# Spalding County
# Pre-Disaster Hazard Mitigation Plan

## September 2016

**Includes the Cities of**
**Griffin**
**Orchard Hill**
**Sunny Side**

**Developed By:**
**Spalding County Emergency Management Agency**
**770-228-2129**

**Facilitated By:**
**Three Rivers Regional Commission**
**770-854-6026**

**Adopted January 2017**

# Table of Contents

# Chapter One: Introduction

Summary of Updates for Chapter One

The following table provides a description of each section of this chapter, and a summary of the changes that have been made to the Spalding County Hazard Mitigation Plan 2011.

| Chapter 1 Section | Update |
|---|---|
| Introduction | New section-Not in 2011 mitigation plan |
| Authority | New section-Not in 2011 mitigation plan |
| Funding | New section-Not in 2011 mitigation plan |
| Scope | New section-Not in 2011 mitigation plan |
| Purpose | New section-Not in 2011 mitigation plan |
| Consistency with Federal Guidelines | New section-Not in 2011 mitigation plan |
| Plan Review | New section-Not in 2011 mitigation plan |
| Hazard Mitigation Plan Update Committee | Updated committee list to match the 2016 planning participants |
| Public Participation | Updated with information from 2016 process |
| Multi-Jurisdictional Considerations | Updated with requirement descriptions |
| Incorporation of Existing Plans, Studies, and Resources | New section-Not in 2011 mitigation plan |

Introduction

The Spalding County Hazard Mitigation Plan Update is the first phase of a multi-hazard mitigation strategy for the entire community. This Plan encourages cooperation among various organizations and crosses political sub-divisions. As written, this Plan fulfills the requirements of the Federal Disaster Mitigation Act of 2000. The Federal Disaster Mitigation Act of 2000 provides federal assistance to state and local emergency management agencies and other disaster response organizations in an effort to reduce damage from disasters. The Act is administered by the Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency (FEMA).
It is important that State and local government, public-private partnerships, and community citizens can see the results of these mitigation efforts; therefore, the goals and strategies need to be achievable. The Spalding County Hazard Mitigation Plan Update Committee identified the following goals during plan development:

GOAL 1 Maximize the use of all resources by promoting intergovernmental coordination and partnerships and partnerships in the public and private sectors
GOAL 2 Harden communities against the impacts of disasters through the development of new mitigation strategies and strict enforcement of current regulations that have proven effective
GOAL 3 Reduce and, where possible, eliminate repetitive damage, loss of life and property from disasters

GOAL 4 Bring greater awareness throughout the community about potential hazards and the need for community preparedness

This plan complies with all requirements and scope of work as described in Spalding County's Hazard Mitigation Grant application.

## Authority

In the past, federal legislation has provided funding for disaster relief, recovery, and some hazard mitigation planning. The Disaster Mitigation Act of 2000 is the latest legislation to improve the planning aspect of that process. The Act reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. The Act establishes a pre-disaster hazard mitigation program and designates new requirements for the national post-disaster Hazard Mitigation Grant Program (HMPG). Section 322 of the Act identifies the new requirements for planning activities and increases the amount of HMPG funds available to states that have developed a comprehensive mitigation plan prior to the disaster.
State and local communities must have an approved mitigation plan in place prior to receiving post-disaster HMGP funds. Local mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the individual communities. To implement the new DMA 2000 requirements, the Federal Emergency Management Agency (FEMA) prepared an Interim Final Rule, published in the Federal Register on February 26, 2002 at 44 CFR Parts 201 and 206, which establishes planning and funding criteria for states and local communities.
Developed in accordance with current State and Federal rules and regulations governing local hazard mitigation plans, Spalding County's Updated Hazard Mitigation Plan will be brought forth to each participating jurisdiction in Spalding County to be formally adopted. The Plan shall be routinely monitored and revised to maintain compliance with the following provisions, rules, and legislation:
Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390); and
FEMA's Interim Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201.

## Funding

Spalding County was awarded a $32,000 Hazard Mitigation Planning Grant by the Georgia Emergency Management Agency for the update of Spalding County's 2011 Hazard Mitigation Plan. The grant requires a 25% match by Spalding County, which was fulfilled by utilizing "in-kind" services. In-kind service documentation is available upon request.

## Scope

The scope of the Spalding County Hazard Mitigation Plan Update encompasses all areas of Spalding County, including all of its municipalities. The Plan identifies all natural and technological hazards that could threaten life and property in Spalding County. The scope of this Plan includes both short and long-term mitigation strategies with implementation and possible sources of project funding. The Hazard Mitigation Plan Update is organized to incorporate the requirements of Interim Final Rule 44 CFR 201.4.

Chapter One includes an overview of the Hazard Mitigation Plan Update, the overall goals of the plan, and details of the planning process as required by Interim Final Rule 44 CFR 201.4(c)(1).
Chapter Two of the Plan details the Spalding County profile, including the demographics, municipalities, and history of Spalding County.
Chapter Three identifies the risk assessment process, past natural hazard events with associated losses, and current natural hazard risks. Potential losses are also analyzed as required by Interim Final Rule 44 CFFR 201.4(c)(2). Additionally, Chapter Three identifies and analyzes potential technological hazards faced by Spalding County.
Chapter Four identifies Spalding County's hazard mitigation goals and objectives, mitigation strategies and actions, and sources of potential funding for mitigation projects as required by Interim Final Rule 44 CFR 201.4(c)(3).
Chapter Five identifies the plan maintenance and implementation strategies. The process for evaluation of the hazard mitigation plan implementation progress is also detailed as required by Interim Final Rule 44 CFR 201.4(c)(4) and (5).

## Purpose

The purpose of the Spalding County Hazard Mitigation Plan Update is to:

- Protect life, promote safety and preserve property by reducing the potential for future damages and economic losses that result from natural and technological hazards;
- Make communities in Spalding County safer places to live, work, and play;
- Qualify for grant funding in both the pre-disaster and post-disaster environments;
- Speed recovery and redevelopment following future disaster events;
- Demonstrate a firm local commitment to hazard mitigation principles; and
- Comply with state and federal legislative requirements for local multi-jurisdictional hazard mitigation plans.

## Consistency with Federal Guidelines

The Plan is intended to enhance and complement state and federal recommendations for the mitigation of natural and technological hazards in the following ways:

- Substantially reduce the risk of life, injuries and hardship from the destruction of natural and technological disasters on an ongoing basis;
- Create a greater awareness to the public about the need for individual preparedness and about building safer, more disaster resistant communities;
- Develop strategies for long-term community sustainability during community disasters; and,
- Develop governmental and business continuity plans that will continue essential private sector and governmental activities during disasters.

The Federal Emergency Management Agency publishes many guidance documents for local governments for mitigating natural disasters. The updated Spalding County Hazard Mitigation Plan fully recognizes, adopts, incorporates and endorses the following principles:

- Develop a strategic mitigation plan for Spalding County;
- Enforce current building codes;
- Develop incentives to promote mitigation;
- Incorporate mitigation of natural hazards into land use plans;
- Promote awareness of mitigation opportunities and programs throughout our community on a continual basis; and,
- Identify potential funding sources for mitigation projects.

The private sector is often an overlooked segment of the community during disasters. It is vital that this sector of a community is included in mitigation efforts that are consistent with state and federal recommendations, such as the following:

- Develop mitigation incentives with insurance agencies and lending institutions;
- Encourage the creation of a business continuity plan for the continuance of commerce during disasters; and,
- Partner with businesses in an effort to communicate with customers about the hazards in our community and possible solutions.

Individual citizens must be made aware of the hazards they may encounter. Additionally, they must be educated on how to protect themselves from the hazards they face. They must be shown that mitigation in their community is an important part of reducing loss of life and property in their community. Their support is critical to the success of any mitigation effort. The updated Spalding County Hazard Mitigation Plan supports the following FEMA recommendations regarding individual citizens:

- Become educated on the hazards that you and your community may encounter;
- Become part of the process by supporting and encouraging mitigation programs that reduce vulnerability to disasters; and,
- An individual's responsibility is to safeguard his/her family, as well as themselves, prior to a disaster event.

Plan Review

The contracted planner, Three Rivers Regional Commission, had the primary responsibility for collecting updated information and presenting data to the committee. The approved 2011 Hazard Mitigation Plan was provided to each member of the Hazard Mitigation Plan Update Committee. Each chapter was reviewed with updated hazard, risk and vulnerability data; updated critical infrastructure information; and revised mitigation strategies based upon whether the strategy was completed, needed to be modified, is an ongoing strategy, or no longer applies. Irregularly attending participants were kept informed with emails containing the updated version of the plan.

Spalding County Hazard Mitigation Plan Update Committee Meeting Dates:

| | |
|---|---|
| November 4, 2015 | Kick off meeting |
| January 5, 2016 | Critical facility identification, hazard frequency, mission and vision |
| February 2, 2016 | Critical facility finalization, goals and objectives, other plan review |
| March 8, 2016 | Discussion and completion of worksheets |
| April 5, 2016 | STAPLEE evaluation |
| May 3, 2016 | Draft Plan Elements Review |
| July 27 , 2016 | Review Meeting with Adjoining County EMA's |

Each section of Spalding County's 2011 Hazard Mitigation Plan has been revised in some manner. Therefore, a summary of those changes will be listed in the first section of each chapter. Major plan changes include the following:

1. Addition of tables to each section highlighting changes to the 2011 plan.

Hazard Mitigation Plan Update Committee

## Planning Process Participants

The Spalding County Mitigation Planning Committee was composed of a diverse group of people that represented the County and the Cities of Orchard Hill, Sunny Side, and Griffin. These same communities participated in the previous plan.

The following members, representing various jurisdictions, city and county departments, and community organizations and businesses, participated in the update of Spalding County's 2016 Hazard Mitigation Plan.

*Spalding County Hazard Mitigation Plan Update Committee*

| *Name* | *Title* | *Representing* |
|---|---|---|
| *Glenn Polk* | *Deputy Chief - Administration, Spalding County Fire Department* | *Spalding County EMA* |
| *Kenny West* | *Fire Chief, Spalding County Fire Department* | *Spalding County EMA* |
| *William Wilson* | *Spalding County Manager* | *Spalding County* |
| *Eric Mosley* | *Asst. Spalding County Manager* | *Spalding County* |
| *Kenny Smith* | *City Manager* | *City of Griffin* |
| *Jim Smith* | *Griffin Spalding County Schools Superintendent* | *Griffin Spalding County School System* |
| *Jerry Miller* | *Council Member* | *City of Sunny Side* |
| *Cynthia Tidwell* | *Spalding County Nurse Manager* | *Spalding County* |
| *Kelly Andrews* | *Spalding County Environmental Manager* | *Spalding County* |
| *Rocky Kenway* | *Spalding County Water Authority Superintendent* | *Spalding County* |
| *Tim Crane* | *Spalding County Public Works Interim Director* | *Spalding County* |
| *Brant Keller* | *City of Griffin Public Works Director* | *City of Griffin* |
| *Jeff Stanley* | *City of Griffin Public Works GIS* | *City of Griffin* |
| *Tommy Jones* | *Fire Chief* | *City of Griffin* |
| *Homer Daniel* | *Captain* | *City of Griffin* |
| *Mike Yates* | *Police Chief* | *City of Griffin* |
| *Wendell Beam* | *Sheriff* | *Spalding County* |
| *Paul Beamon* | *Director of EMS* | *Spalding County* |

| | | |
|---|---|---|
| *Wade Hutchison* | *Extension Service Agent* | *Spalding County* |
| *Jeff Kenerly* | *Chief Ranger* | *Georgia Forestry Commission* |
| *Barbara Lights* | *Manager- 911* | *Spalding County* |
| *Mike Windham* | *Communications Manager* | *Spalding County* |
| *Brent Foster* | *Animal Control Supervisor* | *Spalding County* |
| *Chad Jacobs* | *Community Development Director* | *Spalding County* |
| *Carl Humphrey* | *Correctional Institute Warden* | *Spalding County* |
| *Michael Heath* | *Code Enforcement Officer* | *Spalding County* |
| *TJ Imberger* | *Parks & Recreation Manager* | *Spalding County* |
| *Terry Tardy* | *Construction & Maintenance Superintendent* | *Spalding County* |
| *Don Long* | *Tax Appraiser* | *Spalding County* |
| *Sylvia Hollums* | *Tax Commissioner* | *Spalding County* |
| *Rita Johnson* | *Commissioner* | *Spalding County* |
| *Raymond Ray* | *Commissioner* | *Spalding County* |
| *Bart Miller* | *Commissioner* | *Spalding County* |
| *Don Hawbaker* | *Commissioner* | *Spalding County* |
| *Gwen Flowers-Taylor* | *Commissioner* | *Spalding County* |
| *M. Drolet* | *Water Treatment Plant Superintendent* | *City of Griffin* |
| *Brian Haynes* | *GIS* | *City of Griffin* |
| *W. Brown* | *WaterEmployee* | *City of Griffin* |
| *D. Pryor* | *Construction Superintendent* | *City of Griffin* |
| *Susan Thaxton* | *None* | *City of Griffin* |
| *A. Cook* | *None* | *City of Griffin* |
| *M. Melton* | *None* | *City of Griffin* |
| *Bill Bosch* | *None* | *City of Griffin Electric* |
| *Phil Francis* | *None* | *City of Griffin* |
| *Robert Mohl* | *None* | *Griffin Spalding Airport* |
| *T. Kirk* | *None* | *City of Griffin* |
| *Sonny Foster* | *Coroner* | *Spalding County* |
| *Bonnie Pfrogner* | *Chamber of Commerce* | *Griffin Spalding County* |
| *Ray Lightner* | *Writer* | *Griffin Daily News* |
| *Clay Davis* | *Employee* | *Sun City Community* |
| *Jewell Walker Harps* | *None* | *Griffin Spalding County* |
| *Joseph Walker* | *None* | *Spalding County Collaborative* |
| *William Slaughter* | *Council Member* | *City of Sunny Side* |
| *James Morgan* | *Council Member* | *City of Orchard Hill* |
| *Richard Shurley* | *Water Professional* | *City of Griffin* |
| *Lew Hunnicutt* | *Assistant Provost* | *University of GA-Griffin* |
| *Jamie Clark* | *Deputy Chief of Operations* | *Spalding County EMA* |
| *Harold Williams* | *Fire Marshal* | *Spalding County EMA* |
| *Rocky White* | *Lieutenant* | *Spalding County EMA* |

The Spalding County Emergency Management Agency created a mitigation planning committee to oversee the planning process. Due to the active participation rate, the committee opted not to form subcommittees. The structure and roles of the committee involved in the planning process are listed below.

**Mitigation Planning Committee**

- Membership consisted of local elected officials and local government staff members.
- Convened approximately every 4 weeks for planning coordination between committee members.
- Received information updates and completed work from committee members.
- Provided mitigation planning goals and objectives for the plan.
- Responsible for profiling all natural hazard events applicable to Spalding County and listing any past event occurrences.
- Responsible for identifying and inventorying critical infrastructure for Spalding County, the Cities of Orchard Hill, Sunny Side, and Griffin.
- Responsible for producing a general inventory and cost estimate of non-critical structures within potential hazard areas.
- Assisted in developing mitigation plan goals and action steps.
- Responsible for profiling all applicable human caused hazards within the county.

Interested parties were given the opportunity to be a part of the planning process. The Spalding County Emergency Management Agency solicited participation from businesses and other outside entities through a mass emailing to interested parties. The emailing list included the Chamber of Commerce, the Spalding County Development Authority, healthcare, education, and businesses. The EMA received a great response from these outside entities requesting participation in the planning process for the pre-disaster hazard mitigation plan (See supporting documentation in Appendix E).

Public Participation

As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the natural hazards present in their community and take the steps necessary to reduce their impact. Public awareness is a key component of any community's overall mitigation strategy aimed at making a home, neighborhood, school, business, or city safer from the potential effects of natural hazards.

During the Plan update process, Three Rivers Regional Commission presented an overview of the update process to the Spalding County Local Emergency Planning Committee during the kickoff meeting. An opportunity was given for comments and review.

The Spalding County Hazard Mitigation Plan Update Committee took it upon themselves to ensure the processes undertaken for the development, implementation, and maintenance of the Spalding County Hazard Mitigation Plan Update adequately considered public needs and viewpoints.

A list of public outreach initiatives can be found below; however, it should be noted that the second public outreach meeting will follow approval of this Plan.

- All meetings were open meetings with no attendance restrictions. These meetings were held in the Spalding County Board of Commissioners' meeting room and in the Spalding County Extension office.
- Advertisements were placed in the local newspaper for the August 15, 2016 meeting, which was when the rough draft was available for review.
- Advertisements were made by press release for the November 4, 2015 meeting in which the planning process and involvement process were discussed.

Documentation of these public meetings can be found in Appendix E.

## Multi-Jurisdictional Considerations

While cities are not required by FEMA to adopt hazard mitigation plans, the Federal Disaster Mitigation Act of 2000 requires all municipalities that wish to be eligible to receive FEMA hazard mitigation grants to adopt a local multi-hazard mitigation plan and to update the plan every five years. Spalding County's Hazard Mitigation Plan was approved by FEMA in 2011, and the 2016 Plan Update provides the first five-year update. This approved Hazard Mitigation Plan makes Spalding County and its municipalities eligible for FEMA's Hazard Mitigation Grant Program, Flood Assistance Mitigation Grants, and Pre-Disaster Mitigation Grants.

As set forth by Georgia House Bill 489, the Emergency Management Agency is the implementing agency for projects pertaining to hazard mitigation. Spalding County is dedicated to work in the best interests of the County, as well as, the City of Griffin, City of Orchard Hill, and the City of Sunny Side.

During the creation and update of this Plan, Spalding County Emergency Management Agency solicited and received participation from the following Spalding County cities: Griffin, Orchard Hill, and Sunny Side. Therefore, the result is a truly multi-jurisdictional plan. A few mitigation action steps identified in this plan update may apply to selected jurisdictions. These steps are identified in the appropriate sections. Unless specifically noted otherwise, most steps apply equally to all jurisdictions.

## Incorporation of Existing Plans, Studies, and Resources

**Existing Plans**
2011 Spalding County Pre-Disaster Hazard Mitigation Plan
2014 State of Georgia Hazard Mitigation Plan
Spalding County Local Emergency Operations Plan

City of Griffin Floodplain Management Plan
Georgia Forestry Commission's Spalding Co. Community Wildfire Protection Plan
2009 Spalding County Comprehensive Plan (latest plan-next update due 2019)

**Studies**
2012 United States Department of Agriculture Ag Census
2014 United State Census American Fact Finder
2015 United States Census Estimates

**Resources**

National Climactic Data Center
National Weather Service
Spalding County Tax Assessor's Data GMIS Database
United States Geological Survey
FEMA Flood Insurance Rate Maps National Flood Insurance Program
United States Coast Guard National Response Center Data
Georgia Department of Transportation

**Application of Existing Plans and Studies**

| Existing Planning Mechanism | Reviewed? Yes/No | Incorporation Into Mitigation Plan |
|---|---|---|
| 2011 Spalding County Hazard Mitigation Plan | Yes | Baseline for the 2016 Plan; updated mitigation strategies; updated hazards, updated Spalding County information |
| 2014 State of GA Hazard Mitigation Plan | Yes | Hazard descriptions; potential hazards; mapping mechanisms; potential mitigation strategies that could be adopted on a local level |
| Spalding County Local Emergency Operations Plan (LEOP) | Yes | Identification of current resources; identification of current capabilities |
| Georgia Forestry's Spalding County Community Wildlife Protection Plan | Yes | Mitigation strategies for wildfire and drought; historical data |
| 2009 Spalding County Comprehensive Plan Update | Yes | To identify future development trends; identify mitigation strategies to curb trends in a direction that considers the hazards of the area |
| 2012 USDA Agriculture | Yes | Agriculture data regarding |

| | | |
|---|---|---|
| Census | | potential losses for drought and wildfire |
| 2010, 2014, 2015 United States Census | Yes | To update Spalding County's profile information |
| City of Griffin Floodplain Management Plan | Yes | Mitigation strategies for flood |

# Chapter Two: Spalding County Profile

The following table provides a description of each section of this chapter, and a summary of the changes that have been made to the Spalding County Hazard Mitigation Plan 2011.

| Chapter 2 Section | Updates |
|---|---|
| Past Hazards | New section- Not in 2011 Mitigation Plan. This information involved a review of the hazards listed in the previous plan; information was updated for the last 50 years |
| History | Expanded and updated from 2011 Mitigation Plan |
| Past Events | New Section- Not in 2011 Mitigation Plan; some of these events were listed in the hazard profiles in the previous plan |
| Demographics | Updated data to the 2011 Census Information |
| Economy | New Section- Not in 2011 Mitigation Plan |
| Government | New Section- Not in 2011 Mitigation Plan |
| Municipalities | New Section- Not in 2011 Mitigation Plan |
| Transportation | New Section- Not in 2011 Mitigation Plan |
| Climate | New Section- Not in 2011 Mitigation Plan |
| Utilities | New Section- Not in 2011 Mitigation Plan |

Past Hazards

Spalding County has faced many hazards in its long history. Severe Thunderstorms have been, perhaps, the most prevalent of these hazards. In the last 50 years, Spalding County has been subjected to 88 documented Severe Thunderstorm events. These events include torrential rainfall, hail, thunderstorm-force winds, and lightning.

Tornadoes, which can sometimes spawn from severe thunderstorms, have also occurred in Spalding County, although with much less frequency. There have been 13 documented tornadoes in the last fifty years in Spalding County.

As a result of heavy rainfall either within or upstream from Spalding County, flooding has occurred in the past as well. Data from the National Climactic Data Center of the National Weather Service shows 7 flood events in the last 20 years affecting Spalding County. Most notable was the severe flooding along the Flint River associated with Tropical Storm Alberto in 1994.

Winter storms and heavy snowfall have affected Spalding County infrequently in the last 20 years. These events are not a yearly occurrence and typically do not have the pre-planning in place when compared to Northern and Western states who see this type of weather phenomena regularly. The NCDC recorded 6 winter storm or heavy snow events in 20 years for Spalding County with 2 of those having occurred in the last 10 years.

Spalding County has been plagued by other less severe or less frequent hazards in the past including, but not limited to, drought, excessive heat, tropical cyclones, and wildfires. For more information on all hazard events, please see data in Appendix C.

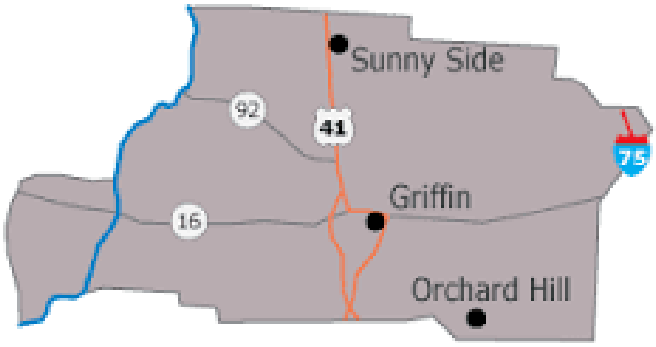
History

The land which is now Spalding County was claimed in the 1540's by the Spaniards as part of Florida. In 1629, England declared the land part of South Carolina. It wasn't until 1764 that this area officially became part of the Georgia colony. Led by Chief McIntosh, the Creek Indians ceded all land between the Flint and Ocmulgee Rivers and north to the Chattahoochee River on January 8, 1821, in the First Treaty of Indian Springs. In 1823, just two years later, the treaty was declared invalid because of rumors of bribery and coercion. Chief McIntosh signed another treaty with the white man and was subsequently executed by a faction of the tribe that was opposed to giving away lands. Although no Creek settlements existed in Spalding County, the familiar McIntosh Road, was an important trail leading to Indian Springs, a meeting place for Indians. The Springs' highly sulfured waters were thought to have healing powers. After the treaty, five counties were created by the Georgia General Assembly: Monroe, Henry, Fayette, Houston and Dooly. The next year, Pike County was carved from Monroe and Henry. Not until December 20, 1851, was Spalding County founded. It was created from parts of Pike, Henry and Fayette Counties.

Population in Spalding County has grown from the 1930 census figure of 23,495 to 64,051 in the 2015 census. The county has a total area of 200 square miles and several major highways that allow for easy travel including Interstate 75, U.S. Route 41, U.S. Route 19, Georgia State Route 16, Georgia State Route 155 and Georgia State Route 362.

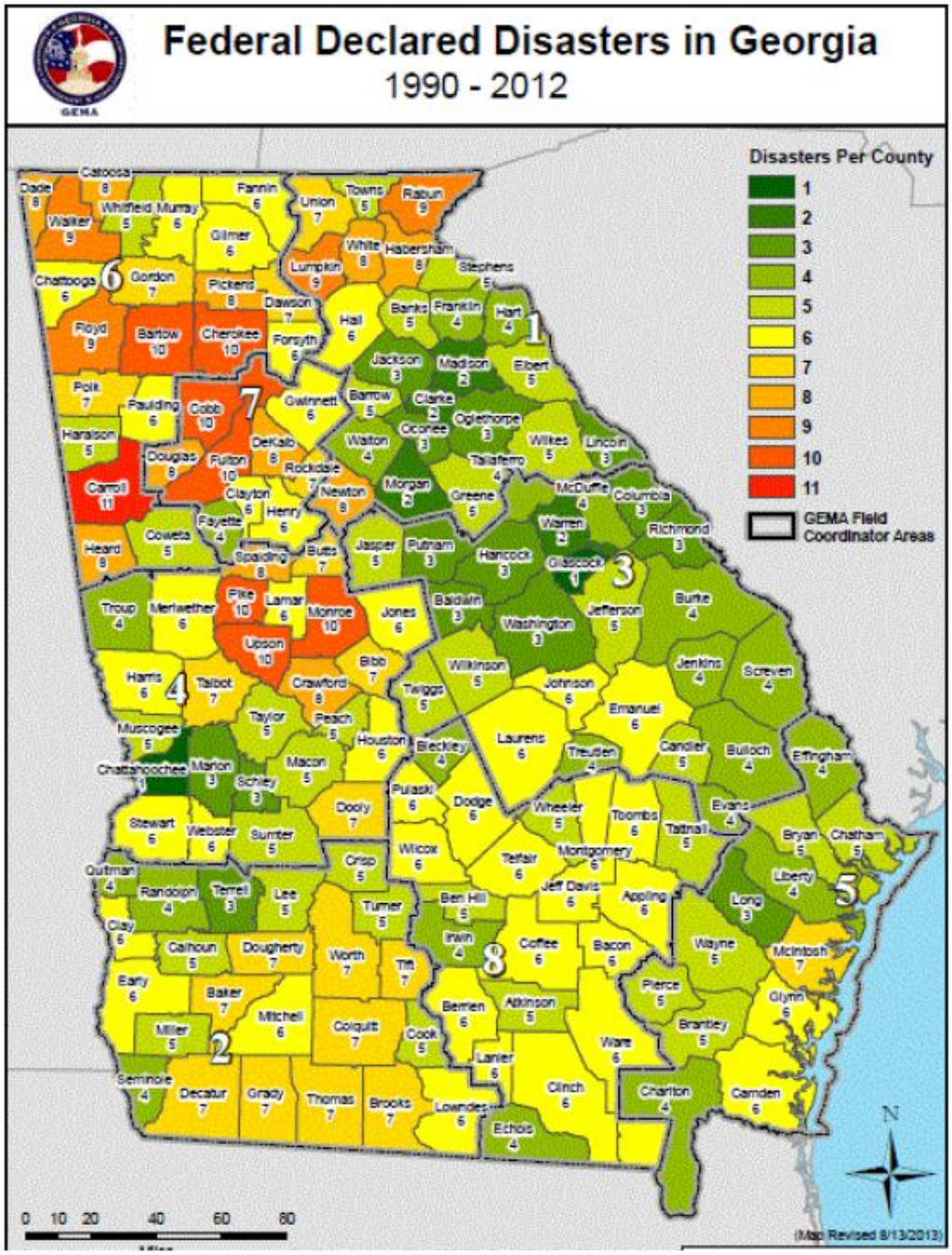
Griffin was not the site of any Civil War battles, but nonetheless it was a vital location during the war. Camp Stephens, located two miles north of McIntosh Road, was a mobilization point for infantry. Cavalry were mobilized at Camp Milner, which is now the grounds of the city park. Two military companies from Griffin and seven from Spalding County were organized to fight. Not only was Griffin the first stop for troops and the home of many soldiers, it was also a hospital town and a printing center. Trainloads of sick and wounded poured into hospitals, public buildings, the courthouse, stores, colleges and even private homes. Much Confederate money was printed in Griffin as well as most of the Confederate government's stamps. At one point, Spalding County even printed its own currency. Although not destroyed physically by Union soldiers (only one warehouse was burned), Griffin was devastated financially. Three hundred miles of railroad, the city's lifeline, had been demolished. Yet once again, as it did after the depression, the town recovered. A new development in Griffin helped it to survive Reconstruction and the postwar era. The 1880's saw the birth of textile manufacturing in Griffin. In 1888, the Kincaid Manufacturing Company opened. It continued to expand by buying other mills in the area. However, the mill is no longer in operation.

The primary industries in Spalding County include industry and commercial, although agriculture and forestry also support the local economy.




Past Events

- 2014, Tornado
- 2014, Winter Storm
- 2011, Tornado
- 2006, Tornado
- 2004, Tropical Storm Frances
- 2004, Hurricane Ivan
- 2000, Ice Storm
- 1998, Severe Storms
- 1994, Tropical Storm Alberto Flooding
- 1993, Tornado
- 1993, Blizzard
- 1990, Severe Storms


Federal Declared Disasters in Georgia
1990 - 2012
GEMA
Disasters Per County
1
2
3
4
5
6
7
8
9
10
11
GEMA Field Coordinator Areas
Catoosa
Dade
Whitfield
Murray
Walker
Fannin
Union
Towns
Rabun
Gilmer
White
Habersham
Stephens
Lumpkin
Chattooga
Gordon
Pickens
Dawson
Banks
Franklin
Hart
Floyd
Bartow
Cherokee
Forsyth
Hall
Jackson
Madison
Elbert
Polk
Paulding
Cobb
Gwinnett
Barrow
Clarke
Oglethorpe
Haralson
Douglas
Fulton
DeKalb
Rockdale
Walton
Oconee
Wilkes
Lincoln
Taliaferro
Carroll
Clayton
Henry
Newton
Morgan
Greene
McDuffie
Columbia
Fayette
Warren
Richmond
Coweta
Heard
Spalding
Butts
Jasper
Putnam
Hancock
Glascock
Troup
Meriwether
Pike
Lamar
Monroe
Jones
Baldwin
Jefferson
Burke
Upson
Washington
Harris
Talbot
Crawford
Bibb
Twiggs
Wilkinson
Johnson
Jenkins
Screven
Taylor
Peach
Emanuel
Muscogee
Houston
Bleckley
Laurens
Treutlen
Candler
Bulloch
Effingham
Chattahoochee
Marion
Macon
Schley
Pulaski
Dodge
Wheeler
Toombs
Evans
Tattnall
Bryan
Chatham
Stewart
Webster
Sumter
Dooly
Wilcox
Crisp
Telfair
Montgomery
Quitman
Randolph
Terrell
Lee
Turner
Ben Hill
Jeff Davis
Appling
Liberty
Long
Clay
Calhoun
Dougherty
Worth
Tift
Irwin
Coffee
Bacon
Wayne
McIntosh
Early
Baker
Mitchell
Berrien
Atkinson
Pierce
Glynn
Miller
Colquitt
Cook
Brantley
Ware
Lanier
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Clinch
Charlton
Camden
Echols
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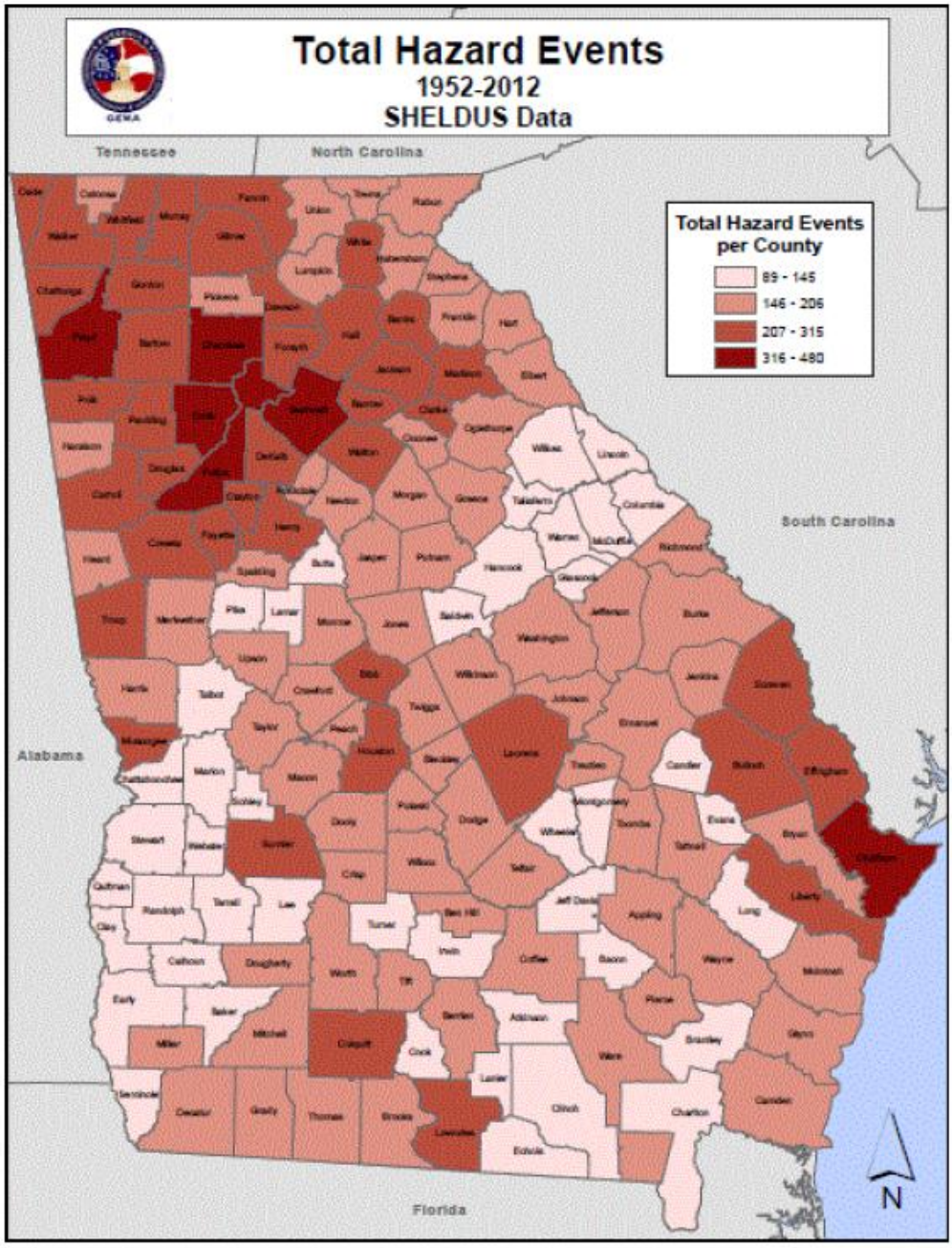
0 10 20 40 60 80
(Map Revised 8/13/2013)


Total Hazard Events
1952-2012
SHELDUS Data
Tennessee
North Carolina
South Carolina
Alabama
Florida
Total Hazard Events per County
89 - 145
146 - 206
207 - 315
316 - 480
N

Demographics

| | 2010 Census | 2014 Census |
|---|---|---|
| Population | 63,304 | 63,946 |
| White | 40,169 | 40,434 |
| African-American | 20,840 | 20,973 |
| Hispanic/Latino | 2,272 | 2,659 |
| Asian | 485 | 520 |
| American Indian | 167 | 253 |
| Two or More Races | 783 | 1,093 |
| Median Age | 36.6 | 38.0 |
| Median Household Income | $41,100 | $40,243 |
| % of Persons Below Poverty Line | 17.2% | 18.2% |
| Homeowners | 64.6% | 62.0% |

Economy

Spalding County's economy is primarily agriculture with some light industry. Spalding County's cost of living is 17.5% below the national average. The unemployment rate in Spalding County is 7.4%, which is slightly higher than the state average of 6.3% and national average of 5.5% (as of May 2016). Spalding County has a median household income of $ 40,243, which is lower than the national average of $51, 914.

The ten largest employers in Spalding County are:

| Company | Product/Service |
|---|---|
| Caterpillar, Inc. | Diesel & gas generator sets |
| CareMaster Medical | Home nursing |
| Norcom | School supplies |
| AEP Industries, Inc. | Packaging film |
| 1888 Mills/Southern Terry | Textile products |
| Supreme Corp. | Insulated van bodies, dry freight & A-frame trailers |
| Bandag, Inc. | Pre-cured treated rubber |
| Coveris, LLC | Plastic bags; unsupported plastic film & sheets |
| Vernay Manufacturing, Inc. | Precision rubber products |
| International Paper | Corrugated shipping containers |

## Government

Spalding County is governed by an elected five-member Board of Commissioners, each Commissioner representing a different geographic district of Spalding County.
The main duties of the Board of Commissioners is to pass local laws, known as ordinances, that regulate a variety of things that promote the health, safety and welfare of the citizens covered by them; to pass a balanced budget each year that funds its own operations as well as to allocate funds to the four Constitutional Officers, other elected officials, the courts and a variety of programs put in place by the State but funded locally; to ensure that necessary services are funded and provided; to set the millage rate for the County government and many other secondary duties.

The Board of Commissioners sets the County millage rate each year to fund a portion of the County budget. They also receive the millage rate that is set by the Board of Education and an assessment by the State which is submitted to the Georgia Department of Revenue each year.

The Board receives, deliberates and passes local ordinances each year and amends many others to reflect the changing times. Both require that a public hearing be held and these are normally held during the regular Commission meetings. They also pass several resolutions and proclamations throughout the year. Generally, with some exceptions, the Board can pass any local law and ordinance they feel is needed for the County so long as it does not violate the laws of the State or Federal government or the Constitutional rights of any individual. These are researched thoroughly by legal staff before ever being brought to a hearing.

The Board of Commissioners provides many services that citizens expect through the revenues that are raised annually. These include Fire and Ambulance protection; E-911 dispatch services; Zoning and Planning; Inspections; Code Enforcement; Animal Control; Public Library; Parks and Recreation; Public Works; Waste Management Collection Centers; and agencies that service all of these such as Building Maintenance and Vehicle Maintenance. The budget also funds state mandated services such as Law Enforcement and Detention; Superior, Probate, Magistrate and Juvenile courts; Tax Assessment and Tax Collection services; Elections management; District Attorney (shared with other counties) and some smaller funding for local agencies under the State of Georgia.

Municipalities

| | 2010 Census | 2014 Census |
|---|---|---|
| Griffin | 23,600 | 23,425 |
| Orchard Hill | 152 | 193 |
| Sunny Side | 113 | 87 |

Transportation

Spalding County's transportation system consists primarily of state highways and county maintained roads. The county has a total area of 200 square miles and several major highways that allow for easy travel including Interstate 75, U.S. Route 41, Georgia State Route 19 and Georgia State Route 362. These are the major transportation routes that carry the majority of passenger and commercial traffic in and out of Spalding County. Congestion in these transportation corridors creates traffic problems, primarily as a result of population growth. There is currently no passenger rail but there are freight rail services in Spalding County.

Climate

Spalding County, like much of Georgia, enjoys a temperate climate. As a result, Spalding County has four well-defined seasons: warm to hot summers; brisk fall temperatures; relatively brief, cool winters; and a warm spring season. As a result, there exists a long growing season in Georgia, perfect for ornamental and economic-boosting agricultural plants.

**Average Monthly Temperatures in Georgia (Fahrenheit)**

| Month | Temperature |
|---|---|
| January | 46 |
| February | 49 |
| March | 56 |
| April | 63 |
| May | 70 |
| June | 77 |
| July | 80 |
| August | 79 |
| September | 74 |
| October | 64 |
| November | 56 |
| December | 48 |

## Utilities

Spalding County's utility needs are met by a variety of public and private entities.

Electrical power to Spalding County is provided by the City of Griffin/Griffin power, Georgia Power Company or Central Georgia Electric Membership Corporation.

Water is provided by the City of Griffin Water and Wastewater Department.

Most of Spalding County's industrial plants are heated with natural gas. As a result of deregulation of the natural gas industry, customers must select an independent marketer to supply their natural gas service; more than 15 marketers are certified by the Georgia Public Service Commission (PSC). The natural gas is delivered through the distribution system owned, operated and maintained by Atlanta Gas Light Company. Gas availability is plentiful, and the state's natural gas rates are competitive with most other areas of the country.

Fuel oil for industrial use is available from several area suppliers as is coal (purchased in carload quantities through Atlanta-area brokers). Liquefied propane is distributed by a number of suppliers in Spalding County.

# Chapter Three: Hazard Profiles

Summary of Updates for Chapter Three

The following table provides a description of each section of this chapter, and a summary of the changes that have been made to the Spalding County Hazard Mitigation Plan 2011.

| Chapter 3 Section | Updates |
|---|---|
| Risk Assessment | Expanded the explanation of the Risk Assessment |
| Natural Hazard Flooding | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Updated and consolidated hazard profile with new data; Land Use and Development trends updated to include municipal NFIP information; Content revised |
| Natural Hazard Tornadoes | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Updated and consolidated hazard profile with new data; Content revised |
| Natural Hazard Agricultural Drought | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Content revised |
| Natural Hazard Severe Winter Storms | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Updated and consolidated hazard profile with new data; Content revised |
| Natural Hazard Extreme Heat | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Updated and consolidated hazard profile with new data; Content revised |
| Natural Hazard Hurricane Winds | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Updated and consolidated hazard profile with new data; Content revised |
| Natural Hazard Thunderstorms | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Updated and consolidated hazard profile with new data; Content revised |

| | |
|---|---|
| Natural Hazard Wildfires | Updated hazard description to match Georgia State Hazard Mitigation Plan information; Updated and consolidated hazard profile with new data; Content revised |
| Technological Hazard Hazardous Materials Release | Updated and consolidated hazard profile data; Content revised |

The Spalding County Pre-Disaster Mitigation Planning Committee identified all natural hazards that could potentially affect Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. During the plan update no new hazards were identified, and no previously identified hazards were deleted. As a result of the pre-disaster mitigation planning process, the planning committee determined that eight (8) natural hazards pose a direct, measurable threat to Spalding County (Floods, Tornadoes, Drought, Severe Winter Storms, Extreme Heat, Hurricane Winds, Thunderstorms, and Wildfires). Data sources used to identify the natural hazards were the National Climatic Data Center (NCDC), the Georgia Forestry Commission, and local government records.

Risk Assessment

The Spalding County Hazard Mitigation Planning Committee conducted a comprehensive Threat and Hazard Identification and Risk Assessment (THIRA) for Spalding County and its municipalities. This assessment developed the hazard basis for this plan. The assessment includes the following components for each hazard:

1. Hazard Identification: The Spalding County Hazard Mitigation Planning Committee identified eight natural hazards and one technological hazard for this Hazard Mitigation Plan. Each hazard was identified by the use of statistical data and records from a variety of sources. The list of hazards are based upon frequency, severity of impact, probability, potential losses, and vulnerability.

2. Hazard Description: Each hazard was described in detail. Many hazard descriptions came from the Georgia Hazard Mitigation Plan since many of the hazards that could impact that state could also potentially impact Spalding County.

3. Profile of Hazards: Each hazard was profiled as to how it could potentially impact Spalding County.

4. Assets Exposed to the Hazard: The plan considers critical facilities and infrastructure as part of the vulnerability assessment. This assessment determines the vulnerability of the municipalities and attempts to identify the populations most vulnerable to each hazard, although many have potential countywide impacts.

5. Estimated Potential Losses: Using critical facility and past history data, and estimation of potential losses due to a particular hazard event were determined.

6. Land Use and Development Trends: Land use trends were considered when determining the potential future impacts of each hazard. This is of particular importance in regards to flooding and dam failure events.

7. Multi-Jurisdictional Concerns: Each jurisdiction was considered when determining the potential hazard impact.

**Natural Hazard: Flooding**

*Hazard Description*

Flooding is a temporary overflow of water on normally dry lands adjacent to the source of water, such as a river, stream, or lake. The causes of flooding include mass sources of precipitation, such as tropical cyclones, frontal systems, and isolated thunderstorms combined with other environmental variables, such as changes to the physical environment, topography, ground saturation, soil types, basin size, drainage patterns, and vegetative cover. Adverse impacts may include structural damages, temporary backwater effects in sewers and drainage systems, death of livestock, agricultural crop loss, loss of egress and access to critical facilities due to roads being washed-out or over-topped and unsanitary conditions by deposition of materials during recession of the floodwaters.

Floods are loosely classified as either coastal or riverine. Coastal flooding occurs when normally dry, low-lying land is flooded by sea water. Coastal flooding is usually associated with tropical cyclones in Georgia. Riverine flooding occurs from inland water bodies such as streams and rivers. Riverine flooding is often classified based on rate of onset. The first is slow to build, peak, and recede, often allowing sufficient time for evacuations. The other type of riverine flood is referred to as a “flash” flood, which rapidly peaks and recedes, thus giving insufficient time for evacuations. Flash floods are typically considered the most dangerous of these types.

On a broad scale, flooding can occur around any body of water or low-lying surface given enough precipitation or snowmelt. The spatial extent of the flooding event depends on the amount of water overflow, but can usually be mapped because of existing floodplains (areas already prone to flooding).

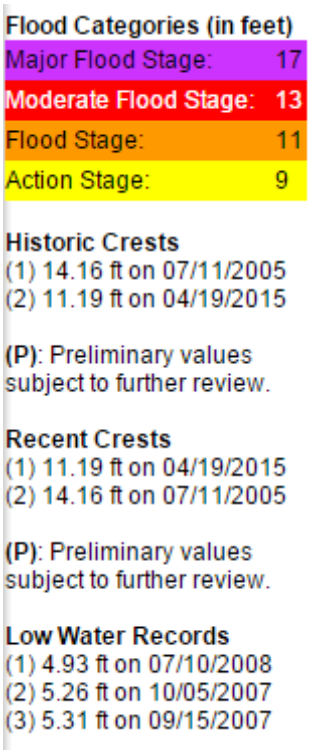
Flooding is Georgia is highly dependent on precipitation amounts and is highly variable. Certain seasons are more prone to flooding to a greater likelihood of excessive precipitation. Typically, the wet seasons are during the winter, early spring, and midsummer. Late spring and fall are usually drier seasons.

Susceptibility of a stream to flooding is dependent upon several different variables. Among these are topography, ground saturation, previous rainfall amounts, soil types, drainage, basin size, drainage patterns of streams, and vegetative cover. Most floods occur because the ground is already saturated with moisture and cannot absorb any further runoff. Georgia's infamous red clay soil contributes to the problem in the piedmont area of the state because the particles of the clay are flat and lie in a dense, compact matrix which leaves little inter-particle space for water. As a result, the clay soil has poor "percolation" capability, and quickly becomes saturated. Additional rainfall results in more runoff. Urbanization and development also contributes to flash flooding in that the vegetative ground cover is removed and replaced with extensive amounts of asphalt, concrete, and buildings. Water is no longer absorbed and quickly runs off into adjacent streams. Flooding may occur relatively slowly or become a flash flood.

*Hazard Profile*

Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side were subjected to major flood damage or disruption during the flood of 1994. During that flood many structures were damaged, government services were disrupted, and each municipality had to mobilize resources to minimize the impact of the flood. Since the flood of 1994, Spalding County has had several flood related events with that have caused property damage.

During the planning process the Mitigation Planning Committee used the NCDC Query report and local hazard records. The best information available on flooding is only from within the last twenty years. In the records that were evaluated, it was determined that there were seven (7) occurrences of flooding that affected either the county or one of its municipalities. Due to the tendency of the NCDC report to lump multiple counties into hazard events, the specific hazard information by jurisdiction was unavailable. Due to the limited data the frequency of occurrence for this event is listed as 10.77% per year, but the percentage should continue to decrease as better records are kept in the future. NCDC data and other hazard records can be found in Appendix C. A hazard event frequency table for flooding is listed in Appendix A.




The Mitigation Planning Committee examined the historical records and land use data, and determined that eight assets listed on the Critical Facility Inventory were potentially at risk in the event of a flood. Worksheet 3A showed a total of eight (8) assets worth $66,909,912 for Spalding County only. Critical facility asset inventories for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D. The GEMA online tool did not list any repetitive losses for Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. The extent of the hazard is shown in the graphic to the left.

The loss estimates were generated using GEMA created online tool that complied reporting information with guidance set forth by the FEMA State and Local Mitigation Planning Guide 386-2: Section 4, Estimating Losses. Loss estimates were generated for structures, general and critical, that were at risk of damage from natural or manmade disasters that were applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Based on the GPS data and the online tool's mapping ability, it was determined that eight listed structures are at risk for flood damage. The total value of the critical facility assets in the hazard area is $66,909,912. Worksheet 3A showed a total of 26, 230 assets worth $959,054,849 for Spalding County only. Losses for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D.

Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side have established minimum

standards for all new construction and substantial improvements of residential and nonresidential structures. In addition, construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act) and the International Building Code (2006 edition). The minimum standards established by these codes provide reasonable protection from most natural hazards to persons and property. Other than the construction codes, there are no land use trends (current or future) that specifically address this hazard. Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side did establish a local ordinance that prohibited building in the flood plain, adopted an update in 2007, and review all new construction to ensure nothing is built in a floodplain. However it should be noted that local ordinances can be modified based on the political climate, and other external political factors.

The historical flooding information can be found in Appendix C.

*Assets Exposed to the Hazard*

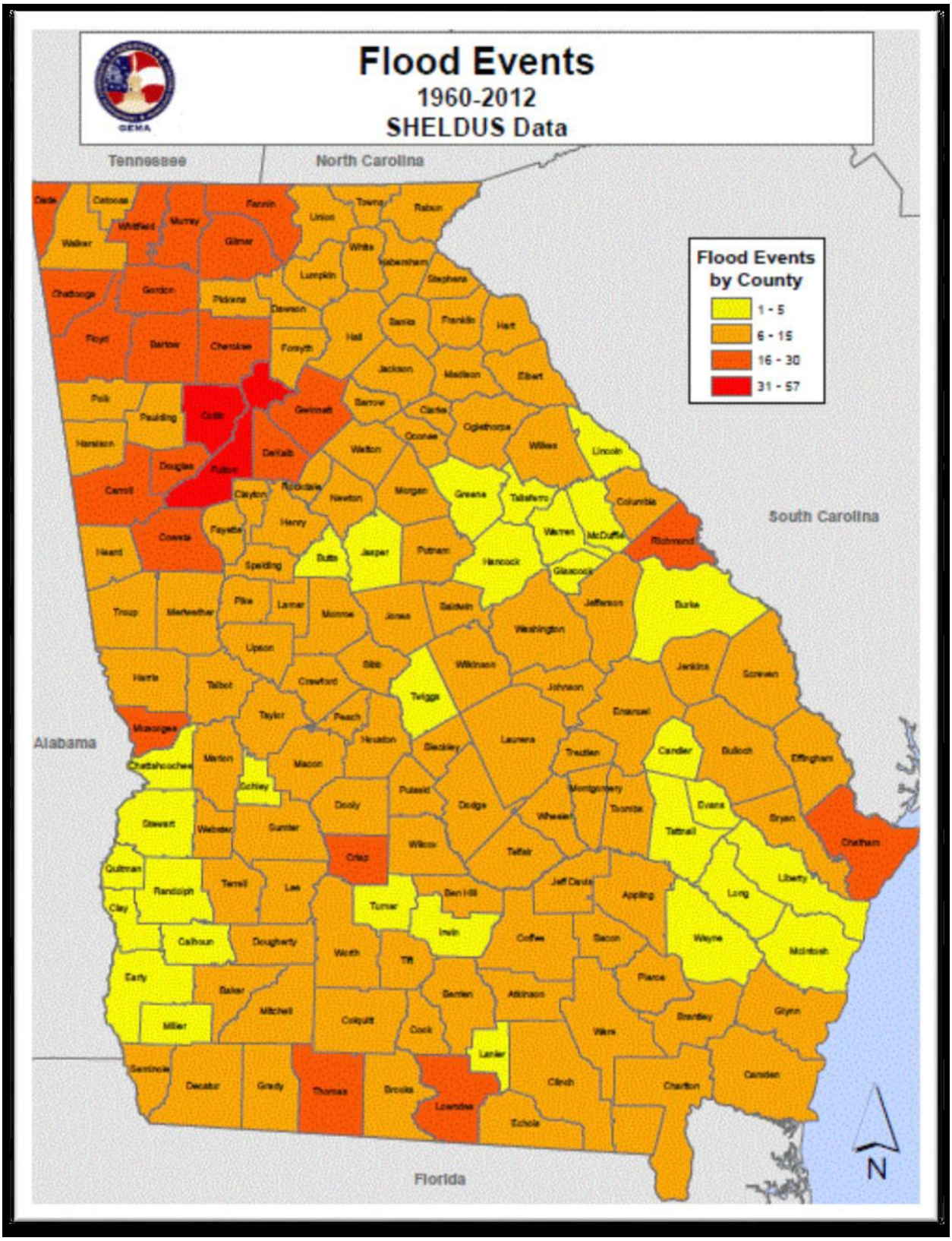
This hazard is applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. The specific areas prone to flood damage can be found in Appendix A,. Worksheet 3A lists eight (8) critical facilities for Spalding County only, and is located in Appendix D. Worksheet 3A shows zero critical facilities in the City of Orchard Hill, zero critical facilities in the City of Griffin, and zero critical facilities in the City of Sunny Side. Mitigation actions taken to address flooding and to limit damage should involve the county and all its municipalities. The tax data information is only available on a county-wide or parcel based level.

Floods have the capability of disrupting government services, and damaging structures from the governmental, industrial, and private sectors. This occurred in 1994 when a hundred year flood affected Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Neither the County nor its municipalities were prepared for the disruption that a massive flood could cause.

Since the flood of 1994 Spalding County has had several flood related events that have caused property damage. These floods have been part of multi-county events, and details on specific structures that were damaged are not available.

*Estimated Potential Losses*

For loss estimations, please see the critical facilities information in Appendix A.


Flood Events
1960-2012
SHELDUS Data
GEMA
Tennessee
North Carolina
South Carolina
Alabama
Florida
Flood Events by County
1 - 5
6 - 15
16 - 30
31 - 57
N

*Land Use & Development Trends*

Spalding County continues to develop in areas around Griffin and in the northern portion of Spalding County towards Clayton, Fayette, and Henry Counties. The County and its municipalities have a land use plan that clearly identifies future development. The Spalding County Building Department and the various municipalities enforce the 2003 International Building Codes. Updating building codes and the adoption of these codes will continue to reduce vulnerability to many hazards in the developing areas of the county.

Spalding County participates in the National Flood Insurance Program (NFIP) and follows the program's guidelines to ensure future development is carried out in the best interests of the public. The County first entered the NFIP (13255#) in 2010. According to the NFIP guidelines, the County has executed a Flood Damage Prevention Ordinance. This ordinance attempts to minimize the loss of human life and health as well as minimize public and private property losses due to flooding. The ordinance requires any potential flood damage be evaluated at the time of initial construction and that certain uses be restricted or prohibited based on this evaluation. The ordinance also requires that potential homebuyers be notified that a property is located in a flood area. In addition, all construction must adhere to the Georgia State Minimum Standard Codes and the International Building Codes. Currently, the cities of Griffin, Orchard Hill, and Sunny Side also participate in NFIP. According to the GEMA online tool, there were no repetitive loss properties.

## *Multi-Jurisdictional Considerations*

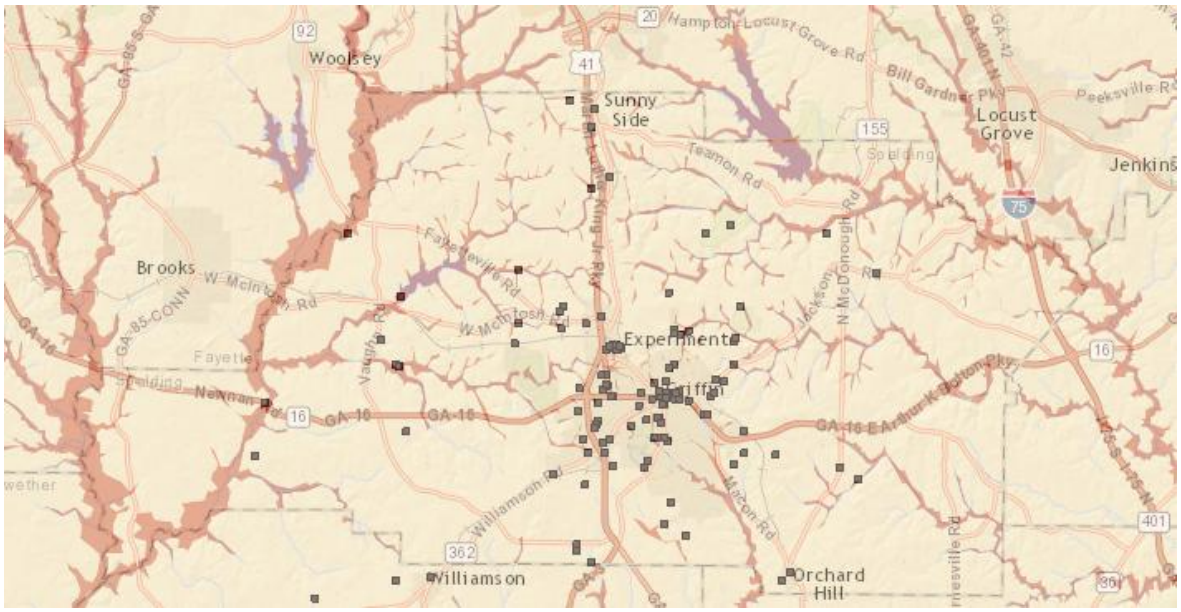
During a large-scale flood event, many portions of Spalding County would potentially be impacted by flooding. However, the areas most prone to flooding have historically been those areas located within the 100-year floodplain. The most flood prone areas of Spalding County are concentrated in the western portion of the county along the Flint River and its distributaries. All of Spalding County's municipalities could potentially be impacted.

## *Hazard Summary*

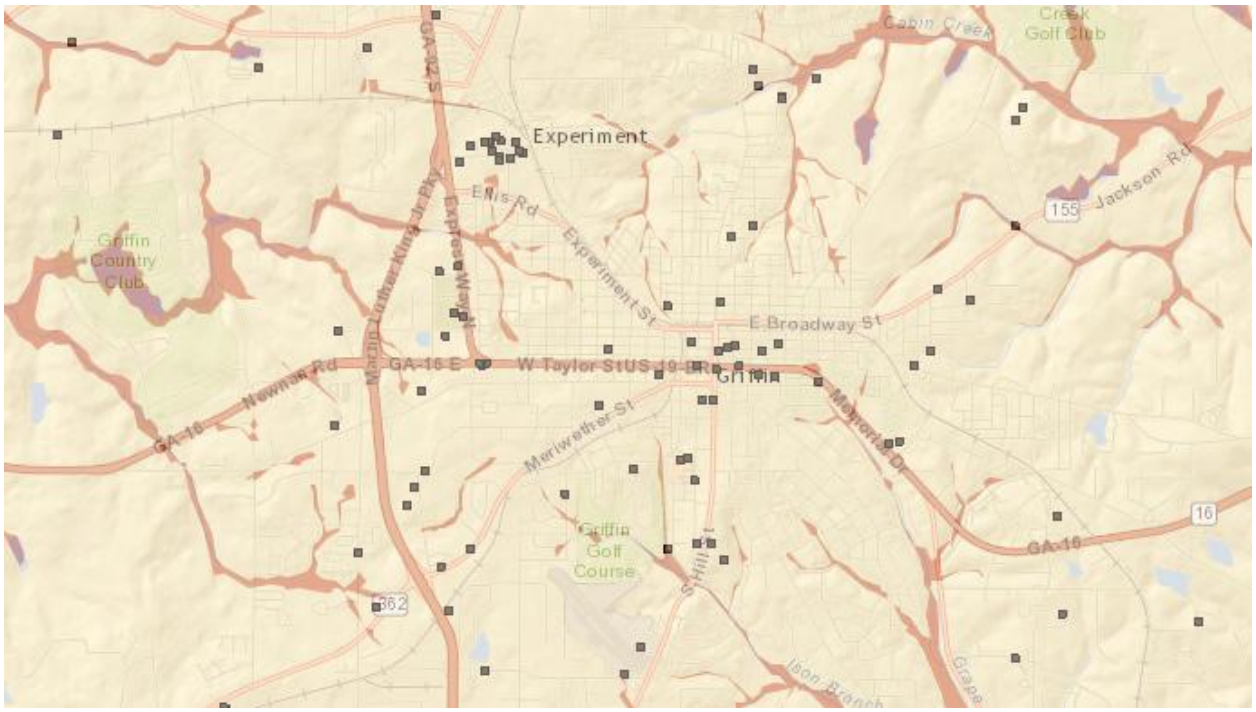
Flooding has the potential to inflict significant damage within Spalding County, particularly along the Flint River and its distributaries. Mitigation of flood damage requires the community to be aware of flood-prone areas, including roads, bridges, and critical facilities. The Spalding County HMPC identified flooding as a hazard requiring mitigation measures and identified specific goals, objectives, and action items they deemed necessary to lessen the impact of flooding for their communities. These maps were updated since the previous plan.

The Spalding County HMPC identified flooding as a hazard requiring mitigation measures and identified specific goals, objectives, and action items they deemed necessary to lessen the impact of flooding for their communities. Strict code enforcement in the Flint River drainage basin, updated county and city soil erosion ordinances, and a planning and zoning review committee has been implemented in accordance with mitigation strategies identified in the 2011 Spalding County Hazard Mitigation Plan.

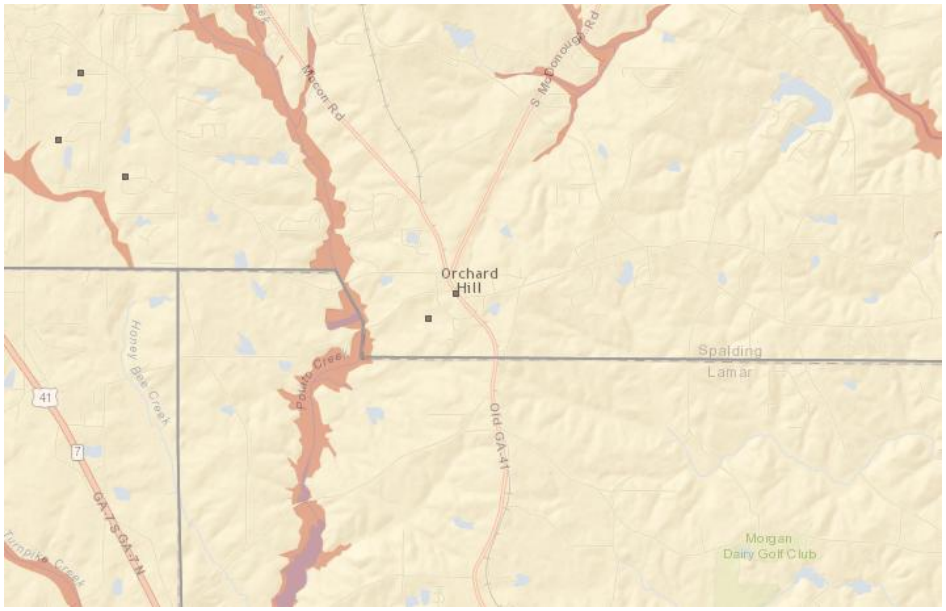
## Spalding County



**Griffin**


Experiment
Ellis Rd
Experiment St
Griffin Country Club
E Broadway St
GA-16 E
W Taylor St
US 19
Griffin
Newnan Rd
GA-16
Meriwether St
Griffin Golf Course
GA-16
16
362
155
Jackson Rd

## Orchard Hill




## Sunny Side

**Natural Hazard: Tornadoes**

*Hazard Description*

A tornado is a violently rotating column of air (seen only when containing condensation, dust, or debris) that is in contact with the surface of the ground. Exceptionally large tornadoes may not exhibit the classic "funnel" shape, but may appear as a large, turbulent cloud near the ground or a large rain shaft. Destructive because of strong winds and windborne debris, tornadoes can topple buildings, roll mobile homes, uproot vegetation and launch objects hundreds of yards.

Most significant tornadoes (excluding some weak tornadoes and waterspouts) stem from the right rear quadrant of large thunderstorm systems where the circulation develops between 15,000 and 30,000 feet. As circulation develops, a funnel cloud, a rotating air column aloft, or tornado descends to the surface. These tornadoes are typically stronger and longer-lived. The weaker, shorter-lived tornadoes can develop along the leading edge of a singular thunderstorm. Although tornadoes can occur in most locations, most of the tornado activity in the United States in the Midwest and Southeast. Tornadoes can occur anywhere within the State of Georgia.

In terms of the continuum of area of impact for hazard events, tornadoes are fairly isolated. Typically ranging from a few hundred to one or two miles across, tornadoes affect far less area than larger meteorological events such as tropical cyclones, winter storms and severe weather events. An exact season does not exist for tornadoes. However, most occur between early spring to mid-summer (February-June). The rate of onset of tornado events is rapid. Typically, the appearance of the first signs of the tornado is the descending funnel cloud. This sign may be only minutes from the peak of the event, giving those in danger minimal sheltering time. However, meteorological warning systems attempt to afford those in danger more time to shelter. The frequency of specific tornado intensities is undetermined because no pattern seems to exist in occurrence. Finally, the duration of tornado events range from the few minutes of impact on a certain location to the actual tornado lasting up to a few hours.

Tornadoes are measured after the occurrence using the subjective intensity measures. The Enhanced Fujita Scale describes the damage and then gives estimates of magnitude of peak 3-second gusts in miles per hour.

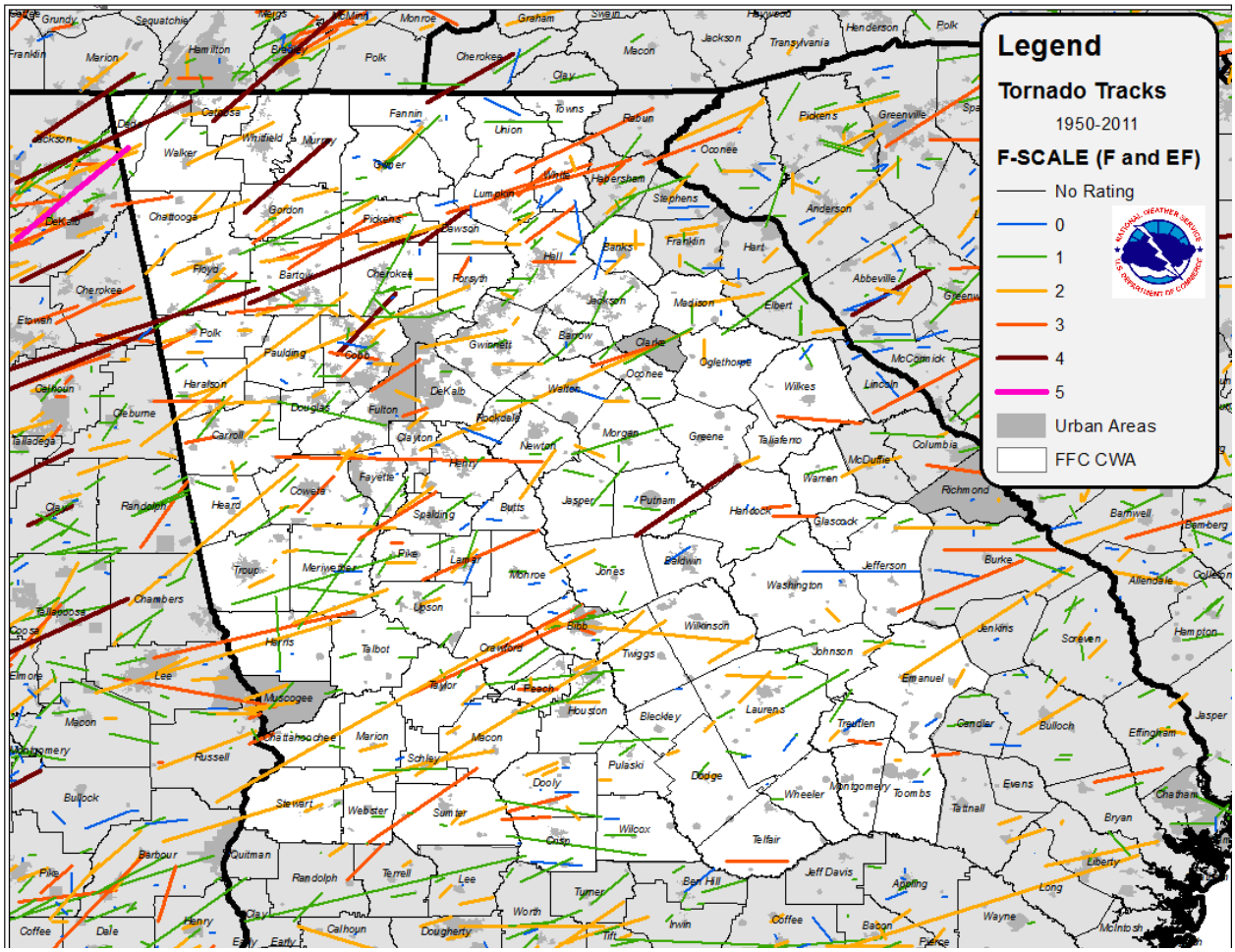
| The Enhanced Fujita Scale | |
|---|---|
| EF Rating | 3 second gust (mph) |
| 0 | 65-85 |
| 1 | 86-110 |
| 2 | 111-135 |
| 3 | 136-165 |
| 4 | 166-200 |
| 5 | over 200 |

*Hazard Profile*

Tornadoes are a constant hazard for Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side because they can form at any time.

During the planning process the Mitigation Planning Committee used the NCDC Query report and local hazard records. The best information available on tornadoes is only from within the last fifty years. In the records that were evaluated, it was determined that there were 13 tornadoes. This included 3F0s, 2 F1s, 1 F2, 2 EF0s, 1 EF1, and 1 EF3s. One of the worst tornadoes in Spalding County was the EF3 on April 27, 2011. This tornado contained 140mph winds, produced two deaths and 10 million dollars in damage. The tornado had a path of 20 miles wide and a width of a half a mile. Dozens of homes and businesses were damaged. There were no records of critical facilities damaged.

Based on available data most tornado events in Spalding County tend to be EF0 or EF1, and EF2 tornado events appear to be rare. Due to the tendency of the NCDC report to lump multiple counties into hazard events, the specific hazard information by jurisdiction was unavailable. Due to the limited data the frequency of occurrence for this event is listed as 20.00% per year, but the percentage should continue to decrease as better records are kept in the future. NCDC data and hazard history records can be found in Appendix C. A hazard event frequency table for tornadoes is listed in Appendix A. The historical tornado information can be found in Appendix C.




*Assets Exposed to the Hazard*

The Mitigation Planning Committee examined the historical records, and determined that all assets listed on the Critical Facility Inventory were potentially at risk in the event of a tornado. Using the information generated by the GEMA online tool, there are one hundred and ninety three (193) critical assets worth $137,062,479 that could be exposed to this hazard. More detailed critical facility asset inventories for this hazard have been listed in Appendix A and Worksheet 3A inventories are located in Appendix D.

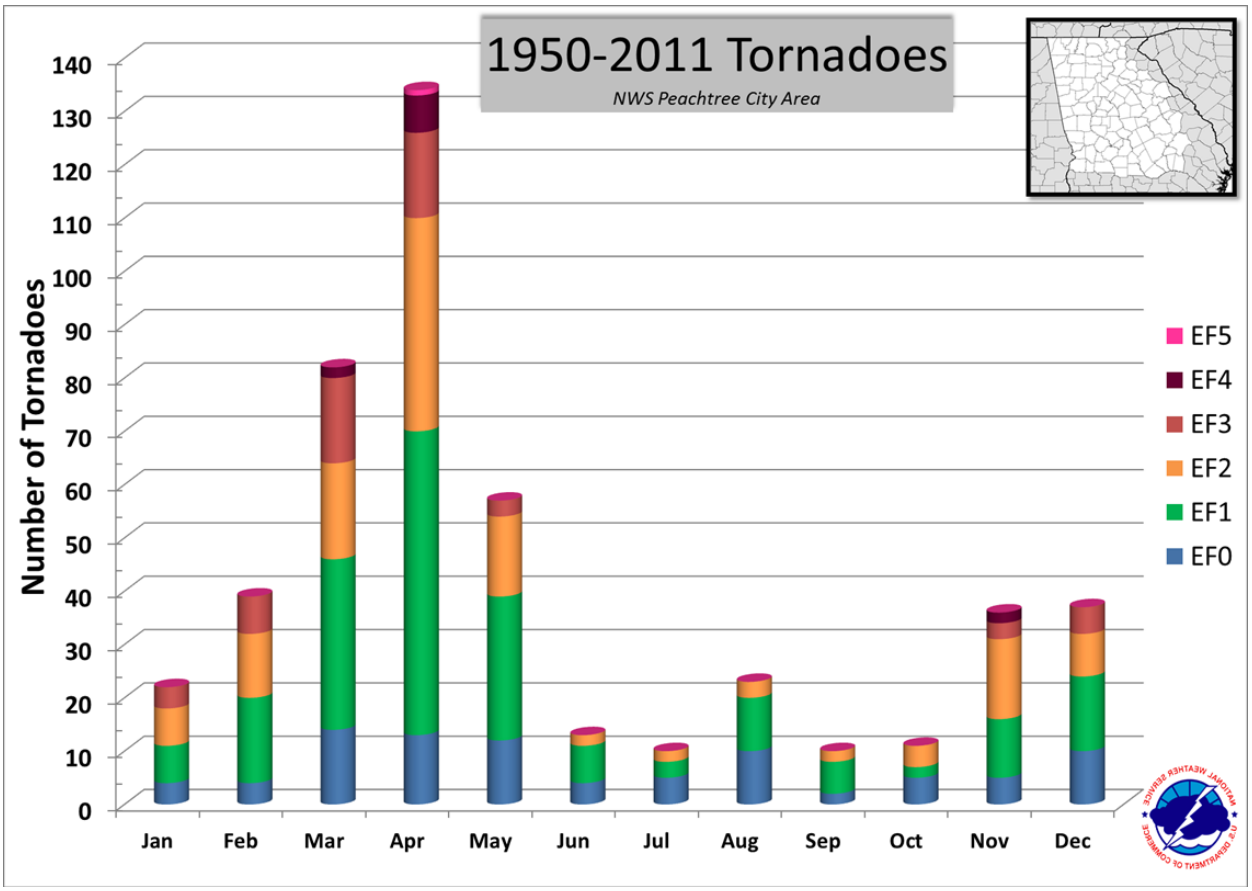
*Estimated Potential Losses*

The loss estimates were generated using GEMA created online tool that complied reporting information with guidance set forth by the FEMA State and Local Mitigation Planning Guide 386-2: Section 4, Estimating Losses. Loss estimates were generated for structures, general and critical, that were at risk of damage from natural or man made disasters that were applicable Spalding County and

the Cities of Griffin, Orchard Hill, and Sunny Side. Using the information generated by the GEMA online tool, there are one hundred and ninety three (193) critical assets worth $137,062,479 in total damage liability. Worksheet 3A showed a total of 26,230 assets worth $959,054,849 for Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Losses for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D. Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side have established minimum standards for all new construction and substantial improvements of residential and nonresidential structures. In addition, construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act) and the International Building Code (2006 edition). The minimum standards established by these codes provide reasonable protection from most natural hazards to persons and property within structures that comply with the regulations. Other than the construction codes, there are no land use trends (current or future) that specifically address this hazard. A full list of future land use trends and goals can be found in Appendix B. This hazard is applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Mitigation actions taken to address tornadoes and to limit damage should involve the county and all its municipalities. Due to the nature of this hazard and its ability to strike anywhere in the county, it is considered a county wide hazard, and there is no significant difference in jurisdictional risk to the local governments. Data was unavailable in order to provide Worksheet 3A asset lists, located in Appendix D, by jurisdiction beyond the county level. Maps of this hazard, if available, are located in Appendix A. Tornadoes can topple buildings, roll mobile homes, uproot trees, hurl people and animals through the air for hundreds of yards, and fill the air with lethal wind-borne debris. Tornadoes do their destructive work through the combined action of their strong rotary winds and the impact of wind-borne debris. Tornadoes within Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side have the capability of disrupting government services, and damaging structures from the governmental, industrial, and private sectors. During the planning process the Mitigation Planning Committee did not find any detailed information regarding losses or damage to critical infrastructure related to this hazard, but the records did indicate that total property damage over the fifty year span to be $1,216,000.

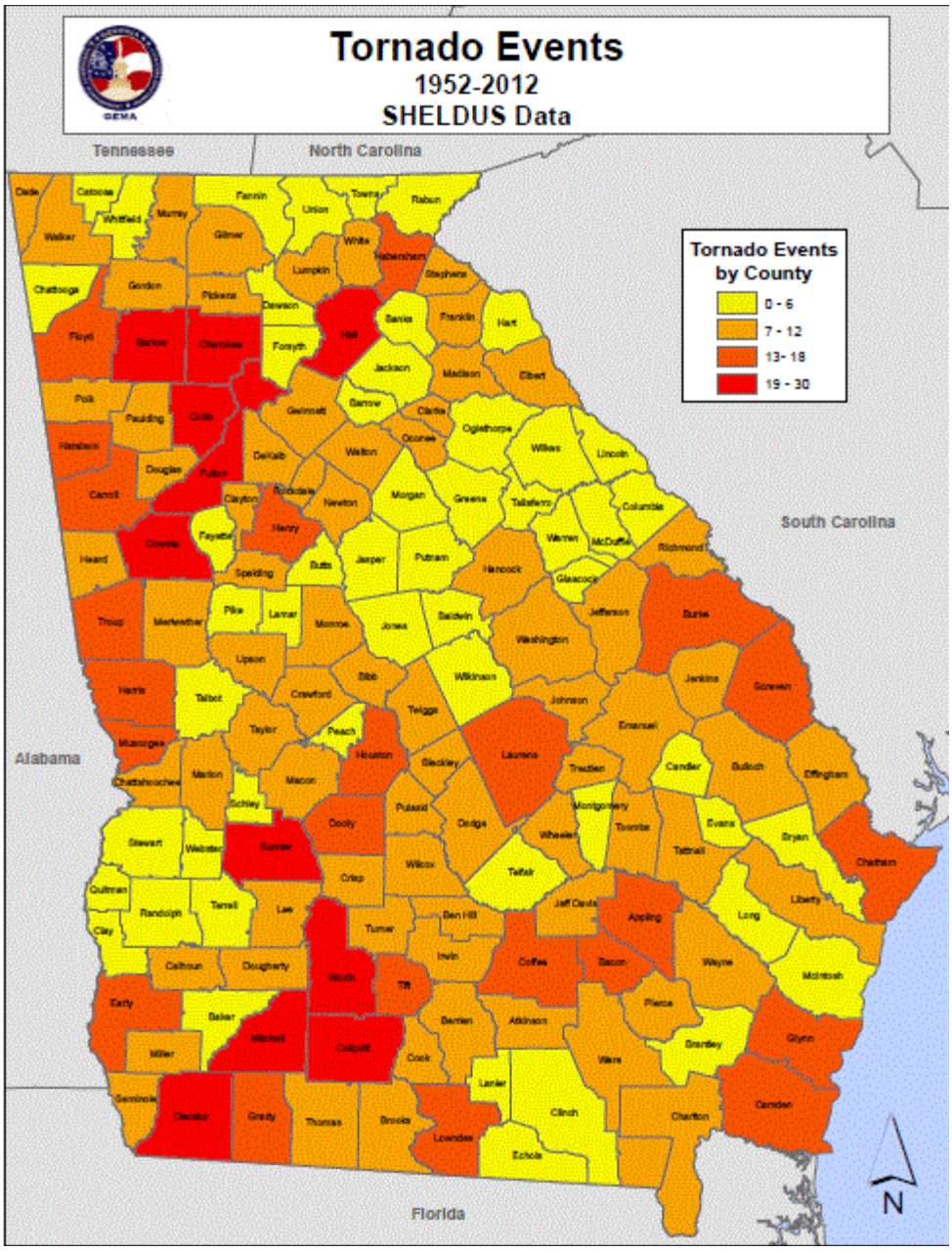
*Land Use and Development Trends*

Spalding County continues to develop in areas around Sunny Side and in the northern portion of Spalding County towards Henry and Clayton Counties. The County and its municipalities have a land use plan that clearly identifies future development. The Spalding County Building Department and the various municipalities enforce the 2003 International Building Codes. Updating building codes and the adoption of these codes will continue to reduce vulnerability to many hazards in the developing areas of the county.




*Multi-Jurisdictional Considerations*

All portions of SpaldingCounty could potentially be impacted by a tornado due to the indiscriminate nature of tornadic events. Therefore, all mitigation actions identified regarding tornadoes should be pursued on a countywide basis and include all cities and town located within Spalding County.


Tornado Events
1952-2012
SHELDUS Data
GEMA
Tennessee
North Carolina
South Carolina
Alabama
Florida
Tornado Events by County
0 - 6
7 - 12
13 - 18
19 - 30
N

*Hazard Summary*

Spalding County remains at risk to potential damage to tornadoes, especially considering the average of one tornado every 5.0 years over the last 50 years. Should a tornado strike in densely populated areas of the county, significant damage or loss of life could occur. A mass notification system was implemented in Spalding County since the adoption of the 2011 Spalding  County Hazard Mitigation Plan, along with a countywide public awareness campaign for natural hazards. Due to the destructive power of tornadoes, it is essential that the mitigation measures identified in this plan regarding tornado activity receive full consideration.

**Natural Hazard: Agricultural Drought**

## *Hazard Description*

Drought is a normal, recurrent feature of climate consisting of a deficiency of precipitation over an extended period (usually a season or more). This deficiency results in a water shortage for some social or environmental sector. Drought should be judged relative to some long-term average condition of balance between precipitation and evapotranspiration in a particular area that is considered "normal." Drought should not be viewed as only a natural hazard because the demand people place on water supply affects perceptions of drought conditions. The impacts of drought conditions. From limited water supplies in urban areas to insufficient water for farmland, the impacts of drought are vast.

Droughts occur in virtually every climactic zone and on every continent. Because the impacts of drought conditions are largely dependent on the human activity in the area, the spatial extent of droughts can span a few counties to an entire country.

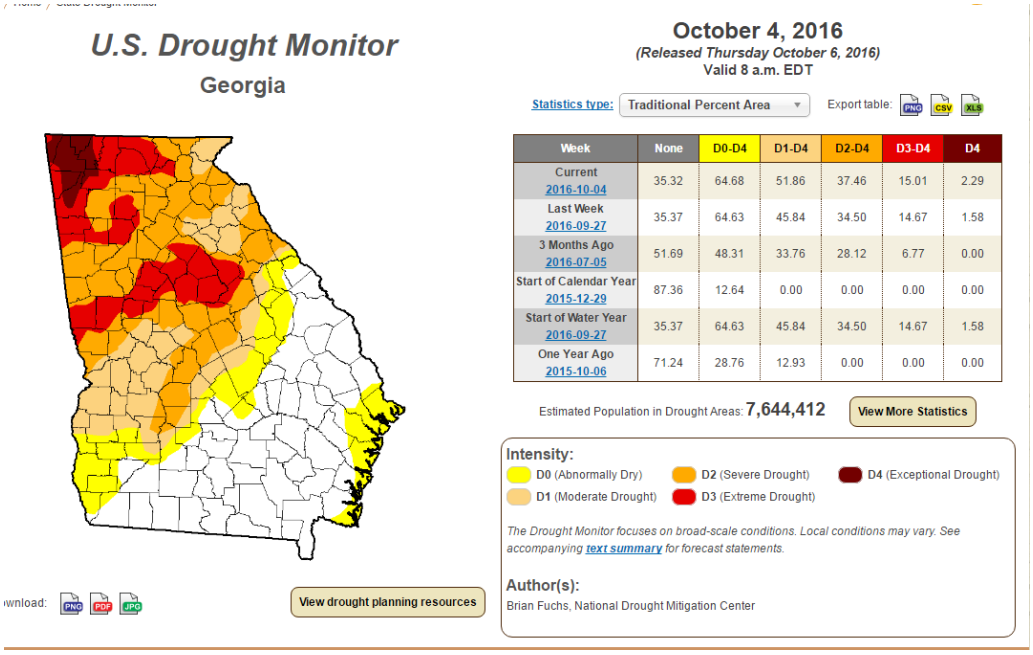
Temporal characteristics of droughts are drastically different from other hazards due to the possibility of extremely lengthy durations as well as a sluggish rate of onset. Drought conditions may endure for years or even decades. This factor implicates drought as having a high potential to cause devastation on a given area. The duration characteristic of droughts is so important that droughts are classified in terms of length of impact. Droughts lasting 1 to 3 months are considered short term, while droughts lasting 4 to 6 months are considered intermediate and droughts lasting longer than 6 months are long term. With the slow rate of onset, most populations have some inkling that drought conditions are increasingly present. 2011 was a recent year in which lower than average rainfall occurred, The Gulf Coast had drier-than-normal conditions in February, April-June, and October-December. Heavy rains from Tropical Storm Lee cut a wet swath through the middle of the Gulf Coast drought area during September. For the Southeast, March and September were wetter than normal, with January-February, April-August, and December being much drier than normal. Georgia, the epicenter of the Southeast drought, had the second driest April-August in the 1895-2011 record. The driest Palmer Drought Severity Index Number occurred in April of 2011 which recorded a PDSI of -5.26 and only had 1.39 inches of rain. Prior to 2011, the years of 2007 and 2009 were years when Spalding County experienced drought conditions.

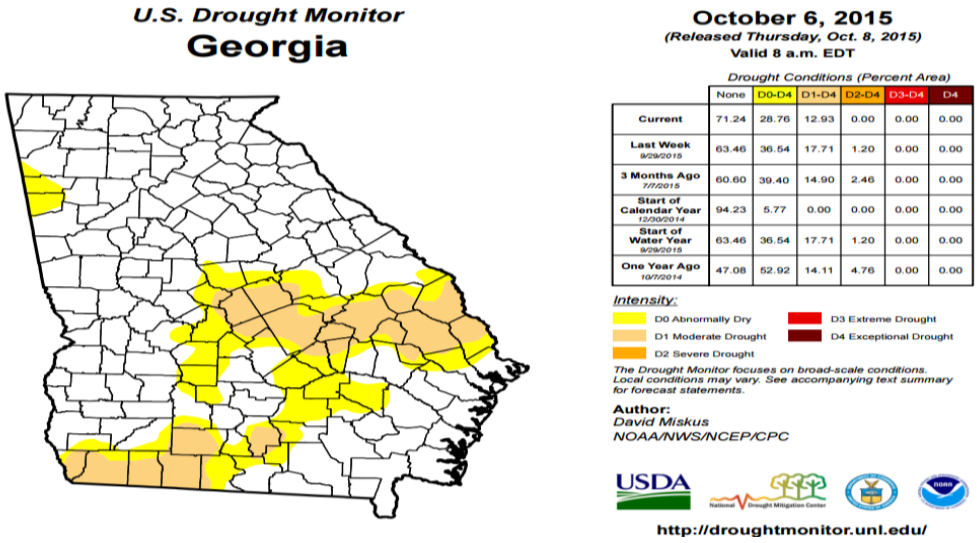
Seasonality has no general impact on droughts in terms of calendar seasons. However, "wet" and "dry" seasons obviously determine the severity of drought conditions. In other words, areas are less susceptible to drought conditions if the area is experiencing a wet season. The frequency of droughts in undetermined due to the fact that the hazard spans such a long period of time. However, climatologists track periods of high and low moisture content similarly to the tracking of cooling and warming periods.

## *Hazard Profile*

During the planning process the Mitigation Planning Committee used the NCDC Query report and local hazard records. The best information available on drought is only from within the last seventeen years. In the records that were evaluated, it was determined that there were twenty one

(21) occurrences of drought conditions that affected either the county or one of its municipalities. The NCDC records from 1998 to 2002 show that Spalding County had many short term drought events that linked together to become a long term drought. Then in 2007 drought conditions reappeared again for two years until 2009. Therefore it appears that drought conditions in Spalding County tend to become long term when they do appear. The worst drought in Georgia since the mid 1950s began in May 1998. Before the drought years of 1998–2002 took their toll, Georgians had experienced relatively infrequent and mild drought conditions from the 1960s through the 1990s. There were no specific information about the number of crops lost, livestock lost or dried up rivers available. In more recent years, one can see how hard hit the drought of 2016 has been on Spalding County. Compared to this time last year when it wasn't even under drought conditions, Spalding is now considered one of the most hard hit counties in the state by drought conditions.



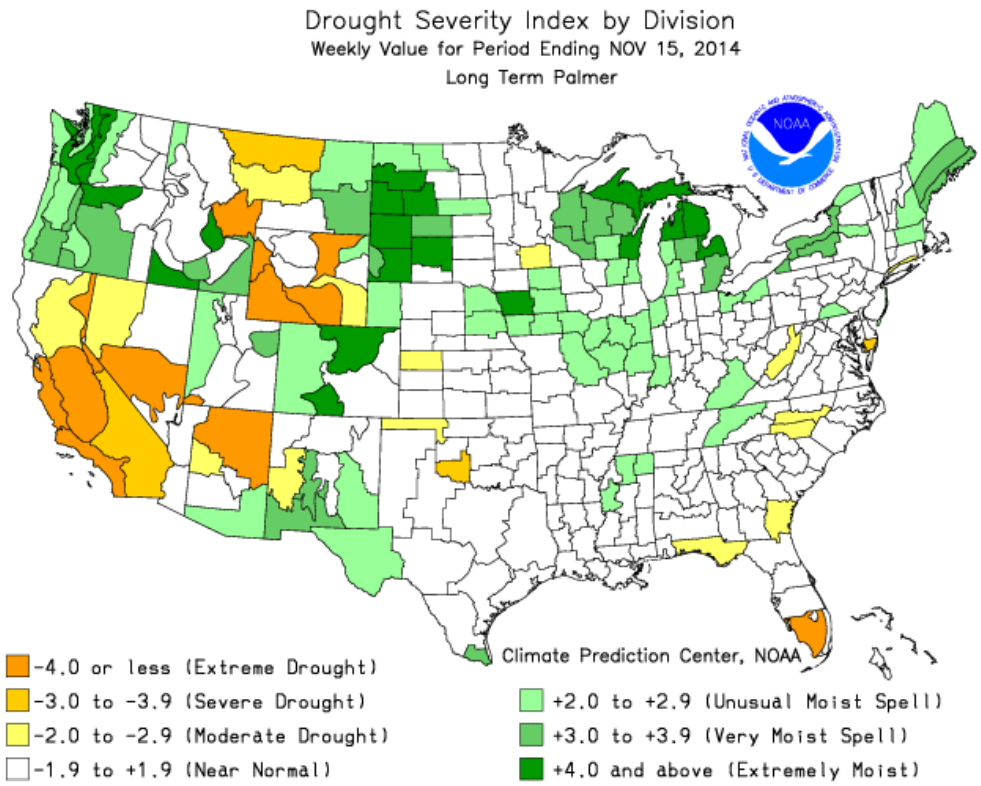
Long-term climate records however, indicate drought durations of two or more years are likely to occur, on average, one in every 25 yearsDue to the limited information available, this creates a situation where the county has a 33.85% chance per year of encountering drought conditions. Due to the tendency of the NCDC report to lump multiple counties into hazard events, the specific hazard information by jurisdiction was unavailable. As time moves on and better records are kept, then frequency should decrease. A hazard event frequency table for drought is listed in Appendix A. NCDC data and other hazard records can be found in Appendix C. The historical drought information can be found in Appendix C.

*Assests Exposed to Hazard/Losses*

The Mitigation Planning Committee examined the historical records, and determined that all assets listed on the Critical Facility Inventory were potentially at risk in the event of a drought. Prolonged drought conditions could cause structural damage, increased frequency of fire, or other conditions that create a risk to critical facilities. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 that could be exposed to this hazard. More detailed asset inventories for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D. The loss estimates were generated using GEMA created online tool that complied reporting information with guidance set forth by the FEMA State and Local Mitigation Planning Guide 386-2: Section 4, Estimating Losses. Loss estimates were generated for structures, general and critical, that were at risk of damage from natural or man made disasters that were applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 in total damage liability. Worksheet 3A showed a total of 26,230 assets worth $959,054,849 for Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Losses for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D. Data deficiencies from the original PDM plan resulted from a lack of property values for all critical facilities, but in the plan update all critical facilities listed had current valuation estimates.

*Existing Regulation, Resources and Authorities*

Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side have established minimum standards for all new construction and substantial improvements of residential and nonresidential structures. In addition, construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act) and the International Building Code (2006 edition). The minimum standards established by these codes provide reasonable protection from most natural hazards to persons and property within structures that comply with the regulations. Other than the construction codes, there are no land use trends (current or future) that specifically address this hazard. A full list of future land use trends and goals can be found in Appendix B.




*Land Use and Development Trends*

Spalding County continues to develop in areas around Griffin and in the northern portion of Spalding County towards Fayette, Clayton, and Henry Counties. The County and its municipalities have a land use plan that clearly identifies future development. The Spalding County Building Department and the various municipalities enforce the 2003 International Building Codes. Updating building codes and the adoption of these codes will continue to reduce vulnerability to many hazards in the developing areas of the county.

*Multi-Jurisdictional Considerations*

This hazard is applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Mitigation actions taken to address drought and to limit damage should involve the county and all its municipalities. Due to the nature of this hazard and its ability to strike anywhere in the county, it is considered a county wide hazard, and there is no significant difference in jurisdictional risk to the local governments. Data was unavailable in order to provide Worksheet 3A asset lists, located in Appendix D, by jurisdiction beyond the county level. Maps of this hazard, if available, are located in Appendix A.

*Hazard Summary*

Drought conditions can cause significant economic stress on the agriculture and forestry interests of Spalding County. The potential negative secondary impacts of drought are numerous. They include increased wildfire threat, decreased water supplies for residential and industrial needs, stream-water quality, and water recreation facilities. Spalding County has not implemented any drought mitigation strategies since the approval of the previous Spalding County Hazard Mitigation plan. The Spalding County HMPC recognizes the potential threats drought conditions could have on the community and have identified specific mitigation actions as a result.

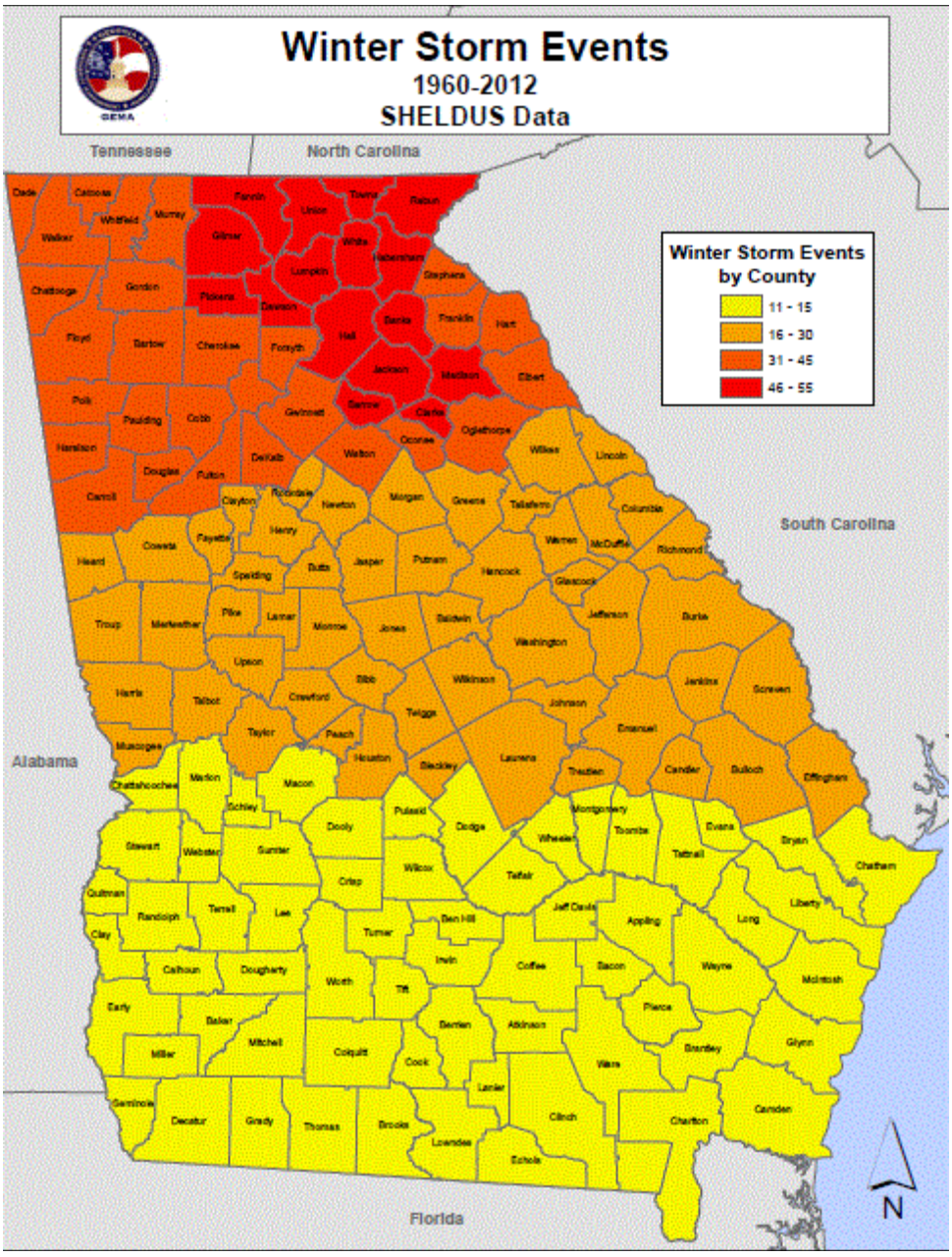
**Natural Hazard: Severe Winter Storm**

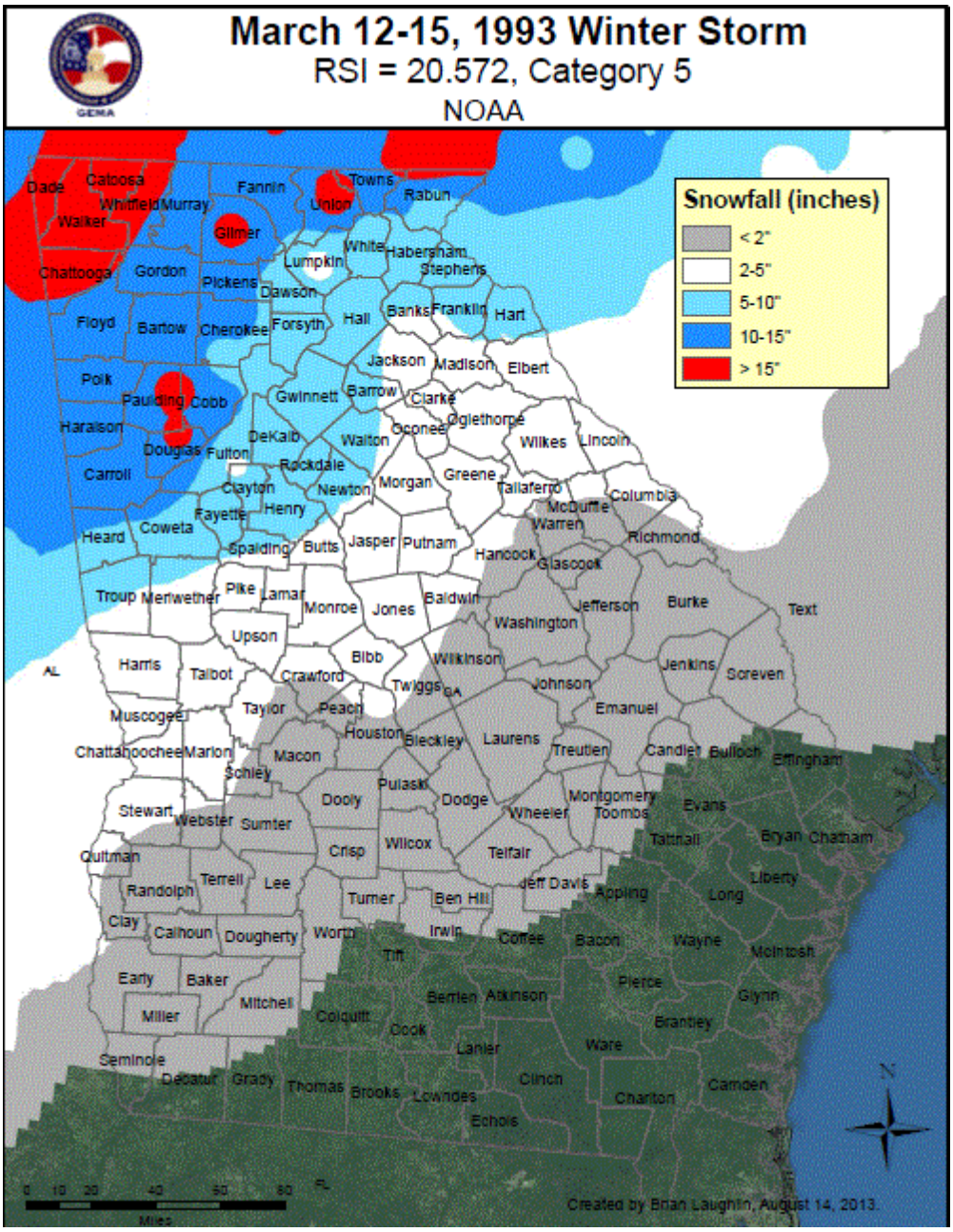
*Hazard Description*

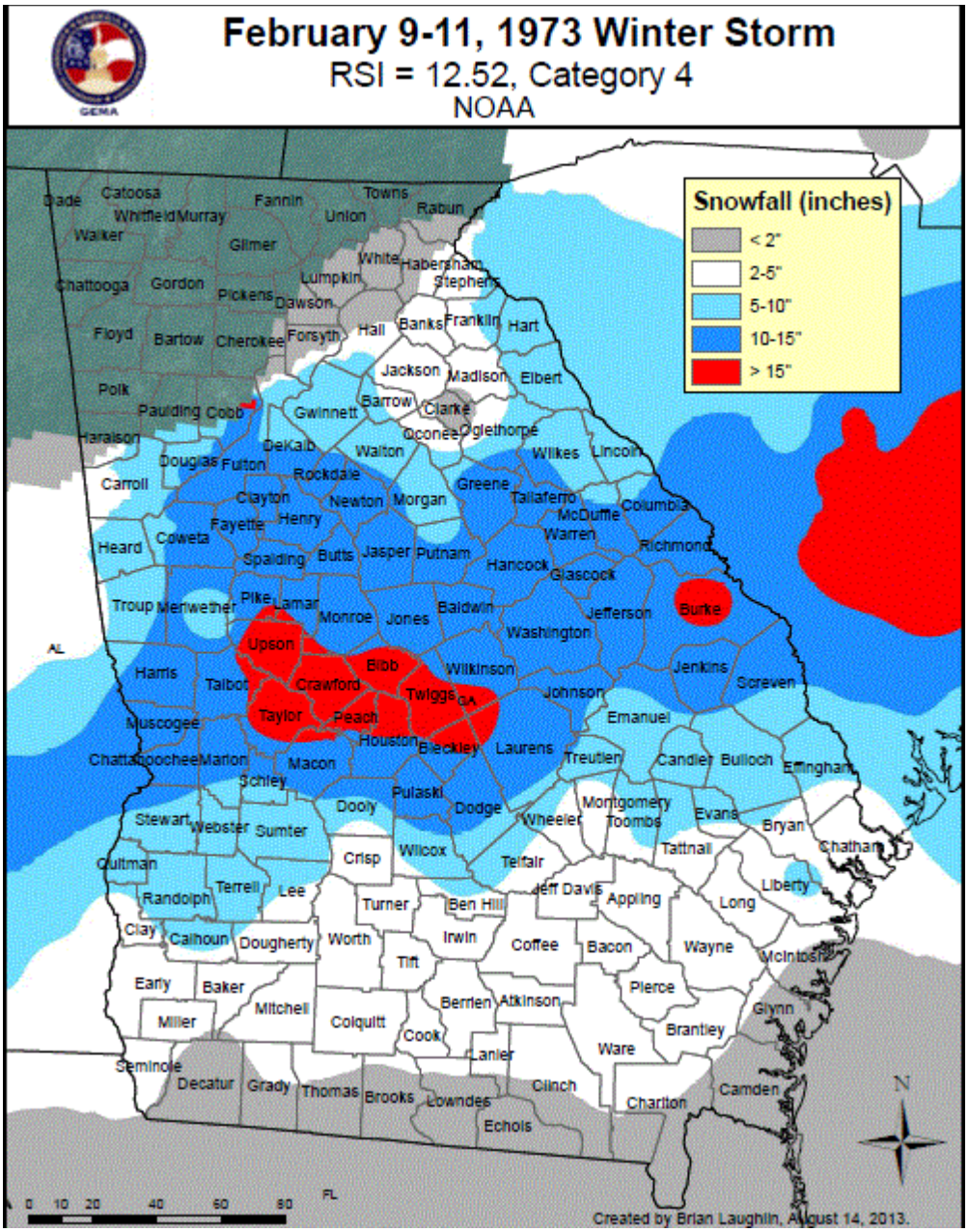
Severe winter storms bring the threat of freezing rain and ice storms. Freezing rain is rain occurring when the surface temperatures are below freezing (32 degrees Fahrenheit, 0 degrees Celsius). The moisture falls in liquid form, but freezes upon impact, resulting in a coating of ice glaze on exposed objects. This occurrence is commonly called an "ice storm" when a substantial glaze layer accumulates. Severe winter storms can cause property damage as well as damage to power lines. Additionally this hazard can create unsafe conditions on roads or sidewalks as layers of ice cover the ground. Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side are vulnerable to the effects of this hazard, but severe winter storms are not a frequent occurrence.

*Hazard Profile*

During the planning process the Mitigation Planning Committee used the NCDC Query report and local hazard records. The best information available on severe winter storms is from within the last fifty years. In the records that were evaluated, it was determined that there were eleven occurrences of severe winter storm conditions that affected either the county or one of its municipalities. Snow events tend to produce between 1 to 4 inches of snowfall, but they don't appear to have disrupted essential services or operations. However in 1973, Spalding County received anywhere from 10-15 inches of snow. During the time that accurate records have been kept there is a 9.23% chance per year for this hazard event. Due to the tendency of the NCDC report to lump multiple counties into hazard events, the specific hazard information by jurisdiction was unavailable. A hazard event frequency table for severe winter storms and hail storms is listed in Appendix A. NCDC data and other hazard records can be found in Appendix C. The historical winter storm information can be found in Appendix C.


Winter Storm Events
1960-2012
SHELDUS Data
GEMA
Tennessee
North Carolina
South Carolina
Alabama
Florida
Winter Storm Events by County
11 - 15
16 - 30
31 - 45
46 - 55
N


March 12-15, 1993 Winter Storm
RSI = 20.572, Category 5
NOAA
GEMA
Snowfall (inches)
< 2"
2-5"
5-10"
10-15"
> 15"
Dade
Catoosa
Whitfield
Murray
Walker
Fannin
Towns
Union
Rabun
Gilmer
Chattooga
Gordon
Pickens
Lumpkin
White
Habersham
Stephens
Dawson
Floyd
Bartow
Cherokee
Forsyth
Hall
Banks
Franklin
Hart
Jackson
Madison
Elbert
Polk
Paulding
Cobb
Gwinnett
Barrow
Clarke
Haralson
Douglas
Fulton
DeKalb
Oconee
Oglethorpe
Walton
Wilkes
Lincoln
Carroll
Rockdale
Clayton
Newton
Morgan
Greene
Taliaferro
Columbia
Fayette
Henry
McDuffie
Warren
Richmond
Heard
Coweta
Spalding
Butts
Jasper
Putnam
Hancock
Glascock
Troup
Meriwether
Pike
Lamar
Monroe
Jones
Baldwin
Jefferson
Burke
Text
Washington
Upson
Harris
Talbot
Crawford
Bibb
Wilkinson
Twiggs
Johnson
Jenkins
Screven
AL
GA
Muscogee
Taylor
Peach
Houston
Bleckley
Laurens
Treutlen
Emanuel
Candler
Bulloch
Effingham
Chattahoochee
Marion
Macon
Schley
Pulaski
Dooly
Dodge
Montgomery
Toombs
Wheeler
Evans
Stewart
Webster
Sumter
Wilcox
Crisp
Telfair
Tattnall
Bryan
Chatham
Quitman
Terrell
Lee
Turner
Ben Hill
Jeff Davis
Appling
Liberty
Long
Randolph
Clay
Calhoun
Dougherty
Worth
Irwin
Coffee
Bacon
Wayne
McIntosh
Tift
Early
Baker
Mitchell
Berrien
Atkinson
Pierce
Glynn
Miller
Colquitt
Cook
Brantley
Lanier
Ware
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Clinch
Charlton
Camden
Echols
N
0 10 20 40 60 80
Miles
FL
Created by Brian Laughlin, August 14, 2013.




*Assets Exposed to Hazard*

The Mitigation Planning Committee examined the historical records, and determined that all assets listed on the Critical Facility Inventory were potentially at risk in the event of a severe winter storm or hail storm event. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 that could be exposed to this hazard. More detailed asset inventories for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D.

*Estimated Potential Losses*

The loss estimates were generated using a GEMA created online tool that compiled reporting information with guidance set forth by the FEMA State and Local Mitigation Planning Guide 386-2: Section 4, Estimating Losses. Loss estimates were generated for structures, general and critical, that were at risk of damage from natural or man-made disasters that were applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 in total damage liability. Worksheet 3A showed a total of 26,230 assets worth $959,054,849 for Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Losses for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D.

*Land Use and Development Trends*

Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side have established minimum standards for all new construction and substantial improvements of residential and nonresidential structures. In addition, construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act) and the International Building Code (2006 edition). The minimum standards established by these codes provide reasonable protection from most natural hazards to persons and property within structures that comply with the regulations. Other than the construction codes, there are no land use trends (current or future) that specifically address this hazard. A full list of future land use trends and goals can be found in Appendix C.

*Multi-Jurisdictional Considerations*

This hazard is applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Mitigation actions taken to address hail/winter storms and to limit damage should involve the county and all its municipalities. Due to the nature of this hazard and its ability to strike anywhere in the county, it is considered a county wide hazard, and there is no significant difference in jurisdictional risk to the local governments.

*Hazard Summary*

A heavy accumulation of ice, especially when accompanied by high winds, devastates trees and transmission lines. Sidewalks, streets, and highways become extremely hazardous to pedestrians and motorists. Destructiveness of ice storms in the southern States, especially rural areas such as Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side, is increased because buildings are not designed with severe winter conditions in mind. In addition, agricultural crop losses have occurred from time to time from unanticipated deep freezing temperatures and ice. During the ice storm of 1973 there was a 96-hour below freezing period and power could not be restored for more than a week. The entire population of Spalding County was without power. This was due to over 10+ inches of ice and snow on the power lines.

The largest impact on the community for this hazard has been that snow and ice has temporarily disrupted critical government services due to limited road access, and due to power line disruptions. During the planning process the mitigation planning committee did not find any information regarding any significant losses or damage to critical infrastructure related to this hazard, but the records did indicate that there was a total multi-county property damage over the fifty year span of $11,000,000 in the central part of the state.

**Natural Hazard: Thunderstorms**

*Hazard Description*

This section provides general and historical information about thunderstorms, including high wind, lightning, and hail. Other elements of thunderstorms, such as tornadoes and flooding, are addressed in their own sections.

Thunderstorms are formed when moist air near the earth's surface is forced upward through some catalyst (convection or frontal system). As the moist air rises, the air condenses to form clouds. Because condensation is a warming process, the cloud continues to expand upward. When the initial updraft is halted by the upper troposphere, both the anvil shape and a downdraft form. This system of up-drafting and down-drafting air columns is termed a "cell."

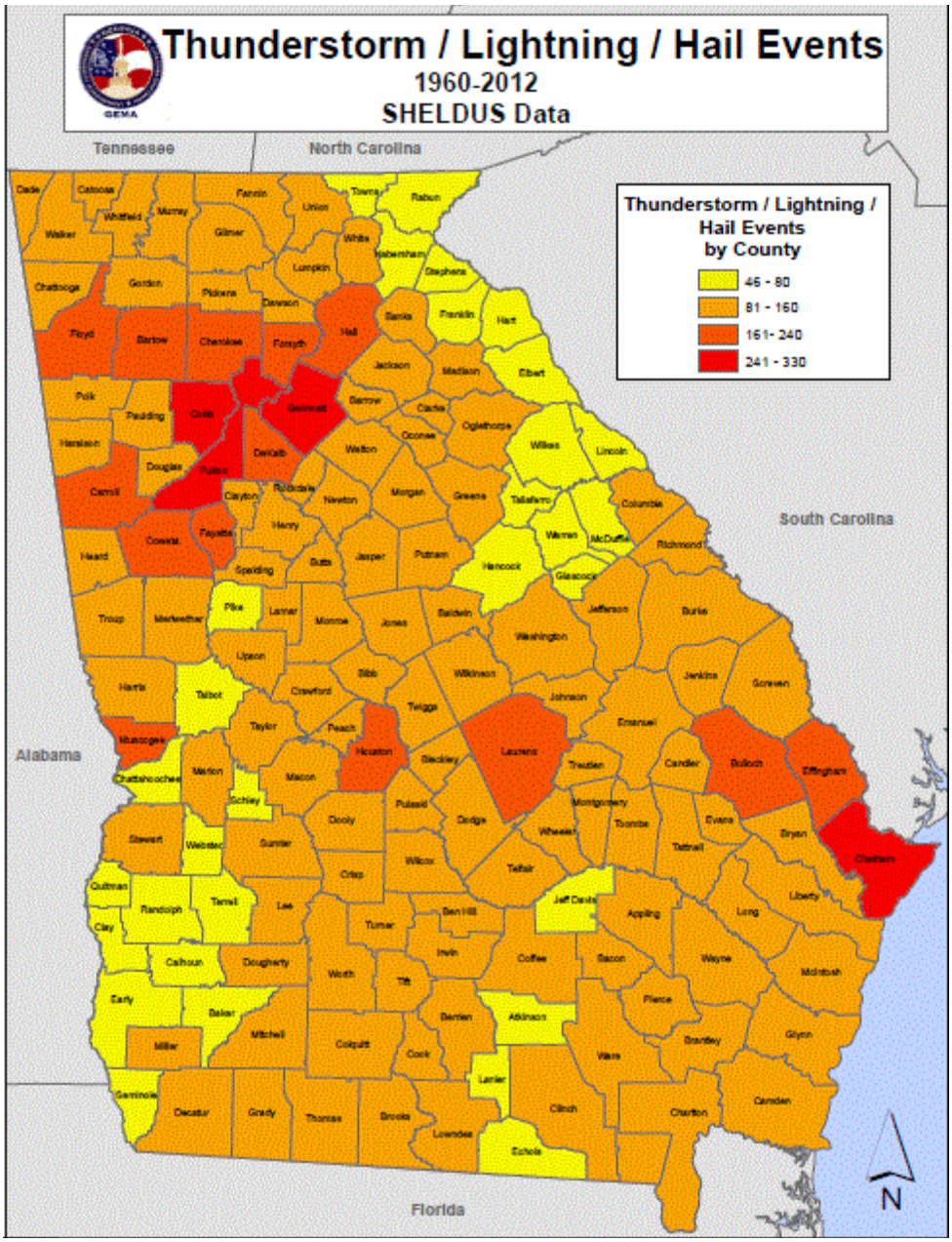
As the process of updrafts and downdrafts feeds the cell, the interior particulates of the cloud collide and combine to form rain and hail, which falls when the formations are heavy enough to push through the updraft. The collision of water and ice particles within the cloud creates a large electrical field that must discharge to reduce charge separation. This discharge is the lightning that occurs from cloud to ground or cloud to cloud in the thunderstorm cell. In the final stage of development, the updraft weakens as the downdraft-driven precipitation continues until the cell dies.

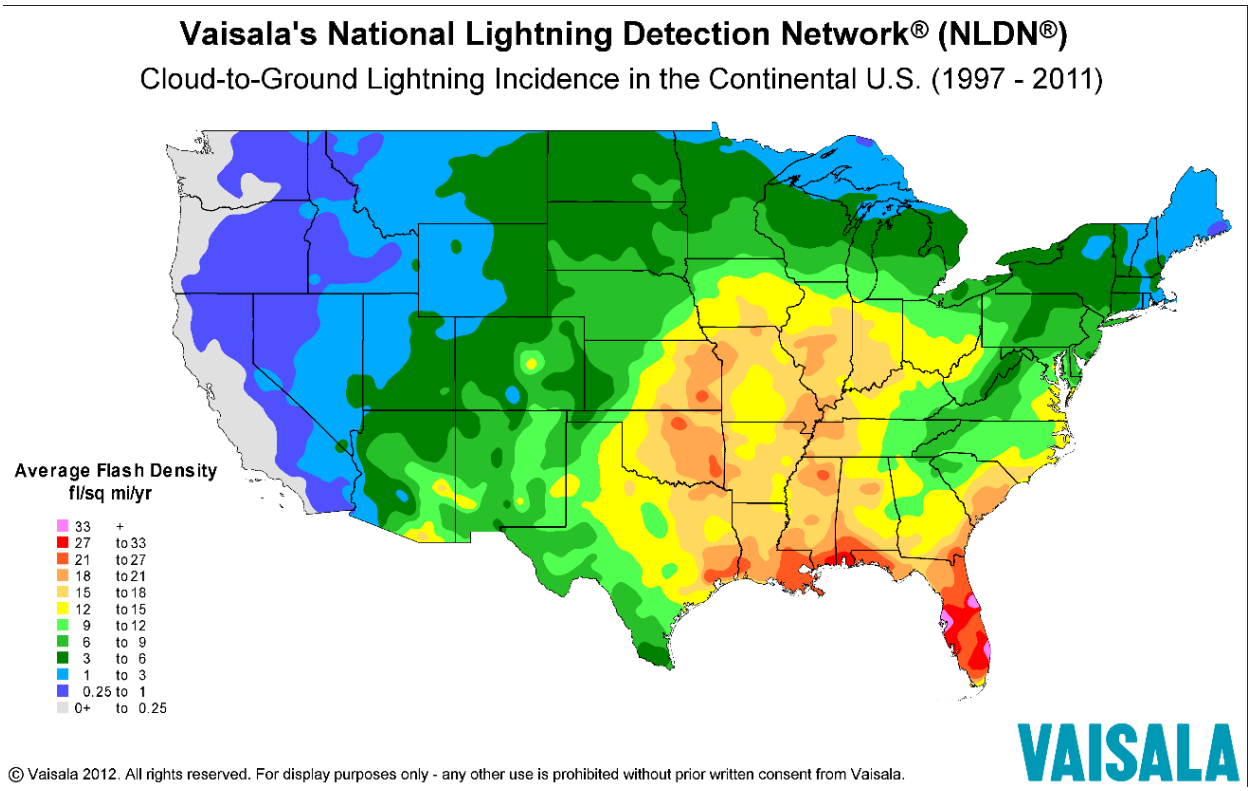
Each thunderstorm cell has the ability to extend several miles across its base and to reach 40,000 feet in altitude. Thunderstorm cells may compound and move abreast to form a squall line of cells, extending farther than any individual cell's potential.

In terms of temporal characteristics, thunderstorms exhibit no true seasonality in that occurrences happen throughout the year. Convectively, driven systems dominate the summer while frontal driven systems dominate during the other seasons. The rate of onset is rapid in that a single cell endures only 20 minutes. However, various cells in different stages of development may form a thunderstorm that lasts up to a few hours as it moves across the surface.
In terms of magnitude, the National Weather Service defines thunderstorms in terms of severity as a severe thunderstorm that produces winds greater than 57 mph and/or hail greater than 1 inch in diameter and/or a tornado. The National Weather Service chose these measures of severity as parameters more capable of producing considerable damage. Therefore, these are measures of magnitude that may project intensity.

*Hazard Profile*

Severe thunderstorms, including high winds, hail and lightning, are a serious threat to the residents and infrastructure of Spalding County. Severe thunderstorms are the most frequently occurring natural hazard in Spalding County. Many of these storms include high winds, lightning, and hail. Damages from thunderstorms in Spalding County include downed power lines, trees blocking roadways and damages to roofs, siding, and windows of homes. Hail up to 2.75 inches was recorded in Spalding County in 2006. While there have been dozens of documented thunderstorm events affecting Spalding County over the last 50 years, it is likely that the official number is a low estimate due to poor record keeping in decades past. For example, only 7 thunderstorm events were recorded between 1964 and 1990, likely a vast underestimation of actual events. The historical thunderstorm information can be found in Appendix C.


Thunderstorm / Lightning / Hail Events
1960-2012
SHELDUS Data
GEMA
Tennessee
North Carolina
South Carolina
Alabama
Florida
Thunderstorm / Lightning / Hail Events by County
46 - 80
81 - 160
161- 240
241 - 330
N




Thunderstorms and tornadoes are small and short-lived and are, therefore, difficult to forecast precisely. It is estimated that at any given moment nearly 2,000 thunderstorms are in progress over the earth's surface. There are about 45,000 thunderstorms daily and 16 million annually around the world. In the United States, there are at least 100,000 thunderstorms annually. Georgia is visited by one or more thunderstorms on the average from 50 to 80 days per year. The National Weather Service defines a severe thunderstorm as one that produces winds greater than 57 miles per hour and/or hail ¾ inch or greater in diameter. These parameters are considered to be capable of damage.

During the planning process the Planning Committee used the NCDC Query report and local hazard records. The best information available thunderstorms is from within the last forty years. In the records that were evaluated, it was determined that there were eighty eight (88) occurrences of thunderstorm conditions that affected either the county or one of its municipalities. Based on available data, this creates a situation where there is a 135.38% chance for a severe thunderstorm event on any given year. Thunderstorm events have created intense winds, lightning, and precipitation up to several inches in Spalding County. Concerning lightning, Spalding County experiences around 9-12 fl/sq mi/yr. There has only been one report of lightning damage from the NCDC in the last 40 years. Due to the tendency of the NCDC report to lump multiple counties into hazard events, the specific hazard information by jurisdiction was unavailable. A hazard event frequency table for thunderstorms is listed in Appendix A. According to the NCDC, the highest winds speed from a thunderstorm in Spalding County was recorded at 55 knots on June 19, 2014. NCDC data and other hazard records can be found in Appendix C.

*Assets Exposed to the Hazard*

Since severe thunderstorms are indiscriminate with regard to location, the Spalding County HMPC determined that all public and private property, including all critical infrastructure, are susceptible to impacts from thunderstorms.

*Estimated Potential Losses*

For an estimate of potential losses, please refer to the Critical Facilities information located in Appendix C. Estimates of damage for the past events of the last 50 years are nearly $1 million, or $19,870 annually. When only events of the last 10 years are considered, yearly estimations rise to $53,700 annually.

*Land Use & Development Trends*

Spalding County continues to develop in areas around Sunny Side and in the northern portion of Spalding County towards Clayton and Henry Counties. The County and its municipalities have a land use plan that clearly identifies future development. The Spalding County Building Department and the various municipalities enforce the 2003 International Building Codes. Updating building codes and the adoption of these codes will continue to reduce vulnerability to many hazards in the developing areas of the county.

*Multi-Jurisdictional Considerations*

Thunderstorm events have occurred across all areas of Spalding County. Crop damage from thunderstorm events would likely have the greatest impact in the rural areas of Spalding County. However, property damage numbers would be highest in the cities due to greater population density. Thunderstorms have the potential to impact all areas of Spalding County.

*Hazard Summary*

Thunderstorms, especially when accompanied by high winds, can devastate trees and transmission lines. Sidewalks, streets, and highways become extremely hazardous to pedestrians and motorists. Destructiveness of thunderstorms in the southern States, especially rural areas such as Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side, is increased because buildings are not always designed with severe thunderstorm conditions in mind. While thunderstorms are not a large threat to the critical infrastructure inventory listed in Appendix A, there are a large number of old residential mill houses located within Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side that could be damaged by falling trees during a severe thunderstorm. During the planning process the PDM planning committee did not find any information regarding any significant losses or damage to critical infrastructure related to this hazard, but the records did indicate that there was a total multi-county property damage over the forty year span of $89,950,000 in the central part of the state

**Natural Hazard: Extreme Heat**

*Hazard Description*

Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms and low visibility. Droughts occur when a long period passes without substantial rainfall. A heat wave combined with a drought is a very dangerous situation.

The magnitude or intensity of an extreme heat event is measured according to temperatures in relation to the percentage of humidity. According to the National Oceanic Atmospheric Administration (NOAA), this relationship is referred to as the "Heat Index," and is depicted in the Figure 1 below. This index measures how hot it feels outside when humidity is combined with high temperatures.

*Hazard Profile*

During the planning process the Mitigation Planning Committee used the NCDC Query report and local hazard records. The best information available on extreme heat is only from within the last thirteen years. In the records that were evaluated, it was determined that there were three (3) occurrences of extreme heat conditions that affected either the county or one of its municipalities. There were sporadic events during 2002, 2007, and 2012. Due to the tendency of the NCDC report to lump multiple jurisdictions into hazard events, the specific hazard information by jurisdiction was unavailable. Based on available data from the frequency table in Appendix A, there is a 33.85% chance per year for an extreme heat event. A hazard event frequency table for extreme heat is listed in Appendix A. To determine the extent of the heat effects of this hazard, refer to the Extreme Heat profile in Appendix A. NCDC data and other hazard records can be found in Appendix C. The historical extreme heat information can be found in Appendix C.

| Category | Extreme Heat Conditions |
|---|---|
| **Heat Advisory** | Issued within 12 hours of the onset of the following conditions: heat index of 105 degrees Fahrenheit but less than 115 degrees Fahrenheit for less than 3 hours per day, or nighttime lows above 80 degrees Fahrenheit for 2 consecutive days. |
| **Heat Cramps** | Muscular pains and spasm due to heavy exertion. Although heat cramps are the least serve, they are often the first signal that the body is having trouble with the heat. |
| **Heat Exhaustion** | A mild form of heat stroke, characterized by faintness, dizziness, and heavy sweating. |
| **Heat Index** | The Heat Index (HI) or the "Apparent Temperature" is an |

| | |
|---|---|
| | accurate measure of how hot it really feels when the Relative Humidity (RH) is added to the actual air temperature. |
| **Heat Lightning** | Lightning that occurs at a distance such that thunder is no longer audible. |
| **Heat Stroke** | A condition resulting from excessive exposure to intense heat, characterized by high fever, collapse, and sometimes convulsions or coma. Also called sun stroke. |
| **Heat Wave** | A period of abnormally and uncomfortably hot and unusually humid weather. Typically a heat wave lasts two or more days. |

*Assets Exposed to Hazard*

The Mitigation Planning Committee examined the historical records, and determined that all assets listed on the Critical Facility Inventory were potentially at risk in the event of an extreme heat event. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 that could be exposed to this hazard. More detailed asset inventories for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D.

*Estimated Potential Losses*

The loss estimates were generated using a GEMA created online tool that compiled reporting information with guidance set forth by the FEMA State and Local Mitigation Planning Guide 386-2: Section 4, Estimating Losses. Loss estimates were generated for structures, general and critical, that were at risk of damage from natural or man-made disasters that were applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 in total damage liability. Worksheet 3A showed a total of 26,230 assets worth $959,054,849 for Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Losses for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D.

*Land Use and Development Trends*

Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side have established minimum standards for all new construction and substantial improvements of residential and nonresidential structures. In addition, construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act) and the International Building Code (2006 edition). The minimum standards established by these codes provide reasonable protection from most natural hazards to persons and property within structures that comply with the regulations. Other than the construction codes, there are no land use trends (current or future) that specifically address this hazard. A full list of future

land use trends and goals can be found in Appendix B.

*Multi-Jurisdictional Considerations*

This hazard is applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Mitigation actions taken to address extreme heat and to limit damage should involve the county and all its municipalities. Due to the nature of this hazard and its ability to strike anywhere in the county, it is considered a county wide hazard, and there is no significant difference in jurisdictional risk to the local governments.

*Hazard Summary*

Heat kills by pushing the human body beyond its limits. Under normal conditions, the body's internal thermostat produces perspiration that evaporates and cools the body. However, in extreme heat and high humidity, evaporation is slowed and body must work extra hard to maintain a normal temperature. A prolonged drought that includes extreme heat conditions can have a serious economic impact on a community. Increased demand for water and electricity may result in shortages of resources. Moreover, food shortages may occur if agricultural production is damaged or destroyed by a loss of crops or livestock. The largest effect that extreme heat would have within the county would be if the extreme heat conditions evolved into drought conditions. Under those conditions governmental services that rely on water supplies could be disrupted. During the planning process the PDM planning committee did not find any information regarding any significant losses or damage to critical infrastructure related to this hazard. There are no major changes to report from the original plan. There is no record of damages from extreme heat in Spalding County.

**Natural Hazard: Hurricane Winds**

*Hazard Description*

The name "hurricane" refers to the great cyclonic storm which occurs in the Atlantic and Gulf of Mexico primarily during the season June through November. These storms occur in different oceans and hemispheres under local names: baguio in the Philippines, typhoon in the Pacific, and the Atlantic hurricane. The broad, spiral base of these storms may dominate weather over thousands of square miles, and from the earth's surface to the lower stratosphere. Winds may reach 200 miles per hour and their lifespan is measured in days or weeks, not minutes or hours. Hurricanes contain embedded thunderstorms, hail, and lightning. Hurricanes in recent years have blanketed large portions of Georgia with tropical force gale winds (50-74 MPH).

*Hazard Profile*

During the planning process the Mitigation Planning Committee used the NCDC Query report and local hazard records. The best information available on hurricane winds is only from within the last thirteen years. In the records that were evaluated, it was determined that there were seventeen occurrences of hurricane winds conditions that affected either the county or one of its municipalities. There was a concentration of three events between 2005 and 2007. Due to the tendency of the NCDC report to lump multiple counties into hazard events, the specific hazard information by jurisdiction was unavailable. Based on available data from the frequency table in Appendix A, there is a 4.62% chance per year for a hurricane/ hurricane wind event. A hazard event frequency table for hurricane winds is listed in Appendix A. To determine the extent of the wind effects of this hazard, refer to the Hurricane Wind profile in Appendix A. NCDC data and other hazard records can be found in Appendix C. The historical hurricane wind information can be found in Appendix C.

*Assets Exposed to Hazard*

The Mitigation Planning Committee examined the historical records, and determined that all assets listed on the Critical Facility Inventory were potentially at risk in the event of a hurricane wind event. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 that could be exposed to this hazard. More detailed asset inventories for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D.

*Estimated Potential Losses*

The loss estimates were generated using a GEMA created online tool that compiled reporting information with guidance set forth by the FEMA State and Local Mitigation Planning Guide 386-2: Section 4, Estimating Losses. Loss estimates were generated for structures, general and critical, that were at risk of damage from natural or man-made disasters that were applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Using the information generated by the GEMA online tool, there are 193 critical assets worth $137,062,479 in total damage liability. Worksheet 3A showed a total of 26,230 assets worth $959,054,849 for Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Losses for this hazard have been listed in Appendix A, and Worksheet 3A inventories are located in Appendix D.

*Land Use and Development Trends*

Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side have established minimum standards for all new construction and substantial improvements of residential and nonresidential structures. In addition, construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act) and the International Building Code (2006 edition). The minimum standards established by these codes provide reasonable protection from most natural hazards to persons and property within structures that comply with the regulations. Other than the construction codes, there are no land use trends (current or future) that specifically address this hazard. A full list of future land use trends and goals can be found in Appendix B.

*Multi-Jurisdictional Considerations*

This hazard is applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Mitigation actions taken to address hurricane winds and to limit damage should involve the county and all its municipalities. Due to the nature of this hazard and its ability to strike anywhere in the county, it is considered a county wide hazard, and there is no significant difference in jurisdictional risk to the local governments.

*Hazard Summary*

Hurricanes, especially when accompanied by high winds, devastate trees and transmission lines. Sidewalks, streets, and highways become extremely hazardous to pedestrians and motorists. Destructiveness of hurricane winds in the southern States, especially rural areas such as Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side, is increased because buildings are not always designed with hurricane wind conditions in mind. During the 2005 hurricane season Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side were struck by several hurricanes, and the strong winds caused massive power outages. Downed trees also blocked roadways and took out power lines. Weather forecasters predict that the next three decades may bring more frequent and more powerful hurricanes. The local governments are planning to address

this type of hazard by reviewing their goals and objectives for wind and flood related disasters. During the planning process the mitigation planning committee did not find any information regarding any significant losses or damage to critical infrastructure related to this hazard, but the records did indicate that there was a total multi-county property damage over the seven year span of $1,800,000 in the central part of the state.

**Natural Hazard: Wildfire**

*Hazard Description*

A wildfire is described as an open fire which spreads unconstrained through the environment. If not quickly controlled, the result can be a fire storm, often termed conflagrations, which destroy large amounts of property and threaten lives. Wildfire behavior and spread are affected by three major factors: fuels, weather and topography. Traditionally, the fuel component consists of grasses, brush, trees and accumulations of dead vegetation. Most fire-prone wild land fuels are generally found on lower or middle elevations and drier sites, which unfortunately are the same sites preferred by humans for development. Therefore "intermix" fuels now contain homes, outbuildings, businesses and other valuable improvements which serve as combustible fuels. Accumulations of firewood, poor outdoor housekeeping and fire-prone construction add to the problem. There is an enlarged threat of public injury and property loss from wildfires in areas where inhabited developments are closely mixed with natural fuels. Weather is also a factor in wildfire development and spread. Drought conditions make the natural fuels more fire-prone. Late March and April along with October are peak months when the danger of wildfires is increase. Topography, the third major factor, shapes a fire's spread. Hollows, canyons and gullies channel winds and thereby channel fire spread. Because heat rises, fire naturally burns upslope. Homes built on a steep slope overlooking a view have less chance of escaping destruction by wildfire. Slope and terrain also hinder fire suppression efforts.

Wildfires result from the interaction of three crucial elements: fuel, ignition (heat), and oxygen. Natural and manmade forces cause the three crucial elements to coincide in a manner that produces wildfire events. Typically, fuel consists of natural vegetation. However, as the urban and suburban footprint expands, wildfires may utilize other means of fuel, such as buildings. In terms of ignition or source of heat, the primary source is lightning. However, humans are more responsible for wildfires than lightning. Manmade sources vary from the unintentional, such as fireworks, campfires or machinery, to intentional arson. With these two elements provided, the wildfires may spread as long as oxygen is present.

Weather is the most variable factor affecting wildfire behavior. Strong winds propel wildfires quickly across most landscapes unless firebreaks are present. Shifting winds create erratic wildfires, which can complicate fire management efforts. Dry conditions provide faster-burning fuels, either making the area more vulnerable to wildfire or increasing the mobility of preexisting wildfires.

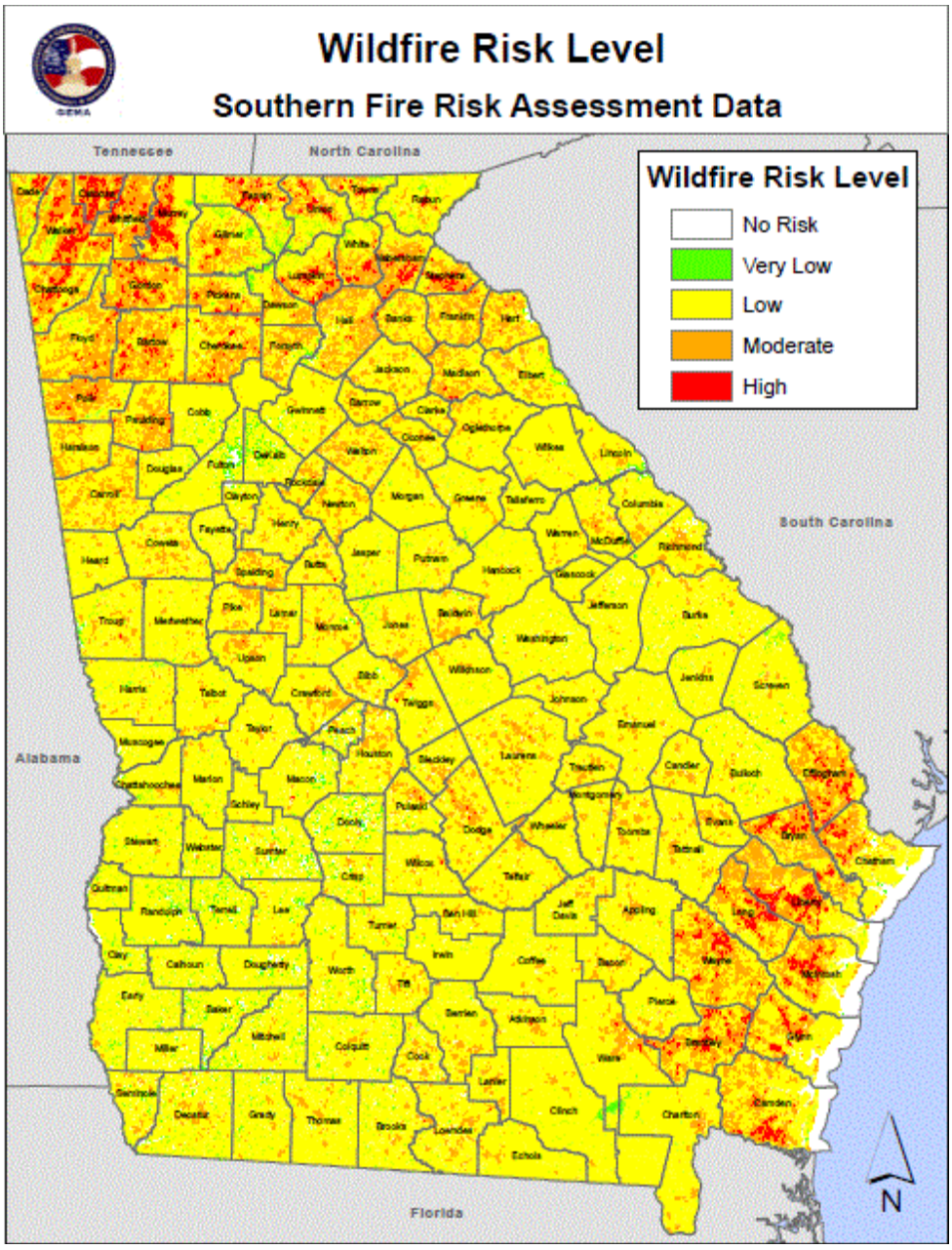
Wildfires are notorious for spawning secondary hazards, such as flash flooding and landslides, long after the original fire is extinguished. Both flash flooding and landslides result from fire consuming the natural vegetation that provides precipitation interception and infiltration as well as slope stability.

All of Georgia is prone to wildfire due to the presence of wildland fuels associated with wildfires. Land cover associated with wildland fuels includes coniferous, deciduous, and mixed forest; shrubland; grassland and herbaceous; transitional; and woody and emergency herbaceous

wetlands. The spatial extent of wildfire events greatly depends on both the factors driving the fire as well as the efforts of fire management and containment operations.

*Hazard Profile*

During the planning process the Planning Committee used the NCDC Query report and Georgia Forestry Commission records. The best information available on wildfires is from within the last fifty years. According to the Spalding County Community Wildfire Protection Plan, it was determined that there were 2,225 occurrences of wildfires that affected either the county or one of its municipalities. Based on available data, this creates a situation where there is a 4450% chance for a wildfire event on any given year. The information provided by the Georgia Forest Commission did not identify the extent of damage done by wildfires, and the only useful information provided was the number of fires per year. Due to the limited data there is no other way to determine any other extent of the wildfire effects of this hazard. For other information related to wildfires, refer to the Wildfire profile in Appendix A. Due to the tendency of the Georgia Forestry Commission's report to only cite hazard events, the specific hazard information by jurisdiction was unavailable. A hazard event frequency table for wildfires is listed in Appendix A. NCDC data and other hazard records can be found in Appendix C. The historical wildfire information can be found in Appendix C.


Wildfire Risk Level
Southern Fire Risk Assessment Data
Tennessee
North Carolina
South Carolina
Alabama
Florida
Wildfire Risk Level
No Risk
Very Low
Low
Moderate
High
N

Assets *Exposed to the Hazard*

All public and private property located within the Wildland-Urban Interface, including critical infrastructures, are susceptible to impacts from wildfires. Due to the large area of wildland area in Spalding County and the large amount of WIU, all public and private property, including critical infrastructures, could be directly or indirectly impacted by the threat of wildfire.

*Estimated Potential Losses*

Little information is available regarding damages, in terms of dollars, is available for wildfire losses in Spalding County. For lost estimation of all critical facilities potentially affected by wildfires, please see the critical facilities information located in Appendix A. According to the 2012 Ag Census by the USDA (the most recent census available), Spalding County has $20,298 in annual crop sales. These areas would potentially be impacted by a wildfire event.

*Land Use & Development Trends*

Spalding County continues to develop in areas around Sunny Side and in the northern portion of Spalding County towards Clayton and Henry Counties. The County and its municipalities have a land use plan that clearly identifies future development. The Spalding County Building Department and the various municipalities enforce the 2003 International Building Codes. Updating building codes and the adoption of these codes will continue to reduce vulnerability to many hazards in the developing areas of the county.
Even with the slight decrease in population, Wildland-Urban Interface (WUI) is increasing in Spalding County. The WUI creates areas where fire can easily move from wildland areas into developed areas and threaten structures and human life. The expansion of the WUI in Spalding County complicated wildland fire management operations and planning initiatives. This development trend is expected to continue in the future.

*Multi-Jurisdictional Considerations*

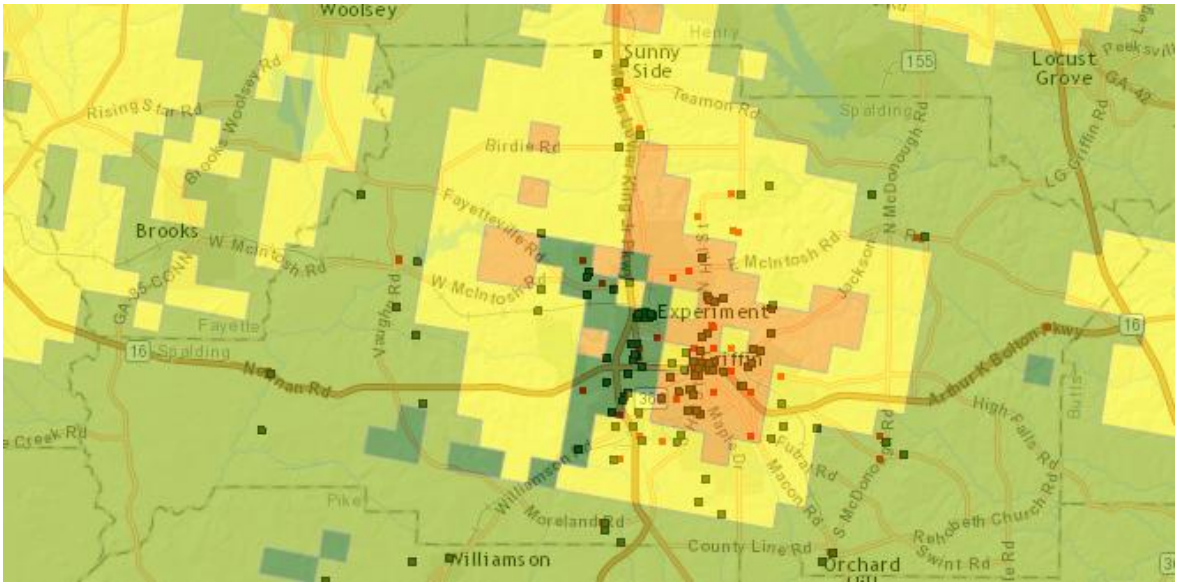
This hazard is applicable to Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side. Mitigation actions taken to address wildfire and to limit damage should involve the county and all its municipalities. Due to the nature of this hazard and its ability to strike anywhere in the county, it is considered a county wide hazard, and there is no significant difference in jurisdictional risk to the local governments.

*Hazard Summary*

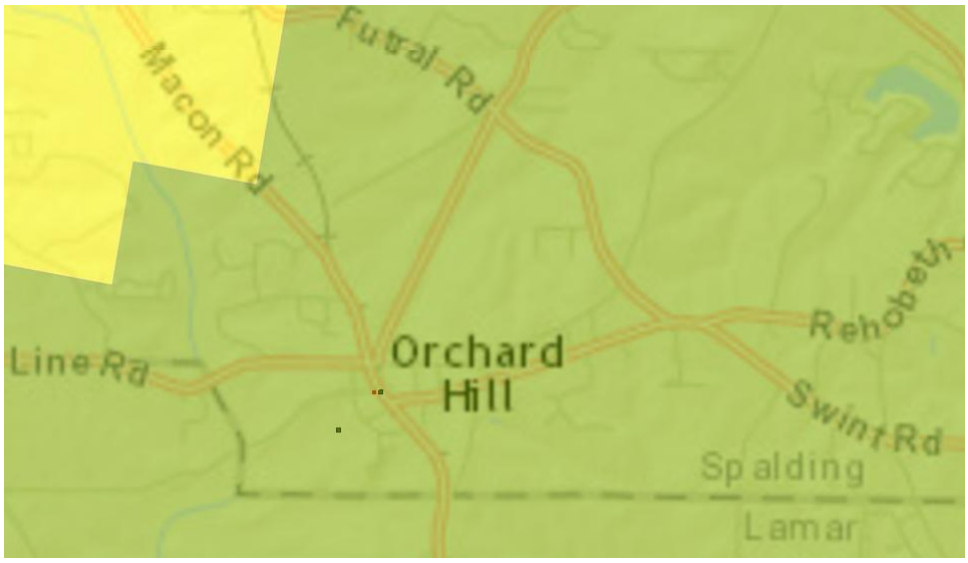
The probability that wildfires will occur in the future is without doubt. All woodland areas in the un-incorporated section of the county are at some degree of risk. Subdivisions and mobile home parks within the county or any of its municipalities that are located in or adjacent to areas of vegetation are also at risk to the wildfire hazard.

While wildfires are a large threat to the critical infrastructure inventory listed in Appendix A, there are a large number of old residential mill houses located within Spalding County and the Cities of Griffin, Orchard Hill, and Sunny Side that could be damaged by wildfire events.

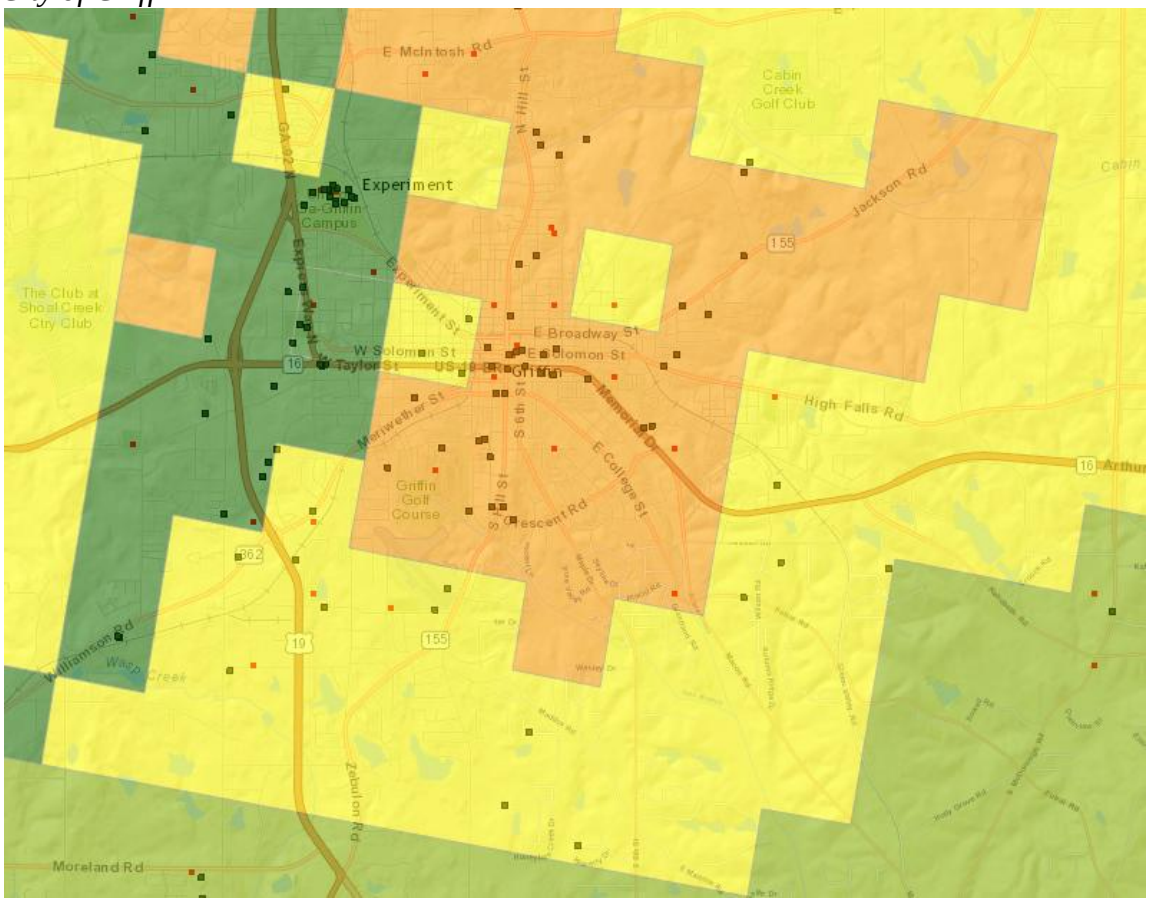
*Spalding County*



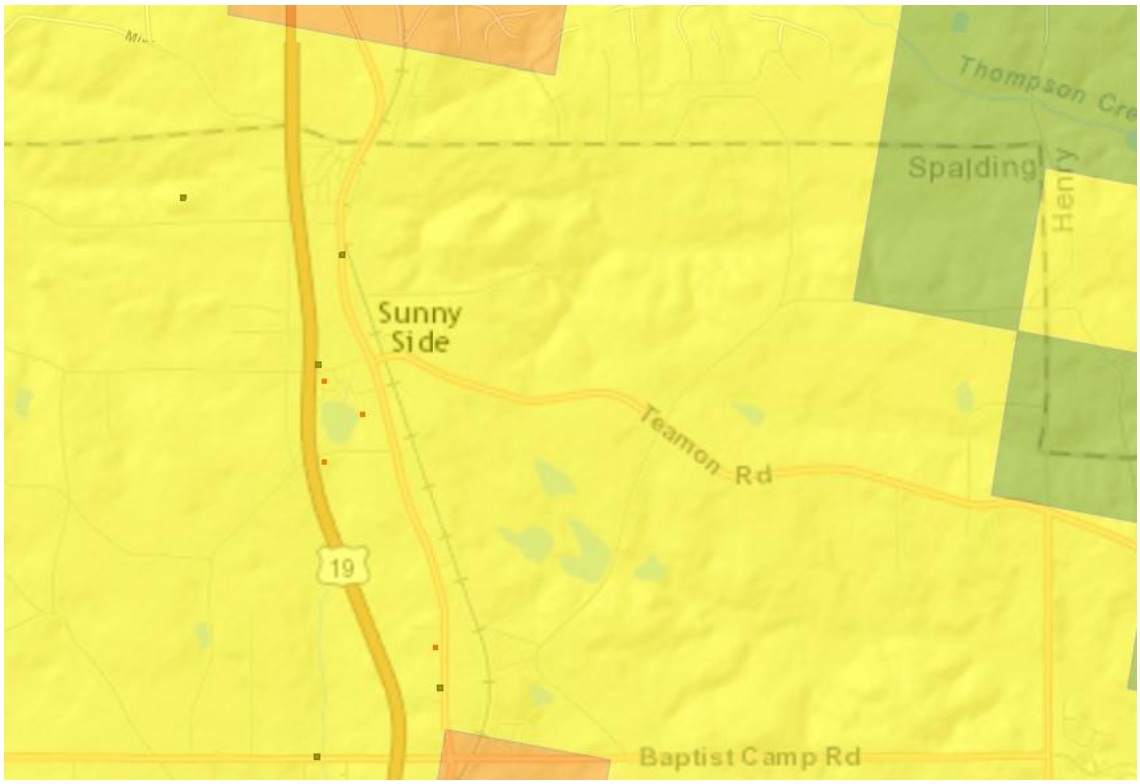
*City of Orchard Hill*




*City of Griffin*



*City of Sunny Side*



**Technological Hazard: Hazardous Material Release**

*Hazard Description*

Hazardous materials, or hazmat, refers to any materials that may pose a real hazard to human health and/or the environment because of its quantity, concentration, and/or physical or chemical characteristics. Hazardous materials include explosives, flammables, combustibles, oxidizers, toxic materials, radioactive substances, and corrosives. Specific federal and state regulations exist regarding the transport and storage of hazardous materials.
A hazardous materials spill or release occurs when a hazardous material gets into the environment in an uncontrolled fashion. Response to a hazmat spill or release depends greatly on the type of material involved and the subsequent physical and chemical characteristics. Major sources of hazardous materials spills include transportation accidents on roadways and railways, pipeline breaches, and spills into rivers and creeks. Jurisdictions with facilities that produce, process, or store hazardous materials are at risk, as are facilities that treat or dispose of hazardous materials.

*Hazard Profile*

Data from the United States Coast Guard National Response Center was reviewed regarding hazardous materials spill history in Spalding County. Data is available from 1990 to 2016 and all available data was reviewed. There were 2 NRC reported hazardous materials spills or releases in Spalding County over a 25 year period. It is anticipated that many more hazardous materials incidents have occurred over the last 25 years, but have not been reported. According to the NRC data, there is an 8% chance of a hazardous materials incident of reporting amounts occurring in any given year. The greatest threat for a hazardous materials spill comes from the transportation of materials through Spalding County.

Hazardous materials releases can also be the result of railway or fixed facility incidents. Fixed facilities continue to be an increasing concern due to Spalding County's growing industrial footprint. In addition to the transportation routes and fixed facilities, Spalding County is also home to two major pipelines – the Dixie Pipeline and the Plantation Pipeline. These pipelines traverse the county through unincorporated areas.

*Assets Exposed to Hazard*

The environment is particularly vulnerable to the threat posed by hazardous materials. Waterways are at a high risk for contamination from hazardous materials. Over the past two decades, many waterways in Spalding County have been impacted by hazardous materials spills. These include Potato Creek, the Flint River, as well as many unnamed creeks, streams, and ponds. Public and private property located near fixed hazardous materials facilities are also a greater risk than the general population of Spalding County. The areas near the Dixie and Plantation pipelines are also at a higher risk to this hazard.

*Estimated Potential Losses*

Estimation of potential losses is difficult with regard to hazardous materials due to the vast array of potential types of hazardous materials that could be involved in the incident and unknown costs regarding environmental damages. No recorded information was found regarding the losses associated with hazardous materials incidents in Spalding County. However, a hazardous materials release, whether in transport or at a fixed facility, would incur significant costs regarding emergency response, potential road closures, evacuations, watershed protection measures, expended man-hours, and cleanup materials, equipment, and personnel.

*Land Use and Development Trends*

Spalding County continues to develop in areas around Sunny Side and in the northern portion of Spalding County towards Clayton and Henry Counties. The County and its municipalities have a land use plan that clearly identifies future development. The Spalding County Building Department and the various municipalities enforce the 2003 International Building Codes. Updating building codes and the adoption of these codes will continue to reduce vulnerability to many hazards in the developing areas of the county. As more industry moves into Spalding County, the possibility for a hazardous materials release increases.

*Multi-Jurisdictional Considerations*

All of Spalding County, including all municipalities, are vulnerable to both fixed facility and transportation-related hazardous materials releases.

*Hazard Summary*

Hazardous materials incidents pose a significant threat to the citizens, infrastructure, and critical facilities of Spalding County. Unknown quantities of hazardous materials are transported daily through Spalding County and its municipalities. These materials are transported via highways, with US Highway 341 and Georgia Highway 18 and Georgia Highway 36 being of greatest concern. As a result of the threat posed by hazardous materials, the Spalding County HMPC has identified mitigation actions directly related to this threat.

# Chapter Four: Hazard Mitigation Strategies

Summary of Updates for Chapter Four

The following table provides a description of each section of this chapter, and a summary of the changes that have been made to the Spalding County Hazard Mitigation Plan 2011.

| Chapter 4 Section | Updates |
|---|---|
| Goals and Objectives | -Updated Goals to match the needs of Spalding County and its municipalities |
| Identification and Analysis of Mitigation Techniques | -The beginning of this section includes new information regarding rating the mitigation strategies based upon the EMAp Standard Hazard Mitigation Section<br>-The Mitigation Strategies have been updated, reorganized by objective, and new strategies have been added.<br>-A chart of completed Mitigation Strategies has been added |
| Multi-Jurisdictional Considerations | -Revised<br>-Multi-Jurisdictional considerations listed for each identified hazard |

**Goals and Objectives**

It is important that State and local government, public-private partnerships, and the average citizen can see the results of these mitigation efforts, therefore, the goals and strategies need to be achievable. The mitigation goals and objectives form the basis for the development of specific mitigation actions. County and municipal officials should consider the listed goals before making community policies, public investment programs, economic development programs, or community development decisions for their communities. The goals of Spalding County have changed slightly in the last five years due to specific threat events, such as the snow and ice storms of 2014 and the tornado events of April 2011. The April 2011 tornadoes significantly impacted Spalding County. As a result, these types of events have taken a greater priority.

Each jurisdiction covered by the Spalding County Hazard Mitigation plan update – Spalding County, Griffin, Orchard Hill and Sunny Side – has limited ability to fully implement the mitigation actions described in this plan. This is particularly true for the smaller jurisdictions of Orchard Hill and Sunny Side, who are severely hampered by their small population and tax base when attempting to raise sufficient revenue to pursue many of these actions. All jurisdictions lack the needed financial

strength and staffing to implement all of the actions described in this plan. Many of the actions will be pursued through grant programs and by partnering with public and private organizations who can supplement the needed resources to accomplish the goals outlined in this plan. For actions where grant funding or partnerships are not available, Spalding County or municipality revenue streams may be supplemented through Special Purpose Local Option Sales Tax (SPLOST) funds, which are voted on by the electorate.

**1) Goal:** Bring greater awareness throughout the community about potential hazards and the need for community preparedness

**2) Goal:** Maximize the use of all resources by promoting intergovernmental coordination and partnerships in the public and private sectors

**3) Goal:** Reduce and, where possible, eliminate repetitive damage, loss of life and property from disasters

**4) Goal:** Harden communities against the impacts of disasters through the development of new mitigation strategies and strict enforcement of current regulations that have proven effective

These objectives state a more specific outcome that Spalding County strives to accomplish over the next five years. Action steps are the specific steps necessary to achieve these objectives. Objectives are not listed in order of importance.

OBJECTIVE 1 Provide educational awareness to citizens regarding the dangers of natural hazards

OBJECTIVE 2 Increase the ability of Spalding County, its municipalities, and its citizens to respond to natural and manmade hazards

OBJECTIVE 3 Maintain continuity of critical operations during and after hazard events.

OBJECTIVE 4 Minimize the damage to property and loss of life resulting from high wind events

OBJECTIVE 5 Reduce damage to property and loss of life from flooding

OBJECTIVE 6 Provide advanced severe weather warning

OBJECTIVE 7 Implement initiatives for water conservation and wildfire protection

OBJECTIVE 8 Increase collaboration between local industry and emergency response agencies/departments

**Identification and Analysis of Mitigation Techniques**

In updating Spalding County's mitigation strategy, a wide range of activities were considered in order to help achieve the mitigation goals and objectives. This includes the following activities as by the Emergency Management Accreditation Program (EMAP):

1) The use of applicable building construction standards;

2) Hazard avoidance through appropriate land-use practices;

3) Relocation, retrofitting, or removal of structures at risk;

4) Removal or elimination of the hazard;

5) Reduction or limitation of the amount or size of the hazard;

6) Segregation of the hazard from that which is to be protected;

7) Modification of the basic characteristics of the hazard;

8) Control of the rate of release of the hazard;

9) Provision of protective systems or equipment for both cyber or physical risks;

10) Establishment of hazard warning and communication procedures; and

11) Redundancy or duplication of essential personnel, critical systems, equipment, and information materials.

Part of the prioritization includes a general assessment according to the STAPLEE criteria, which stands for Social, Technical, Administrative, Political, Legal, Economic and Environmental. This process led to three designated priorities: High, Medium, and Low. Most items that require grant funding must undergo a full Benefit Cost Analysis to determine the action's actual cost effectiveness prior to funding. This process will be completed as part of the grant opportunity application process. This information can be found in Appendix D.

The lead agency listed in the Mitigation Strategy charts will be responsible for the jurisdictional administration and implementation of the mitigation strategy prioritization. Prioritization was determined based on many factors. These include the likelihood of the event, the potential impact of the event, the current readiness posture of Spalding County for the event, the all-hazard impact of the mitigation strategy, and a cost-benefit analysis for the mitigation action. For example, mitigation actions that address high-likelihood, high-impact events with a low cost would rate higher than low-likelihood, high-impact events with a high cost.

On the following charts, each number refers to a particular objective and letter refers to a particular mitigation strategy identified on the mitigation chart (which follows these tables of mitigation techniques). All mitigation strategies considered by the Spalding County Hazard Mitigation Plan Update Committee can be classified under one of the following six (6) broad categories of mitigation techniques:

Prevention

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

| NATURAL HAZARDS | MITIGATION STRATEGIES |
|---|---|
| **Flood** | **1a; 1b; 1f; 2a; 7b** |
| **Tornadoes** | **2a; 7b** |
| **Agricultural Drought** | **5b; 5e; 7b** |
| **Winter Storms** | **7b** |
| **Hail Storms** | **7b** |
| **Hurricane Winds** | **2a; 7b** |
| **Thunderstorms** | **2a; 7b** |
| **Wildfires** | **5b, 5e; 7b** |
| **TECHNOLOGICAL HAZARD** | **MITIGATION STRATEGIES** |
| **Hazardous Materials Release** | **8e; 8f** |

Property Protection

Property protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or involve the removal of the structures from hazardous locations. Examples of property protection in this updated plan are listed in the following table:

| NATURAL HAZARDS | MITIGATION STRATEGIES |
|---|---|
| Flood | 2a; 6b; 7a |
| Tornadoes | 2a; 3a, 3b; 3c; 3d; 3f; 6b; 7a |
| Agricultural Drought | 6b; 7a |
| Severe Winter Storms | 2a; 6b; 7a |
| Hurricane Winds | 2a; 3a; 3b; 3c; 3d; 3f; 6b; 7a |
| Thunderstorms | 6b; 3a; 3b; 3c; 3d; 3f; 6b; 7a |
| Wildfires | 6b; 7a |
| Extreme Heat | 6b;7a |
| TECHNOLOGICAL HAZARD | MITIGATION STRATEGIES |
| Hazardous Materials Release | 8d; 8e |

Natural Resource Protection

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas (ex: floodplains, wetlands, steep slopes, sand dunes) and their protective functions. Parks, recreation, or conservation agencies and organizations often implement these protective measures. Examples of natural resource protection in this updated plan are listed in the following table:

| NATURAL HAZARDS | MITIGATION STRATEGIES |
|---|---|
| **Flood** | **1e** |
| **Tornadoes** | |
| **Agricultural Drought** | |
| **Winter Storms** | |
| **Hurricane Winds** | |
| **Thunderstorms** | **1e** |
| **Wildfires** | |
| **Extreme Heat** | |
| **TECHNOLOGICAL HAZARD** | **MITIGATION STRATEGIES** |
| **Hazardous Materials Release** | |

Structural Projects

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event through construction. They are usually designed by engineers and managed or maintained by public works staff. Examples of structural projects in this updated plan are listed in the following table:

| NATURAL HAZARDS | MITIGATION STRATEGIES |
|---|---|
| **Flood** | **1e** |
| **Tornadoes** | |
| **Agricultural Drought** | **5a** |
| **Winter Storms** | |
| **Hurricane Winds** | |
| **Thunderstorms** | **1e** |
| **Wildfires** | **5a** |
| **Extreme Heat** | **5a** |
| **TECHNOLOGICAL HAZARD** | **MITIGATION STRATEGIES** |
| **Hazardous Materials Release** | |

Emergency Services

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

| NATURAL HAZARDS | MITIGATION STRATEGIES |
|---|---|
| **Flood** | **1c; 1d; 6a; 6b; 6c; 6d; 7a; 7b; 7c; 7d** |
| **Tornadoes** | **1c; 1d; 6a; 6b; 6c; 6d; 6d; 7a; 7b; 7c; 7d** |
| **Agricultural Drought** | **1c; 1d; 5c; 5d; 6a; 6b; 6c; 6d; 7a; 7b; 7c; 7d** |
| **Winter Storms** | **1c; 1d; 6a; 6b; 6c; 6d; 7a; 7b; 7c; 7d** |
| **Hurricane Winds** | **1c; 1d; 6a; 6b; 6c; 6d; 7a; 7b; 7c; 7d** |
| **Thunderstorms** | **1c; 1d; 6a; 6b; 6c; 6d; 7a; 7b; 7c; 7d** |
| **Wildfires** | **1c; 1d; 5c; 5d; 6a; 6b; 6c; 6d; 7a; 7b; 7c; 7d** |
| **Extreme Heat** | **1c; 1d; 5c; 5d; 6a; 6b; 6c; 6d; 7a; 7b; 7c; 7d** |
| **TECHNOLOGICAL HAZARD** | **MITIGATION STRATEGIES** |
| **Hazardous Materials Release** | **8b; 8c; 8d** |

Public Education and Awareness

Public education and awareness activities are used to advise residents, elected officials, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques that they can use to protect themselves and their property. Examples of public education and awareness strategies in this updated plan are listed in the following table:

| NATURAL HAZARDS | MITIGATION STRATEGIES |
|---|---|
| Flood | 4a; 4b; |
| Tornadoes | 2b; 3e;3g;3h; 4a; 4b; |
| Agricultural Drought | 4a; 4b; 4c; 4d; |
| Winter Storms | 4a; 4b; |
| Hurricane Winds | 2b; 3e; 4a; 4b; |
| Thunderstorms | 2b; 3e; 4a; 4b; |
| Wildfires | 4b; |
| Extreme Heat | 4a; 4b; 4c; 4d; |
| TECHNOLOGICAL HAZARD | MITIGATION STRATEGIES |
| Hazardous Materials Release | 8a |

Overall

| MITIGATION TECHNIQUE | PERCENTAGE |
|---|---|
| Prevention | 11.5% |
| Property Protection | 22.5% |
| Natural Resource Protection | 1.2% |
| Structural Projects | 2.2% |
| Emergency Services | 50.0% |
| Public Education and Awareness | 12.6% |

The following Mitigation Charts meet:
Requirement §201.6(c)(3)(ii) and Requirement §201.6(d)(3)

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***OBJECTIVE 1: Reduce damage to property from flooding*** | | | | | | | | | | | | | | | | |
| 1.a | Review FEMA flood maps for accuracy and determine flood plain problem areas for Spalding County and its municipalities | Spalding County and municipalities planning departments*/Spalding County and all municipalities* | X | | | | | | | | Public and private grants | Unknown | 24 months | NEW | Medium | NEW |
| 1.b | Comply with Metropolitan North Georgia Water Planning District and storm water management ordinance and implement | Spalding County Water Engineering and municipal engineering departments/Spalding County and all municipalities | X | | | | | | | | Public and private grants | $250,000 | 5 years | NEW | Low | NEW |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | the model Flood Plain and Flood Damage and Prevention Ordinance | | | | | | | | | | | | | | | |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.c | Continue to purchase road closure equipment, including signage, cones, and barricades | Spalding County EMA and Spalding County Public Works directors*/Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Public and private grants and/or local government budgets | $10,000 | 18 months | NEW | High | NEW |
| 1.d | Continue to use portable electronic information signs | Spalding County EMA and Spalding County Public Works directors*/Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Public and private grants and/or local government budgets | Unknown | 18 months | NEW | Medium | NEW |
| 1.e | Maintain large culverts in areas susceptible to high water flow rates during heavy rain events | Spalding County Public Works/Spalding County and all municipalities | X | | | | | X | | | Public and private grants and/or local government budgets | Unknown | 36 months | NEW | High | NEW |
| 1.f | Maintain ordinances that control development within the floodplain | Spalding County and municipalities planning departments*/Spalding County and all municipalities* | X | | | | | | | | Public and private grants | Unknown | 5 years | Ongoing | High | A.1.1. |
| ***OBJECTIVE 2: Minimize the damage to property resulting from high wind events*** | | | | | | | | | | | | | | | | |
| 2.a | Increase enforcement | Spalding County Code | X | X | | | X | X | | | Local government | Staff time | 5 years | Ongoing | High | E.1.1. |

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| | of manufactured home regulations and ordinances of new buildings and infrastructure | Enforcement Building Dept/Spalding County and all municipalities | | | | | | | | | budgets | | | | | |
| 2.b | Continue an educational awareness program | Spalding County EMA */Spalding County and all municipalities* | | X | | | X | X | | | Local government budgets | Staff time | 5 years | Ongoing | High | B.1.1. |
| ***OBJECTIVE 3: Provide advanced severe weather warning*** | | | | | | | | | | | | | | | | |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.a | Increase the number of outdoor warning sirens in high risk and vulnerable population areas | Spalding County EMA, Spalding County BOC, municipal governing bodies/*Spalding County and all municipalities* | | X | | | X | X | | | Public and private grants and/or local government budgets | $1,000,000 | 5 years | Ongoing | High | F.1.1 |
| 3.b | Identify public gathering areas and provide those areas with NOAA weather radios to increase early warning capabilities | Spalding County EMA/*Spalding County and all municipalities* | | X | | | X | X | | | Public and private grants | $2,000 | 12 months | NEW | Medium | NEW |
| 3.c | Continue to maintain and install severe weather sirens and lighting | Spalding County EMA/*Spalding County and all municipalities* | | X | | | X | X | | | Public and private grants and/or local tax digest | $225,000 | 12 months | NEW | High | NEW |

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| | detection hardware in all public parks and recreational facilities | | | | | | | | | | | | | | | |
| 3.d | Update the activation hardware for countywide sirens | Spalding County EMA/*Spalding County and all municipalities* | | X | | | X | X | | | Public and private grants | $14,000 | 18 months | NEW | High | NEW |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.e | Spalding County will educate the public regarding signing up for Civic Ready mass notification system. | Spalding County EMA, Spalding County BOC, municipal governing bodies/*Spalding County* | | X | | | X | X | | | Public and private grants and/or local government budgets | $1,000 staff time | 6-12 months | NEW | Medium | NEW |
| 3.f | Install two tornado sirens per year to warn the public of incoming severe weather in Spalding County and all municipalities | Spalding County EMA/*Spalding County and all municipalities* | | X | | | X | X | | | Public and private grants | $20,000 each | 5 years (each year) | NEW | High | NEW |
| 3.g | Sunny Side will educate the public regarding signing up for Code Red mass notification | City of Sunny Side/*City of Sunny Side* | | X | | | | | | | Public and private grants and/or local government budgets | $1,000 staff time | 6-12 months | NEW | Medium | NEW |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | system. | | | | | | | | | | | | | | | |
| 3.h | Orchard Hill will educate the public regarding signing up for Code Rd mass notification system | City of Orchard Hill/*City of Orchard Hill* | | X | | | | | | | Public and private grants and/or local government budgets | $1,000 staff time | 6-12 months | NEW | Medium | NEW |
| ***Objective 4: Provide educational awareness to citizens regarding the dangers of natural hazards*** | | | | | | | | | | | | | | | | |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.a | Continue annual countywide public awareness campaign to promote weather safety and preparedness | Spalding County EMA, Spalding County BOC, municipal governing bodies/*Spalding County and all municipalities* | X | X | X | X | X | X | | X | Public and private grants and/or local government budgets | $1,000 staff time | 5 years (each year) | NEW | Medium | NEW |
| 4.b | Work with local cable, radio, newspaper and other media to develop and broadcast public education on Emergency Preparedness | Spalding County EMA/*Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Public and private grants | $1000 staff time | 5 years (each year) | NEW | Medium | NEW |
| 4.c | Develop a public awareness campaign to promote water saving | Spalding County water systems, municipal water systems/*Spalding County and all municipalities* | | | X | | | | | X | Public and private grants and/or local tax digest | $40,000 | 5 years | NEW | Low | NEW |

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| | initiatives | | | | | | | | | | | | | | | |
| 4.d | City of Griffin will develop a public awareness campaign to promote water saving initiatives | City of Griffin/*City of Griffin* | | | X | | | | | X | Public and private grants and/or local tax digest | $1,000 | 5 years | NEW | Low | NEW |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Objective 5: Implement initiatives for water conservation and wildfire protection*** | | | | | | | | | | | | | | | | |
| 5.a | Increase capacity of raw water supplies | Spalding County water systems, municipal water systems/*Spalding County and all municipalities* | | | X | | | | X | X | Public and private grants and/or local government budgets | $8 million | 5 years | Ongoing | Medium | C.1.1. |
| 5.b | Maintain a countywide drought contingency plan, including all municipalities | Spalding County EMA/*Spalding County and all municipalities* | | | X | | | | X | X | Public and private grants | $2500 | 5 years (each year) | NEW | Medium | NEW |
| 5.c | Maintain and purchase water tenders with pumping capabilities for increased wildfire response | Spalding County Fire Department/*Spalding County and all municipalities* | | | X | | | | X | X | Public and private grants and/or local tax digest/SPLOST | Unknown | 24 months | NEW | Medium | NEW |
| 5.d | Maintain and purchase water buffalos to provide | Spalding County EMA/ *Spalding County and all municipalities* | | | X | | | | X | X | Public and private grants | Unknown | 36 moths | NEW | Low | NEW |

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| | potable water to affected populations | | | | | | | | | | | | | | | |
| 5.e | Strengthen Service Delivery Agreements between Spalding County and municipalities | Spalding County EMA, Spalding County BOC, municipal governing bodies/*Spalding County and all municipalities* | | | X | | | | X | X | Public grants and local government budgets | Unknown | 5 years | Ongoing | High | G.1.1. |
| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
| ***Objective 6: Increase the ability of Lamar County, its municipalities, and its citizens to respond to natural and manmade hazards*** | | | | | | | | | | | | | | | | |
| 6.a | Continue the Community Emergency Response Team (CERT) program | Spalding County EMA//*Spalding County and all municipalities* | X | X | X | X | X | X | X | X | State and federal grant programs | $49,000 | 5 years | NEW | High | NEW |
| 6.b | Continue to expand and overhaul the Spalding County 911 Center capabilities to include interoperability and regional collaboration | Spalding County and municipality administrators/*Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Public and private grants and/or local government budgets | Unknown | 5 years (each year) | NEW | Medium | NEW |
| 6.c | Continue to utilize a four-wheel drive capable SUV and all-terrain vehicle to provide emergency response during storm events | Spalding County EMA and Spalding County Sheriff's Office /*Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Public and private grants and/or local government budgets | Unknown | 5 years | NEW | Medium | NEW |

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| 6.d | Conduct a safety review of shelters | Spalding County EMA/ *Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Local government budgets | Unknown | 5 years (each year) | Ongoing | High | D.1.1. |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Flood | Tornadoes | Agricultural Drought | Winter Storms | Hurricane Winds | *Thunderstorm* | Wildfires | Extreme Heat | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Objective 7: Maintain continuity of critical operations during and after hazard events*** | | | | | | | | | | | | | | | | |
| 7.a | Continue to maintain a safe, sustainable, and interoperable Emergency Operations Center (EOC) | Spalding County EMA//*Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Public and private grants and/or local government budgets | Unknown | 5 years | NEW | High | NEW |
| 7.b | Maintain comprehensive Continuity of Operations Plan (COOP) for Spalding County government and municipalities | Spalding County and municipality administrators/*Spalding County and all municipalities* | X | X | X | X | X | X | X | X | Public and private grants and/or local government budgets | Unknown | 5 years | NEW | High | NEW |
| 7.c | Maintain and purchase generators for use at critical facilities | Spalding County EMA and Spalding County Sheriff's Office */Spalding County and all municipalities* | X | X | | X | X | X | X | X | Public and private grants and/or local government budgets | Unknown | 5 years | NEW | Medium | NEW |
| 7.d | Maintain and purchase portable generators to | Spalding County EMA and Spalding County Sheriff's Office | X | X | | X | X | X | X | X | Public and private grants and/or local | Unknown | 5 years | NEW | Medium | NEW |

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| | be used at critical facilities when needed | */Spalding County and all municipalities* | | | | | | | | | government budgets | | | | | |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Hazardous Materials Release | | | | | | | | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Objective 8: Increase collaboration between local industry and emergency response agencies/departments*** | | | | | | | | | | | | | | | | |
| 8.a | Continue a sustainable Local Emergency Planning Committee (LEPC) in partnership with first responders, local businesses, and local industry | Spalding County EMA//*Spalding County and all municipalities* | X | | | | | | | | Public and private grants and/or local government budgets | Unknown | 5 years | NEW | High | NEW |
| 8.b | Continue a hazardous materials incident exercise | Spalding County EMA//*Spalding County and all municipalities* | X | | | | | | | | Public and private grants and/or local government budgets | Unknown | 5 years | NEW | Medium | NEW |
| 8.c | Continue to maintain hazard materials response equipment | Spalding County EMA and Spalding County Development Authority/*Spalding County and all municipalities* | X | | | | | | | | Public and private grants and/or local government budgets | Unknown | 5 years | NEW | Medium | NEW |
| 8.d | Continue to work with and encourage industry to reduce | Spalding County EMA and Spalding County Development Authority */Spalding County* | X | | | | | | | | Private funding | Unknown | 5 years | NEW | Medium | NEW |

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| | chemical inventories at fixed facilities | *and all municipalities* | | | | | | | | | | | | | | |

| Strategy # | Mitigation Action | Lead and Supporting Agency, Department, Organization/ *Jurisdiction* | Hazardous Materials Release | | | | | | | | Funding Source | Estimated Cost | Completion Timeframe | Progress/ Status | Priority | Previous Strategy Number |
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| | | | | | | | | | | | | | | | | |
| 8.e | Develop security strategies and safeguards for the containment of hazardous materials at fixed facilities | Spalding County EMA and Spalding County Development Authority */Spalding County and all municipalities* | X | | | | | | | | Private funding | Unknown | 5 years | NEW | Medium | NEW |
| 8.f | Pre-identify high population areas along major pipelines and develop a mitigation strategy for human impacts | Spalding County EMA, Spalding County Fire and Sherriff's Departments//*Spalding County and all municipalities* | X | | | | | | | | Public and private grants and/or local government budgets | $2500 staff time | 12 months | NEW | High | NEW |

**Completed Strategies**

| Previous Item # | Mitigation Action | Update | New Item # | Status |
|---|---|---|---|---|
| Flood -1 | The local governments would continue to enforce the existing adopted flood ordinance. | Moved from roman numeral format to table format | 1.f | Completed but Ongoing |
| Flood-2 | To solicit comments from the public through public hearings or informational brochures and to obtain feedback that will be used in creating policies or procedures to reduce the impact of this hazard within the County. | Moved from roman numeral format to table format; reworded | 2.b | Completed but Ongoing |
| Flood-3 | Update City of Griffin Floodplain Management Plan | | | Completed |
| Tornado-1 | The Spalding EMA will create an educational awareness program to help inform citizens about the hazards of tornadoes, and outline safety precautions that they can take. | Moved from roman numeral format to table format; reworded | 6.e | Completed but Ongoing |
| Tornado-2 | The Spalding EMA will | Moved from roman | 3.a | Completed but |

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| | install outdoor warning sirens to alert people outside of their homes and away from other media sources of imminent danger from an approaching storm. | numeral format to table format; reworded | | Ongoing |
| Tornado-3 | The Spalding EMA will install a reverse 911-notification system that allows emergency services to quickly contact community residents during emergent events. The system employs a combination of database and mapping technologies to allow emergency responders to pinpoint a specific geographic area and deliver the appropriate message to residents in the affected area. | Moved from roman numeral format to table format; reworded | 3.e, 3.g, 3.h | Ongoing |
| Tornado-4 | Conduct a debris disposal study and recommend a site location designation. | | | Completed |
| Tornado-5 | Adoption of an ordinance to establish safe room construction in any new mobile home parks. | | | Completed |
| Drought-1 | The Spalding EMA will | Moved from roman | 5.b | Completed but |

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| | work with the Spalding County and the City of Griffin to explore multiple ways to increase the dispersion of water resources within the county. | numeral format to table format; reworded | | Ongoing |
| Drought-2 | To solicit comments from the public through public hearings or informational brochures and to obtain feedback that will be used in creating policies or procedures to reduce the impact of this hazard within the County. | Moved from roman numeral format to table format; reworded | 2.b | Completed but Ongoing |
| Severe Winter Storms-1 | The Spalding EMA, City and County Building Officials, and Planning and Zoning will conduct a safety review of designated shelters, and recommend upgrades or improvements. | | | Completed |
| Severe Winter Storms-2 | To solicit comments from the public through public hearings or informational brochures and to obtain feedback that will be used in creating policies or procedures to reduce the | Moved from roman numeral format to table format; reworded | 2.b | Completed but Ongoing |

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| | impact of this hazard within the County. | | | |
| Severe Winter Storms-3 | Conduct a safety review of designated cold weather shelters within the county, and make additions or modifications as needed. | Moved from roman numeral format to table format; reworded | 6.d | Ongoing |
| Severe Winter Storms-4 | Prepare a family emergency preparedness plan | Moved from roman numeral format to table format; reworded | 6.d | Ongoing |
| Severe Winter Storms-5 | Develop an animal shelter development plan | Moved from roman numeral format to table format; reworded | 6.d | Ongoing |
| Hurricane Wind-1 | The Spalding County and City of Griffin Building and Zoning Department will review all new construction plans to ensure new structures are designed to accommodate the proper wind load. Spalding County is in a wind zone 3 category. | Moved from roman numeral format to table format; reworded | 2.a | Ongoing |
| Hurricane Wind-2 | To solicit comments from the public through public hearings or informational brochures and to obtain feedback that will be used in creating policies or procedures to reduce the | Moved from roman numeral format to table format; reworded | 2.b | Completed but Ongoing |

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| | impact of this hazard within the County | | | |
| Thunderstorms-1 | The Spalding EMA will apply for funding to implement an early warning system. | | | Completed |
| Thunderstorms-2 | To solicit comments from the public through public hearings or informational brochures and to obtain feedback that will be used in creating policies or procedures to reduce the impact of this hazard within the County. | Moved from roman numeral format to table format; reworded | 2.b | Completed but Ongoing |
| Wildfire-1 | The Spalding County EMA will continue to work with the appropriate city and county departments to review service delivery agreements, modify them as needed, and renew them at the regularly scheduled renewal date. | Moved from roman numeral format to table format | 5.e | Completed but Ongoing |
| Wildfire-2 | To solicit comments from the public through public hearings or informational brochures and to obtain | Moved from roman numeral format to table format; reworded | 2.b | Completed but Ongoing |

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| | feedback that will be used in creating policies or procedures to reduce the impact of this hazard within the County. | | | |

## Multi-jurisdictional Considerations

While cities are not required by FEMA to adopt hazard mitigation plans, the Federal Disaster Mitigation Act of 2000 requires all municipalities that wish to be eligible to receive FEMA hazard mitigation grants to adopt a local multi-hazard mitigation plan, and to update the plan every five years. Spalding County's hazard mitigation plan was approved by FEMA in July 2011, and this 2016 Plan Update provides the first five-year update. An approved Hazard Mitigation Plan makes Spalding County and municipalities eligible for FEMA's Hazard Mitigation Grant Program, Flood Assistance Mitigation grants, and Pre-Disaster Mitigation Grants.

As set forth by Georgia House Bill 489, the Emergency Management Agency is the overall implementing agency for projects such as hazard mitigation. Spalding County is dedicated to work in the best interests of the County, as well as the City of Griffin, City of Orchard Hill, and City of Sunny Side. Spalding County Emergency Management Agency solicited and received participation from the following Spalding County cities: Griffin, Orchard Hill, and Sunny Side in the creation and update of this plan, resulting in a truly multi-jurisdictional plan. A few mitigation action steps identified in this plan update may apply to selected jurisdictions. These steps are identified in the appropriate sections. Unless specifically noted otherwise, most steps apply equally to all jurisdictions.
When developing the hazard profile for each identified hazard, multi-jurisdictional considerations were also determined and noted. Most hazards are applicable countywide, although some hazards are more applicable to certain jurisdictions due to development trends and/or geographical concerns. The considerations for each hazard are listed below.

*Flood*
During a large-scale flood event, many portions of Spalding County would potentially be impacted by flooding. However, the areas most prone to flooding have historically been those areas located within the 100-year floodplain. The most flood prone areas of Spalding County are concentrated in the western portion of the county along the Flint River and its distributaries. All of Spalding County's municipalities could potentially be impacted.

*Winter Storms*
All of Spalding County is susceptible to winter storm events. As a result, mitigation strategies for winter storm events should be pursued on a countywide basis and include all towns and cities located within Spalding County.

*Thunderstorm*
All of Spalding County is susceptible to thunderstorm events, including hail, lightning, and high winds. As a result, mitigation strategies for thunderstorm events should be pursued on a countywide basis and include all towns and cities located within Spalding County.

*Tornado*
Much of Spalding County has a design wind speed of 200 mph, as determined by the American Society of Civil Engineers (ASCE). All of Spalding County is susceptible to tornado events. As a

result, mitigation strategies for tornado events should be pursued on a countywide basis and include all towns and cities located within Spalding County.

*Agricultural Drought*
All of Spalding County is susceptible to drought events. As a result, mitigation strategies for drought events should be pursued on a countywide basis and include all towns and cities located within Spalding County.

*Wildfire*
All of Spalding County, including all municipalities, potentially could be threatened by wildfires. As such, all wildfire mitigation actions should be pursued on a countywide basis and include all cities and towns located within Spalding County.

*Extreme Heat*
All of Spalding County, including all municipalities, potentially could be threatened by extreme heat. As such, all extreme heat mitigation actions should be pursued on a countywide basis and include all cities and towns located within Spalding County.

*Hurricane Winds*
All of Spalding County, including all municipalities, potentially could be threatened by hurricane winds. As such, all hurricane winds mitigation actions should be pursued on a countywide basis and include all cities and towns located within Spalding County.

*Hazardous Materials*
All of Spalding County, including all municipalities, are vulnerable to both fixed facility and transportation-related hazardous materials releases.

# Chapter Five: Plan Implementation and Maintenance

Summary of Updates for Chapter Four

The following table provides a description of each section of this chapter, and a summary of the changes that have been made to the Spalding County Hazard Mitigation Plan 2011.

| Chapter 5 Section | Updates |
|---|---|
| Maintenance | -Content revised<br>-Included explanation of yearly planning meeting goals |
| Plan Distribution | -New section-not in 2011 Mitigation Plan |
| Implementation | -Content revised |
| Evaluation | -Content revised |
| Peer Review | -New section-not in 2011 Mitigation Plan |
| Plan Update | -Split from Plan Update and Maintenance in previous plan<br>-Content revised |
| Conclusion | -previously Chapter 7 in 2011 Mitigation Plan<br>-content revised |

## Maintenance

In order to adhere to best practices, state and federal guidelines, and lessons learned, the Spalding County Hazard Mitigation Plan Update Committee has developed a method to ensure the regular review and update of the Plan occurs. The Spalding County Hazard Mitigation Plan Update Committee will reconvene annually in July to monitor and evaluate the progress of the mitigation strategies in the Plan. Spalding County's Emergency Management Director, Kenny West, will be responsible for implementing this meeting. These meetings will be open for public participation. The Committee will discuss the following questions annually:

- Do the goals address current and expected hazards and conditions?
- Are the goals and objectives still relevant to the County?
- Has the nature or magnitude of risks changed?
- Does the risk assessment portion of the Plan need to be updated or modified?
- Are the goals and objectives meeting changes in state and federal policy?
- Are the current resources appropriate for implementing the Plan?
- Are there local implementation problems, such as technical, political, legal, or coordination issues with other agencies?
- Have the outcomes occurred as expected?
- Did the jurisdictions, agencies, and other partners participate in the plan implementation process as proposed?

The responsible parties for various mitigation strategies will provide a report during this annual meeting regarding the following:

- How well did the implementation processes work?
- Were any difficulties encountered during implementation?
- How successful was the coordination of efforts?
- Are there any suggestions for revision of any strategies?

Spalding County's Emergency Management Director will send the minutes from this annual meeting to Spalding County Commissioners and City Councils for review.

If there are any updates or modifications to the Spalding County Hazard Mitigation Plan, the Emergency Management Director will forward the changes to the Georgia Emergency Management Agency's Hazard Mitigation Officer.

**Maintenance Log**

| REVISION DATE | REVISED SECTION | REASON FOR REVISION | REVISED BY |
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# Plan Distribution

This Plan will be distributed, but not limited, to the following departments and organizations within Spalding County:
Spalding County Board of Commissioners
Spalding County Fire Department
Spalding County Emergency Management
Spalding County Sheriff's Department
Spalding County Public Works Department
Spalding County Building and Zoning Department
Spalding County Board of Education
City of Griffin

City of Orchard Hill
City of Sunny Side

A printed copy of the approved Plan will be available for viewing at the Spalding County Board of Commissioners located at 119 East Solomon Street Griffin, GA. A printed copy of the approved Plan will also be available for viewing at the Spalding County Emergency Management Office located at 1005 Memorial Drive Griffin, GA. The existence and location of these copies will be publicized in the County's local newspaper, the Griffin Daily News.

All comments, questions, concerns, and opinions about the Plan will be directed to Director Kenny West of the Spalding County Emergency Management Agency for follow-up.

# Implementation

There was a Flood Insurance Study done for Spalding County in 1991. There is no Flood Mitigation Assistance Plan for Spalding County.

Each jurisdiction participating in the Spalding County Hazard Mitigation Plan is responsible for implementing specific mitigation actions as prescribed in this plan. In the Mitigation Strategies section, every proposed strategy is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation.

In addition to the designation of a local lead department or agency, some strategies have secondary or assisting department or agencies listed as well. This allows for a sharing of responsibility and coordination of effort for some of the identified strategies that cross lines of departmental responsibility. The completion date has been assigned in order to assess whether identified mitigation strategies are being implemented in a timely fashion.

Spalding County and its municipalities will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified and targeted for the proposed actions listed in the mitigation strategies. It will be the responsibility of each participating jurisdiction to determine additional implementation procedures beyond those listed within the Spalding County Hazard Mitigation Plan.

This plan, as a joint effort between Spalding County and all municipalities therein, will serve as a comprehensive mitigation plan. The mitigation strategies, hazard identification, and other information identified in this plan will be integrated into all comprehensive Spalding County plans, as well as all municipality plans in the future. Incorporation of these strategies will occur, as necessary, throughout this planning cycle covered by this Hazard Mitigation Plan Update. In particular, aspects of this plan will be integrated into the Spalding County Comprehensive Plan during the next planning cycle.

Identified hazards and mitigation strategies of the 2011 Spalding County Hazard Mitigation plan were integrated into the Local Emergency Operations Plan, multiple County and City SOPs and SOGs, and future planning and zoning plans. Strategies identified in the previous plan were applied to grant applications, building and zoning requirements, and development planning considerations for Spalding County and all municipalities therein.

Since the adoption of the 2011 Spalding County Hazard Mitigation Plan, a mass notification system was implemented, a planning and zoning review committee was implemented, and strict code enforcement was implemented along the Flint River. Threat and hazard assessments for Spalding County were also integrated into many Spalding County planning initiatives after the adoption of the 2011 Spalding County Hazard Mitigation Plan.

Opportunities to integrate the requirements of this Plan into other local planning mechanisms shall continue to be identified. Although it is recognized that there are many possible benefits to integrating components of this Plan into other local planning mechanisms, the development and maintenance of this stand-alone Hazard Mitigation Plan is deemed by the Spalding County Hazard Mitigation Planning Committee to be the most effective and appropriate method to implement local hazard mitigation actions at this time.

# Evaluation

Periodic revisions and updates of the Spalding County Hazard Mitigation Plan may be required to ensure that the goals of this plan are kept current with federal, state, and local regulations. These revisions should also take into account any potential changes in the hazard vulnerability and mitigation priorities of Spalding County.

The Spalding County Hazard Mitigation Plan Update Committee will meet annually to review the Spalding County Hazard Mitigation Plan. During this annual review, mitigation strategies will be reviewed to evaluate the progress that has occurred for each identified mitigation strategy. The Spalding County Hazard Mitigation Plan Update Committee will also meet following any disaster event to review the identified mitigation strategies for that hazard and determine if timelines should be adjusted or additional mitigation strategies should be identified and added to the plan. These steps will ensure that the Spalding County Hazard Mitigation Plan is continuously updated to allow for changes in hazard vulnerabilities and identified mitigation strategies.

The Spalding County Hazard Mitigation Plan Update Committee will complete all evaluations of the Spalding County Hazard Mitigation Plan.

# Peer Review

In order to maintain standards of quality, improve performance, and provide credibility to the Spalding County Hazard Mitigation Plan Update, two representatives of local emergency management agencies, both bordering Spalding County, conducted a peer review of the Plan. The peer review of this Plan constitutes a form of self-regulation, accountability, and new insights offered by qualified professionals in neighboring communities, which face many of the same natural and man-made hazards.
The following email invitation was extended to all surrounding County Emergency Management Directors:

**From:** Glenn Polk
**To:** beckyinbville@hotmail.com; ema@pikecoes.com; mamccarty@upsoncountyga.org; ggoens@buttscounty.org; msingleton@fayettecountyga.gov
**Cc:** Kenny West; Jamie Clark; Eric Mosley; William Wilson Jr.; Kimberly Dutton
**Subject:** Regional EMA Director - Hazard Mitigation Plan - review
**Date:** Friday, July 08, 2016 5:40:34 PM
**Attachments:** Stubbed Attachments.htm

This message's contents have been archived by the Barracuda Message Archiver.
SpaldingCountyPDMDraft2016.pdf (3.8M)

Good afternoon,
Chief West would like to request your assistance for our Hazard Mitigation Plan – update process. We will be hosting the required review of our updated plan on Wednesday July 27 at 10:00am at the Spalding County Fire and EMA Administrative Complex located at 1005 Memorial Drive Griffin 30223. Attached is the plan draft, if you would like to review before the meeting. Thanks in advance for your assistance with this requirement for the plan update. Please let us know if there is anything that we can do for you. Hope you have a great weekend!!

*Glenn*

Glenn Polk, MPA, FO, EMT-I, GaCEM
Deputy Chief - Administration, Spalding County Fire Department
Deputy Director, Spalding County Office of Homeland Security
Office: (770)228-2129
Cell: (770)527-2855
Fax: (770)467-4785
email: gpolk@spaldingcounty.com

# Plan Update

The Federal Disaster Mitigation Act of 2000 requires that the Hazard Mitigation Plan be updated at least once every five years. The Spalding County Emergency Management Agency is the department responsible with ensuring this requirement is met. The Spalding County Hazard Mitigation Plan Update Committee will be involved in this future process and will aid the Spalding County Emergency Management in ensuring that all jurisdictions provide input into the planning process. The public will be invited to participate in the planning process through public hearings to be held whenever major updates to this plan are needed and during annual review meetings. This plan will expire in the fourth quarter of 2020; therefore, the approval and adoption of the next plan update must be completed before that time.

In the first quarter of 2019, Spalding County plans to begin the next Hazard Mitigation Plan Update process. This planning process will include monthly meetings to accomplish the identified goals of the Spalding County Hazard Mitigation Plan Update. This process will be headed up by the Spalding County Emergency Management Agency. The Spalding County Hazard Mitigation Planning Committee will follow a similar process as was undertaken during this planning cycle to complete all FEMA and GEMA requirements for the Hazard Mitigation Plan Update. This process will be completed by the second quarter of 2020 to meet all identified planning deadlines.

# Conclusion

As a result of the hazard mitigation planning process, Spalding County, its municipalities, as well as additional participating organizations have obtained a great deal of information and knowledge regarding Spalding County's disaster history, natural and technological hazards, vulnerabilities, and potential strategies to lessen the impacts of the identified hazards.

One consistent theme identified by the Spalding County Hazard Mitigation Planning Committee was the inability to consistently identify geographic locations that were more vulnerable to most hazards due to the widespread potential effects and random impact areas each hazard could have. This was exceedingly true for most natural hazards. Recognizing this challenge, the Spalding County Hazard Mitigation Plan Update Committee determined it was best to identify many mitigation goals, objectives, and strategies that were both general and specific in nature. These strategies allow the Spalding County Hazard Mitigation Plan Update Committee to adopt strategies that will have the greatest positive effect on the greatest amount of the population.

The Spalding County Hazard Mitigation Planning Committee adopted strategies in all six of the major mitigation categories: Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, and Public Education and Awareness. Property Protection and Emergency Services comprised the greatest number (over 70%) of the mitigation strategies identified by Spalding County.