. 308. STUDY OF PARTICIPATION BY INDIAN TRIBES IN EMERGENCY MANAGEMENT.**

- (a) **DEFINITION OF INDIAN TRIBE.**—In this section, the term “Indian tribe” has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b).
- (b) **STUDY.**—
- (1) **IN GENERAL.**—The Director of the Federal Emergency Management Agency shall conduct a study of participation by Indian tribes in emergency management.
  - (2) **REQUIRED ELEMENTS.**—The study shall—
    - (A) survey participation by Indian tribes in training, predisaster and postdisaster mitigation, disaster preparedness, and disaster recovery programs at the Federal and State levels; and

- (B) review and assess the capacity of Indian tribes to participate in cost-shared emergency management programs and to participate in the management of the programs.
- (3) CONSULTATION.—In conducting the study, the Director shall consult with Indian tribes.
- (c) REPORT.—Not later than 1 year after the date of the enactment of this Act, the Director shall submit a report on the study under subsection (b) to—
  - (1) the Committee on Environment and Public Works of the Senate;
  - (2) the Committee on Transportation and Infrastructure of the House of Representatives;
  - (3) the Committee on Appropriations of the Senate; and
  - (4) the Committee on Appropriations of the House of Representatives.

Approved October 30, 2000.





## **Appendix C**

### **Lowndes County Hazard Mitigation Plan Local Approval**

The planning participation process and approval of the Hazard Mitigation Plan was outlined in the first chapter of the 2015 Lowndes County Hazard Mitigation Plan. After a public hearing and revisions, as necessary, the plan was submitted to AEMA and FEMA for approval. Following any revisions required by FEMA, the plan will be considered for review and approval by resolution by each of the eight local governments in Lowndes County. The following resolutions are included as templates for adoption by the jurisdictions included in the plan. After consideration by the local governments, executed resolutions will be forwarded to AEMA and FEMA.



**Lowndes County, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing all of Lowndes County; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Lowndes County Commission was provided with adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, access risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of Lowndes County.

**NOW THEREFORE BE IT RESOLVED** that the County Commission of Lowndes County, Alabama does hereby adopt the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Robert M. Harris, Chairman

ATTEST:

\_\_\_\_\_  
Jacquelyn J. Thomas, County Administrator

**Town of Benton, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing Lowndes County, including the Town of Benton; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Town of Benton, Alabama was provided with ample and adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, access risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of the Town of Benton.

**NOW THEREFORE BE IT RESOLVED** that the Town Council of the Town of Benton, Alabama does hereby adopt/approve the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Donny Cooper, Mayor

ATTEST:

\_\_\_\_\_  
Edie Hornsby, Town Clerk

**Town of Fort Deposit, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing Lowndes County, including the Town of Fort Deposit; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Town of Fort Deposit, Alabama was provided with ample and adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, access risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of the Town of Fort Deposit.

**NOW THEREFORE BE IT RESOLVED** that the Town Council of the Town of Fort Deposit, Alabama does hereby adopt the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Fletcher S. Fountain, Mayor

ATTEST:

\_\_\_\_\_  
Cynthia Jones, Town Clerk

**Town of Gordonville, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing Lowndes County, including the Town of Gordonville; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Town of Gordonville, Alabama was provided with ample and adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, assess risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of the Town of Gordonville.

**NOW THEREFORE BE IT RESOLVED** that the Town Council of the Town of Gordonville, Alabama does hereby adopt the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Willie C. Davis, Mayor

ATTEST:

\_\_\_\_\_  
Brenda Davis, Town Clerk

**Town of Hayneville, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing Lowndes County, including the Town of Hayneville; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Town of Hayneville, Alabama was provided with ample and adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, access risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of the Town of Hayneville.

**NOW THEREFORE BE IT RESOLVED** that the Town Council of the Town of Hayneville, Alabama does hereby adopt the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Kelvin J. Lawrence, Mayor

ATTEST:

\_\_\_\_\_  
Susie Smith, Town Clerk

**Town of Lowndesboro, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing Lowndes County, including the Town of Lowndesboro; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Town of Lowndesboro, Alabama was provided with ample and adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, access risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of the Town of Lowndesboro.

**NOW THEREFORE BE IT RESOLVED** that the Town Council of the Town of Lowndesboro, Alabama does hereby adopt the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Rick Pate, Mayor

ATTEST:

\_\_\_\_\_  
Bonita Heartsill, Town Clerk



**Town of Mosses, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing Lowndes County, including the Town of Mosses; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Town of Mosses, Alabama was provided with ample and adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, access risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of the Town of Mosses.

**NOW THEREFORE BE IT RESOLVED** that the Town Council of the Town of Mosses, Alabama does hereby adopt the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Walter Hill, Mayor

ATTEST:

\_\_\_\_\_  
Alicia Howard, Town Clerk

**Town of White Hall, Alabama**  
**RESOLUTION \_\_\_\_\_**

**ADOPT THE 2015 LOWNDES COUNTY HAZARD MITIGATION PLAN**

**WHEREAS**, the Lowndes County Emergency Management Agency has engaged in extensive studies of the hazards facing Lowndes County, including the Town of White Hall; and

**WHEREAS**, the Lowndes County Emergency Management Agency, with guidance from the Lowndes County Local Emergency Planning Committee and as required by the Federal Emergency Management Agency, has prepared the 2015 Lowndes County Hazard Mitigation Plan which will supersede the existing county hazard mitigation plan that was approved in 2008; and

**WHEREAS**, the Town of White Hall, Alabama was provided with ample and adequate opportunity to participate in the hazard mitigation planning process and is represented on the Lowndes County Local Emergency Planning Committee; and

**WHEREAS**, the primary goals of this plan are to reduce the loss of life, property damage, and economic loss; make Lowndes County less vulnerable to natural disasters; and to provide education about hazards and hazard mitigation options; and,

**WHEREAS**, the strategies of this plan are to identify and characterize hazards, access risk, prioritize and implement mitigation measures; and,

**WHEREAS**, adoption and implementation of the 2015 Lowndes County Hazard Mitigation Plan would be in the best interest and protection of the citizens of the Town of White Hall.

**NOW THEREFORE BE IT RESOLVED** that the Town Council of the Town of White Hall, Alabama does hereby adopt the document entitled the 2015 Lowndes County Hazard Mitigation Plan.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
James Walker, Mayor

ATTEST:

\_\_\_\_\_  
Shanavia Sellers, Town Clerk

## Appendix D

### Definitions

**Applicant:** Entity, such as a State, Territory, or Indian Tribal government, applying to FEMA for a grant that will be accountable for the use of the funds. Once grant funds are awarded, the Applicant becomes the “Grantee.”

**Base Flood:** A flood having a 1 percent chance of being equaled or exceeded in any given year.

**Base Flood Elevation (BFE):** The elevation shown on the Flood Insurance Rate Map (FIRM) for Zones AE, AH, A1–A30, AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, V1–V30, and VE that indicates the water surface elevation resulting from a flood that has a 1 percent chance of equaling or exceeding that level in any given year.

**Benefit-Cost Analysis (BCA):** A quantitative procedure that assesses the cost-effectiveness of a hazard mitigation measure by taking a long-term view of avoided future damages as compared to the cost of a project.

**Benefit-Cost Ratio (BCR):** A numerical expression of the cost-effectiveness of a project calculated as the net present value of total project benefits divided by the net present value of total project costs.

**Biomass:** Biological material derived from living, or recently living organisms.

**Building:** A structure with two or more outside rigid walls and a fully secured roof that is affixed to a permanent site; a manufactured home or a mobile home without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community’s floodplain management and building ordinances or laws. “Building” does not mean a gas or liquid storage tank or a recreational vehicle, park trailer, or other similar vehicle.

**Clean-site certification:** A letter from the appropriate local, State, Indian Tribal, or Federal entity stating that no further remedial action is required to protect human health or the environment.

**Coastal Barrier Resource System (CBRS):** A geographic unit designated to serve as a protective barrier against forces of wind and tidal action caused by coastal storms and serving as habitat for aquatic species. Congress restricted Federal spending and assistance for development-related activities within CBRS units to protect them from further development. Federal flood insurance is unavailable in these areas. CBRS units are identified on FEMA FIRMs.

**Coastal High Hazard Area:** An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

**Combustible material:** Any material that, in the form in which it is used and under the conditions anticipated, will ignite and burn or will add appreciable heat to an ambient fire.

**Community Rating System (CRS):** A program developed by FEMA to provide incentives for those communities in the NFIP that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.

**Cost-effectiveness:** Determined by a systematic quantitative method for comparing the costs of alternative means of achieving the same stream of benefits for a given objective. The benefits in the context of hazard mitigation are avoided future damages and losses. Cost-effectiveness is determined by performing a BCA.

**Cost share:** The portion of the costs of a federally assisted project or program not borne by the Federal Government.

**Defensible space:** An area that is either natural or manmade, where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire-suppression operations to occur.

**Dwelling:** A building designed for use as a residence for no more than four families or a single-family unit in a building under a condominium form of ownership.

**Elevated Building:** A building that has no basement and a lowest floor that is elevated to or above the BFE by foundation walls, shear walls, posts, piers, pilings, or columns. Solid perimeter foundations walls are not an acceptable means of elevating buildings in Zones V and VE.

**Environmental Benefits:** Environmental benefits are direct or indirect contributions that ecosystems make to the environment and human populations. For FEMA BCA, certain types of environmental benefits may be realized when homes are removed and land is returned to open space uses. Benefits may include flood hazard reduction; an increase in recreation and tourism; enhanced aesthetic value; and improved erosion control, air quality, and water filtration.

**Equipment:** Tangible, nonexpendable, personal property having a useful life of more than 1 year and an acquisition cost of \$5,000 or more per unit. A Grantee may use its own definition of equipment provided such definition would at least include all equipment defined above.

**Federal Agency:** Any department, independent establishment, Government corporation, or other agency of the executive branch of the Federal Government, including the U.S. Postal Service, but not the American National Red Cross.

**Federal Cognizant Agency:** The Federal agency responsible for reviewing, negotiating, and approving cost allocation plans or indirect cost proposals developed on behalf of all Federal agencies. The OMB publishes a list of Federal Cognizant Agencies.

**Firebreak:** a strip of cleared land that provides a gap in vegetation or other combustible material that is expected to slow or stop the progress of a wildfire.

**Fire-proofing:** Removal or treatment of fuels to reduce the danger of fires igniting or spreading. (e.g., fire-proofing roadsides, campsites, structural timber).

**Fire-resistant material:** Material that has a property that prevents or retards the passage of excessive heat, hot gases, or flames under conditions of use.

**Fire retardant:** Chemical applied to lumber or other products to slow combustion and flame spread.

**Fire Severity Zone:** Three concentric zones around a building used to determine the most effective design for defensible space.

**Flammability:** The relative ease with which fuels ignite and burn regardless of the quantity of fuel.

**Flood Insurance Rate Map (FIRM):** Official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.

**Floodplain:** Any land area that FEMA has determined has at least a 1 percent chance in any given year of being inundated by floodwaters from any source.

**Floodplain Management:** The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to, emergency preparedness plans, flood control works, and floodplain management regulations.

**Floodway:** The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities regulate development in these floodways to ensure that there are no increases in upstream flood elevations.

**Freeboard:** Freeboard is a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

**Fuel break:** A natural or manmade change in fuel characteristics that affects fire behavior so that fires burning into them can be more readily controlled.

**Fuel condition:** Relative flammability of fuel as determined by fuel type and environmental conditions.

**Governor's Authorized Representative (GAR):** The individual, designated by the Governor, who serves as the grant administrator for all funds provided under HMGP; the person empowered by the Governor to execute, on behalf of the State, all necessary documents for disaster assistance.

**Grant:** An award of financial assistance for a specified purpose by the Federal government to an eligible Grantee.

**Grantee:** The entity, such as a State, Territory, or Indian Tribal government to which a grant is awarded and that is accountable for the use of the funds provided. The Grantee is the entire legal entity even if only a particular component of the entity is designated in the grant award document.

**Green Open Space:** Green open space is land that does not directly touch a natural body of water, such as a river, lake, stream, creek, or coastal body of water.

**Hazardous fuels reduction:** An area strategically located in relation to predicted fire hazard and occurrence where the vegetation has been permanently modified or replaced so that fires burning into it can be more easily controlled (e.g., vegetation management activities).

**Hazard mitigation planning:** A process used by governments to identify risks, assess vulnerabilities, and develop long-term strategies for protecting people and property from the effects of future natural hazard events.

**HMGP Lock-In Ceiling:** The level of HMGP funding available to a Grantee for a particular Presidential major disaster declaration.

**Identified for Further Review:** Subapplications identified for further review contain sufficient information for a preliminary determination of cost-effectiveness and feasibility. In certain instances, FEMA may work with Applicants to confirm cost-effectiveness and feasibility. Identification for further review is not a notification of award.

**Ignition-resistant construction:** Construction standards based on use of fire-resistant materials, non-combustible materials, and 1-hour fire-rated assemblies.

**Increased Cost of Compliance:** Coverage for expenses a property owner must incur, above and beyond the cost to repair the physical damage the structure actually sustained from a flooding event, to comply with mitigation requirements of State or local floodplain management ordinances or laws; acceptable mitigation measures are structure elevation, dry floodproofing, structure relocation, structure demolition, or any combination thereof.

**Indian Tribal Government:** A federally recognized governing body of an Indian or Alaska Native Tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian Tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

**Indirect cost:** Cost that is incurred by a Grantee for a common or joint purpose benefitting more than one cost objective that is not readily assignable to the cost objectives specifically benefited.

**Indirect cost rate:** Percentage established by a Federal department or agency for a Grantee to use in computing the dollar amount it charges to the grant to reimburse itself for indirect costs incurred in doing the work of the grant activity.

**Management costs:** Any indirect costs, administrative expenses, and any other expenses not directly chargeable to a specific project that are reasonably incurred by a Grantee or subgrantee in administering and managing a grant or subgrant award. For HMGP, management cost funding is provided outside of Federal assistance limits defined at 44 CFR Section 206.432(b).

**Manufactured (Mobile) home:** A structure, transportable in one or more sections that is built on a permanent chassis and designed for use with or without a permanent foundation when attached to the required utilities.

**Mitigation:** Any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.

**Mitigation activity:** A mitigation measure, project, plan, or action proposed to reduce risk of future damage, hardship, loss, or suffering from disasters. The term “measure” is used interchangeably with the term “project” in this program.

**National Flood Insurance Program (NFIP):** Provides the availability of flood insurance in exchange for the adoption of a minimum local floodplain management ordinance that regulates new and Substantially Improved development in identified flood hazard areas.

**Non-combustible material:** Material of which no part will ignite and burn when subjected to fire, such as any material conforming to ASTM E 136.

**Nonflammable:** Material unlikely to burn when exposed to flame under most conditions.

**Non-Federal funds:** Financial resources provided by sources other than the Federal Government. The term does not include funds provided to a State or local government through a Federal grant unless the authorizing statute for that grant explicitly allows the funds to be used as cost share for other Federal grants.

**Non-Residential structure:** Includes, but is not limited to small business concerns, places of worship, schools, farm buildings (including grain bins and silos), pool houses, clubhouses, recreational buildings, mercantile structures, agricultural and industrial structures, warehouses, hotels and motels with normal room rentals for less than 6 months’ duration, and nursing homes.

**Office of Environmental Planning and Historic Preservation:** Integrates the protection and enhancement of environmental, historic, and cultural resources into the FEMA mission and FEMA programs and activities; ensures that FEMA activities and programs related to disaster response and recovery, hazard mitigation, and emergency preparedness comply with Federal environmental and historic preservation (EHP) laws and Executive orders; and provides EHP technical assistance to FEMA staff, local, State, and Federal partners, and Grantees and subgrantees.

**Otherwise Protected Areas (OPAs):** Designation created by the Coastal Barrier Improvement Act. Flood insurance is restricted in OPAs even though they are not in the CBRS and may receive other forms of Federal assistance. OPAs are identified on FEMA FIRMs.

**Period of Performance (POP):** The period of time during which the Grantee is expected to complete the grant activities and to incur and expend approved funds.

**Pile burning:** Piling removed vegetation into manageable piles and burning the individual piles during safe and approved burning conditions.

**Post-FIRM Building:** A building for which construction or Substantial Improvement occurred after December 31, 1974, or on or after the effective date of an initial FIRM, whichever is later.

**Practicable:** An action that is capable of being done within existing constraints. The test of what is practicable depends upon the situation and includes consideration of all pertinent factors, such as environment, cost, and technology.

**Pre-FIRM Building:** A building for which construction or Substantial Improvement occurred on or before December 31, 1974, or before the effective date of an initial FIRM.

**Prescribed burning:** The deliberate and managed use of fire ignited by management actions to meet specific fuels management objectives.

**Presidential Major Disaster:** Any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought) or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Stafford Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

**Private non-profit (PNP):** Any non-governmental agency or entity that currently has: (i) an effective ruling letter from the Internal Revenue Service granting tax exemption under section 501(c), (d), or (e) of the Internal Revenue Code of 1954; or (ii) satisfactory evidence from the State that the organization or entity is a non-profit one organized or doing business under State law.

**Project:** Any mitigation measure or action proposed to reduce risk of future damage, hardship, loss, or suffering from disasters.

**Public Assistance:** Supplementary Federal assistance provided under the Stafford Act to State and local governments or certain PNP organizations other than assistance for the direct benefit of individuals and families. For further information, see 44 CFR Part 206, Subparts G and H. Fire Management Assistance Grants under section 420 of the Stafford Act are also considered Public Assistance.

**Replacement cost value:** The cost to replace property with materials of like kind and quality, without any deduction for depreciation.

**Riparian Area:** The land that directly abuts a natural body of water, such as a river, lake, stream, creek, or coastal body of water.

**Slash:** The accumulation of vegetative materials such as tops, limbs, branches, brush, and miscellaneous residue results from forest management activities such as thinning, pruning, timber harvesting, and wildfire hazard mitigation.

**Special Flood Hazard Area (SFHA):** The land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year. An area having special flood, mudflow, or



flood-related erosion hazards, and shown on a Flood Hazard Boundary Map or a FIRM as Zone A, AO, A1–A30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1– A30, V1–V30, VE, or V.

**State Hazard Mitigation Officer (SHMO):** The representative of a State government who is the primary point of contact with FEMA, other Federal agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.

**Structural fire protection:** The protection of homes or other buildings from wildland fire.

**Subapplicant:** The entity, such as a community/local government, Tribal government, or PNP, that submits a subapplication for FEMA assistance to the Applicant. Once funding is awarded, the subapplicant becomes the “subgrantee.”

**Subgrant:** An award of financial assistance under a grant by a Grantee to an eligible subgrantee.

**Subgrantee:** The entity, such as a community/local government, Tribal government, or PNP to which a subgrant is awarded and who is accountable to the Grantee for the use of the funds provided.

**Substantial Damage:** Damage of any origin sustained by a building whereby the cost of restoring the building to its before-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred.

**Wildfire:** An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

**Wildland-Urban Interface Area:** That geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

All terms not listed above are used consistent with the term definitions used in 44 CFR unless otherwise specified.



**Appendix E**  
**Lowndes County Hazard Mitigation Planning Process**  
**Meeting Summaries**



**Lowndes County Hazard Mitigation Plan Meeting #1**  
Wednesday, May 21, 2014

**MEETING SUMMARY**

**Persons Present:**

Jason Burroughs, Board of Education  
David Butts, Lowndes County EMA/ County  
Engineer  
Tracy Delaney, SCADC  
Ben Huguley, Sejong Alabama  
Joe Jordan, Lowndes County Highway Dept.

Grayson Parker, SCADC  
Jennifer Roberts, Lowndes County Health Dept.  
David Spooner, Lowndesboro VFD  
Paul Stuckey, Alabama Forestry Commission  
Sharon Trippany, SABIC Innovative Plastics  
Ben Waits, SABIC Innovative Plastics

**Welcome and Introductions**

The first meeting of the Lowndes County Hazard Mitigation Plan Update planning process was held on Wednesday, May 21, 2014 at 10:00 AM at the Charles E. Smith Courthouse Annex in Hayneville, Alabama. David Butts, Lowndes County Emergency Management Director and County Engineer addressed the committee and citizens, thanking them for participating in the hazard mitigation planning process. Mr. Butts asked each person to introduce themselves and state what agency or organization he or she was representing. Mr. Butts then introduced Ms. Tracy Delaney, of the South Central Alabama Development Commission, and stated that she would be facilitating the planning process. Ms. Delaney explained that this meeting would be an introduction to hazard mitigation. The meeting would address initial concerns from the community, and comments and suggestions for future meetings. Ms. Delaney thanked each person in attendance. She then reviewed the composition and the role of the Lowndes County Local Emergency Planning Committee (LEPC). Ms. Delaney said that public participation is a major part of making the plan successful and hopes that more citizens, government officials, and concerned parties will participate in future meetings. She also stated that the public participation hours will be utilized to provide in-kind match for the hazard mitigation grant.

**Purpose and FEMA Requirements**

Ms. Delaney stated the purpose of this hazard mitigation process is to update the Lowndes County Hazard Mitigation Plan from 2008. Lowndes County received a grant in the amount of \$20,625, through the Hazard Mitigation Grant Program (HMGP) grant through the Alabama Emergency Management Agency (AEMA). The grant will cover 80 percent of the project cost. Lowndes County will be providing the 20 project match with \$2,875 in cash funds and \$4,000 in in-kind funds. Ms. Delaney explained that the Federal Emergency Management Agency (FEMA) requires each local government to have an adopted hazard mitigation plan to be eligible for federal disaster recovery funds. Further, these plans must be updated and re-adopted every five years to maintain eligibility. The Lowndes County 2008 Hazard Mitigation Plan expired in October 2013. Therefore, Lowndes County is not presently eligible for disaster recovery funds should a natural disaster, such as tornado damage, occur.

The Lowndes County Hazard Mitigation Plan is a multi-jurisdictional plan covering all areas of the county, including unincorporated areas and the area within the seven municipalities located in Lowndes County. Ms. Delaney explained that FEMA defines the purpose of the hazard mitigation plan should be to “minimize your losses” and put into place a framework to create resilient communities that are prepared for disasters and hazards. She further stated that the Lowndes County Hazard Mitigation Plan Update will address 12 natural hazards: floods, high winds, winter/ice storms,

landslides, sinkholes and subsidence, earthquakes, drought, hail, wildfires, extreme temperatures, thunderstorms and lightening, and dam failure.

### **Community Profile**

Ms. Delaney provided a demographic profile of Lowndes County, stating that the county continues to lose population with a 5.3 percent decrease between 2010 and 2013. The U.S. Bureau of Census estimates that the Lowndes County 2013 population is 10,703 persons. Of the total population, it is estimated that 39.8 percent are in a dependent age group, being either 18 or younger or 65 or older. The population density of Lowndes County is 15.8 persons per square mile. Ms. Delaney also reviewed the existing physical conditions of the county, stating that it is important to understand the physical geography of the county, including its waterways and terrain, in relation to better understand the potential impact of natural hazards.

Schools and businesses are greatly affected by tornadoes, thunderstorms, and hurricanes. Sabic Innovative Plastics representatives said that high winds and lightning hurt business, plant operations, and caused major power outages at and around their 500 employee facility. Heavy rains have also caused flooding and runoffs on roads near the Alabama River. Alabama Power has a Dam Emergency Plan.

### **Lowndes County Hazard Identification**

Ms. Delaney stated that the 2008 Lowndes County Hazard Mitigation Plan identified seven Priority 1 hazards and ranked them in the following order: floods; tornados; hurricanes and tropical storms; expansive soils and sinkholes; wildfire; thunderstorms; lightening and hail; and drought and extreme heat. Dam failure was identified as a Priority 2 hazard, while landslides and winter/ice storms were identified as Priority 3 hazards. At this time, committee members were able to share the impact of natural hazards from their individual perspectives. Concerns included: roads flooding; school bus transportation and accessibility to some areas in inclement weather; only two tornado shelters in the county; negligent attitudes towards fire prevention; power failure disruptions at industries; tornado damages; environmental impacts of flooding; lightening strikes on critical facilities; and impact of hazardous materials in a natural disaster event.

### **Critical Facilities**

The LEPC reviewed the critical facilities that were identified in the 2008 plan. Some locations that were previously identified were removed due to closure or relocation. The LEPC then continued to identify critical facilities in the following categories: continuity of government; water, sewer and solid waste utilities; law enforcement; hospitals and health care agencies; disaster coordination and support agencies/social services; electric power and gas utilities; water sources; communications; fire protection; transportation; mass care shelters; adult and child care; schools; and, other retail, industrial and non-profit locations.

### **Questions and Adjourn**

Ms. Delaney thanked everyone for their participation in this introductory meeting. The next LEPC hazard mitigation plan meeting is Wednesday, May 28<sup>th</sup>, 2014 at 10 a.m. at the Charles E. Smith Courthouse Annex in Hayneville. Ms. Delaney asked those in attendance to spend some time over the next week looking at their surroundings in context of a natural disaster event. She also asked committee member to encourage other LEPC members to attend the upcoming meetings.

## ATTENDANCE ROSTER

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**Lowndes County Hazard Mitigation Plan Meeting #2**  
Wednesday, May 28, 2014

**MEETING SUMMARY**

**Persons Present:**

Carmelita Arnold	Joe Jordan	Sharon Trippany
Willie Arnold	David Lee	Ben Waits
David Butts	Tamara McCord	Rachel A. Waters
Brenson Crenshaw	Jennifer Roberts	
Eric Ellis	Billy Smith	SCADC:
Lamar Hall	David Spooner	Tracy Delaney
Bob Hood	William Stiener	Grayson Parker
Ben Huguley	Paul Stuckey	

**Welcome and Introductions**

The second meeting of the Lowndes County Hazard Mitigation Plan Update planning process was held on Wednesday, May 28, 2014 at 10:00 AM at the Charles E. Smith Courthouse Annex in Hayneville, Alabama. David Butts, Lowndes County Emergency Management Director and County Engineer addressed the committee and citizens, thanking those who participated in the first meeting, and welcoming new people at this meeting. Mr. Butts briefed them on Tracy Delaney's introduction to hazard mitigation and its role in the planning process for Lowndes County communities. Mr. Butts said that there were many good ideas and input from public and private interest groups in the first meeting, and he hoped to hear more valuable concerns and ideas about how Lowndes County should address future hazard mitigation preparedness. Mr. Butts introduced Lowndes County Commissioner Brenson Crenshaw. Commissioner Crenshaw stated that he had read the minutes from the previous meeting and was thrilled that there was a greater turnout at this meeting. He said it was critical that Lowndes County have participation in this plan and stressed the importance of priorities for preparedness and building relationships between private businesses and the local communities to ensure safety in the future.

**Review**

Ms. Delaney reminded the group of the 12 hazards that will be addressed in the Lowndes County Hazard Mitigation Plan Update (floods, high winds, winter/ice storms, landslides, sinkholes and subsidence, earthquakes, drought, hail, wildfires, extreme temperatures, thunderstorms and lightning, and dam failure). Ms. Delaney also reminded the group how important it is to have a diverse set of stakeholders in this planning process on the Local Emergency Planning Committee (LEPC), and it is critical to gain support from non-profit and faith-based organizations.

Ms. Delaney provided a review of critical facilities that had been identified from the 2008 plan and in the previous meeting. It was suggested that the National Guard Armory in Fort Deposit should be added to this list. Ms. Delaney stated that there are 58 EPA-regulated facilities in Lowndes County as of May 2014. She suggested a review of EPA regulated facilities to ensure that all facilities have a mitigation plan in effect. Mr. Ben Waits stated that Sabic Inc. has a best practices plan and has mapped affected zones if something hazardous were to be harmful to surrounding areas. Ms. Delaney also suggested that it might be helpful to consider how historical resources fit into critical facilities.

### **Hazard Prioritization**

Ms. Delaney gave detailed charts showing historical and recorded accounts of hazardous weather conditions that had occurred in Lowndes County since 1950. Lowndes County has had only one death from hazardous events between 1950 and 2014, which was from heat exhaustion during the 2007 heat wave. The county has experienced substantial crop and property damage over that period of time, but surprising low impacts compared to other regions of this state. There has been over \$1.02 million in crop damage. Thunderstorms have caused the most property damage, and winter storms and freezing conditions have caused most of the crop damage. Still, there are many instances where damage might not have been recorded in this rural county.

The LEPC Committee then prioritized the identified hazards. Priority 1 hazards include floods, thunderstorms, tornados and wildfires. Priority 2 hazards include expansive soils and sinkholes, hail, hurricanes, and winter storms. Priority 3 hazards include dam failure, drought, earthquake, and landslides. Many people spoke about inconsistency with weather warnings and the lack of cell service in remote areas of the county. It is a priority to get warnings out to people in all communities within the county.

### **Capacity to Respond**

The county currently has two Red Cross certified churches. DHR has an Emergency Contact list that provides support for sheltering for people and animals. DHR has a relationship with Red Cross to serve the shelters. It was stated that in the past advanced communication for warnings for tornadoes has been an issue for the volunteer fire departments. There have been issues in relating warnings throughout the county from the state to each community. The volunteer fire departments are very reliable, active, and capable to respond to hazardous incidents. The volunteer firefighters say that they have no contact with law enforcement, and making these connections and communicating between different agencies could help relay information to the public more efficiently. They also are unfamiliar with dealing with certain chemicals at local factories in the area, and would be interested in working with Sabic and their strategies on their hazard mitigation plan. Some agreed that it would be nice for the county to invest in an Emergency Operator Center that are common in more populated counties. The Board of Education uses STI services to call parents in the event of inclement weather. This allows parents to get a message that tells them that their student might be let out early in preparation for inclement weather. These students can be bussed home, but there is no transit plan for moving the general public to shelters in the county. David Butts reminded the group that when everyone is considering these suggestions that current issues are important, but the meeting must remain focused on trying to prepare for future complex and hazardous situations that the county might face.

### **Goal Review**

Ms. Delaney displayed the goals from the 2008 county mitigation plan, and overwhelmingly everyone agreed with the overarching theme of each of the three goals that addressed the health, safety, and welfare of Lowndes County citizens. There was a general consensus that more could be done to provide shelters and consideration for land use regulations by municipalities that addressed hazard mitigation. Some at the meeting would like to see building codes that prevent people from building in flood plains and suggest safe practices for where people put manufactured homes. Ms. Delaney mentioned that awareness of the hazard mitigation plan would be beneficial to citizens and brochures and booths set up at events around the county would help people realize that the county is making an effort to provide safety and future preparedness for hazardous events. Ms. Delaney also said that a Lowndes County website with a hazard mitigation tab could be very resourceful for communities and businesses and how they understand the steps to prepare for hazards.

**Questions and Adjourn**

A question was brought up regarding how many government-related agencies are aware of hazard mitigation strategies in the county. These inquiries can be research, and it was also brought to the group's attention by Ms. Delaney to consider where government records are stored, and how these documents might be preserved in the best locations during unpredictable weather events. Ms. Delaney ended the meeting by saying thanks to everyone that participated. She reiterated what Mr. Butts had said earlier about making considerations for the future in how Lowndes County prepares for hazard mitigation. She said that as the next two weeks go by, make an effort to think of anything that might be of relevance to this plan, and invite others and LEPC members to come and participate in the last two meetings.

**Lowndes County Hazard Mitigation Plan**  
**Local Emergency Planning Committee Meeting 2**  
 May 28, 2014 @ 10:00 AM

**ATTENDANCE ROSTER**

Name	Daytime Phone	E-mail
David Lee (Priesters)	227-4301	dlee@priesters.com
Bob Hood	334-392-1940	bobhood38@gmail.com
Billy Smith	334 850 0841	
Eric Ellis	334-211-4242	che11@hotmail.com
Paul Stuckey	334-280-3701	lowndes_county@Forestry.alabama.gov
DAVID SPOONER	334-549-4153	DLSPOONER@GMAIL.COM
Ben Huguley	334-300-5809	bhuguley@sj4429.com
LAMAR HALL	334-850-0859	LAMLUND@AOL.COM
Carmelita Arnold	334 312-2726	miniki22@aol.com
Willie E. Arnold	334 312 1283	"
William E. Stener	334-227-4773	wstener@clmore.net.com
David Butts	334-548-2324	LCENGRE@htcnet.net
Brenson Crenshaw	334-392-2521	bcrenshaw1@htcnet.net
Ben Waits	334-832-5609	ben.waits@sabic-ip.com
Sharon Trippany	334-832-5690	sharon.trippany@sabic-ip.com
Jennifer Roberts	334-422-1080	jennifer.roberts@adph.state.al.us
Joe Jordan	334-399-1245	Chevyj500@aol.com
Rachel A. Waters	334-548-3816	rachel.waters@dhr.alabama.gov
Tamara McCard (HTH)	334-348-2128	tammamccard@yahoo.com
Highville Town Hall		

**Lowndes County Hazard Mitigation Plan Meeting #3**  
Wednesday, June 11, 2014

**MEETING SUMMARY**

**Persons Present:**

Leola M. Bell	David Lee	Sharon Trippany
Bobby Bennett	Jamie Lee	Ben Waits
David Butts	Jacqueline S. Lee	Christopher S. West
Barbara Etheridge	Jennifer Roberts	John A. Williams
Fletcher Fountain	Rodney Rudolph	
Jerome Hinson	Billy Smith	SCADC:
Bobby O. Hood, Jr.	David Spooner	Grayson Parker
Alicia Howard	William E. Stiener	
Joe Jordan	Paul Stuckey	

**Welcome and Introductions**

The third meeting of the Lowndes County Hazard Mitigation Plan Update planning process was held on Wednesday, June 11, 2014 at the at 10:00 AM at the Charles E. Smith Courthouse Annex in Hayneville,

Alabama. Mr. David Butts, Lowndes County Emergency Management Director and County Engineer welcomed everyone in attendance and thanked everyone for their participation. He briefly reviewed topics from the first meetings, stating that everyone's opinion is valuable to this plan that will outline the actions necessary to act responsibly in emergency preparedness. Mr. Butts then asked each person at the meeting to introduce himself or herself.

**Review 2008 Hazard Mitigation Strategy**

Mr. Butts led the committee in a review of the action items that were included in the 2008 hazard mitigation plan. A matrix was distributed that included each goal, objective and action strategy, along with the action strategy's geographic boundary, hazard addressed, priority status, estimated cost, proposed funding source, responsible agency and target completion date. The matrix also included columns for the status of each action strategy in terms of completion. The following is a discussion of the mitigation strategy by goals. An updated copy of the reviewed 2008 mitigation strategy is attached and made a part of this meeting summary.

**Goal 1: Promote natural hazard mitigation as a means to decrease loss of life, property damage and economic loss during a disaster occurrence.**

It was acknowledged that communication throughout the county is essential in times of emergency. Areas like Burkville and Sandy Ridge are known to be spotty for being able to hear storm sirens. Lowndes County Sheriff John Williams said that he would look into the feasibility of a phone messaging system throughout the county for hazardous conditions.

While addressing storm shelters, Mr. Butts stated that the Governor will often make funds available for storm shelters either county or statewide based on recent storms that cause major damage so that other communities will have a better chance to prepare. Mr. Butts said that these grants require local matching funds; and, that Lowndes County needs to be as efficient as possible with its funds, while also making a plan that is reasonable and realistic for countywide success. It was suggested that

generators in the county be routinely checked. Committee members stated concern with relying on the Governor to release grant funds for shelters and the county does not have the tax base to fund shelters. Therefore, other alternatives must be found with the resources that Lowndes County already has. One possible alternative is to form partnerships between local governments and churches to fund a storm shelters. Churches and VFD's have propane and may be the best current option for acting as public storm shelters.

Mr. Butts then discussed zoning ordinances and issues within the county with people building in flood plains. Committee members responded that it is difficult to get people to not build in floodplains because people do not actually have to come to the engineering department to get a building permit. Mr. Butts stated that he would like to look into working with health departments and the power company by denying septic hookups and power for new construction in floodplains, so that people will need to move the site to prevent flooding and other potential risks for building within a floodplain. Mr. Butts stated that the county continues to support the forestry commission and works with DOT on maintaining infrastructure in known flood areas in the county. Mr. Butts would like to complement these efforts by utilizing AEMA Flood Relocation Program to address larger old water pipes that are not performing well. Mr. Butts and the committee acknowledged the need to take advantage of ever changing technological advances so that Lowndes County can be aware of possibilities with emergency response services and mapping.

**Goal 2: Provide ongoing support of the Lowndes County Emergency Management efforts to make Lowndes County less vulnerable to natural disasters.**

Mr. Butts addressed the potential for implementation, coordination, and capacities for hazard mitigation planning. Lowndes County is behind on getting this plan in place, but Mr. Butts said that it was because of waiting on approved grant money. Hopefully, Lowndes County will continue with this plan and get up to speed for future plans. Mr. Butts also wants to get with the Local Emergency Planning Committee (LEPC) to meet regularly with the general public about hazard mitigation awareness and report on the status and any changes to the plan. Everyone agreed that more dialogue, and future communication between public officials, citizens, and communities is needed to improve coordination between emergency response organizations and highly vulnerable entities. This information can be further beneficial for future discussions because Sheriff Williams stated that the tax assessor and 911 have awarded a bid for a company to use Geographic Information Systems (GIS) software for mapping critical facilities and infrastructure in the county.

**Goal 3: Educate general population about natural hazards and hazard mitigation**

Mr. Butts stated that there is a need to educate and encourage people to not be driving around during inclement weather. Not only does this increase risk for injuries, but it strains the emergency responders because they are having to be out in the elements (flood, fallen trees, ice) when people are not taking preventative measures to stay in a safe place during these situations. Representatives from the Alabama Public Health Department said that the health departments have a pod system for distributing medicine, and this is something that people should be aware of. Social media is one way of getting this kind of information out on how to take caution in hazardous situation or access numbers to call in an emergency. Mr. Butts said that he would like to get a Facebook page up for Lowndes County EMA so that people would be able to access emergency planning information and discuss any questions or concerns on the page.

**Questions and Adjourn**

Mr. Butts thanked everyone for coming and encouraged everyone to have questions and think about relevant, meaningful measures that can be addressed for this plan at the final meeting on Wednesday, June 25, 2014 at 10 a.m. in Hayneville at the Charles E. Smith Courthouse Annex. A few people in the group said that they were not receiving these documents by email. People also felt that brochures would be important in county department offices and at events throughout the county to further educate people on hazard mitigation.





**Lowndes County Hazard Mitigation Strategy**  
**2014 Hazard Mitigation Plan Review of 2008 Mitigation Measures**

**Goal 1: Promote natural hazard mitigation as a means to decrease loss of life, property damage and economic loss during a disaster occurrence.**

Complete	Validity in 2014			1.1. Establish a full warning system for notification of impending disasters throughout Lowndes County.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
P				<del>Develop a warning plan to install approximately 35 sirens at targeted sites to adequately cover population pockets in Lowndes County.</del>	Countywide, All Municipalities	<del>Tornadoes, Hurricanes, Tropical Storms , Severe Storms</del>	High	<del>\$585,000.00</del>	<del>Federal, State,</del>	Lowndes County EMA	10/1/2012
	X			Install 00 warning sirens to ensure adequate coverage of population throughout Lowndes County	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	High	\$17,500 per siren	Federal, State, Municipal	Lowndes County EMA	9/30/2015
N	X			Designate a central emergency coordinator in each municipality and community to better facilitate communications with the Lowndes County Emergency Management Agency.	Countywide, All Municipalities	All Hazards	High	\$0.00	County, Municipal	Lowndes County EMA, All Municipalities	10/1/2014
N			X	<del>Construct warning signage for limited visibility due to forest/wild fires on major roads in targeted areas.</del>	Countywide, All Municipalities	Wildfires	High	<del>\$0.00</del>	<del>Federal, State, County</del>	Lowndes County Road Department	10/1/2001
P	X			Investigate use of phone messaging system to provide warning of all impending hazardous conditions.	Countywide, All Municipalities	All Hazards	High	TBD	County, Municipal	Lowndes County E911	TBD

Total

\$0.00

Complete	Validity in 2014			1.2 Ensure that adequate protection shelters are available for use during disaster occurrences.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
N		X		Maintain and expand existing shelter facilities to provide adequate pre-disaster care and space, as needed.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	High	TBD	Federal, State, County, Municipal	Lowndes County EMA, Municipalities, Shelter Operators	TBD
N	X			Designate and upgrade/retrofit, as necessary, existing public and institutional facilities to provide shelter in areas of Lowndes County where there currently are no shelters, primarily targeting schools, churches, and community centers, at a rate of one site every two years. <del>Emergency power generators will be purchased for shelters and for distribution to provide emergency power during an emergency event.</del>	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	Moderate	TBD	Federal, State, County, Municipal	Lowndes County EMA, Municipalities, Shelter Operators	10/1/2012
N	X			Purchase emergency power generators for shelters and <u>for distribution</u> to provide emergency power during natural disaster events. -- <u>How Many?</u>	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	Moderate	TBD	Federal, State, County, Municipal	Lowndes County EMA, Municipalities, Shelter Operators	10/1/2012
				<del>Investigate construction of new public shelter facilities in those areas of the county with no shelter facilities as long term and low priority task.</del>	Countywide, All Municipalities	<del>Tornadoes, Hurricanes, Tropical Storms , Severe Storms</del>	Low	<del>\$0.00</del>	<del>County</del>	Lowndes County EMA	Continuous
N				Partner with non-profit and private organizations, as possible, to construct new public shelter facilities in those areas of the county with no shelter facilities.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	Low	TBD	County	Lowndes County EMA, Municipalities, Non-Profits, Private Entities	Continuous
N	X			Secure funds to continue efforts to assist citizens in constructing private shelters on their land at a rate of seven shelters per year. (Approx. \$5,000 per shelter)	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	High	\$175,000.00	Federal, Private	Lowndes County EMA	Continuous
N	X			Work with developers, homebuilders and contractors to promote construction of a safe room in all new residential development.	Countywide, All Municipalities	Tornadoes, Hurricanes, Tropical Storms , Severe Storms	Moderate	\$0.00	County, Municipal	Lowndes County EMA, County and Municipal Building Officials	Continuous
N	X			Publicize information on locations of existing public shelters and when to use them.	Countywide, All Municipalities	All Hazards	High	\$2,500.00	County, Municipal, Red Cross, DHR	Lowndes County EMA, Municipalities, Red Cross, DHR	Continuous

Total

\$177,500.00

Complete	Validity in 2014			1.3 Develop and adopt, or amend, and enforce land use regulations and ordinances and modern building codes that support natural hazard mitigation efforts throughout Lowndes County.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
N	X			Incorporate and enforce flood management provisions in all county and municipal land use regulations and zoning ordinances.	Countywide, All Municipalities	Flooding	High	\$0.00	County, Municipal	County and Municipal Building Officials	Continuous
<del>N</del>		<del>X</del>		<del>Ensure that future land use and growth plans do not extend into flood plain areas.</del>	<del>Countywide, All Municipalities</del>	<del>Flooding</del>	<del>High</del>	<del>\$0.00</del>	<del>County, Municipal</del>	<del>County and Municipal Building Officials</del>	<del>Continuous</del>
				Promote the best use of flood plain areas for environmental management, recreational development, and aesthetic enjoyment in all future land use and development plans and policies.	Countywide, All Municipalities	Flooding	High	\$0.00	County, Municipal	County and Municipal Planning and Building Officials	Continuous
N	X			Develop long-range growth and development plan for Lowndes County to address permitting and construction process in unincorporated areas.	Unincorporated Communities	All Hazards	Moderate	TBD	Federal, State, County	County Engineer, Planning Official	9/30/2015
N	X			Adopt and enforce the 2009 International Building Code at the county and municipal levels.	Countywide, All Municipalities	All Hazards	High	\$0.00	County, Municipal	County and Municipal Building Officials	9/30/2017
N	X			Ensure that the Lowndes County Emergency Management Agency is involved in the review of all local future growth and development plans.	Countywide, All Municipalities	All Hazards	Moderate	TBD	County, Municipal	County and Municipal Building Officials	Continuous
N	X			Identify and obtain properties in floodplains to be used for greenways, open spaces, parks, trails, and other recreational activities.	Countywide, All Municipalities	Flooding	High	TBD	Federal, State, County, Municipal	Lowndes County, All Municipalities, Planning Officials	Continuous
N	X			Promote and encourage the County and municipalities that are located in known floodplains, and that are not participating in and/or are sanctioned by FEMA's National Flood Insurance Program (NFIP), to join/rejoin the NFIP.	Countywide, All Municipalities	Flooding	High	\$0.00	County, Municipal	County and Municipal Building Officials, Lowndes County Engineering, Councils/Mayors	Continuous
N				Consider road signage program to ensure that citizens and travelers are aware of location of flood-prone areas.	Countywide, All Municipalities	Flooding	TBD	TBD	TBD	TBD	Continuous

Total

\$0.00

Complete	Validity in 2014			1.4 Implement fire protection measures to decrease potential for loss of life and property damage.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
			X	<del>Develop and utilize zoning ordinances to manage development in urban fringe areas.</del>	<del>All Municipalities</del>	<del>Wildfires</del>	<del>High</del>	<del>\$0.00</del>	<del>Federal, State, County, Municipal</del>	<del>County and Municipal Building Officials</del>	<del>Continuous</del>
N	X			Establish education program to provide information on methods to construct buffers and fire breaks on private property in wild land interface areas	Countywide, All Municipalities	Wildfires	Moderate	\$0.00	Federal, State, County, Municipal	Lowndes County EMA, All VFDs	1/1/2007
N	X			Support Alabama Forestry Commission efforts to help educate private landowners to protect their own and other's property through construction of fire lanes and fire breaks on forested property, making landowners aware of both their responsibility and liability.	Countywide, All Municipalities	Wildfires	Moderate	\$0.00	County, Municipal	Lowndes County EMA, All VFDs, All County and Municipal Building Officials	Continuous

Total

\$0.00

Complete	Validity in 2014			1.5 Limit impact of heat and drought on human health, property damage and agricultural losses.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
N	X			Work with Lowndes County, municipalities, and Lowndes County Extension to implement public awareness and education efforts about water conservation and water quality.	Countywide, All Municipalities	Extreme Heat, Drought	Moderate	\$0.00	County, Municipal, Water Providers	Lowndes County EMA, All Water Providers	Continuous
?				Work with Lowndes County medical providers to develop emergency supplies and education program.	Countywide, All Municipalities	All Hazards	Moderate	\$0.00	County, Municipal, Medical Providers	Lowndes Count EMA, Lowndes County Health Department, Medical Providers	TBD
N	X			Work with Lowndes County Farm Service Agency and County Extension Service to establish a drought information center.	Countywide, All Municipalities	Extreme Heat, Drought	Moderate	\$0.00	Federal, State, County, Municipal	Lowndes County	TBD
N	X			Develop a drought and heat indicator plan and warning system that includes a response strategy.		Extreme Heat, Drought	Moderate	\$0.00	State, County, Municipal	Lowndes County EMA, County Farm Service Agency, County Extension Service	TBD
N	X			Develop print public service announcements.	Countywide, All Municipalities	Extreme Heat, Drought	Moderate	\$2,500.00	State, County, Municipal	Lowndes County EMA, County Farm Service Agency, County Extension Service	Continuous
Total								\$2,500.00			

Complete	Validity in 2014			1.6 Improve infrastructural facilities and remove at-risk commercial and residential buildings to limit the impact of natural hazard events.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
P	X			Identify roads that require elevation and paving, and that have a high potential for flooding and/or washing during flood events, to provide access and limit erosion and sedimentation.	Countywide, All Municipalities	Flooding	Moderate	\$0.00	State, County, Municipal	ALDOT, Lowndes County Engineering, Municipal Road Departments	Continuous
P	X			Continue bridge inspection and improvement efforts to prevent washing and/or failure during flood events.	Countywide, All Municipalities	Flooding	High	\$7,000,000.00	Federal, State, County, Municipal	ALDOT, Lowndes County Engineering, Municipal Road Departments	Continuous
P				Maintain all county roads to allow constant access for emergency response, recovery and repair, and continuity of delivery services at eight roads per year. Also, the LEPC will continue to work with the county and other jurisdictions to improve drainage systems in the unincorporated and incorporated parts of the County.	County Unincorporated Communities	All Hazards	High	\$5,000,000.00	Federal, State, County	ALDOT, Lowndes County Engineering	Continuous
N	X			Utilize AEMA Flood Relocation Program and other appropriate FEMA and/or AEMA programs to remove at-risk commercial and residential structures from flood prone and other natural hazard areas, if necessary in the future.	Countywide, All Municipalities	All Hazards	High	\$500,000.00	Federal, State, County, Municipal	Lowndes County EMA, Lowndes County, All Municipalities	Continuous
Total								\$12,500,000.00			

Complete	Validity in 2014			1.7 Investigate, prepare, and provide for mitigation and emergency services and activities before, during, and after a disaster event.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
N	X			Investigate need for emergency water supply during disaster events.	Countywide, All Municipalities	All Hazards	Moderate	\$0.00	State, County, Municipal, Water Providers	Lowndes County EMA, All Water Providers	Continuous
N	X			Limit non-critical water consumption during severe drought conditions.	Countywide, All Municipalities	Extreme Heat, Drought	Moderate	\$0.00	County, Municipal, Water Providers	Lowndes County, All Municipalities, All Water Providers	Continuous
N	X			Inventory the county's emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment, or required resources.	Countywide, All Municipalities	All Hazards	High	\$0.00	County, Municipal	Lowndes County EMA, All Emergency Service Agencies	TBD
	?			Investigate the need and feasibility of establishing a local reserve fund for repairing and/or incorporating hazard mitigation measures for public and private facilities and infrastructure that are at risk of being damaged or have been damaged by natural hazards.	Countywide, All Municipalities	All Hazards	High	\$0.00	County, Municipal, Private	County Commission, All Municipal Councils	TBD
N	X			Continue to research and provide hazard mitigation, emergency preparedness, and disaster recovery grant writing and/or administration services for available grant and loan programs (e.g., AFGP, FMA, HMGP, PDM, etc.).	Countywide, All Municipalities	All Hazards	Moderate	\$0.00	County, Municipal	Lowndes County EMA, Lowndes County Commission, All Municipalities	Continuous
N	X			Investigate the need for and acquire emergency electrical power generation equipment to provide back-up emergency electrical power to critical facilities.	Countywide, All Municipalities	All Hazards	High	\$150,000.00	Federal, State, County, Municipal	Lowndes County EMA, Lowndes County Commission, All Municipalities	Continuous

Total

\$150,000.00

GRAND TOTAL FOR GOAL 1

\$12,830,000.00

**Lowndes County Hazard Mitigation Strategy**  
**2014 Hazard Mitigation Plan Review of 2008 Mitigation Measures**

**Goal 2: Provide ongoing support of the Lowndes County Emergency Management efforts to make Lowndes County less vulnerable to natural disasters.**

Complete	Validity in 2014			2.1 Ensure that the Lowndes County Hazard Mitigation Plan remains current and it implements	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
N	X			Update the Lowndes County Hazard Mitigation Plan every five years as required by regulations.	Countywide, All Municipalities	All Hazards	Moderate	\$30,000.00	Federal, State, County	Lowndes County EMA, LEPC	9/30/2019
N	X			Communicate with the general public at least annually to provide a status report of the plan and any project or programs that are a result of the plan and its implementation.	Countywide, All Municipalities	All Hazards	Moderate	\$0.00	County	Lowndes County EMA	Continuous
N	X			Municipalities should provide local human resources and other resources, such as materials and supplies, to assist in implementation of the Lowndes County Hazard Mitigation Plan and its regular update.	Countywide, All Municipalities	All Hazards	High	\$25,000.00	Municipal	All Municipalities	Continuous
Total								\$55,000.00			

Complete	Validity in 2014			2.2 Improve coordination and communication between emergency response organizations and highly vulnerable entities.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
N	X			Designate a central emergency coordinator in each municipality and community to better facilitate communications with the Lowndes County Emergency Management Agency.	Countywide, All Municipalities	All Hazards	High	\$0.00	County, Municipal	County Commission, All Municipal Governments	TBD
?	X			Provide for incident command training for the local emergency coordinators and other responders.	Countywide, All Municipalities	All Hazards	High	\$2,000.00	Federal, State, County, Municipal	Lowndes County EMA	Continuous
N	X			Develop an on-going cycle to provide regular updates to the Lowndes County Commission, municipal councils, fire protection and law enforcement officials, utility boards, and other emergency responders.	Countywide, All Municipalities	All Hazards	Moderate	\$7,500.00	County	Lowndes County EMA	Continuous
N	X			Investigate the need and feasibility of upgrading communications systems and increasing coverage and compatibility across the entire county and its municipalities.	Countywide, All Municipalities	All Hazards	Moderate	\$0.00	County, Municipal	Lowndes County EMA, All Emergency Responders	TBD
Total								\$9,500.00			

Complete	Validity in 2014			2.3 Enhance the County's and municipalities' capability to conduct further hazard throughout the County.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
				Continue to identify the County's most at-risk critical facilities, and evaluate the potential mitigation techniques and activities for protecting each facility to the maximum extent possible.	Countywide, All Municipalities	All Hazards	High	\$0.00	County, Municipal & All Utilities	Lowndes County EMA, LEPC, Local Governments, Utilities	Continuous
				Incorporate (or continue) development of a Geographic Information System (GIS) to maintain current cadastral and spatial data for purposes of inventorying critical facilities and infrastructure, conducting more detailed hazard risk assessments, and for tracking permitting and land use patterns.	Countywide, All Municipalities	All Hazards	High	\$176,000.00	State, SCADC, County, Municipal	State, SCADC, Lowndes County EMA, E-911, County Tax Assessor, County and Municipal Building Officials, Utilities	Continuous
Total								\$176,000.00			

GRAND TOTAL FOR GOAL 2

\$240,500.00

**Lowndes County Hazard Mitigation Strategy**  
**2014 Hazard Mitigation Plan Review of 2008 Mitigation Measures**

**Goal 3: Education general population about natural hazards and hazard mitigation options**

Complete	Validity in 2014			3.1 Establish and implement hazard mitigation public awareness program.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
N	X			Cooperate and coordinate with various agencies and entities to assist with distribution of information and materials, including Chambers of Commerce, DHR, Lowndes County Board of Education, churches, municipalities, etc.	Countywide, All Municipalities	All Hazards	Moderate	\$2,500.00	County, Municipal, Private	Lowndes County EMA, LEPC	Continuous
N	X			Develop a portable information booth for display at local fairs and public events to distribute materials.	Countywide, All Municipalities	All Hazards	Moderate	\$5,500.00	County, Municipal	Lowndes County EMA, LEPC	TBD
N	X			Create and distribute magnets that list all emergency contact information of local responding agencies.	Countywide, All Municipalities	All Hazards	Moderate	\$2,500.00	County, Municipal, Private	Lowndes County EMA, LEPC, All Municipalities	Continuous
		X		Investigate and develop strategies that will help protect citizens from pandemic influenza, and cooperate and coordinate with state and county public health and agricultural authorities to educate the public of such protective measures.	Countywide, All Municipalities	Pandemic Influenza	Moderate	\$0.00	USHHS, USDA, State, County, Municipal, Private	Lowndes County EMA, Lowndes County Health Department, All Municipalities	10/1/2008
Total								\$10,500.00			

Complete	Validity in 2014			3.2 Establish and promote disaster prevention education programs, utilizing all forms of media (e.g., print, TV, internet websites - government and related non-governmental) to help distribute information and materials.	Geographic Beneficiaries	Hazards Addressed	Priority	Estimated Cost Over 5 Years	Funding Source	Responsible Agency	Target Completion Date
	YES	NO	N/A								
?	X			Investigate working with Lowndes County Extension System to develop adult training/certification courses on land management (best management practices) to decrease property damage during natural disaster events.	Countywide, All Municipalities	All Hazards	Moderate	\$20,000.00	USDA, County	Lowndes County EMA	TBD
N	X			Develop broadcast public service announcements for airing on local television and radio stations.	Countywide, All Municipalities	All Hazards	Moderate	\$15,000.00	County, Municipal	Lowndes County EMA	TBD
N	X			Develop print public service announcements for publication in local newspaper and agency newsletters.	Countywide, All Municipalities	All Hazards	Moderate	\$2,500.00	County, Municipal	Lowndes County EMA	TBD
N	X			Develop information website with links from Lowndes County Commission and municipal websites.	Countywide, All Municipalities	All Hazards	Moderate	\$4,400.00	County, Municipal, Private	Lowndes County EMA	TBD
N	X			Incorporate hazard awareness and mitigation into the curricula of local schools.	Countywide, All Municipalities	All Hazards	Moderate	\$7,000.00	State & County	Lowndes County BOE	TBD
N	X			Develop coloring and activity books at four appropriate age levels for widespread annual distribution.	Countywide, All Municipalities	All Hazards	Low	\$6,500.00	Federal, State, County, Municipal	Lowndes County EMA, Lowndes County BOE	TBD



Lowndes County Hazard Mitigation Plan  
Local Emergency Planning Committee Meeting 3  
June 11, 2014 @ 10:00 AM

**ATTENDANCE ROSTER**

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**Lowndes County Hazard Mitigation Plan Meeting #4**  
Wednesday, June 25, 2014

**MEETING SUMMARY**

**Persons Present:**

Willie Arnold  
Leola M. Bell  
David Butts  
Willie C. Davis  
Barbara Etheridge  
Lamar Hall  
Rodney Hartsfield

Jerome Hinson  
Ben Huguley  
Jaqueline S. Lee  
Jesse McCall  
Tamare N. McCord  
Jennifer Roberts  
Billy Smith

David Spooner  
William Stiener  
Paul Stuckey  
Sharon Trippany  
SCADC:  
Tracy Delaney  
Grayson Parker

**Welcome and Introductions**

David Butts, Lowndes County Engineer/EMA Director gave a brief introduction and thanked everyone who had made efforts to attend these hazard mitigation meetings at the Charles E. Smith Courthouse Annex in Hayneville. He hopes that this hazard mitigation plan will better prepare Lowndes County in disaster preparation and planning tactics that promote the well-being of Lowndes County citizens. Tracy Delaney, of the South Central Alabama Development Commission, gave a brief introduction explaining that this meeting would be a review of the outline for the Lowndes County Hazard Mitigation Plan Update. Ms. Delaney stated that those persons who have not been able to attend the planning meetings have reviewed the meeting summaries and provided input to her via email. The next steps in the planning process are to conduct a public hearing for comments on the draft plan, plan review by AEMA and FEMA, then adoption by each of the eight local governments of Lowndes County.

**2014 Hazard Mitigation Plan Update Outline**

An outline for the final draft of the Lowndes County Hazard Mitigation Plan Update was provided to committee members. Ms. Delaney explained the chapter sections and how they fit into the plan. She said that the community profile identified the existing conditions in Lowndes County. The hazard identification section was completed with citizen input at the first two planning meetings. Risk assessment and vulnerability analysis estimates the probability of disaster occurrences in Lowndes County based on past history and current conditions. In the last meeting, the hazard mitigation strategy goals and objectives were reviewed and discussed based on Lowndes County's future needs. Finally, Ms. Delaney stated that it is important that this plan does not expire like the previous plan from 2008; and that Lowndes County would need to begin work about a year and a half before the expiration date to have the next updated plan completed and reviewed in time for the expiration of the 2014 update.

**Community Capacity**

A matrix table developed by FEMA to measure community capacity to withstand disaster events was distributed for review and comments. Information was gathered about Lowndes County and the seven municipalities about the following subjects that are used to measure community capacity: general community plans; building code, permitting, and inspections; land use planning and ordinances; administration and staff; technical resources; funding resources; and education and outreach. Lowndes County does not have a comprehensive plan but is currently working on a strategic

and economic development plan. Hayneville, Lowndesboro, and Mosses have comprehensive plans, which have an economic development and transportation components included. Site review is included with building permits. Lowndes County Schools address capital improvement planning each year. The highway department does a little with capital improvements project funding. Fort Deposit, Hayneville, Lowndesboro, and Mosses either have adopted or draft zoning ordinances; and, Lowndes County does not have state enabling legislation allowing the county to enforce a zoning ordinance. Ms. Delaney said that the county and its municipalities should work towards creating and maintaining subdivision regulations along with building codes to encourage floodplains to be used for recreational and mitigation zones that benefit the county and its citizens. Fort Deposit has building codes, and new construction must be reviewed and inspected on site by the planning commissions before approval. People mentioned their concern for how long it would take to draft building codes and maintain the code with very few buildings going up each year in Lowndes County.

The Board of Education maintains sports fields for school athletics but there is minimal maintained public recreation other than Holy Ground Battlefield Park in White Hall. Ms. Delaney also mentioned that it would be interesting to find out how many hunting lodges there are in the county, and maybe work with them to see the best uses of mitigating land and deciding where floodwaters should be flowing. It would be important to re-write portions about these groups as to not offend private land owners to think that county/municipality is trying to acquire their land or floodplains. All of these kinds of planning tactics should be considered, and South Central Alabama Development Commission is one of the resources that can provide assistance with planning, economic development, and grant writing tools that help secure many of these types of projects. Within Lowndes County, volunteer fire departments, county commissioners, the Lowndes County Emergency Planning Committee, and citizens all working together will begin to help create meaningful discussions and perspectives about how to address future hazard mitigation planning in cost-efficient ways.

Outreach and education is an important component that committee members felt should be better addressed in this plan. Currently the volunteer fire departments, Lowndes County Citizens for Action, and the Tawasse Point Homeowners Association are the only visible organizations focused on environmental protection, emergency needs, and access for critical needs populations. Lowndes County Schools address natural disaster preparation in the science and health curriculums. People at the meeting were enthusiastic in agreeing that outreach and education should be highlighted in the final draft of this plan.

### **Mitigation Strategy**

The draft hazard mitigation strategy was reviewed with changes, corrections and additions made from the review in the previous planning meeting.

### **Questions and Adjourn**

The next steps in the planning process are to conduct a public hearing for comments on the draft plan, plan review by AEMA and FEMA, then adoption by each of the eight local governments of Lowndes County. The public hearing will be held on **Monday, July 28, 2014** at 5:30 PM at the Charles E. Smith Courthouse Annex in Hayneville. The final draft plan will be submitted to the AEMA in early August. Upon approval from FEMA, the Lowndes County Hazard Mitigation Plan Update should be ready to adopt by local governments in late October through early November 2014. Mr. Butts thanked everyone for coming and encouraged everyone to return for the public hearing. With there being no further discussion, the meeting was adjourned.

**Lowndes County Hazard Mitigation Plan**  
**Local Emergency Planning Committee Meeting 4**  
 June 25, 2014 @ 10:00 AM

**ATTENDANCE ROSTER**

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**Lowndes County Hazard Mitigation Plan Public Hearing**  
Wednesday, July 30, 2014

**MEETING SUMMARY**

**Persons Present:**

David Butts  
Willie Davis  
Loren Dickey  
Fred Guarino  
David Spooner  
Walt Stell  
Richard Thompson

SCADC:  
Tracy Delaney  
Grayson Parker

**Welcome and Introductions**

A public hearing was conducted to review the proposed 2014 Lowndes County Hazard Mitigation Plan. The public hearing was held at the Charles E. Smith Courthouse Annex in Hayneville on July 30<sup>th</sup> at 5:30 p.m. Ms. Tracy Delaney started the public hearing by saying she would give a brief presentation of the plan and was happy to hear comments and questions. Draft copies of the plan had been previously made available to residents through the Lowndes County Emergency Management Department.

**Overview of the Plan**

Ms. Delaney provided brief definitions of hazards and the importance of communities to be proactive and thoughtful about hazard mitigation planning. She explained that for counties and communities to be eligible for disaster relief funds in the event of a hazard event, the counties and communities must have a current hazard mitigation plan that has been approved by the Alabama Emergency Management Agency and the Federal Emergency Management Agency (FEMA) and must be adopted by the local governments. Further the local hazard mitigation plan must be updated every five years. Lowndes County is behind and needs to update and have this plan adopted as soon as possible.

Lowndes County has continuously maintained itself as a rural county, and resources are limited and spread across lots of territory. The biggest issue and focus of this plan has tended to be that there is a great need for public awareness and communicating to citizens about how to prepare for hazardous conditions. There is a high capacity for potential in education and outreach to citizens and interested parties through this plan. Positive notes are that Lowndes County has not had any structures that have repetitively been affected by floods. There is also growing participation on hazard mitigation issues from the volunteer fire departments, Department of Public Health, and Department of Human Resources in Lowndes County.

Ms. Delaney said that FEMA has stressed the importance of public input from people concerned from all jurisdictions in this planning process. FEMA will be looking into how capable each of these communities are to mitigate hazard events, such as creating ordinances and having persons in place to work through the procedures. Ms. Delaney also reviewed FEMA's *Local Mitigation Plan Review Tool* that FEMA will utilize to review and approve the 2014 Lowndes County Hazard Mitigation Plan. FEMA will look into the planning process and the LEPC's attempts to meet and discuss these issues. Lowndes County needs to plan to allocate time and resources a year and a half out to get updates to

the plan before it expires on time every five years. The 2014 Lowndes County plan has the same model as the 2008 Plan, but is more realistic and stresses that the county consider additional sirens, emergency shelters, and community facilities in the process of planning for hazardous situations.

### **Questions and Adjourn**

Ms. Delaney concluded the overview of the plan by asking the group if these issues discussed are really where the priorities are in Lowndes County, and do people agree with the priorities. It was brought to her attention that people in Gordonville cannot hear sirens during inclement weather. David Butts, County Engineer/EMA Director said that parts of the county and in Gordonville are not served by the sirens. In Lowndesboro, there is a siren station but residents have never heard it go off or be tested. Mr. Butts said that the sirens are tested silently each Wednesday. Some people would like to hear it to make sure it works, while others find it distracting. For new sirens to be put in, the county and/or jurisdictions would have to make a match with state agencies. Ms. Delaney said that Lowndes County has to complete this plan to be eligible for federal disaster relief funding. She said feel free to email her with additional comments or questions. Ms. Delaney expects FEMA to review the plan between 45-90 days, and hopes for it to be approved by November so that Lowndes County jurisdictions can approve the plan.

## ATTENDANCE ROSTER

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