FLORENCE-LAUDERDALE MULTI-HAZARD MITIGATION PLAN

THE FLORENCE-LAUDERDALE EMERGENCY MANAGEMENT AGENCY

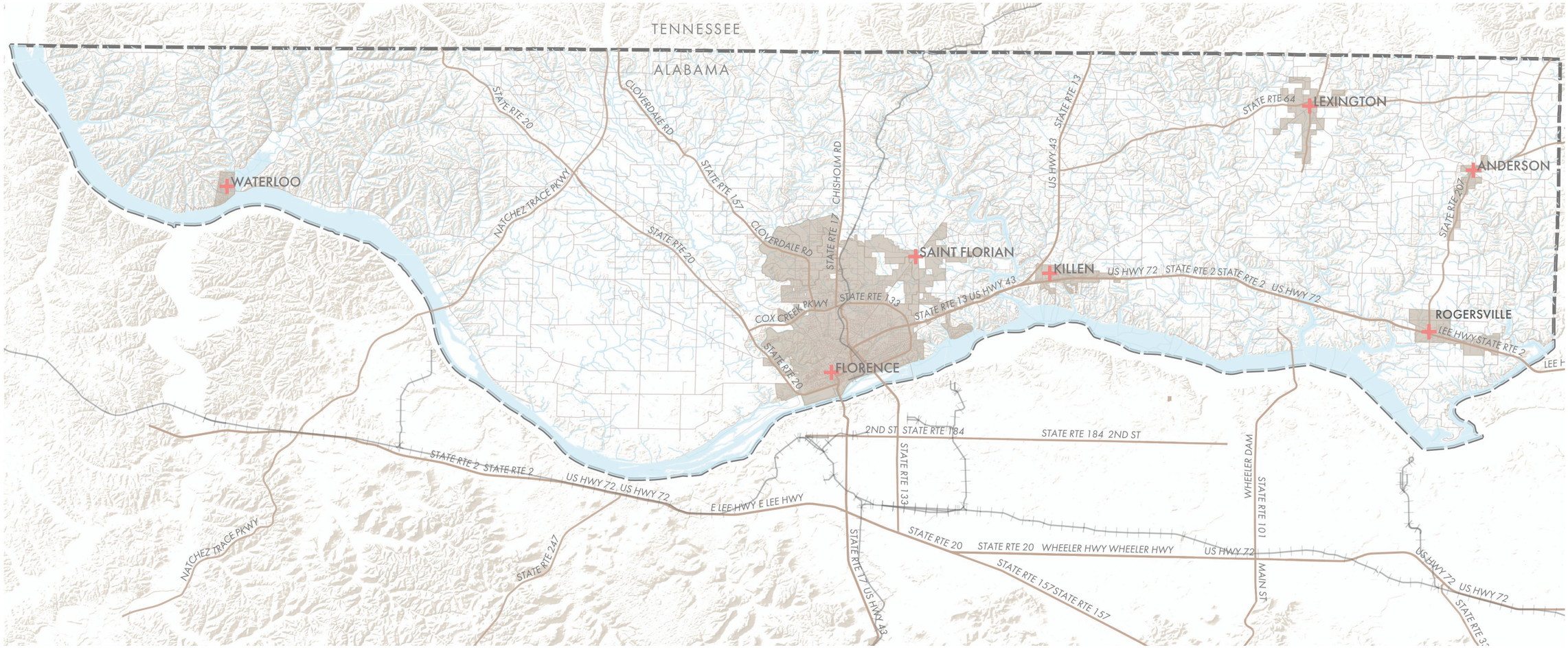
04.12.2023 | Florence-Lauderdale EMA, 110 West College Street, Room B25, Florence, Alabama 35630

FARMER | MORGAN

PLANNING · DESIGN · CONSTRUCTION

Nashville, TN | Pikeville, TN | Huntsville, AL

www.farmermorgan.com



THIS PAGE INTENTIONALLY LEFT BLANK.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS ..... [A]
- Acknowledgements 3

INTRODUCTION & EXECUTIVE SUMMARY ..... [B]
- I.1 - Purpose of this Plan 2
- I.2 - Planning Process 2
- I.3 - Grant Assistance Eligibility 2-3
- I.4 - Planning Study Area 3
- I.5 - Executive Summary 3
- I.6 - Mitigation Plan Update 3-4

DOCUMENT PREREQUISITES ..... [C]
- DP.1 - Jurisdictional Adoption for Grant Eligibility 2
- DP.2 - Multi-Jurisdictional Planning Participation 2-3
- DP.3 - Multi-Jurisdictional Plan Adoption 3

Jurisdictional Context ..... [D]
- JC.1 - Narrative Description of Jurisdictions 2-3
- JC.2 - Climate 3
- JC.3 - Economic Data 3-4
- JC.4 - Transportation 4
- JC.5 - Demographic Data 5
- JC.6 - Communications 5
- JC.7 - Utilities 6

PLANNING PROCESS ..... [E]
- PP.1 - Documentation of Planning Process 2
- PP.2 - Opportunities for Public Comment 2-3
- PP.3 - Opportunities for Stakeholder Involvement 3
- PP.4 - Public & Policy Committee Participation 3
- PP.5 - Precedent & Plan Study Integration 4
- PP.6 - Plan Participation 4
- PP.7 - Implementation Period Public Involvement 4

RISK ASSESSMENT ..... [F]
- RA.1 - Identification of Jurisdictional Hazards 2
- RA.2 - Hazard Descriptions & Profiles 3-41
  - Pandemic 3-4
  - Earthquake 5-7
  - Dam/Levee Failure 8-9
  - Drought 10-11
  - Expansive Soils 12-13
  - Extreme Temperatures 14-16
  - Flood 17-23
  - Hazardous Materials 24-26
  - Hurricanes & Tropical Cyclones 27-28
  - Landslides 29
  - Nuclear Accidents 30
  - Sinkholes & Land Subsidence 31-32
  - Severe Storms 33-34
  - Tornados 35-37
  - Wildfires 38-39
  - Winter Storms 40-41
- RA.3 - Assessing Vulnerability Overview 43
- RA.4 - Identifying Structures 44-53
- RA.5 - Estimating Potential Losses 54-63
- RA.6 - Addressing Repetitive Loss Properties 63
- RA.7 - Analyzing Development Trends 64-68

MITIGATION STRATEGIES ..... [G]
- MS.1 - Local Hazard Mitigation Goals 2
- MS.2 - Identification & Analysis of Mitigation Actions 3-66
  - Earthquake 4-7
  - Dam/Levee Failure 8-12
  - Drought 17-19
  - Extreme Temperatures 20-23
  - Flood 24-30
  - Hazardous Materials 31-34
  - Hurricanes & Tropical Cyclones 35-39
  - Landslide 40-44
  - Sinkhole 45-49
  - Severe Storm 50-54
  - Tornado 55-57
  - Wildfire 58-62
  - Winter Storm 63-66

MITIGATION STRATEGIES (CONTINUED) ..... [G]
- MS.3 - NFIP Implementation Strategy 67
- MS.4 - Mitigation Action Implementation 67-99
  - Lauderdale County 68-72
  - Town of Anderson 73-75
  - City of Florence 76-82
  - Town of Killen 83-87
  - Town of Lexington 88-89
  - Town of Rogersville 90-91
  - Town of St. Florian 92-98
  - Town of Waterloo 99

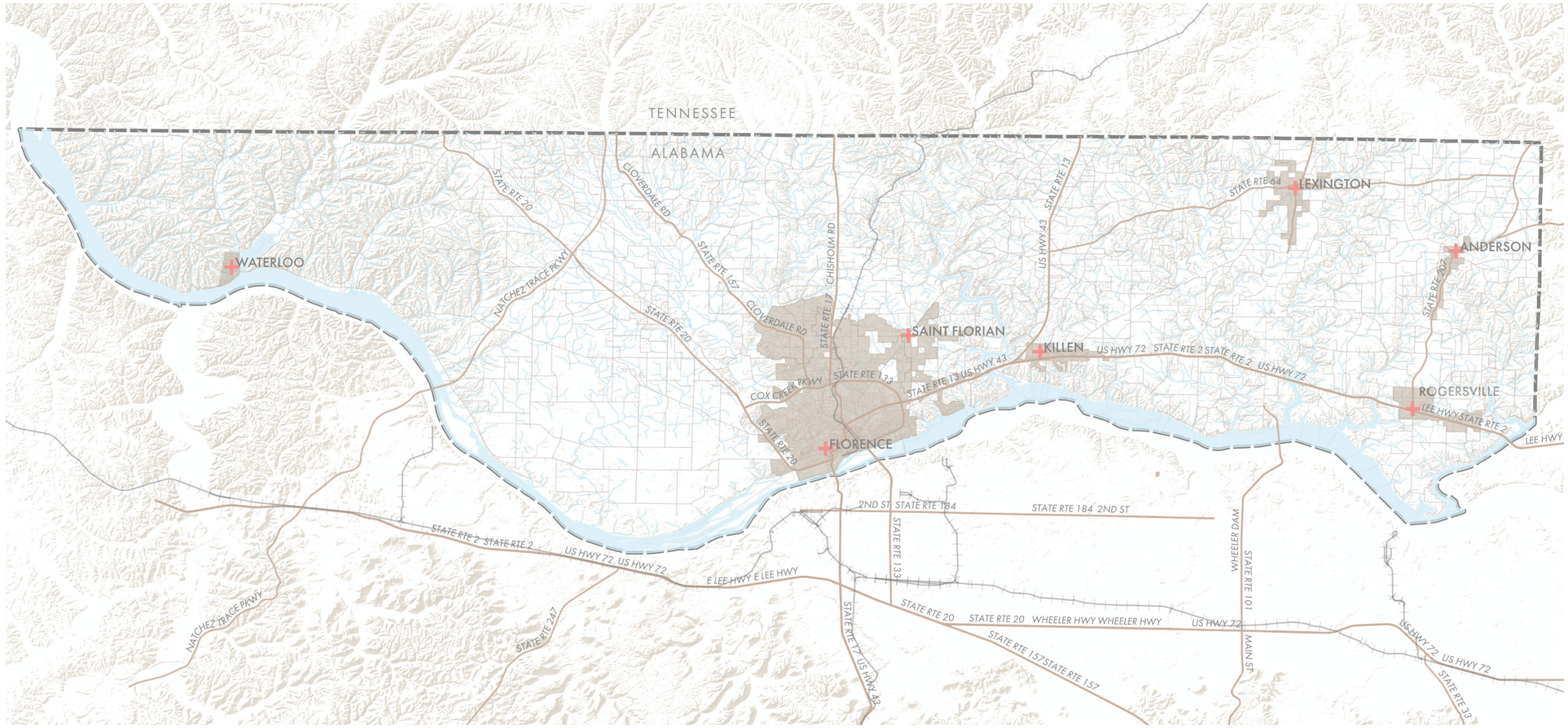
PLAN MAINTENANCE ..... [H]
- PM.1 - Plan Monitoring & Implementation 2
- PM.2 - Active Planning & Mitigation Incorporation 2
- PM.3 - Multi-Jurisdictional Public Involvement 2

APPENDICES ..... [I]
- Policy Committe and Public Meeting 03/09/23 2-3
- Stakeholder Meeting - 6/23/14 - Elgin Fire Dept 4
- Stakeholder Meeting-6/24/14 -Waterloo Senior Center 5
- Stakeholder Meeting - 6/25/14 - Florence Municipal Auditorium 6
- Policy Committee Meetings - 6/18/14 & 7/17/14 - Florence-Lauderdale EMA Board Room 7
- Multi-Hazard Mitigation Stakeholder Meeting Power Point Presentation Slides 8-14
- Hazard Mitigation Planning Surveys 15
- Flood Maps for all Jurisdictions 16-22
- Inter Jurisdictional Correspondence 23-57

THIS PAGE INTENTIONALLY LEFT BLANK.

[A] ACKNOWLEDGEMENTS

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



THIS PAGE INTENTIONALLY LEFT BLANK.

Authority

This document is created under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S. C. 5165. Hazard Mitigation Planning to mitigate natural disasters is a requirement of the Stafford Act in order for local jurisdictions to receive disaster mitigation funds. Natural Hazard Mitigation Planning is the process of reducing or eliminating the loss of life and property damage resulting from natural hazards such as floods, tornadoes, earthquakes and other events. Man Made Hazard Mitigation is the process of reducing or eliminating the loss of life and property damage resulting from man-made hazards.

Funding

Funding for the preparation and development of this plan was provided in part by the Federal Emergency Management Agency (FEMA) through a grant awarded by the Alabama Emergency Management Agency (A-EMA) to the Florence-Lauderdale Emergency Management Agency (F-L EMA) and the Lauderdale County Commission. Funding for the preparation and development of this update was shared by all participants.

Background

Preparation and development of this document began in June 2019 with planning and document content development with the Hazard Mitigation Planning Team. The team is composed of George M. Grabryan Jr., Director Florence-Lauderdale EMA; Melissa Bailey, Director, Florence Planning Department; John Rochester, Florence-Lauderdale EMA; Ryan Wallace Water Plants Superintendent, Ben Smith, Florence Planning Department; Benjamin Farmer, Farmer | Morgan, LLC; Will Hargrove, Farmer | Morgan, LLC; Jo Beth Gleason, Farmer | Morgan, LLC; Jaspuneet Kaur, Farmer | Morgan, LLC;

Policy Committee

- Jimmy D. Glass, Mayor, Town of Anderson
- Andy Betterton, Mayor, City of Florence
- Tim Tubbs, Mayor, Town of Killen
- Sandra K. Burroughs, Mayor, Town of Lexington
- Richard Herston, Mayor, Town of Rogersville
- Matthew Connolly, Mayor, Town of St. Florian
- Miranda Simpson, Mayor, Town of Waterloo
- Danny Pettus, Chairman, Lauderdale County Commission
- George M. Grabryan Jr., EMA 911 Director, Florence-Lauderdale EMA
- Melissa Bailey, Florence City Planner
- Hal Greer, Port Director, Florence Port Authority
- Jerry Hill, School Superintendent, Lauderdale County Schools
- Dr. Jimmy Shaw, School Superintendent, Florence City Schools
- Chief Les Jackson, UNA Police Department
- Dr. Jan Westerman, Chief Medical Officer, North Alabama Medical Center
- Steve Pierce, Chairman, UNA Board of Trustees
- Brad Black, Lauderdale County Commissioner, District 1 (East),
- Roger Garner, Lauderdale County Commissioner, District 1 (East)
- Joe Hackworth, Lauderdale County Commissioner, District 2, (West)
- Fay Parker, Lauderdale County Commissioner, District 2 (West)
- Ryan Wallace, Water Plants Superintendent, Florence Water Department

Contact Information:

George M. Grabryan Jr., Director
Florence - Lauderdale EMA
110 West College Street, Room B 25
Florence, Alabama 35630
ggrabryan@flalema911.org
256-760-6363

John Rochester, Planner
Florence - Lauderdale EMA
110 West College Street, Room B 25
Florence, Alabama 35630
jrochester@flalema911.org
256-760-6363

Heath Bennett, Deputy Director
Florence-Lauderdale EMA
110 W. College Street
City Hall; Room B25
Florence, AL 35630

FARMER | MORGAN
PLANNING · DESIGN · CONSTRUCTION
Nashville, TN | Pikeville, TN | Huntsville, AL
www.farmermorgan.com

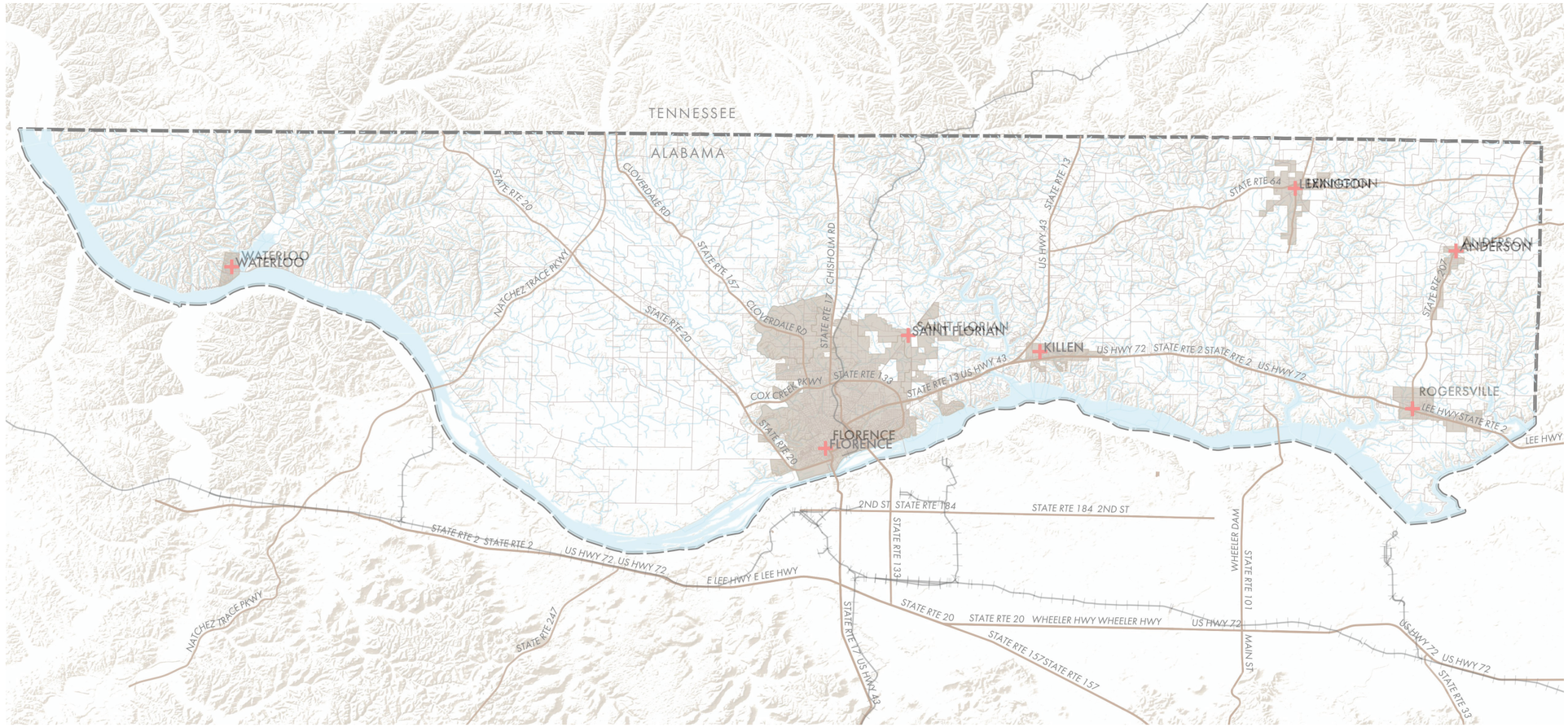
hbennett@flalema911.org
256-760-6363

Benjamin B. Farmer, Principal
Farmer | Morgan
Post Office Box 626
Huntsville, Alabama 37367
bfarmer@farmermorgan.com

THIS PAGE INTENTIONALLY LEFT BLANK.

[B] INTRODUCTION AND EXECUTIVE SUMMARY

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



INTRODUCTION & EXECUTIVE SUMMARY
I.1 PURPOSE OF THIS PLAN
I.2 PLANNING PROCESS
I.3 GRANT ASSISTANCE ELIGIBILITY
I.4 PLANNING STUDY AREA
I.5 EXECUTIVE SUMMARY
I.6 MITIGATION PLAN UPDATE

Each year in this country, natural disasters result in the death of hundreds of people and injure thousands more. Taxpayers pay billions of dollars annually to assist communities, organizations, businesses and homeowners with recovery efforts from disasters. However, this is just a fraction of the true cost of disasters as insurance companies and other private entities contribute additional monies to assist in the recovery cost. Many natural disasters are predictable, and their damage costs could be lessened with adequate planning.

The Federal Emergency Management Agency (FEMA), developed the Hazard Mitigation Planning Process to assist and guide local and state governments in the development of a guidance document to identify, plan and respond to natural hazards in a way that would reduce the loss of lives, injuries and associated recovery cost. Hazard mitigation planning is defined by FEMA as "any sustained action taken to reduce or eliminate long-term risk to human life and property from hazards." The results of a congressional mandated 3-year study found that every $1 spent on hazard mitigation activities saves taxpayers an average of $4 in future disaster recovery. Therefore, the Disaster Mitigation Act 2000 was passed and requires governments to develop and implement hazard mitigation plans to be eligible for emergency funding. In 2004, FEMA updated the mitigation guide to reflect a performance based approach such that local governments would plan action items as mitigation strategies.

I.1 Purpose of this Plan

Lauderdale County and its jurisdictions have prepared this update to the 2020 Florence-Lauderdale Multi-Jurisdiction Hazard Mitigation Plan. The purpose of the plan is to identify potential natural disaster risks in Lauderdale County and its communities and propose mitigation strategies that will reduce their adverse impact. After identifying potential risks, communities establish policies and actions to be implemented over the long term to reduce future risk and losses. The plan serves as the community's strategy to respond to natural disasters and strives to break the repetitive cycle of disaster loss, reconstruction and repeated loss through inadequate planning. The goals of the plan are to:

- Reduce the vulnerability of the community to natural and man-made hazards;
- Improve and maintain coordination between jurisdictions;
- Educate the public and create awareness on potential hazards;
- Improve public hazard communications and safety notifications;
- Risk reduction through partnerships with government, businesses, community and organizations;
- Potential funding agencies and organizations are aware of goals and priorities.

I.2 Planning Process

The planning process for the development of this Multi-Jurisdictional Hazard Mitigation Plan followed FEMA's guidelines and involved public involvement through community meetings and workshops that resulted in the establishment of a Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan Policy Committee. The Committee identified the local hazards and risks through a community profile and determined how vulnerable the community was to these risks. The stakeholders then identified goals and objectives to address the risks and feasible mitigation strategies to lessen their effects. This data was compiled into this plan to be used a strategy to guide future disaster mitigation actions and intended to implement upon adoption and updated when required.

Using FEMA's guidelines, a four-step process was used to develop the Florence - Lauderdale Multi-Jurisdictional Hazard Mitigation Plan:

- **Planning Process**
  - + Organize the Planning Activities
  - + Seek Opinion and Involve Stakeholders
  - + Coordinate between Jurisdictions
- **Risk Assessment**
  - + Identify Hazards
  - + Assess Risks
- **Mitigation Strategy**
  - + Establish Goals
  - + Review Possible Actions
  - + Draft Action Plan
- **Plan Maintenance**
  - + Adopt the Plan
  - + Implement, Evaluate and Revise the Plan

I.3 Grant Assistance Eligibility

Multi-Jurisdictional Hazard Mitigation Plan development and adoption is required by all local EMAs and their jurisdictions to be eligible to apply and receive grant assistance for mitigation and response actions to natural disasters. The following technical assistance and funding will be available for application after plan adoption:

- **Flood Mitigation Assistance Program -** Helps states and communities plan and carry out activities designed to reduce the risk of flood damage to structures insurable under the NFIP.

- **Hazard Mitigation Grant Program (HMGP) -** Prevents future loss of lives and property due to disasters; implements state or local hazard mitigation plans to enable mitigation measures to be implemented during immediate recovery for a disaster; and provides funding for previously identified mitigation measures to benefit the disaster area.

- **Building Resilient Infrastructure and Communities (BRIC)** The Building Resilient Infrastructure and Communities (BRIC) program, and the Biggert-Waters Flood Insurance Reform Act of 2012 merged the Repetitive Flood Claims (RFC) Program and the Severe Repetitive Loss (SRL) Program with the Flood Mitigation Assistance (FMA) Program. FEMA's BRIC grant program give states, local communities, tribes and territories funding to address future risks to natural disasters, including ones involving: wildfires, drought, hurricanes, earthquakes, extreme heat, and flooding. Addressing these risks helps make communities more resilient. In addition to providing funding, the BRIC program offers help to communities in the form of non-financial Direct Technical Assistance that can provide holistic hazard mitigation planning and project support.

- **Hazard Mitigation Grant Program Post Fire:** FEMA's Hazard Mitigation Grant Program (HMGP) has Post Fire assistance available to help communities implement hazard mitigation measures after wildfire disasters.

I.4 Planning Study Area

The planning study area is contained within Lauderdale County located in Northwest Alabama. Lauderdale County has seven incorporated jurisdictions. According to U.S. Census data, the population is estimated at 93,096 for 2018 and the county's land area in 2019 was 668 square miles. The Florence-Lauderdale EMA is the lead mitigation planning agency within the county and assists the entire planning study area in implementing hazard mitigation planning strategies.

I.5 Executive Summary

Document Prerequisites

This section outlines the plan's adoption procedures for grant eligibility and specifies that plan adoption will occur after the draft version has been reviewed by the Alabama Emergency Management Agency (A-EMA) and the Federal Emergency Management Agency (FEMA). This section also identifies all of the participating jurisdictions within the planning area which are Lauderdale County, Town of Anderson, City of Florence, Town of Killen, Town of Lexington, Town of Rogersville, Town of St. Florian, and the Town of Waterloo. This section also identifies non-jurisdictional entities consisting of school systems and universities.

Jurisdictional Context

This section contains a narrative description of the planning area, the county and all of its participating jurisdictions. It describes geographic characteristics, weather and topography. It also describes population characteristics, housing characteristics, transportation networks and economic profiles. According to U.S. Census data, the Lauderdale County median household income is $44,888 in comparison to the State estimate of $49,861. Lauderdale County is served by the Northwest Alabama Regional Airport and contains U.S. Highway 72 and U.S. Highway 43. Caucasians compose 87% of the racial demographic within the county. Total population in the county is estimated to be 92,585 in 2018. 15.2% of the persons above the age of 25 years and over with a bachelors degree.

Planning Process

This section outlines the entire planning process and the involvement from local entities, adjacent communities and EMA jurisdictions. Due to COVID-19 restrictions, opportunities for public involvement were conducted virtually. Online mitigation strategy surveys, hazard identification surveys and worksheets were also used to receive input. The Policy Committee was created to implement the identified mitigation strategies for reducing or preventing natural hazards.

Risk Assessment

This section identifies all potential jurisdictional hazards and includes a description and profile of location within the planning area. The identified hazards are: pandemics, earthquakes, dam and levee failures, droughts, extreme temperatures, floods, hazardous materials, hurricanes and tropical cyclones, landslides, nuclear accidents, sinkholes, severe storms, tornados, wildfires and winter storms. This section also identifies historical occurrences, assesses future probability and estimates future potential loss as a result of each hazard. In addition, this section identifies critical facilities and structures within the planning area. The section also includes a vulnerability assessment per individual hazard and addresses repetitive loss. Vulnerability assessments were done using FEMA's HAZUS-MH MR-4 analysis for building occupancy type and disaster scenarios run through storm models using HAZUS-MH. Finally, local and regional development trends were reviewed for each jurisdiction and within Lauderdale County.

Mitigation Planning

This section identifies mitigation strategies for each identified hazard that matches the goals and objectives for the planning study area. Descriptions for each mitigation strategy are categorized within each disaster type that is mitigated. The five categories of mitigation actions are: Prevention, Property Protection, Public Education and Awareness, Natural Resource Protection and Structural Projects. Mitigation strategies are also identified for each participating jurisdiction.

Plan Maintenance

This section outlines the Policy Committee's proposed actions for plan maintenance in conjunction with the Planning Team and the participating jurisdictions. The planning process for hazard mitigation is a continuous cycle that requires regular monitoring, evaluating and updating the multi-hazard mitigation plan. It is intended for the Policy Committee to meet four times a year to evaluate each jurisdiction's accomplishments in mitigating natural disasters within their jurisdiction. The plan maintenance section defines a general agenda for these meetings and how to proceed with implementation over the next five years.

Appendix

The appendix contains documentation of public meetings and workshops, the results of the online hazard mitigation surveys and the paper risk identification surveys, stakeholder and public feedback forms for identified hazards and critical facility information, sign-in sheets and policy committee presentations.

I.6 Mitigation Plan Update

The Florence-Lauderdale EMA convened the Hazard Mitigation Policy Committee in the summer of 2019 to initiate the 2023 Florence-Lauderdale Multi-Hazard Mitigation Plan update (which was due in 2020). A Hazard Mitigation Policy Committee was formed consisting of representatives from each incorporated jurisdiction as well as community stakeholders. After receiving public feedback, the 2023 Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan was assessed for any needed changes and updates. All of the data was updated however, the format of the plan was not changed. A brief description of each section's modifications are below.

Document Prerequisites

There were no changes to the format or sub-sections of this section. The content was updated to reflect the current planning participation public involvement schedule however, the participating jurisdictions, public sector agencies and academic institutions remained the same.

Jurisdictional Context

There were no changes to the format or sub-sections of this section. Most of the jurisdictional narrative information remained the same as well as the transportation, geographic and topographic information. All of the population demographics and economic profile data was changed and updated. Most of the utility and communications information remained the same.

Planning Process

There were no changes to the format or sub-sections of the section. However, most of the section's contents required updating to describe this plan's planning process, policy committee members, workshop and meeting dates. The public involvement process was expanded to include the addition of an online hazard mitigation strategies survey to increase opportunities for public input and make the process more convenient. The Planning Team did not conduct another visual preference survey with this update and relied on data from the paper hazard identification surveys and the online hazard mitigation action surveys for identification.

Risk Assessment

There were a few modifications to the format and sub-sections of this section to better illustrate the effect each identified hazed has on each jurisdiction, the probability of future occurrences and the magnitude and severity of future occurrences. We have added pandemic as a hazard to this section. All previous occurrences data

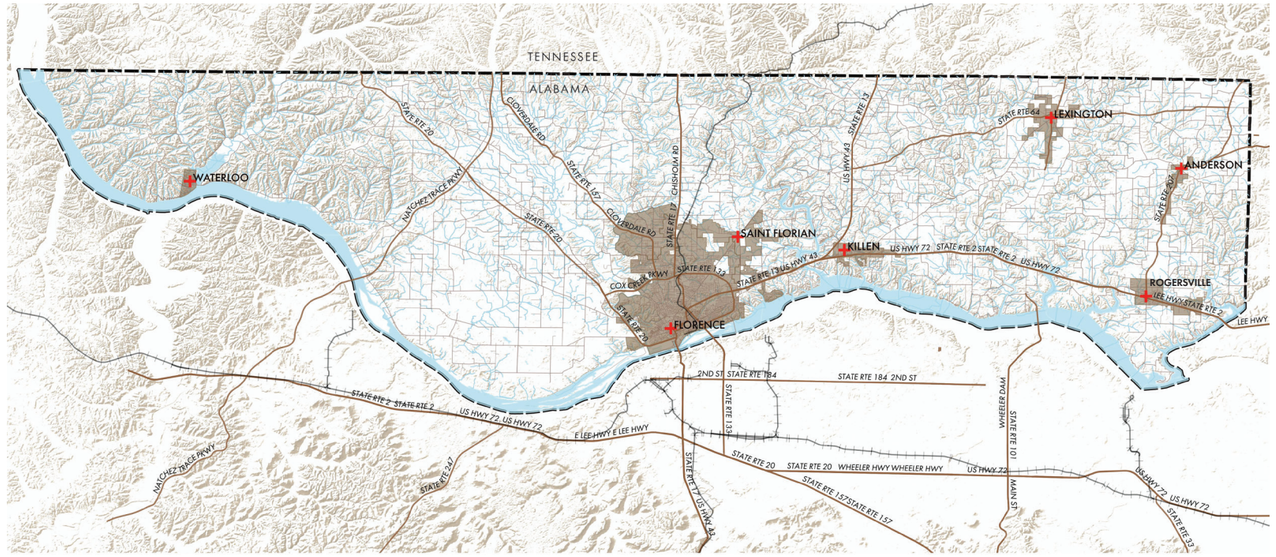
was updated along with future probability assessment data. All of the critical facilities information, repetitive loss data, vulnerability assessment data and future growth and development data was updated to reflect current information. The extent of jurisdictional affect for the identified hazard, flooding, was upgraded to "extensive" to reflect that based on current data, it affects 50-100% of the planning area.

Mitigation Planning

There were a few modifications to the format of this section as a new hazard has been added. Most of the hazard mitigation strategies proposed for each identified hazard remained the same. However, the following mitigation actions were added to some identified risks: Safe Shelter Requirements; Flood Prone Building Proofing and Retrofitting; River/Stream Corridor Restoration and Protection; Seawalls, Retaining Walls; Neighborhood and Community Safe Rooms. Establishing Defensible Space Within the Wildland Urban Interface which was a proposed mitigation action for wildfires and landslides was eliminated in 2015. Mitigation actions were also identified by jurisdictions and based on the online mitigation surveys for each jurisdiction. The results from this survey are contained in the Appendix section of this document. Some of the identified actions from the 2015 plan were removed and some new actions were introduced, per jurisdiction, during this update process. All of the associated information with each identified mitigation action was also updated.

Plan Maintenance

There were no changes to the format or sub-sections of this section and most of the content type remained the same.



Bottom Right:
Multi-Jurisdictional Mitigation Planning Study Area Map
(Map, 2020: Jaspuneet Kaaur)

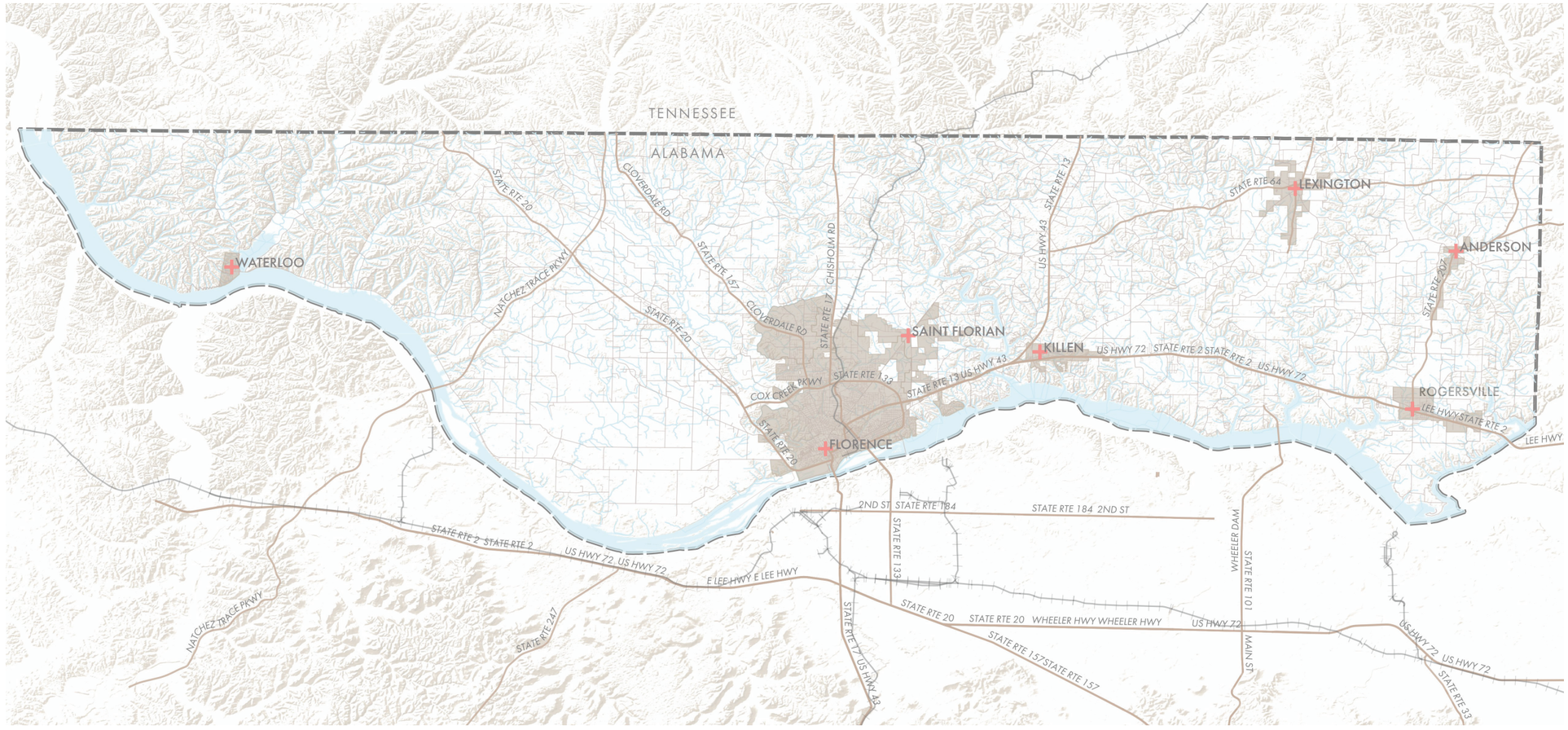
Legend:

- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

ESRI Terrain

[C] DOCUMENT PREREQUISITES

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



44 CFR § 201.6 Local Mitigation Plans: Federal Prerequisites
(a) Plan requirements.

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

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

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

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

DOCUMENT PREREQUISITES
DP.1 JURISDICTIONAL ADOPTION FOR GRANT ELIGIBILITY
DP.2 MULTI-JURISDICTIONAL PLANNING PARTICIPATION
DP.3 MULTI-JURISDICTIONAL PLAN ADOPTION

DP.1 Grant Eligibility

To be eligible for grant assistance through Federal Emergency Management Agency (FEMA) programs, participating jurisdictions must approve and adopt the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan. The proposed plan must first be reviewed and approved by the Alabama Emergency Management Agency (A-EMA), which represents FEMA in the State of Alabama. The A-EMA implements the FEMA hazard mitigation programs and serves as the planning authority within the state. Once the plan has been approved by FEMA/A-EMA, each participating jurisdiction must adopt the approved plan and send the adoption resolutions to FEMA/A-EMA. Formal adoption of the FEMA/A-EMA approved plan must occur within the participating jurisdictions within 12 months of receiving FEMA/A-EMA approval. Without prior approval from FEMA/A-EMA, any jurisdiction or academic institution cannot apply or receive grants under the FEMA hazard mitigation programs. The following types of grant assistance are available to communities through FEMA and A-EMA upon adoption of the multi-jurisdictional plan:

- Hazard Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Building Resilient Infrastructure and Communities (BRIC)
- Hazard Mitigation Grant Program Post Fire

DP.2 Multi-Jurisdictional Planning Participation

The Florence-Lauderdale Emergency Management Agency (F-L EMA) is the coordinating agency for mitigation planning in Lauderdale County. The Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Policy Committee was established by the F-L EMA to guide the planning team and development of the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan. The Policy Committee also directs and implements the adopted 2023 Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan and measures the effectiveness of the proposed mitigation strategies through the life of the Plan. Members of the Policy Committee are familiar with all eight jurisdictions identified within the plan and have worked with these jurisdictions during the implementation of previously adopted hazard mitigation plans. The participating eight jurisdictions are:

- Lauderdale County
(256-760-5750)
- City of Florence
(256-760-6300)
- Town of Killen
(256-757-1246)
- Town of Anderson
(256-247-3617)
- Town of Waterloo
(256-764-3237)
- Town of St. Florian
(256-767-3690)
- Town of Lexington
(256-229-5221)
- Town of Rogersville
(256-247-5446)

Located within the eight jurisdictions are public sector agencies, academic institutions and private sector business interests that participated in the planning and development of this plan. Participating academic institutions include:

- University of North Alabama
President's Office (256-765-4211)
- Lauderdale County School System
(256-760-1300)
- Lauderdale County Virtual School
(256-760-1300)
- Allen Thornton Career Technical Center
- (256-757-2101)
- Brooks Elementary School
(256-757-2171)
- Brooks High School
(256-757-2115)
- Central High School
(256-764-5409)
- Lauderdale County High School
(256-760-4051)
- Lexington High School
(256-229-6636)
- Rogers High School
(256-757-9625)
- Underwood Elementary School
(256-766-5044)
- Waterloo High School
(256-766-3100)
- Wilson School
(256-764-1304)
- City of Florence School System
(256-768-3000)
- Florence City School Virtual School
(256-768-3000)
- Florence High School
(256-768-2200)
- Florence Freshman Center
(256-768-2400)
- Florence Middle School
(256-768-3100)
- Forest Hills Elementary School
(256-768-2500)
- W.C. Handy School
(256-768-3400)
- Kilby Laboratory School
(256-768-3000)
- Harlan Elementary School
(256-768-2700)
- Hibbett Intermediate School
(256-768-2800)
- Weeden Elementary School
(256-786-2900)

The Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation

Policy Committee and planning team established a strategy for public participation and citizen feedback to develop mitigation strategies for each participating jurisdiction. Owing to COVID-19, the planned public workshops could not be held.

DP.3 Multi-Jurisdictional Plan Adoption

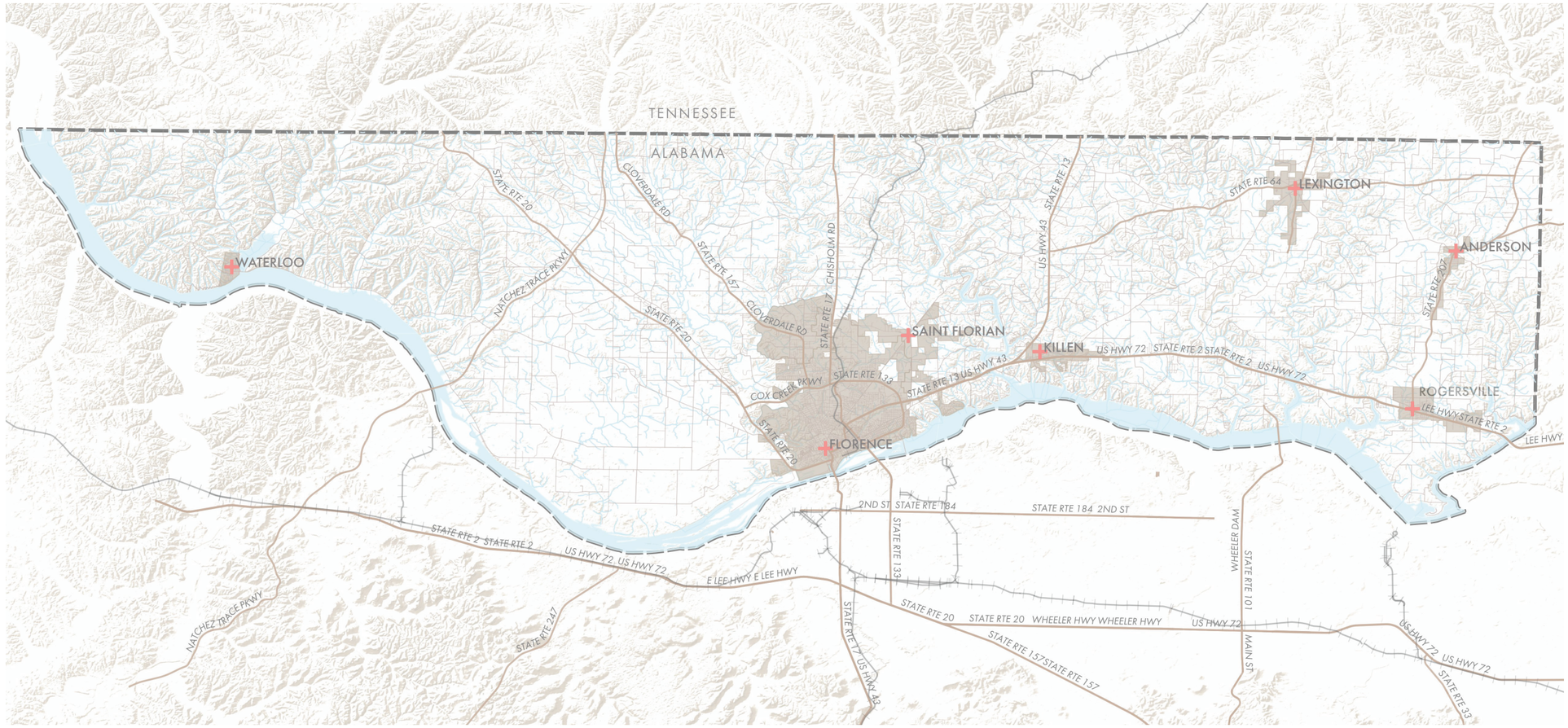
Upon conditional approval from FEMA/A-EMA, the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan must be adopted by all participating jurisdictions identified in this plan by resolution. All state required public notice and public meeting laws and requirements must be complied with prior to adoption. Each participating jurisdiction must adopt the plan within 12 months of receiving conditional approval notification of the plan from FEMA/A-EMA. Resolution for the commission are drafted by the local EMA, after being presented to the County Commission the resolutions are formally adopted. Similar procedures will be followed by all jurisdictions within the County.

After local adoption, a certified final copy of the adopted plan must be submitted to FEMA/A-EMA for final approval. Copies of the adopted resolution are contained in the Appendix of this document and are on file at each participating jurisdiction. In addition, the Lauderdale County School System and the City of Florence School System participated in the development of this plan and are willing to adopt the plan in the next cycle.

THIS PAGE INTENTIONALLY LEFT BLANK.

[D] JURISDICTIONAL CONTEXT

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



4 CFR § 201.6 Local Mitigation Plans:
Plan Content-Planning Process Special Considerations:
The planning team should consider including a current description of the jurisdiction in this section or in the introduction of the plan. The general description can include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability (Local Multi-Hazard Mitigation Planning Guidance, July, 1, 2008, p. 27).

JURISDICTIONAL CONTEXT
JC.1 NARRATIVE DESCRIPTION OF JURISDICTIONS
JC.2 CLIMATE
JC.3 ECONOMIC DATA
JC.4 TRANSPORTATION
JC.5 DEMOGRAPHIC DATA
JC.6 COMMUNICATIONS
JC.7 UTILITIES

This section provides a profile of each jurisdiction within the planning area and discussed in this multi-jurisdiction hazard mitigation plan.

JC.1 Narrative Description of Jurisdictions

Lauderdale County

Lauderdale County was established in 1818 one year before Alabama became a state. It is named after Colonel James Lauderdale, a renowned military officer of the War of 1812 that served under Andrew Jackson. Lauderdale County is located in the northwestern corner of Alabama and is bordered by: Tishomingo Co., Mississippi, to the west; Hardin, Wayne, Lawrence, and Giles Counties in Tennessee to the north; Limestone County, Alabama to the east; and Colbert and Lawrence Counties in Alabama to the south. The City of Florence serves as the county seat with six other incorporated towns in the county.

According to the U.S. Census Bureau, the population of Lauderdale County in 2019 was 92,729 and the 2018 population estimate is 92,585 indicating a growth rate of 1%. The county is part of the Florence - Muscle Shoals Metropolitan Statistical Area known as "The Shoals" which also includes the cities of Muscle Shoals, Sheffield and Tuscumbia located in abutting Colbert County. Lauderdale County has a total area of 721 square miles, of which 668 square miles are land and 53 square miles are water. Key Cave National Wildlife Refuge, Joe Wheeler State Park and a portion of the Natchez Trace Parkway and the Elk River State Park are located within the county.

The Lauderdale County Commission is a five-member body of four (4) elected commissioners from two districts and a chairman. The chairman only votes in the event of a tie vote. The county is divided into two districts with two commissioners being elected from each district. The commission establishes policies and appoints a County Administrator to implement the policies and manage the operation of the county. The Commission adopts the millage rate annually and approves the budget, which determines the expenditures and revenue necessary to operate all Lauderdale County Departments.

Town of Anderson

The Town of Anderson is located in northeastern Lauderdale County and was incorporated in 1973. The town is located on Anderson Creek. Both the town and creek are named after Samuel Anderson who owned a grist mill on the creek in the early 19th century. The town was first settled in 1825 and a post office was constructed in 1860. According to the 2017 U.S. Census, the Town of Anderson had a population of 242. The town's current total area is 1.3 square miles, all of which is land.

The Town of Anderson has a mayor-council form of government with five council members. It is the responsibility of the Town Council to adopt policies governing the current operation and development of the city. The town also utilizes a nine-member Planning Commission to plan and direct new growth and development. Anderson Junior High School is located within their municipal limits and is part of the Lauderdale County School System. Anderson Creek Golf Club is located within the town and was designed by James Bullard and Bob Ingrum in 1992.

City of Florence

The City of Florence, also known as Alabama's Renaissance City, is located in the south-central part of Lauderdale County. The City of Florence is the Lauderdale County seat and is the principal city of the Florence - Muscle Shoals Metropolitan Statistical Area known as "The Shoals'. It is considered the primary economic hub of Northwest Alabama. The City of Florence was incorporated in 1826 and named after Florence, Italy by an Italian surveyor named Fedinand Sannoner.

Florence is located on Wilson Lake and Pickwick Lake, bodies of water on the Tennessee River dammed by Wheeler and Wilson Dams. Wilson Dam was constructed by the Tennessee Valley Authority, an agency created by Franklin Roosevelt's New Deal Legislation. Wilson Dam was the first dam constructed on the Tennessee River. According to the U.S. Census Bureau, Florence has a total land area of 25 square miles, of which 24.9 square miles are land and 0.1 square miles are water. In 2021, according to the U.S. Census, the population of Florence was 39,933.

The City of Florence has a mayor-council form of government. City Council members are elected from six separate districts and the mayor is elected separately. It is the responsibility of the City Council to adopt policies governing the current operation and development of the city. The city utilizes a nine-member Planning Commission to plan and direct new growth and development. The city also created the Florence Planning Department and employs community planners to guide and assist the planning commission and council on future development that is in compliance with adopted city plans, regulations and ordinances.

The City of Florence is the birthplace of W.C. Handy, the "Father of the Blues" and is known for the W.C. Handy Music Festival held every August. The Florence - Muscle Shoals Metropolitan Statistical Area is also known worldwide for its contribution to the music industry with pioneering record producer Sam Phillips and his associated FAME Recording Studio and the renown recording artist, The Swampers, and their associated Muscle Shoals Sound Recording Studio. Many famous artist and musicians have traveled to the area for decades to create and record their music and this trend continues today. The success of the music industry in the Shoals has fostered a growing art community that includes all types of artisans and new businesses.

Town of Killen

The Town of Killen is located in south central Lauderdale County and is part of the Florence - Muscle Shoals Metropolitan Statistical Area. It was founded in 1896. In 1826, Joseph Mason was appointed the first postmaster of the new community called Masonville, which later became Killen. In the 1830s, the construction of the Alabama Canal brought growth to the area and many local families worked on the construction of the canal. The Corp of Engineers employed over 200 men during this time who, in addition to working on the canal, built many of the historic homes and buildings in the community. The canal was later named the Muscle Shoals Canal.

According to the U.S. Census, the town has a total area of 1.9 square miles. The 2021 U.S. Census population of Killen was 1,209. The Town of Killen has a mayor-council form of government with five council members. It is the responsibility of the Town Council to adopt policies governing the current operation and development of the city. The town also utilizes a nine-member Planning Commission to plan and direct new growth and development. Killen is home to Brooks Elementary School and Brooks High School, both of which are part of the Lauderdale County School System.

Town of Lexington

The Town of Lexington is located in the northeastern portion of Lauderdale County and is part of the Florence - Muscle Shoals Metropolitan Statistical Area. In 1848, the first settlers built homes in the Lexington community followed by a general store, school and two churches. The community continued to grow and was incorporated in 1959. According to the 2021 U.S. Census, the population of Lexington was 940. The town has a total area of 3.2 square miles.

The Town of Lexington has a mayor-council form of government with five council members. It is the responsibility of the Town Council to adopt policies governing the current operation and development of the city. The town also utilizes a nine-member Planning Commission to plan and direct new growth and

development. Lexington is home to Lexington School, which is part of the Lauderdale County School System.

Town of Rogersville

The Town of Rogersville is located in south-central Lauderdale County along the Tennessee and Elk Rivers. The town is part of the Florence - Muscle Shoals Metropolitan Statistical Area. The town incorporated in 1858 and was named after Andrew and Patience Rodgers, the town's earliest settlers. The post office was established in 1825 and the community was known as a major trading post in north Alabama along the Tennessee River in the 19th Century.

The Town of Rogersville has a mayor-council form of government with five council members. It is the responsibility of the Town Council to adopt policies governing the current operation and development of the city. The town also utilizes a nine-member Planning Commission to plan and direct new growth and development. In 2021, according to the U.S. Census, the total area of the town is 3.1 square miles and the population was 1,339. Joe Wheeler State Park is located in Rogersville and serves as a tourist destination for outdoor enthusiast.

Town of St. Florian

The Town of St. Florian is located in south-central Lauderdale County, abutting portions of the City of Florence. The town is part of the Florence - Muscle Shoals Metropolitan Statistical Area. It was established in 1872 as a German Catholic settlement with settlers relocating to the community from the Midwest and Northeast. St. Michael's Catholic Parish was constructed in 1872 and has been led by Benedictine monks ever since.

The Town of St. Florian was incorporated in 1970 and has a mayor-council form of government with five council members. It is the responsibility of the Town Council to adopt policies governing the current operation and development of the city. The town also utilizes a nine member Planning Commission to plan and direct new growth and development. In 2021, the town has a total area of 3.0 square miles and the U.S. Census population was 510.

Town of Waterloo

The Town of Waterloo was established in 1819 and is located in the south west portion of Lauderdale County and located on the Tennessee River. The town is part of the Florence - Muscle Shoals Metropolitan Statistical Area. In 2020, according to the U.S Census, the total area of the town is 0.8 square miles and the population is 178.

The town has a mayor-council form of government with five council members. It is the responsibility of the Town Council to adopt policies governing the current operation and development of the city. The town also utilizes a nine-member Planning Commission to plan and direct new growth and development.

Waterloo is known for its Native American history associated with the Indian Removal Act of 1830 and the Trail of Tears. The town was the location of a camp and the final departure, via the Tennessee River, of over a 1,000 Cherokee Indians traveling from Alabama to the Midwest on the Trail of Tears. The Native Americans traveled on foot from Chattanooga, TN, to Waterloo where many died. Since then, the Alabama Trail of Tears Corridor has been established and Waterloo is the last destination on that corridor. The largest organized annual motorcycle ride in America, the annual Trail of Tears Commemorative Motorcycle Ride, is held the 3rd weekend in September and starts in Chattanooga, TN, and ends in Waterloo, AL, with a three day Pow Wow and festival.

JC.2 Climate

The climate of Lauderdale County and its jurisdictions is characterized by hot, humid summers and generally mild to cool winters. The mean annual temperature is 60.7 degrees. Average annual rainfall is 52.6" inches, and the average snowfall is 5 inches.

CLIMATE AVERAGES	
Average Annual Temperature	59° F
Average High Temperature	72.9° F
Average Low Temperature	48.8° F
Highest Recorded Temperature	108° F
Lowest Recorded Temperature	-13° F
Average Annual Precipitation	52.6"
Average # of Days with Precipitation	112
Average Annual Snowfall	5"

Source: *weatherbase.com*

JC.3 Economic Data

Industry Summary

According to 2021 U.S. Census data, the labor force in Lauderdale County totaled 44,501 individuals. 2.0% of this labor force was estimated to be unemployed. The largest industry sector in Lauderdale County was Educational Services, Healthcare and Social Services with 19.2% employment. The second largest industry sector is Manufacturing with 15.7% employment, followed by the Arts, entertainment, and recreation, an accommodation and food services industry sector with 14.6% employment. See Table 3.3 for the complete 2013 industry sector data for Lauderdale County.

INDUSTRY SECTOR	% LABOR FORCE
Agriculture, forestry, fishing, hunting, and mining	0.4%
Construction	6.9%
Manufacturing	15.7%
Wholesale trade	3.7%
Retail trade	13.2%
Transportation and warehousing, and utilities	4.6%
Information	0.3%
Finance and insurance, and real estate and rental and leasing	5.4%
Professional, scientific, and management, and administrative and waste management services	4.8%
Educational services, and health care and social assistance	19.2%
Arts, entertainment, and recreation, and accommodation and food services	14.6%
Other services, except public administration	6.1%
Public administration	5.5%

Source: *2021 U.S. Census American Community Survey 1-Year Estimates*

Bottom Middle:
Climate Averages for Florence-Lauderdale, AL (Table, 2023: Multi-Hazard Mitigation Planning Team)

Center Right:
Major Employer Groups.
(Table 2023: Multi-Hazard Mitigation Planning Team)

Major Transportation Routes:

- U.S. Highway 43
- U.S. Highway 72
- AL State Route 17
- AL State Route 20
- AL State Route 101
- AL State Route 157
- AL State Route 64
- AL State Route 207
- AL State Route 99
- AL State Route 133

Industrial Rail Lines:

- Tennessee Southern Railroad

Air Transportation:

- Northwest Alabama Regional Airport

Waterways:

- Tennessee River
- Wheeler Lake
- Wilson Lake
- Pickwick Lake
- Elk River
- Cypress Creek
- Shoals Creek
- First Creek
- Second Creek
- Anderson Creek
- Colbert Creek
- Panther Creek

Bottom Right:
O'Neal Bridge over the Tennessee River (Photo, 2007: Tyler Ross; wikipedia.org)

Population Economics

The 2013 U.S. Census data lists the median household income for Lauderdale County as $43,891. The State of Alabama's 2013 estimated median household income was $42,849, which is slightly less than what is estimated for Lauderdale County. The poverty level for Lauderdale County in 2013 was 17.2%. 12.4% of families in Lauderdale County in 2013 were estimated by the Census Bureau to have a household income below the poverty level. Source: *2013 U.S. Census American Community Survey 1-Year Estimate, Selected Economic Characteristics, Lauderdale County, AL.*

According to the Alabama Department of Labor, the average weekly wage in 2012 in Lauderdale County was $586 and the average hourly wage was $14.52. In 2013, the average weekly wage was $673. Source: *Alabama Department of Labor, Labor Market Information, Annual and Quarterly Employment and Wages.*

According to U.S. Census data, there were 44,068 housing units in Lauderdale County in 2013. 31.4% of the housing units were built between 1990 and 2013, while 42.2% were constructed between 1950 and 1989, and 12.1% were built before 1950. 67% of the housing units in Lauderdale County in 2013 were owner occupied, while 33% were renter occupied. Of the estimated 2013 housing units sampled, 93% had at least one vehicle for transportation. Median home value in Lauderdale County in 2013 was $118,600 compared to $122,700 for the State of Alabama. Source: *2013 U.S. Census American Community Survey 1-Year Estimate, Selected Housing Characteristics, Lauderdale County, AL.*

JC.4 Transportation

Lauderdale County's transportation network consists of U.S. and State highways, rail lines, waterways and air transportation. U.S. Highway 43 runs north to south in the central portion of the county through Florence and Rogersville. It connects Lauderdale County to Tennessee and extends as far south as Mobile Bay. U.S. 43 serves as one of three U.S. Interstate access routes for the county and provides connection to I-65 in Athens, AL. U.S. 43 connects Lauderdale and Colbert Counties and crosses the Tennessee River in Florence via O'neal Bridge.

U.S. Highway 72 extends east to west from Chattanooga, TN, across the northern portion of Alabama and Mississippi, and ends in Memphis, TN. U.S. 72 extends from Rogersville, through Killen, to Florence and across the Tennessee River via the Singing River Bridge, to connect Lauderdale County with Colbert County and the rest of "The Shoals". The Singing River Bridge serves as the new route for U.S. 72, AL 157 and other shared routes that previously used the Wilson Dam corridor to cross the Tennessee River. The Wilson Dam corridor is still open but is considered a scenic route. The Natchez Trace Parkway runs from Natchez, Mississippi to Nashville, Tennessee. The Natchez Trace Parkway is a nationally recognized scenic and historic corridor first used by Indians and early settlers. It runs north to south and extends over the Midwestern portion of the county connecting to Tennessee in the north and Colbert County to the south.

Alabama State Route 17 runs the length of the state from Mobile to terminate at the Tennessee state line. It is a partner route to HWY 43 in portions of Lauderdale County as it leads through Muscle Shoals. Alabama State Route 101 is a north south route located in the eastern portion of the county. It crosses the Tennessee River near Rogersville via Wheeler Dam and extends from Lawrence County, AL to the Tennessee state line. Alabama State Route 64 is an east west corridor that connects the Town of Lexington and rural communities of northeast portions of the county to central Lauderdale County and the City of Florence. Alabama State Route 20 is an east to west route that connects Lauderdale County with counties and cities to the east and it serves as the second, most southern U.S. Interstate access route for the county, with an I-65 junction in Decatur, AL. It is also a shared route with U.S. 72 through "The Shoals" and extends into the north western corner of the county. Alabama State Route 157 is a north south route located in the central portion of the county that connects Lauderdale County to communities to the south. It is the third U.S. Interstate access route for the county providing connection to I-65 in Cullman, AL. Alabama State Route 207 is a north south corridor through the eastern portion of the county that connects the Town of Anderson and rural communities of the county to "The Shoals". State Route 99 is a north south route located in the eastern portion of the county that connects the Town of Anderson and small communities to Athens, AL, and Limestone County. Alabama State Route 133 is a primary corridor through Lauderdale County, "The Shoals" and the City of Florence and forms an outer loop around Florence through shared routes with AL 157, AL 20, U.S. 72 and U.S. 43.

Tennessee Southern Railroad provides industrial rail service to Northwestern Alabama and Middle Tennessee with over 149 miles of track throughout its region. In Lauderdale County, its southern terminus is located in downtown Florence along the banks of the Tennessee River adjacent to the Florence Harbor. The tracks extend north out of the city paralleling the AL 157 and AL 17 corridors into Tennessee.

Lauderdale County is served by the Northwest Alabama Regional Airport. The airport provides direct commuter service to Atlanta International Airport (ATL), Nashville International Airport (BNA) and Greenville Mid-Delta Airport (GLH) via Boutique Air. Huntsville International Airport (HSV) and Birmingham International Airport (BHM) provide international air travel. Air cargo is received at the inter-modal center at the Huntsville International Airport and at the Memphis International Airport.

Lauderdale County's southern boundary is the Tennessee River which extends from Tennessee and Mississippi across the length of the county and the northern portion of the State of Alabama. The Wilson Dam Navigational Lock, located in Florence, is one of several navigational locks along the Tennessee River. The main lock is a single chamber measuring 110 feet wide and 600 feet long. On average, 10 million tons in commodities are transported through the lock every year, which include wheat, corn, scrap metal and chemicals. About 3,700 vessels pass through this navigable water system. Over 7,000 commercial barges lock through the dam every year and there are more than 1,000 lockages for recreational traffic each year. It is the highest single lift lock east of the Rocky Mountains with a normal lift of between 93 and 100 feet. The flood storage capacity at Wilson is 50,500 acre-feet. Source: *Tennessee Valley Authority Webpage, Wilson Reservoir.*

The county has an abundant amount of navigational waterways due to the county's location on the banks of the Tennessee River. Most of the incorporated towns and cities within the county have water access and public boat launches. Wheeler, Wilson and Pickwick Lakes provide large public water access and outdoor areas for



O'Neal Bridge over the Tennessee River

county residents and attract tourists year round. Some of the smaller tributaries of the Tennessee River in Lauderdale County include: Elk River, Cypress Creek, Shoals Creek, First Creek, Second Creek, Anderson Creek, Colbert Creek and Panther Creek.
3.5 Demographic Data

JC.5 Demographic Data

Population Growth

According to 2010 U.S. Census data, Lauderdale County had an estimated total population of 92,679 in 2010 and an estimated population of 92,709. The 2019 U.S. Census estimates predict that the population is 92,729 with a growth rate under 1%. The table below illustrates the population changes for Lauderdale County and its jurisdictions. Source: *U.S. Census 2019 Population Estimate Program-Annual Estimates of Resident Population.*

POPULATION CHANGE				
Incorporated Place	2019 Census	2018 Estimate	2017 Estimate	2016 Estimate
Lauderdale County	92,729	92,604	92,564	92,425
City of Florence	40,797	40,699	40,079	39,996
Town of Rogersville	1,251	1,233	1,230	1,218
Town of Killen	955	957	971	976
Town of Lexington	709	709	719	719
Town of St. Florian	670	649	619	590
Town of Anderson	267	268	272	272
Town of Waterloo	197	197	199	199
Source: *U.S. Census 2019 Population Estimate Program-Annual Estimates of Resident Population.*				

Population By Age and Race

According to 2018 U.S. Census data, 69.8% of Lauderdale County residents are over the age of 25. 5.3% of the population is under the age of five years and 17.2% is school age. 20% of the population is age 65 and older. The median age of the Lauderdale County population is 41.1. Children and the elderly are more dependent on the general population and are more vulnerable in emergencies requiring public assistance. 24.7% of the population is under the age of 15 and over the age of 75 and, therefore likely dependent on another individual for transportation in the event of an emergency. The table below illustrates the age composition of the population of Lauderdale County. Source: *2018 U.S. Census American Community Survey 1-Year Estimate, ACS Demographic and Housing Characteristics.*

POPULATION BY AGE		
Under 5 years	4,920	5.3%
5 to 9 years	4,433	5.7%
10 to 14 years	5,483	5.9%
15 to 19 years	6,003	6.7%
20 to 24 years	7,145	9.8%
25 to 34 years	11,317	12.2%
35 to 44 years	10,100	10.9%
45 to 54 years	11,718	12.7%
55 to 59 years	7,136	7.7%
60 to 64 years	5,713	6.2%
65 to 74 years	10,360	11.3%
75 to 84 years	5879	6.4%
85 years and over	2,162	2.3%
Median age (years)	41.1	
Source: *2018 U.S. Census American Community Survey 1-Year Estimate, ACS Demographic and Housing Characteristics.*		

According to 2018 U.S. Census data, 87% of the population is Caucasian, 10% is African American, and 2.5% is some other race. Source: *2018 U.S. Census American Community Survey 1-Year Estimate, Race-Total Population.*

Education

The 2018 U.S. Census data reported 88.8% of the population in Lauderdale County has a high school diploma. Almost 24% of the population has a bachelor's degree or higher. The table below illustrates the educational attainment of the population of Lauderdale County. Source: *2013 U.S. Census American Community Survey 1-Year Estimate, Selected Social Characteristics.*

EDUCATIONAL ATTAINMENT OF POPULATION		
Population 25 years and over	**64,403**	
Less than 9th grade	1,910	3.0%
9th to 12th grade, no diploma	5,277	8.2%
High school graduate (includes equivalency)	25,089	39.0%
Some college, no degree	11,358	17.6%
Associate's degree	5,171	8.0%
Bachelor's degree	9,762	15.2%
Graduate or professional degree	5,836	9.1%
Percent high school graduate or higher		88.8%
Percent bachelor's degree or higher		24.2%
Source: *2018 U.S. Census American Community Survey 1-Year Estimate, Selected Social Characteristics*		

Disabled Population

14.0% of the population of Lauderdale County is disabled according to U.S. 2018 Census data. 3.1% of the disabled are under the age of 18, 9.5% are between the ages of 18 to 64, and 39% are 65 years and older. The population cohort of 65 years and over can be more vulnerable to emergencies if they lack the ability to respond accordingly on their own and may need public assistance. (Source: *2018 U.S. Census American Community Survey 1-Year Estimate, Selected Social Characteristics*).

JC.6 Communications

The ability to communicate information to the population within a jurisdiction is extremely important in a time of emergency. Local governments and emergency responders use various forms of communication to achieve public notification including television, radio, internet (social media), the newspaper and telephone. *The Times Daily of Florence*, Alabama is the main newspaper in Lauderdale County. *East Lauderdale News*, and *Courier Journal* are two other newspapers with online as well. The following provides cable or satellite T.V. service in Lauderdale County: Comcast Communications, Direct T.V., Dish Network, Spectrum, Charter Cable and AT&T. Comcast Communications and AT&T provide telephone service to the county. Local radio stations in the area include: WQPR 88.7 FM, WFIX 91.3 FM, WYTK 93.9, WXFL 96.1 FM, WGOL, WLAY FM 100.3, WWFA 102.7 FM, WJHF-LP 106.9 FM,

Television:
- Comcast Communications
- DirecTV
- AT&T
- Dish Network
- Charter Cable

Newspapers:
- Times Daily - Florence, AL
- Huntsville Times - Huntsville, AL
- Birmingham News - Birmingham, AL
- East Courier Journal
- East Lauderdale News, and
- Courier Journal

Telecommunications:
- AT&T
- Comcast Communications

Local Radio Stations:
- WBCF
- WBTG - FM 106.3
- WGOL
- WLAY - FM 100.3
- WSBM
- WYTK - 93.9
- WZZA
- WFIX
- WQLT - FM 107.3

Internet:
- Comcast Communications
- AT&T
- Charter Cable
- DirectTV
- Century Link

Left Center:
Population Change 2016-2019 (Table, 2023: Multi-Hazard Mitigation Planning Team)

Middle Top: 2013 Population by Age. (Table, 2023: Multi-Hazard Mitigation Planning Team)

Right Top:
2018 Educational Attainment of Population (Table, 2023: Multi-Hazard Mitigation Planning Team)

WQLT 107.3, WBTG 106.3FM, WBCF 1240 AM, WSBM 1340 AM, and WZZA 1410 AM.

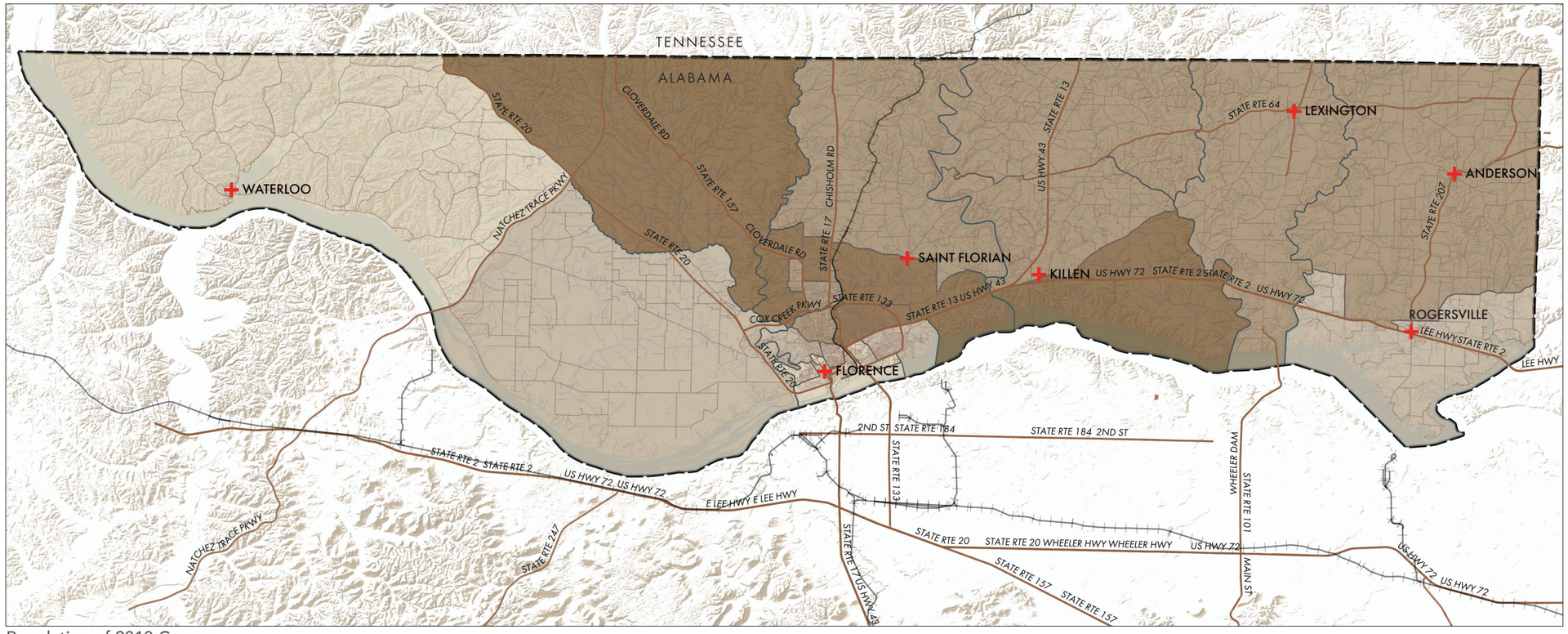
Internet providers in Lauderdale County include Comcast Communications, Spectrum, AT&T, Charter Communications, and Viasat. According to 2018 U.S. Census data, 85.8% of the population in Lauderdale County has a computer at home and 76% of this population has internet subscription. Source: *2018 U.S. Census American Community Survey 1-Year Estimate, Selected Social Characteristics.*

JC.7 Utilities

West Lauderdale Water Authority serves residents of West Lauderdale by purchasing water from the City of Florence Water Department. Surface water from Tennessee River and Cypress Creek and pumped ground water from Killen and Central Star areas are the sources of water. East Lauderdale County Water and Fire Protection Authority supplies water to its residents through Pluris LLC, who pump groundwater from the Center Star Well and Carver Springs Well.

The City of Florence provides water and sewer services within their municipal boundary. The Town of Waterloo provides water from the Central Heights Water District and receives water from the West Lauderdale Water Authority. The Town of Killen and St. Florian receive municipal water from the City of Florence. The Rogersville Water and Sewer Board provides water and sewer to the residents of Rogersville. The Town of Anderson provides water to their residents from the East Lauderdale Water District. The Town of Lexington receives water from the Springfield Water System.

Electrical utilities are provided throughout the entire county by the Florence Utility and the Florence Electricity Department. The Tennessee Valley Authority manages power generation and grid distribution for the region. Natural gas providers in Lauderdale County are the Alabama-Tennessee Natural Gas Company and Florence Utilities. The Tennessee Gas Pipeline is the wholesale provider for these companies. Lauderdale County Solid Waste Department collects all residential garbage for the county excluding City of Florence and Lexington City Limits. The City Of Florence manages garbage collection and recycling within its corporate city limits.



Population of 2010 Census

Legend:

- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS

POPULATION BY CENSUS TRACTS

- 1100 - 2602
- 2602 - 4103
- 4103 - 5605
- 5605 - 7106

- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

ESRI Terrain

Image:
Population of 2019 Census
(Map, 2023: Multi-Hazard Mitigation Planning Team)

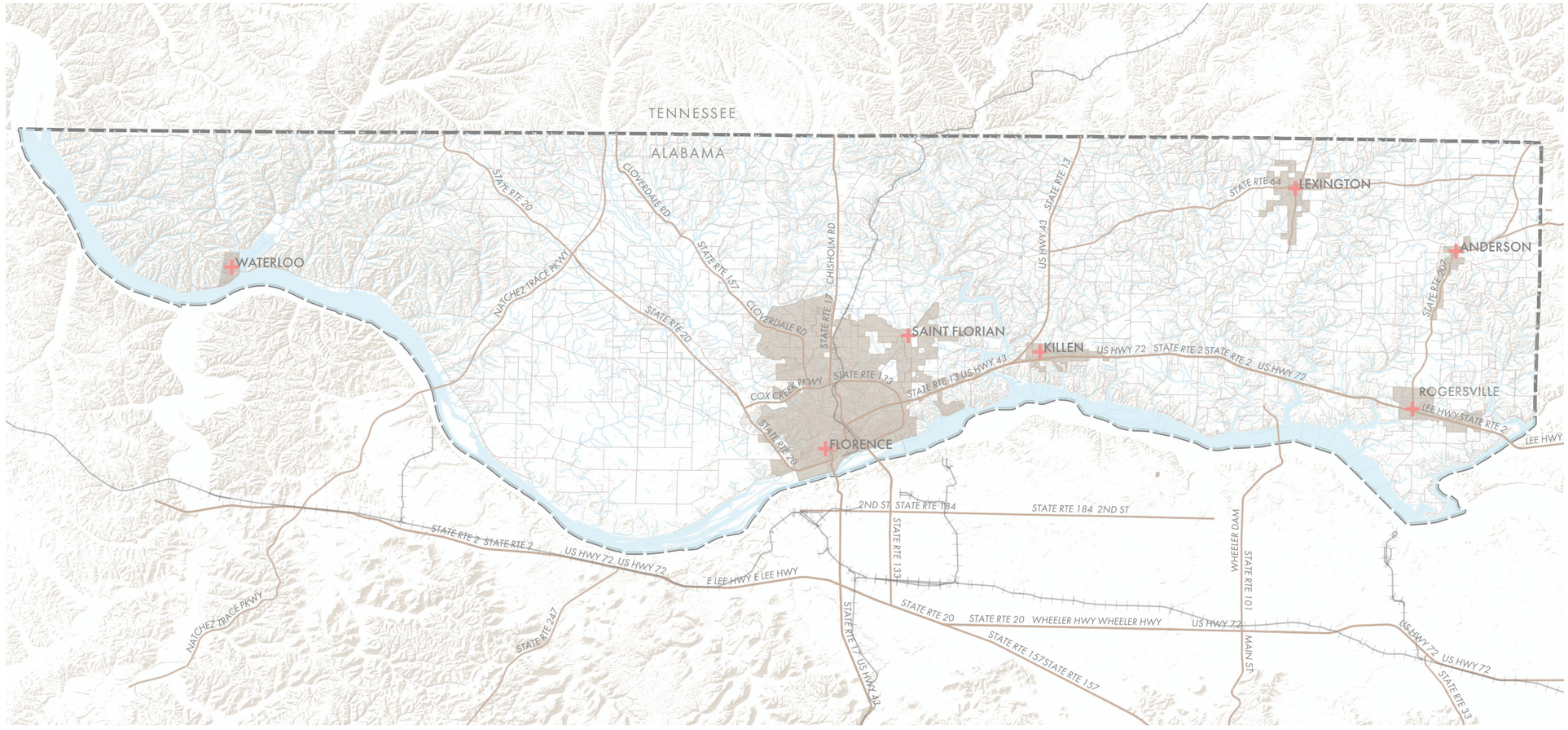


Households per Blockgroup

Image:
Population by Blockgroup
(Map, 2023: Multi-Hazard Mitigation Planning Team)

[E] PLANNING PROCESS

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



Requirements §201.6(b) and §201.6(c)(1): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:
1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

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

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

PLANNING PROCESS
PP.1 DOCUMENTATION OF PLANNING PROCESS
PP.2 OPPORTUNITIES FOR PUBLIC COMMENT
PP.3 OPPORTUNITIES FOR STAKEHOLDER INVOLVEMENT
PP.4 PUBLIC & POLICY COMMITTEE PARTICIPATION
PP.5 PRECEDENT & PLAN STUDY INTEGRATION
PP.6 PLAN PREPARATION
PP.7 IMPLEMENTATION PERIOD PUBLIC INVOLVEMENT

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

This section documents the planning process which details the opportunities for the public to comment on the plan at all stages of its formation, and the involvement of any neighboring communities, interested agencies, and private and non-profit organizations.

PP.1 Documentation of Planning Process

A strategy for public involvement in the planning process was established by the Florence-Lauderdale Hazard Mitigation Policy Committee during the initial meetings held in June 2019. Public involvement continued throughout the development of the plan and directed the goals and objectives identified by Policy Committee members within their jurisdictions. The initial planning process resulted in the identification of four mitigation planning groups: the Florence-Lauderdale Hazard Mitigation Policy Committee, the Florence-Lauderdale Hazard Mitigation Planning Team, the Florence-Lauderdale Stakeholders and the Planning Jurisdiction Citizen Participants.

The Policy Committee is responsible for overseeing the implementation of the hazard mitigation strategies and is composed of elected and appointed officials such as mayors, school superintendents, hospital executives and university policy officials. A list identifying policy committee members is located in this section. The stakeholders are first responders, police and fire department personnel, and individuals representing local, state, regional and federal agencies. Stakeholders also include major employers, non-profit organizations and neighboring counties. The citizen participants are interested citizens from the planning study area in Lauderdale County. Each group contributed to the identification of potential hazards within the study area and proposed mitigation strategies to lessen their adverse effects.

The planning process update officially began in January 2020 with a planned kick-off meeting on March 18, 2020, followed by a policy committee meeting on the same day. However, due to the global spread of the COVID-19 infection, offices had to be closed and public engagement services were disrupted. Florence Area Public Involvement Meeting was scheduled for March 30th, 2020, at the Florence Municipal Auditorium at 6pm. Waterloo Area Public Involvement Meeting was scheduled for March 31st, 2020, at the Waterloo Town Hall at 6pm. Rogersville Area Public Involvement Meeting was scheduled for April 1st, 2020, at the Rogersville Town Hall at 6pm. These scheduled public engagement events were initially postponed, and later cancelled as social distancing measures continue to be practiced till date. Further, Florence-Lauderdale Emergency Management Agency were allocating resources and investing time and energy towards the COVID-19 emergency. For the public comment and engagement section we are using the knowledge gathered from our previous meetings held for the plan update of year 2015. That information has been supplemented by input received virtually from stakeholders and together it has been utilized to identify the hazards and mitigation strategies identified in the plan. On March 09, 2023, a combined policy committee as well as a public participation meeting was held to discuss the hazard mitigation strategies and the plan in great length. The newspaper advertisement and sign -in sheet for which are attached in the appendix.

Lauderdale County reviewed the previous plan, updates of FEMA regulations and new local information and proposal of the new plan preparation and development schedule. For the plan update of 2015, the first Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Policy Committee meeting was held on June 18, 2014, and focused on educating the policy committee participants on existing conditions and potential natural disasters within their study area and informing them on possible mitigation actions for each disaster. Subsequent meetings with policy committee members, the mitigation planning team, stakeholders and citizens allowed for further clarification and identification of mitigation actions for each hazard potential within the study area. Communication with the Planning Team and among planning groups was readily available via, mail, phone, email and local meetings. Policy Committee members also continued to discuss plan development within the jurisdictions they administrate.

Neighboring communities located outside of the study area were contacted for participation in the planning process by either attending meetings as stakeholders or providing valuable information considered in the development of this plan. Participating adjacent jurisdictions include EMA Offices of Colbert, Lawrence, and Limestone Counties of Alabama as well as the Tennessee Counties of Giles, Hardin, Lawrence and Wayne. In addition, the EMA representative of Tishomingo County and representatives of the Tennessee Valley Authority were invited to comment on the development of the plan.

Communities of interest not directly adjoining the study area were also contacted through the Northwest Alabama Council of Local Governments (NACOLG). NACOLG serves as the regional planning agency for five counties in Northwest Alabama. Lauderdale County and the planning study jurisdictions participate in regional planning with the regional council.

A public hearing to receive comments on the plan was held by each jurisdiction within the study area. Each individual participating jurisdiction adopted this document by resolution and the original resolutions are kept on file at the Florence- Lauderdale Emergency Management Office.

PP.2 Opportunities for Public Comment for Plan Update

The Florence-Lauderdale Hazard Mitigation Planning Team held several meetings throughout the development of this plan within the study area to provide opportunity for public participation. In attendance at these meetings were members of the Florence-Lauderdale Hazard Mitigation Policy Committee and community stakeholders who guided interested citizen participants through the identification of hazards and possible mitigation efforts within their communities. Public involvement resources included a Hazard Identification and a Mitigation Strategy Survey (Suvey is attached in the Appendix). Public involvement was also possible through participation in an online survey, the Florence-Lauderdale Hazard Mitigation Public Survey, which was assessable via the internet for seven months during plan development. The public had an additional comment period after the development of the plan during a draft plan review meeting in May 2015. The following community meetings were hosted by the Florence-Lauderdale Hazard Mitigation Planning Team within the study area to facilitate citizen participation and public comments during the development of this plan:

- Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation public hearing for the plan update. 03-09-2023
- Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Planning Team meeting for review of previous plan, updates of FEMA regulations and new local information and proposal of the new plan preparation and development schedule. 6-16-14

- 1st Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Policy Committee meeting and workshop for plan review and development and identification of hazards and critical facilities. 6-18-14
- Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation public hearing for the plan update. 6-23-14
- Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation citizen and stakeholder involvement meeting in Elgin. 6-23-14
- Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation citizen and stakeholder involvement meeting in Waterloo. 6-24-14
- Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation citizen and stakeholder involvement meeting in Florence. 6-25-14
- 2nd Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Policy Committee meeting and workshop for continued plan review and development and identification of hazards and critical facilities. 7-17-14
- Online Mitigation Strategy Public Survey for policy committee, stakeholders and citizen input. 8-26-14 to 3-31-15
- Online email follow-up of mitigation strategies with participating jurisdictions. September 2014 - March 2015
- Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan Draft distribution to policy committee members, stakeholders and citizens for review and comments. April 30, 2015.

https://www.timesdaily.com/news/local/public-can-weigh-in-on-haz-mat-plan/article_ae3ab029-64fc-582e-854d-69764ea9c1bb.html

CENTERPIECE | TOP STORY

Public can weigh in on haz-mat plan

By Bernie Delinski Staff Writer
Mar 9, 2023

FLORENCE — The public can learn information and ask questions Thursday regarding the upcoming Lauderdale County Multi-Hazard Mitigation Plan.

The event is at 4 p.m. in the Florence City Hall, said George Grabryan, director of the Lauderdale County Emergency Management Agency.

Ben Farmer, managing partner at Farmer Morgan, which is consulting on the plan, said the Federal Emergency Management Agency requires counties to form such a plan every five years.

Farmer said the plan goes beyond handling emergencies to include preparing for potential disasters before they happen.

He said, for example, having regulations and other means to handle flooding. In fact, flood-related matters are the most common when it comes to mitigation.

Other disasters and hazards also are in the plan.

Grabryan said Farmer has a good reputation in FEMA circles.

PP.3 Opportunities for Stakeholder Involvement for Plan Update

The Florence-Lauderdale Multi-Hazard Mitigation Planning Team encouraged community stakeholder participation through meeting attendance, phone calls, emails and online survey participation. The Planning Team requested participation from all applicable regional, state and federal agencies and received input and cooperation. The agencies provided a wealth of information in regards to the hazard profiles, vulnerability assessment, potential losses, land use and development trends, existing plans and data mapping. The following is a list of participating agencies that provided input in the development of this plan:

Federal Agencies
- National Weather Service-Huntsville
- United States Geological Survey, Alabama District
- Tennessee Valley Authority
- United States Army Corps of Engineers
- Federal Emergency Management Agency

State Agencies
- Alabama Emergency Management Agency
- Alabama Forestry Commission

Regional Agencies
- Lauderdale County Revenue Commissioner's Office
- Florence-Lauderdale EMA
- Northwest Alabama Council of Local Governments

Local Agencies
- City of Florence Utility District
- West Lauderdale Water Board
- Rogersville Water and Sewer Board
- Lauderdale County E-911
- Business, Academia and Non-Profit Agencies
- University of North Alabama
- Lauderdale County School System
- North Alabama Industrial Development Agency
- Shoals Economic Development Authority
- Shoals Chamber of Commerce
- Florence City School System
- River Bend Center for Mental Health
- North Alabama Medical Center

PP.4 Policy Committee Participation for Plan Update

Policy Committee Composition

The Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Policy Committee is composed of elected leaders, or their appointees, from the county or municipalities within the planning area. In addition, key personnel of agencies and/or entities involved with hazard response within the planning area also serve on the policy committee. The members of the policy committee are listed below:

- Jimmy D. Glass, Mayor, Town of Anderson
- Andy Betterton, Mayor, City of Florence
- Tim Tubbs, Mayor, Town of Killen
- Sandra K. Burroughs, Mayor, Town of Lexington
- Richard Herston, Mayor, Town of Rogersville
- Matthew Connolly, Mayor, Town of St. Florian
- Joan Farneman, Mayor, Town of Waterloo
- Danny Pettus Chairman, Lauderdale County Commission
- George M. Grabryan Jr., EMA Director, Florence-Lauderdale EMA
- Melissa Bailey, Florence City Planner
- Hal Greer, Port Director, Florence Port Authority
- Jerry Hill, School Superintendent, Lauderdale County Schools
- Dr. Jimmy Shaw, School Superintendent, Florence City Schools
- Chief Les Jackson, UNA Police Department
- Dr. Jan Westerman, Chief Medical Officer, North Alabama Medical Center
- Steve Pierce, Chairman, UNA Board of Trustees
- Brad Black, Lauderdale County Commissioner, District 1 (East)
- Roger Garner, Lauderdale County Commissioner, District 1 (East)
- Joe Hackworth, Lauderdale County Commissioner, District 2, (West)
- Fay Parker, Lauderdale County Commissioner, District 2 (West)
- Ryan Wallace, Water Plants Superintendent, Florence Water Department

Hazard Mitigation Plan Update 2023

The 2023 Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan was updated under the direction of the Hazard Mitigation Planning Team which consists of the Florence-Lauderdale EMA, the City of Florence Planning Department and Farmer Morgan, LLC. The 2023 plan format is consistent with the 2015 format in most sections. The format has been slightly changed in some sections to meet new FEMA requirements associated with hazard mitigation plan design. Benjamin Farmer, AICP principal of Farmer Morgan, LLC has served as the planning consultant and will continue to provide planning consulting to the planning team and the Florence-Lauderdale EMA with revisions, amendments and updates to the 2020 Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan.

Left:
Advertisement for 03-09-2023 public meeting printed in the local newspaper, Times Daily.
(Newspaper Article, 2023: www.TimesDaily.com)

PP.5 Precedent and Plan Integration for Plan Update, 2023

Coordination between all participating jurisdictions and applicable local and state agencies is paramount to developing a successful hazard mitigation plan. Therefore, each jurisdiction within the planning area provided existing plans, studies, ordinances, regulations, and city/town codes from their jurisdiction. Other local and state agency documents and plans were also consulted for consistency with future hazard mitigation strategies. Integrating existing planning efforts and mitigation action strategies into this plan establishes a credible and comprehensive plan that ties into and supports other community programs. The Northwest Alabama Council of Local Governments (NACOLG) assists many of the municipalities within the planning area with planning assistance and regulatory document developments and updates. NACOLG maintains a local resource library that serves the region and provides support and coordination between counties and local governments within their jurisdiction. The Council is an invaluable resource to the region and their document library was reviewed for hazard mitigation strategy development and updates. The following documents were reviewed and consulted during the 2023 Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan:

- Alabama Emergency Management Agency Annual Report, 2017
- Florence-Lauderdale County Emergency Operations Plan, 2012
- Shoals Area MPO 2040 Long Range Transportation Plan, 2015
- Shoals Area MPO Bicycle and Pedestrian Plan, 2017
- Shoals Area MPO FY 2020=2023 Transportation Improvement Program
- Alabama 2040 Statewide Transportation Plan
- The Lauderdale County Transportation Plan for Hazardous Incident Response
- The Wildfire Prevention Plan, Alabama Forestry Commission
- The Wildfire Readiness Plan, Alabama Forestry Commission
- Flood Insurance Study of Lauderdale County, Alabama
- The Tennessee Valley Authority Dam Safety Emergency Action Plan
- Tennessee Valley Authority Wheeler Watershed Plan
- Tennessee Valley Authority Dam Safety Emergency Action Plan
- Lauderdale County Subdivision Regulations
- Lauderdale County Solid Waste Management Plan
- The City of Florence Comprehensive Plan, 2007
- City of Florence Zoning Ordinance
- City of Florence Subdivision Regulations
- City of Florence Building Code
- The West Florence Specific Plan
- Town of Killen Master Plan, 2009
- Town of Killen Zoning Ordinance
- Town of Killen Subdivision Regulations
- Town of Killen Building Code
- Town of St. Florian Comprehensive Sketch Plan
- Waterloo Wastewater Facilities Plan
- Rogersville Wastewater Facilities Plan
- Multi-hazard Loss Estimation Methodology-Hurricane Model User Manual for HAZUS 4.2
- Multi-hazard Loss Estimation Methodology-Earthquake Model User Manual for HAZUS 4.2
- Multi-hazard Loss Estimation Methodology-Flood Model User Manual for HAZUS 4.2

PP.6 Plan Preparation

The planning process update officially began with a kick-off meeting in January 2020 with the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Planning Team for the review of the previous plan, updates of FEMA regulations and new local information, and proposal of the new plan preparation and development schedule. Since the 2015 Plan there have been changes in elected officials within the study area as well as initiatives. After updating these changes, the Planning Team organized the Policy Committee, developed the public participation process, and began collecting new data and documents applicable to the update of the plan.

All Planning Team members, Policy Committee members and stakeholders were contacted via email with a link to the draft of the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan and asked to distribute the survey throughout their jurisdiction. The unanticipated coronavirus disease 2019 (COVID-19) pandemic disrupted the management across jurisdictions and affected the Plan's intended outreach and engagement. This Plan uses the survey from last planning cycle but will resume participation and outreach in the next cycle. The intent of the survey was to increase public involvement in the process by making the survey more convenient and accessible to all citizens. The results of the survey and comments received are contained in the Appendix. The email correspondence between different jurisdictions for this plannning cycle has been attached in the Appendix. In September 2020, the Planning Team and Policy Committee reviewed the draft plan with distribution being made available to the public within each planning jurisdiction. Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation public hearing for the plan update was held on 03-09-2023 however, no public input was collected. Afterwards, the planning team assembled the final draft for submission to FEMA/A-EMA.

PP.7 Implementation Period and Public Involvement

The 2023 Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan Policy Committee will oversee the implementation and maintenance of the plan. The Florence-Lauderdale EMA will serve as the plan facilitator throughout the planning area and will host quarterly scheduled meetings to monitor the implementation of mitigation strategies throughout the jurisdictions and evaluate the effectiveness of the strategies for each identified risk. A more detailed description of plan implementation efforts is discussed in the Plan Maintenance section of this document.

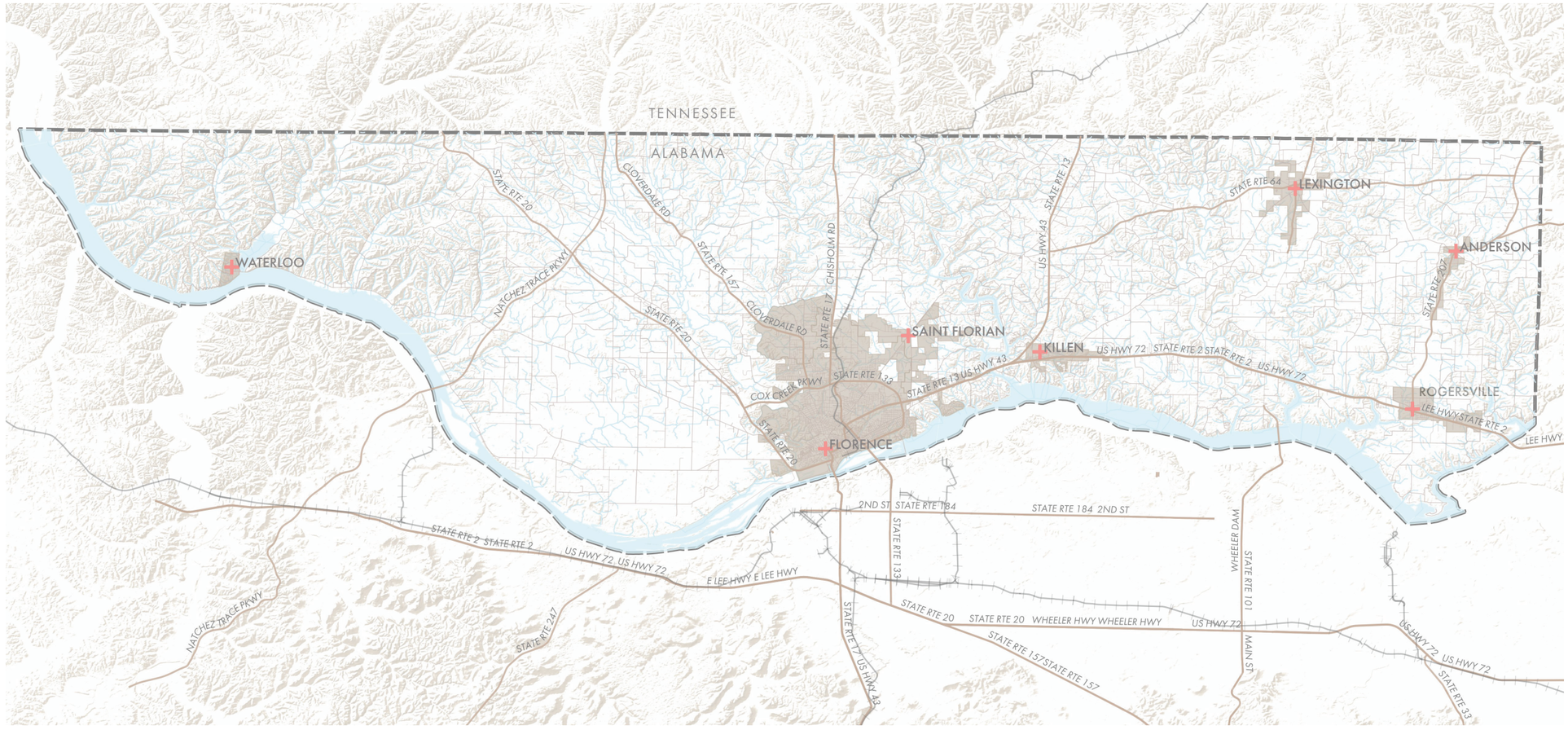
The Florence-Lauderdale EMA will maintain public education, outreach and involvement with the plan and provide comment periods within the five-year planning cycle through online-efforts during the pandemic and in-person events after the pandemic. A hard copy of the plan will be available at appropriate entities post the pandemic and a digital copy of the plan will be available on the web for everyone to access. Florence-Lauderdale EMA will ensure that the plan stays current through continuous monitoring, evaluating and updating the mitigation plan within the 5 year cycle of this plan.



Image:
Florence-Lauderdale Multi-Hazard Mitigation Policy Committee Meeting
(Photo, 2009: Multi-Hazard Mitigation Planning Team)

[F] RISK ASSESSMENT

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



44 CFR Requirement §201.6(c)(2)(i): The risk assessment shall include a] description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

RISK ASSESSMENT
RA.1 IDENTIFICATION OF JURISDICTIONAL HAZARDS
RA.2 HAZARD DESCRIPTIONS & HAZARD PROFILES
RA.3 ASSESSING VULNERABILITY OVERVIEW
RA.4 IDENTIFYING STRUCTURES
RA.5 ESTIMATING POTENTIAL LOSSES
RA.6 ADDRESSING REPETITIVE LOSS PROPERTIES
RA.7 ANALYZING DEVELOPMENT TRENDS

Risk assessment identifies and profiles hazards likely to occur within an area and assesses the impact to lives, property and infrastructure from these hazards. The goal of the risk assessment process is to estimate the potential loss in the planning area, including loss of life, personal injury, property damage and economic loss, from a hazard event. It allows communities to better understand their potential risk to natural hazards and develop a plan for responding to the hazard to minimize loss and damage within the community.

RA.1 Identification of Jurisdictional Hazards

The jurisdictional hazards listed in this plan were identified by the Florence - Lauderdale Multi-Jurisdictional Hazard Mitigation Policy Committee through citizen meetings and workshops, policy committee surveys, the online Mitigation Public Survey, community stakeholders and local knowledge and expertise obtained from the Florence-Lauderdale EMA for plan update in 2015. Other resources used include The State of Alabama 2018 Hazard Mitigation Plan Update guides and resources, the National Weather Service, NOAA Storm Events Database, local newspapers and internet sources. The hazards were quantified by their level of probability and concern within the study area. These surveys from 2015 Plan Update assisted the planning team in understanding the public's perception of the types of hazards that impact the study area and determined what hazards were included in this plan. The hazards identified as impacting the study area are listed in the table below.

LAUDERDALE COUNTY IDENTIFIED HAZARDS

Hazard Type	Associated Hazard	Lauderdale County	Anderson	Florence	Killen	Lexington	Rogersville	St. Florian	Waterloo
Pandemic	Disease	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Earthquake	Landslides	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extreme Temperatures	Wildfires, Drought	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dam/Levee Failure	Floods	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Hazardous Materials		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hurricanes/ Coastal Storms	Tropical Storms Severe Storms High Winds Floods	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Landslides		Yes	No	No	No	No	No	No	No
Nuclear Accidents		Yes	No	No	No	No	Yes	No	No
Sinkholes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Severe Storms Hail High Wind	Thunderstorms Hail High Winds Lightning Tornados Floods	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tornado	Severe Storms High Winds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wildfires		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Winter Storm Freezes	Snow Storms Hail Extreme Cold	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Expansive Soils		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: *Hazard Mitigation Planning Team Surveys*

Right:
Identified Hazards in Lauderdale County (Chart, 2015: Multi-Hazard Mitigation Planning Team)

RA.2 Hazard Descriptions and Profiles

For each of the hazards identified in this plan, the following information is specified: the hazard description, locations impacted by hazard, previous occurrences of the hazard, an estimated probability of future occurrence, magnitude or severity of the hazard and estimated annual damage expectations. The following formulas were used to calculate annual estimates:

Location:

- It is the extent of jurisdictional effect and the percentage of study area susceptible to the hazard and categorized as follows:
- Extensive- 50-100% of planning area affected
- Significant - 10-50% of planning area affected
- Limited - Less than 10% of planning area affected

Probability of Future Occurrence:

- The frequency of past events is used to gauge the likelihood of future occurrences. Therefore, the number of historical events in a time period divided by the number of years from first and last incidents occurred will equal the percent probability of the hazard occurring in any given year.
- Highly Likely - Near 100% chance of occurring in a year
- Likely - 10-100% chance of occurrence in a year or 1 chance in every 10 years
- Occasional - 1-10% chance of occurring in a year or 1 chance in every 100 years
- Unlikely - Less than 1% chance of occurrence in a year or less than 1 chance every 100 years

Magnitude/Severity of Hazard:

- Catastrophic - Multiple, widespread deaths and severe injuries; widespread, severe property destruction and damage; widespread interruption of essential facilities and services for over a week.
- Critical - Isolated deaths and severe injuries; isolated property destruction and damage; isolated interruption of essential facilities and services for over 3 days.
- Limited - Moderate to minor injuries and illness; moderate to minimal property damage; interruption of essential facilities and services for over 24 hours.
- Negligible - Few or no injuries or illness; little or no property damage; brief interruption of essential facilities and services for less than 24 hours.

Annual Damage Expectations Formula:

Total dollar amount of damages for each event divided by the number of damage causing events within the time period will equal the average annual damages of that hazard event per year.

PANDEMIC

Description and Profile

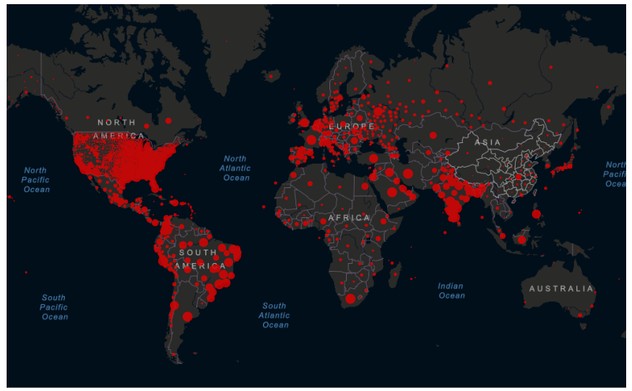
An epidemic is the rapid spread of disease to a large number of people in a given population within a short period of time. When such an epidemic spreads globally or in a very large area that spans over multiple countries such that it affects a large number of people then such an infection spread will be considered a pandemic. World Health Organization (WHO) mentions that when a world wide spread of a new disease occurs and most people do not have immunity then such a spread is called an influenza pandemic. Animal originated influenza viruses have been found to be the most common cause of influenza pandemic. COVID-19, the ongoing pandemic, is an influenza pandemic passed onto humans reportedly by Pangolins. Several strains of influenza with pandemic potential are found in pigs and poultry, and some have repeatedly infected farmers over the last ten years. Wild animals carry as many as 40,000 unknown viruses and experts say that about 10,000 of those could jump to humans. The US Center for Disease Control and Prevention (CDC) estimates that three out of every four new infectious diseases and all pandemics emerge from "zoonotic transfer."

The defining characteristics of a pandemic are Speed and Scale, Severity and Societal and Economic Disruption. As we have seen with the ongoing COVID-19 pandemic, the disease has spread quickly with more than 25 million cases and almost 850,000 deaths reported worldwide within 8 months of the onset of COVID-19 (*John Hopkins University and Medicine*). In the older age group and in people with underlying health conditions, there has been an increased risk of severe disease and illness. The health and social care systems have been strained and containment measures have had broad and deep socio-economic consequences. Experts and researchers have yet to figure out the long term social and economic impact and the associated damages of the ongoing pandemic. However, CDC estimates that from 2009 through 2018, influenza A H1N1 caused at least 100.5 million illnesses, 936,000 hospitalizations and 75,000 deaths in the United States alone.

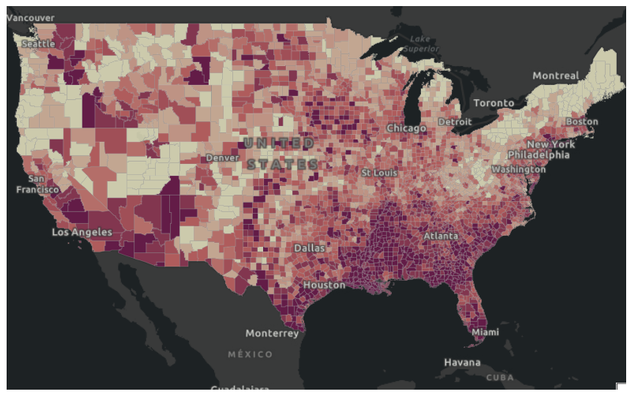
Location

The ongoing pandemic has spread across the globe with the latest confirmed cases of COVID-19 mapped (top right). It is evident from the map that Lauderdale County's location or geography doesn't impact the spread of a pandemic. As we know that pandemics are random events that can originate anywhere and spread rapidly, so when it comes to a pandemic we have to comprehend the word "location" not in terms of geography but as an action that places someone or something. Implying to the need of mapping where an infection occurs, the location of possible cases for contact tracing and location of healthcare facilities for providing supplies.

The disease that has pandemic potential has to be traced and contained in as small an area as possible. For this, the affected area needs access to control and prevention measures to identify populations or areas at high risk and allocate resources to high risk areas such that prevention strategies can be implemented. Location data also helps in assessing the location of the next hot spot so medical equipment and preventative methods can be planned and executed for that area to stop the spread.



Global Map of Cumulative Confirmed Cases of COVID-19

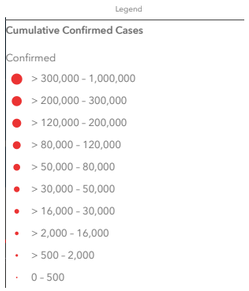


Coterminous United States Cumulative Confirmed Cases of COVID-19

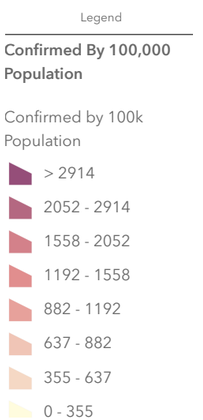
During the Ebola virus outbreak, the strategy that helped contain the virus was called the Rapid Isolation and Treatment of Ebola (RITE). This strategy was developed by CDC and it focused on isolating and treating Ebola patients by establishing facilities in the community or transferring them to Ebola Treatment Units (ETU).

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Top:
2020 Global Map of Cumulative Confirmed Cases of COVID-19
(John Hopkins University)

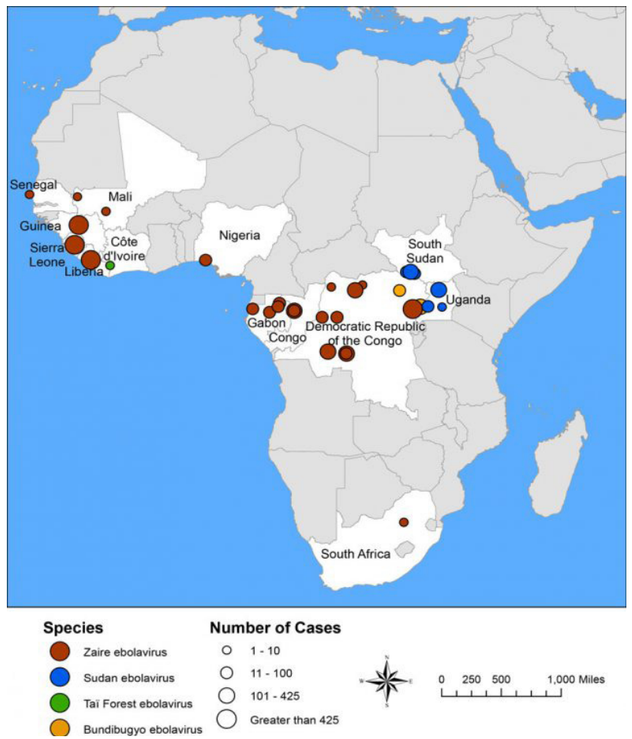


Bottom:
2020 Cumulative Confirmed Cases of COVID-19 in Coterminus United States
(John Hopkins University)



This is similar to the current methods being deployed for COVID-19 patients as well, where special COVID-19 units have been set up by hospitals exclusively for testing and treating COVID-19 patients. The RITE strategy further involved tracing the first person to bring the virus into the community for understanding the importation and transmission patterns. Healthcare workers and the community were trained in safe burial practices, and finally RITE strategy-maintained contact with Ebola patients for 21 days from the death or admission of every patient until the very last patient such that the outbreak was contained in very small areas as seen in map below. In the map below, Zaire Ebola virus (shown in brown) caused the outbreak in 2014.

In terms of socioeconomic impact, the Ebola outbreak (2014) in West Africa affected Guinea, Liberia and Sierra Leone. According to the World Bank, an estimated $2.2 billion was lost in gross domestic product of the three countries. The outbreak impacted investment and substantial losses occurred in private sector growth, agricultural production and cross-border trade of good and services. 881 healthcare workers were infected due to Ebola virus and 513 died



Right:
Identified Hazards in Lauderdale County (Chart, 2015: Multi-Hazard Mitigation Planning Team)

Ebola Virus Outbreaks since 1976 in Africa

to the infection in the three aforementioned countries. Liberia, Sierra Leone and Guinea lost 8%, 7% and 1 % of health care workers respectively. The outbreak hampered healthcare services and consequently caused setbacks in the treatment and control of other diseases including HIV, Tuberculosis and Malaria. The CDC estimates that an additional 10,600 lives were lost due to disruption of healthcare services. Additionally, it is estimated that 17,300 children were orphaned due to the pandemic as death rate was higher in the older population with nearly 80% cases in people above 15 years of age. Since the schools were closed during the pandemic, students lost 1,848 hours of education approximately. Children also experienced a gap in vaccinations schedules as routine immunizations were decreased by 30%. Aside from affecting health, a potential pandemic or an epidemic can disrupt socioeconomic life with long lasting impacts. Researchers suggest that the severity of the impact of a pandemic can increase if global public health security concerns are not addressed.

Previous Occurrences

In the past 300 years there have been nine occurrences of an influenza pandemic, the shortest gap between these pandemics has been three years, while the longest has been 56 years (Center for Infectious Disease Research and Policy). Scientists suggests that there is no clear pattern or prediction for pandemics as they are random events. However, in the past 20 years, there have been six significant threats in the form of SARS (2003), re-emergence of H5N1 (2003), Cholera (2010), Pandemic H1N1 (2009), MERS-CoV (2012) and Ebola (2014). In 2019, COVID-19's first case was reported in China, which by 2020 had engulfed the entire world in disease and illness making it a severe pandemic.

Severe Acute Respiratory Syndrome (SARS) is a viral respiratory disease caused by a SARS- associated coronavirus. It is an airborne virus and can spread through small droplets of saliva just like the common cold and influenza. It can also spread through contaminated surfaces. The first case emerged in China in February 2003 and from there it spread to four other countries along the routes of international air travel. The average fatality rate is around 3%.

H5N1 is a type of influenza virus that causes a highly infectious, severe respiratory disease in birds called avian influenza or bird flu. Human cases of the virus occur occasionally, but humans can get infected when in close contact of an infected live or dead bird. However, since influenza viruses mutate constantly, there is a risk to humans should it become easily transferable to humans as the average fatality rate for humans if infected is 60%.

Pandemic H1N1 is an influenza A virus that causes severe illness in healthy adults and it spreads rapidly. In 2009, the H1N1 virus spread to over 214 countries and it is estimated by the CDC that 151,700 to 575,400 people died from the infection. It is an airborne virus and can also spread through droplets of coughs and sneezes. Contaminated surfaces and hands are other sources of possible contamination. The average fatality rate was 0.02%.

Middle East respiratory syndrome coronavirus (MERS-CoV) was identified in 2012 and was linked to Middle East respiratory syndrome (MERS), a viral respiratory disease. Dromedary camels are linked to MERS-CoV and the possible cause of transmission to humans. However, most cases are attributed to human-to-human infection in healthcare settings. 35% of the reported cases of MERS have been fatal.

The Ebola virus disease is a severe, often fatal illness affecting humans and other primates. It is transmitted to people from wild animals and then spreads in the human population through direct contact with the blood, secretions or other bodily fluids of infected people and with surfaces and materials contaminated with these fluids. The average fatality rate is 50%.

Future Probability and Magnitude/ Severity

Experts suggest that human impacts on the natural world are causing new infectious diseases to emerge more frequently than ever before which implies that the next pandemic would be worse than COVID-19. In 2016, the Ebola virus response team indicated that a serious pandemic from an airborne infectious disease could be possible in near future. Then in 2017, the SARS research team also warned that a mutated version of SARS virus or a similar virus could affect humans again. Researchers have counted around 200 infectious diseases that have broken out more than 12,000 times over the past three decades and a new disease jumps to humans every four months (CDC). Animal species like civet cats (SARS), camels (MERS), horses (Hendra virus), pigs (Nipah) and chimpanzees (HIV) have all been implicated in the spread of new viruses at different times. The current pandemic is believed to have been passed onto humans by pangolins. Although the animals are carriers, it is the human activities and practices that have almost always caused the transmission.

The human impact on the natural systems has increased contact between humans and animals. These contacts could be as simple as consuming animals to as complex as pathogens in the wild being driven out due to habitat loss. Deforestation, disturbed ecosystems for expansion of agricultural land, intensification of livestock farming and increased hunting and trading of wildlife have increased human contact with animals. Based on this determination, the future probability of a pandemic is higher and can be categorized as likely. The magnitude/severity of the event would depend on the containment measures and preparedness of the communities in which it originates.

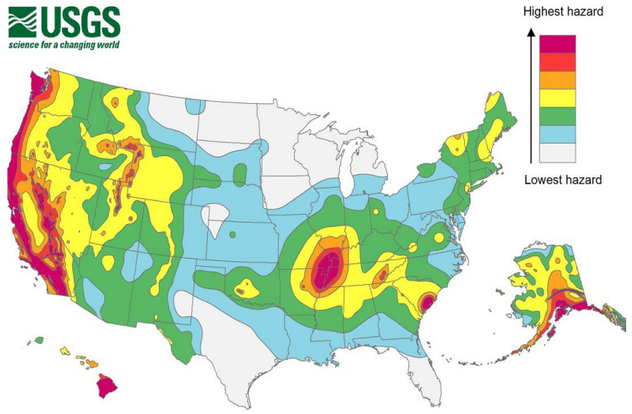
EARTHQUAKE

Description and Profile

An earthquake is the sudden and often violent shaking of the ground as a result of movements in the earth's crust, particularly along fault lines. They can affect thousands of square miles and cause billions of dollars in damage. Earthquakes are common along the west coast but can also be fairly common in the eastern United States and do occur in North Alabama. The North Alabama region is susceptible to earthquakes due to its proximity to two seismic zones: the Southern Appalachian Seismic Zone (SASZ) and the New Madrid Seismic Zone (NMSZ). Several methods have been developed to quantify the strength of an earthquake. The most common method used is the Richter Magnitude Scale. The Richter Magnitude Scale measures earthquake strength or the amount of energy released. One Richter value is calculated for each earthquake and is measured at the event's epicenter and is expressed as a whole number and decimals. The lower the number, the weaker the earthquake and amount of energy released.

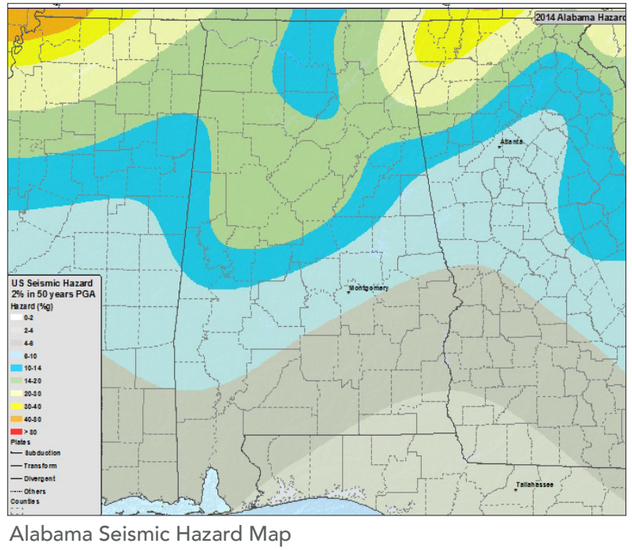
Location

The 2018 U.S. Geological Survey National Seismic Peak Acceleration Map below displays earthquake ground motions for various probability levels across the United States. These probability levels are applied to seismic provisions of building codes, insurance rate structures, risk assessments and other public policy regulations. The map identifies Lauderdale County as being located in an area within 0.08%g to 0.16%g of hazard probability which necessitates a profile and mitigation plan for this natural hazard. There are two earthquake seismic zones located in close proximity to Lauderdale County with the ability to produce a hazardous earthquake event. The Southern Appalachian Seismic Zone (SASZ) is located to the northeast of the study area and has a low level of activity. The New Madrid Seismic Zone (NMSZ) is located to the northwest of the study area and is moderately active. Both seismic zones have the capability of affecting the entire planning area, therefore the percentage of the study area susceptible to this hazard is categorized as extensive.



2018 United States National Seismic Peak Acceleration Map

The U.S. Geological Survey shaking-hazard map for Alabama, below, is based on the rate at which earthquakes occur and the distance shaking extends from quake source. Colors show the levels of horizontal shaking that have a 1-in-10 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of g (g is the gravitational acceleration of a falling object). The geographic extent and probability of earthquakes occurring in Lauderdale County was assessed as a threat by the policy committee for the entire planning jurisdiction. This threat is based on an 14% to 20%g.



Alabama Seismic Hazard Map

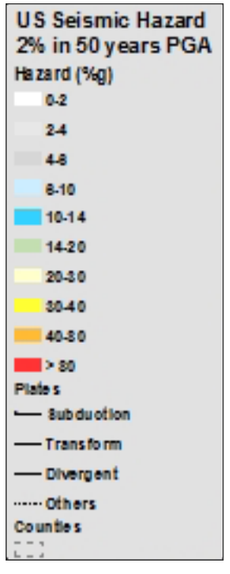
RICHTER MAGNITUDE SCALE		
-1 0 1 2	Negligible	Usually not felt by people but recorded by seismograph; no damage.
3	Minor	Felt by some; hanging objects may sway; dishes may rattle; rarely cause damage
4		Felt by most in the affected area; indoor items shake, sway and rattle; possible minor damage
5	Moderate	Felt by most and some may seek shelter; some may have trouble standing; minor to moderate damage possible at epicenter a few miles out; walls and door facings may crack; furniture may fall over; damage to poorly constructed buildings; little to no injuries/deaths
6	Major	Difficult to stand; furniture falls over, walls crack; windows break; doors jam closed; moderate damage to buildings at epicenter and beyond; can be destructive up to 100 miles away in populated areas; minor to moderate injuries/deaths
7	Severe	Impossible to move; furniture thrown about; walls and roofs collapse; utilities are damaged and interrupted; roads and bridges damaged; ground distorts; moderate to major damage to most buildings with damage being more severe closer to the epicenter and extending out for miles; moderate to significant injuries / deaths
8+	Catastrophic	Widespread death and severe injuries; major destruction for miles; structures destroyed; infrastructures and utilities destroyed; roads and bridges destroyed; ground severely distorted; severe destruction to entire communities

Source: *USGS Earthquake Hazards Program*

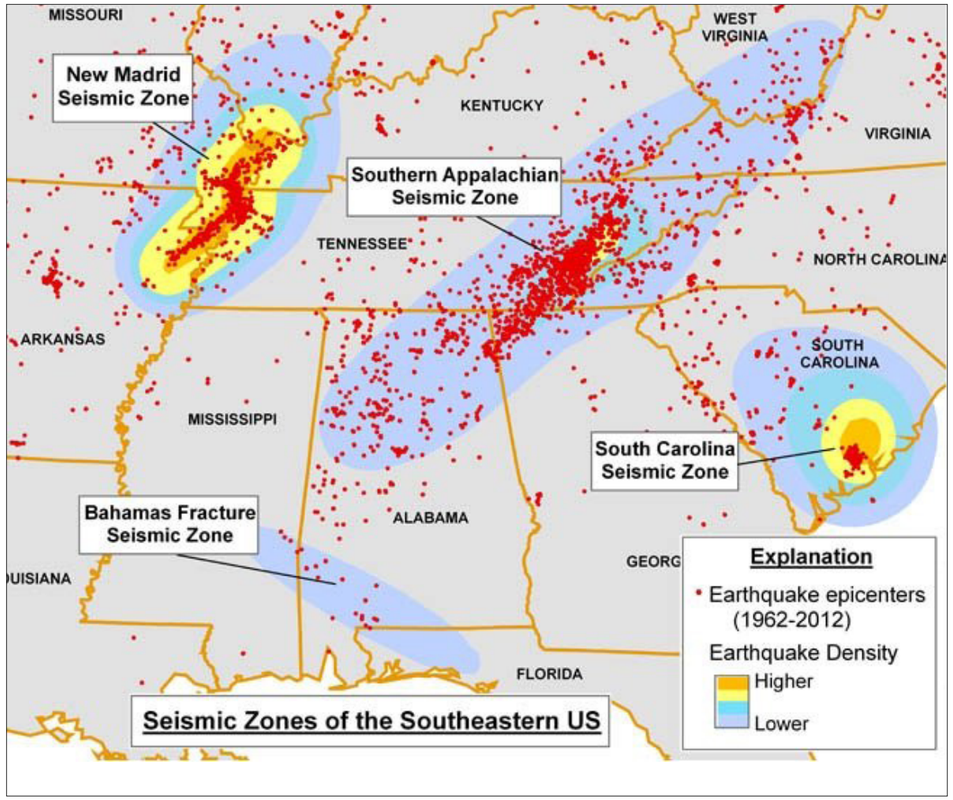
Top:
2018 United States National Seismic Peak Acceleration Map
(Map, 2018: U.S. Geological Survey)

Bottom:
2018 Alabama Seismic Hazard Map
(Map, 2018: U.S. Geological Survey)

LEGEND:



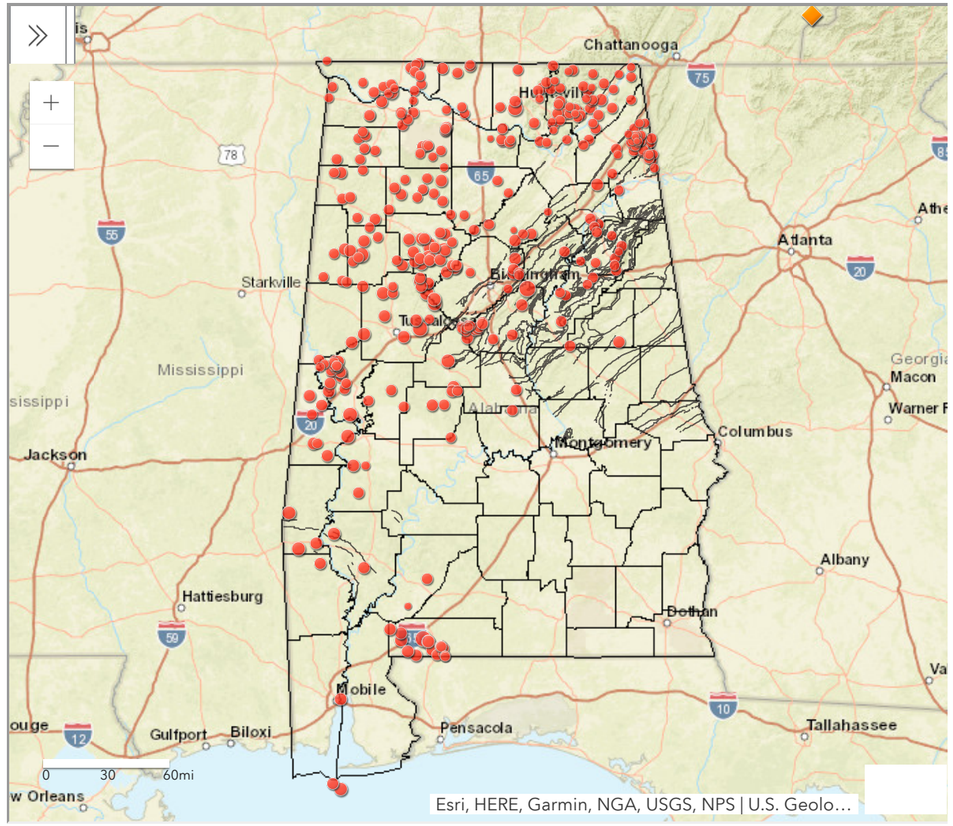
The following image illustrates seismic zones in the Southeastern U.S. and identifies earthquake epicenters occurring throughout the South. The Southern Appalachian Seismic Zone and the New Madrid Seismic Zone are clearly defined, and a pattern of earthquake activity is visible in the areas that surround these zones. Activity lessens the further away you move from the seismic zone's center. According to this resource, Lauderdale County has experienced considerable seismic activity between 1962 and 2012.



Seismic Zones of the South Eastern United States
Source: *U.S. Geological Survey*

Previous Occurrences

According to data from USGS in the chart below, there have been 14 earthquake events of a magnitude of one or greater with the epicenter occurring within the planning jurisdiction since 1983. Other low magnitude earthquakes have been reported to have occurred in North Alabama that have been felt in Lauderdale County by sources other than the U.S. Geological Survey or the Geological Survey of Alabama. Local news reports and newspapers have all reported increased seismic activity felt in the planning area since the 2015 plan update. It is possible some of the felt seismic activity may be the result of land disturbing activities such as mining and are not true earthquakes. Therefore, to be consistent with the data sources, these alleged earthquake events are not included in this analysis and only U.S Geological Survey and Geological Survey of Alabama data will be used. None of the 14 earthquake events have exceeded 2.7 in magnitude. According to the USGS, the Richter earthquake magnitude scale defines earthquakes of 2.9 magnitude or less as generally not felt by people and having no damage. Damage and breakage occur with earthquakes of a 4.0 magnitude or higher.



Historical Earthquakes of Alabama Map 1886-2020
Source: *U.S. Geological Survey*

Left:
Seismic Zones of the South Eastern United States
(Map, 2018: U.S. Geological Survey)

Right:
Historical Earthquakes of Alabama Map 1886-2020
(Map, 2020: U.S. Geological Survey)

EARTHQUAKES IN LAUDERDALE COUNTY 1886-2020			
Date	Time	Community	Magnitude
1886	N/A	N/A	N/A
9-28-83	N/A	Florence	2.7
1-25-86	5:14	Greenhill (Killen)	1.9
6-29-87	N/A	Florence	2.0
7-8-87	1:45	Lauderdale County	2.1
4-1-88	14:15	Florence	1.9
3-26-90	17:01	Florence	2.0
12-3-90	4.12	Florence	1.8
10-19-93	7:43	Florence	1.1
5-19-97	2:32	Florence	1.7
4-20-02	7:28	Cedar Grove (Rogersville)	1.8
3-27-05	22:08	Waterloo	1.3
12-3-05	22:29	Lexington	2.4
02-05-2013	04:59	Rogersville	1.9
01-13-2017	22:24	Florence	2.3

Source:. *Geological Survey of Alabama*





<u>Future Probability and Magnitude/ Severity</u>

Although the Florence-Lauderdale planning jurisdiction has not experienced an earthquake event higher than 2.7 in the past 30 years, USGS has identified the area as having a probability of a magnitude of six or greater event in the next 50 years and therefore mitigation strategies to this risk must be developed. Based on this determination, the future probability of an earthquake event higher than 2.7 is categorized as occasional. The magnitude/severity of the event would depend on the strength of the earthquake and could range between negligible to critical.

Earthquake Future Probability Assessment Based on Historic Data from 1983-2020			
Extent of Jurisdictional Affect: Extensive	Previous Occurrences: 14	Percent Probability of Future Annual Occurrences: Occasional-Likely	Magnitude/ Severity of Event:
Lauderdale County	14	38%	<3.0 Magnitude= Negligible - Critical
Town of Anderson	0	0	<3.0 Magnitude= Negligible - Critical
City of Florence	8	22%	<3.0 Magnitude= Negligible - Critical
Town of Killen	1	2.7%	<3.0 Magnitude= Negligible - Critical
Town of Lexington	2	5.5%	<3.0 Magnitude= Negligible - Critical
Town of Rogersville	1	2.7%	<3.0 Magnitude= Negligible
Town of St. Florian	0	0	<3.0 Magnitude= Negligible
Town of Waterloo	1	2.7%	<3.0 Magnitude= Negligible
Source: *Hazard Mitigation Planning Team*			

Top Left:
Earthquakes in Lauderdale County 1886-2010
(Chart, 2015: Geological Survey of Alabama, Planning Team)

Bottom Left:
Earthquake Photos
(Photos, 2009, 2005: wikipedia.org)

Top Right:
Earthquake Probability Assessment Based on Historic Data from 1982-2023
(Chart, 2023: Multi-Hazard Mitigation Planning Team)

DAM/LEVEE FAILURE

Description and Profile

A dam or levee failure is defined as an uncontrolled release of the water reservoir. The causes of dam or levee failures can be due to dam overtopping, excessive seepage and structural failure of a component. Dam or levee failure can result from excessive rainfall, flooding, earthquakes and landslides. Dam of levee failure can be catastrophic to surrounding communities and can result in significant loss of life. Any natural event or situation that has the potential to compromise the integrity of a dam or levee is considered a dam safety emergency.

Location

According to the U.S. Department of Energy, there were over 80,000 dams in the United States in 2011. In Alabama, there are an estimated 2,000 dams of sufficient size that can pose a significant threat to life and property. Approximately 32 of these dams are federally regulated with no state legislation in place to regulate dam inspection. Lauderdale County has six dams or levees of significant size in the county that include Wilson Dam , Wheeler Dam and four smaller dams located throughout the county. Wilson and Wheeler Dams are hydroelectric power generating facilities and are operated by the Tennessee Valley Authority (TVA). Wilson Dam is located on the Tennessee River in the south-central portion of the county. Wheeler Dam is located in the southeastern corner of the county on the Tennessee River. All six dams located within Lauderdale County have the capability of affecting the entire planning area, however the Towns of Lexington and Anderson are located northeast of the dam systems and would likely not be directly impacted. The percentage of the study area susceptible to this hazard is categorized as extensive because 10-50% of the planning area would be affected by this hazard.

Previous Occurrences

There have been no occurrences of dam failures within the planning jurisdiction.

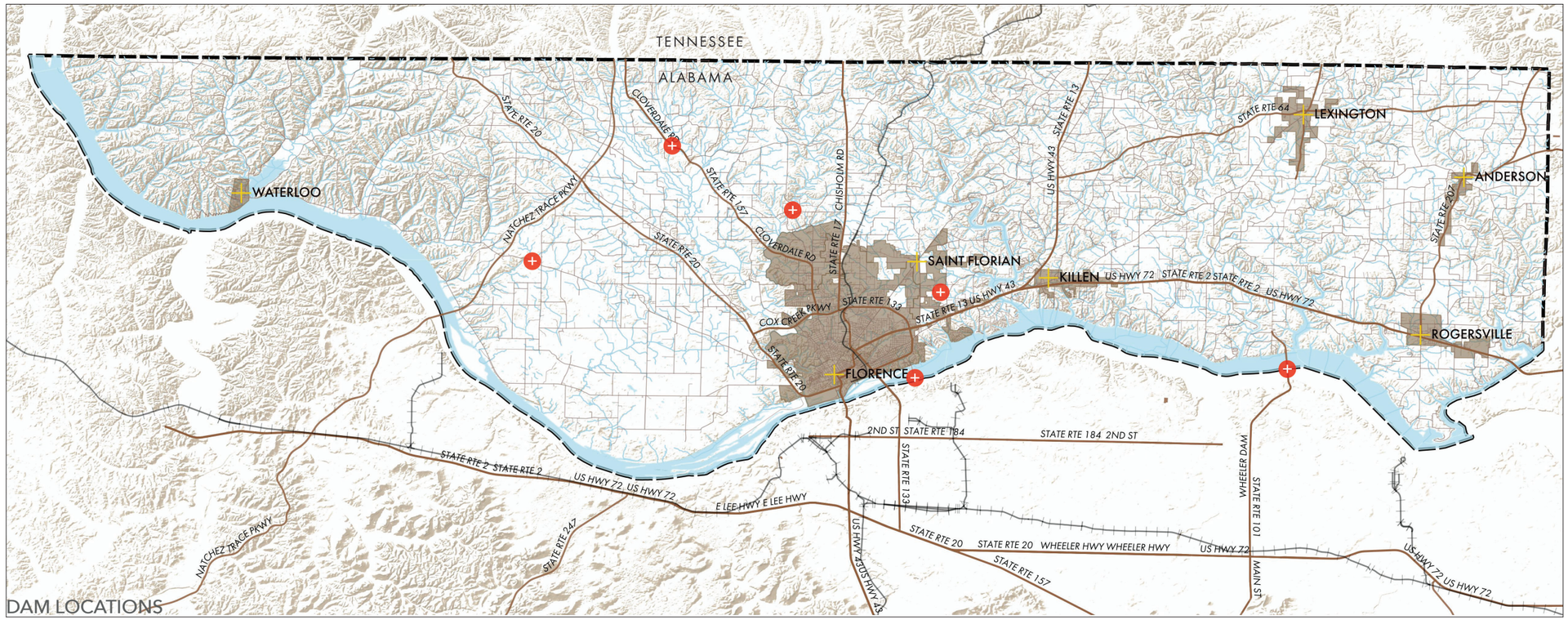
DAM FAILURE PROBABILITY ASSESSMENT & EXTENT OF DISASTER 1940-2020			
Extent of Jurisdictional Affect: Extensive	Previous Occurrences: 0	Percent Probability of Future Annual Occurrence: Unlikely	Magnitude/ Severity of Event: Critical -Catastrophic
Lauderdale County	0	0	0
City of Florence	0	0	0
Town of Anderson	0	0	0
Town of Killen	0	0	0
Town of Lexington	0	0	0
Town of Rogersville	0	0	0
Town of St. Florian	0	0	0
Town of Waterloo	0	0	0
Source: Hazard Mitigation Planning Team			

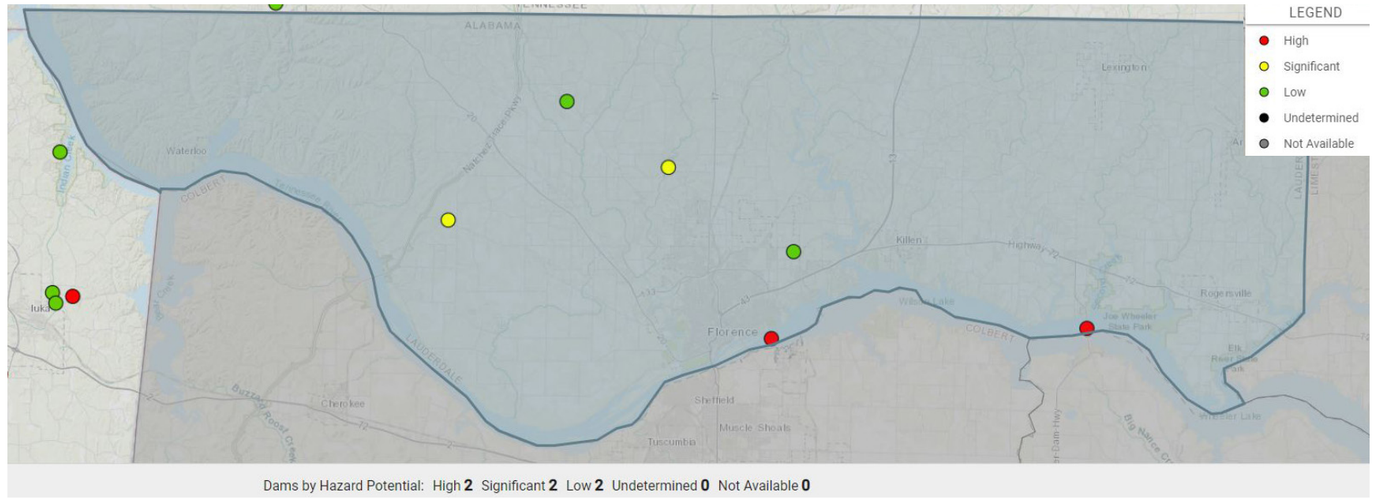
Future Probability and Magnitude/ Severity

The Tennessee Valley Authority implements a Dam Safety Emergency Action Plan for emergency preparedness in the event of failure at the dams. The Lauderdale County EMA has a copy of this plan and is prepared to coordinate efforts if the need arises. Probability of future occurrence of dam failure is categorized as unlikely. In the event of dam failure, both major dams have the potential to create emergency situations in Lauderdale County, which necessitates the need for a profile and mitigation for this event. The extent of the potential hazard event for the participating jurisdictions would be severe and cause wide spread damage. Therefore, the magnitude/ severity of dam failure within the planning jurisdiction is categorized as critical to catastrophic.



Left:
Dam Inspection
(Photo, 2015: istockphoto.com)





Extent of Dam Failure

The adjoining map shows the Hazard Potential Rating for each dam located in Lauderdale County. This rating system is developed by National Inventory of Dams, they serve as a resource to support awareness of dams and actions to prepare for a dam-related emergency.
Totals Dams: 6
Average Dam age: 72 years
High Hazard Potential Dams with an EAP: 100%

Legend:

- DAM LOCATIONS
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

ESRI Terrain

Map Top:
Lauderdale County Dam Locations
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Map Bottom:
Lauderdale County Dams Hazard Potential Rating by National Inventory of Dams
(Map, 2023: National Inventory of Dams, https://nid.sec.usace.army.mil/#/)

DROUGHT

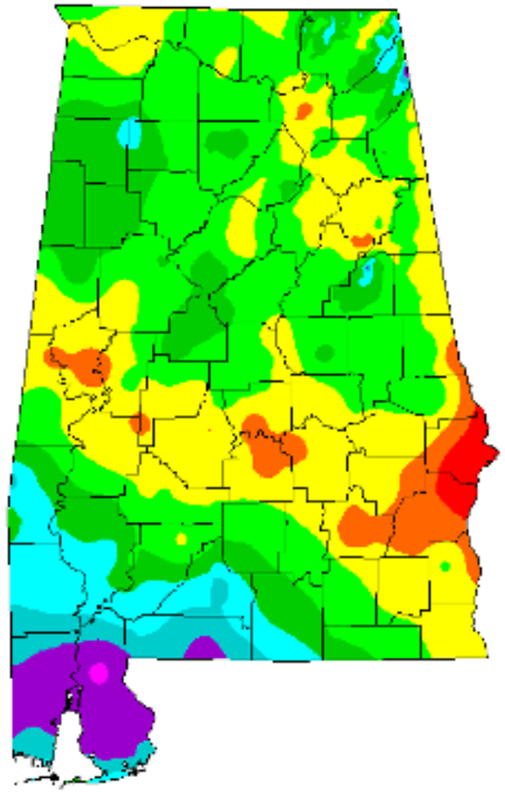
Description and Profile

Drought is a prolonged period of low precipitation severe enough to reduce soil moisture and water levels below the minimum necessary for sustaining plant, animal and economic systems. Droughts are a natural part of the climate cycle and can reduce water supply, threaten crops that rely on natural precipitation and increase the threat of wildfires. Droughts can have a widespread impact on the environment and the economy. It is difficult to predict when they will occur or when they will end.

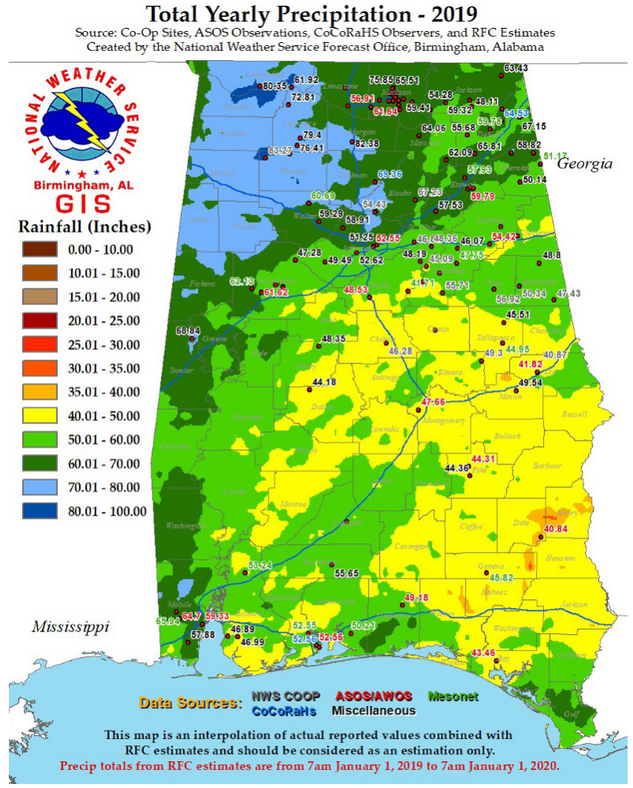
Location

Lauderdale County occasionally experiences short droughts and extreme heat events in the summer season. According to FEMA's Declaration of Disaster Archives, only one drought event has been significant enough to result in a declaration of emergency in Lauderdale County, which occurred in the summer of 1977, The drought was significant enough to cause crop and property damage and a disaster declaration was made on June 20, 1977 for many counties in the state, including Lauderdale County. The use of the Tennessee River and its watersheds to irrigate crops and farmland throughout the county has likely prevented more frequent widespread damage from drought events in the planning jurisdiction.

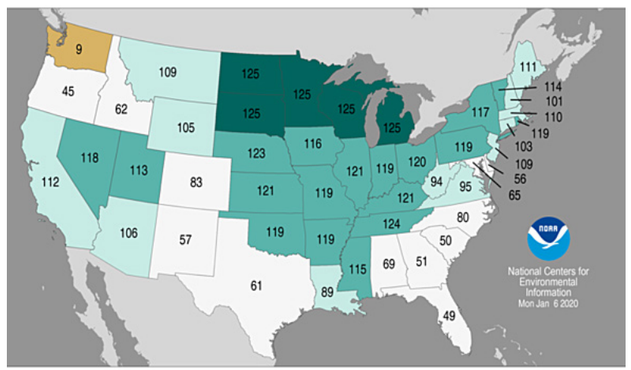
According to NOAA's Average Annual Precipitation Map for Alabama, Lauderdale County typically receives between 54-58 inches of rainfall a year. The National Weather Service's 2019 Total Yearly Rainfall map for Alabama illustrates that Lauderdale County received 70-80 inches of average annual rainfall in 2019. NOAA's Palmer-Z Index Map from August 2019 to July 2020 indicates that Lauderdale County is experiencing a mid-range to moist season. However, during the growing season, NOAA's 2019 June-August precipitation map indicates that Lauderdale County's rainfall was below average within 4-10 inches. Additionally, NOAA's statewide precipitation ranks from January to December 2019 reports that Alabama's precipitation is near average. All participating jurisdictions identified drought as a significant hazard with the capability of affecting the entire planning area, therefore the percentage of the study area susceptible to this hazard is categorized as extensive.



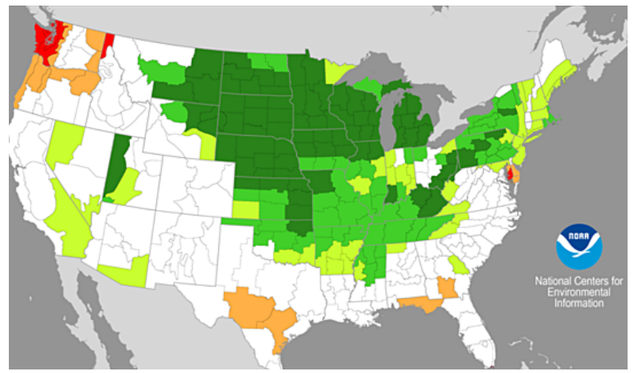
1961-1990, Annual Precipitation in Alabama plotted by NOAA



Total Yearly Precipitation in Alabama, 2019

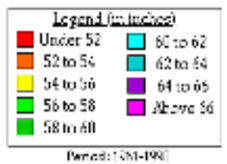


Statewide Precipitation Ranks for 2019



Palmer Drought Severity Index, 2019

Center Top:
1961-1990, Annual Precipitation in Alabama plotted by NOAA (NOAA, 2020)



Center Bottom:
Statewide Precipitation Ranks for 2019 (National Centers for Environmental Information, 2020)

Right Top:
Total Yearly Precipitation in Alabama, 2019 (National Weather Service)

Right Bottom:
Palmer Drought Severity Index, 2019 (National Centers for Environmental Information, 2020)

INDIVIDUAL INCIDENTS OF DROUGHT WITHIN THE STUDY AREA BETWEEN JANUARY 1950 AND MAY 2020					
County Location	Date	Deaths	Injuries	Total Property Damage	Total Crop Damage
Lauderdale	03-27-2007	0	0	$0.00	$0.00
Lauderdale	04-01-2007	0	0	$0.00	$0.00
Lauderdale	05-01-2007	0	0	$0.00	$0.00
Lauderdale	06-01-2007	0	0	$0.00	$0.00
Lauderdale	07-01-2007	0	0	$0.00	$0.00
Lauderdale	08-01-2007	0	0	$0.00	$0.00
Lauderdale	09-01-2007	0	0	$0.00	$0.00
Lauderdale	10-01-2007	0	0	$0.00	$0.00
Lauderdale	11-01-2007	0	0	$0.00	$0.00
Lauderdale	12-01-2007	0	0	$0.00	$0.00
Lauderdale	01-01-2008	0	0	$0.00	$0.00
Lauderdale	02-01-2008	0	0	$0.00	$0.00
Lauderdale	03-01-2008	0	0	$0.00	$0.00
Lauderdale	04-01-2008	0	0	$0.00	$0.00
Lauderdale	05-01-2008	0	0	$0.00	$0.00
Lauderdale	07-03-2012	0	0	$0.00	$0.00
Lauderdale	06-03-2016	0	0	$0.00	$0.00
Lauderdale	07-01-2016	0	0	$0.00	$0.00
Lauderdale	08-01-2016	0	0	$0.00	$0.00
Lauderdale	09-27-2016	0	0	$0.00	$0.00
Lauderdale	10-11-2016	0	0	$0.00	$0.00
Lauderdale	11-01-2016	0	0	$0.00	$0.00
Lauderdale	11-15-2016	0	0	$0.00	$0.00
Lauderdale	12-01-2016	0	0	$0.00	$0.00
Lauderdale	12-06-2016	0	0	$0.00	$0.00

Source: 2020 NOAA Storm Events Database

Previous Occurrences

According to NOAA's Storm Events Database for Lauderdale County, there have been 25 significant drought events within the planning area between January 1950 and August 2020. However, none of these drought events had any reported deaths, injuries, or property damage according to NOAA. However, in the past five years there have been nine drought events in Lauderdale County as reported by NOAA.

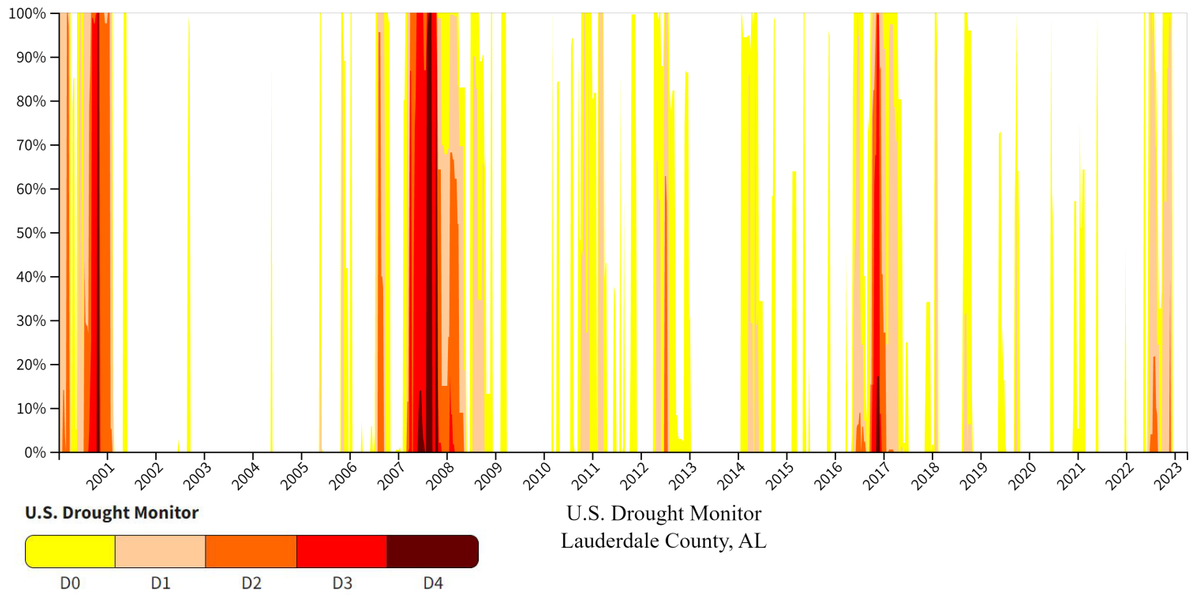
Future Probability and Magnitude/ Severity

Based on current NOAA data and past trends, the future probability of a drought event occurring in Lauderdale County is categorized as likely. The magnitude/severity of the event would be determined by the duration of the event but the possible affect is categorized as limited to critical.

Drought Extent Based on Historical Data The U.S. Drought Monitor (2000–present) depicts the location and intensity of drought across the County. Every Thursday, authors from NOAA, USDA, and the National Drought Mitigation Center produce a new map based on their assessments of the best available data and input from local observers. The map uses five categories: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1–D4). D1 - Moderate Drought, D2 - Severe Drought, D3 - Extreme Drought, D4 - Exceptional Drought

DROUGHT PROBABILITY ASSESSMENT OF DISASTER BASED ON HISTORICAL DATA FROM 1950-2020			
Extent of Jurisdictional Affect:	Historical Occurrences:	Percent Probability of Future Annual Occurrence:	Damage Expectations of Event: Limited to Critical
Extensive	25	Likely	Damage from a drought event would depend on the longevity of the event.
Lauderdale County	25	35%	0
Town of Anderson	25	35%	0
City of Florence	25	35%	0
Town of Killen	25	35%	0
Town of Lexington	25	35%	0
Town of Rogersville	25	35%	0
Town of St. Florian	25	35%	0
Town of Waterloo	25	35%	0

Source: *Hazard Mitigation Planning Team*



Left:
Individual Instances of Drought Within Lauderdale County, AL Between January 1950 - May 2020
(Chart, 2014: NOAA Storm Events Database)

Center:
Drought Extent Based on Historical Data
(Chart, 2023, National Integrated Drought Information System)

Right Top:
Drought Probability Assessment & Extent of Disaster Base on Historical Data 1950-2020
(Chart, 2020: Hazard Mitigation Planning Team)

EXPANSIVE SOILS

Description and Profile

Expansive soil is a soil/clay (such as montmorillonite or bentonite) that is prone to expansion or shrinkage due directly to variation in water volume. Expansive soils swell when exposed to large amounts of water and shrink when the water evaporates. This continuous cycle of wet to dry soil keeps the soil in perpetual motion causing structures built on this soil to sink or rise unevenly, often requiring foundation repair. Expansive soils are comprised primarily of minerals (incredibly fine particles) with little to no organic material and are thus incredibly viscous, proving difficult to drain.

Location

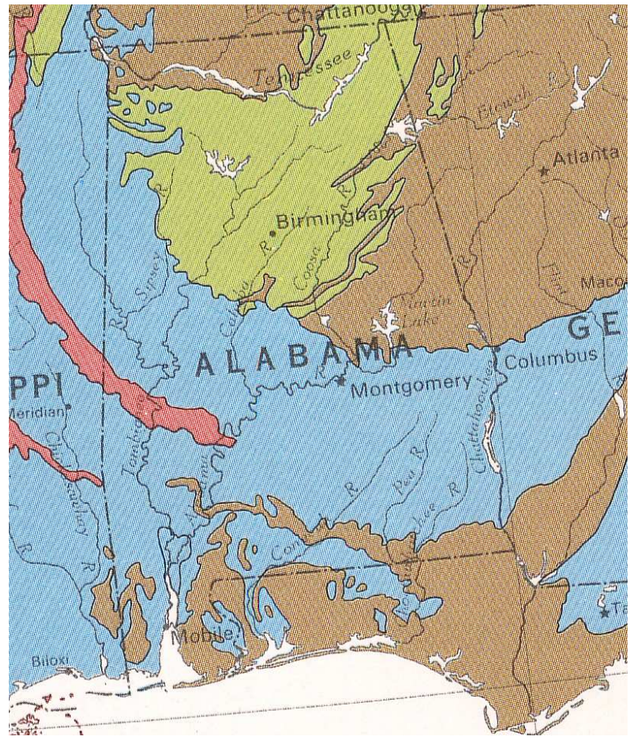
Lauderdale County has soils with clays of high swelling potential. Expansive soil is generally a clay that is inherently susceptible to swelling and shrinking due to its chemical composition. This swelling and shrinking is directly related to changes in the water table. Expansive soils are referred to by names, including – expanding soil, expansive clays, shrink-swell soils, and heavable soils. Expansive soils contain minerals, such as smectite clays, that are prone to absorb copious amounts of moisture. When they take on water, they increase in volume. The more water they absorb, the more their volume increases. This change in volume can exert enough force and enough pressure on a home or other structure to cause serious cosmetic and structural damage. This pressure can be as great as 5,000 pounds per foot. Expansive soils also shrink, compress when they dry out. This shrinkage can remove structural support from a home or structure and result in damaging subsidence. Large cracks and fissures can also develop in the soil. This repetitious cycle of swelling and shrinkage puts serious stress on your home's foundation causing either foundation settlement or foundation heave – both will get worse over time.

Each year in the United States alone, expansive soils cause $2.3 billion dollars in damages to houses, roads, pipelines, and other structures. This is more than twice the damage from floods, hurricanes, tornadoes, and earthquakes combined.

Future Probability and Magnitude/ Severity

The Lauderdale County EMA has a copy of this plan and is prepared to coordinate efforts if the need arises. Since, drought, extreme temperatures, winter storms, and floods can cause shrinkage or expansion of soil, the probability of future occurrence of structural failure due to expansive soils is categorized as Highly- Likely. In the event of failure, structural failure of buildings they can cause loss of property and life which necessitates the need for a profile and mitigation for this event. The extent of the potential hazard event for the participating jurisdictions is dependent on the soil cover where the clays of high swelling potential are present as fifty percent of these areas are susceptible to damage and failure. The majority of the time, the expansive soil is going to put undue stress on foundation, whether it be slab on grade, raised, basement, post-tension, or pier & beam. When expansive soils are present, they will generally not cause a problem if their water content remains constant. The situation where greatest damage occurs is when there are significant and repeated moisture content changes. Since the hazard profile for Expansive Soils relates to other hazards, the mitigation strategies for expansive soils has been identified under appropriate hazard profiles that correspond to this condition. The magnitude/ severity of failure within the planning jurisdiction is categorized as limited to negligible.

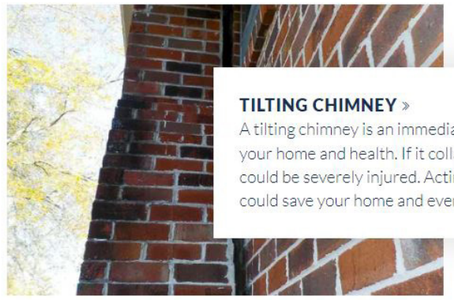
	Over 50 percent of these areas are underlain by soils with abundant clays of high swelling potential.
	Less than 50 percent of these areas are underlain by soils with clays of high swelling potential.
	Over 50 percent of these areas are underlain by soils with abundant clays of slight to moderate swelling potential.
	Less than 50 percent of these areas are underlain by soils with abundant clays of slight to moderate swelling potential.
	These areas are underlain by soils with little to no clays with swelling potential.
	Data insufficient to indicate the clay content or the swelling potential of soils.



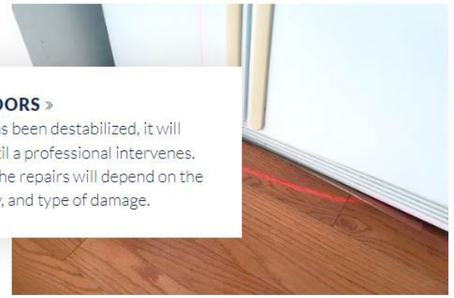
Map:
Expansive soils map for Alabama (Expansive Soils Map for the United States, 2023, www.geology.com)



BOWING FOUNDATION WALLS »
Foundation wall anchors can repair many bowing wall problems. Soil anchors are placed in the ground outside.



TILTING CHIMNEY »
A tilting chimney is an immediate danger to your home and health. If it collapses, you could be severely injured. Acting quickly could save your home and even your life.



UNEVEN FLOORS »
Once a floor has been destabilized, it will deteriorate until a professional intervenes. The nature of the repairs will depend on the extent, severity, and type of damage.



WALL CRACK »
If you have a wall crack that has been giving you concern, call a professional. The nature of the repairs that are needed will depend on the underlying issues at work.

EXPANSIVE SOILS ASSESSMENT 2020			
Extent of Jurisdictional Affect: Extensive	Presence of Expansive Soil	Percent Probability of Future Annual Occurrence:	Magnitude/ Severity of Event:
Lauderdale County	Yes	Highly-likely	Limited
City of Florence	Yes	Highly-likely	Limited
Town of Anderson	Yes	Highly-likely	Limited
Town of Killen	Yes	Highly-likely	Limited
Town of Lexington	Yes	Highly-likely	Limited
Town of Rogersville	Yes	Highly-likely	Limited
Town of St. Florian	Yes	Highly-likely	Limited
Town of Waterloo	Yes	Highly-likely	Limited
Source: Hazard Mitigation Planning Team			

Photo:
Images showing various structural signs that indicate foundation failure. These images are from a local company that provides repair services in case of failure, they recognize that clayey soils present in the region cause such structural failures. www.afsrepair.com)

EXTREME TEMPERATURES

Description and Profile

The Lauderdale County planning area experiences extremes in temperatures that consist of hot summers and cold winters. Alabama summers are one of the hottest in the nation, with daily highs averaging over 90^0 F. Heat is the number one weather related killer in the U.S. Extreme temperatures over 90^0 F can cause health issues such as severe sunburns, heat stroke and death. Winters within the planning area are usually mild but can sustain periods of extreme cold with temperatures plunging below freezing. Exposure to extreme cold temperatures can result in hypothermia, cold stress, frostbite, freezing of extremities, death, and property damage.

Excessive Heat is a heat index of 105^0 F or greater that will last for two hours or more. Extreme heat or heat waves occur when the temperature reaches extremely high levels or when the combination of heat and humidity causes the air to become oppressive. Extreme heat is a period of high heat and humidity with temperatures exceeding 90^0 F for at least two to three days. As summer-time temperatures which hover 10 degrees or more above the average high temperature for a region and last for several weeks and have the potential to cause injury to people and animals and damage crops. The National Weather Service created a Heat Index chart to demonstrate how air temperature increases with relative humidity and the adverse effect prolonged heat exposure has on the population.

Extreme cold weather events are defined as days where the mean daily temperature (average of the high and low recorded temperatures over a 24-hour period) falls below 32° F. As the temperature drops and wind speed increases heat can leave the body more rapidly. This is known as the wind-chill effect and it can exacerbate an extreme cold event. The NWS created a wind chill chart that measures apparent temperature felt on exposed skin due to the combination of air temperature and wind speed and the minimum exposure time at which frostbite begins to occur.

NWS Heat Index

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

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

Classification	Heat Index	Effect on the body
Caution	80°F - 90°F	Fatigue possible with prolonged exposure and/or physical activity
Extreme Caution	90°F - 103°F	Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
Danger	103°F - 124°F	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
Extreme Danger	125°F or higher	Heat stroke highly likely

Wind Chill Chart

Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes | 10 minutes | 5 minutes

Wind Chill (°F) = 35.74 + 0.6215T - 35.75($V^{0.16}$) + 0.4275T($V^{0.16}$)

Where, T= Air Temperature (°F) V= Wind Speed (mph) *Effective 11/01/01*

Left:
Heat Index Chart
(National Weather Service)

Right:
Wind Chill Chart
(National Weather Service)

Location

NOAA's National Weather Service Climatology Station at Northwest Shoals Regional Airport, located in adjacent Colbert County six miles south of Florence, reports monthly normal and extreme temperature events for the Shoals area and the historical data is illustrated below. The hottest temperature recorded for the Shoals was 108^0 F and occurred four times: June 1914, September 1925 and July and August 1930. The coldest temperature recorded was -13^0 F and occurred in February 1905. All participating jurisdictions identified extreme temperatures as a significant hazard with the capability of affecting the entire planning area, therefore the percentage of the study area susceptible to this hazard is categorized as extensive.

MONTHLY TEMPERATURE NORMALS AND EXTREMES FOR THE SHOALS AREA												
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Normal High	50.7	55.4	64.4	73.3	80.9	87.8	90.8	90.9	84.7	74.3	63.3	52.8
Normal Low	31.3	35.0	42.0	49.5	58.7	66.3	70.0	68.8	61.6	49.8	40.9	33.8
Normal Average	41.0	45.2	53.2	61.4	69.8	77.0	80.4	79.8	73.2	62.1	52.1	43.3
Record High Temp and Year	80 1949	83 2012	92 1929	97 1936	99 1941	108 1914	108 1930	108 1930	108 1925	100 2019	89 2016	78 2016
Record Low Temp and Year	-11 1985	-13 1905	7 1899	24 1940	32 1909	42 1894	49 1937	47 1917	35 1901	23 1917	2 1950	-5 1989
Source: NOAA National Weather Service												

Previous Occurrences

There are eleven weather stations within Lauderdale County as identified on the NOAA website. The stations are located in the following areas: Russellville No 2, BelleMina 2, Muscle Shoals 2, Huntsville International Airport, Cullman N.A.H.S., Hanceville, Guntersville, Boaz, Scottsboro, Valley Head and Bridgeport 5 NW. These weather stations are operable year-round and record events of extreme weather that are reported to NOAA and stored in their Storm Events Database. The Storm Events Database stores data geographically categorized by state and county and historical data is available from January 1, 1950, through May 31, 2020, at the time of this plan.

According to NOAA's Storm Events Database for Lauderdale County, there have been six extreme heat events between 1950 and May 31, 2020. The extreme heat event that occurred on June 19, 2009, resulted in 12 injuries. There have been six extreme cold events between 1950 and September 30, 2014. The extreme cold event that occurred on March 7, 1996, caused $2 million in crop damages,

Excessive Heat Events in Lauderdale County between 1950 – May 31, 2020					
Event Type	Date	Deaths	Injuries	Property Damage	Crop Damage
Extreme Heat	06/19/2009	0	12	0	0
Extreme Heat	06/27/2009	0	0	0	0
Extreme Heat	08/15/2010	0	0	0	0
Extreme Heat	07/10/2011	0	0	0	0
Extreme Heat	08/05/2016	0	0	0	0
Extreme Heat	08/13/2019	0	0	0	0
Total Number of Extreme Temperature Events					
6		0	12	0	0
Source: 2020 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/					

Extreme Cold/ Wind Chill in Lauderdale County between 1950 – May 31, 2020					
Event Type	Date	Deaths	Injuries	Property Damage	Crop Damage
Cold/Wind Chill	02/03/1996	0	0	0	0
Cold/Wind Chill	03/07/1996	0	0	0	1.00M
Cold/Wind Chill	01/16/2009	0	0	0	0
Cold/Wind Chill	01/06/2014	0	0	0	0
Cold/Wind Chill	01/06/2014	0	0	0	0
Cold/Wind Chill	01/01/2018	0	0	0	0
Cold/Wind Chill	01/01/2018	0			
Cold/Wind Chill	01/16/2018	0			
Total Number of Extreme Temperature Events					
8		0	0	0	1.000M
Source: 2020 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/					

Left:
Monthly Temperature Normals & Extremes for the Shoals Area
(Chart, 2020: NOAA National Weather Service, Multi-Hazard Mitigation Planning Team)

Right:
Extreme Temperature Events in Lauderdale County between 1950-2020
(Chart, 2020: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Future Probability and Magnitude/Severity

Based on historical weather data, Lauderdale County and its municipalities are susceptible to extreme heat and cold weather events and therefore, hazard mitigation planning is required due to the probability of it occurring every year. The future probability of an extreme heat event occurring within the planning area is categorized as likely. The magnitude/severity of the potential hazard event is categorized between limited to critical and could cause millions of dollars in damages to the agriculture industry.



EXTREME TEMPERATURE PROBABILITY ASSESSMENT & EXTENT OF DISASTER BASED ON HISTORICAL DATA BETWEEN 1996 - AUGUST 2020			
Extent of Jurisdictional Effect: Extensive	Historical Occurrences: 14	% Probability of Future Annual Occurrence: Likely	Magnitude/ Severity of Event: Limited to Critical
Lauderdale County	14	58%	$1,000,000
Town of Anderson	14	58%	$1,000,000
City of Florence	14	58%	$1,000,000
Town of Killen	14	58%	$1,000,000
Town of Lexington	14	58%	$1,000,000
Town of Rogersville	14	58%	$1,000,000
Town of St. Florian	14	58%	$1,000,000
Town of Waterloo	14	58%	$1,000,000
Source: *Hazard Mitigation Planning Team*			

Chart:
Extreme Temperature Probability Assessment & Extent of Disaster Based on Historical Data between 1996-2020
(Chart, 2023: Hazard Mitigation Planning Team)

Top Left:
Fighting Fire in Freezing Weather
(Photo, 2009: istockphoto.com)

Bottom Left:
Extreme Heat
(Photo, 2009: bike198.com)

Bottom Center:
Extreme Heat
(Photo, 2011: cnn.com)

Bottom Right:
School Buses in Extreme Cold
(Photo, 2014: thetimesweekly.com)







FLOOD

Description and Profile

Floods are the most common and widespread of all-natural disasters and can be the most costly in terms of human hardship and economic loss. A flood, as defined by the National Flood Insurance Program, is: "A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from: overflow of inland or tidal waters, unusual and rapid accumulation or runoff of surface waters from any source, or a mudflow".

There are several different types of flood events likely to occur in Lauderdale County including flash, riverine and urban storm water. Flooding is most always attributed to excessive rainfall, either in the flood area or upstream reach. Flash floods are localized flood events of great volume and short duration. Riverine flood events occur when a watercourse exceeds its bank capacity due to prolonged rainfall and typically effects large areas. Urban storm water flood events result as land loses its ability to absorb rainfall as it is converted from fields or woodlands to roads, buildings and parking lots. Lauderdale County, and all its incorporated places, are located within the Tennessee River drainage basin and therefore are very susceptible to flood events of all types.

The immediate danger from flooding is the strength of the water which causes destruction of personal property such as structures and vehicles. Flooding can remove houses from their foundation and push debris miles from its origin causing injury or death to people and animals in its path. Long term adverse effects include power outages, damage to infrastructure, contaminated water supply and outbreak of disease.

Location

The National Flood Insurance Program (NFIP) was authorized by Congress with the enactment of the National Flood Insurance Act of 1968. Under the NFIP, flood insurance is made available at rates that are intended to be affordable in return for community adoption of ordinances to regulate development in mapped flood hazard areas. Lauderdale County has all eight jurisdictions within the planning area participating in the NFIP Program.

Lauderdale County and all of its cities and towns are located within the Tennessee River drainage basin and are susceptible to flood events every year. Therefore, the entire planning area is susceptible to flood events and is categorized as extensive.

Previous Occurrences

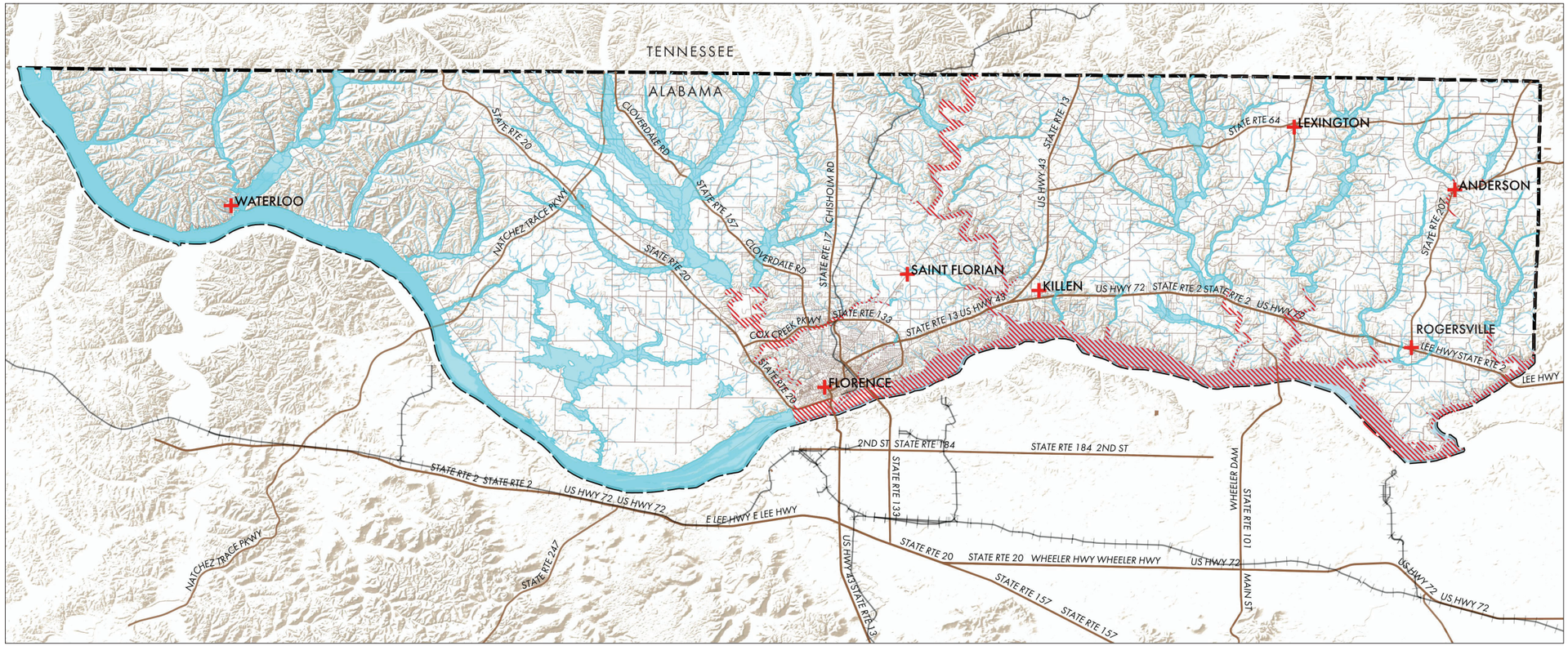
According to data from NOAA's National Climatic Data Center, the planning area has experienced 178 previous flood events in the past 24 years resulting in 3 deaths, 4 injuries and totaling $15,000 in crop damage and $2,017,000 million in property damage.

FLOOD FUTURE PROBABILITY ASSESSMENT OF DISASTER BASED ON HISTORICAL DATA BETWEEN 1996 – MAY 2020

HISTORICAL FLOOD EVENTS FOR LAUDERDALE COUNTY BETWEEN 1996 -AUGUST 2020

Location	Date	Event Type	Deaths	Injuries	Property Damage	Crop Damage
Florence	3/6/96	Flash Flood	0	0	25.00 K	0
Florence	6/23/06	Flash Flood	0	0	10.00 K	0
Florence	8/8/96	Flash Flood	0	0	10.00 K	0
Countywide	1/7/98	Flash Flood	0	0	25.00 K	5.00 K
Killen	7/14/98	Flash Flood	0	2	30.00 K	10.00 K
Greenhill	6/28/99	Flash Flood	0	0	20.00 K	0
Countywide	4/3/00	Flash Flood	0	0	10.00 K	0
Countywide	1/23/02	Flash Flood	0	0	400.00 K	0
Countywide	1/24/02	Flash Flood	0	0	50.00 K	0
Florence	2/15/03	Flash Flood	0	0	0	0
Rogersville	2/21/03	Flash Flood	0	0	0	0
Anderson	2/21/03	Flash Flood	0	0	0	0
Lexington	2/21/03	Flash Flood	0	0	0	0
Florence	2/22/03	Flash Flood	0	0	0	0
Countywide	2/22/03	Flash Flood	0	0	0	0
Countywide	2/22/03	Flash Flood	0	0	0	0
Countywide	5/6/03	Flash Flood	0	0	350.00 K	0
Anderson	5/6/03	Flash Flood	0	0	0	0
Florence	5/6/03	Flash Flood	0	0	0	0
Rogersville	5/6/03	Flash Flood	0	0	0	0
Florence	5/11/03	Flash Flood	0	0	0	0
Countywide	6/18/03	Flash Flood	0	0	0	0
Greenhill	7/16/03	Flash Flood	0	0	0	0
Greenhill	7/22/03	Flash Flood	0	0	0	0
Lexington	7/22/03	Flash Flood	0	0	0	0
Center Star	8/6/03	Flash Flood	0	0	0	0
Florence	8/6/03	Flash Flood	0	0	0	0

Chart:
Historical Flood Events for Lauderdale County between 1996-2020
(Chart, 2020: NOAA Climatic Data Center, Multi-Hazard Mitigation Planning Team)



FLOOD ZONES (INDIVIDUAL PLANS FOR EACH JURISDICTION ARE ATTACHED IN THE APPENDIX.

Map:
Lauderdale County Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

- CITIES WITHIN STUDY AREA

FEMA FLOOD ZONES
- ZONE A
- ZONE AE
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

ESRI Terrain

Location	Date	Event Type	Deaths	Injuries	Property Damage	Crop Damage
Countywide	2/5/04	Flash Flood	0	0	0	0
Countywide	2/6/04	Flood	0	0	0	0
Florence	3/5/04	Flash Flood	0	0	0	0
Florence	7/14/04	Flash Flood	0	0	0	0
Florence	7/25/04	Flash Flood	0	0	0	0
Florence	9/12/04	Flash Flood	0	0	0	0
Countywide	9/16/04	Flash Flood	0	0	0	0
Florence	10/19/04	Flash Flood	0	0	0	0
Waterloo	10/19/04	Flash Flood	0	0	0	0
Florence	11/23/04	Flash Flood	0	0	0	0
Countywide	11/30/04	Flash Flood	0	0	0	0
Florence	12/6/04	Flash Flood	0	0	0	0
Countywide	12/09/04	Flash Flood	0	0	0	0
Countywide	2/21/05	Flash Flood	0	0	0	0
Countywide	2/21/05	Flash Flood	0	0	0	0
Countywide	4/6/05	Flash Flood	0	0	0	0
Florence	1/22/06	Flash Flood	0	0	0	0
Murphy Xrds	3/1/07	Flash Flood	0	0	0	0
Florence	7/6/07	Flash Flood	0	0	0	0
Rogersville	4/4/08	Flash Flood	0	0	1.00 K	0
Lauderdale Co	5/27/08	Flash Flood	0	0	0	0
Rogersville	5/27/08	Flash Flood	0	0	5.00 K	0
Oliver	5/27/08	Flash Flood	0	0	0	0
Lauderdale Co	5/27/08	Flash Flood	0	0	0	0
Lauderdale Co	5/27/08	Flash Flood	1	0	30.00 K	0
Weeden Heights	12/9/08	Flash Flood	0	0	0	0
Anderson	12/11/08	Flood	0	0	0	0
Lexington	12/11/08	Flood	0	0	0	0
Pritton	12/11/08	Flood	0	0	0	0
Anderson	12/11/08	Flood	0	0	0	0
Rogersville	1/6/09	Flash Flood	0	0	0	0
Anderson	1/6/09	Flash Flood	0	0	0	0
Greenhill	1/6/09	Flash Flood	0	0	0	0
Whitehead	1/6/09	Flood	0	0	0	0
Greenhill	3/26/09	Flood	0	0	0	0
Toonersville	3/26/09	Flood	0	0	0	0
Greenhill	3/26/09	Flood	0	0	0	0
Anderson	3/26/09	Flood	0	0	0	0
Whitehead	5/1/09	Flash Flood	0	0	0	0
Waterloo	5/1/09	Flood	0	0	0	0
Pritton	5/6/09	Flash Flood	0	0	0	0
Pritton	5/6/09	Flood	0	0	0	0
Powell	7/5/09	Flash Flood	0	0	0	0
Powell	7/5/09	Flood	0	0	0	0
Florence	7/16/09	Flash Flood	0	0	0	0
Sullivan Xrds	8/11/09	Flash Flood	0	0	0	0
Oakland	9/16/09	Flash Flood	0	0	0	0
Waterloo	9/17/09	Flash Flood	0	0	0	0
Greenhill	9/17/09	Flash Flood	0	0	0	0
Wilson Lake	9/17/09	Flash Flood	0	0	0	0
Pritton	9/17/09	Flash Flood	0	0	0	0
Petersville	9/17/09	Flash Flood	0	0	0	0
Killen	9/17/09	Flash Flood	0	0	0	0
Florence	9/17/09	Flash Flood	0	0	0	0
Jacksonburg	9/17/09	Flash Flood	0	0	0	0
Florence	9/17/09	Flash Flood	0	0	0	0
Greenhill	9/17/09	Flash Flood	0	0	0	0
Greenhill	9/17/09	Flash Flood	0	0	0	0
Whitehead	9/17/09	Flash Flood	0	0	0	0
Florence	9/17/09	Flash Flood	0	0	0	0
Center Star	9/20/09	Flash Flood	0	0	0	0
Lexington	12/8/09	Flash Flood	0	0	0	0
Grassy	1/20/10	Flood	0	0	0	0

Chart:
Historical Flood Events for Lauderdale County between 1996-2020
(Chart, 2020: NOAA Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Location	Date	Event Tpe	Deaths	Injuries	Property Damage	Crop Damage
Lexington	2/5/10	Flood	0	0	18.00 K	0
Anderson	2/5/10	Flood	0	0	0	0
Antioch	2/5/10	Flood	0	0	0	0
Wright	5/1/10	Flash Flood	0	0	5.00 K	0
Waterloo	5/2/10	Flash Flood	0	0	1.00 K	0
Waterloo	5.2/10	Flash Flood	0	0	0	0
Arkdell	5/2/10	Flash Flood	0	0	0	0
Pritton	5/2/10	Flood	0	0	1.000 M	0
Antioch	3/9/11	Flash Flood	0	0	0	0
Anderson	3/9/11	Flash Flood	0	0	0	0
Center Hill	3/9/11	Flash Flood	0	0	0	0
Mars Hill	3/9/11	Flash Flood	0	0	0	0
Center Star	6/28/11	Flash Flood	0	0	0	0
Arkdell	6/28/11	Flash Flood	0	0	0	0
Lexington	6/28/11	Flash Flood	0	0	5.00 K	0
Lexington	6/28/11	Flash Flood	0	0	0	0
Whitehead	6/28/11	Flash Flood	0	0	0	0
Upper Green Hill	6/28/11	Flash Flood	0	0	0	0
Gravelly Spgs	6/28/11	Flash Flood	0	0	0	0
Anderson	6/28/11	Flash Flood	0	0	0	0
Kimbrough Xrds	6/28/11	Flash Flood	0	0	0	0
Pritton	6/28/11	Flash Flood	0	0	0	0
Mars Hill	6/28/11	Flash Flood	0	0	0	0
Kimbrough Xrds	1/17/12	Flash Flood	0	0	0.50 K	0
Rogersville	1/17/12	Flash Flood	0	0	1.00 K	0
Anderson	1/23/12	Flash Flood	0	0	0.50 K	0
Florence	9/17/12	Flash Flood	0	0	0	0
Lauderdale Co	6/5/13	Flash Flood	0	0	0	0
Holloway	7/13/13	Flash Flood	0	0	20.00 K	0
Florence	8/6/13	Flash Flood	0	0	0	0

Location	Date	Event Type	Deaths	Injuries	Property Damage	Crop Damage
Petersville	6/11/14	Flash Flood	0	0	0	0
Florence	7/8/14	Flash Flood	0	0	0	0
Florence	1/3/2015	Flash Flood	0	0	0	0
Waterloo	3/31/15	Flash Flood	1	0	0	0
Green Hill	3/31/15	Flash Flood	0	0	0	0
Pritton	11/18/15	Flash Flood	0	0	0	0
Anderson	12/25/15	Flash Flood	0	0	0	0
Anderson	12/25/15	Flash Flood	0	0	0	0
Florence	11/29/16	Flash Flood	0	0	0	0
East Killen	6/23/17	Flash Flood	0	0	0	0
Sullivan Xrds	2/28/18	Flood	0	0	0	0
Sullivan Xrds	2/28/18	Flood	0	0	0	0
Sullivan Xrds	2/28/18	Flood	0	0	0	0
Pritton	2/28/18	Flood	0	0	0	0
Johnson Xrds	2/28/18	Flood	0	0	0	0
Center Hill	2/28/18	Flood	0	0	0	0
Toonersville	2/19/19	Flood	0	0	0	0
Center Hill	2/19/19	Flood	0	0	0	0
Lexington	2/19/19	Flood	0	0	0	0
Upper Green Hill	2/19/19	Flood	0	0	0	0
Lexington	2/19/19	Flood	0	0	0	0
Powell	2/19/19	Flood	0	0	0	0
Jacksonburg	2/19/19	Flood	0	0	0	0
Powell	2/20/19	Flood	0	0	0	0
Arkdell	2/20/19	Flood	0	0	0	0
Anderson	2/20/19	Flood	0	0	0	0
Lexington	2/20/19	Flood	0	0	0	0
Johnson Xrds	2/20/19	Flood	0	0	0	0
Florence	2/20/19	Flood	0	0	0	0
Whitehead	2/20/19	Flood	0	0	0	0
Petersville	2/20/19	Flood	0	0	0	0

Chart:
Historical Flood Events for Lauderdale County between 1996-2020
(Chart, 2020: NOAA Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Zip City	2/20/19	Flood	0	0	0	0
Zip City	2/22/19	Flood	0	0	0	0
Pritton	2/22/19	Flood	0	0	0	0
Florence	2/23/19	Flood	0	0	0	0
Jacksonburg	8/3/19	Flash Flood	0	0	0	0
Central Hgts	8/13/19	Flood	0	0	0	0
Florence	8/25/19	Flash Flood	0	0	0	0
North Florence	8/25/19	Flash Flood	0	0	0	0
North Florence	8/25/19	Flash Flood	0	0	0	0
Petersville	8/25/19	Flash Flood	0	0	0	0
Weeden Hgts	11/30/19	Flash Flood	0	0	0	0
Rogersville	11/30/19	Flash Flood	0	0	0	0
Petersville	11/30/19	Flash Flood	0	0	0	0
Anderson	12/29/19	Flash Flood	1	2	0	0
Jacksonburg	2/5/20	Flash Flood	0	0	0	0
Petersville	2/5/20	Flash Flood	0	0	0	0
Petersville	2/5/20	Flood	0	0	0	0
Antioch	3/23/20	Flash Flood	0	0	0	0
Mars Hill	3/23/20	Flash Flood	0	0	0	0
Powell	3/23/20	Flash Flood	0	0	0	0
Anderson	3/23/20	Flash Flood	0	0	0	0
Anderson	3/23/20	Flash Flood	0	0	0	0
Anderson	3/23/20	Flash Flood	0	0	0	0
Upper Green Hill	3/23/20	Flash Flood	0	0	0	0
Powell	3/23/20	Flash Flood	0	0	0	0
Antioch	3/23/20	Flash Flood	0	0	0	0
Florence	4/12/20	Flood	0	0	0	0
TOTAL EVENTS: 178			3	4	2.017 M	15.00 K

Source: *2020 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/*

Future Probability and Magnitude/Severity

The percent probability of a flood event occurring in Lauderdale County is highly likely with a future probability percentage of 741% that a flood event will occur in the next year. The assessed magnitude and severity are categorized as limited to critical and depends on the duration of rainfall and the areas affected. The extent of the potential hazard could cause millions in economic loss to property and agriculture.

FLOOD FUTURE PROBABILITY ASSESSMENT OF DISASTER BASED ON HISTORICAL DATA BETWEEN 1996 – MAY 2020			
Extent of Jurisdictional Affect: Extensive	Historical Occurrences: 178	Percent Probability of Future Occurrence: Likely- Highly Likely	Magnitude/ Severity of Event: Limited - Critical
Lauderdale County	108	450%	$1,915,500
Town of Anderson	17	71%	$500
City of Florence	28	117%	$45,000
Town of Killen	2	08%	$40,000
Town of Lexington	10	42%	$18,000
Town of Rogersville	7	29%	$7,000
Town of St. Florian	0	0%	0
Town of Waterloo	6	25%	0
TOTAL	178	741%	$2,026,000
Source: *Hazard Mitigation Planning Team*			



Chart: Left
Historical Flood Events for Lauderdale County between 1996-2020
(Chart, 2020: NOAA Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Top Right:
Flood Future Probability Assessment & Extent of Disaster based on Historical Data between 1996-2020
(Chart, 2023: Multi-Hazard Mitigation Planning Team)

Bottom Right:
Flood Road Closures
(Photo, 2009: Multi-Hazard Mitigation Planning Team)

Flood Disaster Extent Based on Historical Data between 1996 – May 2020

Location	Date	Event	Narrative
FLORENCE	8/8/1996	Flash Flood	Heavy rain associated with a thunderstorm caused flash flooding of low lying areas in Florence. Water was reported to be 1 to 2 feet deep in some locations. Time is estimated.
KILLEN	7/14/1998	Flash Flood	More than three inches of rain forced Shoal Creek out of its banks. Two men were injured when they drove around barricades and onto flooded CR 8. Their truck was washed off the road and two of the three men jumped into the water and were injured. Most of the flooding was contained to the Shoal Creek area near Goose Shoals. Several people were forced out of their homes due to the rising water.
COUNTYWIDE	4/3/2000	Flash Flood	Several roads throughout Lauderdale County were temporarily flooded. Many creeks were flowing over the banks but no homes were reported flooded. Radar estimated rainfall of up to five inches over the weekend.
COUNTYWIDE	1/23/2002	Flash Flood	A band of significant rainfall repeatedly doused parts of extreme northwest Alabama and southern middle Tennessee. Radar estimated rainfall in isolated locations as high as 6 to 8 inches, but the majority of the area received 2 to 4 inches of rain. The heaviest rain fell across Lauderdale County and into middle Tennessee. Lauderdale County reported that numerous roads were flooded and impassable. Schools were closed for the entire day. Many residents were evacuated along Shoal Creek in the Goose Shoals area and in a few other locations. One woman was stranded in her home. Colbert County also had numerous roads flooded and impassable. Schools closed at noon. Rainfall and runoff from Tennessee caused several creeks to overflow in Limestone and Lauderdale counties.
COUNTYWIDE	1/24/2002	Flash Flood	Rainfall continued across parts of northwest Alabama for a second day in a row. Radar estimated rain amounts as high as 3 inches. Additional rainfall on already saturated ground quickly caused flooding. Numerous roads across all of these counties were flooded and impassable. Many of the roadways received moderate damage which included bridge damage, sinkhole development, and road surface damage. Many cross drains and side drains were damaged by the high, rushing water. Six homes in Lauderdale County were flooded but no injuries were reported. One home in Colbert County was flooded and received driveway damage.
FLORENCE	5/6/2003	Flash Flood	25 food deep by 30 foot wide section of river mont road washed away.
ROGERSVILLE	5/6/2003	Flash Flood	foundation of county road bridge 562 washed out and bridge damaged.
FLORENCE	5/11/2003	Flash Flood	highway 72 had several inches of water over road.
COUNTYWIDE	6/18/2003	Flash Flood	flash flooding occurring across large portion of county with several county roads with several inches of water over roads.
GREEN HILL	7/16/2003	Flash Flood	several inches of water covering road with flooding reported.
GREEN HILL	7/22/2003	Flash Flood	several inches of water over military road.
LEXINGTON	7/22/2003	Flash Flood	County road 502 with several inches of water over the road.
COUNTYWIDE	2/5/2004	Flash Flood	Widespread flash flooding occurred with several roads with several inches of water covering them countywide.
	2/6/2004	Flood	Shoals creek flooded the basements of several houses in the St. Florian area.
FLORENCE	3/5/2004	Flash Flood	An underpass was flooded with several inches of water was reported near McFarland Park.
FLORENCE	7/14/2004	Flash Flood	A few roads were reported to be underwater with several inches of water over the roads.
FLORENCE	7/25/2004	Flash Flood	Flash flooding was reported with several inches of water over a few roads in Florence.
FLORENCE	9/12/2004	Flash Flood	Flash flooding was reported in Florence with several streets with several inches of water over the roads.
COUNTYWIDE	9/16/2004	Flash Flood	Widespread flash flooding was reported throughout the county. Several roads had several inches of water over them.
FLORENCE	10/19/2004	Flash Flood	Several inches of water was over area roads in the Muscle Shoals area.
WATERLOO	10/19/2004	Flash Flood	Several inches of water was over the road along County Road 15.
FLORENCE	11/23/2004	Flash Flood	Street flooding was occurring with several streets having several inches of water over them.
FLORENCE	12/6/2004	Flash Flood	Flash flooding initially occurred in Florence with highways 20 and 72/43 underpass being closed due to high water. Widspread flash flooding occurred by 1400 as several roads throughout the county had at least six to twelve inches of water over the road.
FLORENCE	1/22/2006	Flash Flood	Significant street flooding in Florence. Numerous roads flooded and barricaded throughout the county. Several periods of thunderstorms produced widespread heavy rainfall on the order of 2 to 4 inches with isolated 5 inch amounts. Officially, a record daily rainfall occurred in Muscle Shoals on the 22nd with 2.46 inches.
ROGERSVILLE	5/27/2008	Flash Flood	Torrential rainfall inundated the area of downtown Rogersville along and near Lee Street. Here, several inches of water was reported over roadways and water rose over sidewalks and entered downtown businessess as well. Particularly hard hit was Barabara's Wedding Shop at the corner of Lee street and Wheeler street.
ANDERSON	3/26/2009	Flood	Runoff from heavy rainfall caused flooding to occur, which closed CR 534 in the Anderson community. Between 2 and 4 inches of rainfall was reported.
WATERLOO	5/1/2009	Flood	Heavy rainfall from strong to severe thunderstorms caused closed numerous roads across the county. Water was even reported covering a portion of US Hwy 72 in the Rogersville community.
FLORENCE	7/16/2009	Flash Flood	Several inches of water covered the Coffee Road underpass in Florence. At least one car stalled while trying to drive through the flooded roadway.
WATERLOO	9/17/2009	Flash Flood	Roads were reported flooded in the Waterloo community. Rainfall amounts in Lauderdale county varied from 3 to 5 inches.
KILLEN	9/17/2009	Flash Flood	Flooding was reported on CR 65 just off highway 43 in the Bush Creek community of Killen. Rainfall amounts in Lauderdale county varied from 3 to 5 inches.
NORTH FLOREN	9/17/2009	Flash Flood	One foot of water covered the road on a portion of Wood Avenue. Rainfall amounts in Lauderdale county varied from 3 to 5 inches.
NORTH FLOREN	9/17/2009	Flash Flood	Public reported water covering several roads on the UNA campus. Some of these roads were impassable. Rainfall amounts in Lauderdale county varied from 3 to 5 inches.
NORTH FLOREN	9/17/2009	Flash Flood	Flooding was reported on Florence Blvd near Meinke Blvd. Flooding was reported at the intersection of Creekwood and Mars Hill. Rainfall amounts in Lauderdale county varied from 3 to 5 inches.
LEXINGTON	12/8/2009	Flash Flood	One to three inches of rainfall closed several roads in eastern portions of Lauderdale county. Roads closed included: CR 534, CR 156, CR 502, CR 96, and portions of Turner Lindsey road.
WATERLOO	5/2/2010	Flash Flood	Portions of County Road 14 were reported impassable due to flooding, particularly near Threets park. 2 to 5 inch rainfall.
WATERLOO	5/2/2010	Flash Flood	Portions of CR 90 in Waterloo were reported impassable due to flooding. 2 to 5 inches of rainfall
ANDERSON	3/9/2011	Flash Flood	Flash flooding prompted the closure of County Road 156. 1 to 3 inches of rainfall
ARKDELL	6/28/2011	Flash Flood	County Road 462 was closed due to flash flooding. 3 to 5 inches of rainfall
LEXINGTON	6/28/2011	Flash Flood	A vehicle was flooded and floating down a creek near County Road 502. No one was in the vehicle. Additional roads were also closed between Lexington and Killen due to flash flooding. 3 to 5 inches of rainfall

Chart:
Historical Flood Events for Lauderdale County between 1996-2020
(Chart, 2020: NOAA Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Location	Date	Event	Narrative
LEXINGTON	6/28/2011	Flash Flood	County Road 502 was closed in Lexington due to flash flooding. 3 to 5 inches of rainfall
ANDERSON	6/28/2011	Flash Flood	County Road 156 was closed due to flash flooding. 3 to 5 inches of rainfall
ROGERSVILLE	1/17/2012	Flash Flood	Flash flooding occurred along County Road 26 along Neely Creek Branch. Flash flooding also prompted the closure of Lindsey Road. Rainfall amounts of 2 to around 3.5 inches were reported
ANDERSON	1/23/2012	Flash Flood	Flash flooding clsed County Road 52 between Highway 207 and County Road 532. Rainfall amounts of 1 to 2 inches.
FLORENCE	9/17/2012	Flash Flood	Commerce street was closed due to high water over the street, near Florence. Rainfall amounts of 2 to 4 inches were observed at most locations, with some seeing 5 to just over 7 inches
FLORENCE	6/5/2013	Flash Flood	Flash flooding occurred with several inches of water running across East Oak Hill road. One house had an unknown amount of water enter the lowest level which resulted in at least minor flood damage.
FLORENCE	8/6/2013	Flash Flood	One foot of flowing water was reported to be across the underpass on Mitchell Boulevard near Highway 20.
FLORENCE	7/8/2014	Flash Flood	Heavy rainfall resulted in 12 to 18 inches of water rushing across the road along Veterans drive and Commerce street in Florence, Alabama. A small creek was flooding due to the heavy rainfall, and a car was swept off the road. No one was injured.
FLORENCE	1/3/2015	Flash Flood	Up to eight inches of flood water was reported at the intersections of Veteran's Drive and Cherry Street and at Mitchell Boulevard at Coffee Road in Florence. Rainfall totals reached 1 to 2 inches.
WATERLOO	3/31/2015	Flash Flood	A local Lauderdale county man drowned after he was stuck in his truck while attempting to cross high waters along Panther Creek near County Road 105 in Waterloo, Alabama.
EAST KILLEN	6/23/2017	Flash Flood	EMA reported water partially blocking Eastbound lane at US Hwy 72 and County Road 71/Lingerlost Road in Killen. Depth of water unknown. Depth of water was 1-3 inches.
SULLIVAN XRDS	2/28/2018	Flood	CR 112 closed at this location due to flooding. Depth of water was 4-6 inches.
SULLIVAN XRDS	2/28/2018	Flood	Corrects previous flood report from 7W Underwood-Petersville. County Roads 112 and 81 closed due to high water. Depth of water was 4-6 inches.
SULLIVAN XRDS	2/28/2018	Flood	CR 81 closed at this location due to flooding. Depth of water was 4-6 inches.
PRITTON	2/28/2018	Flood	CR 298 was closed due to flooding at this location. Depth of water was 4-6 inches.
JOHNSON XRDS	2/28/2018	Flood	County Road 139 was closed due to flooding. Depth of water was 4-6 inches.
CENTER HILL	2/28/2018	Flood	CR 485 was closed at this location due to flooding. Depth of water was 4-6 inches.
WEEDEN HGTS	11/30/2019	Flash Flood	Flooding near the intersection of Seville Street and Gresham Road. Depth of water was 2-5 inches.
ROGERSVILLE	11/30/2019	Flash Flood	Rose Street in Rogersville was flooded. Depth of water unknown. Depth of water was 2-5 inches.
PETERSVILLE	11/30/2019	Flash Flood	Flooding along Chisholm Road near the intersection of Gresham Road. Depth of water was 2-5 inches.
ANDERSON	12/29/2019	Flash Flood	Three vehicles were swept by flash flooding on Anderson Creek along CR 50 and CR 52. A 20 year old woman was killed in the vehicle. Two others including the victim's mother in the other vehicles were rescued. Time of occurrence from Times Daily news article. 2-3 inches of rain in less than two hours.
ANTIOCH	3/23/2020	Flash Flood	Flooding near CR 403 at CR 73 from Six Mile Creek. Depth of water was 1.5-3 inches.
MARS HILL	3/23/2020	Flash Flood	Water over the road at 1701 Mars Hill Road. Depth of water was 1.5-3 inches.
POWELL	3/23/2020	Flash Flood	Water over the road at Deerlick Branch on CR 155. Depth of water was 1.5-3 inches.
ANDERSON	3/23/2020	Flash Flood	Flash flooding along Anderson Creek on CR 50 and CR 52. Depth of water was 1.5-3 inches.
ANDERSON	3/23/2020	Flash Flood	Flash flooding closed the bridge on CR 49 over East Fork of Anderson Creek. Depth of water was 1.5-3 inches.
ANDERSON	3/23/2020	Flash Flood	Flash flooding closed CR 156 at Anderson Creek. Depth of water was 1.5-3 inches.
UPPER GREEN H	3/23/2020	Flash Flood	Flash flooding closed CR 130 at Military Road. Depth of water was 1.5-3 inches.
POWELL	3/23/2020	Flash Flood	CR 520 and CR 522 closed due to flash flooding along Anderson Creek. Depth of water was 1.5-3 inches.
ANTIOCH	3/23/2020	Flash Flood	CR 31 closed due to flash flooding in Killen. Depth of water was 1.5-3 inches.
SULLIVAN XRDS	3/17/2021	Flash Flood	Intersection of CR81 and CR112 closed in Oakland. Depth of water was 3-5 inches.
KILLEN	3/17/2021	Flash Flood	Road impassable due to rushing water at CR63 at Brush Creek. Depth of water was 3-5 inches.
CENTER STAR	10/5/2021	Flash Flood	Approximately two feet of water covering Cousins Gas Station along Highway 72 just east of Killen.
CENTRAL HGTS	6/2/2022	Flash Flood	Flash flooding reported at 6891 County Road 6. Depth of water was 3-6 inches.
JACKSONBURG	6/2/2022	Flash Flood	Flash flooding reported at County Road 7 at County Road 639. Road covered in water. Depth unknown. This flooding is from Cypress Creek. Depth of water was 3-6 inches.
ZIP CITY	6/2/2022	Flash Flood	Roadway flooded at Highway 17 and Davis Lane. DDepth of water was 3-6 inches.
LOVELACE XRDS	6/2/2022	Flash Flood	Flooding reported at Highway 157 near County Road 6. One land completely flooded. Depth of water was 3-6 inches.
CLOVERDALE	6/2/2022	Flash Flood	County Road 11 flooded between County Road 118 and County Road 273. Depth of water was 3-6 inches.
JACKSONBURG	6/2/2022	Flash Flood	Flooded roadway along County Road 7 near County Road 639. Depth of water was 3-6 inches.
JACKSONBURG	6/2/2022	Flash Flood	Flash flooding was reported along County Road 124 near Oakdale Drive, with the road starting to erode. Depth of water was 3-6 inches.
MC GEE TOWN	6/2/2022	Flood	County Road 41 at Ghost Bridge was impassable due to flooding. County Road 41 closed from County Road 16 to Crosslin Lane. Depth of water was 3-6 inches.
PETERSVILLE	8/8/2022	Flash Flood	Side creeks overflowing, along with nearby cropland. A yard was covered with water and a basement was flooded. Depth of water unknown.
FLORENCE	8/10/2022	Flash Flood	Woman helped from vehicle after driving into floodwaters on Commerce Street. Depth of water was 6-8 inches.
FLORENCE	8/10/2022	Flash Flood	Road Department closed Commerce Street due to flooding. Location notoriously floods due to low elevation. Depth of water now 6-12 inches.
PETERSVILLE	8/10/2022	Flash Flood	Intersection of Chisholm and Gresham Roads underwater. Depth estimated at 1-2 feet from earlier heavy rainfall. Elevation is in low spot. Report relayed via social media.

Chart:
Historical Flood Events for Lauderdale County between 1996-2020
(Chart, 2020: NOAA Climatic Data Center, Multi-Hazard Mitigation Planning Team)

HAZARDOUS MATERIALS

Description and Profile

Hazardous materials (HAZMAT) are part of the technological hazards category that originate from human activities. Hazardous materials (HAZMAT) are chemical substances that can pose a threat to the environment or health of people and animals if released and exposure occurs. Hazardous chemicals are found throughout Lauderdale County in areas of industry, agriculture, commercial development and medical facilities. HAZMAT can come in the form of explosives, flammable and combustible substances, corrosives, gases, poisons and radioactive materials. Exposure to HAZMAT can cause mild to severe health problems including long lasting health effects and death. Exposure can damage buildings, homes and entire sections of communities including rivers, streams and drinking water supplies. Due to the potential public hazard, facilities possessing HAZMAT are required to register and receive permits through state and federal agencies for the monitoring of proper storage, transport and care of HAZMAT material. Under normal conditions, these substances are controlled and pose no threat to human life and the environment. However, when a release occurs, they can produce disastrous results. Releases may come from fixed sources, such as a manufacturing or storage facility, or from a transportation source, such as a truck, railcar or boat. Accidental releases can occur due to equipment failure, human error or a natural or man-made hazard event.

Location

HAZMAT can be associated with a fixed facility or with a transportation corridor such as a highway or railway. With fixed facility HAZMAT, the substances are identified and permitted by the Environmental Protection Agency (EPA) and Alabama Department of Environmental Management (ADEM) and the facility is required to store and handle the substances per established regulations for public and environmental safety. These facilities are required to develop emergency plans and spill plans for the purpose of responding to a HAZMAT release.

According to the Environmental Protection Agency (EPA) EnviroFacts online community information database, there were 575 EPA regulated facilities in Lauderdale County in 2020. The table below specifies what regulation/permit category these facilities are associated with and how many facilities are permitted for each category within the county.

The Environmental Protection Agency (EPA) Enforcement Compliance History Online (ECHO) Report identifies EPA regulated facilities within incorporated places and their associated regulation/ permit categories, as well as any violations these facilities may have. The table below illustrates 2020 EPA regulated facilities within the incorporated places in Lauderdale County and identifies if any of these facilities have violations. There were eleven facilities in Lauderdale County in 2020 with a current violation and five of them have significant violations.

Transportation HAZMAT incidents can also occur when hazardous substances are being transported via roadway, railway or waterway from one facility to the next. The transportation of hazardous material is regulated by state and federal agencies including the U.S. Department of Transportation, U.S. Environmental Protection Agency and the Alabama Department of Environmental Management. All hazardous substances being transported through Alabama must be properly stored, contained and labeled and transported between permitted facilities.

2020 ENVIRONMENTAL PROTECTION AGENCY (EPA) REGULATED/PERMITTED FACILITIES IN LAUDERDALE COUNTY

Regulated/Permitted Category	Number of Facilities
ICIS-Air - Facilities that are permitted for air emissions	26
BR - Facilities that are permitted to generate hazardous waste	6
RCRA - Facilities that are permitted to handle hazardous waste	137
PCS/ICIC - Facilities permitted to discharge waste water into waterbodies	391
TRI - Facilities permitted to have toxic releases	15
Source: *EPA-Envirofacts: http://www.epa.gov/enviro/facts/topicsearch.html*	

2020 EPA ENFORCEMENT AND COMPLIANCE HISTORY ONLINE (ECHO) REPORT FOR FACILITIES LOCATED IN LAUDERDALE COUNTY INCORPORATED PLACES

Town/ City	Facility with Current Violation	Facility with Violation in last 3 Years	Facility with Formal Enforcement Actions in 5 Years	Facilities with ICIS Source - Air Emissions	Facilities with ICIS NPDES Permits -Waste Water Discharge	Facilities with RCRA IDs - Waste Handlers	Facilities with TRI Releases- Toxic Releases
City of Florence	8	14	3	19	91	65	15
Town of Anderson	1	2	0	0	7	0	0
Town of Killen	1	3	1	0	5	1	0
Town of Lexington	1	2	0	0	5	1	0
Town of Rogersville	2	4	0	1	13	3	0
Town of St. Florian	0	0	0	0	0	0	0
Town of Waterloo	0	0	0	0	2	0	0
Source: *EPA-Envirofacts: http://www.epa.gov/enviro/facts/topicsearch.html*							

Top Center:
2020 EPA Regulated/Permitted Facilities in Lauderdale County
(Chart, 2020: EPA Envirofacts, Multi-Hazard Mitigation Planning Team)

Bottom Center:
2020 EPA Enforcement & Compliance History Online (ECHO) Report for Facilities located in Lauderdale County Incorporated Places
(Chart, 2020: EPA Envirofacts, Multi-Hazard Mitigation Planning Team)

There are four main highways in Lauderdale County that serve as freight truck routes: U.S. Highway 43; U.S. Highway 72; AL Highway 20; and AL Highway 17. According to the North Alabama Industrial Development Association, North Alabama is served by more than 65 commercial trucking companies. Tennessee Southern Railroad provides industrial rail service through the county with its southern terminus located in downtown Florence along the banks of the Tennessee River. The tracks extend north out of the city paralleling the AL 157 and AL 17 corridors into Tennessee. The Tennessee River runs east to west along the southern boundary of Lauderdale County. According to the Tennessee Valley Authority, over 50 million tons of freight move up and down the Tennessee River including various types of petroleum products and industrial chemicals and materials.

Previous Occurrences

The EPA's Emergency Response Notification System (ERNS) requires that all accidents or spills of HAZMAT material from all types of facilities, whether fixed or in transit, be reported. The National Response Center is operated by the U.S. Coast Guard and the database of incidents is also managed by the Coast Guard at http://www.nrc.uscg.mil/. The table below lists all hazardous material related incidents that have occurred in Lauderdale County from 1982 through 2020 and were reported to the ERNS. According to the Emergency Response Notification System (ERNS), there have been 146 incidents in the past 38 years resulting in three fatalities, 11 injuries, 355 people evacuated and $50,000 in property damage.

The Emergency Response Notification System database also records the type of facility the incident occurred from including fixed facilities, mobile vehicles such as trucks, rail, ships or planes. Of the 146 incidents that occurred in Lauderdale County between 1982 and 2020, 53 of the incidents originated from mobile vehicles, 44 originated from fixed sites and 36 were discovered as an unknown sheen on the surface of water.

EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) REPORTED INCIDENTS FROM 1982-2020 FOR PLACES IN LAUDERDALE COUNTY AND INCORPORATED PLACES

Location	Total # Incidents	Fatalities	Hospitalizations	Injuries	Total # People Evacuated	Total Property Damage
Lauderdale County	20	1	1	1	3	0
City of Florence	91	1	8	8	352	$50,000
Town of Anderson	0	0	0	0	0	0
Town of Killen	19	1	2	2	0	0
Town of Lexington	1	0	0	0	0	0
Town of Rogersville	14	0	0	0	0	0
Town of St. Florian	0	0	0	0	0	0
Town of Waterloo	1	0	0	0	0	0
Total	146	3	11	11	355	$50,000

Source: *National Response Center U.S. Coast Guard, http://www.nrc.uscg.mil/*

EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) REPORTED INCIDENTS TYPES FROM 1982-2020 FOR PLACES IN LAUDERDALE COUNTY

Type of Facility Incident	Number of Incident
Fixed Site	44
Storage tank, pipeline, drilling platform	11
Mobile vehicle (truck, rail, ship, plane)	53
Unknown sheen on water	36
Continuous release	0
Other	2

Source: National Response Center U.S. Coast Guard, http://www.nrc.uscg.mil/



Top:
ERNS Reported Incidents from 1982-2020 for Places in Lauderdale County
(Chart, 2020: National Repsonse Center, Multi-Hazard Mitigation Planning Team)

Bottom Left:
ERNS Reported Incident Types from 1982-2020 for Places in Lauderdale County
(Chart, 2020: National Repsonse Center, Multi-Hazard Mitigation Planning Team)

Bottom Right:
Hazardous Materials
(Photo, 2009: istockphoto.com)

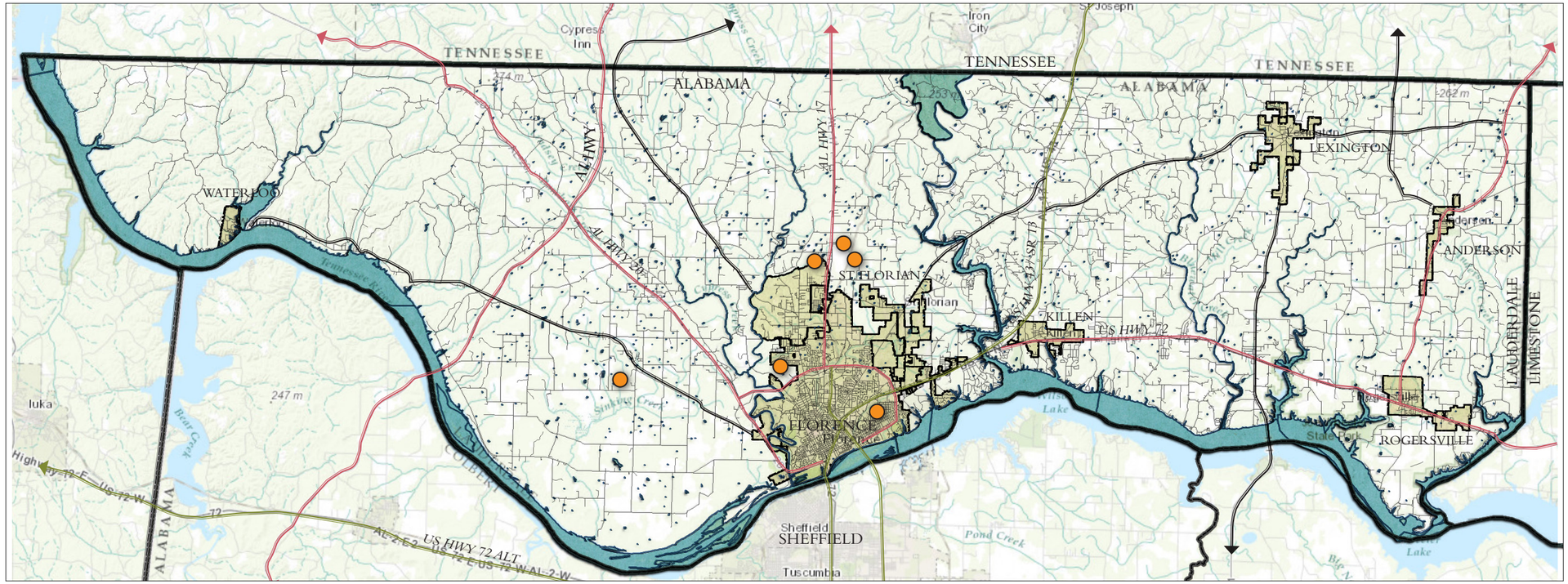
Future Probability and Magnitude/Severity

The percent probability of a hazardous material incident occurring in Lauderdale County is highly likely with a future probability percentage of 384% that a hazardous material incident will occur in the next year. The assessed magnitude and severity is categorized as negligible to limited and depends on the type of hazardous material released, the size of the release and the exposure to the release. The extent of the potential hazard could cause thousands of dollars in property damage.

HAZARDOUS MATERIAL INCIDENT FUTURE PROBABILITY ASSESSMENT AND EXTENT OF DISASTER BASED ON HISTORICAL DATA BETWEEN 1982 - 2020			
Extent of Jurisdictional Affect: Extensive	Historical Occurrences: 146	Percent Probability of Future Occurrence: Occasional -Highly Likely	Magnitude/ Severity of Event: Negligible - Limited
Lauderdale County	20	52%	0
City of Florence	91	239%	$50,000
Town of Anderson	0	0	0
Town of Killen	19	50%	0
Town of Lexington	1	2.6%	0
Town of Rogersville	14	37%	0
Town of St. Florian	0	0	0
Town of Waterloo	1	2.6%	0
TOTAL	146	384%	$50,000
Source: *Hazard Mitigation Planning Team*			

Chart:
Hazardous Material Incident Future Probability Assessment & Extent of Disaster based on Historical Data between 1982-2014 (Chart, 2014: Hazard Mitigation Planning Team, Chastidy Piper)

Map:
HAZUS-MH Identified Hazardous Materials (Map, 2015: Randy Morgan)



LEGEND

- *Hazardous Materials*

HURRICANES AND TROPICAL CYCLONES

Description and Profile

Tropical depressions, tropical storms and hurricanes are collectively called tropical cyclones. A tropical cyclone is an organized, rotating system of clouds and thunderstorms that originates over tropical and subtropical waters and forms a circular rotation around an eye. Tropical cyclones are the most devastating natural hazards in the U.S. and an average of five hurricanes occur per year in the Atlantic Region.

A tropical depression is a cyclone with maximum sustained winds of 38 mph or less. A tropical storm is a cyclone with maximum sustained winds of 39 to 73 mph. A hurricane is a cyclone with maximum sustained winds of 74 mph or higher. Once a cyclone reaches hurricane strength, the Saffir/Stimpson Hurricane Scale is used to classify the storms strength and damage potential. A number scale from 1 to 5 is used to categorize hurricanes. The higher the number, the stronger the hurricane. Hurricane categories are defined by a storms central pressure, wind speed, storm surge height and damage potential.

Associated hazards with hurricanes include: severe winds, storm surge flooding, high waves, coastal erosion, extreme rainfall, thunderstorms, lightning and possibly tornadoes.

Location

The Gulf of Mexico has an extremely active hurricane season and many hurricanes make landfall from New Orleans to Pensacola and have the potential to impact North Alabama as they track north. Hurricanes do not directly impact Lauderdale County due to its distance from the coast; however, tropical storms and tropical depressions are capable of impacting the county as they move inward from the Gulf. Although no hurricane force cyclone storm events have hit Lauderdale County, their associated downgraded tropical storms have. Downgraded tropical storms have caused property damage and have impacted all parts of the county. Therefore, the potential impact of the planning area is classified as extensive.

Previous Occurrences

According to NOAA's Historical Hurricane Tracker Interactive Online Mapper, six tropical cyclones have tracked through Lauderdale County. Of these six tropical storms and depressions whose storm center passed directly through the county, the damage reported was negligible to none as they dissipated and weakened moving inward.

SAFFIR/ STIMPSON HURRICANE SCALE

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt 119-153 km/h	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt 154-177 km/h	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph 96-112 kt 178-208 km/h	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt 209-251 km/h	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: *NOAA National Weather Service, National Hurricane Center*

LAUDERDALE COUNTY HISTORICAL HURRICANE TRACKS FROM 1891 TO PRESENT

Hurricane/Cyclone Name	Date (Storm Life)	Deaths/Injuries	Property Damage
Not Named 1891	July, 3-8, 1891	0	0
Not Named 1916	Oct.9-19, 1916	0	0
Ethel	Sept.14-17, 1960	0	0
Frederic	Aug.29-Sept.-14, 1979	0	0
Danny	Aug.12-20, 1985	0	0
Arlene	June 8-14, 2005	0	0
Harvey	Aug 16 – Sep 02, 2017	0	0
Alberto	May 25 -31, 2018	0	0

Source: *2020 NOAA Historical Hurricane Tracker Interactive Online Mapper , http://coast.noaa.gov/hurricanes/*

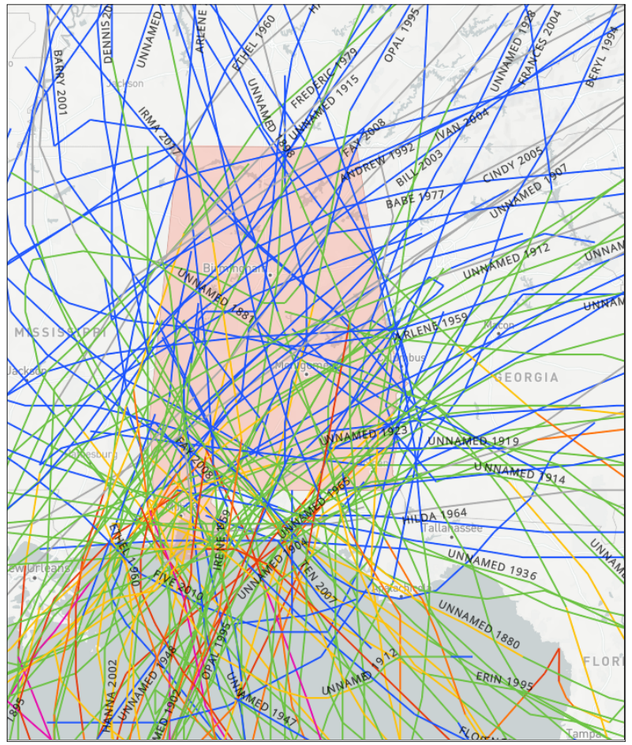
Top: Saffir / Stimpson Hurricane Scale (Chart, 2014: NOAA National Weather Service, National Hurricane Center, Chastidy Piper)

Bottom: Lauderdale County Historical Hurricane Tracks from 1891-Present (Chart, 2014: NOAA Climatic Data Center, Chastidy Piper)

NOAA's National Climatic Data Center Storm Event Database lists four cyclone storm events occurring in Lauderdale County since 1950.

Future Probability and Magnitude/Severity

The percent probability of a hurricane or tropical storm event occurring in Lauderdale County is categorized as occasional with a future probability percentage of 9% that a cyclone storm event will occur in the next year. The assessed magnitude and severity is categorized as negligible to limited and depends on the intensity of the storm. The extent of the potential hazard could cause millions in economic loss to property and agriculture.



Bottom Left:
State of Alabama Hurricane History Map (Map, 2020: NOAA Coastal Service Center)

Top Right:
Hurricane & Tropical Storm Events Reported in Lauderdale County between 1950-2020
(Map, 2020: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

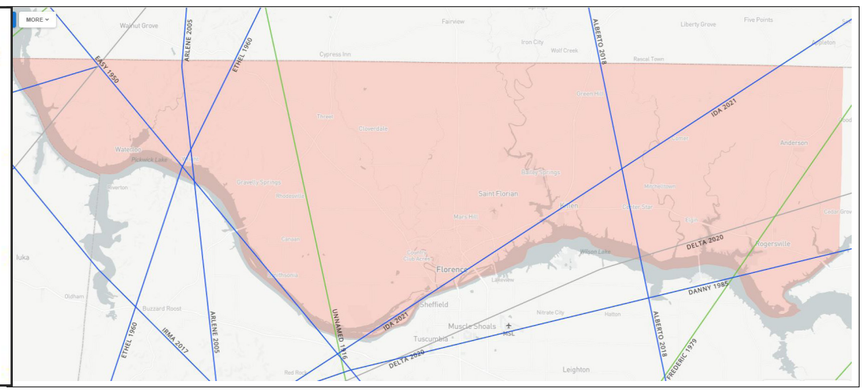
Middle Right:
Hurricane/Tropical Storm Event Future Probability Assessment of Disaster based on Historical Data between 1891-2020
(Map 2023, NOAA Historical Hurricane Tracks)

Bottom:
Map showing extent of hurricane disaster
(Map 2023, NOAA Historical Hurricane Tracks)

HURRICANE AND TROPICAL STORM EVENTS REPORTED IN LAUDERDALE COUNTY BETWEEN 1950 -2020				
Hurricane/Tropical Strom	Date	Death/Injuries	Property Damage	Crop Damage
Opal	10-4-95	2 Deaths	100 Million	10 Million
Tropical Storm	7-10-05	0	0	0
Tropical Storm	8-29-05	0	0	0
Tropical Depression	5-29-2018	0	0	0
Source: *2020 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/*				

HURRICANE/TROPICAL STORM EVENT FUTURE PROBABILITY ASSESSMENT OF DISASTER BASED ON HISTORICAL DATA BETWEEN 1891-2020			
Extent of Jurisdictional Affect: Extensive	Historical Occurrences: 12	Percent Probability of Future Occurrence: Occasional	Magnitude/ Severity of Event: Negligible - Limited
Lauderdale County	12	9%	110 Million
City of Florence	12	9%	110 Million
Town of Anderson	12	9%	110 Million
Town of Killen	12	9%	110 Million
Town of Lexington	12	9%	110 Million
Town of Rogersville	12	9%	110 Million
Town of St. Florian	12	9%	110 Million
Town of Waterloo	12	9%	110 Million
TOTAL	12	9%	110 Million
Source: *Hazard Mitigation Planning Team*			





LANDSLIDES

Description and Profile

A landslide is a downward and outward movement of slope-forming soil, rock and vegetation under the influence of gravity. Landslides are triggered by natural and human-induced changes in the environment. Landslides include soil creeps, surface slides and rock falls. These changes may be contributed to the following activities:

- Weaknesses in composition or structure of the rock or soil
- High precipitation
- Changes in ground-water level
- Seismic activity
- Construction or mining activity
- Over-steepening of slopes
- Changes in surface water runoff
- Heavy loads on slopes

Landslides are a major geologic hazard because they are widespread and occur in all U.S. states. Damage in the U.S. equals over $1-2 billion in damages and includes more than 25 fatalities on average each year. In Alabama, damages are over a million dollars every year. Landslides pose serious threats to highways and to structures that support community infrastructure and function, community economy and general transportation. Landslides commonly happen concurrently with other major natural disasters such as earthquakes and floods, which exacerbate relief and reconstruction efforts. The increased development of urban and recreational areas within steep slopes has led to increased threats, deaths and property damage by landslides. This development trend must be taken into account in Lauderdale County as growth within the planning study area continues.

Location

The State of Alabama reports 50 out of the 66 counties are vulnerable to landslides. However, in Lauderdale County, there are no records of significant landslide events, and Lauderdale County is ranked with moderate susceptibility with a low incidence by the Alabama Geologic Survey. With changes in development patterns and densities occurring, there is a greater chance of future landslide activity associated with future construction of buildings, highways, railroads and/or mining activities. Monitoring and land use planning activities must continue during the planning implementation period to ensure a low occurrence of significant landslides. The extent of a landslide hazard event is possible countywide; however, it is more likely within the participating jurisdictions located on the western end of Lauderdale County due to the geologic nature of the area. Landslide susceptibility increases with slope and in weaker rocks and according to the Geologic Survey Lauderdale has low to moderate susceptibility. Therefore, the potential impact of the planning area is classified as limited to significant.

Previous Occurrences

There have been no recent or historical landslide events in Lauderdale County according to the U.S. Geological Survey data. However, there is a small chance that the western portion of the county could experience a landslide event due to geologic conditions therefore, the planning team included this potential hazard in this assessment and has identified it as a possible threat.

Future Probability and Magnitude/Severity

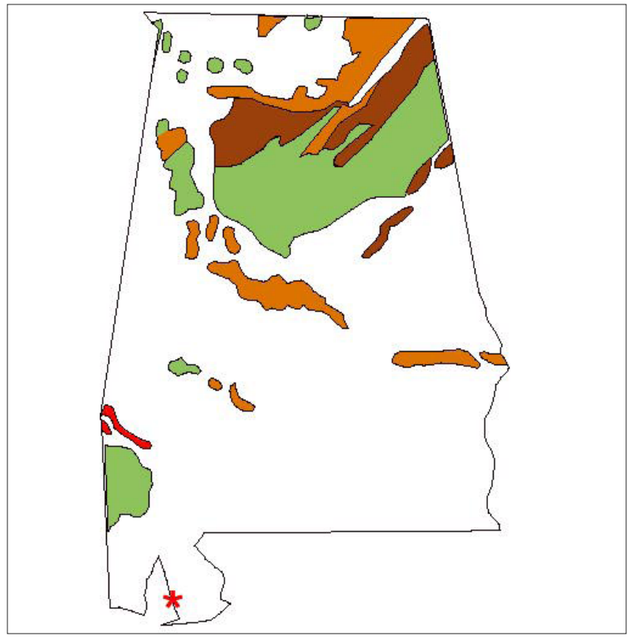
The percent probability of a landslide hazard event occurring in Lauderdale County is categorized as occasional with a future probability percentage of 0-10% that a landslide event will occur in the next year. The assessed magnitude and severity is categorized as negligible to limited and depends on the severity of the landslide event. Property damage and economic loss from landslides is estimated to be low to moderate.

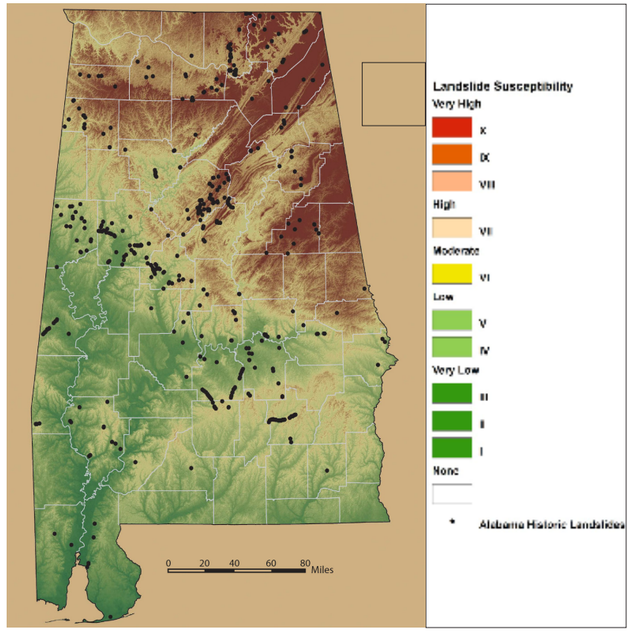
LANDSLIDE HAZARD EVENT FUTURE PROBABILITY ASSESSMENT AND EXTENT OF DISASTER BASED ON PREVIOUS OCCURRENCES

Extent of Jurisdictional Affect	Historical Occurrences	Percent Probability of Future Occurrence	Magnitude/ Severity of Event
Limited to Significant	0	Occasional	Negligible - Limited

Source: *Hazard Mitigation Planning Team*







Middle Center:
Landslide Hazard Event Future Probability Assessment & Extent of Disaster base on Previous Occurrences (Chart, 2020: Multi-Hazard Mitigation Planning Team)

Middle Bottom:
Landslide Photo
(Photo, 2014: U.S. Geological Survey)

Top Right:
Alabama Landslide Incidence Map
(Map, 2009: U.S. Geological Survey)

Bottom Right:
Alabama Landslide Susceptibility Map
(Map, 2023: Alabama State Hazard Mitigation Plan Update 2013)

NUCLEAR ACCIDENTS

Description and Profile

According to FEMA, a nuclear accident involves an actual or potential release of radioactive material at a commercial nuclear power plant or other nuclear facility, in sufficient quantity to constitute a threat to the health and safety of the off-site population. Even though nuclear facilities are designed to withstand aircraft attacks and incidents of natural disasters, emergency response plans must be in place for communities living in close proximity to these facilities in the event there is structural failure resulting in a release.

Location

There are no nuclear facilities in Lauderdale County, however there is one in neighboring Limestone County to the east. The Tennessee Valley Authority Brown's Ferry Nuclear Power Plant is located 14 miles from Lauderdale County and 40 miles from the City of Florence. The facility sits on 840 acres adjacent to the Wheeler Reservoir near Athens, Alabama, and is within the 10 mile Emergency Planning Zone (EPZ). Though the construction and operation of nuclear power plants are closely monitored and regulated by the Nuclear Regulatory Commission (NRC), accidents at these plants are considered a possibility and appropriate on-site and off-site emergency planning is conducted. FEMA, TVA and local jurisdictions have developed Federal Radiological Emergency Response Plans (FRERP). The potential impact of a nuclear release on the planning area is classified as extensive due to the close proximity of the plant to the county and its location on the Tennessee River. The entire county and all its municipalities would be adversely affected.

Previous Occurrences

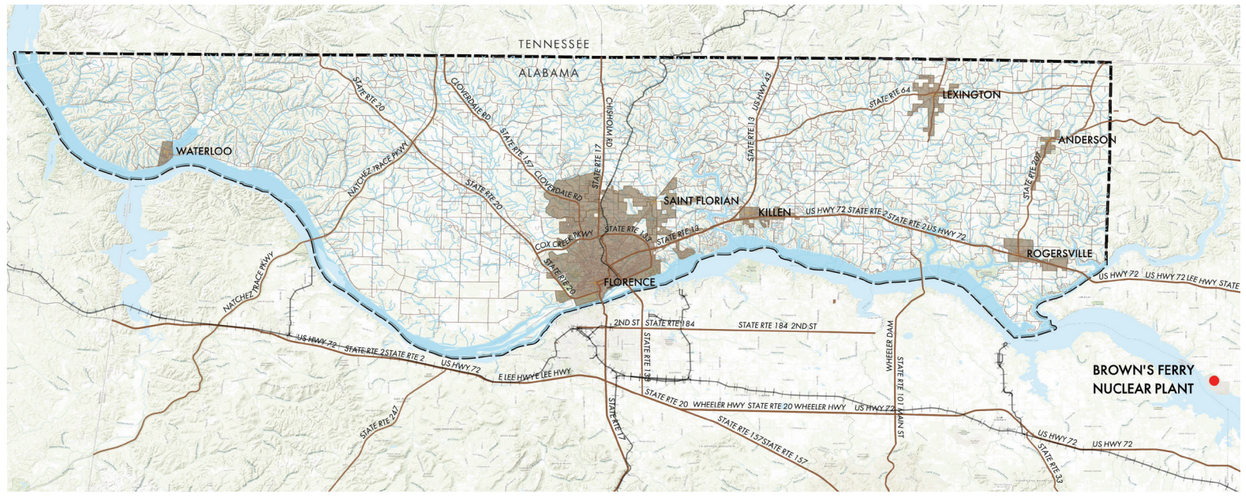
According to the Tennessee Valley Authority, there have been no incidents of nuclear release from the Brown's Ferry Nuclear Power Plant.

Future Probability and Magnitude/Severity

The percent probability of a nuclear release incident occurring in Lauderdale County is categorized as occasional with a future probability percentage of 0-10% that a nuclear release will occur in the next year. The assessed magnitude and severity of a nuclear release is categorized as catastrophic. Property damage and economic loss would be devastating and is estimated to be in the billions. Human and animal mortality would be high as would severe injury and illness.



NUCLEAR ACCIDENT HAZARD EVENT FUTURE PROBABILITY ASSESSMENT AND EXTENT OF DISASTER BASED ON PREVIOUS OCCURRENCES			
Extent of Jurisdictional Affect	Historical Occurrences	Percent Probability of Future Occurrence	Magnitude/ Severity of Event
Extensive	0	Occasional	Catastrophic
Source: *Hazard Mitigation Planning Team*			



BROWN'S FERRY NUCLEAR PLANT

Top Middle:
Brown's Ferry Nuclear Power Plant
(Image, 2015: United States Nuclear Regulatory Commission)

Top Right:
Nuclear Accident Hazard Event Future Probability & Extent of Disaster Based on Previous Occurences
(Chart, 2023: Hazard Mitigation Planning Team)

Bottom Right:
Brown's Ferry Nuclear Power Plant Map
(Image, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

Drawings
- BROWN'S FERRY NUCLEAR PLANT
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

ESRI Topo

SINKHOLES AND LAND SUBSIDENCE

Description and Profile

Sinkholes are a naturally occurring geologic feature resulting in the ground above a natural or manmade void to collapse. Areas that have sinkholes are known as karst terrain. The bedrock under areas where sinkholes form is usually made of limestone. The acid content in rainwater dissolves the limestone bedrock and begins an underground erosion process called dioxide cascade. Over time, this process forms cracks, crevices, tunnels and caves. When the roof of the cave can no longer support the weight of the ground above, it collapses forming the sinkhole. The process is also known as land subsidence. Sinkholes can also be caused by a drop in the water table due to drought, excessive rainfall/flood, drainage problems or heavy construction.

Sinkholes pose hazards to property and the environment and can result in millions of dollars of damage. They can cause substantial property damage, threaten water and environmental resources by draining streams, lakes, and wetlands and creating pathways for transmitting surface waters directly into underlying aquifers. Where these new pathways form, movement of surface contaminants into the underlying aquifer systems can degrade ground-water resources. Conversely, when sinkholes become plugged, they can cause flooding by capturing surface-water flow and can create new wetlands, ponds and lakes.

Location

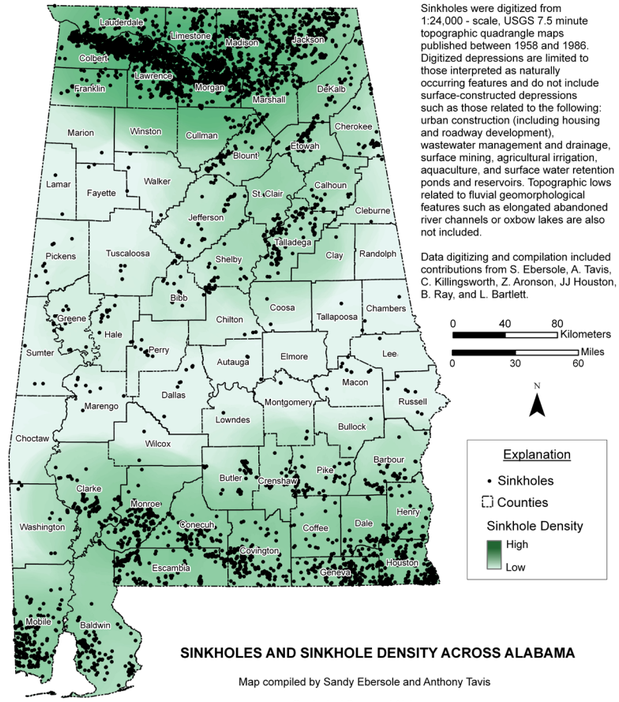
Most of Alabama's sinkholes are located in the northern portion of the state. An extremely large concentration of sinkholes is located just south of the Tennessee River in the western portion of the state forming a band that stretches east to west from Colbert County to Marshall County. Although Lauderdale County abuts Colbert and Marshall Counties, the two counties in the state with the greatest number of sinkholes, Lauderdale County only possess a moderate amount of sinkholes in comparison. All participating jurisdictions within the county are susceptible to sinkholes as a potential hazard, therefore the percentage of the study area susceptible to this hazard is categorized as extensive.

Previous Occurrences

The Geological Survey of Alabama website has an interactive map of the state of Alabama that allows users to zoom into specific locations and view sinkholes. The map was created in 2010 and uses data obtained from topographic maps of Lauderdale County. According to this map, the greatest concentration of sinkholes in Lauderdale County is located just west of the City of Florence, along the banks of the Tennessee River, around the Key Cave National Wildlife Refuge. There are close to 247 identified sinkholes Lauderdale County, 36 of which are located in Florence. The area located to the southeast of the Natchez Trace Parkway and to the southwest of Highway 20 has most sinkholes in Lauderdale County. This area consists of rural residential land use transitioning to larger farmland parcels the further south you go towards the river. The Tennessee Valley Authority owns most of the waterfront property in this area.

There are around 22 identified sinkholes in the City of Florence. There are around 2, 7, and 5 identified sinkholes in Killen, Rogersville and Lexington respectively. There are no identified sinkholes in the western corner of Lauderdale County west of the Natchez Trace Parkway in the Waterloo area. A sinkhole on Lauderdale Street measured 10 feet wide and close to 20 feet long. (selmatimesjournal.com). The information for other sinkholes is not available.

IDENTIFIED SINKHOLES IN LAUDERDALE COUNTY IN 2020 BY THE GEOLOGICAL SURVEY OF ALABAMA ONLINE INTERACTIVE MAP		
Extent of Jurisdictional Affect: Extensive	Historical Occurrences: 247	Percent Probability of Future Occurrence: Occasional
Lauderdale County	247	9%
City of Florence	22	9%
Town of Anderson	0	0%
Town of Killen	2	9%
Town of Lexington	5	9%
Town of Rogersville	7	9%
Town of St. Florian	0	0%
Town of Waterloo	0	0%
Source: *Hazard Mitigation Planning Team*		



Middle Center:
Identified Sinkholes in Lauderdale County in 2020 by the Geological Survey of Alabama Online Interactive Map
(Chart, 2010: Geological Survey of Alabama)

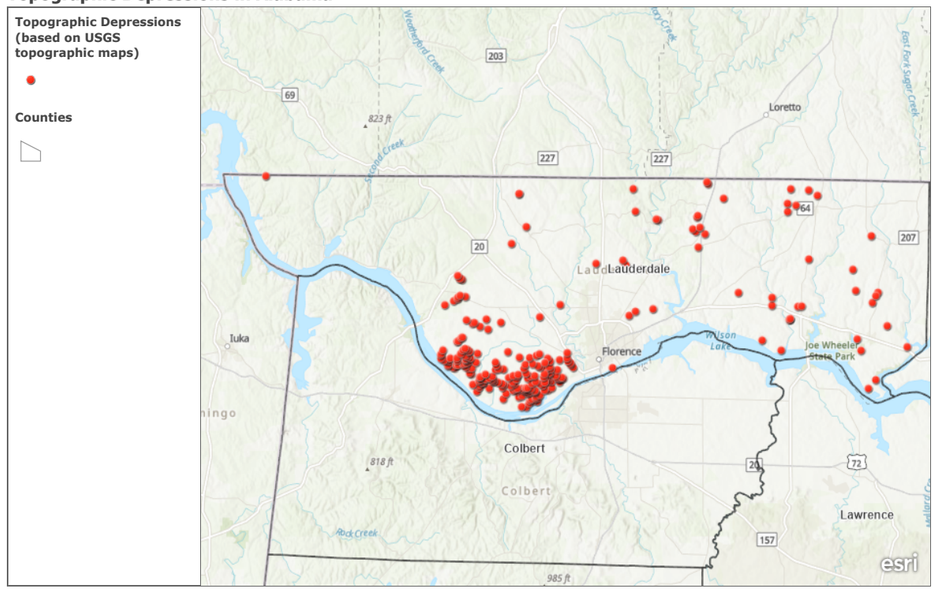
Bottom Right:
Sinkhole & Sinkhole Density Across Alabama
(Map, 2014: Geological Survey of Alabama)

Future Probability and Magnitude/Severity

According to county and city engineers, sinkholes occurring in municipal limits do not happen very often but when they do, they are typically associated with failed storm water drainage infrastructure and damage is minor to moderate. Sinkholes located in populated areas that present a danger are filled to prevent any hazard. However, most sinkholes in Lauderdale County are in rural farmland areas and present little to no danger to the general public. However, due to the karst terrain of areas of Lauderdale County, it is possible that a sinkhole of significant size could occur in a populated area of the county and present a serious hazard. Based on the Geological Survey of Alabama's 2020 sinkhole data, the percent probability of a new sinkhole forming in Lauderdale County is categorized as likely. Its location within the county would determine if it is a hazard requiring further action. The assessed magnitude and severity of a sinkhole is categorized as negligible to critical depending on its location and size.

SINKHOLE HAZARD EVENT FUTURE PROBABILITY ASSESSMENT AND EXTENT OF DISASTER BASED ON PREVIOUS OCCURRENCES				
County Region	Municipalities in Region	Identified Sinkholes	Probability of Future Occurrence	Magnitude/ Severity of Event
Middle, North of Florence	City of Florence Town St. Florian	22	Likely	Limited -Critical
Middle, West of Florence	City of Florence	200	Highly Likely	Limited -Critical
Eastern	Town of Killen Town of Lexington Town of Rogersville Town of Anderson	25	Likely	Limited -Critical
Western	Town of Waterloo	0	Occasional	Negligible
Lauderdale County Total		**247**	**Highly Likely**	**Limited -Critical**
Source: *Hazard Mitigation Planning Team*				

Topographic Depressions in Alabama



Left:
Sinkhole Hazard Event Future Probability Assessment & Extent of Disaster based on Previous Occurrences
(Chart, 2023: Multi-Hazard Mitigation Planning Team)

Right:
Identified Sinkholes in Lauderdale County in 2020 by the Geological Survey of Alabama Online Interactive Map
(Chart, 2010: Geological Survey of Alabama)

SEVERE STORMS

Description and Profile

For the purpose of this document, severe storm events include thunderstorms, high winds, lightning and hail. The combination of these events or as individual occurrences can be deadly. Thunderstorms are heavy rainstorm accompanied by thunder, lightning, strong winds and sometimes hail. Thunderstorms can produce strong winds known as a down burst or straight-line winds which may exceed 120 mph. These storms can tear off roofs, topple trees and overturn mobile homes. Some thunderstorms can be accompanied by tornadoes. The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes.

According to the National Oceanic and Atmospheric Administration, approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena:

- Hail measuring three quarters of an inch or larger in diameter; and/or
- Winds equal or exceed 58 mph

The National Weather Service will issue the following public safety announcements associated with thunderstorms:

- A severe thunderstorm watch is issued when the weather conditions are such that a severe thunderstorm is likely to develop. They are issued well in advance of the actual occurrence of severe weather. During the watch, people should review severe thunderstorm safety rules and be prepared to move to a place of safety if threatening weather approaches.

- A severe thunderstorm warning is issued when a severe thunderstorm has been sighted or indicated by weather radar. At this point, the danger is very serious, and it is time to go to a safe place, turn on a battery-operated radio or television and wait for the "all clear" from authorities.

High winds associated with a severe storm are capable of damaging property and structures and include straight-line winds, down-bursts and micro-bursts. Straight-line winds are high winds across a wide area that can reach 140 mph. Down-bursts are localized currents of air blasting down from a thunderstorm to the ground resulting in outward bursts of damaging winds. Micro-bursts are small downbursts covering an area less than 2.5 miles across and include a strong wind shear.

Lightning is the visible electric discharge associated with a thunderstorm. Lightning can occur within a cloud, from cloud to cloud, cloud to air or cloud to ground. In the U.S., lightning causes an average of 60 fatalities and 300 injuries a year.

Hail occurs when strong rising air currents associated with a thunderstorm, called updrafts, carry water droplets to a height where freezing can occur. When the ice particles fall to the ground, they are called hail. Severe thunderstorms have been known to produce hail three quarters of an inch or more in diameter and fall at speeds close to 100 mph. In the U.S., hail storms cost more than $1 billion in damages to property and crops every year.

Location

Severe storms impact the entire Lauderdale County planning area and typically occur from mid-March through September. However, they can occur anytime in the year when conditions are warm and favorable. According to National Weather Service data, Lauderdale County and all of its municipalities have experienced severe storm events that have resulted in deaths, injuries, property damage and crop damage. The entire planning area will continue to experience severe storms and be impacted by their hazardous conditions, therefore the percentage of the study area susceptible to this hazard is categorized as extensive.

Previous Occurrences

According to data from NOAA's Storm Event Database, there have been 7,549 thunderstorm and high wind events in Lauderdale County between 05/1/61 and 08/01/20. These hazardous events resulted in two deaths and five injuries. Property damage from these events totaled $3.8M and crop damage totaled $519.00 K.

THUNDERSTORM AND HIGH WIND EVENTS IN LAUDERDALE COUNTY BETWEEN 5/1/61- 8/01/2020				
Thunderstorm and High Wind Events	Deaths	Injuries	Property Damage	Crop Damage
749	2	5	$3.8 M	$519.00 K
Source: *2020 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/*				

The NOAA Storm Event Database reports 30 lightning events in Lauderdale County between 06/1/96 and 08/01/20. These events resulted in eight injuries and $169.0 K in property damage.

LIGHTNING EVENTS IN LAUDERDALE COUNTY BETWEEN 06/1/96-08/01/2020				
Lightning Events	Deaths	Injuries	Property Damage	Crop Damage
30	0	8	$169.0 K	$0.0K
Source: 2020 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/				

According to the NOAA Storm Event Database, there have been 193 hail events in Lauderdale County between 06/1/69 and 12/31/14. These events resulted in $163.50 K in property damage and $77.0 K in crop damage.

HAIL EVENTS IN LAUDERDALE COUNTY BETWEEN 06/1/69-08/01/2020				
Hail Events	Deaths	Injuries	Property Damage	Crop Damage
193	0	0	$163.50 K	$77.00K
Source: 2020 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/				

Severe Storm Event Extent Disaster Based on Historical Data between 12/01/50-12/31/22

- In the last 72 years the estimated gusts for thunderstorm winds range from 0.59 miles per hour to 100 miles per hour.
- The extent of lightning occurrences in Lauderdale County is 46.0 events/square kilometers/year.
- Hail measuring 0.75 inch to 2.75 inches in diameter has been recorded as per the historical hail storms data from 1969 to 2022 (NOAA).

Bottom Middle:
Thunderstorm & High Wind Events in Lauderdale County 1961-2014
(Chart, 2014: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Top Right:
Lightning Events in Lauderdale County between 1996-2014
(Chart, 2014: NOAA National Climatic Data Center,Multi-Hazard Mitigation Planning Team)

Top Right:
Hail Events in Lauderdale County between 1969--2014
(Chart, 2014: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Future Probability and Magnitude/Severity

There were 972 severe storm events that included thunderstorms, high winds, lightning and hail in the planning area in the past 59 years. The percent probability of a severe storm event occurring in Lauderdale County is categorized as highly likely with a future probability percentage of 1,647 % that one or a combination of these severe storm hazards will occur in the next year. The assessed magnitude and severity is categorized as limited to critical and depends on the intensity and size of the storm. The extent of the potential hazard could cause millions in economic loss to property and agriculture as well as injuries and death.

SEVERE STORM EVENT FUTURE PROBABILITY ASSESSMENT OF DISASTER BASED ON HISTORICAL DATA BETWEEN 05/8/61-08/01/20			
Extent of Jurisdictional Affect: Extensive	Historical Occurrences: 972	Percent Probability of Future Occurrence: Likely - Highly Likely	Magnitude/ Severity of Event: Limited-Critical
Lauderdale County	593	1005%	$1.8M
City of Florence	134	227%	$715.90 K
Town of Anderson	35	59.3%	$70.6 K
Town of Killen	51	86.4%	$132.9 K
Town of Lexington	36	61%	$1.2M
Town of Rogersville	57	96.6%	$414.8 K
Town of St. Florian	16	27.1%	$24.6 K
Town of Waterloo	50	84.7%	$318.1 K
TOTAL	972	1,647%	$4.7M
Source: *Hazard Mitigation Planning Team*			







Top Left:
Severe Storm Event Future Probability Assessment & Extent of Disaster Based on Historical data between 1961-2020
(Chart, 2014: Hazard Mitigation Planning Team)

Bottom Left:
Severe Storm Damage
(Photo, 2010: istockphoto.com)

Bottom Center:
Severe Storm Damage
(Photo, 2010: istockphoto.com)

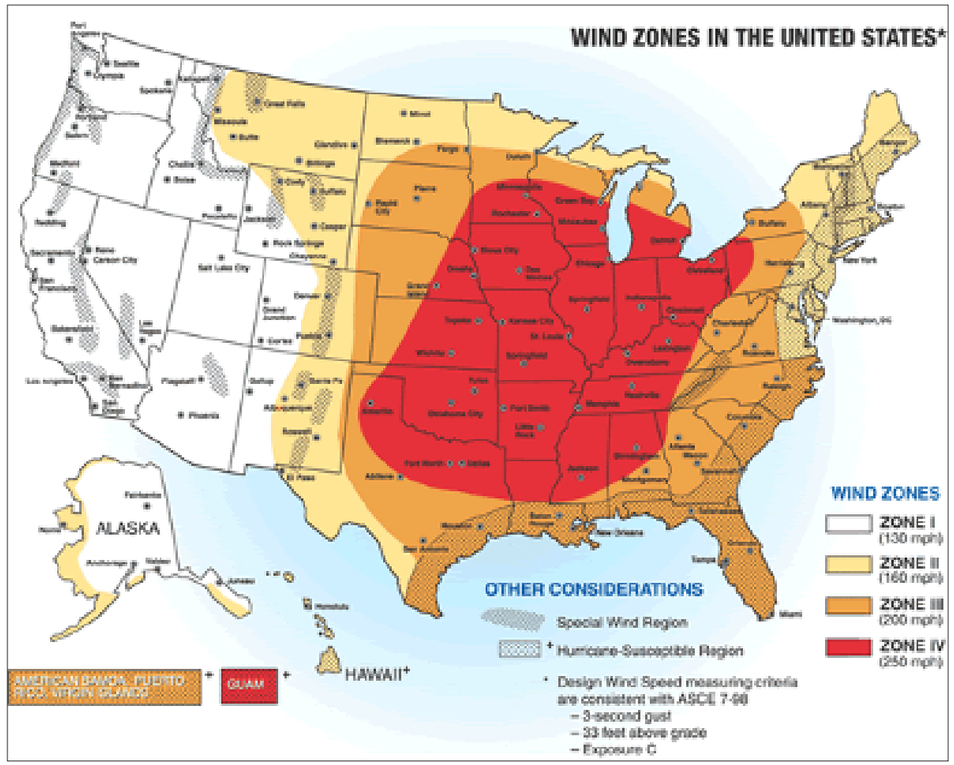
Right:
Lightning Photo
(Photo, 2013: noaa.gov)

TORNADOS

Description and Profile

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud and is formed from a horizontal change in wind speed and direction that is then uplifted into a vertical formation. The vertical mass can be greater than six miles wide in rotation. Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction with wind speeds that can exceed 250 mph. Damage paths can be more than one mile wide and 50 miles long. Tornado season is generally March-August and again in November-December, although tornadoes can occur at any time of year. Over 80 percent of all tornadoes strike between noon and midnight.

The Fujita Scale was developed in 1971 and is used to measure tornado strength using sets of wind measurements based on damage that results from wind speed. It was enhanced in 2007 and now includes 28 damage indicators and associated degrees of damage allowing for more detailed analysis and better correlation between damage and wind speed. Tornadoes are classified by the damaging pattern which is categorized by EF0 through EF5.



Location

Tornadoes are most prevalent in the United States and occur in the Midwest, Southwest and Southeast. Alabama ranks fourth in the nation in the number of killer tornadoes and the number of fatalities. The entire state is vulnerable to the threat of tornadoes, however Lauderdale County and the entire planning area is extremely susceptible. The planning study area is located in a Zone IV Wind Zone, according to the FEMA U.S. Wind Zone Map. This map shows frequency and strength of extreme windstorms in the U.S. Lauderdale County is at the highest risk of damage from these events.

Based on the NOAA Storm Prediction Center map of historic tornado data from 1950 through 1998 Lauderdale County and all its municipalities are located in the highest tornado zone (>15) of previously recorded tornados of F3 category and higher occurring per 2,470 square miles. Therefore, tornadoes were assessed as a significant threat to the entire planning area and every jurisdiction of Lauderdale County and categorized as extensive with the capability of affecting 50-100% of the planning area.

ENHANCED FUJITA SCALE		
EF-Scale:	**Old F-Scale:**	**Typical Damage:**
EF-0 (65-85 mph)	F0 (40-72 mph)	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF-1 (86-110 mph)	F1 (73-112 mph)	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF-2(111-135 mph)	F2 (113-157 mph)	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF-3 (136-165 mph)	F3 (158-207 mph)	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF-4 (166-200 mph)	F4 (208-260 mph)	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF-5 (>200 mph)	F5 (261-318 mph)	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yd); high-rise buildings have significant structural deformation; incredible phenomena will occur.
EF No rating	F6-F12 (319 mph to speed of sound)	Inconceivable damage. Should a tornado with the maximum wind speed in excess of EF-5 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc., will create serious secondary damage on structures.
Source: *NOAA Storm Prediction Center*		

Left:
Wind Zones in the United States
(Map, 2020: fema.gov)

Right:
Enhanced Fujita Scale
(NOAA Storm Prediction Center)

Legend

F Scale***

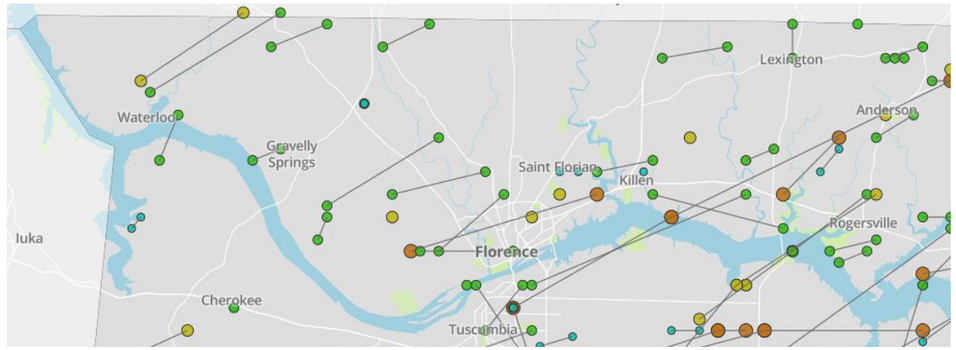
- EF5
- EF4
- EF3
- EF2
- EF1
- EF0
- Not Available

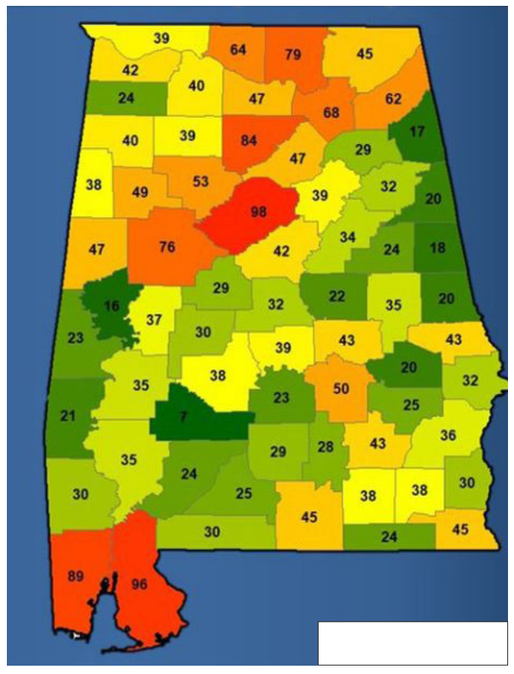
Enhanced Fujita Scale describes the strength of the tornado based on the amount and type of damage caused by the tornado. The F-scale of damage will vary in the destruction area; therefore, the highest value of the F-scale is recorded for each event.

- EF0 – Light Damage (40 – 72 mph),
- EF1 – Moderate Damage (73 – 112 mph),
- EF2 – Significant damage (113 – 157 mph),
- EF3 – Severe Damage (158 – 206 mph),
- EF4 – Devastating Damage (207 – 260 mph),
- EF5 – Incredible Damage (261 – 318 mph)

Previous Occurrences

According to NOAA's 2022 National Climatic Data Center Storm Events Database, there have been a total of 39 tornado events in Lauderdale County between 1950 and December 2022. These tornado events resulted in two deaths, 20 injuries, and 2.893 M in property damage.





Alabama is right in the center of the "hot zone" for tornadoes (oftentimes referred to as Dixie Alley) during the late fall, winter and early spring months. The northern half of the state sees substantially more tornadoes than the southern half of the state.

Top Right:
Tornado Activity in Lauderdale County, AL, from 1950 to 2022
(Chart, 2023: https://data.montgomeryadvertiser.com/tornado-archive/)

Bottom Right:
Total tornadoes to impact each of Alabama's counties from 1950-2019.
(Map: WSFA 12 News/NWS)

Left:
Tornado Events Reported in Lauderdale County 1950-2020
(Chart, 2020: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

TORNADO EVENTS REPORTED IN LAUDERDALE COUNTY BETWEEN 1950 -PRESENT

Location	Date	Magnitude	Death/Injuries	Property Damage$	Crop Damage$
Lauderdale County	11/15/51	F2	0/6	2.50K	0
Lauderdale County	3/22/53	F2	0/0	2.50K	0
Lauderdale County	9/20/58	F1	0/0	25.00K	0
Lauderdale County	3/9/64	F3	2/2	250.00K	0
Lauderdale County	3/17/65	F3	0/0	250.00K	0
Lauderdale County	10/24/67	F3	0/1	250.00K	0
Lauderdale County	3/20/76	F2	0/2	25.00K	0
Lauderdale County	4/11/79	F1	0/1	0	0
Lauderdale County	4/17/82	F1	0/0	250.00K	0
Lauderdale County	8/16/85	F1	0/0	0.03K	0
Lauderdale County	6/11/86	F1	0/0	2.50K	0
Lauderdale County	11/4/88	F0	0/0	0	0
Lauderdale County	5/3/93	F0	0/0	0	0
Lauderdale County	6/26/94	F3	0/3	500.00K	0
Florence	5/18/95	F1	0/0	200.00K	0
Killen	2/27/99	F2	0/0	145.00K	0
Florence	5/6/03	F1	0/0	200.00K	0
Rogersville	5/17/03	F1	0/0	250.00K	0
Lauderdale County	5/30/04	F1	0/0	5.00K	0
Florence	5/30/04	F1	0/0	30.00K	0
Killen	5/30/04	F1	0/0	30.00K	0
Anderson	5/30/04	F1	0/0	40.00K	0
Lauderdale County	10/18/04	F1	0/0	20.00K	0
Lexington	10/18/04	F1	0/0	5.00K	0
St. Florian	4/7/06	F0	0/0	0	0
Lauderdale County	5/8/08	EF1	0/2	300.00K	0
Lauderdale County	5/8/08	EF1	0/0	5.00K	0
Lauderdale County	5/10/08	EF1	0/0	100.00K	0
Lauderdale County	5/10/08	EF1	0/0	5.00K	0
Waterloo	4/27/11	EF1	0/0	0	0
Lauderdale County	4/27/11	EF1	0/1	0	0

Lauderdale County	5/25/11	EF1	0/0	0	0
Lauderdale County	2/20/14	EF1	0/0	0	0
Anderson	2/20/14	EF1	0/1	0	0
Waterloo	12/23/15	EF2	0/1	0	0
Threet	11/5/18	EF1	0/0	0	0
Thorotontown	12/16/19	EF1	0/0	0	0
Green Hill	2/12/20	EF1	0/0	0	0
Toonersville	03/22/2022	EF0	0/0	0	0
TOTAL 39			2/20	2.893M	$0
Source: *2023 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/*					

Future Probability and Magnitude/Severity

There were 39 tornado events in the planning area in the past 72 years. The percent probability of a severe storm event occurring in Lauderdale County is categorized as occasional to likely with a future probability percentage of 53% that a tornado will occur somewhere in Lauderdale County in the next year. The assessed magnitude and severity is categorized as limited to critical and depends on the intensity and size of the storm. The extent of the potential hazard could cause millions in economic loss to property as well as injuries and death.

TORNADO EVENT FUTURE PROBABILITY ASSESSMENT AND EXTENT OF DISASTER BASED ON HISTORICAL DATA BETWEEN 01/01/50-12/31/22			
Extent of Jurisdictional Affect: Extensive	Historical Occurrences: 39	Percent Probability of Future Occurrence: Occasional -Likely	Magnitude/ Severity of Event: Limited-Critical
Lauderdale County	27	37%	1.993M
City of Florence	3	3%	430K
Town of Anderson	2	3%	40K
Town of Killen	2	3%	175K
Town of Lexington	1	1%	5K
Town of Rogersville	1	1%	250K
Town of St. Florian	1	1%	0
Town of Waterloo	2	3%	0
TOTAL	38	53%	2.893M
Source: *Hazard Mitigation Planning Team*			

Top Left:
Tornado Events Reported in Lauderdale County 1950-2020
(Chart, 2020: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Bottom Left:
Tornado Event Future Probability Assessment & Extent of Disaster based on Historical Data between 1950-2020
(Chart, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

WUI
- Intermix
- Interface

Non-WUI Vegetated
- Very Low Density Housing
- No Housing

Non-Vegetated or Agriculture
- Medium and High Density Housing
- Low and Very Low Density Housing
- Water

Bottom Center:
Alabama Wildland Urban Interface 2000 (Chart, 2003: University of Wisconsin, Madison)

Right:
National Fire Danger Rating System (USDA Forest Service, 2020 (ww.fs.usda.gov/detail/inyo/home/?cid=stelprdb5173311))

WILDFIRES

Description and Profile

A wildfire is an uncontrollable fire spreading through vegetation that poses a threat to structures, wildlife, crops and lives. As with most natural disasters, wildfires are strongly influenced by weather phenomena and often begin unnoticed and spread quickly through dry vegetation. There are three factors that contribute to wildfire behavior and an area's potential to burn: fuel, topography and weather. Fuel is the material that feeds the fire and can consist of dead tree needles, twigs, brush, branches of dead trees, cured grass and other associated natural combustibles. An area's topography affects a wildfire's ability to spread and become larger. Slopes contribute to increased fire activity due to a fire's tendency to rise via convection. A fire's intensity and rate of spread increases as slope increases. Weather factors such as temperature, humidity, wind and lightning also affect the potential for wildfires. Drought conditions increase an area's chance for wildfires. More than 100,000 wildfires occur in the US every year and they clear up to 5 million acres of land.

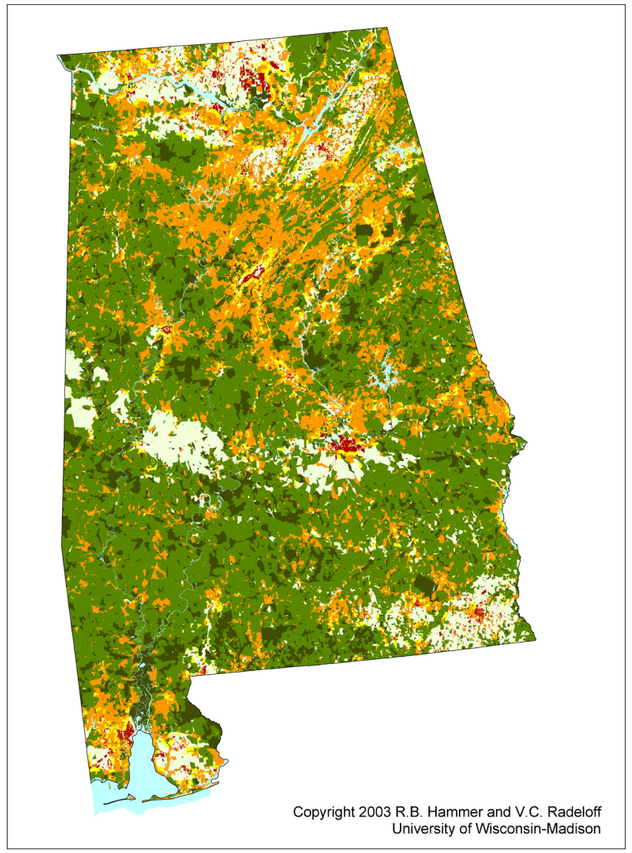
The US Department of Agriculture Fire Service has adopted a National Fire Danger Rating System (NFDRS). The purpose of the system is to help prevent human-caused wildfires from occurring. This system allows fire managers to express the level of fire danger in an area (and the need for fire protection) in terms of qualitative or numeric indices. Knowledge of the fire danger level in an area can help people make decisions on whether it is safe to have a campfire, burn debris, etc. If the fire danger level is very extreme, the National Forest has the ability to restrict certain activities. The table below provides the explanation of different danger levels established by the NFDRS.

The Wildland-Urban Interface (WUI) is the area where houses meet or intermingle with undeveloped wildland vegetation. This makes the WUI a focal area for human-environment conflicts such as wildland fires, habitat fragmentation, invasive species and biodiversity decline. Below is the Wildland Urban Interface map of Alabama illustrating areas of WUI areas of intermix and interface across the state. According to Alabama Statewide Forest Assessment and Resource Strategy about 29,593,963 acres (91.7%) of Alabama's total surface area are subject to wildfire threat.

Location

According to the Alabama Forestry Commission, an average wildland fire year in Alabama produces 4,000 wildland fires that burn over 40,000 acres. Nearly all wildfires in Alabama are human-caused with only 3 percent being caused by lightning. Debris burning and arson are major causes of wildland fire. Each year, Alabama wildfires damage or destroy 46 homes, 114 structures and 1,100 vehicles. Rapid population growth has resulted in extensive areas of wildland/urban interface across the State. An initial estimate found over 1,350 wildland/urban interface communities with potential wildland fire damage risk. Approximately 94 percent of Alabama's forestlands are privately owned, therefore the vast majority of wildland fires occur on privately owned lands.

Wildfires are identified as a threat to Lauderdale County and the entire planning area, especially areas where the interface and rural development patterns meet. The Lauderdale County Wildfire Risk Map below identifies areas within the planning area that are at low and moderate risk for wildfires. Based on this map, wildfires were assessed as a significant threat to the entire planning area and every jurisdiction of Lauderdale County and categorized as extensive with the capability of affecting 50-100% of the planning area.



NATIONAL FIRE DANGER RATING SYSTEM	
Fire Danger Rating and Color Code	Description
Low	Fuels do not ignite easily from small embers, but a more intense heat source, such as lightning, may start fires in duff or dry rotten wood. Fires in open, dry grasslands may burn easily a few hours after a rain, but most wood fires will spread slowly, creeping or smoldering. Control of fires is generally easy.
Moderate	Fires can start from most accidental causes, but the number of fire starts is usually pretty low. If a fire does start in an open, dry grassland, it will burn and spread quickly on windy days. Most wood fires will spread slowly to moderately. Average fire intensity will be moderate except in heavy concentrations of fuel, which may burn hot. Fires are still not likely to become serious and are often easy to control.
High	Fires can start easily from most causes and small fuels (such as grasses and needles) will ignite readily. Unattended campfires and brush fires are likely to escape. Fires will spread easily, with some areas of high intensity burning on slopes or concentrated fuels. Fires can become serious and difficult to control unless they are put out while they are still small.
Very High	Fires will start easily from most causes. The fires will spread rapidly and have a quick increase in intensity, right after ignition. Small fires can quickly become large fires and exhibit extreme fire intensity, such as long-distance spotting and fire whirls. These fires can be difficult to control and will often become much larger and longer-lasting fires.
Extreme	Fires of all types start quickly and burn intensely. All fires are potentially serious and can spread very quickly with intense burning. Small fires become big fires much faster than at the "very high" level. Spot fires are probable, with long-distance spotting likely. These fires are very difficult to fight and may become very dangerous and often last for several days.

Source: *USDA Forest Service, 2020 (ww.fs.usda.gov/detail/inyo/home/?cid=stelprdb5173311)*

Previous Occurrences

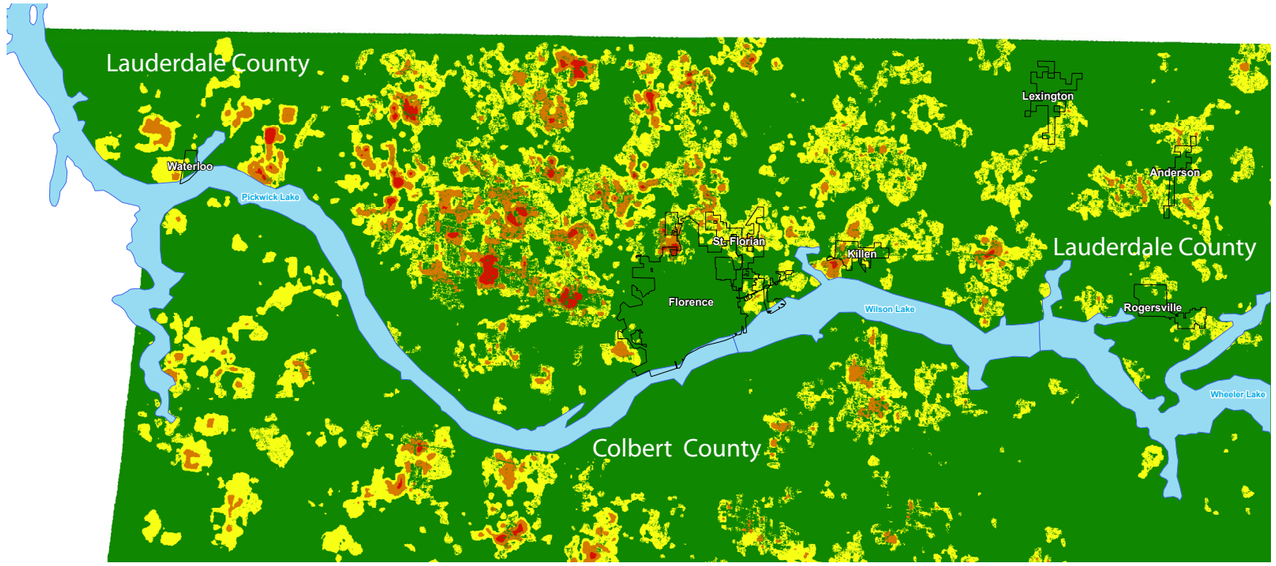
According to NOAA's 2014 National Climatic Data Center Storm Events Database, there have been no wildfires in Lauderdale County between 1950 and 2020. However, we know this to not be accurate due to reports from county and municipal officials and recognize that there is a lack of data for this hazard with this resource. However, the Alabama Forestry Commission reports that 353 wildfire events have occurred in Lauderdale County between 2012 and August 2020 resulting in 3,693.65 acres burned.

WILDFIRE EVENTS IN LAUDERDALE COUNTY BETWEEN 2007 AND 2020			
Total Number of Wildfires	Total Acres Burned	Number of Deaths	Number of Injuries
353	3,693.65	0	0
Source: *Alabama Forestry Commission*			

Future Probability and Magnitude/Severity

There were 353 wildfire events in the planning area in the past 13 years. The percent probability of a wildfire event occurring in Lauderdale County is categorized as highly likely with a future probability percentage of greater than 1000% that a wildfire will occur somewhere in Lauderdale County in the next year. The assessed magnitude and severity is categorized as negligible to limited and depends on the size and location of the wildfire. The extent of the potential hazard could cause millions in economic loss to property, crops, as well as injuries and death if the fire is spreads into the wildland urban interface and into developed areas of the county.

WILDFIRE EVENT FUTURE PROBABILITY ASSESSMENT AND EXTENT OF DISASTER FOR LAUDERDALE COUNTY BASED ON HISTORICAL DATA BETWEEN 2007 AND 2020			
Extent of Jurisdictional Affect:	Historical Occurrences:	Percent Probability of Future Occurrence:	Magnitude/ Severity of Event:
Extensive	353	Highly Likely (greater than 1000%)	Negligible-Limited
Source: *Hazard Mitigation Planning Team*			



LEGEND

- *1 - Low Risk*
- *2 - Medium Risk*
- *3 - High Risk*
- *4 - Extreme Risk*





Top Left:
Wildfire Events Reported in Lauderdale County 2007-2020
(Chart, 2020: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Bottom Right:
Wildfire Event Future Probability Assessment & Extent of Disaster for Lauderdale County based on Historical Data between 2007-2020
(Chart, 2023: Hazard Mitigation Planning Team)

Top Right:
Lauderdale County Wildfire Risk per Acre
(Map, 2015: Multi-Hazard Mitigation Planning Team)

Bottom Center and Right:
Wildfire Photos
(Photos, 2015: istockphoto.com)

WINTER STORMS

Description and Profile

Winter storms in the south involve snow and freezing rain and pose a threat to public safety, damage personal property and utilities, disrupt transportation, commerce and public services. Large storms can isolate portions of communities and shut down services and access for days. Heavy snow and ice can collapse roofs and down trees and power lines. They can cause power outages, freeze water lines and result in people being trapped in their homes for days without power, heat or supplies. Icy roadways result in many traffic accidents. Death from exposure to cold temperatures can also occur.

Location

Winter storms in Alabama are not as severe or common as they are in northern states. A winter storm in Alabama usually consists of freezing rain, sleet and a few inches of snow that may or may not accumulate. Most counties in Alabama do not experience a winter storm every year. Lauderdale County's location in the northern portion of the state results in its increased chance of a winter storm in comparison to other counties in Alabama. Due to the size and weather pattern of winter storms in North Alabama, winter storms were assessed as a significant threat to the entire planning area and every jurisdiction of Lauderdale County and categorized as extensive with the capability of affecting 50-100% of the planning area.

Previous Occurrences

According to NOAA's 2020 National Climatic Data Center Storm Events Database, there have been a total of 67 winter storm events in Lauderdale County between 1950 and present (December 2022). These winter storm events included winter weather, heavy snow, ice storms and sleet. They resulted in six deaths, four injuries and 5.25 B in property damage and 1.00K in crop damage.

WINTER STORM EVENTS REPORTED IN LAUDERDALE COUNTY BETWEEN 1950 -PRESENT

Location	Date	Event Type	Death/ Injuries	Property Damage$	Crop Damage$
Lauderdale County	3/12/93	Winter Storm	4/0	5.00B	0
Lauderdale County	2/9/94	Ice Storm	0/2	0	0
Lauderdale County	1/6/95	Sleet	0/0	0	0
Lauderdale County	1/22/95	Heavy Snow	0/0	0	0
Lauderdale County	2/6/95	Winter Storm	0/0	0	0
Lauderdale County	2/11/95	Winter Storm	0/0	0	0
Lauderdale County	1/6/96	Winter Storm	0/0	10.00K	1.00K
Lauderdale County	2/1/96	Winter Storm	0/0	15.00K	0
Lauderdale County	1/10/97	Winter Storm	0/0	10.00K	0
Lauderdale County	12/29/97	Winter Storm	0/0	0	0
Lauderdale County	12/23/98	Ice Storm	0/0	2.00M	0
Lauderdale County	12/21/99	Ice Storm	0/0	0	0
Lauderdale County	1/27/00	Winter Storm	0/0	15.00K	0
Lauderdale County	2/5/02	Winter Storm	0/0	1.00K	0
Lauderdale County	3/15/05	Winter Weather	0/0	0	0
Lauderdale County	2/1/07	Heavy Snow	0/0	0	0
Lauderdale County	3/7/08	Winter Storm	0/0	0	0
Lauderdale County	12/1/08	Winter Weather	0/0	0	0
Lauderdale County	12/11/08	Heavy Snow	0/0	0	0
Lauderdale County	12/23/08	Winter Weather	0/0	0	0
Lauderdale County	3/1/09	Heavy Snow	0/0	0	0
Lauderdale County	1/7/10	Winter Weather	0/0	0	0
Lauderdale County	1/18/10	Winter Weather	0/0	0	0
Lauderdale County	1/29/10	Winter Storm	2/2	0	0
Lauderdale County	2/8/10	Winter Storm	0/0	0	0
Lauderdale County	2/15/10	Winter Weather	0/0	0	0
Lauderdale County	2/15/10	Winter Weather	0/0	0	0
Lauderdale County	3/2/10	Winter Weather	0/0	0	0
Lauderdale County	12/15/10	Winter Weather	0/0	0	0
Lauderdale County	12/26/10	Winter Weather	0/0	0	0
Lauderdale County	12/25/10	Heavy Snow	0/0	0	0
Lauderdale County	1/9/11	Heavy Snow	0/0	0	0
Lauderdale County	1/20/11	Winter Weather	0/0	0	0
Lauderdale County	2/9/11	Winter Weather	0/0	0	0
Lauderdale County	11/28/11	Winter Weather	0/0	0	0
Lauderdale County	1/12/12	Winter Weather	0/0	0	0
Lauderdale County	1/14/13	Winter Weather	0/0	0	0
Lauderdale County	1/17/13	Sleet	0/0	0	0
Lauderdale County	2/2/13	Winter Weather	0/0	0	0
Lauderdale County	2/2/13	Sleet	0/0	0	0
Lauderdale County	2/11/14	Heavy Snow	0/0	0	0
Lauderdale County	2/12/14	Winter Weather	0/0	0	0
Lauderdale County	1/07/15	Extreme Cold	0/0	0	0

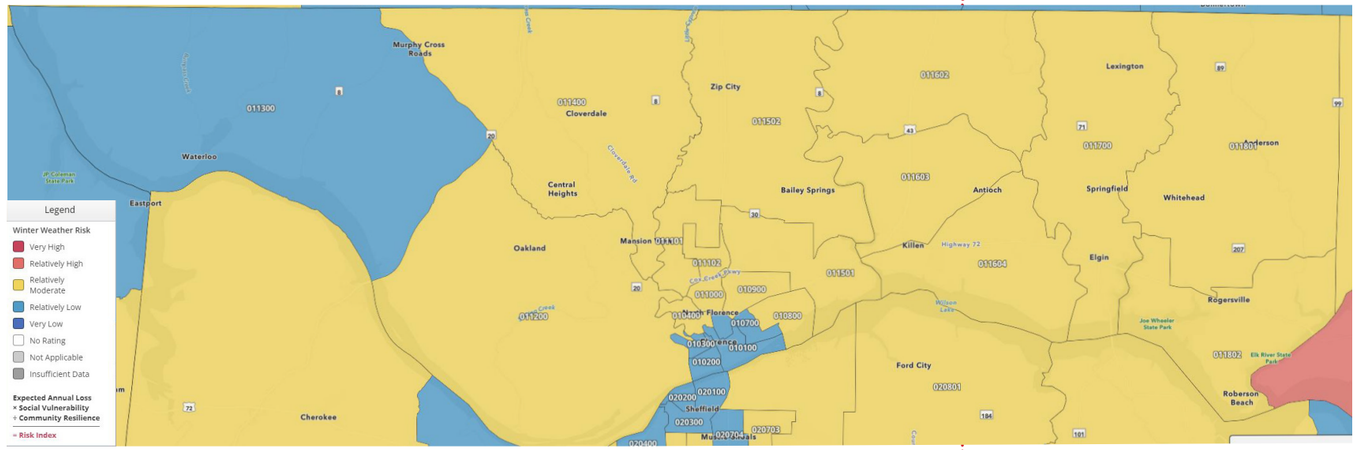
Chart:
Winter Storm Events Reported in Lauderdale County 1950-2020
(Chart, 2020: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Location	Date	Event	Deaths/ Injuries	Property Damage $	Crop Damage $
Lauderdale County	1/15/15	Winter Weather	0/0	0	0
Lauderdale County	2/16/15	Ice Storm	0/0	0	0
Lauderdale County	2/20/15	Winter Weather	0/0	0	0
Lauderdale County	02/20/15	Ice Storm	0/0	0	0
Lauderdale County	02/23/15	Winter Weather	0/0	0	0
Lauderdale County	03/05/15	Winter Storm	0/0	0	0
Lauderdale County	03/11/17	Winter Weather	0/0	0	0
Lauderdale County	01/16/18	Winter Weather	0/0	0	0
Lauderdale County	11/12/19	Winter Weather	0/0	0	0
Lauderdale County	12/10/19	Winter Weather	0/0	0	0
Lauderdale County	02/06/20	Winter Weather	0/0	0	0
Lauderdale County	01/11/21	Winter Weather	0/0	0	0
Lauderdale County	02/12/21	Winter Weather	0/0	0	0
Lauderdale County	02/13/21	Winter Weather	0/0	0	0
Lauderdale County	02/15/21	Ice Storm	0/0	0	0
Lauderdale County	02/16/21	Cold/Wind Chill	0/0	0	0
Lauderdale County	02/17/21	Winter Storm	0/0	0	0
Lauderdale County	01/02/22	Winter Storm	0/0	0	0
Lauderdale County	01/06/22	Winter Weather	0/0	0	0
Lauderdale County	01/16/22	Winter Weather	0/0	0	0
Lauderdale County	03/11/22	Heavy Snow	0/0	0	0
Lauderdale County	12/22/22	Cold/wind Chill	0/0	0	0
Lauderdale County	12/23/22	Extreme Cold/wind Chill	0/0	0	0
Lauderdale County	1/23/22	Cold/wind Chill	0/0	0	0
TOTAL			6/4	5.25 B	1.00K

Source: *2023 NOAA National Climatic Data Center -Storm Events Database at http://www.ncdc.noaa.gov/*

Extent of Winter Storm Event for Lauderdale County

New Year's 1963-64 Event		19.5 inches
2	February 11, 1910	12.0 inches
3	January 18, 1893	10.5 inches
4	January 9-10, 2011	9.0 inches
5	January 29, 1966	9.0 inches
6	February 12-13, 1960	9.0 inches



Future Probability and Magnitude/Severity

There were 67 winter storm events in the planning area in the past 72 years. The percent probability of a winter storm event occurring in Lauderdale County is categorized as likely with a future probability percentage of 87% that a winter storm will occur somewhere in Lauderdale County in the next year. The assessed magnitude and severity is categorized as limited to critical and depends on the size and location of the winter storm. The extent of the potential hazard could cause billions in economic loss to property, crops, as well as injuries and death if the winter storm effects metropolitan areas and last for several days.

WINTER STORM EVENT FUTURE PROBABILITY ASSESSMENT OF DISASTER FOR LAUDERDALE COUNTY BASED ON NOAA STORM EVENT DATA BETWEEN 1950 AND 2020			
Extent of Jurisdictional Affect:	Historical Occurrences:	Percent Probability of Future Occurrence:	Magnitude/ Severity of Event:
Extensive	67	87%- Likely	5.25 B Limited-Critical
Source: *Hazard Mitigation Planning Team*			

Left:
Chart, Winter Storm Events Reported in Lauderdale County 1950-2020
(Chart, 2020: NOAA National Climatic Data Center, Multi-Hazard Mitigation Planning Team)

Top Right:
FEMA Risk Index Map for Lauderdale County showing Winter Weather Risk by Census Tract
(Map, 2023: FEMA)

Bottom Right :
Winter Storm Event Future Probability Assessment & Extent of Disaster for Lauderdale County based on Historical Data between 1950-2020
(Chart, 2023: Hazard Mitigation Planning Team)

5.3 Assessing Vulnerability

Requirement §201.6(c)(2)(ii) :[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Requirement §201.6(c)(2)(ii)(A) :The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

Requirement §201.6(c)(2)(ii)(B) :[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Requirement §201.6(c)(2)(ii): (As of October 1, 2008) [The risk assessment] must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

RA.3 Assessing Vulnerability

The vulnerability assessment determines the extent of vulnerability the identified hazards have on various components of the planning jurisdiction and includes: Jurisdiction Vulnerability, Critical Facilities and Structures, Estimated Potential Loss, Repetitive Loss and Development Trends and Population Growth.

Jurisdiction Vulnerability to Each Identified Hazard

The vulnerability of each jurisdiction to each identified hazard is discussed in each hazard description earlier in this section and the following classification was used:

- Extensive- 50-100% of planning area affected by hazard
- Significant - 10-50% of planning area affected by hazard
- Limited - Less than 10% of planning area affected by hazard

The planning area is equally susceptible to all identified hazards described and profiled with the exception of one hazard, landslides. Landslides are more likely within the rural communities located on the western end of Lauderdale County due to the geologic nature of the area. Therefore, the potential impact of the planning area is classified as limited to significant. The table below illustrates each jurisdictions vulnerability to each hazard.

The populations of each jurisdiction and county are vulnerable to each of the identified hazards. The table below describes the population distribution within Lauderdale County as well as population projections for the year 2020. According to the linear population projection methodology, Lauderdale County's population will grow by 1,953 people to 94,749 in 2020. If current growth trends remain the same with five of the participation jurisdictions experiencing population loss, the overall growth of the county will take place in the unincorporated areas. The projection indicates that the City of Florence will continue a trend of increased growth with a 2020 population projection of 42,586.

INDIVIDUAL JURISDICTION'S VULNERABILITY TO IDENTIFIED HAZARDS

Indentified Hazard	Lauderdale County	Anderson	Florence	Killen	Lexington	Rogersville	St. Florian	Waterloo
Dam/Levee Failure	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Drought	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Earthquake	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Extreme Temps	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Flood	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Hazardous Materials	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Hurricane	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Landslides	Limited	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Nuclear Accidents	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Sinkholes	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Severe Storms	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Tornado	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Wildfires	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive
Winter Storms	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive	Extensive

POPULATION DISTRIBUTION AND POPULATION PROJECTION BY JURISDICTION

Jurisdiction	2019 Population Estimate	2018 Population Estimate	Average Annual % Change	2025 Projected Population	% of Total County Population
Lauderdale County	92,769	92,604	0.17%	93,765	100%
City of Florence	40,797	40,699	0.24%	41,390	44%
Town of Rogersville	1,251	1,233	1.46%	1,365	1.3%
Town of Killen	955	957	-0.21%	943	1%
Town of Lexington	709	709	0%	709	0.8%
Town of St. Florian	670	649	3.24%	811	0.7%
Town of Anderson	267	268	-0.37%	261	0.3%
Town of Waterloo	197	197	0%	197	0.2%

Top:
Individual Jurisdictions' Vulnerability to Identified Hazards
(Chart, 2023: Hazard Mitigation Planning Team)

Bottom:
Population Distribution and Population Projection by Jurisdiction
(Chart, 2023: U.S. Census Data Hazard Mitigation Planning Team)

RA.4 IDENTIFYING STRUCTURES

Source: *U.S. Census Data and Planning Team*

Critical Facilities and Structures

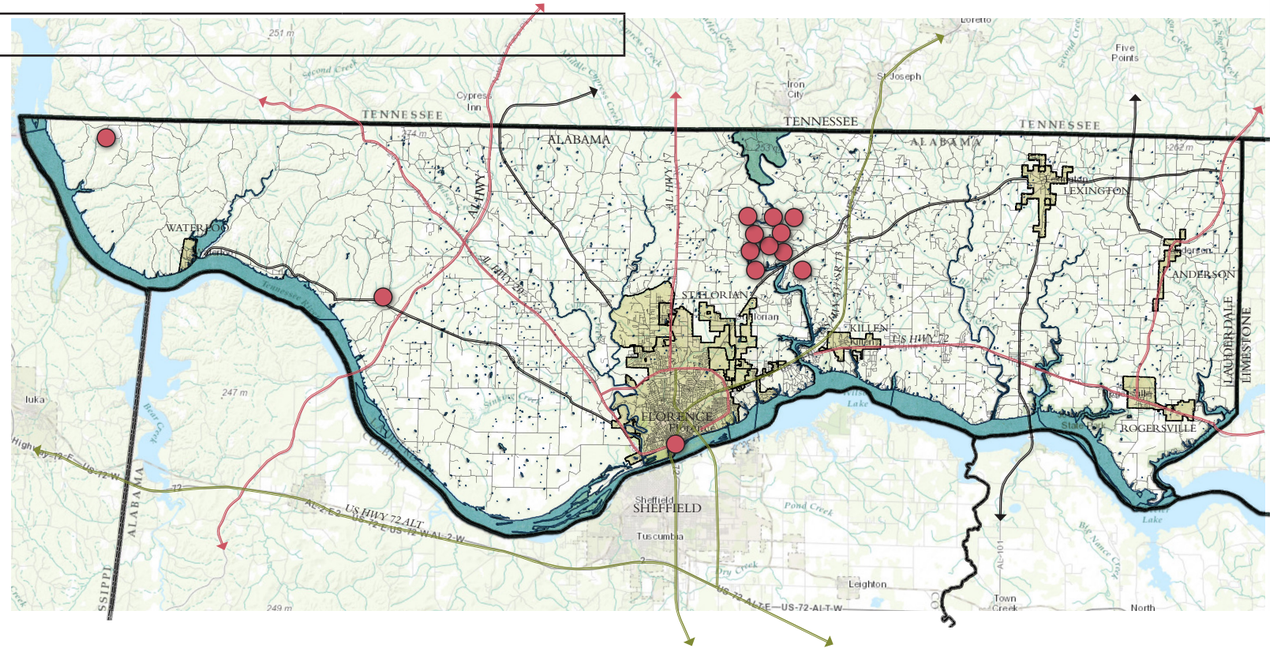
A critical facility is defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. For the purposes of this plan, the delineation of facilities as critical is based on FEMA's HAZUS standards of critical facility definitions and public feedback from policy committee members. In terms of determining the impact a particular hazard has on an identified critical facility, the HAZUS model is used to estimate potential loss and associated costs. The FEMA HAZUS critical facilities definitions are as follows:

- **Essential Facilities -** These facilities are critical to the health and welfare of the entire county population and are essential following hazard events. They include emergency response facilities, medical care facilities, schools and shelters for evacuation.
- **Lifeline Utility Systems -** These facilities are essential lifelines that include potable water, wastewater, natural gas, electric and communication systems.
- **Transportation Systems -** These facilities include highways, bridges, railways and waterways.
- **High Potential Loss Facilities -** These facilities include military installations and high potential loss dams.
- **Hazardous Materials Facilities** - These facilities may pose a threat if disrupted by natural hazards and include hazardous chemicals, explosives, flammables, toxins and radioactive materials.

Each jurisdiction within the planning area identified critical facilities within their community and the structure type and estimated value was assessed. Local data was gathered in regard to each participating jurisdictions' select critical facilities as they are perceived by that jurisdiction. In addition, the vulnerability of critical facilities was discussed in relation to future buildings, infrastructure and critical facilities within the planning study area.

Identified critical facilities were delineated by category and include law enforcement stations, fire stations, national guard locations, hospitals, school buildings, warning sirens locations and transportation facilities. Hazardous materials locations were identified and discussed earlier in the hazard profile portion of this section.

To further verify building types and material values obtained from public feedback, the planning team applied a level one HAZUS-



LEGEND

Flood Prone Areas





Top Right:
Lauderdale County Flood Prone Areas Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Bottom Center:
Flood Photo
(Map, 1999: noaa.gov)

Bottom Right:
Flood Photo
(Map, 2013: noaa.gov)

MH analysis to obtain building material types and the amount of structures within those material types. That information along with building types by use are described with the overall estimated replacement value. However, these numbers are estimates and further local data should be gathered to increase the estimates accuracy.

(The facilities list was updated using the feedback sheets. The estimates have not had the HAZUS applied and are the #s from last plan)

Left:
Selected Critical Facility Values in Lauderdale County
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Middle Top:
Selected Critical Facility Values in Lauderdale County
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Middle Bottom:
Selected Critical Facility Values in Florence
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Right:
Selected Critical Facility Values in Florence
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

SELECTED CRITICAL FACILITY VALUES JURISDICTION: LAUDERDALE COUNTY	
Facility Type	**Facility Value**
Courthouse, Sheriff's Office	$7,065,150.00
Cloverdale Rd. Transfer Station	$105,000.00
Court Street Commodities Building	$147,000.00
State Street Office Building	$94,500.00
State Street Shop Building	$225,750.00
State Street Gas House	$10,000.00
State Street Pump Shed	$945.00
State Street Storage Shed	$73,500.00
State Street Warehouse	$42,000.00
Seminary Street Warehouse	$8,400.00
Highway 57 Solid Waste Office & Warehouse	$367,500.00
Highway 57 Solid Waste Equipment Shed	$105,000.00
Chisholm Road Health Department	$1,835,265.60
Allen Thorton Career Technical Center	$35,000,000.00
Brooks Elementary	$11,323,680.00
Brooks High School	$99,648,400.00
Central High School	$17,358,900.00
Cloverdale Jr. High School	$3,929,033.85
Lauderdale County High School	$15,094,170.00
Lexington High School	$11,837,840.00
Rogers High School	$15,975,580.00
Underwood Elementary School	$5,019,150.00
Waterloo High School	$4,296,880.00
Wilson School	$16,183,690.00
System Wide	$27,306,133.05
Lauderdale County School Board Complex	$10,000,000.00
Anderson Volunteer Fire Department	$235,305.00
Center Star Volunteer Fire Department	$414,776.25
Central Volunteer Fire Department	$525,000.00
Cloverdale Volunteer Fire Department	$641,827.20
Elgin Volunteer Fire Department	$524,576.85
Greenhill Volunteer Fire Department	$1,417,500.00
Killen Volunteer Fire Department	$1,575,000.00
Lexington Volunteer Fire Department	$574,595.70
Mid-Lauderdale Volunteer Fire Department	$687,761.55
Oakland Volunteer Fire Department	$876,750.00
Rogersville Volunteer Fire Department	$787,500.00
Underwood / Pertersville Volunteer Fire Department	$1,575,000.00
Waterloo Volunteer Fire Department	$9,940.95
Zip City Volunteer Fire Department	$18,439.00
Total Critical Facilities Amount:	**$292,917,440.00**

Source: *Policy Committee Critical Facility Sheets and HAZUS data*

SELECTED CRITICAL FACILITY VALUES JURISDICTION: CITY OF FLORENCE	
Facility Type	**Facility Value**
East Mo B	$3,616,830.00
Cox Creek Mo B	$3,648,330.00
Collins Mo B	$7,124,250.00
Port of Florence & Lauderdale County	$26,250,000.00
Police Department Headquarters	$4,725,000.00
Police Department Wal-Mart Substation	$15,750.00
Police Department Mall Substation	$15,750.00
Police Department Huntsville Road Substation	$15,750.00
Police Department Court View Sub-Station	$15,750.00
Fire Department Station One	$4,200,000.00
Fire Department Station Two	$2,100,000.00
Fire Department Station Three	$1,470,000.00
Fire Department Station Four	$1,470,000.00
Fire Department Station Five	$1,470,000.00
Florence Housing Authority Administration Building	$385,087.50
Florence Housing Authority Maintenance Building	$611,310.00
City of Florence Municipal Building	$13,358,035.95
Florence-Lauderdale EMA Office	$115,500.00
Gas Administration Office	$1,260,000.00
Gas Warehouse & Storage Building	$945,000.00
Gates Regulator Stations, Sub-Stations	$45,045,000.00
Water Treatment Plans One & Two	$63,000,000.00
Waste Water Treatment Plant	$78,750,000.00
Water Storage Tanks One Through Eight	$9,450,000.00
Water Booster Stations One Through Four	$2,100,00.00
Sewer Lift Stations One Through Four	$210,000.00
Construction Warehouse & Equipment	$1,575,000.00
Electricity Transformer Office	$1,365,000.00
Fire Department Station Five	$1,470,000.00
Florence Electrical Department Building A	$133,350.00
Florence Electrical Department Meter Lab, Crew Room	$207,900.00
Florence Electrical Department Building C	$173,250.00
Florence Electrical Department Building D	$357,000.00
Florence Electrical Department Pump Island Canopy	$3,150.00
Florence Electrical Department Building E	$57,750.00
Florence Electrical Department Building Storage Barn	$37,800.00
Florence Electrical Department Building & Antenna	$94,500.00
Florence Electrical Department 706 College Street	$36,750.00

Florence Electrical Department 708 College Street	$16,800.00
Florence Electrical Department Administration Office	$630,000.00
Florence Electrical Department 1 through 48 Substations	38,430,000.00
Total Critical Facilities Amount:	**$730,537,593.45**
Source: Policy Committee Critical Facility Sheets and HAZUS data.	

SELECTED CRITICAL FACILITY VALUES BY JURISDICTION: TOWN OF ANDERSON	
Facility Type	Facility Value
Anderson Town Hall	$183,750.00
Fire Department	$262,500.00
First Baptist Church of Anderson	$420,000.00
Water Storage Tank	$472,500.00
Anderson Junior High	$3,383,229.15
Total Critical Facilities:	**$4,721,979.15**
Source: *Policy Committee Critical Facility Sheets and HAZUS data.*	

SELECTED CRITICAL FACILITY VALUES JURISDICTION: TOWN OF KILLEN	
Facility Type	Facility Value
Town Hall	$1,000,000.00
Fire Department	$1,000,000.00
Emergency Service Building	$500,000,00
Police Department	$400,000.00
Killen Senior Center	1,000,000.00
Killen Public Library	1,000,000.00
Killen Park	$400,000.00
Killen Church of Christ Storm Shelter	$10,000,000.00
Killen Methodist Church Storm Shelter	$12,000,000.00
Killen Baptist Church Storm Shelter	$15,000,000.00
Brooks Elementary School	$11,323,680.00
Brooks High School	$99,648,400.00
Total Critical Facilities:	**$153,272,080.00**
Source: *Policy Committee Critical Facility Sheets and HAZUS data.*	

SELECTED CRITICAL FACILITY VALUES JURISDICTION: TOWN OF LEXINGTON	
Facility Type	Facility Value
Town Hall	$750,000.00
Police Department	$300,000.00
Fire Department	$150,000.00
Medical Clinic	$136,333.00
Lexington School	$11,837,840.00
Senior Citizen Center	$367,500.00
Colonial Bank (Storm Shelter)	$500,000.00
Fire Substation	$200,000.00
Total Critical Facilities:	$14,241,673.00
Source: Policy Committee Critical Facility Sheets and HAZUS data.	

SELECTED CRITICAL FACILITY VALUES JURISDICTION: TOWN OF ROGERSVILLE	
Facility Type	Facility Value
Town Hall	$1,500,000.00
Fire Department / Police Department	$787,500.00
Lauderdale County High School	$15,094,170.00
Rogersville Water Department	$525,000.00
Alagasco	$525,000.00
Clark Gas Company	$262,500.00
Rogersville Funeral Home	$262,500.00
Rogersville Church of Christ	$787,500.00
Rogersville Baptist Church	$787,500.00
Rogersville United Methodist Church	$1,050,000.00
Total Critical Facilities:	**$21,581,670.00**
Source: *Policy Committee Critical Facility Sheets and HAZUS data.*	

SELECTED CRITICAL FACILITY VALUES BY JURISDICTION: TOWN OF ST. FLORIAN	
Facility Type	Facility Value
Town Hall	$150,000.00
Senior Center	$300,000.00
Buffler House	$300,000.00
Total Critical Facilities:	**$750,000.00**
Source: *Policy Committee Critical Facility Sheets and HAZUS data.*	

Left:
Selected Critical Facility Values in Florence
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Left Center:
Selected Critical Facility Values in Town of Anderson
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Left Bottom:
Selected Critical Facility Values in Town of Lexington
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Middle Top:
Selected Critical Facility Values in Town of Killen
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Middle Bottom:
Selected Critical Facility Values in Town of Lexington
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Right Top:
Selected Critical Facility Values in Town of Rogersville
(Chart, Policy Committee Critical Facility Sheets & HAZUS Data)

Right Bottom:
Selected Critical Facility Values in Town of St. Florian
(Chart, Policy Committee Critical Facility

SELECTED CRITICAL FACILITY VALUES BY JURISDICTION: TOWN OF WATERLOO	
Facility Type	Facility Value
Waterloo School	$5,782,000.00
Waterloo Fire Station One	$105,000.00
Waterloo Fire Station Two	$80,000.00
Waterloo Fire Station Three	$80,000.00
Waterloo Community Center	$180,000.00
Waterloo Town Hall & Police Station	$80,000.00
Waterloo Post Office	$255,000.00
Waterloo Museum	$541,000.00
Total Critical Facilities:	**$7,103,000.00**
Source: *Policy Committee Critical Facility Sheets and HAZUS data.*	

Building Material Types within Lauderdale County and Participation Jurisdictions	
Material Type	Amount of Buildings
Wood	$3,729,957
Steel	$216,156
Masonry	$679,983
Concrete	$754,584
Manufactured	$166,410
Total Structures	**$5,547,090**
Source: *HAZUS -MH*	

Building Asset Values for Lauderdale County and Participating Jurisdictions		
Building Types	Amount of Buildings	Replacement Value
Residential	40,401	$4,089,309,000.00
Commercial	1,905	$917,053,000.00
Industrial	461	$292,556,000.00
Agriculture	131	$15,535,000.00
Religious	216	$136,653,000.00
Government	59	$34,394,000.00
Education	52	$61,683,000.00
Total Structures	**43,225**	**$5,547,183,000.00**
Source: *HAZUS -MH*		

HAZUS -MH MR-4 Building Inventory by Material Type for Lauderdale County and Participating Jurisdictions		
Material Type	Building Amount	Percent of Total
Wood	32,764	76%
Steel	228	1%
Masonry	1,314	3%
Concrete	4,129	10%
Manufactured Housing	4,462	10%
Total Buildings	**43,225**	**100%**
Source: *HAZUS -MH*		

HAZUS -MH MR-4 Building Inventory by Occupancy for Lauderdale County and Participating Jurisdictions		
Occupancy Type	Building Amount	Percent of Total
Residential	40,401	93%
Commercial	1,905	4%
Industrial	461	1%
Agriculture	131	.3%
Religion	216	.5%
Government	59	.1%
Education	52	.1%
Total Buildings	**43,225**	**100%**
Source: *HAZUS -MH*		

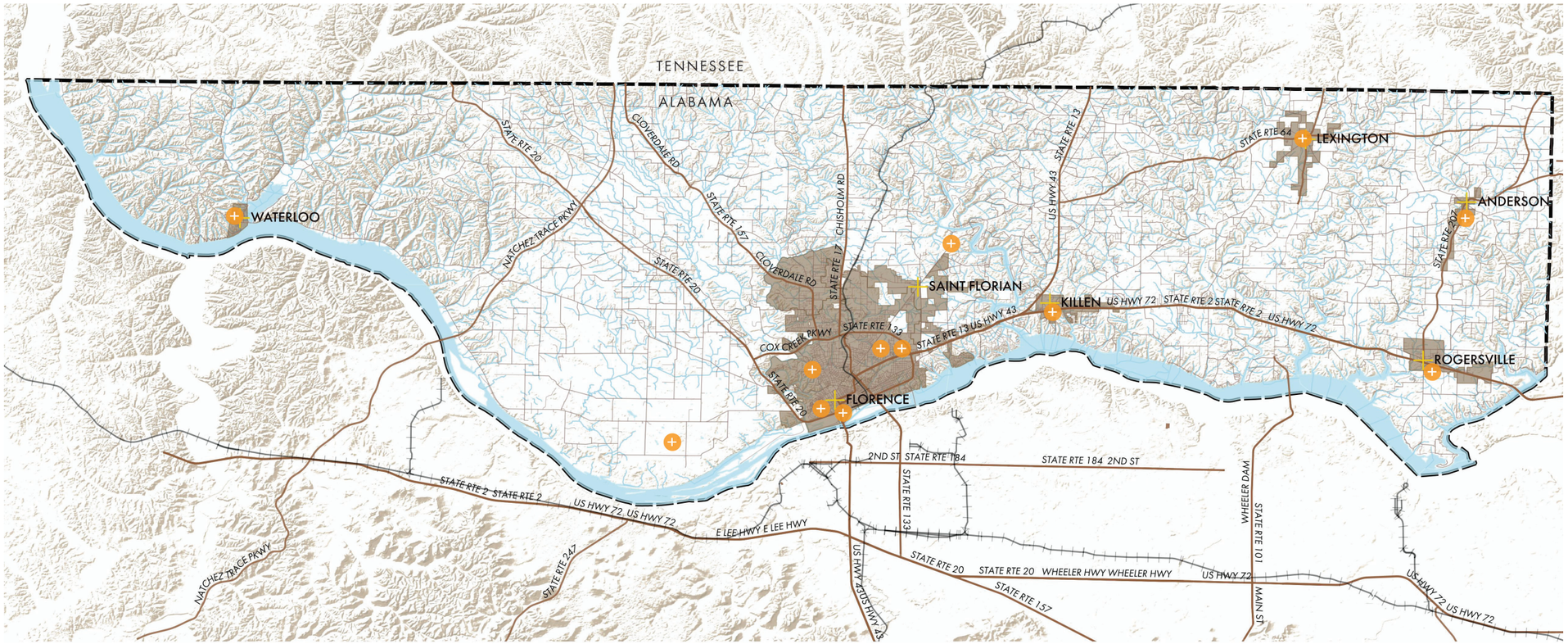
Top Left:
Selected Critical Facility Values in Town of Waterloo
(Chart, Policy Committee Critical Facility Sheets & HAZUS data)

Bottom Left:
Building Material Types within Lauderdale County
(Chart, HAZUS Data)

Top Center:
Building Asset Values for Lauderdale County
(Chart, HAZUS Data)

Bottom Center:
Building Inventory by Material Type for Lauderdale County
(Chart, HAZUS Data)

Top Right:
Building Inventory by Occupancy for Lauderdale County
(Chart, HAZUS Data)



LAW ENFORCEMENT LOCATIONS

Legend:

- LAW ENFORCEMENT LOCATIONS
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

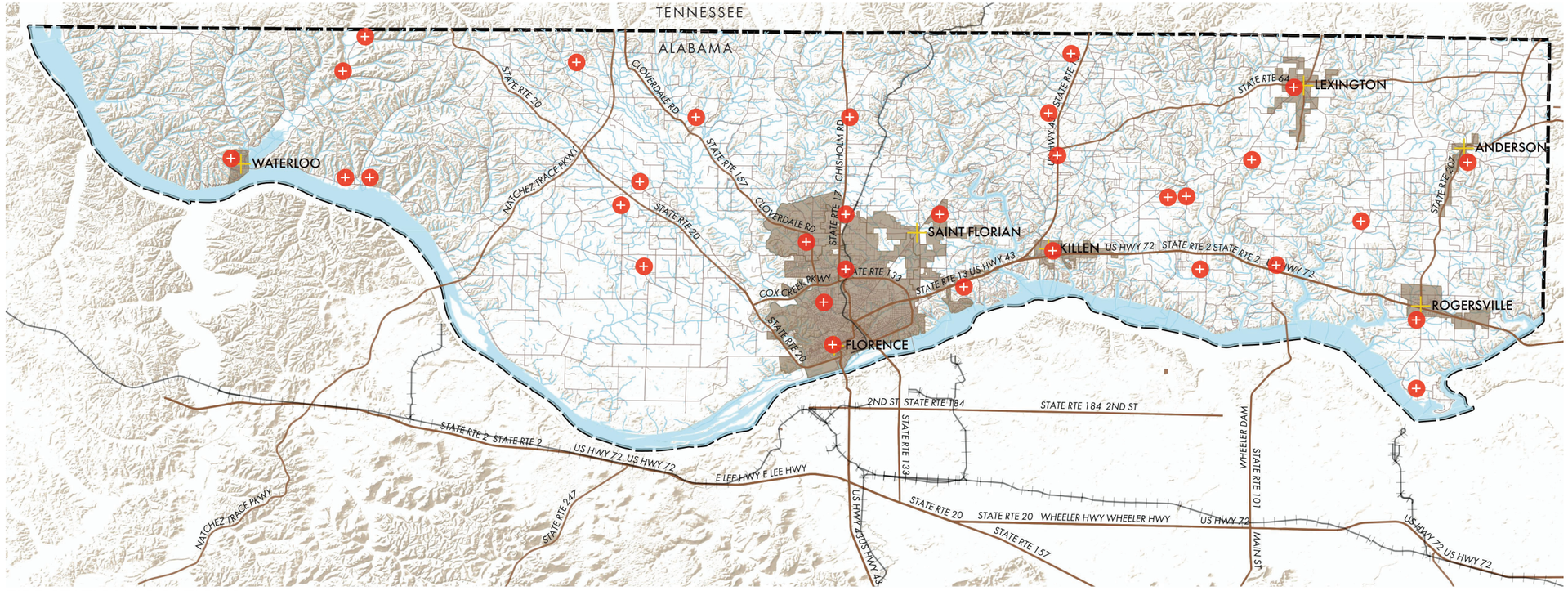
ESRI Terrain

Map:
Lauderdale County Essential Facilities -Law Enforcement Locations
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

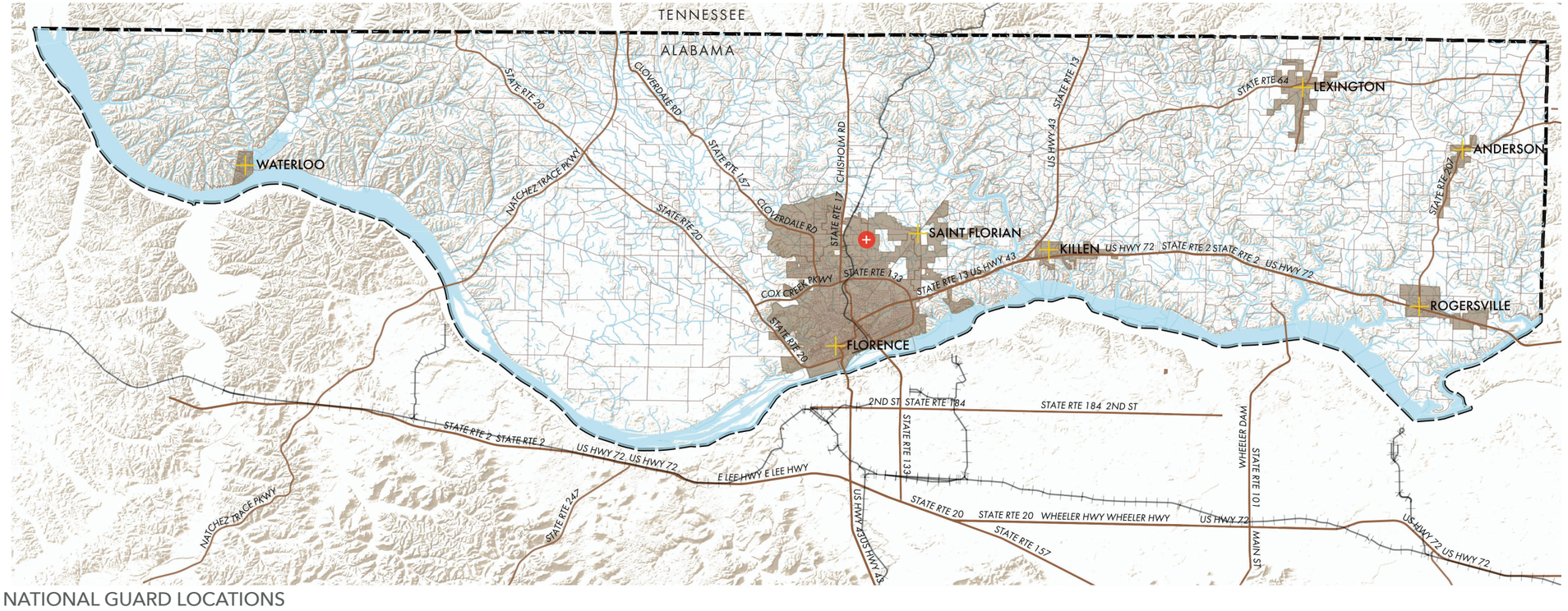
- FIRE STATION LOCATIONS
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

ESRI Terrain



FIRE STATION LOCATIONS

Map:
Lauderdale County Essential Facilities - Fire Station Locations
(Map, 2023: Multi-Hazard Mitigation Planning Team)



Legend:

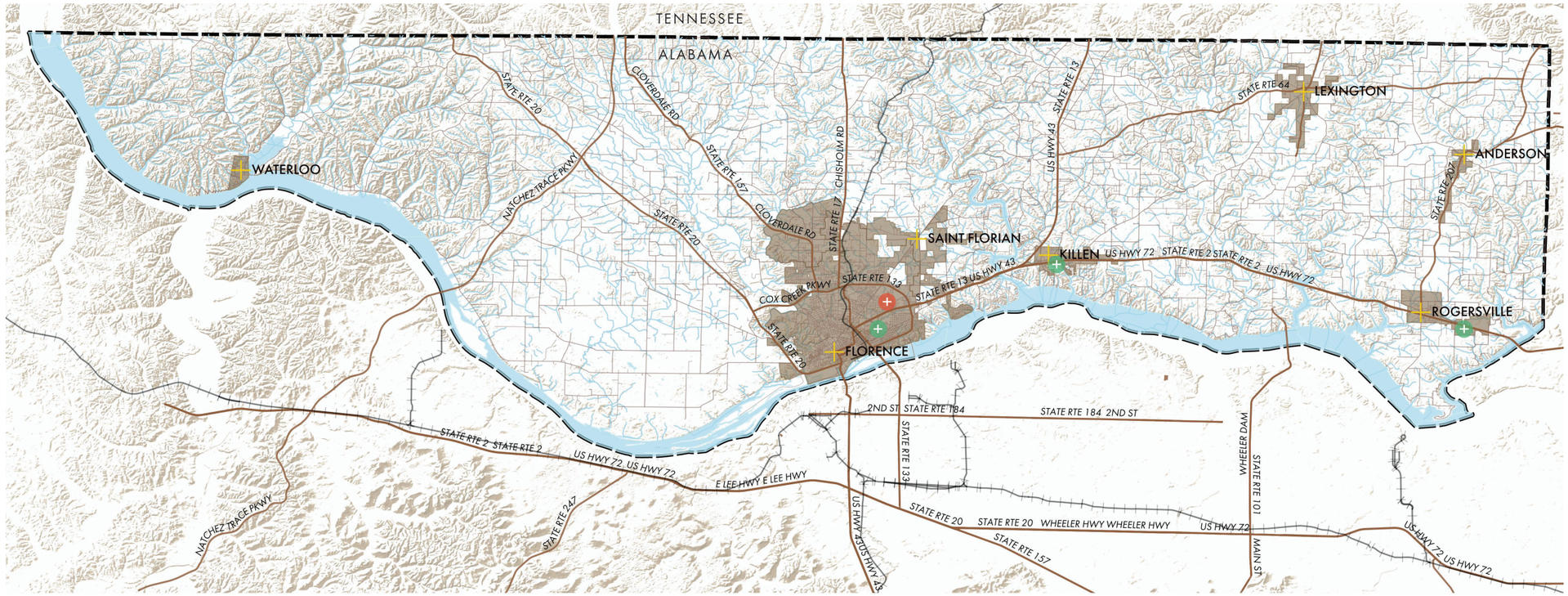
- NATIONAL GUARD LOCATIONS
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

NATIONAL GUARD LOCATIONS

Map:
Lauderdale County Essential Facilities - National Guard Locations
(Map, 2023: Multi-Hazard Mitigation Planning Team)

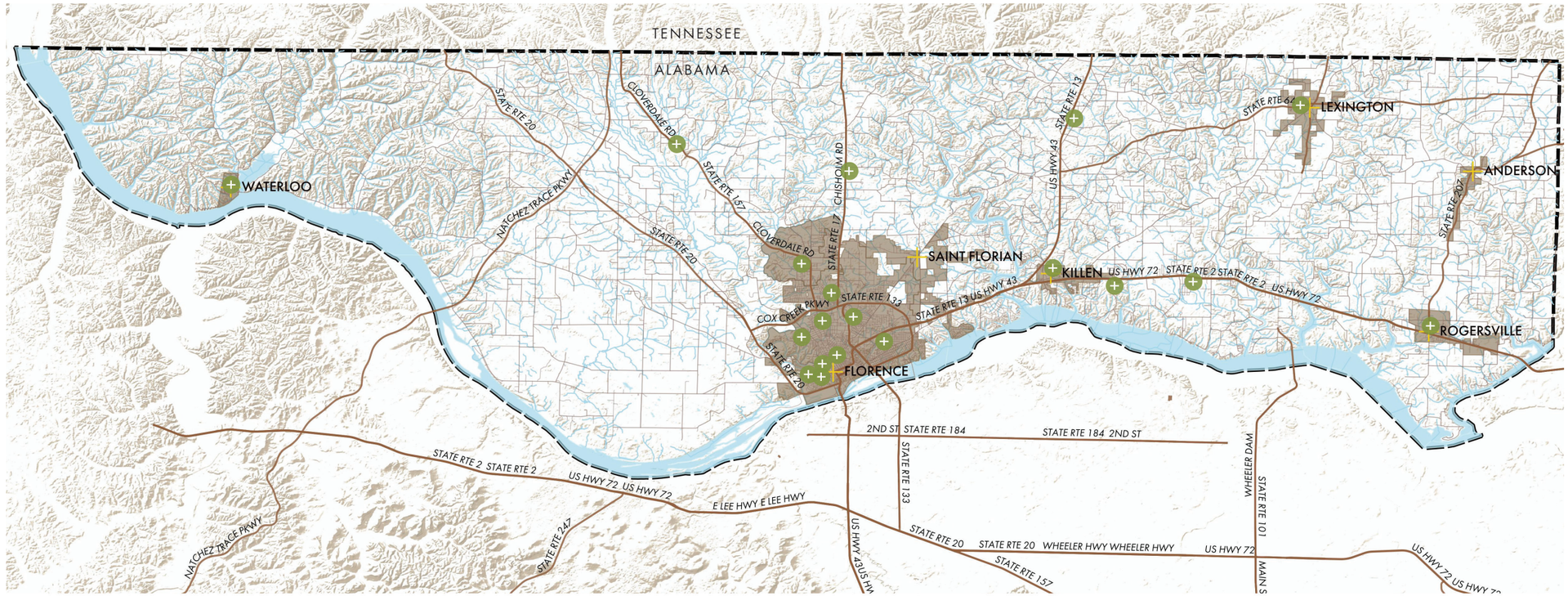
Legend:

- HOSPITAL LOCATION
- AMBULANCE LOCATION
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY



HOSPITAL LOCATIONS

Map:
Lauderdale County Essential Facilities - Hospital Locations
(Map, 2023: Multi-Hazard Mitigation Planning Team)



SCHOOL LOCATIONS

Legend:

- PUBLIC SCHOOLS LOCATIONS
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

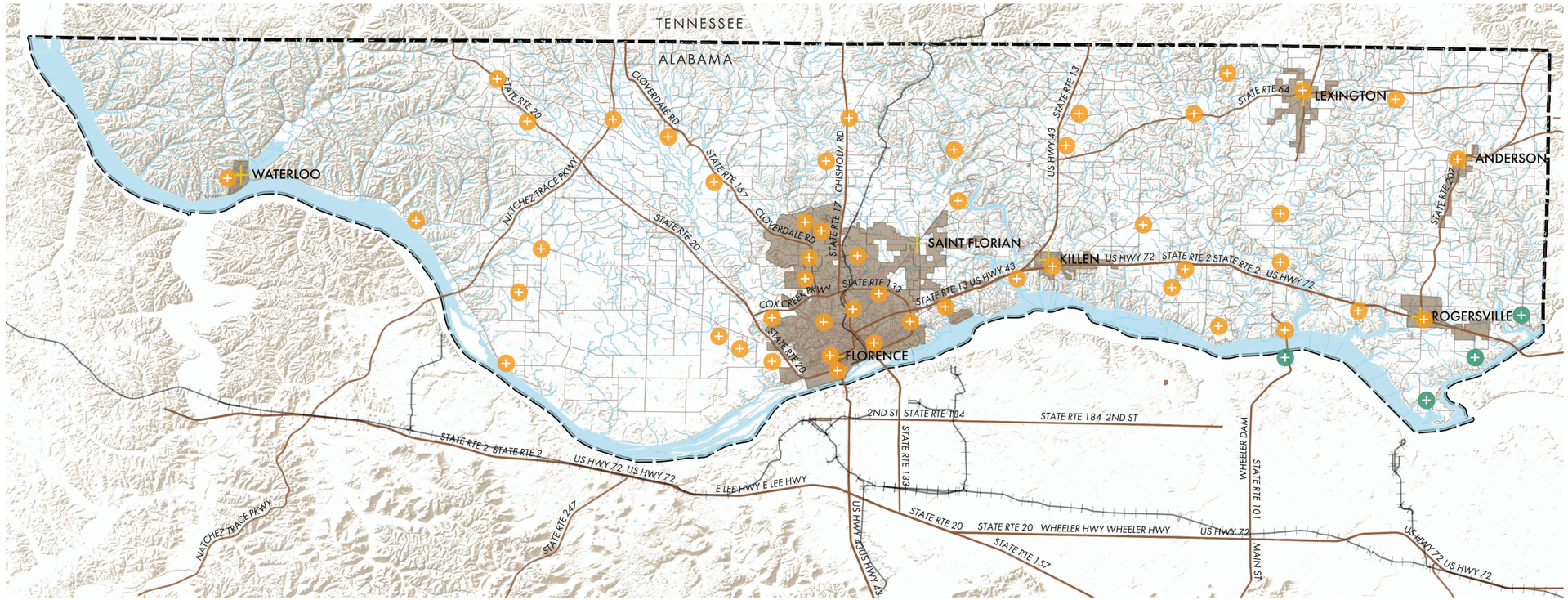
ESRI Terrain

Map:
Lauderdale County Essential Facilities - School Locations
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

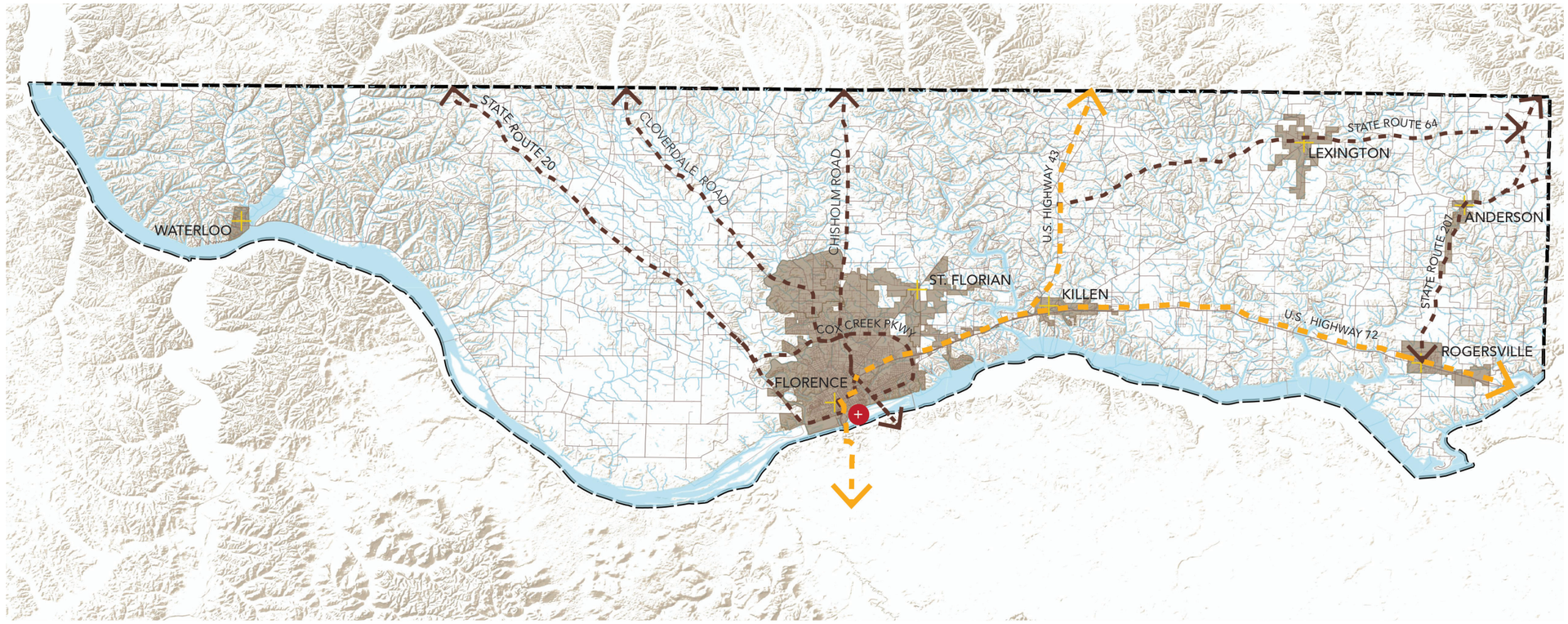
- WARNING SIREN LOCATIONS
- TVA WARNING SIREN LOCATIONS
- CITIES WITHIN STUDY AREA
- RAILROADS
- PRIMARY ROADS
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

ESRI Terrain



WARNING SIREN LOCATIONS

Map:
Lauderdale County Essential Facilities - Warning Sign Locations
(Map, 2023: Multi-Hazard Mitigation Planning Team)



TRANSPORTATION ROUTE LOCATIONS

Legend:
- U.S. HIGHWAY
- STATE ROADS
- PORTS
- CITIES WITHIN STUDY AREA
- SECONDARY ROADS
- CITIES
- STREAMS
- WATER BODIES
- COUNTY BOUNDARY

Map:
Lauderdale County Essential Facilities - Transportation Routes
(Map, 2023: Multi-Hazard Mitigation Planning Team)

RA.5 Estimating Potential Losses

Estimated Potential Loss

The financial estimated loss for each identified hazard is discussed within each hazard description and profile in the beginning of this section. In addition, FEMA HAZUS-MH analysis and damage estimates for the following hazards were also done: floods, dam and levee failure and landslides. HAZUS-MH scenario estimates were obtained for these hazards because their impact to the jurisdiction can be more localized due to geographic locations.

Economic losses by jurisdiction were calculated by applying the 2013 population estimate of each jurisdiction in relation to the overall county population. This allows for a generalized estimate of the economic losses by jurisdiction for hazards that are likely to occur countywide and are less likely to be localized. For this study, localized disasters consist of landslides, dam/levee failures and floods. Flood economic losses were calculated by HAZUS-MH MR-4. In addition, the Value of Buildings Exposed to Hazards table deducts a percentage of economic value if the hazard was not perceived to affect the particular jurisdiction. For example, dam/levee failure and the jurisdictions of Lexington and Anderson have a total apportionment of 0.014 % of the building value. However, they are not affected by dam and levee failure in the planning study area. Therefore, an apportionment was deducted from each category of building value in regards to dam and levee failure.

According to FEMA's Multi-Hazard Loss Estimation Methodology Flood Model, Users Manual for HAZUS-MH MR-4, the loss estimates from HAZUS are "crude estimates of losses based on a minimum of local input." It is recommended that users of the HAZUS software develop "a local inventory that best reflects the characteristics of their region such as building types and demographics." Also, the "quality and uncertainty of the results are affected by the detail and accuracy of the community-specific data provided." HAZUS program developers have intended the default data sets to be used as initial estimates to determine where more detailed data collection is needed.

Middle Top:
Population by Jurisdiction
(Chart: 2020: U.S. Census Data, Multi-Hazard Mitigation Planning Team)

Middle Bottom
Population Vulnerable to Hazards
(Chart, 204: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Bottom Right:
Total Building Losses by jurisdictional Apportionment for 100 Year Flood Plain
(Chart,2014: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

POPULATION BY JURISDICTION	
Jurisdiction	2019 Population Estimate
Lauderdale County	92,769
City of Florence	40,797
Town of Rogersville	1,251
Town of Killen	955
Town of Lexington	709
Town of St. Florian	670
Town of Anderson	267
Town of Waterloo	197
Source: *U.S. Census Data*	

POPULATION VULNERABLE TO HAZARDS		
Hazard Type	Estimated Population	Estimated Households
Dam/Levee Failure	86,772	87,454 (seems really high in comparison)
Drought	87,966	36,088
Earthquake	87,966	36,088
Extreme Temperatures	87,966	36,088
Flood (HAZUS – MH 100 Year Flood Shelter Requirements)	1,481	1,002
Hazardous Materials	87,966	36,088
Hurricane	87,966	36,088
Landslides	96	44
Nuclear Accidents	87,966	36,088
Sinkholes	87,966	36,088
Severe Storms	87,966	36,088
Tornado	87,966	36,088
Wildfires	87,966	36,088
Windstorms	87,966	36,088
Source: *FEMA HAZUS -MH*		

Estimated Loss for Flooding

Flooding is, by far, the most frequently occurring identified hazard within the planning jurisdiction. The hazard description and profile in the beginning of this section projects future probability of a flooding event in the next year somewhere within Lauderdale County at 741%. There is a 450% future probability a flooding event will be located within the county, but outside municipal limits. The City of Florence has a 117% probability of experiencing a flood event in the next year followed by the Town of Anderson, with a 71% probability.

The tables below show the total economic losses, value of buildings exposed to floods and a quick assessment of the 100 year and 500-year flood events within the planning jurisdiction. The apportionment table takes the percent of each jurisdiction's population and extrapolates the countywide economic loss of a 100 year flood. This table indicates that the larger population centers within the county will be the hardest hit and sustain the most damages from a major flood event.

The 100-year flood table evaluates the value of buildings exposed to a 100-year flood. The FEMA HAZUS-MH software places structures into eight categories and assigns an overall dollar value to each category. The HAZUS flood model estimates residential buildings to be the hardest hit from a 100-year flood event with $102,132,000.00 in exposure. The Quick Assessment Report identifies 40,401 residential structures within the study area. The assessment also expects there to be 1,002 households displaced from a 100-year flood event.

TOTAL PROPERTY LOSSES BY JURISDICTIONAL APPORTIONMENT FOR 100-YEAR FLOOD			
Jurisdiction	2008 Population Estimate	Percent of Total County Population	Amount of Total Economic Losses
Lauderdale County	89,128	100%	$152,089,000.00
Anderson	354	.4%	$608,356.00
Florence	37,877	42%	$63,877,380
Killen	1,142	1%	$1,520,890.00
Lexington	843	1%	$1,520,890.00
Rogersville	1,204	1%	$1,520,890.00
St. Florian	474	1%	$1,520,890.00
Waterloo	210	.2%	$304,178.00
Source: *FEMA HAZUS-MH Data*			

VALUE OF BUILDINGS EXPOSED TO HAZARDS IN LAUDERDALE COUNTY								
Hazards	Residential	Commercial	Industrial	Agricultural	Religious	Government	Education	County Total
Dam/Levee Failure	$4,032,058,674.00	$904,214,258.00	$288,460,216.00	$15,317,510.00	$134,739,858.00	$33,912,484.00	$60,819,438.00	$5,469,522,438.00
Drought	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Earthquake	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Extreme Temperatures	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Flood 100 year	$102,132,000.00	19,650,000.00	$23,121,000.00	$314,000.00	$1,598,000.00	$2,103,000.00	$843,000.00	$149,761,000.00
Hazardous Materials	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Hurricane	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Landslides	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Nuclear Accidents	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Sinkholes	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Severe Storms	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Tornado	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Wildfires	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Windstorms	$4,089,309,000.00	$917,053,000.00	$292,556,000.00	$15,535,000.00	$136,653,000.00	$34,394,000.00	$61,683,000.00	$5,547,183,000.00
Source: *FEMA HAZUS-MH Data*								

NUMBER OF BUILDINGS EXPOSED TO 100 YEAR FLOOD			
Building Type	Value of Buildings	Flood Exposure	Flood Exposure % of Total Value of Buildings
Residential	$4,089,309,000.00	$102,132,000.00	2%
Commercial	$917,053,000.00	$19,650,000.00	2%
Industrial	$292,556,000.00	$23,121,000.00	8%
Agriculture	$15,535,000.00	$314,000.00	2%
Religious	136,653,000.00	$1,598,000.00	1%
Government	$34,394,000.00	$2,103,000.00	6%
Education	$61,683,000.00	$843,000.00	1%
Total Value	$5,547,183,000.00	$149,761,000.00	3%
Source: *FEMA HAZUS-MH Data*			

QUICK ASSESSMENT REPORT LAUDERDALE COUNTY	100 YEAR FLOOD	500 YEAR FLOOD
Area(square miles)	669	669
Number of Census Blocks	3,185	3,185
Number of Residential Buildings	40,401	40,401
Number of Building Total	43,225	43,225
Number of People in Region	88,000	88,000
Building Exposure - Residential	$4,089,000.00	$4,089,000.00
Building Exposure - Total	$5,547,000.00	$5,547,000.00
Displaced Households	1,002	1,001
People Needing Short Term Shelter	1,481	1,688
Residential Property Losses	$89,790,000.00	$104,170,000.00
Total Property Losses	$152,890,000.00	$173,740,000.00
Business Interruption Losses	$740,000.00	$820,000.00
Total Estimated Economic Loss	$243,420,000.00	$278,730,000.000
Source: FEMA HAZUS-MH Data		

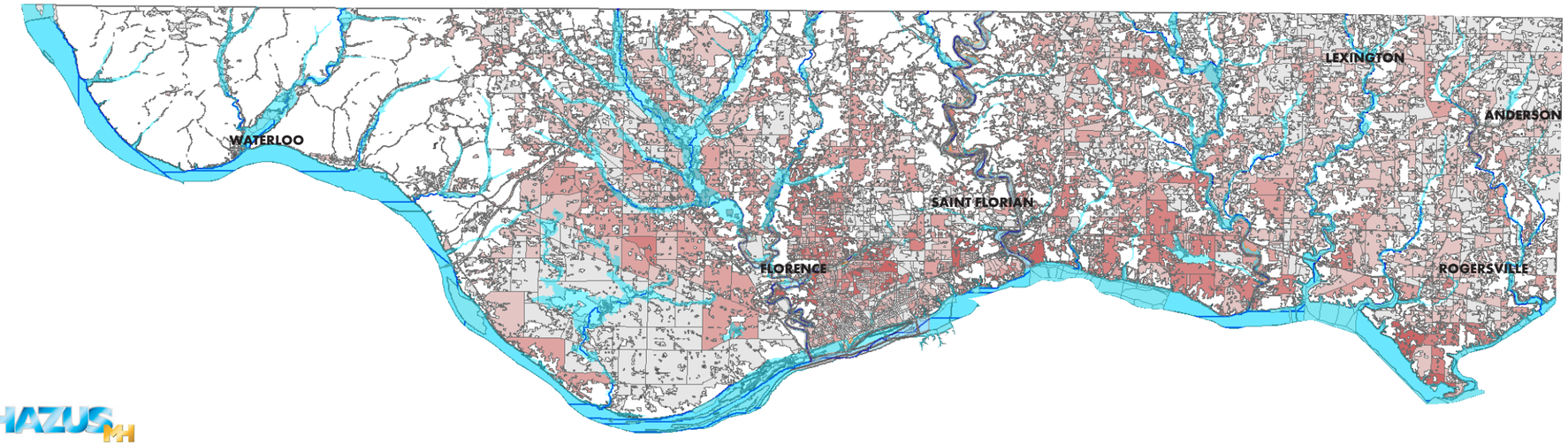
The following maps show the 100-year floodplain residential damage and 100-year floodplain total building damage projections within the planning area. Census maps have been overlaid with the 100-year floodplain to show the specific areas of concern for a flooding event within the planning area as well as the housing density and population distribution.

Top:
Value of Buildings Exposed to Hazards in Lauderdale County
(Chart, 2014: FEMA HAZUS Data)

Bottom Left:
Number of Buildings Exposed to 100 Year Flood
(Chart, 2015: FEMA HAZUS Data)

Bottom Right:
Quick Assessment Report Lauderdale County
(Chart, 2015: FEMA HAZUS Data)

100-YEAR FLOOD TOTAL RESIDENTIAL DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



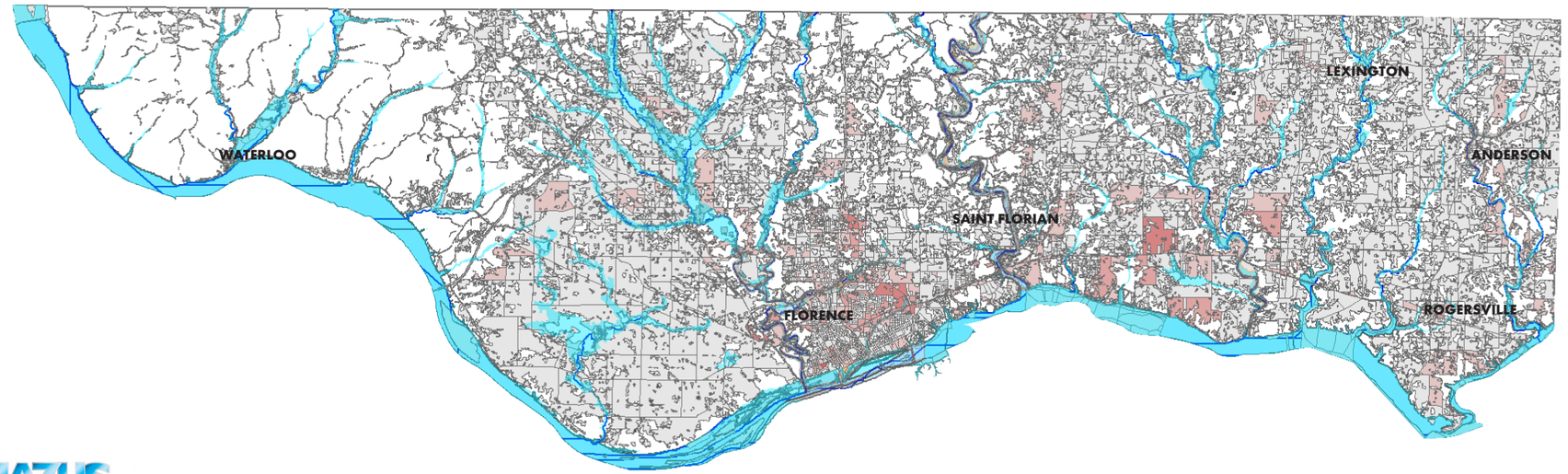
Map, Top:
Lauderdale County 100 Year Flood Total Residential Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Legend

FEMA 100 year Flood Zones
100 Year Flood Zones
100 Year Flood Zones

absv_InvGBSExposureBldgGOccup
0.00 to 1731.00
1731.00 to 5400.00
5400.00 to 13044.00
13044.00 to 27571.00
27571.00 to 51105.00

100-YEAR FLOOD TOTAL COMMERCIAL DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



Map, Bottom:
Lauderdale County 100 Year Flood Total Commercial Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

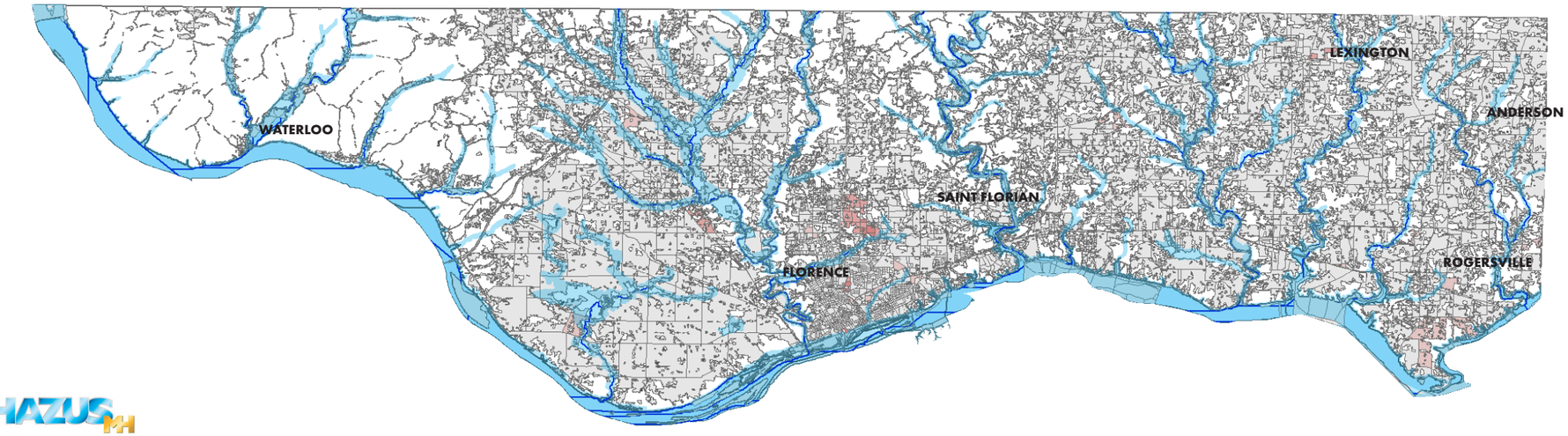
Legend

FEMA 100 year Flood Zones
100 Year Flood Zones
100 Year Flood Zones

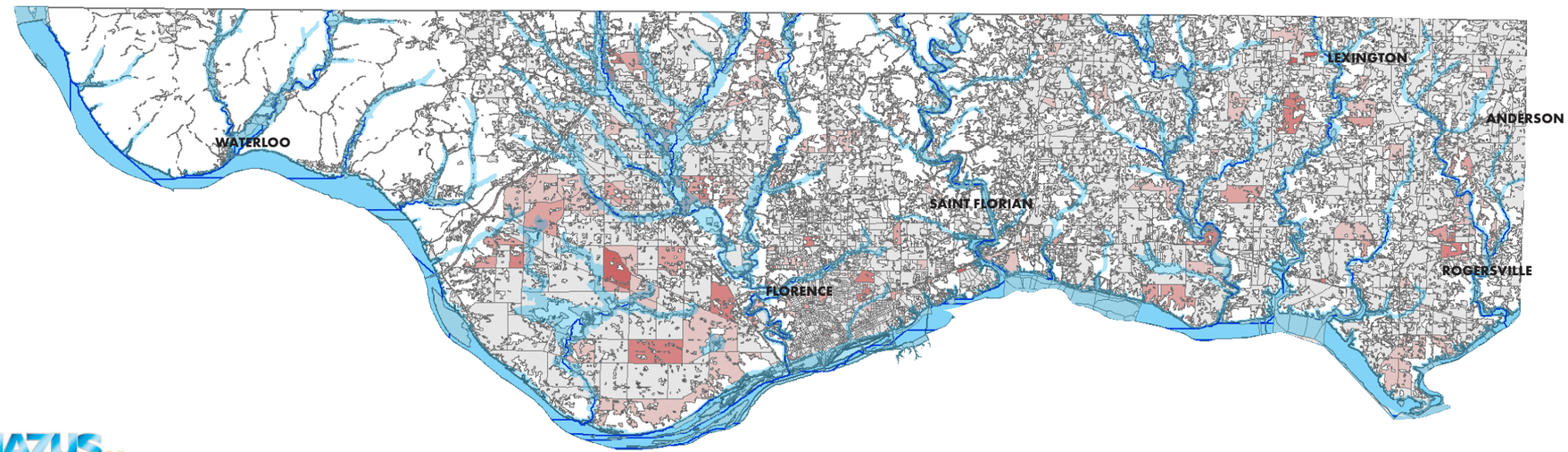
Commercial

0.00 to 1081.00
1081.00 to 4240.00
4240.00 to 13624.00
13624.00 to 44671.00
44671.00 to 112207.00

100-YEAR FLOOD TOTAL INDUSTRIAL DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



100-YEAR FLOOD TOTAL AGRICULTURE DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



Map, Top:
Lauderdale County 100 Year Flood Total Industrial Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

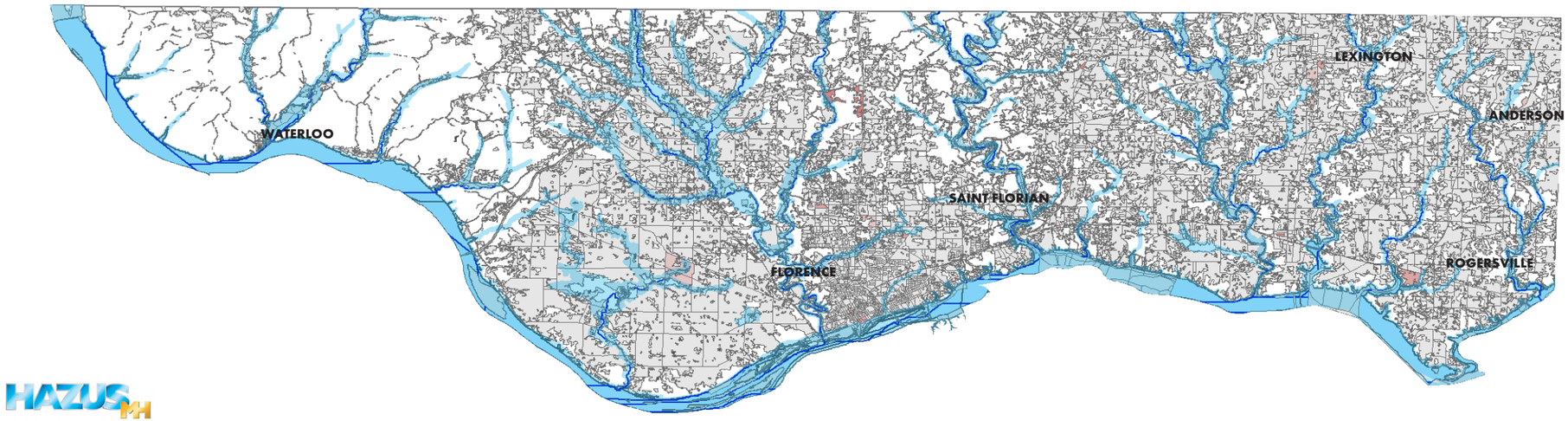
FEMA 100 year Flood Zones
100 Year Flood Zones
100 Year Flood Zones

Industrial
0.00 to 1102.00
1102.00 to 4523.00
4523.00 to 14942.00
14942.00 to 34898.00
34898.00 to 50984.00

Map, Bottom:
Lauderdale County 100 Year Flood Total Agriculture Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Legend
FEMA 100 year Flood Zones
100 Year Flood Zones
100 Year Flood Zones
0.00 to 45.00
45.00 to 140.00
140.00 to 273.00
273.00 to 581.00
581.00 to 984.00

100-YEAR FLOOD TOTAL GOVERNMENT BUILDING DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



Map, Top:
Lauderdale County 100 Year Flood Total Government Building Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Legend

FEMA 100 year Flood Zones

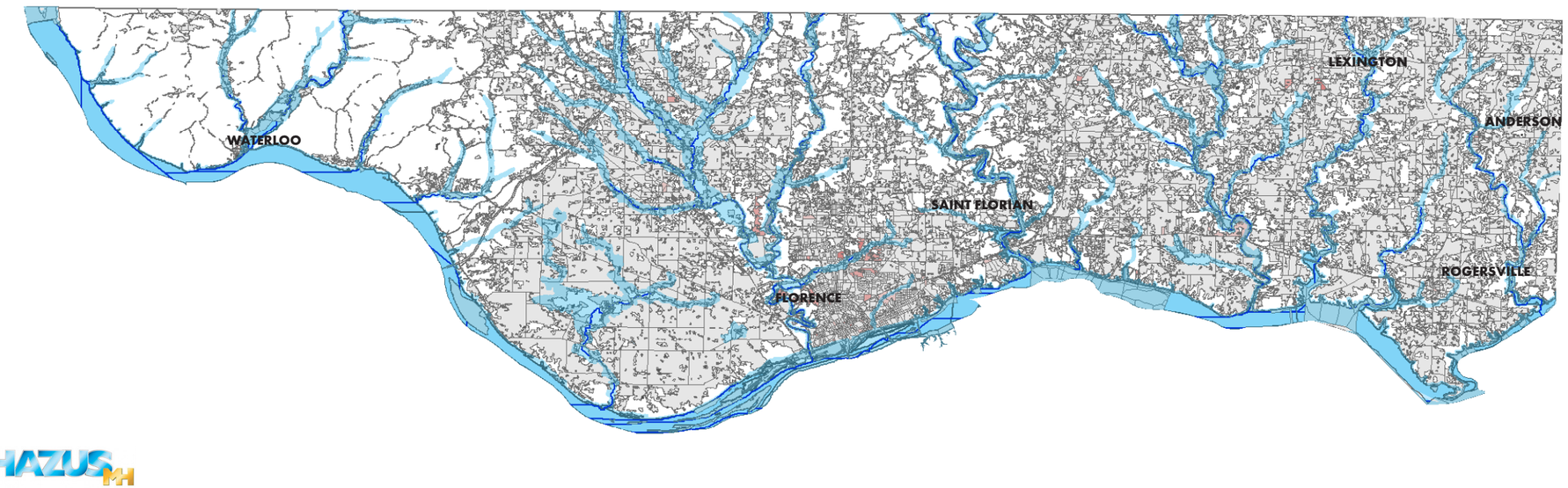
100 Year Flood Zones

100 Year Flood Zones

Government

0.00 to 202.00
202.00 to 731.00
731.00 to 1499.00
1499.00 to 4347.00
4347.00 to 8733.00

100-YEAR FLOOD TOTAL EDUCATIONAL BUILDING DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



Map, Bottom:
Lauderdale County 100 Year Flood Total Educational Building Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Legend

FEMA 100 year Flood Zones

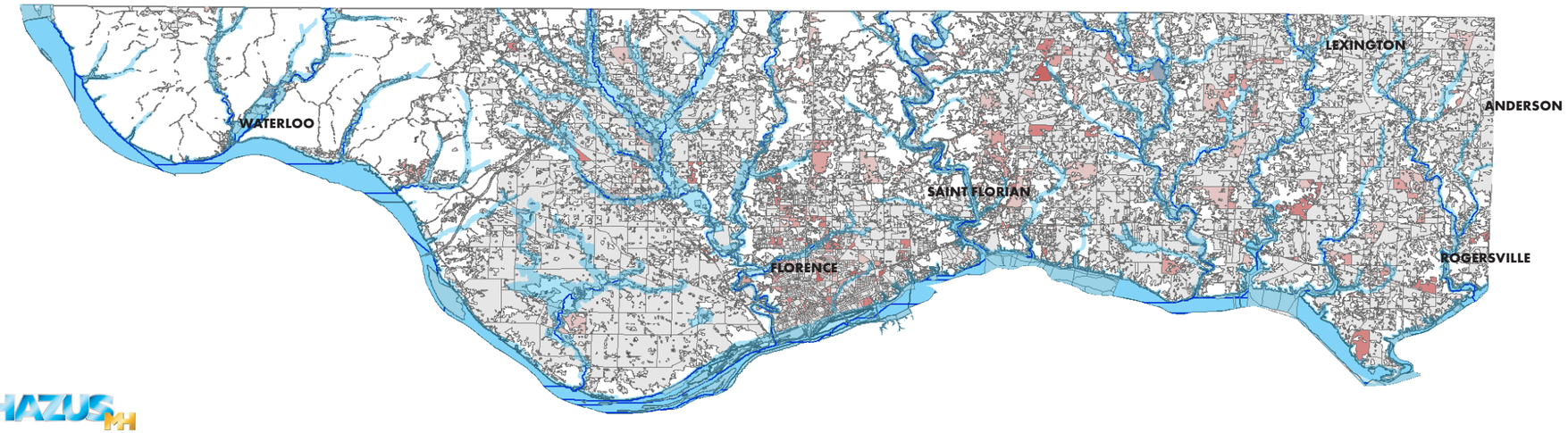
100 Year Flood Zones

100 Year Flood Zones

Education

0.00 to 467.00
467.00 to 1705.00
1705.00 to 4244.00
4244.00 to 7866.00
7866.00 to 13208.00

100-YEAR FLOOD TOTAL **RELIGIOUS BUILDING** DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



Map, Top:
Lauderdale County 100 Year Flood Total Religious Building Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Legend

FEMA 100 year Flood Zones

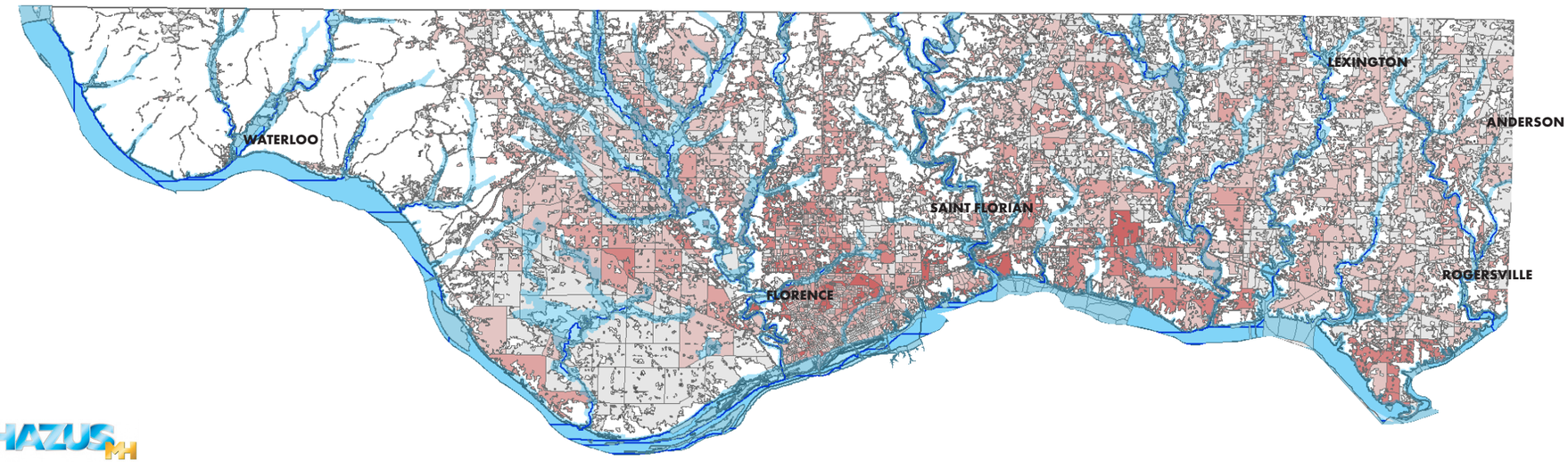
100 Year Flood Zones

100 Year Flood Zones

Religion

0.00 to 207.00
207.00 to 637.00
637.00 to 1202.00
1202.00 to 1958.00
1958.00 to 6065.00

100-YEAR FLOOD TOTAL DOLLAR EXPOSURE/REPLACEMENT VALUE ($THOUSAND)



Map, Bottom:
Lauderdale County 100 Year Flood Total Dollar Exposure / Replacement Value Map
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Legend

FEMA 100 year Flood Zones

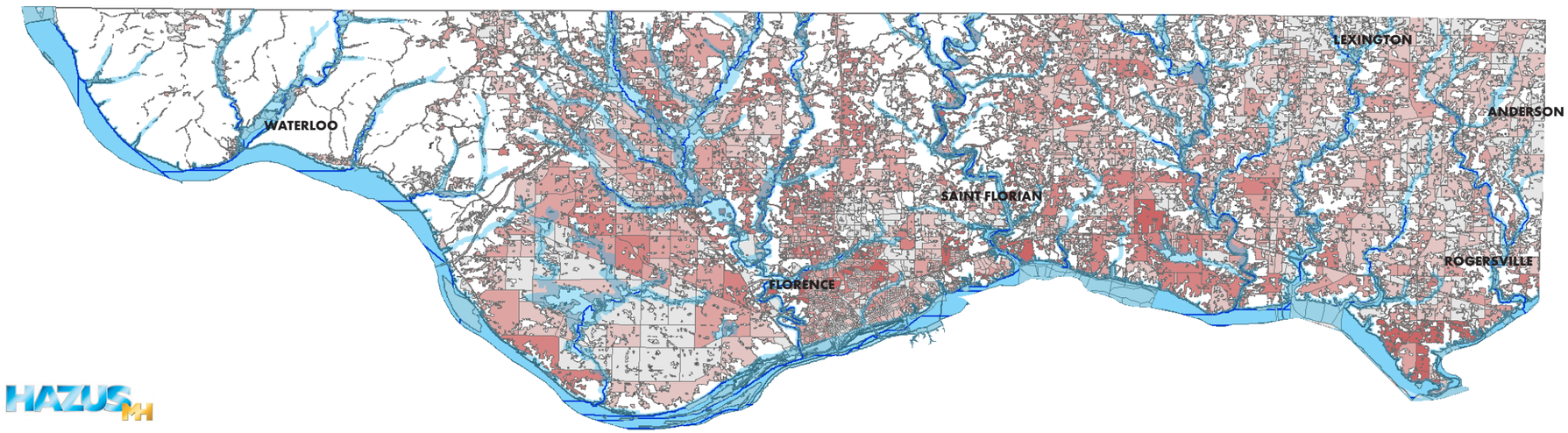
100 Year Flood Zones

100 Year Flood Zones

absv_InvGBSExposureBldgGOccup

0.00 to 2311.00
2311.00 to 7374.00
7374.00 to 16742.00
16742.00 to 35742.00
35742.00 to 116592.00

100-YEAR FLOOD TOTAL RESIDENTIAL BUILDING COUNT



Map, Top:
Lauderdale County 100 Year Flood Total Residential Building Count
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

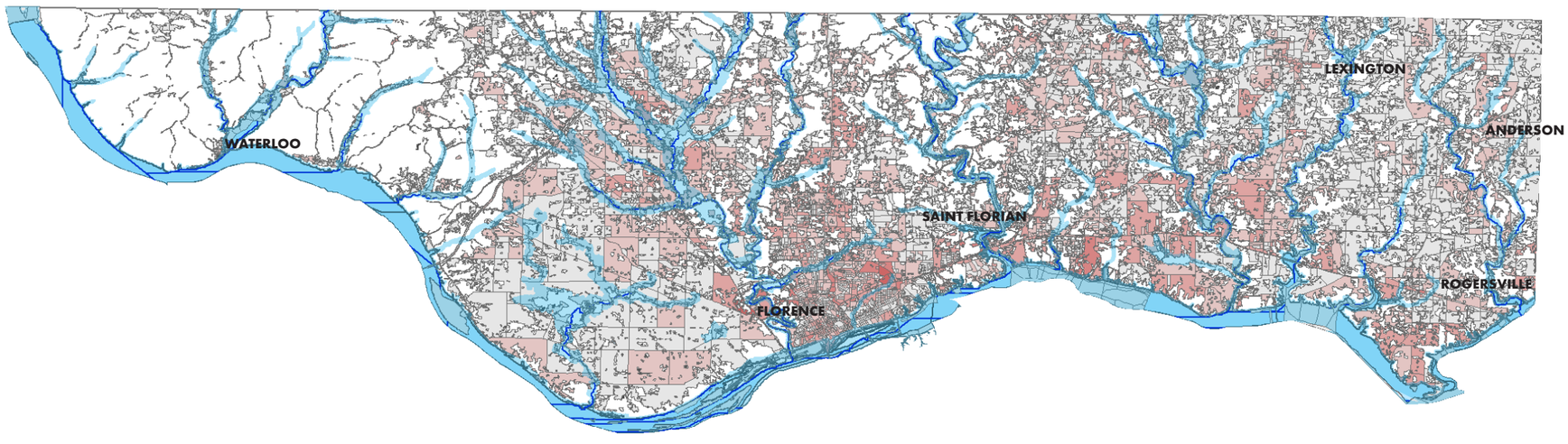
Legend

FEMA 100 year Flood Zones
100 Year Flood Zones
100 Year Flood Zones

Residential

0.00 to 7.00
7.00 to 23.00
23.00 to 56.00
56.00 to 118.00
118.00 to 275.00

100-YEAR FLOOD TOTAL COMMERCIAL BUILDING COUNT



Map, Bottom:
Lauderdale County 100 Year Flood Building Count
(Map, 2023: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Legend

FEMA 100 year Flood Zones
100 Year Flood Zones
100 Year Flood Zones

Commercial

0.00 to 0.00
0.00 to 2.00
2.00 to 6.00
6.00 to 13.00
13.00 to 23.00

Estimated Loss for Magnitude Earthquake 5.0 Probabilistic Loss Estimates

The impact of a 5.0 magnitude earthquake was evaluated with the HAZUS-MH MR-4 software. The 5.0 earthquake model indicates minimal damage to buildings and infrastructure in the planning area. The estimated number of buildings damaged ranges between 1,000 and 7,000 with no casualties expected. Less than one household seeking shelter due to damage from a 5.0 magnitude earthquake is projected by the model. The tables below summarize the 5.0 probabilistic scenario and carry slightly different values of damage than are shown in the Direct Economic Losses map. The 5.0 Magnitude Earthquake Map indicates where potential economic losses might occur after a 5.0 magnitude earthquake event within the planning area.

5.0 MAGNITUDE EARTHQUAKE ESTIMATED ECONOMIC LOSS ($BILLIONS) FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Category	Description	Range
General Building Stock	Building Damage	00.0-0.2
	Building Contents	<0.1
	Business Interruption	<0.1
Infrastructure	Lifelines Damage	
TOTAL		0.10-0.30
Source: FEMA HAZUS-MHM-4.2 Data		

5.0 MAGNITUDE EARTHQUAKE ESTIMATED BUILDING DAMAGE(THOUSANDS OF BUILDINGS) FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Description	Residential	Commercial	Other	Total
Minor	1-6	<1.0	<1.0	1-7
Major	<1.0	<1.0	<1.0	<1.0
Total	1-7	<1.0	<1.0	1-7
Source: FEMA HAZUS-MHM-4 Data				

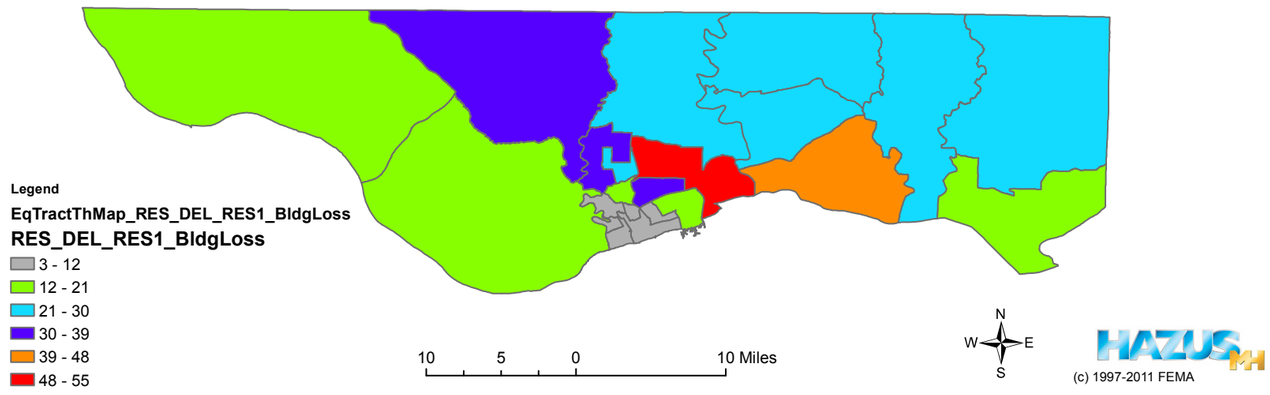
5.0 MAGNITUDE EARTHQUAKE ESTIMATED SHELTER NEEDS FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Type	Household	People
Displaced Households	<1.0	N/A
Public Shelter	N/A	N/A
Source: *FEMA HAZUS-MHM-4 Data*		

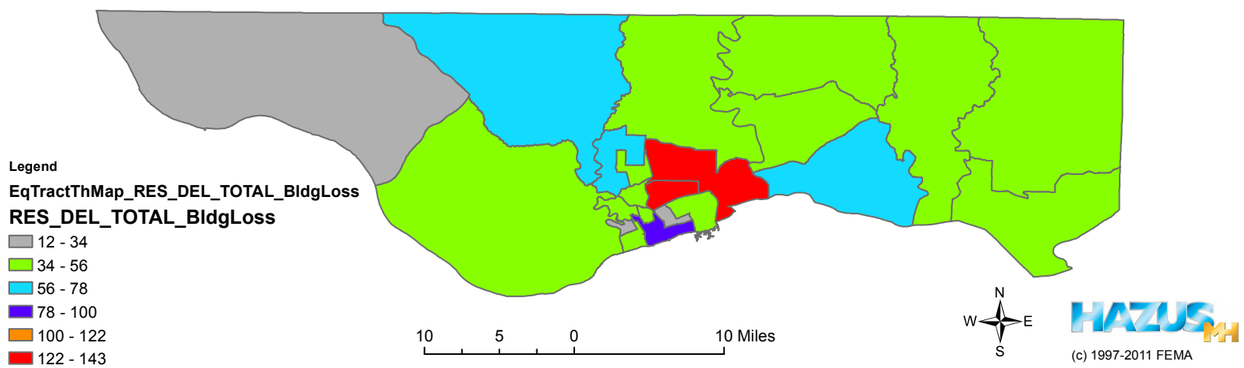
5.0 MAGNITUDE EARTHQUAKE ESTIMATED CASUALTIES: COMMUTE TIME FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Severity Level	Description	# Persons
Level 1	Medical Aid	N/A
Level 2	Hospital Care	N/A
Level 3	Life-Threatening	N/A
Level 4	Fatalities	N/A
Source: *FEMA HAZUS-MHM-4 Data*		

SCENARIO: 5.0 MAGNITUDE EARTHQUAKE DIRECT ECONOMIC LOSS, RES1 ($THOUSAND)



SCENARIO: 5.0 MAGNITUDE EARTHQUAKE DIRECT ECONOMIC LOSS, TOTAL ($THOUSAND)



Top Left:
5.0 Magnitude Earthquake Estimated Economic Loss for Lauderdale County
(Charts, 2014: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Bottom Left:
5.0 Magnitude Earthquake Estimated Building Damage & Shelter Needs for Lauderdale County
(Charts, 2014: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

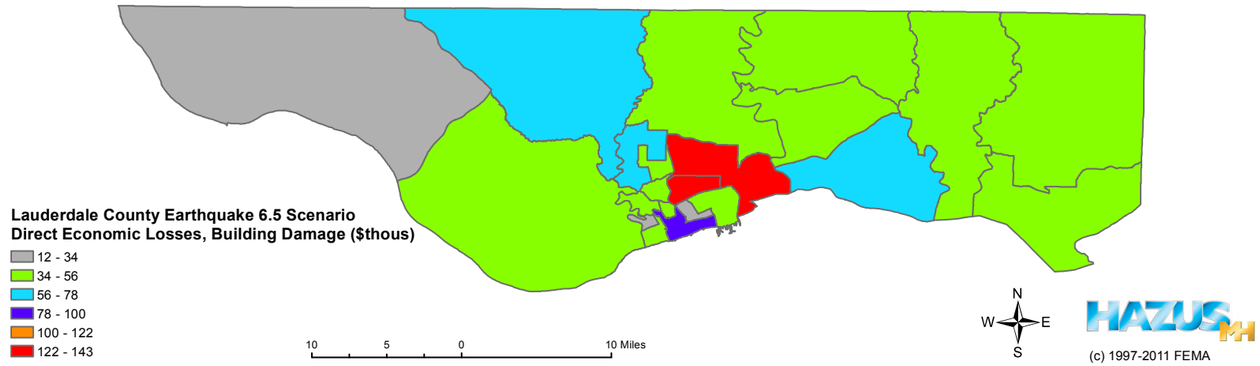
Top Right:
5.0 Magnitude Earthquake Estimated Casualties: Commute Time for Lauderdale County
(Charts, 2014: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Bottom Right:
5.0 Magnitude Earthquake Scenario Maps
(Map, 2015: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

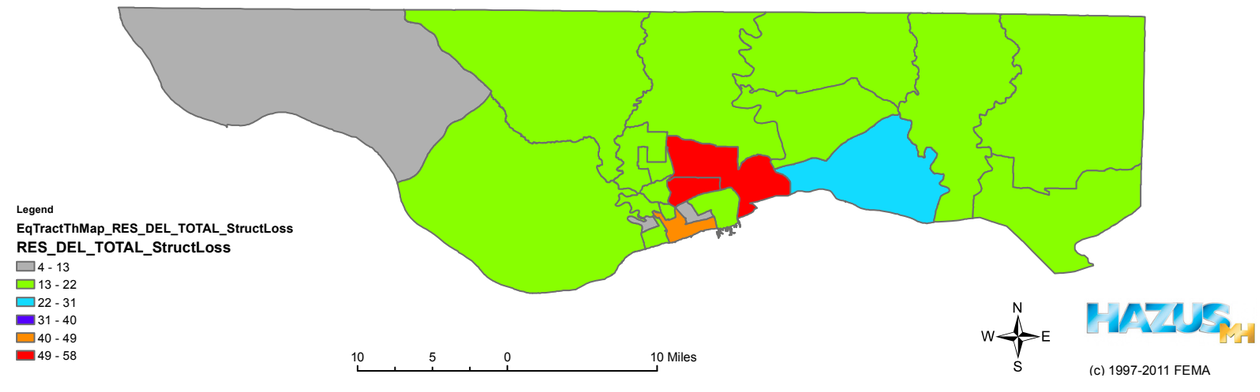
Estimated Loss for Magnitude Earthquake 6.5 Probabilistic Loss Estimates

According to the FEMA HAZUS software, a 6.5 magnitude earthquake would cause significant damage to structures and infrastructure within the planning area. HAZUS estimates between 30 to 100 fatalities with almost 1,200 people seeking medical assistance. The estimated economic losses reach into the billions as shown in the Estimated Economic Losses chart. In comparison to the 5.0 magnitude earthquake, the 6.5 earthquake is expected to cause significant damage within the heavily developed areas in and around the City of Florence. Preparing and implementing mitigation strategies for this magnitude of an earthquake should be considered to lessen the effects of this disaster. The most significant mitigation strategy for earthquakes is design and enforcement of local building codes. The tables below summarize the 6.5 probabilistic scenario and carry slightly different values of damage than are shown in the Direct Economic Losses map. The 6.5 Magnitude Earthquake Map indicates where potential economic losses might occur after a 6.5 magnitude earthquake event within the planning area.

SCENARIO: 6.5 MAGNITUDE EARTHQUAKE DIRECT ECONOMIC LOSS, TOTAL ($THOUSAND)



SCENARIO: 6.5 MAGNITUDE EARTHQUAKE RESIDENTIAL LOSS, RES1 ($THOUSAND)



Top Left:
6.5 Magnitude Earthquake Estimated Economic Loss, Building Damage,Shelter Needs
(Map, 2015: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Bottom Left:
6.5 Magnitude Earthquake Estimated Residential Loss for Lauderdale County
(Charts, 2014: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Right Top to Bottom:
6.5 Magnitude Earthquake Estimated Economic Loss for Lauderdale County

6.5 Magnitude Earthquake Estimated Building Damage for Lauderdale County,

6.5 Magnitude Earthquake Estimated Shelter Need for Lauderdale County

6.5 Magnitude Earthquake Estimated Casualties for Lauderdale County
(Charts, 2014: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

6.5 MAGNITUDE EARTHQUAKE ESTIMATED ECONOMIC LOSS ($BILLIONS) FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Category	Description	Range
General Building Stock	Building Damage	0.50-2.00
	Building Contents	00.0-0.10
	Business Interruption	0.20-0.80
Infrastructure	Lifelines Damage	N/A
TOTAL		0.80-3.30

Source: *FEMA HAZUS-MHM-4 Data*

6.5 MAGNITUDE EARTHQUAKE ESTIMATED BUILDING DAMAGE(THOUSANDS) FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Description	Residential	Commercial	Other	Total
Minor	11-50	0-1	<1.0	11-50
Major	3-13	0-1	<1.0	4-16
Total	14-60	0-3	0-1	15-60

Source: *FEMA HAZUS-MHM-4 Data*

6.5 MAGNITUDE EARTHQUAKE ESTIMATED SHELTER NEEDS FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Type	Household	People
Displaced Households	1,100-4,000	N/A
Public Shelter	N/A	N/A

Source: *FEMA HAZUS-MHM-4 Data*

6.5 MAGNITUDE EARTHQUAKE ESTIMATED CASUALTIES: COMMUTE TIME FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Severity Level	Description	# Persons
Level 1	Medical Aid	30-1,200
Level 2	Hospital Care	90-400
Level 3	Life-Threatening	30-110
Level 4	Fatalities	30-100

Source: *FEMA HAZUS-MHM-4 Data*

Estimated Loss for Hurricanes

Historically, hurricanes lose strength when moving inland and are downgraded to a tropical storm by the time they reach Lauderdale County and damages are minimal and equivalent to a severe storm. However, Hurricane Katrina did have economic damages within the planning area and increased the community's concern for future hurricanes and tropical storm events within the County.

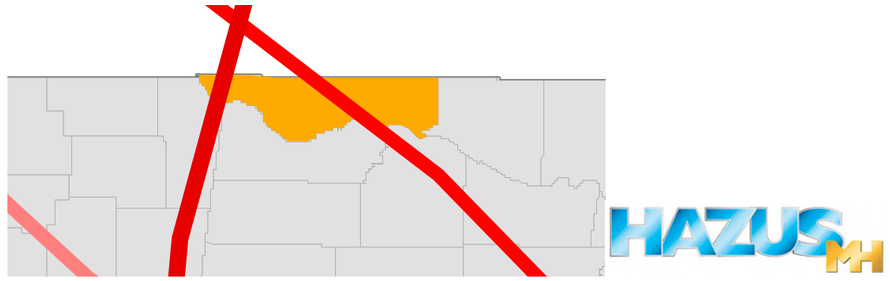
FEMA HAZUS MH 4.2 analysis was conducted on hurricane events for the planning area. Seven storm event periods were analyzed. Storm tracks for the 50, 100, 500 and 1000-year hurricane storms are shown below.

According to the HAZUS data, damages from the probabilistic scenarios began to occur during the 50-year storm and accelerated greatly from a 1000-year hurricane. The 50-year storm is projected to have approximately 18 damaged structures and $20,000.00 in damage. The 1000-year storm has a direct storm track through Lauderdale County and could cause devastating losses with over 1,068 buildings damaged for an economic loss exceeding 24 million dollars. The Probabilistic Hurricane Economic Losses table below shows the expected economic damages from storms of different strength.

PROBABILISTIC HURRICANE ECONOMIC LOSSES FOR LAUDERDALE COUNTY AND PARTICIPATING JURISDICTIONS

Hurricane Period	Total Number of Residential Buildings Damaged	Total Number of Buildings Damaged	Shelter Requirements	Total Economic Losses For Property
10 Year Storm	0	0	0	$0.00
20 Year Storm	0	0	0	$0.00
50 Year Storm	9	18	0	$20,000
100 Year Storm	18	30	0	$2,059,000.00
200 Year Storm	77	93	0	$6,055,000.00
500 Year Storm	362	398	0	$15,237,000.00
1000 Year Storm	1,000	1,068	2	$24,756,000.00

Source: FEMA HAZUS-MH-4.2 Data



RA.6 Addressing Repetitive Loss Properties

According to FEMA, a repetitive loss property is a residential property that has two or more losses of at least $1,000.00 each of which has been paid under the National Flood Insurance Program (NLIP) within any 10 year period since 1978. All eight participating jurisdictions are in compliance with NFIP standards. Currently, there are only two jurisdictions within the planning area with NFIP losses as of December 2014: Lauderdale County and the City of Florence. Lauderdale County has 92 losses with $642,202,67 in total payments. Florence has 27 losses with $ 642,202,67 in total losses.

NFIP Repetitive Loss Properties as of 06/2020

State	County Name	Comm Nbr	Community Name	Occupancy	NFIP RL Properties
AL	LAUDERDALE	10140	FLORENCE, CITY OF	OTHR-NONRES	2
AL	LAUDERDALE	10140	FLORENCE, CITY OF	SINGLE FMLY	2
AL	LAUDERDALE	10323	LAUDERDALE COUNTY	SINGLE FMLY	14
AL	LAUDERDALE	10323	LAUDERDALE COUNTY	SINGLE FMLY	2

Source: NFIP Data, June 2020

NFIP Losses as of December 2014

Jurisdiction	Total Losses	Total Payments
Florence	27	$378,495.55
Lauderdale County	92	$642,202.67

Source: *http://bsa.nfipstat.fema.gov/reports/1040.htm#01*

NFIP Insurance Policies as of 12/31/14

Jurisdiction	Policies In Force	Insurance In Force	Written Premium In Force
Florence	36	$9,545,600	$36,332
Killen	4	$1,077,000	$2,683
Anderson	2	$710,000	$3,623
Lauderdale County	154	$32,255,800	$104,140

Source: *http://bsa.nfipstat.fema.gov/reports/1011.htm#ALT*

There are currently 194 NFIP policies within the planning area as of December 2014. Lauderdale County has a total of 154 policies alone with $32,255,800 in insurance in force and $104,140 in written premiums in force.

Bottom, left:
Probabilistic Hurricane Economic Losses for Lauderdale County
(Charts, 2020: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Top Right:
1000-Year Probabilistic Hurricane Storm Track
(Charts, 2014: FEMA HAZUS Data, Multi-Hazard Mitigation Planning Team)

Middle Right:
Losses as of December 2014
(Chart, 2014: fema.gov, Multi-Hazard Mitigation Planning Team)

Bottom Right:
NFIP Insurance Policies as of 12/31/14
(Chart, 2014: fema.gov, Multi-Hazard Mitigation Planning Team)

RA.7 Analyze Development Trends

With its 2025 population estimate of 93,765, Lauderdale County is the most populous county in Northwest Alabama and contains the region's largest city, Florence. The City of Florence is the hub of business, commercial, retail, employment, healthcare and entertainment establishments in the county and makes up about 44% of the county's total population. There are large industrial employers in the county; however, the highest density of residential and commercial structures are located within the City of Florence. Most of the western and northern parts of the county are rural farmland. Higher residential densities can be seen all along the Tennessee River all through the county where property is privately owned. The Tennessee Valley Authority (TVA) owns a lot of the riverfront property; however, TVA has plans to sell portions of these lots to private entities in the future. Efforts should be made to ensure that only appropriate land uses are allowed in flood prone areas. The Population Distribution and Population Projection table below illustrates the population demographic of the planning area.

Lauderdale County has continued to experience increased growth over the past 19 years with a 0.4% growth allocation resulting in 4,803 new residents. The City of Florence, the Town of Rogersville and the Town of St. Florian have also experienced growth over the past 19 years. Florence has grown by 4,533 individuals, Rogersville by 52 individuals and St. Florian by 335 individuals. However, the other four jurisdictions have experienced population loss. The Growth Allocation by Jurisdiction table below illustrates these trends

The land use and development patterns of Lauderdale County and its participating jurisdictions have followed their local adopted plans, regulations and ordinances and have been consistent with desired growth goals and objectives. Efforts have been made to increase densities in already developed areas as opposed to undeveloped rural parts of the county. Growth and development patterns have followed existing infrastructure corridors and transportation routes and has generally been focused within incorporated places where public services and access are available. Efforts have been made by planning officials to execute site plan reviews to ensure proper land choices for new construction to avoid new floodplain properties and repetitive loss claims. Building codes have been enforced to ensure proper structure construction to withstand high winds. Better planning practices have been utilized to address storm water management mitigation strategies that affect flash flooding. The existing and future land use maps for the planning area are below.

Top Right:
Population Distribution & Population Projection by Jurisdiction
(Chart, 2020: U.S. Census Data & Hazard Mitigation Planning Team)

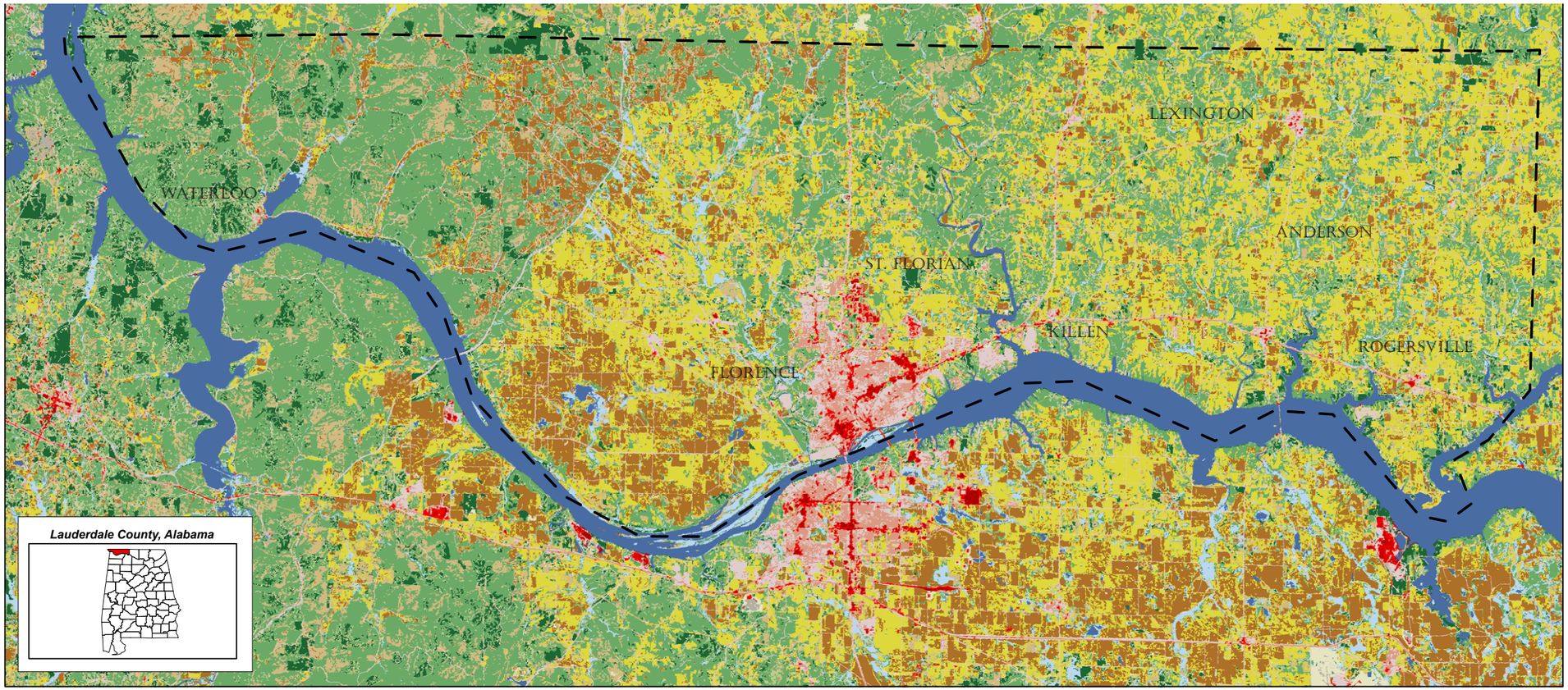
Bottom Left:
Growth Allocation by Jurisdiction
(Chart, 2014: U.S. Census Data & Hazard Mitigation Planning Team)

POPULATION DISTRIBUTION AND POPULATION PROJECTION BY JURISDICTION

Jurisdiction	2019 Population Estimate	2018 Population Estimate	Average Annual % Change	2025 Projected Population	% of Total County Population
Lauderdale County	92,769	92,604	0.18%	93,765	100%
City of Florence	40,797	40,699	0.24%	41,390	43.98%
Town of Rogersville	1,251	1,233	1.46%	1,365	1.35%
Town of Killen	955	957	-0.21%	943	1.03%
Town of Lexington	709	709	0%	709	0.76%
Town of St. Florian	670	649	3.24%	811	0.72%
Town of Anderson	267	268	-0.37%	261	0.29%
Town of Waterloo	197	197	0%	197	0.21%
Source: *U.S. Census Data and Planning Team*					

GROWTH ALLOCATION BY JURISDICTION

Jurisdiction	2000 Census	2010 Census	2019 Population Estimate	2000-2019 Growth	Percent of Growth Allocation
Lauderdale County	87,966	92,709	92,769	4,803	0.4%
City of Florence	36,264	39,319	40,797	4,533	0.8%
Town of Rogersville	1,199	1,257	1,251	52	0.3%
Town of Killen	1,119	1,108	955	-164	-0.9%
Town of Lexington	840	735	709	-131	-1.0%
Town of St. Florian	335	413	670	335	2.0%
Town of Anderson	354	282	267	-87	-1.6%
Town of Waterloo	208	203	197	-11	-0.4%
Source: *U.S. Census Data and Planning Team*					



LAND USE / LAND COVER MAP

LEGEND

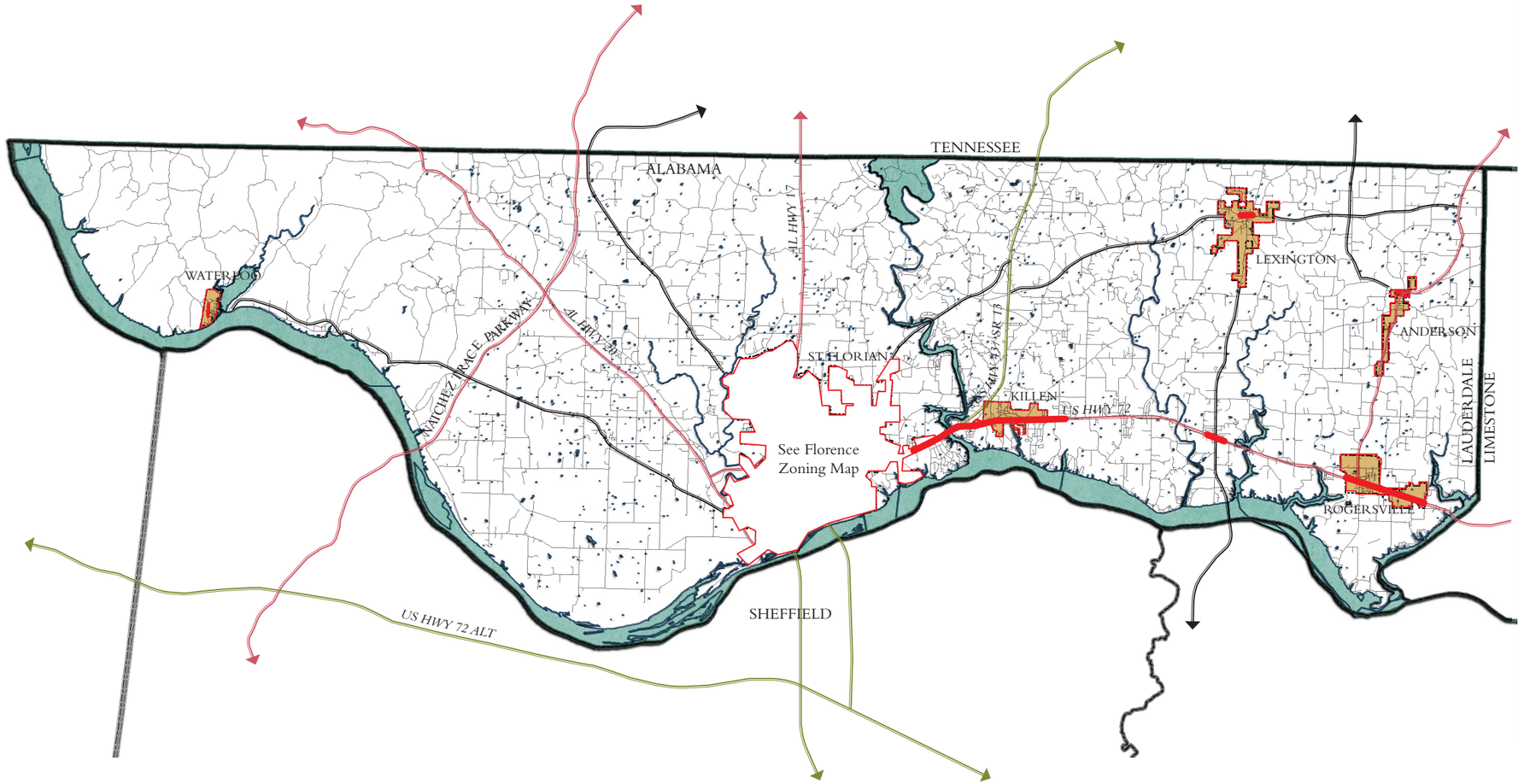
- *Barren Land*
- *Cultivated Crops*
- *Deciduous Forest*
- *Developed, High Intensity*
- *Developed, Low Intensity*
- *Developed, Medium Intensity*
- *Developed, Open Space*
- *Emergent Herbaceous Wetlands*
- *Evergreen Forest*
- *Hay / Pasture*
- *Herbaceous*
- *Mixed Forest*
- *Open Water*
- *Perennial Snow / Ice*
- *Shrub / Scrub*
- *Woody Wetlands*

Map, Bottom:
Lauderdale County Land Use/ Land Cover Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

LEGEND

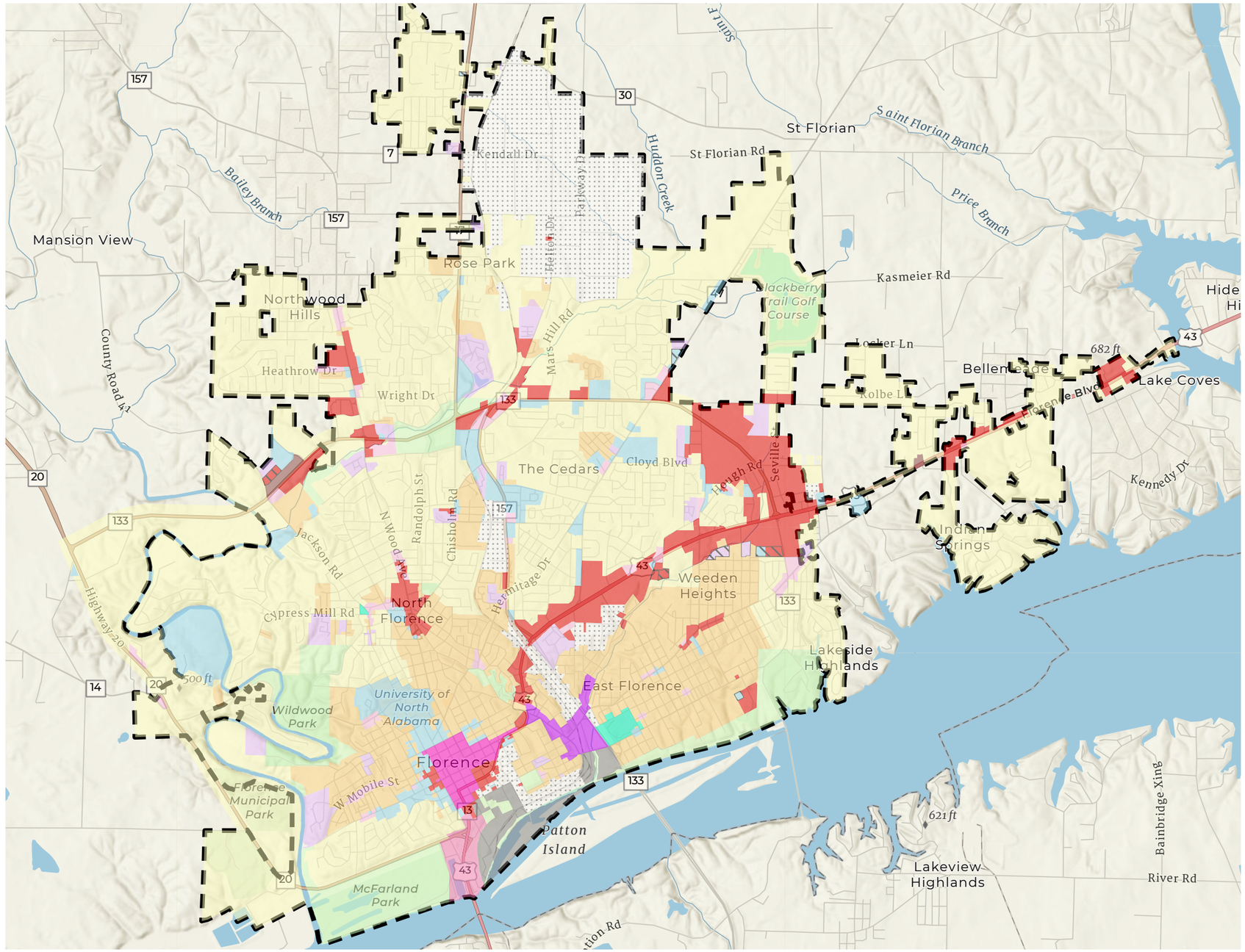
Residential Development

Commercial Development



LAND USE DEVELOPMENT TRENDS EXISTING DEVELOPMENT PATTERNS

Map:
Lauderdale County Land Use Development Trends Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)



Zoning District

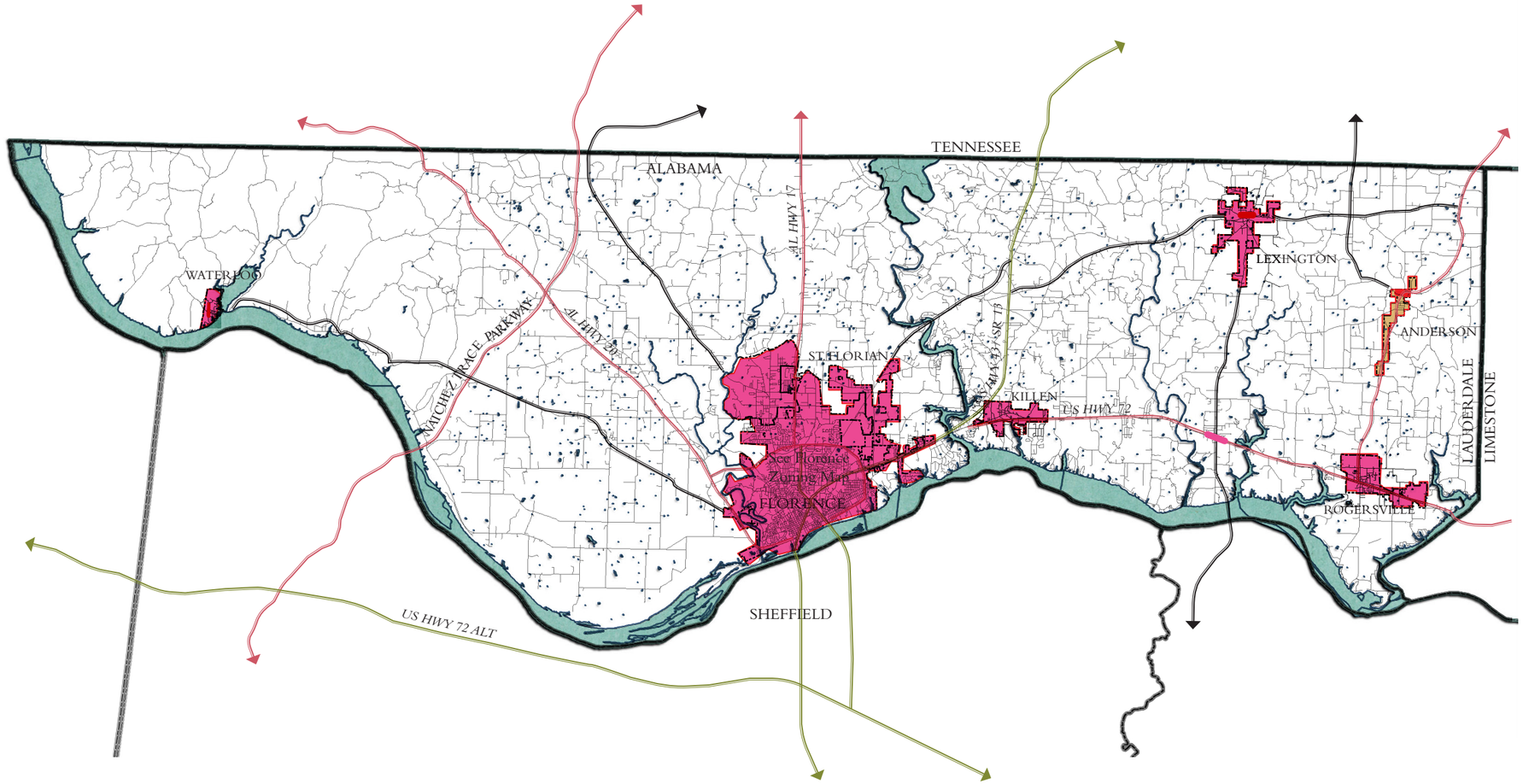
- B-1 - Neighborhood Business
- B-2 - General Business
- B-3 - Central Business
- B1-H - Neighborhood Business/High Impact
- CO - Conditional Overlay
- FAR - Floodway-Agricultural-Recreational
- H-1 - Florence Harbor
- I-1 - Light Industry
- I-2 - Heavy Industry
- PUD - Planned Unit Development
- R-1 - Single-Family Residence/Conventional
- R-2 - Single-Family Residence/Small Lots
- R-3 - Multi-Family Residence
- R-B - Residence-Business
- SD - Sweetwater
- North Florence Business District
- Municipal Boundaries

Map:
City of Florence Zoning Map
(Map, 2023: City of Florence, Online Portal)

LEGEND

Increased Density Area

Commercial Development

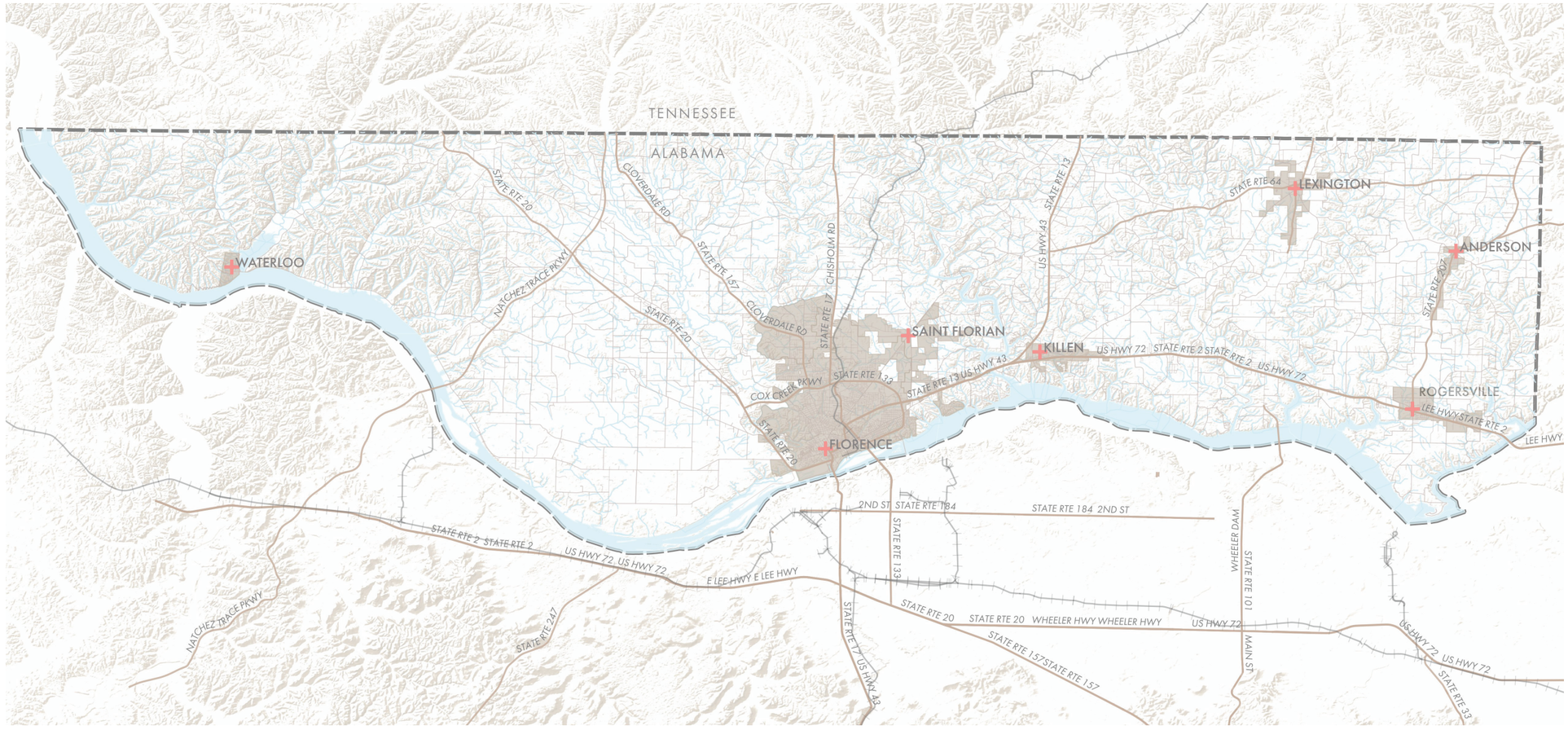


LAND USE DEVELOPMENT TRENDS
FUTURE DEVELOPMENT PATTERNS

Map:
Lauderdale County Land Use Land Cover Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

[G] MITIGATION STRATEGIES

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



44 CFR § 201.6
Local Mitigation Plans:
(c) Plan content. The plan shall include the following:

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

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

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

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

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

MITIGATION STRATEGIES

MS.1 LOCAL HAZARD MITIGATION GOALS
MS.2 IDENTIFICATION & ANALYSIS OF MITIGATION ACTIONS
MS.3 NFIP IMPLEMENTATION STRATEGY
MS.4 MITIGATION ACTION IMPLEMENTATION

This section describes the natural hazards mitigation strategy that serves as the jurisdiction's action plan for reducing potential losses identified in the risk assessment section of this plan. The purpose of mitigation planning is to lessen a community's vulnerability to the hardship and cost of disasters. A sustainable community is one in which the economic and social needs of people, businesses, critical facilities and institutions coexist with the natural environment. Consistent and comprehensive mitigation planning will establish the region as a safe, healthy and prosperous place to live, work and play.

MS.1 Local Hazard Mitigation Goals

Description of Hazard Mitigation Goal Development

The mitigation strategy was developed by the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Policy Committee based on the identified risk assessment. The strategy was developed through a collaborative group process that involved reviewing the 2015 plan's mitigation strategies, evaluating the success of past goals and objectives associated with each risk to determine which needed to be continued and what new strategies should be added. The updated mitigation strategies were placed under mitigation action group categories and discussed further in regard to which jurisdictions they were appropriate for. The Committee used the following FEMA guidance to guide the development of their mitigation goals and objectives:

From the FEMA guidance document, Developing the Mitigation Plan (2011):

- Goals are general guidelines that explain what you want to achieve. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. They are usually long-term, broad, policy-type statements.
- Objectives define strategies or implementation steps to attain the identified goals and are specific and measurable.
- Mitigation Actions are specific actions that help achieve goals and objectives.

Planning Jurisdictions Goals and Objectives

The goals and objectives of the planning team was to create a plan that provided direction for reducing hazard related losses in the Florence-Lauderdale County planning area. The mission of the Lauderdale County Mitigation Plan is to promote public policy designed to protect citizens, critical facilities, infrastructure, private property and the environment from natural hazards. This can be achieved by implementing actions for risk reduction, lessening vulnerability through local regulations, increasing public awareness and identifying activities that will guide the county, and its municipalities, towards building a safer, more sustainable community. The goals and objectives identified in this plan describe the direction that Lauderdale County and its agencies, organizations, municipalities and citizens can take to accomplish successful hazard mitigation.

After the committee reviewed the 2015 Plan's goals and objectives, it was decided that no changes would be made and that the same goals and objectives still applied to the planning area for the 2020 Plan Update. Therefore, the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan's goals and objectives are:

Protect Life & Property

- Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities and other property more resistant to losses from natural hazards.
- Increase community awareness of and preparedness for natural hazards that the county is vulnerable to.
- Reduce losses and repetitive damages for chronic hazard events.
- Improve hazard assessment information to make recommendations for discouraging new development and encouraging preventative measures for existing development in areas vulnerable to natural hazards, especially those that are area specific.

Public Awareness

- Develop, implement and expand current education and outreach programs to increase public awareness of the risks associated with natural hazards.
- Provide information on tools, partnership opportunities and funding resources for municipalities and the community as a whole to assist in implementing mitigation activities.

Natural Systems

- Balance planning, natural resource management and land use planning with natural hazard mitigation to protect life, property and the environment.
- Preserve, rehabilitate and enhance natural systems to serve as natural hazard mitigation functions.

Partnership & Information

- Strengthen communication and coordinate participation among and within public agencies, municipalities, citizens, non-profit organizations, business and industry to gain a unified interest in plan implementation and maintenance.
- Encourage leadership within public and private sector organizations to prioritize and implement local, county and regional hazard mitigation activities.

Emergency Services

- Establish policies to ensure mitigation projects for critical facilities, services and infrastructure.
- Strengthen emergency operations by increasing collaboration and coordination among public agencies, municipalities, non-profit organizations, businesses and industry.
- Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operation plans and procedures.

Compatibility with the State of Alabama 2018 Plan Update

During the development of the 2023 Plan Update, the Committee reviewed the 2018 State of Alabama Hazard Mitigation Plan Update to ensure that local goals and objectives that were developed by the Committee were consistent and reflective of the state's hazard plan's vision and goals. The following are the 2018 State of Alabama Hazard Mitigation Plan's goals:

1. Enhance the comprehensive statewide hazard mitigation system.
2. Reduce the State of Alabama's vulnerability to hazards and increase resilience to hazards to protect people, property and natural resources.
3. Foster public awareness and understanding of their hazard risk and mitigation opportunities.
4. Expand and promote coordination and communication with other government agencies, local governments, other relevant organizations.

MS.2 Identification and Analysis of Mitigation Actions

The following sub-section contains the hazard mitigation strategies presented to the Policy Committee members, stakeholders and citizens of the planning area. Survey respondents selected which mitigation strategies worked best for their jurisdiction (survey is attached in the Appendix). Each identified risk is listed with their proposed mitigation strategies. The mitigation strategies are organized into five categories:

- Prevention - are "government administrative or regulatory actions or processes that influence the way land and buildings are developed and built."
- Property Protection - are actions "that involve the modification of existing buildings or infrastructure to protect them from hazard, or removal from hazard areas."
- Public Education & Awareness - are "actions to inform and educate citizens, elected officials and property owners about potential risks form hazards and potential ways to mitigate them."
- Natural Resource Protection - are "actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural systems."
- Structural Projects - are "actions that involve the construction of structures to reduce the impact of a hazard."

Prioritization of mitigation strategies are not hazard specific and will apply to all identified hazards. The mitigation measures will be administered, implemented and funded through the local jurisdictions, the state and local EMA and FEMA. The Policy Committee recognizes that in most instances, priority is relative to funding availability.

Prioritization Process

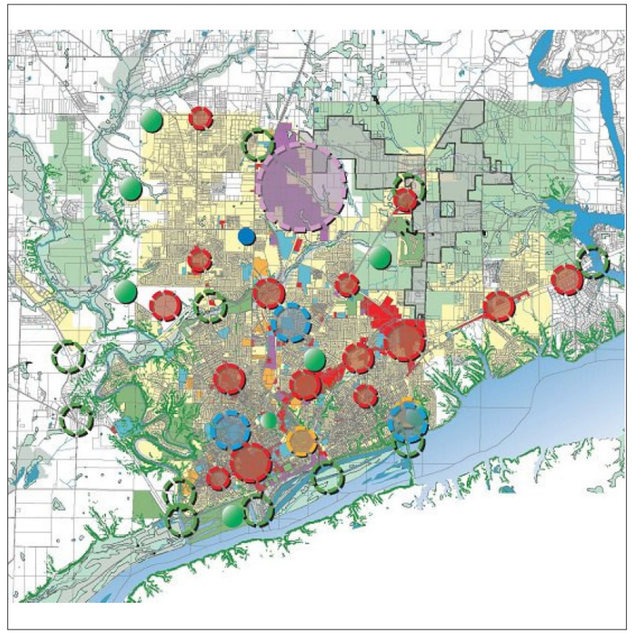
Once the new mitigation actions were identified, the Policy Committee members were provided with several sets of decision-making tools, including FEMA's recommended criteria, (which considers social, technical, administrative, political, legal, economic, and environmental constraints and benefits).

- Social: Does the measure treat people fairly?
- Technical: Will it work? (Does it solve the problem? Is it feasible?)
- Administrative: Is there capacity to implement and manage the project?
- Political: Who are the stakeholders? Did they get to participate? Is there public support? Is political leadership willing to support the project?
- Legal: Does your organization have the authority to implement? Is it legal? Are there liability implications?
- Economic: Is it cost-beneficial? Is there funding? Does it contribute to the local economy or economic development? Does it reduce direct property losses or indirect economic losses?
- Environmental: Does it comply with environmental regulations or have adverse environmental impacts?

Other criteria used to recommend what actions might be more important, more effective, or more likely to be implemented than another included:

- Does the action protect lives?
- Does the action address hazards or areas with the highest risk?
- Does the action protect critical facilities, infrastructure or community assets?

The above criteria were used to prioritize actions in an iterative process over the course of the plan update process. At the start of the process, participating jurisdictions were asked to validate or update the priorities of their continuing actions from the 2015 Plan. When submitting new mitigation actions, planning team members were asked to prioritize those as well. Finally, once all new and continuing actions had been collated into a draft mitigation strategy, jurisdictions were asked to verify or update the priorities of each action compared to their other actions and are listed under sub-section MS.4.

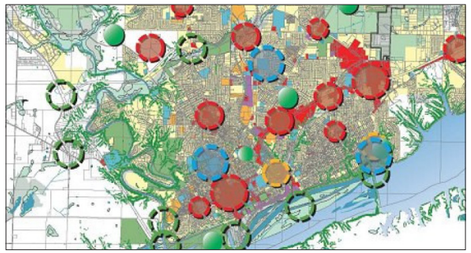


PANDEMIC

PANDEMIC MITIGATION ACTIONS:







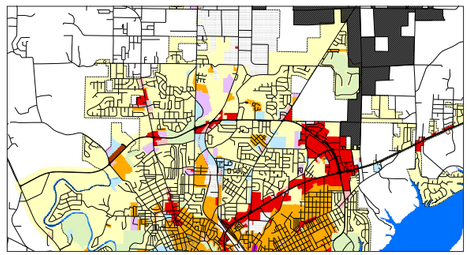
PREVENTION

Resource Management and Preparedness Plan
Strong leadership and multi-sector governmental engagement in the pandemic preparedness planning should be prioritized. Public Health experts to work with local government to establish a pandemic preparedness plan. Appropriate resources, stakeholders and vendors should be included to help prepare the county in case of a pandemic. Vendors should be listed and included in the preparedness plan. Adequate emergency resources to be determined and procured such that they can be frequently replenished as needed.

Emergency Healthcare Plans
Some planning is specific to the healthcare industry, a key element is scaling up hospital capacity by postponing non-essential surgery to free up beds. Mobilizing or redeveloping recently retired, military and student medical staff. Gather adequate knowledge and technical expertise to prepare and manage temporary hospitals, if need arises.

Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social and economic characteristics of the community for years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places. Comprehensive Plan to establish public health as a priority and allocate funding and resources which help in preparing the county better in case of any disease outbreak. **Capital**









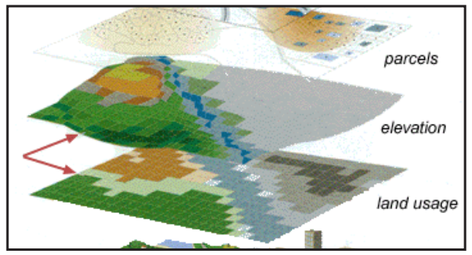
Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills. All areas in the county have equal access to health care facilities and infrastructure and that such facilities are equally distributed throughout the county to safeguard public health. Equal access to health care also ensures that an outbreak can be contained in a smaller area among a smaller population.

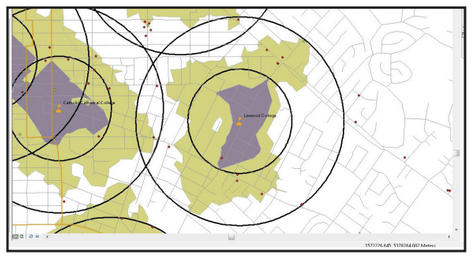
Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies. Land use laws to assess and protect the wildlife-urban interface such that interaction and infringement of humans along these interfaces can be reduced. Animals that wander into urban areas can carry harmful bacteria, viruses and pathogens and can transfer those to humans.

Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout, design standards and community infrastructure requirements that must be met by the proposed subdivision. These standards help to ensure that future owners get safe neighborhoods and sound facilities that promote healthy habits and safeguard public health.

Isolation Areas Requirements
Planning and development of isolation areas should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Those infected or feared to be can be shifted to such safe rooms so that they can be isolated in time and at a proper place which can contain the spread.









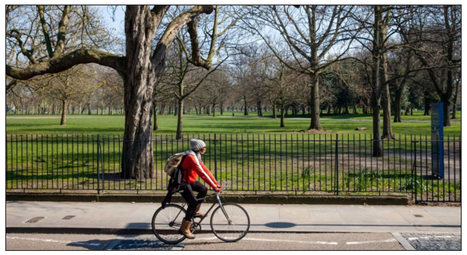
Critical Facilities Assessments
The policy committee, public health officials and local government to perform assessments of critical facilities including hospitals, emergency operation centers, community clinics, medical equipment and providers. The assessments should address building and site vulnerabilities to a pandemic and prepare accordingly.

Geographic Information Systems
Geographic Information System (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities. This mapping technique is helpful in determining the location and distribution of residents, senior homes, pharmacies, hospitals, clinical laboratories and grocery stores. Such a database can be helpful in location of services and estimating population in need. Such mapping and consequential analysis is helpful in preparing better in the event of an outbreak.

Planning Studies
A plan is an adopted statement of policy, in the form of text, maps and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic and physical growth of a community.

Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site and communication re-routing in emergency response.









Protection of Property:
Open Spaces and recreational areas should be protected/established for outdoor recreation. In a disease outbreak situation these areas can be used for setting up isolation zones and can otherwise become breathing spaces for residents.

Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief. New structures should be sited, designed and constructed for "maximum protection from all hazards."

Disaster Planning Scenarios
Pandemics are unpredictable events so local cross-agency planning and response committee should have in place a framework that enables action items and allows for effective communication with the affected. Scenario building exercises are needed to protect critical care facilities from getting overwhelmed during an outbreak.

PANDEMIC

PANDEMIC MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



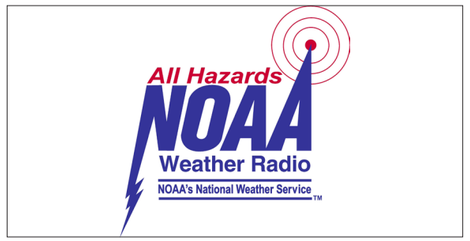
School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.

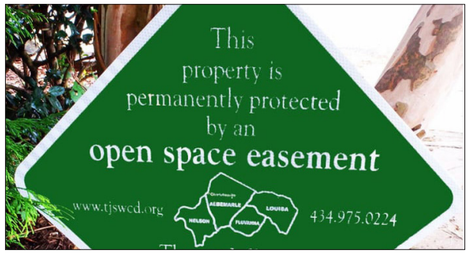


NOAA Weather Radio Programs
Promote the use of weather radios in critical facilities, institutions, businesses and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks.



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, internet blogs, podcasts, video sharing and online social networking to increase public awareness of hazard mitigation efforts.

PANDEMIC MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Open Space Easements and Acquisition
"The preservation of open space has been a major focus of land trusts and a number of government programs." Some of these strategies include: Fee-Simple Acquisition, Land Trust, Land & Water Conversation Fund, State Programs, Conversation Easements on agricultural and woodland properties.



Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

PANDEMIC MITIGATION ACTIONS:
STRUCTURAL PROJECTS

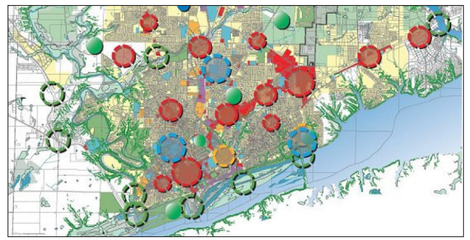
neighbors
EMERGENCY CENTER

Neighborhood and Community Rooms for Emergency
Similar to neighborhood and community safe rooms which are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes and severe storms," local authorities need to plan for rooms where TTV medical equipment can be stockpiled before or during the pandemic. Alternatively, these rooms can be used during a pandemic to store and supply necessary chemicals, equipment and personal protective equipment (PPE) as the need arises.

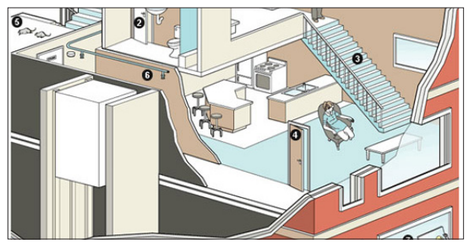
PANDEMIC

EARTHQUAKE

EARTHQUAKE MITIGATION ACTIONS:
PREVENTION



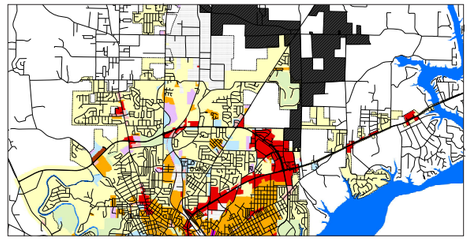
Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



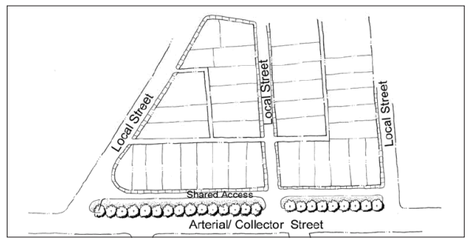
Building Codes and Construction Requirements
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



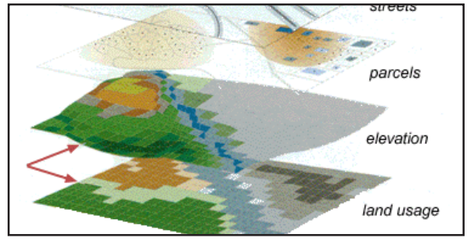
Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction .



Safe Shelter Requirements
Planning and development of safe shelters should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Safe shelters "ensure the protection of people from dangerous incidents caused by tornadoes, severe storms and hurricanes through special regulatory standards for safe rooms."



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.

EARTHQUAKE MITIGATION ACTIONS: PREVENTION



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site and communication re-routing in emergency response. The county already has a sentry system where Colbert County and Lauderdale County work together to back each other. The County also has a wireless emergency alert system.

EARTHQUAKE MITIGATION ACTIONS: PROPERTY PROTECTION



Property Protection
Real Estate Flooding Acquisition and Building Relocations - Establish a county and local jurisdiction program through the Florence-Lauderdale EMA that acquires recurring flood properties and other natural hazard areas that contain existing buildings. The buildings should then be demolished and the establishment of open space for recreation and wildlife should occur.



Critical Facilities Protection Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high risk zones and designed and constructed for "maximum protection from all hazards."

EARTHQUAKE

EARTHQUAKE MITIGATION ACTIONS:
PROPERTY PROTECTION



Emergency Power Generation
Establishment of back up emergency power for critical facilities in order to maintain the electric power during an emergency situation involving loss of power during severe storms and other natural disasters.



Building Retrofit and New Construction of Shatter Resistant Glass Structures
Retrofitting of existing buildings to safeguard against damages from identified natural hazards in the jurisdiction. As well as requiring shatter resistant glass in new construction involving critical facilities and public buildings.



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.

EARTHQUAKE MITIGATION ACTIONS:
PUBIC EDUCATION AND AWARENESS



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

EARTHQUAKE MITIGATION ACTIONS:
PUBIC EDUCATION AND AWARENESS



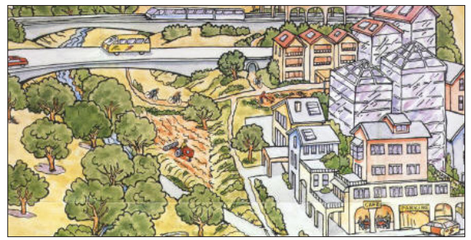
Hazard Mitigation Plan and Pamphlet Distribution Publish and distribute the adopted Florence- Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.

NOAA Weather Radio Programs
Promote the use of weather radios in critical facilities, institutions, businesses and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks.

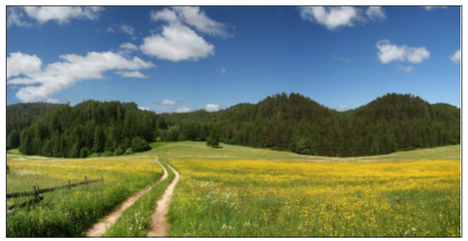


Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, internet blogs, podcasts, video sharing and online social networking to increase public awareness of hazard mitigation efforts.

EARTHQUAKE MITIGATION ACTIONS:
NATURAL RESOURCE PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds and catchments.



Open Space Easements and Acquisition
"The preservation of open space has been a major focus of land trusts and a number of government programs." Some of these strategies include: Fee-Simple Acquisition, Land Trust, Land & Water Conversation Fund, State Programs, Conversation Easements on agricultural and woodland properties.



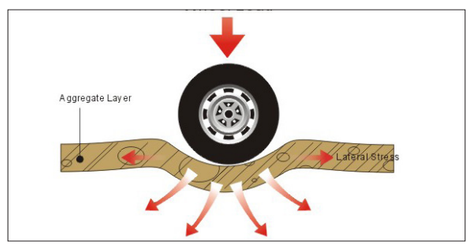
Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

EARTHQUAKE

EARTHQUAKE MITIGATION ACTIONS:
STRUCTURAL PROJECTS



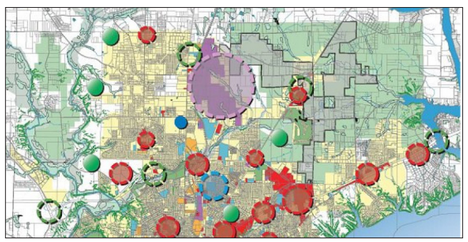
Neighborhood and Community Safe Rooms
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes and severe storms."



Ground Stabilization
Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

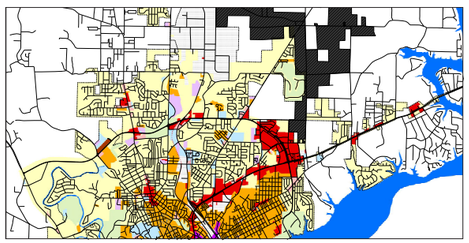
EARTHQUAKE

DAM AND LEVEE FAILURE MITIGATION ACTIONS: PREVENTION



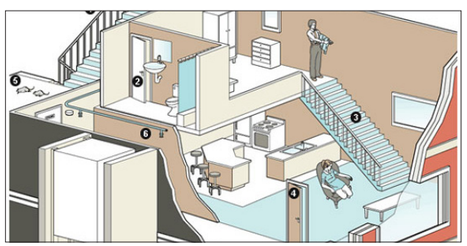
Comprehensive Planning

Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



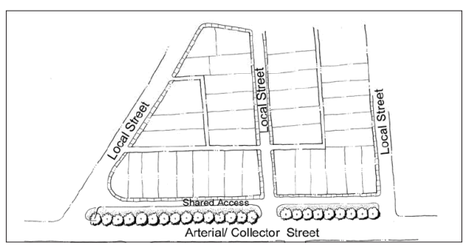
Land Use Development Regulations

Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



Building Codes and Construction Req's

A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



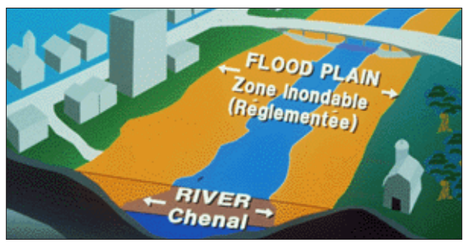
Subdivision Regulations

A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Capital Improvements Programs

The capital improvement program (CIP) is a five to six-year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Floodplain Management Programs

Floodplain management begins with active participation in the National Flood Insurance Program (NFIP). "The mapping functions of the NFIP provide an effective basis for establishing floodplain management regulations through zoning, subdivision controls and other measures within clearly defined areas. . ." Existing structures should be relocated or elevated above the floodplain.



Storm Water Management

Storm water management is the methodology for drainage and flood controls based on natural systems, where runoff is retained or infiltrated at the source. The flow of the retained storm water is within a more naturalized channel and flood control is provided by protection and maintenance of floodplains.



Levee and Dam Management

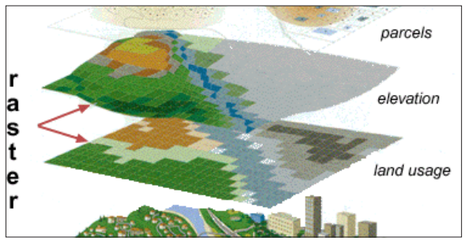
Dams either store water, control river flow or can be used to generate hydroelectric power. A levee is built to prevent river water from flowing into a floodplain or floodway. Levees and dams may suffer catastrophic failure if they are not maintained routinely and on a scheduled basis. Dam management puts in place practices for maintaining existing dams that are in the local jurisdictions control.

DAM / LEVEE FAILURE

DAM AND LEVEE FAILURE MITIGATION ACTIONS: PREVENTION



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

DAM AND LEVEE FAILURE MITIGATION ACTIONS: PROPERTY PROTECTION



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high risk zones and designed and constructed for "maximum protection from all hazards."



Freeboard Requirements for Building Elevations
The freeboard is "any additional height above a flood elevation on a building. A community may use this elevation calculation to determine the required level of elevation for a structure's lowest floor in accordance with floodplain management regulations." Standard is the Base Flood Elevation (BFE) plus one foot of rise.

DAM AND LEVEE FAILURE MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, internet blogs, podcasts, video sharing and online social networking to increase public awareness of hazard mitigation efforts.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

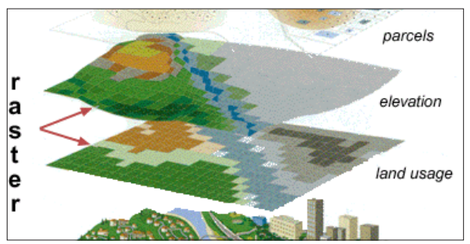
DAM / LEVEE FAILURE

DAM AND LEVEE FAILURE MITIGATION ACTIONS: NATURAL RESOURCES PROTECTION



Watershed Management

Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds and catchments.



Press and Media Mitigation Releases and Training Sessions

Informing media representatives about mitigation efforts allows for accurate information to be distributed on long term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.



Water Resource Conservation Programs

Water resource programs "protect water quantity and quality through water conservation programs to mitigate the effects of droughts and assure uninterrupted potable water supplies." Water conversation is defined as "activities designed to reduce the demand for water, improve efficiency in use and reduce losses and waste of water."

DAM AND LEVEE FAILURE MITIGATION ACTIONS: STRUCTURAL PROJECT



Neighborhood and Community Safe Rooms

Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes and severe storms."



Dam Modifications

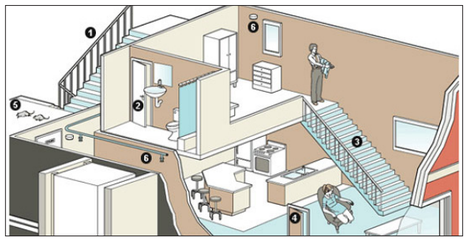
Dam modifications allow for safe and effective operation of existing structures that contain large volumes of water within a reservoir. Modifications can enable the structure to function more efficiently as well as continue the life span of the dam itself.



Ground Stabilization

Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

DROUGHT MITIGATION ACTIONS: PREVENTION



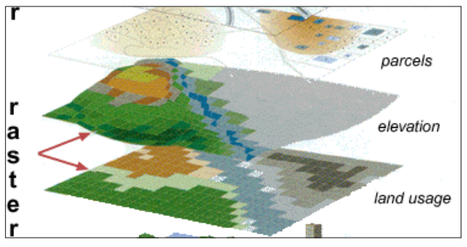
Building Codes and Construction Req's

A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



Capital Improvements Programs

The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Geographic Information Systems

Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies

A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support

Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

DROUGHT MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



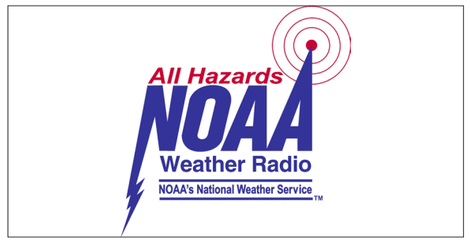
Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



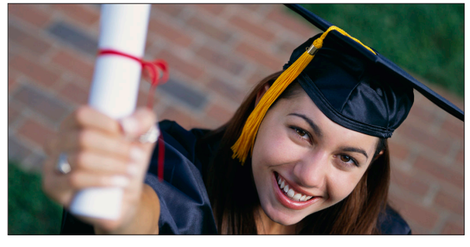
NOAA Weather Radio Programs
Promote the use of weather radios in critical facilities, institutions, businesses, and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



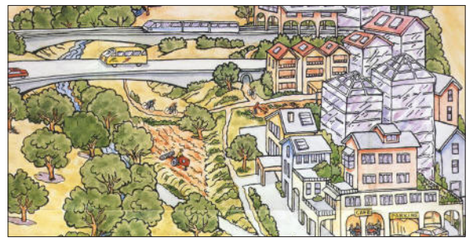
Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

DROUGHT

DROUGHT MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Urban Forestry Planning and Development Programs
Development of urban forestry and neighborhood tree programs can be invaluable in storm water management and suppression of other storms including heat periods within urban neighborhoods.

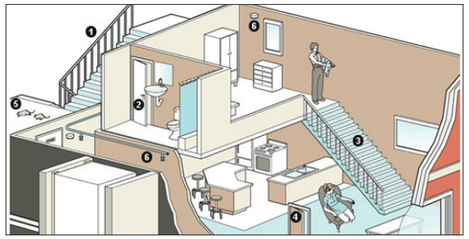


Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.



Water Resource Conservation Programs
Water resource programs "protect water quantity and quality through water conservation programs to mitigate the effects of droughts and assure uninterrupted potable water supplies." Water conversation is defined as "activities designed to reduce the demand for water, improve efficiency in use, and reduce losses and waste of water."

EXTREME TEMPERATURE MITIGATION ACTIONS: PREVENTION



Building Codes and Construction Requirements

A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



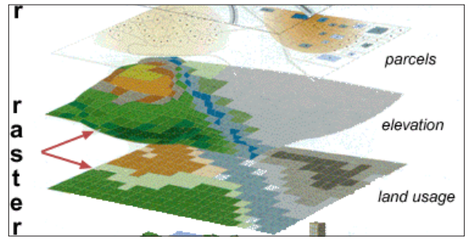
Critical Facilities Assessments

Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



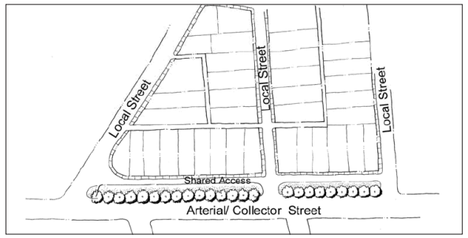
Capital Improvements Programs

The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Geographic Information Systems

Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Subdivision Regulations

A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Planning Studies

A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Safe Shelter Requirements

Planning and development of safe shelters should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Safe shelters "ensure the protection of people from dangerous incidents caused by tornadoes, severe storms, and hurricanes through special regulatory standards for safe rooms.



Mitigation Planning Technology Support

Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

EXTREME TEMPERATURE MITIGATION ACTIONS: PROPERTY PROTECTION



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."



Emergency Power Generation
Establishment of back up emergency power for critical facilities in order to maintain the electric power during an emergency situation involving loss of power during severe storms and other natural disasters.

EXTREME TEMPERATURE MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

EXTREME TEMPERATURES

EXTREME TEMPERATURE MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



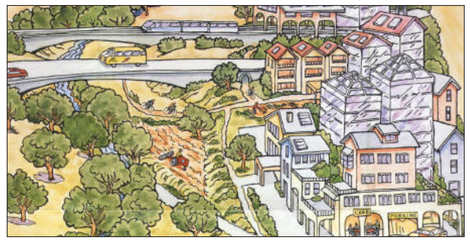
Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.

NOAA Weather Radio Programs
Promote the use of weather radios in critical facilities, institutions, businesses, and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks.



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

EXTREME TEMPERATURE MITIGATION ACTIONS: NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Urban Forestry Planning and Development Programs
Development of urban forestry and neighborhood tree programs can be invaluable in storm water management and suppression of other storms including heat periods within urban neighborhoods.



Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

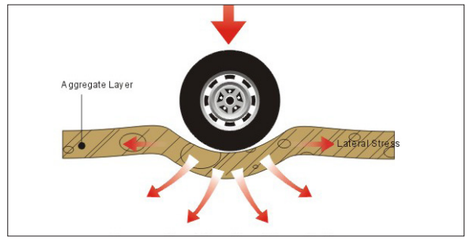


Water Resource Conservation Programs
Water resource programs "protect water quantity and quality through water conservation programs to mitigate the effects of droughts and assure uninterrupted potable water supplies." Water conversation is defined as "activities designed to reduce the demand for water, improve efficiency in use, and reduce losses and waste of water."

EXTREME TEMPERATURE MITIGATION ACTIONS: STRUCTURAL PROJECT

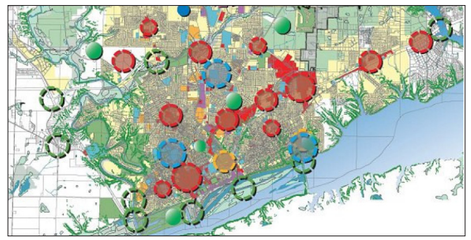


Structural Projects
Neighborhood and Community Safe Rooms – Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."

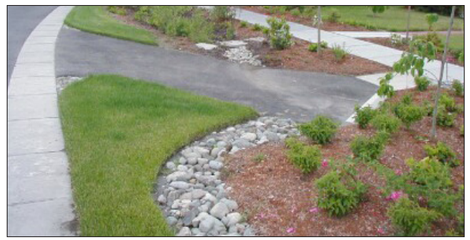


Ground Stabilization
Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

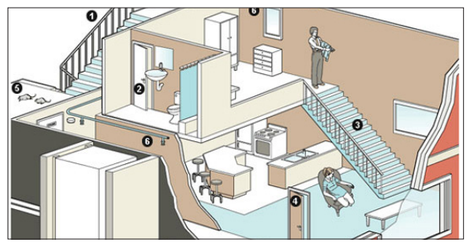
FLOOD MITIGATION ACTIONS:
PREVENTION



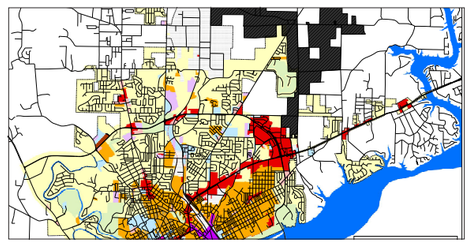
Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social, and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



Storm Water Management
Storm water management is the methodology for drainage and flood controls based on natural systems, where runoff is retained or infiltrated at the source. The flow of the retained storm water is within a more naturalized channel and flood control is provided by protection and maintenance of floodplains.



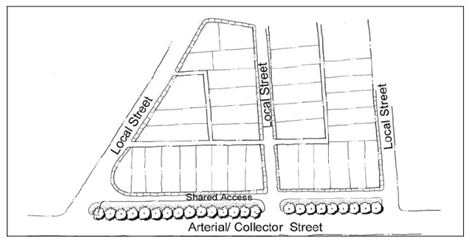
Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



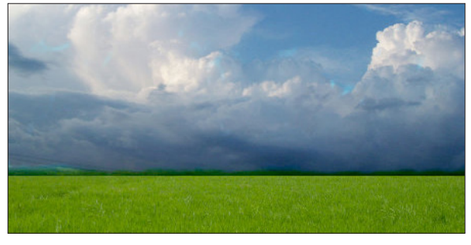
Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Open Space Preservation
The preservation of open space is a voluntary process involving a landowner who is donating or selling land to a government agency or a qualified private organization. "Open space broadly includes woodlands, fields, wetlands, stream banks, floodplains, and unique geologic formations.

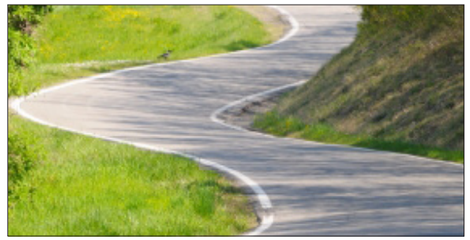


Flood Plain Management Programs
Flood plain management begins with active participation in the National Flood Insurance Program (NFIP). "The mapping functions of the NFIP provide an effective basis for establishing floodplain management regulations through zoning, subdivision controls, and other measures within clearly defined areas. . ." Existing structures should be relocated or elevated above the floodplain.

FLOOD MITIGATION ACTIONS:
PREVENTION



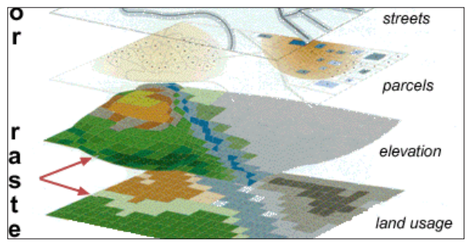
Levee and Dam Management
Dams either store water, control river flow or can be used to generate hydroelectric power. A levee is built to prevent river water from flowing into a floodplain or floodway. Levees and dams may suffer catastrophic failure if they are not maintained routinely and on a scheduled basis. Dam management puts in place practices for maintaining existing dams that are in the local jurisdictions control.



Public Right-of-Way Maintenance Regulations
Clarification of public right-of-way maintenance requirements through mapping and policy committee discussion increases awareness of responsibility. In addition, jurisdictions should enforce dumping and littering in the public right-of-way and encourage maintenance to be shared with adjoining property owners.



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

FLOOD MITIGATION ACTIONS: PROPERTY PROTECTION



Real Estate Flooding Acquisition and Building Relocations
Establish a county and local jurisdiction program through the Florence-Lauderdale EMA that acquires recurring flood properties and other natural hazard areas that contain existing buildings. The buildings should then be demolished and the establishment of open space for recreation and wildlife should occur.



Emergency Power Generation
Establishment of back up emergency power for critical facilities in order to maintain the electric power during an emergency situation involving loss of power during severe storms and other natural disasters.



Flood Prone Building Proofing and Retrofitting
Redesigning and modification of structures to allows a building to remain in the floodplain where necessary. Although long term plans should be to remove the building from the floodplain.



Separate Sewer System Collection and Protection
Sewer systems come in two major types of either combined with storm water collection or separate sewer system from storm water collection. A combined system is one in which both wastewater and storm water are conveyed through the same set of pipes. This combined type can overflow and often does during heavy rainfall and flooding. Separate systems tend to reduce untreated sewage from entering rivers and streams.



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high risk zones and designed and constructed for "maximum protection from all hazards."



Storm Shutter Programs and Installation
Storm shutter programs provide protection of existing structures that may not meet modern standards for storm readiness.



Free Board Requirements for Building Elevations
The freeboard is " any additional height above a flood elevation on a building is called the freeboard. A community may use this elevation calculation to determine the required level of elevation for a structure's lowest floor in accordance with floodplain management regulations." Standard is the Base Flood Elevation (BFE) plus 1 foot of rise.



Building Retrofit and New Construction of Shatter Resistant Glass Structures
Retrofitting of existing buildings to safeguard against damages from identified natural hazards in the jurisdiction. As well as requiring shatter resistant glass in new construction involving critical facilities and public buildings.

FLOOD

FLOOD MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.



Real Estate Disclosure Requirements
Encourage and or require the disclosure of flood plain locations within a real estate transaction. This includes the location of floodplains within the property being sold as well as adjoining properties.



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.



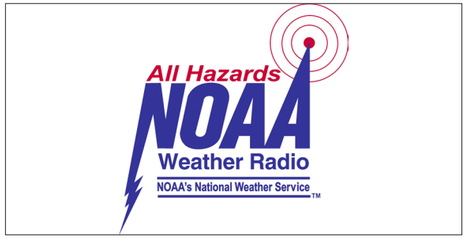
Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



Flood Map Information Distribution
Distribute to media and public a simplified flood map as a general information guide. The guide should discuss the importance of floodplains to local economies and the regional environment. Graphic material should be used to communicate this information.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



NOAA Weather Radio Programs
Promote the use of weather radios in critical facilities, institutions, businesses, and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks.

FLOOD MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

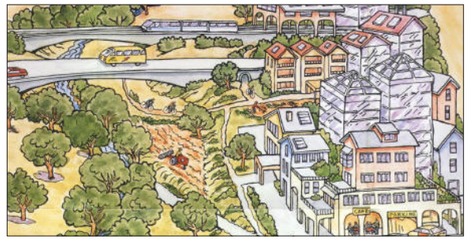
FLOOD MITIGATION ACTIONS: NATURAL RESOURCES PROTECTION



Sediment and Erosion Control
"Erosion is any process by which sediment is entrained (eroded) and moved away from its original location by gradational agents, which include gravity, water, wind, ice, and humans." The best approach is avoidance of the eroding area by identifying the area affected by the hazard and enforce plans not to develop such identified areas. Other options include using landscape architects to engineer the construction of the natural system.



Stream Corridor Restoration
"A wide range of efforts fall under stream restoration, including cleaning local creeks, day lighting small urban creeks (taking them out of concrete culverts), and rebuilding entire river channels and restoring flow regimes" back to the water body. " Restoration goals should respond to human needs and be realistic in terms of physical and ecological processes."



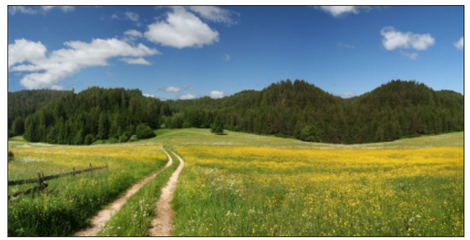
Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Wetland Restoration and Wetland Preservation
Wetlands provide wildlife habitat, serve as filters of groundwater, and aid in flood control. Restoration and preservation begins with the national wetlands inventory map. Section 404 of the federal clean water act requires permits from the Army Corps of Engineers when dredging or filling waters within the United States. Regulations now include wetlands.

FLOOD

FLOOD MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Open Space Easements and Acquisition
"The preservation of open space has been a major focus of land trusts and a number of government programs." Some of these strategies include: Fee-Simple Acquisition, Land Trust, Land & Water Conversation Fund, State Programs, Conversation Easements on agricultural and woodland properties."



River/Stream Corridor Restoration and Protection
General principles are: "Recognize that ecological goals and economic development goals are mutually beneficial; protect and restore natural river features and functions; provide for public access, connections, and recreational uses."



Urban Forestry Planning and Development Programs
Development of urban forestry and neighborhood tree programs can be invaluable in storm water management and suppression of other storms including heat periods within urban neighborhoods.



Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.



Water Resource Conservation Programs
Water resource programs "protect water quantity and quality through water conservation programs to mitigate the effects of droughts and assure uninterrupted potable water supplies." Water conversation is defined as "activities designed to reduce the demand for water, improve efficiency in use, and reduce losses and waste of water."

FLOOD MITIGATION ACTIONS:
STRUCTURAL PROJECT



Storm Water Diversion Culverts
Diversion culverts act as a constructed system to divert storm water away from undesirable areas. Diversion culverts simply move storm water into piped systems that can be day lighted into appropriate locations. However, improperly used culverts can create storm water systems that introduce increased volumes of water into rivers and streams thus causing erosion and sedimentation.



Dam Modifications
Dam modifications allow for safe and effective operation of existing structures that contain large volumes of water within a reservoir. Modifications can enable the structure to function more efficiently as well as continue the life span of the dam itself.



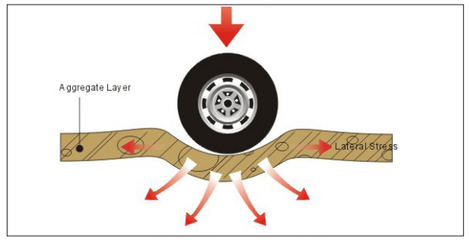
Storm Water Flood Walls
Storm water flood walls divert storm water away from undesirable areas and into constructed via ducts and culverts.



Storm Sewer System Construction
Storm sewer systems involve the "efficient conveyance of water from one point to another and the control of increased peak rates of runoff associated with land use alteration." There are two approaches to storm water systems. The directly connected system involves "efficient collection of runoff at the source and then conveyance to a detention area." The Natural Systems Approach works to mimic the natural conditions of a site.



Seawalls
Seawalls prevent erosion of river and lake banks due to highly constructed environments. Seawalls allow for stabilized stream and river banks in situations where development is desired along shore lines.



Ground Stabilization
Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

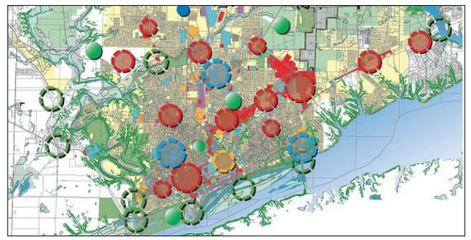


Neighborhood and Community Safe Rooms
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."

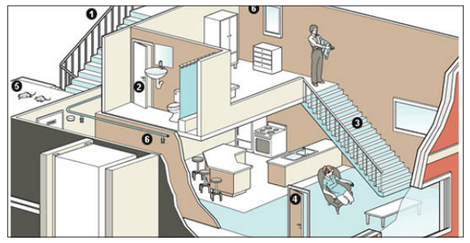


Reservoir Construction
Construction of reservoirs and dams for flood control "where deemed cost effective and feasible" can assist in mitigating potential disasters. However, when creating the reservoir a man made technical hazard is created and must be maintained and evaluated on a consistent basis.

HAZARDOUS MATERIALS MITIGATION ACTIONS: PREVENTION



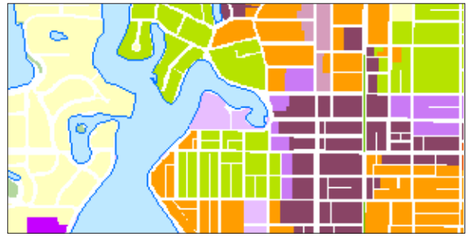
Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social, and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



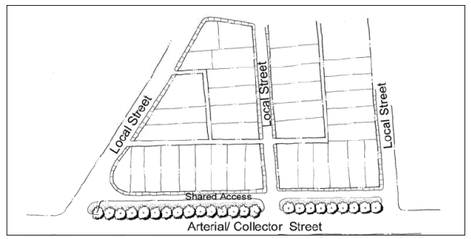
Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



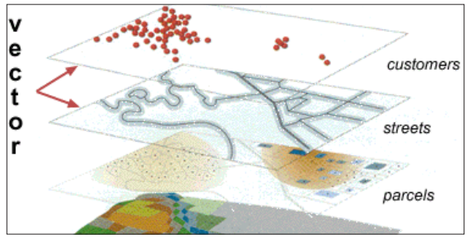
Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.

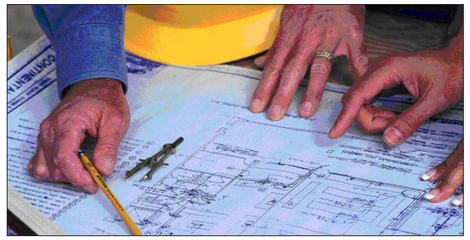
HAZARDOUS MATERIALS MITIGATION ACTIONS: PREVENTION



Mitigation Planning Technology Support

Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

HAZARDOUS MATERIALS MITIGATION ACTIONS: PROPERTY PROTECTION



Critical Facilities Protection

Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."

HAZARDOUS MATERIALS MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

HAZARDOUS MATERIALS MITIGATION ACTIONS: NATURAL RESOURCES PROTECTION



Watershed Management

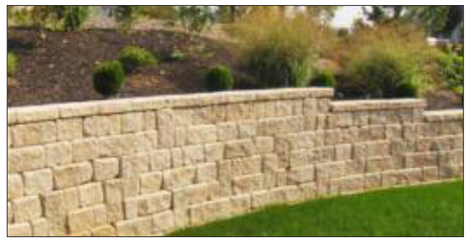
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Press and Media Mitigation Releases and Training Sessions

Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

HAZARDOUS MATERIALS MITIGATION ACTIONS: STRUCTURAL PROJECT



Retaining Walls

Retaining walls provide stabilization to slopes allowing urbanization and development to occur. Retaining walls are used along interstates, within residential neighborhoods and urban centers. Retaining walls allow for safe habitation and movement of goods and services in areas that contain poor soil conditions and steep slopes that may be undesirable for development.



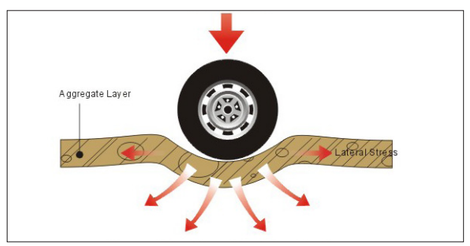
Neighborhood and Community Safe Rooms

Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."



Storm Sewer System Construction

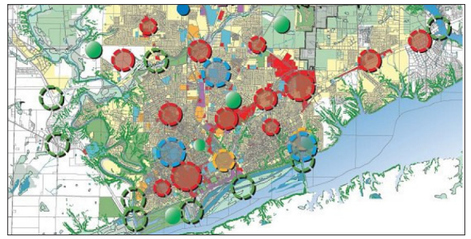
Storm sewer systems involve the "efficient conveyance of water from one point to another and the control of increased peak rates of runoff associated with land use alteration." There are two approaches to storm water systems. The directly connected system involves "efficient collection of runoff at the source and then conveyance to a detention area." The Natural Systems Approach works to mimic the natural conditions of a site.



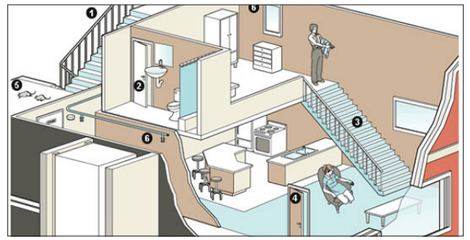
Ground Stabilization

Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: PREVENTION



Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social, and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



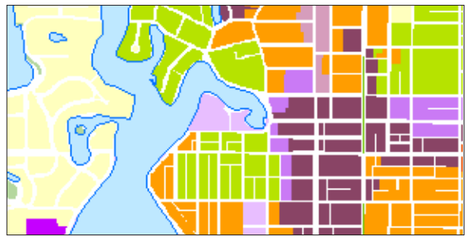
Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



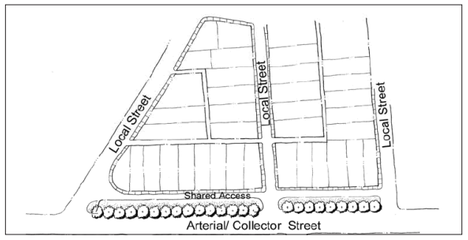
Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Open Space Preservation
The preservation of open space is a voluntary process involving a landowner who is donating or selling land to a government agency or a qualified private organization. "Open space broadly includes woodlands, fields, wetlands, stream banks, floodplains, and unique geologic formations.



Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.

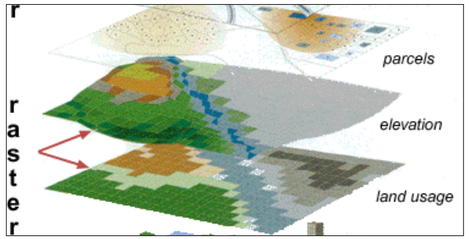


Safe Shelter Requirements
Planning and development of safe shelters should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Safe shelters "ensure the protection of people from dangerous incidents caused by tornadoes, severe storms, and hurricanes through special regulatory standards for safe rooms.



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: PREVENTION



Geographic Information Systems

Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies

A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support

Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: PROPERTY PROTECTION



Real Estate Flooding Acquisition and Building Relocations

Establish a county and local jurisdiction program through the Florence-Lauderdale EMA that acquires recurring flood properties and other natural hazard areas that contain existing buildings. The buildings should then be demolished and the establishment of open space for recreation and wildlife should occur.



Flood Prone Building Proofing and Retrofitting

Redesigning and modification of structures to allows a building to remain in the floodplain where necessary. Although long term plans should be to remove the building from the floodplain.



Critical Facilities Protection

Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for “maximum protection from all hazards.”



Free Board Requirements for Building Elevations

The freeboard is “ any additional height above a flood elevation on a building is called the freeboard. A community may use this elevation calculation to determine the required level of elevation for a structure’s lowest floor in accordance with floodplain management regulations.” Standard is the Base Flood Elevation (BFE) plus 1 foot of rise.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: PROPERTY PROTECTION



Emergency Power Generation
Establishment of back up emergency power for critical facilities in order to maintain the electric power during an emergency situation involving loss of power during severe storms and other natural disasters.

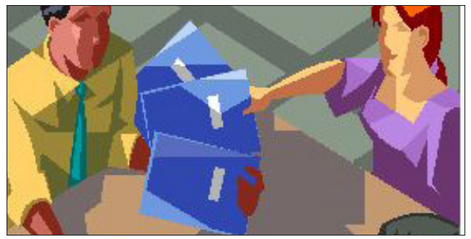


Storm Shutter Programs and Installation
Storm shutter programs provide protection of existing structures that may not meet modern standards for storm readiness.



Building Retrofit and New Construction of Shatter Resistant Glass Structures
Retrofitting of existing buildings to safeguard against damages from identified natural hazards in the jurisdiction. As well as requiring shatter resistant glass in new construction involving critical facilities and public buildings.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: PUBLIC EDUCATION AND AWARENESS



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.

NOAA Weather Radio Programs
"Promote the use of weather radios in critical facilities, institutions, businesses, and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks."



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Open Space Easement and Acquisition
"The preservation of open space has been a major focus of land trusts and a number of government programs." Some of these strategies include: Fee-Simple Acquisition, Land Trust, Land & Water Conversation Fund, State Programs, Conversation Easements on agricultural and woodland properties".



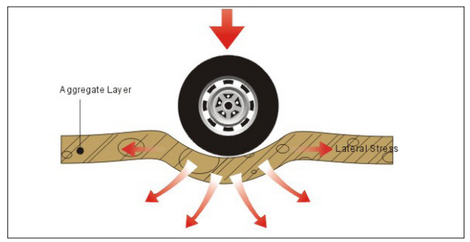
Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

HURRICANE AND TROPICAL CYCLONES MITIGATION ACTIONS: STRUCTURAL PROJECT



Neighborhood and Community Safe Rooms

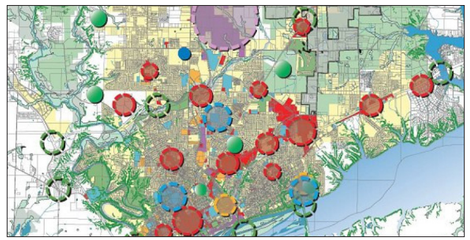
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."



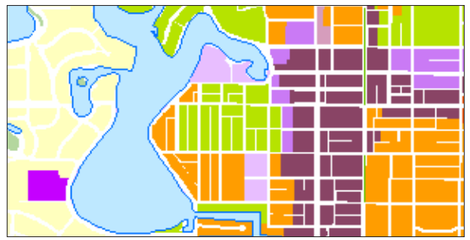
Ground Stabilization

Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

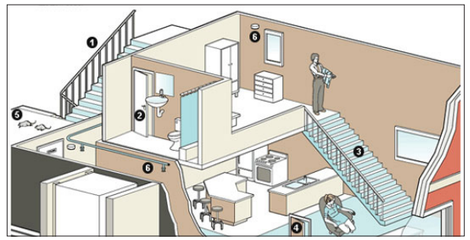
LANDSLIDE MITIGATION ACTIONS:
PREVENTION



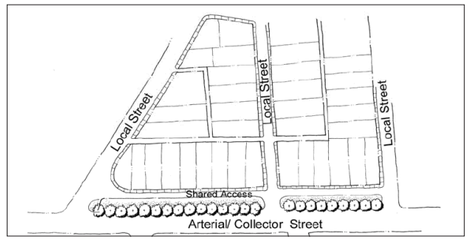
Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social, and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



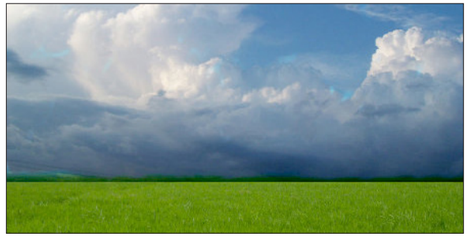
Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.

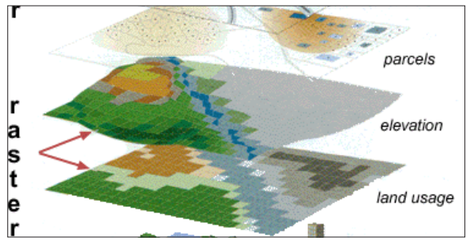


Open Space Preservation
The preservation of open space is a voluntary process involving a landowner who is donating or selling land to a government agency or a qualified private organization. "Open space broadly includes woodlands, fields, wetlands, stream banks, floodplains, and unique geologic formations.

LANDSLIDE MITIGATION ACTIONS:
PREVENTION



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

LANDSLIDE MITIGATION ACTIONS:
PROPERTY PROTECTION



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."

LANDSLIDE

LANDSLIDE MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.



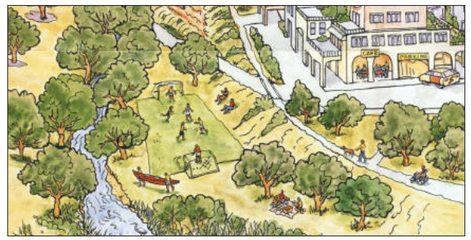
School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



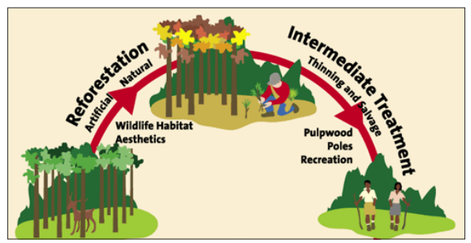
Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

LANDSLIDE

LANDSLIDE MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Forest and Vegetation Management
Forest management focuses on best management practices (BMP) established for silviculture activities related to timber harvesting by each state. BMP include establishing defensible space in forested areas and wildfire fuel reduction etc . . .

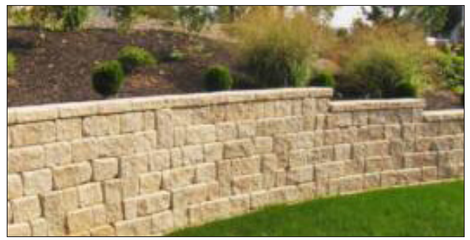


Open Space Easement and Acquisition
"The preservation of open space has been a major focus of land trusts and a number of government programs." Some of these strategies include: Fee-Simple Acquisition, Land Trust, Land & Water Conversation Fund, State Programs, Conversation Easements on agricultural and woodland properties".

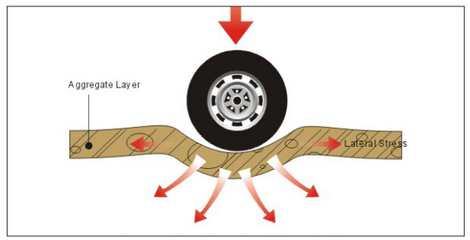


Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

LANDSLIDE MITIGATION ACTIONS:
STRUCTURAL PROJECT



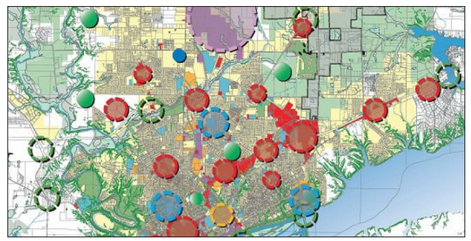
Retaining Walls
Retaining walls provide stabilization to slopes allowing urbanization and development to occur. Retaining walls are used along interstates, within residential neighborhoods and urban centers. Retaining walls allow for safe habitation and movement of goods and services in areas that contain poor soil conditions and steep slopes that may be undesirable for development.



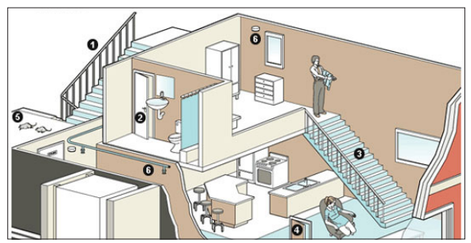
Ground Stabilization
Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

LANDSLIDE

SINKHOLE MITIGATION ACTIONS:
PREVENTION



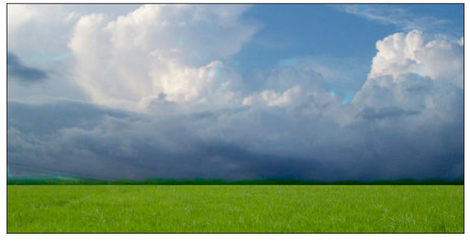
Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social, and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



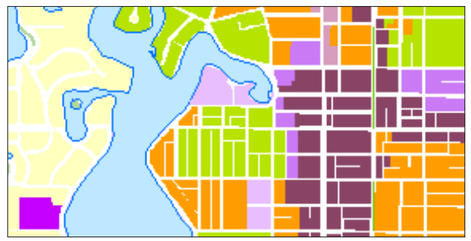
Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



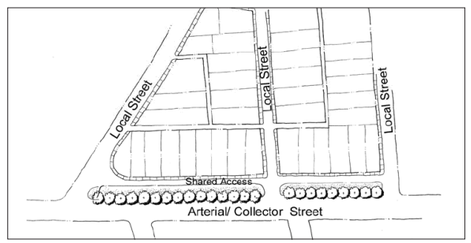
Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Open Space Preservation
The preservation of open space is a voluntary process involving a landowner who is donating or selling land to a government agency or a qualified private organization. "Open space broadly includes woodlands, fields, wetlands, stream banks, floodplains, and unique geologic formations.



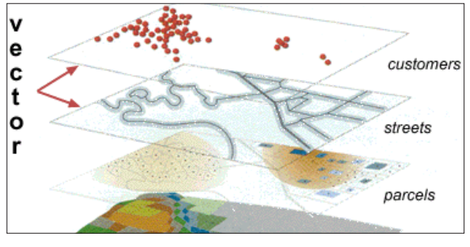
Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.

SINKHOLE MITIGATION ACTIONS:
PREVENTION



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

SINKHOLE MITIGATION ACTIONS:
PROPERTY PROTECTION



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief afethe hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."

SINKHOLE

SINKHOLE MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives. Hazard Information Kiosk and Centers-



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.



Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

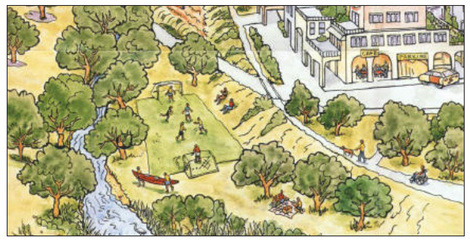


School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.

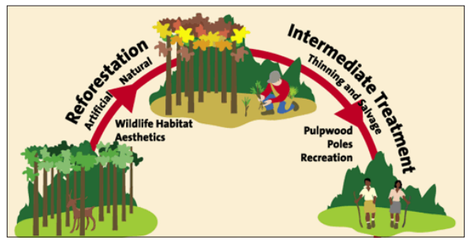


Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

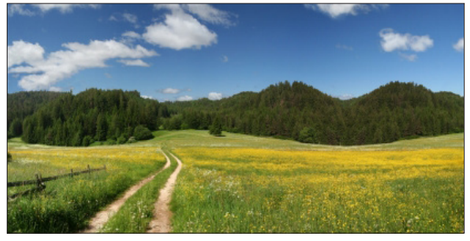
SINKHOLE MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Forest and Vegetation Management
Forest management focuses on best management practices (BMP) established for silviculture activities related to timber harvesting by each state. BMP include establishing defensible space in forested areas and wildfire fuel reduction etc . . .



Open Space Easement and Acquisition
"The preservation of open space has been a major focus of land trusts and a number of government programs." Some of these strategies include: Fee-Simple Acquisition, Land Trust, Land & Water Conversation Fund, State Programs, Conversation Easements on agricultural and woodland properties".
Press and Media Mitigation Releases and Training



Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

SINKHOLE

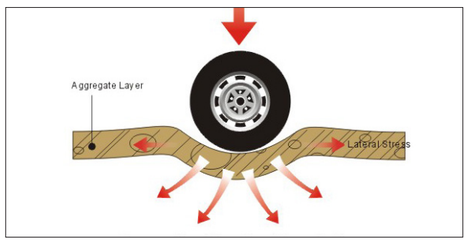
SINKHOLE MITIGATION ACTIONS:
STRUCTURAL PROJECT



Neighborhood and Community Safe Rooms
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."

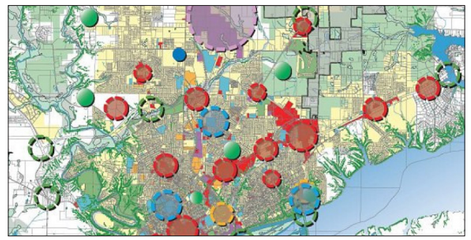


Storm Sewer System Construction
Storm sewer systems involve the "efficient conveyance of water from one point to another and the control of increased peak rates of runoff associated with land use alteration." There are two approaches to storm water systems. The directly connected system involves "efficient collection of runoff at the source and then conveyance to a detention area." The Natural Systems Approach works to mimic the natural conditions of a site.

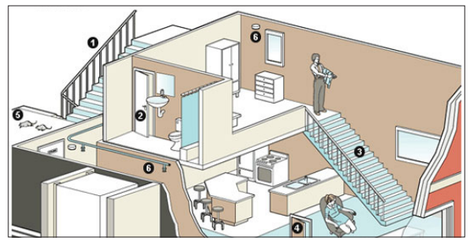


Ground Stabilization
Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

SEVERE STORM MITIGATION ACTIONS:
PREVENTION



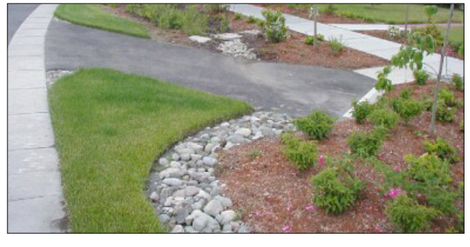
Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social, and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



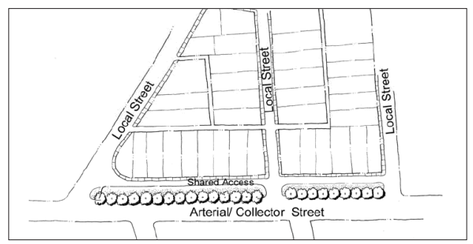
Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



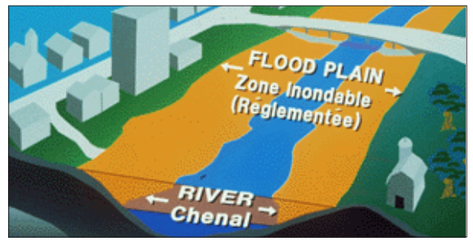
Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Storm Water Management
Storm water management is the methodology for drainage and flood controls based on natural systems, where runoff is retained or infiltrated at the source. The flow of the retained storm water is within a more naturalized channel and flood control is provided by protection and maintenance of floodplains.



Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Flood Plain Management Programs
Flood plain management begins with active participation in the National Flood Insurance Program (NFIP). "The mapping functions of the NFIP provide an effective basis for establishing floodplain management regulations through zoning, subdivision controls, and other measures within clearly defined areas. . ." Existing structures should be relocated or elevated above the floodplain.

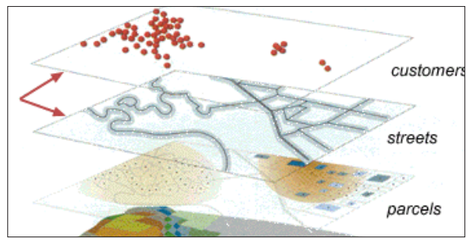


Safe Shelter Requirements
Planning and development of safe shelters should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Safe shelters "ensure the protection of people from dangerous incidents caused by tornadoes, severe storms, and hurricanes through special regulatory standards for safe rooms.



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.

SEVERE STORM MITIGATION ACTIONS:
PREVENTION



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

SEVERE STORM MITIGATION ACTIONS:
PROPERTY PROTECTION



Real Estate Flooding Acquisition and Building Relocations
Establish a county and local jurisdiction program through the Florence-Lauderdale EMA that acquires recurring flood properties and other natural hazard areas that contain existing buildings. The buildings should then be demolished and the establishment of open space for recreation and wildlife should occur.



Flood Prone Building Proofing and Retrofitting
Redesigning and modification of structures to allows a building to remain in the floodplain where necessary. Although long term plans should be to remove the building from the floodplain.



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."



Free Board Requirements for Building Elevations
The freeboard is " any additional height above a flood elevation on a building is called the freeboard. A community may use this elevation calculation to determine the required level of elevation for a structure's lowest floor in accordance with floodplain management regulations." Standard is the Base Flood Elevation (BFE) plus 1 foot of rise.

SEVERE STORM

SEVERE STORM MITIGATION ACTIONS:
PROPERTY PROTECTION



Emergency Power Generation
Establishment of back up emergency power for critical facilities in order to maintain the electric power during an emergency situation involving loss of power during severe storms and other natural disasters.



Storm Shutter Programs and Installation
Storm shutter programs provide protection of existing structures that may not meet modern standards for storm readiness.



Building Retrofit and New Construction of Shatter Resistant Glass Structures
Retrofitting of existing buildings to safeguard against damages from identified natural hazards in the jurisdiction. As well as requiring shatter resistant glass in new construction involving critical facilities and public buildings.

SEVERE STORM MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

SEVERE STORM MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



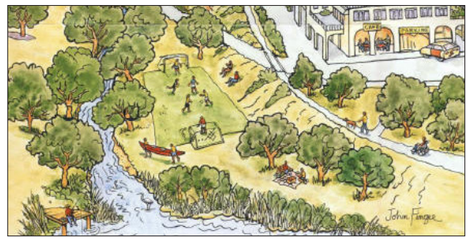
Hazard Mitigation Plan and Pamphlet Distribution Publish and distribute the adopted Florence- Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.

NOAA Weather Radio Programs
"Promote the use of weather radios in critical facilities, institutions, businesses, and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks."



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

SEVERE STORM MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.

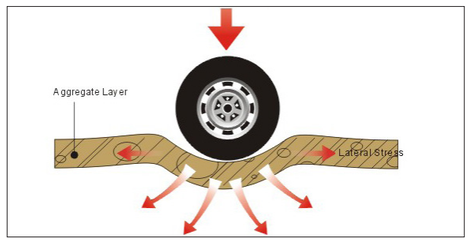


Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

SEVERE STORM MITIGATION ACTIONS:
STRUCTURAL PROJECT



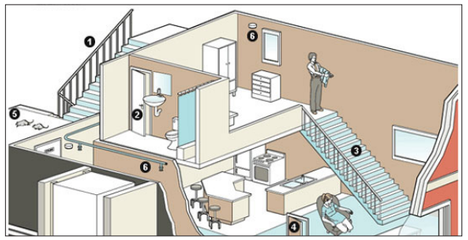
Neighborhood and Community Safe Rooms
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."
Ground Stabilization –



Ground stabilization techniques mitigate hazards of undesirable soils that are not good for road construction or development. These soils and their underlying geologic formations require stabilization techniques ranging from large stone placement, asphalt reclamation geotechnical pavers and concrete additives.

SEVERE STORM

TORNADO MITIGATION ACTIONS:
PREVENTION



Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



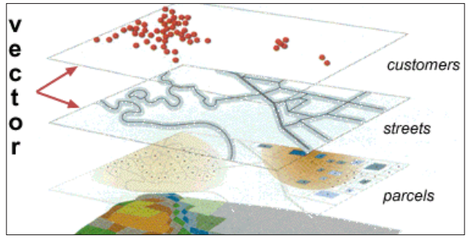
Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Safe Shelter Requirements
Planning and development of safe shelters should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Safe shelters "ensure the protection of people from dangerous incidents caused by tornadoes, severe storms, and hurricanes through special regulatory standards for safe rooms.



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

TORNADO MITIGATION ACTIONS:
PROPERTY PROTECTION



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."



Emergency Power Generation
Establishment of back up emergency power for critical facilities in order to maintain the electric power during an emergency situation involving loss of power during severe storms and other natural disasters.



Storm Shutter Programs and Installation
Storm shutter programs provide protection of existing structures that may not meet modern standards for storm readiness.



Building Retrofit and New Construction of Shatter Resistant Glass Structures
Retrofitting of existing buildings to safeguard against damages from identified natural hazards in the jurisdiction. As well as requiring shatter resistant glass in new construction involving critical facilities and public buildings.

TORNADO MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

TORNADO

TORNADO MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.

NOAA Weather Radio Programs
"Promote the use of weather radios in critical facilities, institutions, businesses, and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks."



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

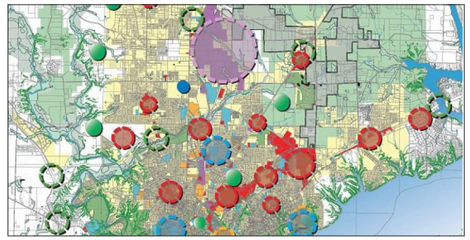
TORNADO MITIGATION ACTIONS:
STRUCTURAL PROJECT



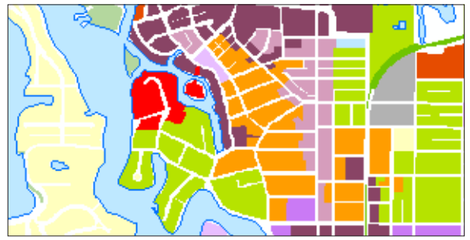
Neighborhood and Community Safe Rooms
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."

TORNADO

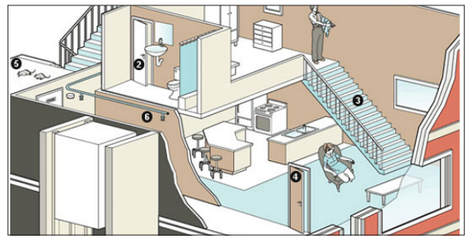
WILDFIRE MITIGATION ACTIONS:
PREVENTION



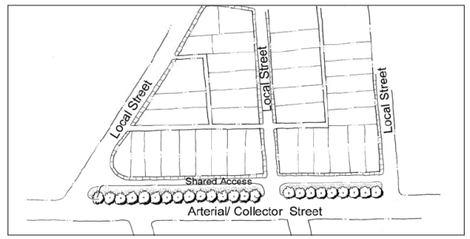
Comprehensive Planning
Comprehensive planning sets forth goals and describes and illustrates a vision for the physical, social, and economic characteristics of the community in years ahead. The policies and guidelines intended to implement the vision are outlined in a Comprehensive Plan document that is required by state code for all incorporated places.



Land Use Development Regulations
Land use or "zoning ordinance divides a local government's jurisdiction into districts or zones. For each district or zone, the zoning ordinance can regulate land uses, density of development patterns and the amount of parking." A zoning map usually accompanies the ordinance to identify the different districts and the properties for which it applies.



Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



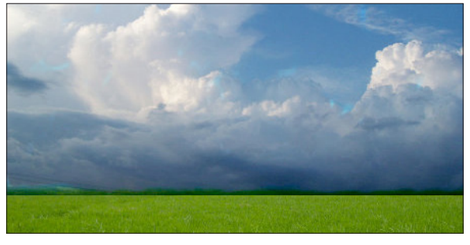
Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



Burn Permits
Burn permits establish controls and guidelines that allow for the appropriate timing and safety of debris burning within the jurisdiction. Through an expensive permit the jurisdiction can safely guide citizens into the best times to burn debris and the best methods of doing so.



Open Space Preservation
The preservation of open space is a voluntary process involving a landowner who is donating or selling land to a government agency or a qualified private organization. "Open space broadly includes woodlands, fields, wetlands, stream banks, floodplains, and unique geologic formations.

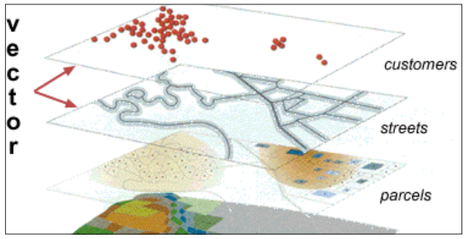


Safe Shelter Requirements
Planning and development of safe shelters should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Safe shelters "ensure the protection of people from dangerous incidents caused by tornadoes, severe storms, and hurricanes through special regulatory standards for safe rooms.

WILDFIRE MITIGATION ACTIONS:
PREVENTION



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

WILDFIRE MITIGATION ACTIONS:
PROPERTY PROTECTION



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."

WILDFIRE MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



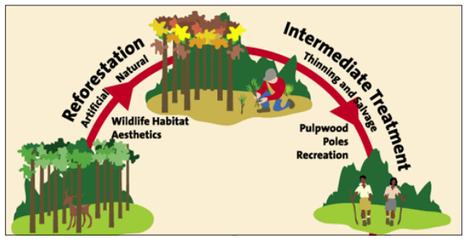
Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

WILDFIRE

WILDFIRE MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Forest and Vegetation Management
Forest management focuses on best management practices (BMP) established for silviculture activities related to timber harvesting by each state. BMP include establishing defensible space in forested areas and wildfire fuel reduction etc . . .



Open Space Easement and Acquisition
"The preservation of open space has been a major focus of land trusts and a number of government programs." Some of these strategies include: Fee-Simple Acquisition, Land Trust, Land & Water Conversation Fund, State Programs, Conversation Easements on agricultural and woodland properties".



Urban Forestry Planning and Development Programs
Development of urban forestry and neighborhood tree programs can be invaluable in storm water management and suppression of other storms including heat periods within urban neighborhoods.



Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.



Water Resource Conservation Programs
Water resource programs "protect water quantity and quality through water conservation programs to mitigate the effects of droughts and assure uninterrupted potable water supplies." Water conversation is defined as "activities designed to reduce the demand for water, improve efficiency in use, and reduce losses and waste of water."

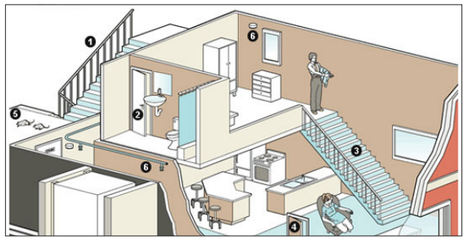
WILDFIRE MITIGATION ACTIONS:
STRUCTURAL PROJECT



Neighborhood and Community Safe Rooms
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."
Ground Stabilization –

WILDFIRE

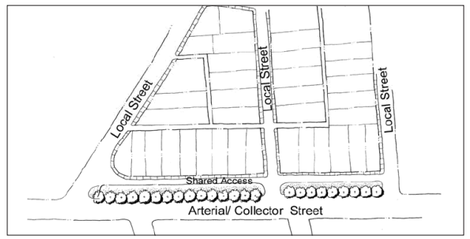
WINTER STORM MITIGATION ACTIONS:
PREVENTION



Building Codes and Construction Req's
A building code is a set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of the building code is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. Building codes are enforced by jurisdictions and become local building construction laws.



Capital Improvements Programs
The capital improvement program (CIP) is a five to six year schedule of capital projects. Capital planning involves the purchase or construction, major repair, reconstruction, or replacement of capital items, such as bridges, buildings, utility systems, parks and landfills.



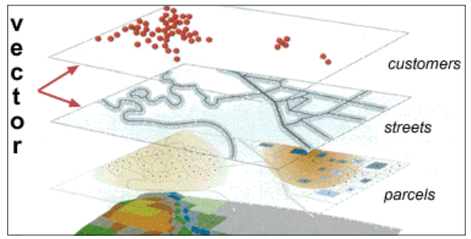
Subdivision Regulations
A subdivision ordinance controls the division of a tract of land for building and development purposes. Subdivision regulations determine the layout and design standards that must be met by the proposed subdivision. These standards help to insure that future owners get safe neighborhoods and sound construction.



Safe Shelter Requirements
Planning and development of safe shelters should take in depth analysis of community planning and development strategies for placement and function of the facility. In addition, the coordination of the facility with other facilities within the jurisdiction should be taken into account. Safe shelters "ensure the protection of people from dangerous incidents caused by tornadoes, severe storms, and hurricanes through special regulatory standards for safe rooms.



Critical Facilities Assessments
Critical facility minimum standards should be set for Lauderdale County and the municipal jurisdictions. These standards should be drafted and approved by the policy committee for performing assessments of critical facilities including hospitals, schools, fire and police stations, emergency operation centers, special needs housing, etc. The assessments should address building and site vulnerabilities to hazards.



Geographic Information Systems
Geographic information system (GIS) is a tool that connects databases to maps. It combines layers of information about where things are located with descriptive data about those things and their surroundings. Information such as where a point is located on a map, the length of a road, or the size of a parcel of property. This information can be stored in digital format in layers and used to generate detailed and exact maps of communities.



Planning Studies
A plan is an adopted statement of policy, in the form of text, maps, and graphics, used to guide public and private actions that affect the future. A plan provides decision makers with the information they need to make informed decisions affecting the long-range social, economic, and physical growth of a community.



Mitigation Planning Technology Support
Mitigation technologies come in a variety of forms that include warning sirens, flood warning systems, automatic icing indicators on critical bridges, telephone based flood warning system, 911 service back up site, and communication re-routing in emergency response. The County has a wireless emergency alert system for residents and visitors which is called the Sentry System. Colbert County and Lauderdale County work together to back each other in case of adversities.

WINTER STORM MITIGATION ACTIONS:
PROPERTY PROTECTION



Flood Prone Building Proofing and Retrofitting
Redesigning and modification of structures to allows a building to remain in the floodplain where necessary. Although long term plans should be to remove the building from the floodplain.



Critical Facilities Protection
Redesigning and modification of existing critical facilities to protect them during a disaster so they may remain viable for disaster relief after the hazard has occurred. New structures should be sited in such a manner as to be away from high-risk zones and designed and constructed for "maximum protection from all hazards."



Emergency Power Generation
Establishment of back up emergency power for critical facilities in order to maintain the electric power during an emergency situation involving loss of power during severe storms and other natural disasters.



Building Retrofit and New Construction of Shatter Resistant Glass Structures
Retrofitting of existing buildings to safeguard against damages from identified natural hazards in the jurisdiction. As well as requiring shatter resistant glass in new construction involving critical facilities and public buildings.

WINTER STORM MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Identification of outreach and community projects that provide publicity and support in achieving hazard mitigation goals identified in the plan. Projects should be identified in each of the participating jurisdictions and promoted in achieving hazard mitigation goals and objectives.



Hazard Information Kiosk and Centers
Promoting the Florence-Lauderdale Hazard Mitigation Policy Committee agenda throughout Lauderdale County. This can be done through providing lectures, speakers and information for county and municipal events that discuss existing mitigation and planning efforts within Lauderdale County.



School Age Education Programs
Provide a methodology and curriculum to introduce students to mitigation strategies and land planning efforts within the planning jurisdiction. The program should be promoted by the Florence- Lauderdale Hazard Mitigation Policy Committee and developed in conjunction with school systems within the mitigation planning jurisdictions.



Adult and Community Education Programs
Mitigation and land use workshops can be conducted to inform individuals of different hazards within the planning jurisdictions and methods of mitigation those hazards.

WINTER STORM MITIGATION ACTIONS:
PUBLIC EDUCATION AND AWARENESS



Hazard Mitigation Plan and Pamphlet Distribution
Publish and distribute the adopted Florence-Lauderdale Hazard Mitigation Plan in full. In addition there should be distribution of specific mitigation efforts taking place within Lauderdale County and its municipal jurisdictions.

NOAA Weather Radio Programs
"Promote the use of weather radios in critical facilities, institutions, businesses, and homes as a means for advance warning to implement mitigation measures and to increase public awareness of hazard risks."



Press and Media Mitigation Releases and Training Sessions
Utilization of mass media outlets like newspapers, television, cable access, Internet blogs, podcasts, video sharing, and online social networking to increase public awareness of hazard mitigation efforts.

WINTER STORM MITIGATION ACTIONS:
NATURAL RESOURCES PROTECTION



Watershed Management
Watershed management is "broadly defined as a suite of zoning and land-use management techniques applied to help align compatible land uses with resource quality." The management style is based on basins, sub-basins, watersheds, sub-watersheds, and catchments.



Press and Media Mitigation Releases and Training Sessions
Informing media representatives about mitigation efforts allows for accurate information to be distributed on long-term mitigation projects. This training begins with a sound understanding of the overall mitigation plan and the mitigation efforts underway within the community. Targeted representatives include newspapers, television reporters and radio correspondents.

WINTER STORM MITIGATION ACTIONS:
STRUCTURAL PROJECT



Neighborhood and Community Safe Rooms
Neighborhood and community safe rooms are "freestanding, single purpose community storm shelters or safe rooms within buildings used for other purposes to provide temporary shelter from hurricanes, tornadoes, and severe storms."

WINTER STORM

MS.3 NFIP Implementation Strategy

All of the jurisdictions within the planning area participate in the FEMA's National Flood Insurance Program and are in good standing with program requirements and implementation. Digital Flood Insurance Rate Maps (FIRMS), last updated September 11, 2009, are available for all jurisdictions at FEMA's Flood Map Service Center online.

All of the jurisdictions within the planning area have continued to enforce and maintain updated floodplain ordinances since entering the flood insurance program. The jurisdictions are implementing the following strategies for the NFIP program:

- Maintaining enforcement records of floodplain ordinances
- Educational assistance to local floodplain administrators
- Outreach and public education to construction managers and property owners about the floodplain management requirements
- Maintain and update FIRM data in the planning jurisdictions GIS data system Document and monitor flood event occurrence through local EMA
- Discussion and future planning to enter the Community Rating System (CRS) standards through the hazard mitigation planning process.
- Florence- Lauderdale EMA to maintain NFIP publications in support of local floodplain administrators within each participating jurisdiction.

NFIP Community Status for Lauderdale County Jurisdictions

Community ID	Jurisdiction	Current Effective Map	Status
010323	Lauderdale County	8-02-18	Participating
010407	Anderson	9-11-09	Participating
010140	Florence	9-11-09	Participating
010338	Killen	9-11-09	Participating
010358	Lexington	9-11-09	Participating
010339	Rogersville	8-02-18	Participating
010505	St. Florian	9-11-09	Participating
010340	Waterloo	9-11-09	Participating

Source: http://www.fema.gov/cis/AL.html; Community Status Source Book Report

MS.4 Mitigation Action Implementation

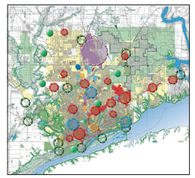
The jurisdictions within the planning area are responsible for implementing the identified mitigation strategies for that jurisdiction. This responsibility is often shared with academic institutions, utility systems, and health care facilities. Policy Committee representatives from each of the incorporated jurisdictions, as well as Lauderdale County, have recommended mitigation strategies that they would like to pursue over the five year planning implementation period.

Each jurisdiction has defined the mitigation actions they will adopt and implement. Due to local differences in mitigating natural disasters, each jurisdiction selected mitigation strategies that it felt it had the capacity and political support to implement. The listed strategies were selected from each jurisdiction's responses to the online hazard mitigation survey. The results are located in the appendices. Within each jurisdiction's selected mitigation strategies, there are identified partners, priority ranking, lead responsibility designation, estimated cost, potential funding sources, and the hazards that may be mitigated. The implementation time line for each of the listed mitigation strategies is within the planning study period. Mitigation measures reference prior and future actions as well as on-going efforts. All references are for this planning period only.

The pandemic upended the everyday activities of all jurisdictions. Mitigation strategies for the pandemic have been prioritized in this section. Apart from this change, no major changes to the priorities have been made to the hazard mitigation strategies.

LAUDERDALE COUNTY

LAUDERDALE COUNTY MITIGATION STRATEGIES:
PREVENTION



Comprehensive Planning
Partners: F-L EMA, A-EMA, County Engineer, Co. Commissioners
Priority: Low
Lead Responsibility: County Engineer
Estimated Cost: $80,000.00 to $100,000.00
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre- Disaster Mitigation (PDM), Flood Mitigation Assistance (FMA)
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: County reviewed and continues preliminary discussion for a county comprehensive plan.
Future Actions: Continue to seek support for county wide planning through mitigation planning awareness.



Building Codes & Construction Requirements
Partners: County Engineer, Co. Commissioners
Priority: Medium
Lead Responsibility: F-L EMA, County Engineer
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from last plan update.
Future Actions: Evaluate existing codes being applied in Lauderdale County and review for additional action.



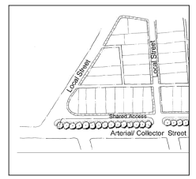
Capital Improvements Programs
Partners: County Engineer, County Commissioners, F-L EMA
Priority: Medium
Lead Responsibility: County Engineer
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued effort from last plan adopted.
Future Actions: Seek countywide support for establishing a five year improvements plan to include capital projects that are identified in the hazard mitigation planning process.



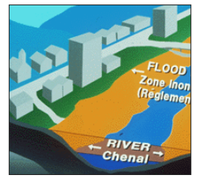
Open Space Preservation
Partners: County Commission, AL Land Conservancy, Landowners, F-L EMA
Priority: Low
Lead Responsibility: County Commission
Estimated Cost: $10,000.00 to $20,000.00 per donation.
Funding Sources: AL Land Conservancy, Local Match, A-EMA, ADECA
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Landslides, Sinkholes
Prior Actions: Continued effort from last plan adopted.
Future Actions: Identify potential funding sources, partners and prioritize areas of needed open space within the county.



Storm Water Management
Partners: ADEM, F-L EMA, A-EMA, ADECA, County Eng.
Priority: Low
Lead Responsibility: County Engineer
Estimated Cost: Not determined at this time
Funding Sources: ADEM, Local Match, HMGP, PDM, ADECA
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failure
Prior Actions: Continued effort from last plan adopted.
Future Actions: F-L EMA evaluation of storm water management actions to be taken.
Best management practices for storm water management implemented during site plan review of subdivision regulations.



Subdivision Regulations
Partners: F-L EMA, County Engineer, County Commissioners
Priority: Low
Lead Responsibility: County Engineer
Estimated Cost: No Additional Cost
Funding Sources: ADECA, Local Match, PDM
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued effort from last plan adopted.
Future Actions: Further discussion about regulating subdivisions within the county should occur. Currently this prevention method is not viable and needs community support through community education and information distribution.

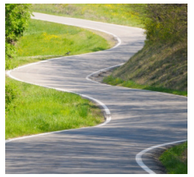


Flood Plain Management Programs
Partners: F-L EMA, County Engineer, TVA, Co. Commission
Priority: High
Lead Responsibility: Not Determined
Estimated Cost: Not determined at this time
Funding Sources: ADECA, ADEM, PDM, A-EMA
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: Previous actions consist of NFIP local administration guidance and working with state NFIP coordinator.
Future Actions: Evaluate methodologies for strengthening the NFIP program through flood plain management.



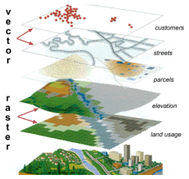
Safe Shelter Site Planning
Partners: F-L EMA, County Engineer, County *Commissioners*, Incorporated Areas
Priority: Low
Lead Responsibility: F-L EMA
Estimated Cost: $20,000.00 to $50,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued effort from last plan adopted.
Future Actions: Identify funding sources to complete an existing needs assessment and site selection process for safe shelters in the county and incorporated areas.

LAUDERDALE COUNTY MITIGATION STRATEGIES: PREVENTION



Public Right-of-Way Maintenance Regulations
Partners: County Engineer, County Commission, F-L EMA, ALDOT
Priority: High
Lead Responsibility: County Engineer, ALDOT
Estimated Cost: Not determined at this time
Funding Sources: ALDOT, HMGP, PDM
Mitigating Hazards: Flooding
Prior Actions: Previous actions include ongoing maintenance .
Future Actions: Continue to monitor and document needed right-of-way maintenance and sharing information to the correct and corresponding entities.

Critical Facility Assessments
Partners: A-EMA, F-L EMA, Co. Commission, Hospitals, School Districts.
Priority: Low
Lead Responsibility: Not Determined
Estimated Cost: Not determined at this time.
Funding Sources: Not determined at this time.
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action taken.
Future Actions: Establish critical facility minimum standards for Lauderdale County. The assessment should address building and site vulnerabilities to hazards.



Geographic Information Systems
Partners: County Engineer, F-L EMA, Jurisdictions
Priority: Medium
Lead Responsibility: County Engineer
Estimated Cost: $15,000.00 annually
Funding Sources: Local match, ADEM, ADECA
Mitigating Hazards: All hazards are mitigated.
Prior Actions: GIS data has been gathered through a collective agreement of participating jurisdictions.
Future Actions: Ongoing data gathering that is added to the county wide GIS system.



Planning & Land Use Studies
Partners: F-L EMA, County Engineer, Co. Commissioners
Priority: Low
Lead Responsibility: Depend on study type.
Estimated Cost: Undetermined
Funding Sources: ADECA, HUD, A-EMA, ADEM
Mitigating Hazards: All hazards are mitigated.
Prior Actions: 2010 Hazard Mitigation Plan
Future Actions: Identify needed plans and studies within the county such as the Hazard Mitigation Plan, watershed management plans, fire hydrant inventory, and flood prone roadways.



Mitigation Planning Technology Support
Partners: Co. Engineer, Co. Commission, Local jurisdictions, F-L EMA
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, ADEM, local match
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Previous actions include installing warning sirens throughout the county.
Future Actions: Continue implementation of warning sirens as requested by local jurisdictions and update existing ones. Evaluation of installing a telephone based warning system.

LAUDERDALE COUNTY MITIGATION STRATEGIES: PROPERTY PROTECTION



Property Protection: Critical Facilities Protection
Partners: County Commissioners, F-L EMA, County Engineer
Priority: Medium
Lead Responsibility: County Engineer
Estimated Cost: Undetermined
Funding Sources: ALDOT, County Match, HMGP
Mitigating Hazards: All hazards are mitigated.
Prior Actions: Continued efforts from last plan update.
Future Actions: Perform infrastructure assessments of public schools and universities for hazard retrofitting. Identify critical facilities that need additional retrofitting for mitigating identified natural disasters. Review bridges that are vulnerable to flood damage and complete infrastructure retrofitting for them.



Emergency Power Generation
Partners: Co. Engineer, Co. Commission, Local jurisdictions, F-L EMA
Priority: High
Lead Responsibility: Not Determined
Estimated Cost: Undetermined
Funding Sources: HMGP, ALA-EMA, PDM
Mitigating Hazards: All hazards may be mitigated
Prior Actions: Assisting entities with critical facilities in receiving power within the planning study area.
Future Actions: Establish emergency generator power to all critical facilities that do not have emergency systems. Annual evaluation should document critical facility needs.

LAUDERDALE COUNTY MITIGATION STRATEGIES:
PUBLIC EDUCATION AND AWARENESS



Public Education and Awareness: Outreach Projects
Partners: F-L EMA, participating jurisdictions in the planning area.
Priority: High
Lead Responsibility: Florence-Lauderdale EMA
Estimated Cost: $5,000.00 to $7,000.00 annually
Funding Sources: A-EMA, PDM, Local Funds
Mitigating Hazards: May assists in mitigating all hazards.
Prior Actions: No previous actions taken.
Future Actions: Select the greatest impacting hazard to the county and initiate an educational program to mitigate that hazard. Quantitative data indicates that floods are the most costly hazard in Lauderdale County and the region.



Real Estate Disclosure Requirements
Partners: NFIP Coordinator, Co. Engineer, A-EMA, F-L EMA
Priority: Medium
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: No additional cost.
Mitigating Hazards: Floods
Prior Actions: Assisting and encouraging jurisdictions to participate in the NFIP program.
Future Actions: Establish an annual education & awareness strategy that also discusses flood map information in Lauderdale County.



School Age Education Programs
Partners: F-L EMA, A-EMA, PDM, School Districts, F-L EMA
Priority: Moderate
Lead Responsibility: County School District
Estimated Cost: Not determined at this time.
Funding Sources: ADEM, A-EMA, PDM, ADECA
Mitigating Hazards: Mitigates all identified hazards.
Prior Actions: Public input and mitigation discussions.
Future Actions: Develop annual strategies and prioritize hazards to be mitigated that need focus on public education and awareness. The Policy Committee indicated that floods are a very important hazard that can be mitigated through education and awareness over time.



Adult & Community Education Programs
Partners: A-EMA, Co. Commissioners, Academic Institutions, F-L EMA
Priority: High
Lead Responsibility: Not Determined
Estimated Cost: $5,000.00 annually
Funding Sources: A-EMA, Local Match
Mitigating Hazards: All hazards may be mitigated
Prior Actions: Previous actions include citizen & stakeholder hazard mitigation meetings and local workshops.
Future Actions: Conduct public hazard mitigation education booths in conjunction with civic celebrations. Complete annual mitigation education awareness workshops that are interesting, fun and well attended.



Hazard Mitigation Plan & Pamphlet Distribution
Partners: School Dist., Academic Institutions, Local Jurisdictions, F-L EMA
Priority: Low
Lead Responsibility: F-L EMA
Estimated Cost: $3,000.00 annually
Funding Sources: HMGP, PDM, ADECA, Local Match
Mitigating Hazards: All hazards potentially mitigated.
Prior Actions: Distribution of the 2010 Hazard Mitigation Plan
Future Actions: Develop a hazard mitigation pamphlet that covers the most common hazards within the county. This should be distributed based on population and be image driven to achieve the desired message.

NOAA Weather Radio Programs
Partners: Critical Facility Entities, School Districts, Local Jurisdictions, County Commissioners, F-L EMA
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, ADEM, local match
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Ongoing weather radio use is actively promoted.
Future Actions: Continue placement of NOAA weather radios within the community. Use local sponsorship to place radios in areas of hazard danger. Placement should continue to focus on distribution to critical facilities as a priority.



Press & Media Mitigation Releases
Partners: Co. Engineer, Co. Commission, local jurisdictions, F-L EMA
Priority: Medium
Lead Responsibility: F-L EMA
Estimated Cost: No additional cost.
Funding Sources: n/a
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Previous actions include ongoing briefings with local media outlets.
Future Actions: Establish advertising or communication campaigns that are image driven and share methods for mitigating natural hazards within Lauderdale County.

LAUDERDALE COUNTY MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION:



Sediment & Erosion Control
Partners: County Engineer, County Commission, F-L EMA
Priority: High
Lead Responsibility: County Engineer
Estimated Cost: No additional Cost
Funding Sources: n/a
Mitigating Hazards: Flooding & Landslides
Prior Actions: Implementation through subdivision regulations and building codes .
Future Actions: Clarify that additional erosion control methods should be put in place that go beyond the erosion caused by new construction.



Press and Media Mitigation Training Releases and Training Sessions
Partners: Media Outlets, F-L EMA
Priority: Low
Lead Responsibility: County Engineer
Estimated Cost: Not determined at this time.
Funding Sources: PDM, A-EMA
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Scheduled media interview after hazard occurrence.
Future Actions: Develop in conjunction with media entities a workshop program for staff to learn about mitigation efforts.



Open Space Easements & Acquisition
Partners: County Commission, Urban Forestry, Planning Dept., F-L EMA
Priority: Low
Lead Responsibility: County Commission
Estimated Cost: Undetermined
Funding Sources: Local and Regional Land Trusts
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Landslides, Sinkholes
Prior Actions: No previous actions taken.
Future Actions: Establish open space and passive recreation as a priority within the county as a hazard mitigation strategy.

LAUDERDALE COUNTY MITIGATION STRATEGIES:
STRUCTURAL PROJECT



Structural Projects:
Storm Water Diversion Culverts
Partners: County Engineer, ALDOT
Priority: High
Lead Responsibility: Not Determined
Estimated Cost: Not determined at this time.
Funding Sources: Local Funds, ALDOT
Mitigating Hazards: Floods
Future Actions: Identify in conjunction with the county engineer specific sites for storm water diversion projects. Identification should take place in conjunction with community participants and local leadership.



Retaining Walls
Partners: County Commission, County Engineer, F-L EMA
Priority: Low
Lead Responsibility: County Engineer
Estimated Cost: Not determined at this time.
Funding Sources: Local Funds
Mitigating Hazards: Landslides, Technical Hazards
Prior Actions: On- going efforts to construct any needed retaining walls along county rights-of-way continues.
Future Actions: Continue to identify maintenance areas and needed retaining walls as they arise.



Neighborhood & Community Safe Rooms
Partners: Co. Engineer, Co. Commission, Church & Community Centers.
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: Not determined at this time.
Funding Sources: A-EMA, PDM, ADECA, Local Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Continued efforts from last plan update. The following community safe rooms are proposed:
+ Cloverdale VFD – 101 CR-263 Florence, AL 35633
+ Central – 670 Stadium Dr. Florence, AL 35633
+ Greenhill VFD – 417 CR-364 Florence, AL 35634
+ Oakland VFD – 5300 CR-15 Florence, AL 35633
+ Center Star VFD – CR – 69
+ Zip City VFD – 9235 Hwy. 17 Florence, AL 35634

Future Actions: Continue to support development of and seek funds for community safe rooms within Lauderdale County. Rolling blackouts may be administered to the community, shelters will provide heat as a warming center.

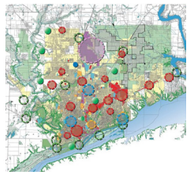
TOWN OF ANDERSON MITIGATION STRATEGIES:
PREVENTION



Capital Improvements Programs
Partners: County Engineer, F-L EMA, Town Planning Commission, Town Council
Priority: Medium
Lead Responsibility: County Engineer
Estimated Cost: No Additional Cost.
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action.
Future Actions: Seek support for establishing a five year improvements plan to include capital projects that are identified in the hazard mitigation planning process.



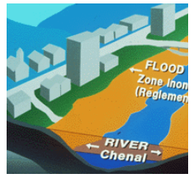
Subdivision Regulations
Partners: Town Planning Commission, Town Council F-L EMA, County Engineer,
Priority: Low
Lead Responsibility: Town Planning Commission, Town Council
Estimated Cost: No Additional Cost.
Funding Sources: ADECA, Local Match, PDM
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions
Future Actions: The town should evaluate and implement their adopted subdivision regulations.



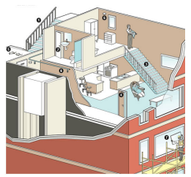
Comprehensive Planning
Partners: F-L EMA, A-EMA, NACOLG, Town Planning Commission, Town Council
Priority: Low
Lead Responsibility: Town Planning Commission
Estimated Cost: $15,000.00 to $25,0000.00
Funding Sources: Local Match, ADECA, PDM
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued effort from last plan update.
Future Actions: Seek support for comprehensive planning for hazard mitigation in the Town of Anderson through community discussions. Evaluate political will and available funding sources.



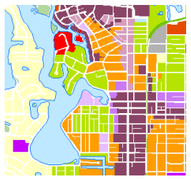
Open Space Preservation
Partners: Town Planning Commission, Town Council , AL Land Conservancy, Landowners, F-L EMA
Priority: Low
Lead Responsibility: Town Planning Commission, Town Council
Estimated Cost: $10,000.00 to $20,000.00 per donation
Funding Sources: AL Land Conservancy, Local Match, A-EMA, ADECA
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Landslides, Sinkholes
Prior Actions: No previous effort
Future Actions: Identify potential funding sources and partners and prioritize areas of needed open space within the jurisdiction.



Flood Plain Management Programs
Partners: Town Planning Commission, Town Council, F-L EMA, County Engineer, TVA,
Priority: High
Lead Responsibility: Town Planning Commission, Town Council
Estimated Cost: Not determined at this time.
Funding Sources: ADECA, ADEM, PDM, A-EMA
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: Previous actions consist of NFIP local administration guidance and working with state NFIP coordinator.
Future Actions: Evaluate methodologies for strengthening the NFIP program through flood plain management.



Building Codes & Construction Requirements
Partners: County Engineer, Town Planning Commission, Town Council
Priority: Medium
Lead Responsibility: Town Planning Commission, Town Council
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action.
Future Actions: Evaluate local codes being applied in within municipal limits and review for additional action.



Land Use Development Regulations
Partners: ADECA, HUD, NACOLG, Town Planning Commission, Town Council
Priority: Low
Lead Responsibility: Town Planning Commission, Town Council
Estimated Cost: No additional cost at this time.
Funding Sources: Local Match
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Dam/Levee Failures, Technical Hazards
Prior Actions: No prior actions.
Future Actions: The town should evaluate and implement their adopted development regulations.

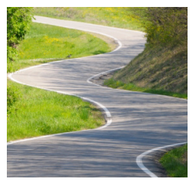


Burn Permits
Partners: Town Council ,County Sheriff's Dept., Local Fire Dept., Urban Forestry
Priority: High
Lead Responsibility: Town Council ,County Sheriff's Dept., Local Fire Dept.
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Wildfires, Landslides
Prior Actions: No previous actions.
Future Actions: Continue public awareness through public outreach programs.

TOWN OF ANDERSON MITIGATION STRATEGIES: PREVENTION



Safe Shelter Site Planning
Partners: F-L EMA, County Engineer, Mayor and Town Council
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: $8,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from previous plan update.
Future Actions: Evaluate a scope of work and funding sources to identify current safe shelters and future needs for safe shelters. Planning should identify appropriate sites for appropriately locating the safe shelter. Rolling blackouts may be administered to the community shelter s providing heat as a warming center.



Public Right-of-Way Maintenance Regulations
Partners: Mayor and Town Council ,County Engineer, County Commission, F-L EMA, ALDOT
Priority: High
Lead Responsibility: Town Council, County Engineer ,ALDOT
Estimated Cost: Not determined at this time.
Funding Sources: ALDOT, HMGP, PDM
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: Monitor and document needed right-of-way maintenance and sharing information to the correct and corresponding entities.



Mitigation Planning Technology Support
Partners: F-L EMA, FEMA, A-EMA, Mayor and Town Council
Priority: High
Lead Responsibility: Mayor and Council
Estimated Cost: Undetermined
Funding Sources: PDM, Local Funds, County Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Continued efforts from last plan update.
Future Actions: Continuing to oversee future installation of five additional warning sirens in the community of Anderson.

TOWN OF ANDERSON MITIGATION STRATEGIES: PROPERTY PROTECTION



Emergency Power Generation
Partners: Co. Engineer, F-L EMA, A-EMA, ADECA, Mayor and Council
Priority: Medium
Lead Responsibility: Mayor & Council
Estimated Cost: Undetermined
Funding Sources: HMGP, A-EMA, PDM
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Continued effort from last plan update.
Future Actions: Identify critical facilities in Anderson that do not have emergency power and pursue funds within the planning period to provide emergency power.

TOWN OF ANDERSON MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION:



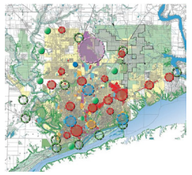
Wetland Restoration and Wetland Preservation
Partners: Town Council, F-L EMA, UNA, ADEM, EPA
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Undetermined
Funding Sources: ADEM, EPA
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: Identify areas within the planning jurisdiction appropriate for wetland restoration and preservation.

TOWN OF ANDERSON MITIGATION STRATEGIES:
STRUCTURAL PROJECT:

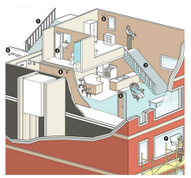


Neighborhood & Community Safe Rooms
Partners: Mayor & Council, F-L EMA, Local Churches and Community Centers.
Priority: High
Lead Responsibility: F-L EMA, Town Council
Estimated Cost: Not determined at this time
Funding Sources: A-EMA, PDM, ADECA, Local Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: No previous action taken.
Future Actions: Identify any future needs for safe centers within the town and update existing safe centers. Attempt to use multi-use facilities that are occupied at other times than during storm periods. Rolling blackouts may be administered to the community, shelters will provide heat as a warming center.

CITY OF FLORENCE MITIGATION STRATEGIES:
PREVENTION



Comprehensive Planning
Partners: F-L EMA, A-EMA, Utilities Department, ALDOT, Florence Port Authority, Univ of North Alabama (UNA)
Priority: Low
Lead Responsibility: Florence Planning Department
Estimated Cost: $80,000.00 to $120,000.00
Funding Sources: ADECA, PDM, Local Match, HUD
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: City of Florence continuously updates the comprehensive plan as plan accomplishments occur and/or changes in the developmental environment. City of Florence completed an update to the comprehensive plan in 2021
Future Actions: continued implementation and detailing via specified area and neighborhood planning, monitoring of developmental conditions and analysis of past performance.



Building Codes & Construction Requirements
Partners: F-L EMA, Florence Planning Department
Priority: Medium
Lead Responsibility: Florence Building Department
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Yearly review and evaluation of updates.
Future Actions: Evaluate future needs to meet identified hazard risks and any identified mitigation strategies related to updating local building codes within the city.



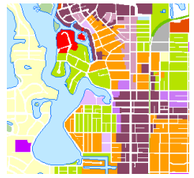
Capital Improvements Programs
Partners: Mayor/Council, City Engineer, Florence Planning, Parks and Recreation, General Fund Accounting
Priority: Medium
Lead Responsibility: Mayor/Council
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Previous actions include updating the five year capital improvements program.
Future Actions: Evaluate the existing capital improvements program for additions to complete identified hazard mitigation strategies within the city.



Open Space Preservation
Partners: F-L EMA, A-EMA, City Engineer, Parks and Recreation, Florence Planning Department
Priority: Low
Lead Responsibility: Parks and Recreation
Estimated Cost: Undetermined
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Ass. (FMA), AL Land Trusts
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts to establish passive recreational facilities. The Comprehensive Plan contains green infrastructure plans and specific park plans for the City. Development, preservation, and sustainability are core elements of City planning.
Future Actions: Future actions-the comprehensive plan contains green infrastructure requirements for all private development and identifies green spaces of varying sizes land locations inside and outside the planning area.



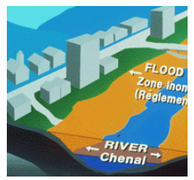
Storm Water Management
Partners: F-L EMA, ADEM, A-EMA, Florence Planning Dept. Florence Building Dept.
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: Not estimated
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Assistance. (FMA), ADEM
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: City has storm water management ordinance and permits in place.
Future Actions: Seek contemporary methods to mitigate storm water runoff through constructed wetlands and road side containment methods.



Land Use Development Regulations
Partners: ADECA, HUD, NACOLG, Florence Building Dept., City Engineer, Florence Planning Commission, Florence Planning Department, Florence City Council, Board of Zoning Adjustments
Priority: Low
Lead Responsibility: Florence Planning Dept.
Estimated Cost: No additional cost at this time
Funding Sources: Local Match
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Dam/Levee Failures, Technical Hazards
Prior Actions: The City of Florence has subdivision regulations in place and are implementing the existing comprehensive plan and reflective of the priorities implemented by the comprehensive plan.
Future Actions: The city will continue to evaluate and implement the development regulations daily.



Subdivision Regulations
Partners: City Engineer, Florence Utilities, Florence Building Department, Florence Planning Department, Florence Planning Commission
Priority: Low
Lead Responsibility: City Engineer/Florence Planning Dept.
Estimated Cost: No additional cost
Funding Sources: Not applicable
Mitigating *Hazards*: Assists in mitigating all hazards.
Prior Actions: The City of Florence has subdivision regulations in place and are implementing the existing comprehensive plan and reflective of the priorities implemented by the comprehensive plan.
Future Actions: Continue to monitor the current subdivision regulations for potential updates and opportunities to mitigate identified hazard risks.

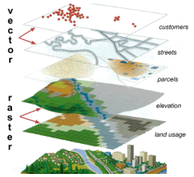


Flood Plain Management Programs
Partners: F-L EMA, ADEM, TVA, Florence Port Authority, City Engineer, City of Florence Planning Department
Priority: Low
Lead Responsibility: Florence Engineering Dept., Florence Building Dept.
Estimated Cost: $20,000.00
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Ass. (FMA)
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: City of Florence currently relies on TVA and their storm water management program to implement flood plan management.
Future Actions: Continue support for existing programs and identify two to three improvements that need to be made.

CITY OF FLORENCE MITIGATION STRATEGIES:
PREVENTION



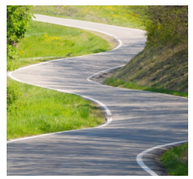
Safe Shelter Site Planning
Partners: F-L EMA, City Engineer, A-EMA, ADECA, Florence Planning Dept.
Priority: High
Lead Responsibility: Florence-Lauderdale EMA
Estimated Cost: $20,000.00 to $35,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from last plan update.
Future Actions: Initiate planning study for sectors within the city that are in need of safe shelters. Criteria for this study should be established that include use of existing or multifunctional structures like churches.



Geographic Information Systems
Partners: Florence Planning Dept., F-L EMA, Jurisdictions
Priority: Medium
Lead Responsibility: Florence Planning Department
Estimated Cost: No additional cost.
Funding Sources: Not applicable
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: GIS data has been gathered through a collective agreement of participating jurisdictions.
Future Actions: Completion of the current land use update for the City of Florence. Ongoing analysis, review, and updating as needed.



Levee & Dam Management
Partners: F-L EMA, A-EMA, TVA, City Engineer
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: No additional cost
Funding Sources: Not applicable
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Ongoing coordination with TVA and its dam management program. This includes coordinating road closing within the city with the department of transportation.
Future Actions: Continue municipal coordination with TVA and F-L EMA. The city has no municipal dams or levees to manage within its jurisdiction.



Public Right-of-Way Maintenance Regulations
Partners: County Engineer, F-L EMA, ALDOT
Priority: High
Lead Responsibility: City Engineer, ALDOT
Estimated Cost: Not determined at this time
Funding Sources: ALDOT, HMGP, PDM, Local Match
Mitigating Hazards: Flooding
Prior Actions: Previous actions include ongoing maintenance.
Future Actions: Continue to monitor and document needed right-of-way maintenance and sharing information to the correct entities.



Planning & Land Use Studies
Partners: F-L EMA, City Engineer, Municipal Departments
Priority: Low
Lead Responsibility: Florence Planning Department
Estimated *Cost*: Undetermined
Funding Sources: ADECA, HUD, A-EMA, ADEM, USDA
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Through GIS data gathered and created to analyze developmental patterns, forecast future growths, and site plan public facilities, green infrastructure, and private development oversight Florence Comprehensive Plan, East Florence Plan, West Florence Plan, Sweetwater Redevelopment Plan; and Veterans Drive Corridor Plan
Future Actions: Evaluate plans for update to include hazard mitigation components. Identify two to three mitigation land use components to include in the next municipal planning document and identify potential new partners and educational opportunities.



Burn Permits
Partners: Florence Police Dept., Florence Urban Forestry Dept., Florence Building Department
Priority: High
Lead Responsibility: Florence Fire Department
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Wildfires, Landslides
Prior Actions: Burn permits are in place and enforced, Sweetwater Redevelopment Plan, Veterans Drive Corridor Plan.
Future Actions: Continue public awareness through public outreach programs.



Critical Facility Assessments
Partners: F-L EMA, City Schools, Florence Planning Dept., Building Department.
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: Not determined at this time.
Funding Sources: Not determined at this time.
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action taken.
Future Actions: Establish critical facility minimum standards for the City of Florence and its school system. The assessment should address building and site vulnerabilities to hazards.



Mitigation Planning Technology Support
Partners: F-L EMA, A-EMA, FEMA, UNA
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, ADEM, local match
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Previous actions include installing warning sirens within identified points in the city.
Future Actions: Continue implementation of warning sirens as requested by communities and update existing ones. Evaluation of installing a telephone based warning system.

CITY OF FLORENCE MITIGATION STRATEGIES:
PROPERTY PROTECTION



Critical Facilities Protection
Partners: F-L EMA, County Engineer, County Commissioners, Incorporated Areas
Priority: High
Lead Responsibility: City Engineer/Florence Building Department
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HMGP, PDM, FEMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from last plan update.
Future Actions: Target funding sources to complete redesign of critical facilities if identified in the critical facility analysis.



Separate Sewer System Collection & Protection
Partners: Florence Planning Department Areas
Priority: Low
Lead Responsibility: Florence Utility Department
Estimated Cost: Undetermined
Funding Sources: Determined upon project clarification.
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Evaluation and cost estimates have been reviewed for specific projects.
Future Actions: Clarify time table and funding sources for completing separate sewer and storm water collection.



Real-Estate Flood Prone Property Acquisition
Partners: F-L EMA, Florence Planning Department, A-EMA, ADECA
Priority: High
Lead Responsibility: City Engineer
Estimated Cost: Not determined
Funding Sources: A-EMA, ADECA, HMGP, PDM, NFIP, Local Funds
Mitigating Hazards: Floods
Prior Actions: Property purchases have occurred in previous years.
Future Actions: Continue public education and discussions with potential property owners in need of purchase. Specifically evaluate repetitive loss properties in the City of Florence.



Freeboard Requirements for Building Elevations
Partners: F-L EMA, Florence Planning Department, A-EMA, ADECA
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: Not determined
Funding Sources: A-EMA, ADECA, HMGP, PDM, NFIP, Local Funds
Mitigating Hazards: Floods
Prior Actions: No previous actions.
Future Actions: Identify areas in floodplains where freeboard elevations might be applicable and determine if local guidelines and codes should be developed and enforced.



Storm Shutter Programs and Installation
Partners: City Engineer
Priority: Low
Lead Responsibility: Building Department
Estimated Cost: Determined on project by project basis
Funding Sources: Undetermined
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions taken.
Future Actions: Determine what locations and building in the City would benefit from storm shutter installation and explore funding options for interested entities.



Flood Prone Building Proofing and Retrofitting
Partners: F-L EMA, Florence Planning Department, A-EMA, ADECA
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: Not determined
Funding Sources: A-EMA, ADECA, HMGP, PDM, NFIP, Local Funds
Mitigating Hazards: Floods
Prior Actions: No previous actions.
Future Actions: Identify buildings in floodplain areas that cannot be moved in the near future but could benefit from redesign or modifications to lessen adverse impacts from flooding events.



Emergency Power Generation
Partners: F-L EMA, City Engineer, Building Department
Priority: High
Lead Responsibility: Florence Utilities Department
Estimated Cost: Undetermined
Funding Sources: Funding determined on a project by project basis.
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: On- going emergency power generation efforts
Future Actions: Clarify specific entities that need emergency power generation and document them. Then complete the power generation projects once funds have been identified.



Installation of Shatter Resistant Glass and Building Retrofit
Partners: City Engineer
Priority: Low
Lead Responsibility: Building Department
Estimated Cost: Determined on project by project basis
Funding Sources: Undetermined
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from previous plan update.
Future Actions: Clarify that shatter resistant glass is required within municipal building codes within the city for all commercial properties. Evaluate further implementation of the requirement on a cost benefit analysis.

CITY OF FLORENCE MITIGATION STRATEGIES:
PUBLIC EDUCATION AND AWARENESS



Hazard Information Kiosk and Centers
Partners: Florence Planning Dept., County Engineer, City Engineer, Commissioners, Mayor & Council
Priority: Low
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: May assists in mitigating all hazards.
Prior Actions: Continued efforts from last plan update.
Future Actions: Establish with department representatives the type and location for a hazard mitigation kiosk. The kiosk should be developed in a way to encourage interactive learning.



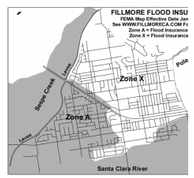
Hazard Mitigation Plan & Pamphlet Distribution
Partners: F-L EMA, A-EMA, ADEM
Priority: High
Lead Responsibility: City Engineer
Estimated Cost: $3,000.00 to $5,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM
Mitigating Hazards: Assists in mitigating hazards discussed.
Prior Actions: Publication of the 2010 Mitigation Plan.
Future Actions: Clarify funding sources and specify hazard to be discussed in the pamphlet and its strategy for mitigating the specific hazard. This hazard can occur heavily within the city or be part of a broad county wide initiative with other jurisdictions.



Outreach Projects
Partners: F-L EMA, City Engineer, Florence Planning Department
Priority: High
Lead Responsibility: Florence-Lauderdale EMA
Estimated *Cost*: $5,000.00 to $7,000.00 annually
Funding Sources: A-EMA, PDM, Local Funds
Mitigating Hazards: May assists in mitigating all hazards.
Prior Actions: Continued efforts from previous plan update.
Future Actions: Select the greatest impacting hazard to the City of Florence and initiate an educational program to mitigate that hazard. Quantitative data indicates that floods are the most costly hazard in Florence and the region.



School Age Education Programs
Partners: F-L EMA, Mayor & Council
Priority: Medium
Lead Responsibility: Florence City Schools
Estimated Cost: $10,000.0 to 15,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from last plan update.
Future Actions: Clarify partners and scope of educational program to be implemented within the school system. FEMA should be able to recommend specific school age programs for the Florence School District.



Flood Map Information Distribution
Partners: F-L EMA, Mayor & Council, FEMA, NFIP State Coordinator
Priority: High
Lead Responsibility: Florence Building Dept., Florence Engineering Dept.
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HUD
Mitigating Hazards: Floods
Prior Actions: Continued effort from previous plan update.
Future Actions: Initiate discussion with NFIP Coordinator and A-EMA to acquire current methods of distributing flood map information to the general public. These methods should be evaluated for use in the City of Florence and modified accordingly.



Real-Estate Disclosure Requirements
Partners: F-L EMA, Local and regional legislative delegation, Municipal Attorney.
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Not estimated
Funding Sources: n/a
Mitigating Hazards: Flooding
Prior Actions: Continued efforts from last plan update.
Future Actions: Initiate discussions within the council to decide whether further real-estate disclosure is necessary to prevent repetitive loss properties from continued development



Adult & Community Education Programs
Partners: University of North Alabama, GED Programs, Mayor & Council
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: $10,000.00 to $15,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions taken.
Future Actions: Educational program should be clarified for types of hazards to be discussed as well as method for reaching the desired audience. This program could come as a public service announcement with a second component of discussing hazards with to local civic clubs and groups

NOAA Weather Radio Programs
Partners: F-L EMA, Mayor & Council
Priority: Low
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, FMA, PDM Local Non-Profits
Mitigating Hazards: Tornadoes, Flooding, Severe, Storms, Hurricanes, Winter Freezes, Earthquakes, Drought
Prior Actions: Distribution of weather radios to critical facilities.
Future Actions: Develop NOAA weather radio public and private partners. Local companies can contribute to a fund to distribute NOAA weather radio's to low income and identified families and entities.

CITY OF FLORENCE MITIGATION STRATEGIES:
PUBLIC EDUCATION AND AWARENESS



Press & Media Mitigation Releases
Partners: F-L EMA, Mayor & Council, Municipal Departments
Priority: Low
Lead Responsibility: Florence City Clerk, Florence-Lauderdale EMA
Estimated Cost: No additional cost.
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from previous plan.
Future Actions: Identify funding sources to complete an existing needs assessment and site selection process for safe shelters in the county and incorporated areas.

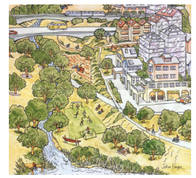
CITY OF FLORENCE MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION



Sediment & Erosion Control
Partners: Mayor & Council
Priority: High
Lead Responsibility: City Engineer
Estimated Cost: No additional Cost
Funding Sources: n/a
Mitigating Hazards: Flooding & Landslides
Prior Actions: Ordinance for Erosion Control and Sediments is in place.
Future Actions: Clarify that additional erosion control methods should be put in place that go beyond the erosion caused by new construction.



Stream / River Corridor Restoration
Partners: Mayor & Council. F-L EMA, Recreational Dept. Florence Planning Dept., Urban Forestry Dept.
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: Not determined at this time
Funding Sources: ADEM, A-EMA, Local Funds, HUD, EPA
Mitigating Hazards: Flooding
Prior Actions: Municipal cleanup programs have occurred.
Future Actions: Evaluation of current stream and tributary inventory for future restoration.



Watershed Management Programs
Partners: F-L EMA, Mayor & Council, City Engineer, TVA
Priority: Low
Lead Responsibility: Undetermined
Estimated Cost: Undetermined
Funding Sources: TVA
Mitigating Hazards: Flooding, Severe Storms, Hurricanes, Sinkholes, Landslides, Drought, Technical Hazards
Prior Actions: See Comprehensive Planning Document
Future Actions: Clarify need for expansion of local watershed management in Florence and potential for cooperating with a county wide initiative.



Forest and Vegetation Management
Partners: Alabama Forest Commission (AFC), AL Cooperative Extension Service
Priority: Low
Lead Responsibility: City of Florence Planning Dept.
Estimated Cost: Not determined
Funding Sources: Not determined
Mitigating Hazards: Wildfires, Landslides, Sinkholes
Prior Actions: Ongoing support of the AFC
Future Actions: Continue to develop and promote best management practices for forests in conjunction with the AFC. This information needs to be further disseminated to local landowners by extension service providers.



Wetland Restoration and Preservation
Partners: Mayor & Council, City Engineer, Building Dept, City of Florence Planning Dept.
Priority: Low
Lead Responsibility: Florence Engineering Dept.
Estimated Cost: No additional cost
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating *Hazards*: Flooding
Prior Actions: Ordinances protecting existing wetlands.
Future Actions: Section 404 Permitting requires a permit from the Army Corps of Engineers when modifying a wetland area. Evaluation of existing wetlands within the city should be reevaluated and determined whether further action should be taken.

CITY OF FLORENCE MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION



Open Space Easements and Acquisition
Partners: Mayor & Council, Urban Forestry, Planning Dept.
Priority: Low
Lead Responsibility: Recreation Department
Estimated Cost: Undetermined
Funding Sources: Local and Regional Land Trusts
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Landslides, Sinkholes
Prior Actions: Continued efforts from previous plan update.
Future Actions: Establish open space and passive recreation as a priority within recreational planning as a hazard mitigation strategy. This strategy should be weighed against the available density requirements within the city.



Urban Forestry Planning Programs
Partners: Mayor & Council, City Engineer, Utility Department, Planning Dept. Recreational Dept.
Priority: Medium
Lead Responsibility: Urban Forestry Department
Estimated *Cost*: Not determined at this time.
Funding Sources: need to be clarified
Mitigating Hazards: Flooding, Drought, Heat and Wildfires
Prior Actions: Ongoing urban forestry efforts include analysis and daily installation and maintenance programs.
Future Actions: Clarification for future actions for mitigating specific natural hazards needs to be completed.



Media Mitigation Training Sessions
Partners: City Engineer, Mayor & Council, Planning Department
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: No additional cost
Funding Sources: n/a
Mitigating Hazards: May mitigate all hazards.
Prior Actions: Continued efforts from last plan update.
Future Actions: Establish biannual training sessions for local and regional media to be briefed on hazard mitigation and natural disasters. Combining this event with other training sessions or adjacent EMA entities may be of benefit.



Water Resource Conservation Programs
Partners: TVA, National Resource Conservation Service (NRCS),
Priority: Low
Lead Responsibility: Florence-Lauderdale EMA, Florence Utilities
Estimated Cost: Not determined at this time.
Funding Sources: NRCS, EPA, ADEM, FEMA
Mitigating Hazards: Flooding, Drought, Heat, Wildfires, Dam/Levee Failure, Landslides, Sinkholes, Technical Hazards.
Prior Actions: Land use and land planning strategies.
Future Actions: Host a roundtable discussion involving sustainable methods of development for the jurisdiction. This should include a breakout session on water resource protection headed by the NRCS.

CITY OF FLORENCE MITIGATION STRATEGIES:
STRUCTURAL PROJECTS



Storm Water Flood Walls
Partners: Mayor & Council, F-L EMA, Florence Planning Department
Priority: Low
Lead Responsibility: Street Department/City Engineer
Estimated Cost: Not determined at this time
Funding Sources: Not determined use on an emergency basis.
Mitigating Hazards: Flooding
Prior Actions: On- going efforts to mitigate flooding have been underway.
Future Actions: Evaluate and identify specific areas that need storm water flood walls that will redirect storm water from undesirable areas until long term mitigation projects can be undertaken.

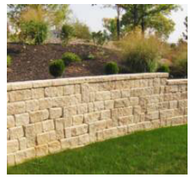


Storm Water Diversion Culverts
Partners: ALDOT, Mayor & Council
Priority: High
Lead Responsibility: Engineering Department
Estimated Cost: Not determined at this time.
Funding Sources: Local Match, ADEM, A-EMA, FEMA
Mitigating Hazards: Flooding
Prior Actions: Continued efforts from previous plan update.
Future Actions: Identify and document specific areas needing storm water diversion culverts and those that are in need of repair. Each should be mapped for planning purposes and placed in a long range implementation list.

CITY OF FLORENCE MITIGATION STRATEGIES:
STRUCTURAL PROJECTS



Seawalls
Partners: Mayor & Council, F-L EMA, Planning Department, TVA
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: Not determined at this time.
Funding Sources: Local, TVA
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: Identify and document specific areas needing seawalls. Each should be mapped for planning purposes and placed in a long range implementation list.



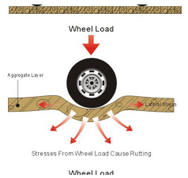
Retaining Walls
Partners: Mayor & Council
Priority: Low
Lead Responsibility: City Engineer
Estimated Cost: Not determined at this time
Funding Sources: Local Funds
Mitigating Hazards: Landslides, Technical Hazards
Prior Actions: On -going efforts to construct any needed retaining walls along municipal rights-of-way continues.
Future Actions: Continue to identify maintenance areas and needed retaining walls as they arise.



Neighborhood & Community Safe Rooms
Partners: Mayor & Council, F-L EMA, Local Churches and Community Centers.
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: Not determined at this time.
Funding Sources: A-EMA, PDM, ADECA, Local Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Continued efforts from previous plan update.
Future Actions: Clarify any future needs for additional safe centers within the city and update existing safe centers. Attempt to use multi-use facilities that are occupied at other times than during storm periods. Rolling blackouts may be administered to the community, shelters will provide heat as a warming center.



Storm Sewer System Construction
Partners: Mayor & Council, City Engineer,
Priority: High
Lead Responsibility: City Engineer
Estimated Cost: Not determined at this time.
Funding Sources: ADECA, ADEM, PDM, A-EMA
Mitigating Hazards: Flooding, Landslides, Sinkhole, Technical Hazards
Prior Actions: Ongoing improvements to the storm sewer system within the city.
Future Actions: Evaluate current repetitive flood areas and determine whether storm sewer improvements will assist in reducing the flood damage. This should be evaluated in conjunction with real-estate purchase programs as a cost benefit analysis.



Ground Stabilization
Partners: Mayor & Council, F-L EMA, Planning Dept.
Priority: Medium
Lead Responsibility: Street Department, City Engineer
Estimated Cost: Not determined at this time.
Funding Sources: Local,
Mitigating Hazards: Most all identified hazards.
Prior Actions: No previous actions.
Future Actions: Identify areas within the planning area where soils are unstable and not favorable to new construction without utilizing soil stabilization methods prior to construction.



Reservoir Construction
Partners: TVA, F-L EMA, Engineering Dept.
Priority: Low
Lead Responsibility: TVA, F-L EMA
Estimated Cost: Not determined at this time.
Funding Sources: Local, FEMA, TVA
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: On-going communication and coordination between partners to determine if reservoir construction is needed.

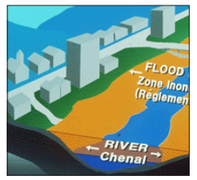


Dam Modifications
Partners: TVA, F-L EMA, Engineering Dept.
Priority: Low
Lead Responsibility: TVA
Estimated Cost: Not determined at this time.
Funding Sources: TVA
Mitigating Hazards: Flooding, Dam Levee Failure
Prior Actions: No previous actions.
Future Actions: On-going communication and coordination with TVA of all significant dam modifications and changes to adjacent land use.

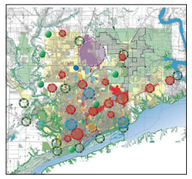
TOWN OF KILLEN MITIGATION STRATEGIES:
PREVENTION



Capital Improvements Programs
Partners: Municipal Departments
Priority: Medium
Lead Responsibility: Mayor & Council
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions taken.
Future Actions: Evaluate the use of a capital improvements program within the planning period of this plan for the Town of Killen. Implementation should include funding for specific mitigation strategies for reducing overall risk in the community.



Flood Plain Management Programs
Partners: F-L EMA, ADEM, TVA, Mayor and Town Council, County Engineer
Priority: Low
Lead Responsibility: Killen Planning Commission, Mayor and Town Council
Estimated Cost: Undetermined
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Ass. (FMA)
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: Participation in the NFIP program with good standing.
Future Actions: Continue support for NFIP program and implement program's goals and objectives.



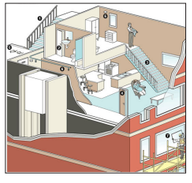
Comprehensive Planning
Partners: Mayor & Council, F-L EMA, NACOLG
Priority: Low
Lead Responsibility: Killen Planning Commission
Estimated Cost: $15,000.00 to $30,000.00
Funding Sources: Local Funds
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Completion of Killen Comprehensive Plan updated 2008.
Future Actions: On- going implementation of current plan with evaluation for inclusion of identified hazard mitigation principles. Preparation for future planning updates in three to five years from prior plan completion date.



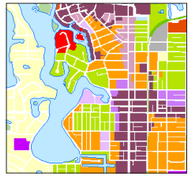
Subdivision Regulations
Partners: Local Developers, NACOLG, ADECA
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: No additional cost
Funding Sources: Not applicable
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Town currently uses subdivision regulations to reduce risk to citizens of the community.
Future Actions: Evaluate the need for updates to the subdivision regulations in regards to the risk assessment and the updated comprehensive plan.



Burn Permits
Partners: Mayor and Town Council, Sheriff's Dept., Urban Forestry
Priority: High
Lead Responsibility: Mayor and Town Council
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Wildfires, Landslides
Prior Actions: No previous actions.
Future Actions: Continue public awareness through public outreach programs.



Building Codes & Construction Requirements
Partners: Mayor & Council, F-L EMA
Priority: Medium
Lead Responsibility: Codes Enforcement, Town Hall
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Yearly review and evaluation of updates.
Future Actions: Evaluate current building code for achieving identified mitigation strategies and identified risks within the risk assessment of this document.

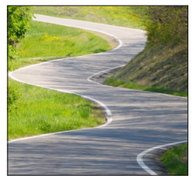


Land Use Development Regulations
Partners: ADECA, NACOLG
Priority: Low
Lead Responsibility: Killen Planning Commission
Estimated Cost: No additional cost at this time
Funding Sources: Local Funds
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Dam/Levee Failures, Technical Hazards
Prior Actions: The town currently uses land use development regulations.
Future Actions: Evaluate the existing regulations for mitigating risk in relation to identified hazards within the town. Adopt any needed updates to the regulations.



Safe Shelter Site Planning
Partners: F-L EMA, A-EMA, ADECA
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: No additional cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Evaluated current shelters during mitigation planning efforts.
Future Actions: Evaluate the need for additional shelters and analyze the appropriate site placement prior to seeking property.

TOWN OF KILLEN MITIGATION STRATEGIES: PREVENTION



Public Right-of-Way Maintenance Regulations
Partners: Mayor and Town Council, County Engineer, F-L EMA, ALDOT
Priority: Medium
Lead Responsibility: Mayor and Town Council, County Engineer, ALDOT
Estimated Cost: Not determined at this time.
Funding Sources: ALDOT, HMGP, PDM, Local Match
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: Monitor and document needed right-of-way maintenance and sharing information to the correct entities.

Planning & Land Use Studies



Partners: Mayor and Town Council, F-L EMA, County Engineer
Priority: Low
Lead Responsibility: Mayor and Town Council, Planning Commission
Estimated *Cost*: Undetermined
Funding Sources: ADECA, HUD, A-EMA, ADEM, USDA
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: The Town has conducted many planning studies over the past decade.
Future Actions: Evaluate plans for update to include hazard mitigation components.

TOWN OF KILLEN MITIGATION STRATEGIES: PROPERTY PROTECTION



Real-Estate Flood Prone Property Acquisition
Partners: Mayor and Town Council, F-L EMA, A-EMA, ADECA
Priority: Medium
Lead Responsibility: Mayor and Town Council, County Engineer
Estimated Cost: Not determined
Funding Sources: A-EMA, ADECA, HMGP, PDM, NFIP, Local Funds
Mitigating Hazards: Floods
Prior Actions: No previous actions.
Future Actions: Provide public education and discussions with potential property owners in need of purchase. Specifically evaluate repetitive loss properties in municipal limits.



R**eal-Estate Disclosure Requirements**
Partners: F-L EMA, Local and regional legislative delegation, Municipal Attorney.
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Not estimated
Funding Sources: n/a
Mitigating Hazards: Floods
Prior Actions: Continued efforts from previous plan update.
Future Actions: Initiate discussions within the council to decide whether further real-estate disclosure is necessary to prevent repetitive loss properties from continued development.

TOWN OF KILLEN MITIGATION STRATEGIES: NATURAL RESOURCE PROTECTION



Hazard Information Kiosk
Partners: Mayor & Council
Priority: Low
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: May assists in mitigating all hazards
Prior Actions: Continued efforts from last plan update.
Future Actions: Install an informative kiosk to promote hazard mitigation within the Town of Killen as well as within the county.

TOWN OF KILLEN MITIGATION STRATEGIES:
PUBLIC EDUCATION AND AWARENESS



Hazard Mitigation Plan & Pamphlet Distribution
Partners: F-L EMA, A-EMA, ADEM
Priority: High
Lead Responsibility: Planning Commission, County Engineer
Estimated Cost: $3,000.00 to $5,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM
Mitigating Hazards: Assists is mitigating hazards discussed.
Prior Actions: Publication of the 2010 Mitigation Plan.
Future Actions: Clarify funding sources and specify hazard to be discussed in the pamphlet and its strategy for mitigating the specific hazard. This hazard can occur heavily within the town or be part of a broad county wide initiative with other jurisdictions.



Flood Map Information Distribution
Partners: F-L EMA, Mayor & Council, FEMA, NFIP State Coordinator
Priority: High
Lead Responsibility: Planning Commission, Town Council, County Engineer
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HUD
Mitigating Hazards: Floods
Prior Actions: No previous actions.
Future Actions: Initiate discussion with NFIP Coordinator and A-EMA to acquire current methods of distributing flood map information to the general public. These methods should be evaluated for use in the Town of Killen and modified accordingly.

NOAA Weather Radio Programs
Partners: F-L EMA
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Undetermined
Funding Sources: A-EMA, FMA, PDM Local Non-Profits
Mitigating Hazards: Tornadoes, Flooding, Severe, Storms, Hurricanes, Winter Freezes, Earthquakes, Drought
Prior Actions: Distribution of weather radios to critical facilities in Killen
Future Actions: Develop NOAA weather radio public and private partners. Continue to distribute weather radios to local entities in need.



Press & Media Mitigation Releases
Partners: F-L EMA, Mayor & Council, Municipal Departments
Priority: Low
Lead Responsibility: Mayor, Commission, and Council, Florence-Lauderdale EMA
Estimated Cost: No additional cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions taken.
Future Actions: Identify funding sources to complete an existing needs assessment and site selection process for safe shelters in the county and incorporated areas.

TOWN OF KILLEN MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION



Stream / River Corridor Restoration
Partners: Mayor & Council. F-L EMA,
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: Not determined at this time
Funding Sources: ADEM, A-EMA, Local Funds, HUD, EPA
Mitigating Hazards: Flooding
Prior Actions: No previous actions have occurred.
Future Actions: Evaluation of current stream and tributary inventory for future restoration.



Watershed Management Programs
Partners: F-L EMA, Mayor & Council, County Engineer, TVA
Priority: Low
Lead Responsibility: Undetermined
Estimated Cost: Undetermined
Funding Sources: TVA
Mitigating Hazards: Flooding, Severe Storms, Hurricanes, Sinkholes, Landslides, Drought, Technical Hazards
Prior Actions: No previous actions.
Future Actions: Clarify need for expansion of local watershed management in Killen and potential for cooperating with a county wide initiative.

TOWN OF KILLEN MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION



Forest and Vegetation Management
Partners: Alabama Forest Commission (AFC), AL Cooperative Extension Service
Priority: Low
Lead Responsibility: Mayor and Council, Planning Commission
Estimated Cost: Not determined
Funding Sources: Not determined
Mitigating Hazards: Wildfires, Landslides, Sinkholes
Prior Actions: No previous action.
Future Actions: Develop and promote best management practices for forests in conjunction with the AFC.



Open Space Easements and Acquisition
Partners: Mayor & Council, Planning Commission
Priority: Low
Lead Responsibility: Planning Commission
Estimated Cost: Undetermined
Funding Sources: Local and Regional Land Trusts
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Landslides, Sinkholes
Prior Actions: No previous actions.
Future Actions: Establish open space and passive recreation as a priority within recreational planning as a hazard mitigation strategy. This strategy should be weighed against the available density requirements within the town.



Media Mitigation Training Sessions
Partners: Mayor & Council, F-L EMA
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: No additional cost
Funding Sources: n/a
Mitigating Hazards: May mitigate all hazards.
Prior Actions: No previous actions.
Future Actions: Establish biannual training sessions for local media to be briefed on hazard mitigation and natural disasters. Combining this event with other training sessions or adjacent EMA entities may be of benefit.



Wetland Restoration and Preservation
Partners: Mayor & Council, ADEM
Priority: Low
Lead Responsibility: Mayor and Council, Planning Commission
Estimated Cost: No additional cost
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating *Hazards*: Flooding
Prior Actions: Ordinances protecting existing wetlands.
Future Actions: Section 404 Permitting requires a permit from the Army Corps of Engineers when modifying a wetland area. Evaluation of existing wetlands within the city should be reevaluated and determined whether further action should be taken.



Urban Forestry Planning Programs
Partners: Mayor & Council, Planning Commission
Priority: Medium
Lead Responsibility: Planning Commission
Estimated *Cost*: Not determined at this time.
Funding Sources: Need to be clarified
Mitigating Hazards: Flooding, Drought, Heat and Wildfires
Prior Actions: No previous actions.
Future Actions: Clarification for future actions for mitigating specific natural hazards needs to be completed.

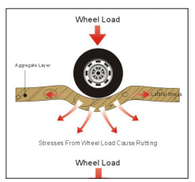


Water Resource Conservation Programs
Partners: TVA, National Resource Conservation Service (NRCS),
Priority: Low
Lead Responsibility: Florence-Lauderdale EMA, Mayor and Council, Planning Commission
Estimated Cost: Not determined at this time.
Funding Sources: NRCS, EPA, ADEM, FEMA
Mitigating Hazards: Flooding, Drought, Heat, Wildfires, Dam/Levee Failure, Landslides, Sinkholes, Technical Hazards.
Prior Actions: No previous actions.
Future Actions: Host a roundtable discussion involving sustainable methods of development for the jurisdiction. This should include discussion on water resource protection headed by the NRCS.

TOWN OF KILLEN MITIGATION STRATEGIES:
STRUCTURAL PROJECTS



Neighborhood & Community Safe Rooms
Partners: Mayor & Council, F-L EMA, Local Churches and Community Centers.
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: Not determined at this time.
Funding Sources: A-EMA, PDM, ADECA, Local Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: No previous efforts.
Future Actions: Clarify any future needs for additional safe centers within the town and update existing safe centers. Attempt to use multi-use facilities that are occupied at other times than during storm periods. Rolling blackouts may be administered to the community, shelter will provide heat as a warming center.



Ground Stabilization
Partners: Mayor & Council, F-L EMA
Priority: Medium
Lead Responsibility: Mayor and Council, Planning Commission, County Engineer
Estimated Cost: Not determined at this time.
Funding Sources: Local
Mitigating Hazards: Most all identified hazards.
Prior Actions: No previous actions.
Future Actions: Identify areas within the planning area where soils are unstable and not favorable to new construction without utilizing soil stabilization methods prior to construction.

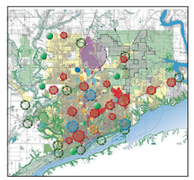


Storm Sewer System Construction
Partners: Mayor & Council, County Engineer,
Priority: High
Lead Responsibility: Mayor and Town Council, Planning Commission
Estimated Cost: Not determined at this time.
Funding Sources: ADECA, ADEM, PDM, A-EMA
Mitigating Hazards: Flooding, Landslides, Sinkhole, Technical Hazards
Prior Actions: No previous actions.
Future Actions: Evaluate current repetitive flood areas and determine whether storm sewer improvements will assist in reducing the flood damage. This should be evaluated in conjunction with real-estate purchase programs as a cost benefit analysis.



Reservoir Construction
Partners: TVA, F-L EMA, Mayor and Council
Priority: Low
Lead Responsibility: Mayor and Council, Planning Commission, TVA, F-L EMA
Estimated Cost: Not determined at this time.
Funding Sources: Local, FEMA, TVA
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: On-going communication and coordination between partners to determine if reservoir construction is needed.

TOWN OF LEXINGTON MITIGATION STRATEGIES:
PREVENTION



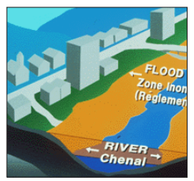
Comprehensive Planning
Partners: Mayor & Council, F-L EMA, NACOLG
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: $15,000.00 to $30,000.00
Funding Sources: Local Funds
Mitigating Hazards: Assists is mitigating all hazards
Prior Actions: Continued efforts from previous plan update.
Future Actions: Continue to implement the comprehensive plan developed and adopted by the planning commission.



Public Right-of-Way Maintenance Regulations
Partners: County Engineer, County Commission, F-L EMA, ALDOT
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: Not determined at this time.
Funding Sources: ALDOT, HMGP, PDM
Mitigating Hazards: Flooding
Prior Actions: Previous actions include ongoing maintenance.
Future Actions: Continue to monitor and document needed right-of-way maintenance and sharing information to the correct and corresponding entities.



Mitigation Planning Technology Support
Partners: Mayor & Council, A-EMA, FEMA,
Priority: High
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, ADEM, local match
Mitigating Hazards: All hazards may be mitigated
Prior Actions: Town of Lexington continues to work with the county EMA to implement mitigation technologies.
Future Actions: Continue implementation of warning sirens as identified and update existing ones. Evaluate the need for installing a telephone based warning system.



Flood Plain Management Programs
Partners: F-L EMA, ADEM, TVA, County Engineer
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Not determined
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Ass. (FMA)
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: Participates in the NFIP and is in good standing.
Future Actions: Continued participation and implementation of NFIP policies and objectives.



Safe Shelter Site Planning
Partners: F-L EMA, A-EMA, ADECA
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: $3,000.00 to $5,000.00
Funding Sources: Local Funds, A-EMA, FEMA, ADECA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Evaluated current shelters during mitigation planning efforts.
A community safe room at Grass, 14269 Hwy 64 Lexington, AL 35648 is proposed. (Rolling blackouts may be to the community shelter s providing heat as a warming center.)
Future Actions: Continue to evaluate the need for additional shelters and analyze the appropriate site placement prior to seeking property.

TOWN OF LEXINGTON MITIGATION STRATEGIES: PROPERTY PROTECTION



Emergency Power Generation
Partners: F-L EMA
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Undetermined
Funding Sources: Funding determined on a project by project basis
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: On- going emergency power generation efforts in conjunction with the county EMA.
Future Actions: Evaluate further emergency power generation needs within the town in conjunction with the County EMA.

TOWN OF LEXINGTON MITIGATION STRATEGIES: PUBLIC EDUCATION AND AWARENESS



Hazard Information Kiosk
Partners: Mayor & Council
Priority: Low
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: May assists in mitigating all hazards.
Prior Actions: Continued efforts from previous plan update.
Future Actions: In conjunction with the F-L EMA there should be a kiosk type and location selected to promote hazard mitigation within the Town of Lexington. In addition, the town supports all outreach and media development projects.

TOWN OF LEXINGTON MITIGATION STRATEGIES: STRUCTURAL PROJECT

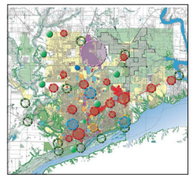


Neighborhood & Community Safe Rooms
Partners: F-L EMA, Local Churches and Community Centers.
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: Not determined at this time.
Funding Sources: A-EMA, PDM, ADECA, Local Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Continued efforts from previous plan update. A community safe room is proposed at Grassy – 14269 Hwy 64 Lexington, AL 35648
Future Actions: Clarify any future needs for additional safe centers within the city and update existing safe center facilities. Attempt to use multi-use facilities that are occupied at other times than only during storm periods. Rolling blackouts may be administered to the community, shelters will provide heat as a warming center.



Storm Water Flood Walls
Partners: F-L EMA, County Engineer
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Not determined at this time.
Funding Sources: Undetermined, case-by-case basis.
Mitigating Hazards: Flooding
Prior Actions: On- going efforts to mitigate flooding have been underway.
Future Actions: Evaluate and identify specific areas that need storm water floodwalls that will redirect storm water from undesirable areas until long-term mitigation projects can be undertaken.

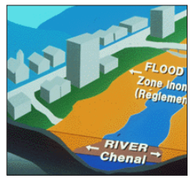
TOWN OF ROGERSVILLE MITIGATION STRATEGIES:
PREVENTION



Comprehensive Planning
Partners: F-L EMA, A-EMA, NACOLG
Priority: Low
Lead Responsibility: Mayor and Council
Estimated Cost: $15,000.00 to $25,0000.00
Funding Sources: Local Match, ADECA, PDM
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Existing land use regulations and zoning map have been implemented.
Future Actions: Seek support for continued comprehensive plan implementation in the Town of Rogersville through community discussions. Evaluate political will and available funding sources.



Mitigation Planning Technology Support
Partners: F-L EMA, FEMA, A-EMA
Priority: High
Lead Responsibility: Mayor and Council
Estimated Cost: Undetermined
Funding Sources: PDM, Local Funds, County Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Previously installed five warning sirens within the geographical area of Rogersville.
Future Actions: Continuing to oversee future installation of additional warning sirens in the community.



Flood Plain Management Programs
Partners: F-L EMA, County Engineer, TVA,
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: Not determined at this time.
Funding Sources: ADECA, ADEM, PDM, A-EMA
Mitigating Hazards: Flooding, Severe Storms
Prior Actions: Continued efforts from previous plan and implementation of NFIP policies.
Future Actions: Evaluate regional support for a watershed management plan with supporting ordinances from each jurisdiction in the planning study area.



Safe Shelter Site Planning
Partners: F-L EMA, County Engineer, NACOLG
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: $8,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Continued efforts from previous plan update.
Future Actions: Evaluate a scope of work and funding sources to identify current safe shelters and future needs for safe shelters. Planning should identify appropriate sites for locating safe shelters that are multi-use facilities.

TOWN OF ROGERSVILLE MITIGATION STRATEGIES:
PROPERTY PROTECTION



Property Protection:
Emergency Power Generation
Partners: Co. Engineer, F-L EMA, A-EMA, ADECA
Priority: Medium
Lead Responsibility: Mayor & Council
Estimated Cost: Undetermined
Funding Sources: HMGP, A-EMA, PDM
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: No previous actions taken.
Future Actions: Identify critical facilities in Rogersville that do not have emergency power and pursue funds within the planning period to provide emergency power.

TOWN OF ROGERSVILLE MITIGATION STRATEGIES:
PUBLIC EDUCATION AND AWARENESS



Hazard Information Kiosk
Partners: F-L EMA, A-EMA
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: Undetermined
Funding Sources: F-L EMA, A-EMA, PDM
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Public meetings on the existing hazard mitigation plan.
Future Actions: Establish opportunities for a portable EMA kiosk to be placed at events within the Town of Rogersville. The town will support all methods of public awareness for hazard mitigation and natural disasters such as outreach projects and media training.



School Age Education Programs
Partners: F-L EMA, A-EMA, PDM, County School System
Priority: Moderate
Lead Responsibility: Mayor & Council
Estimated Cost: Not determined at this time.
Funding Sources: ADEM, A-EMA, PDM, ADECA
Mitigating Hazards: Mitigates all identified hazards.
Prior Actions: Continued efforts from previous plan update to seek opportunities to foster school age education programs.
Future Actions: Identify opportunities to have speakers and displays about hazard mitigation priorities within local schools.



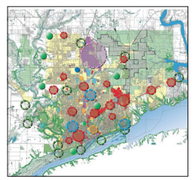
Adult & Community Education Programs
Partners: A-EMA, Co. Commissioners, Academic Institutions
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: $500.00 (combine with F-L EMA)
Funding Sources: A-EMA, Local Match
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Previous actions include citizen & stakeholder hazard mitigation meetings and local workshops.
Future Actions: Conduct public workshops that involve citizens and municipal leaders of the Town of Rogersville.

TOWN OF ROGERSVILLE MITIGATION STRATEGIES:
STRUCTURAL PROJECT

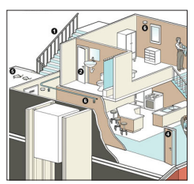


Structural Projects:
Neighborhood & Community Safe Rooms
Partners: F-L EMA, Local Churches and Community Centers.
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: Not determined at this time
Funding Sources: A-EMA, PDM, ADECA, Local Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Reviewed and applied for shelter design and construction. Community safe room is proposed at Turnersville – Mt. Bethel United Methodist Church 1743 Cr-53 Rogersville, AL 35652.
Future Actions: Clarify any future needs for additional safe centers within the town and update existing safe center facilities. Attempt to use multi-use facilities that are occupied at other times than only during storm periods. Rolling blackouts may be administered to the community, shelters will provide heat as a warming center.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
PREVENTION



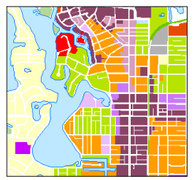
Comprehensive Planning
Partners: Mayor & Council, F-L EMA, NACOLG
Priority: Low
Lead Responsibility: St Florian Planning Commission
Estimated Cost: $15,000.00 to $30,000.00
Funding Sources: Local Funds, ADECA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Completed Sketch Plan Implementing Comprehensive Plan; consider plan update.
Future Actions: On- going implementation of current plan with evaluation for inclusion of identified hazard mitigation principles. Preparation for future planning updates in three to five years from prior plan completion date.



Building Codes & Construction Requirements
Partners: Mayor & Council, F-L EMA
Priority: Medium
Lead Responsibility: Planning Commission, Mayor and Council, County Engineer
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Yearly review and evaluation of updates.
Future Actions: Evaluate current building code for achieving identified mitigation strategies and identified risks within the risk assessment of this document.



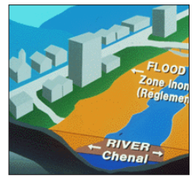
Storm Water Management
Partners: F-L EMA, ADEM, A-EMA, Mayor and Council
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: Not estimated
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Assistance. (FMA), ADEM
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: Town has subdivision ordinance in place that could be updated to reflect any storm water management practices..
Future Actions: Seek contemporary methods to mitigate storm water runoff through best management practices.



Land Use Development Regulations
Partners: ADECA, NACOLG
Priority: Low
Lead Responsibility: St. Florian Planning Commission
Estimated Cost: No additional cost at this time
Funding Sources: Local Funds
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Dam/Levee Failures, Technical Hazards
Prior Actions: The town currently uses land use development regulations.
Future Actions: Evaluate the existing regulations for mitigating risk in relation to identified hazards within the town. Adopt any needed updates to the regulations.



Subdivision Regulations
Partners: Local Developers, NACOLG, ADECA
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: No additional cost
Funding Sources: Not applicable
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Town currently uses subdivision regulations to reduce risk to citizens of the community.
Future Actions: Evaluate the need for updates to the subdivision regulations in regards to the risk assessment and the updated comprehensive plan.



Flood Plain Management Programs
Partners: F-L EMA, ADEM, TVA, Mayor and Town Council, County Engineer
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Town Council
Estimated Cost: Undetermined
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Ass. (FMA)
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: Participation in the NFIP program with good standing.
Future Actions: Continue support for NFIP program and implement program's goals and objectives.

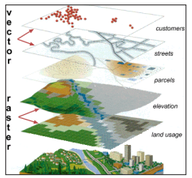


Burn Permits
Partners: Mayor and Town Council, Sheriff's Dept., Urban Forestry
Priority: High
Lead Responsibility: Mayor and Town Council
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Wildfires, Landslides
Prior Actions: No previous actions.
Future Actions: Continue public awareness through public outreach programs.

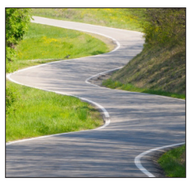


Safe Shelter Site Planning
Partners: F-L EMA, A-EMA, ADECA
Priority: High
Lead Responsibility: Mayor & Council
Estimated Cost: No additional cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Evaluated current shelters during mitigation planning efforts.
Future Actions: Evaluate the need for additional shelters and analyze the appropriate site placement prior to seeking property.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES: PREVENTION



Geographic Information Systems
Partners: F-L EMA, Mayor and Council
Priority: Medium
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: No additional cost.
Funding Sources: Not applicable
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: GIS data has been gathered through a collective agreement of participating jurisdictions.
Future Actions: Completion of the current land use update for the Town of St. Florian.



Public Right-of-Way Maintenance Regulations
Partners: Mayor and Town Council, County Engineer, F-L EMA, ALDOT
Priority: Medium
Lead Responsibility: Mayor and Town Council, County Engineer, ALDOT
Estimated Cost: Not determined at this time.
Funding Sources: ALDOT, HMGP, PDM, Local Match
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: Monitor and document needed right-of-way maintenance and sharing information to the correct entities.

Critical Facility Assessments



Partners: F-L EMA, Mayor and Council
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: Not determined at this time.
Funding Sources: Not determined at this time.
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action taken.
Future Actions: Establish critical facility minimum standards for the Town of St. Florian. The assessment should address building and site vulnerabilities to hazards.



Planning & Land Use Studies
Partners: Mayor and Town Council, F-L EMA, County Engineer
Priority: Low
Lead Responsibility: Mayor and Town Council, Planning Commission
Estimated *Cost*: Undetermined
Funding Sources: ADECA, HUD, A-EMA, ADEM, USDA
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: The Town has conducted many planning studies over the past decade.
Future Actions: Evaluate plans for update to include hazard mitigation components.

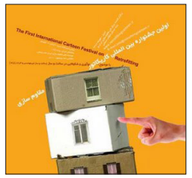


Mitigation Planning Technology Support
Partners: F-L EMA, FEMA, A-EMA, Mayor and Town Council
Priority: High
Lead Responsibility: Mayor and Council
Estimated Cost: Undetermined
Funding Sources: PDM, Local Funds, County Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: No previous action.
Future Actions: Continuing to oversee future installation of five additional warning sirens in the Town of St. Florian.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES: PROPERTY PROTECTION



Real-Estate Flood Prone Property Acquisition
Partners: F-L EMA, A-EMA, ADECA, Mayor and Council
Priority: High
Lead Responsibility: Mayor and Council, County Engineer
Estimated Cost: Not determined
Funding Sources: A-EMA, ADECA, HMGP, PDM, NFIP, Local Funds
Mitigating Hazards: Floods
Prior Actions: No previous actions..
Future Actions: Initiate public education and discussions with potential property owners in need of purchase. Specifically evaluate repetitive loss properties in the town.



Flood Prone Building Proofing and Retrofitting
Partners: F-L EMA, A-EMA, ADECA, Mayor and Council
Priority: Low
Lead Responsibility: Mayor and Council, County Engineer
Estimated Cost: Not determined
Funding Sources: A-EMA, ADECA, HMGP, PDM, NFIP, Local Funds
Mitigating Hazards: Floods
Prior Actions: No previous actions.
Future Actions: Identify buildings in floodplain areas that cannot be moved in the near future but could benefit from redesign or modifications to lessen adverse impacts from flooding events.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
PROPERTY PROTECTION



Critical Facilities Protection
Partners: F-L EMA, County Engineer, Mayor and Council
Priority: High
Lead Responsibility: Mayor and Council, Planning Commission, County Engineer
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HMGP, PDM, FEMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action,
Future Actions: Target funding sources to complete redesign of critical facilities if identified in the critical facility analysis.



Emergency Power Generation
Partners: F-L EMA, County Engineer, Mayor and Council
Priority: High
Lead Responsibility: Mayor and Council
Estimated Cost: Undetermined
Funding Sources: Funding determined on a project by project basis.
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: On- going emergency power generation efforts.
Future Actions: Clarify specific entities that need emergency power generation and document them. Then complete the power generation projects once funds have been identified.



Separate Sewer System Collection & Protection
Partners: Mayor and Council
Priority: Low
Lead Responsibility: Mayor and Council
Estimated Cost: Undetermined
Funding Sources: Determined upon project clarification.
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action.
Future Actions: Assess funding sources for completing separate sewer and storm water collection.

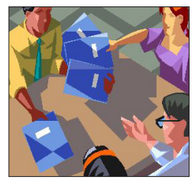


Storm Shutter Programs and Installation
Partners: Mayor and Council
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: Determined on project by project basis.
Funding Sources: Undetermined
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions taken.
Future Actions: Determine what locations and building in the town would benefit from storm shutter installation and explore funding options for interested entities.



Installation of Shatter Resistant Glass and Building Retrofit
Partners: Mayor and Council
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: Determined on project by project basis.
Funding Sources: Undetermined
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions.
Future Actions: Clarify that shatter resistant glass is required within municipal building codes within the town for all commercial properties. Evaluate further implementation of the requirement on a cost benefit analysis.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
PUBLIC EDUCATION AND AWARENESS



Outreach Projects
Partners: F-L EMA, Mayor and Council
Priority: High
Lead Responsibility: F-L EMA, Mayor and Council
Estimated *Cost*: Undetermined
Funding Sources: A-EMA, PDM, Local Funds
Mitigating Hazards: May assists in mitigating all hazards.
Prior Actions: No previous actions.
Future Actions: Select the greatest impacting hazard to the town and initiate an educational program to mitigate that hazard. Quantitative data indicates that floods are the most costly hazard in St. Florian and the region.

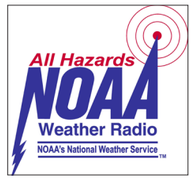


Real-Estate Disclosure Requirements
Partners: F-L EMA, Local and regional legislative delegation, Municipal Attorney.
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: Not estimated
Funding Sources: n/a
Mitigating Hazards: Flooding
Prior Actions: No previous action.
Future Actions: Initiate discussions within the council to decide whether further real-estate disclosure is necessary to prevent repetitive loss properties from continued development

TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
PUBLIC EDUCATION AND AWARENESS



Adult & Community Education Programs
Partners: Mayor & Council, F-L EMA
Priority: High
Lead Responsibility: F-L EMA, Mayor and Council
Estimated Cost: $10,000.00 to $15,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions taken.
Future Actions: Educational program should be clarified for types of hazards to be discussed as well as method for reaching the desired audience. This program could come as a public service announcement with a second component of discussing hazards with to local civic clubs and groups



NOAA Weather Radio Programs
Partners: F-L EMA, Mayor & Council
Priority: Low
Lead Responsibility: F-L EMA
Estimated Cost: Undetermined
Funding Sources: A-EMA, FMA, PDM Local Non-Profits
Mitigating Hazards: Tornadoes, Flooding, Severe, Storms, Hurricanes, Winter Freezes, Earthquakes, Drought
Prior Actions: Distribution of weather radios to critical facilities.
Future Actions: Develop NOAA weather radio public and private partners. Local companies can contribute to a fund to distribute NOAA weather radio's to low income and identified families and entities.



Hazard Information Kiosk and Centers
Partners: Mayor and Council, County Engineer, F-L EMA
Priority: Low
Lead Responsibility: F-L EMA, Mayor and Council
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: May assists in mitigating all hazards.
Prior Actions: No previous actions.
Future Actions: Establish with department representatives the type and location for a hazard mitigation kiosk. The kiosk should be developed in a way to encourage interactive learning.



Hazard Mitigation Plan & Pamphlet Distribution
Partners: F-L EMA, A-EMA, ADEM, Mayor and Council
Priority: High
Lead Responsibility: Mayor and Council, F-L EMA
Estimated Cost: $3,000.00 to $5,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM
Mitigating Hazards: Assists in mitigating hazards discussed.
Prior Actions: Publication of the 2010 Mitigation Plan.
Future Actions: Clarify funding sources and specify hazard to be discussed in the pamphlet and its strategy for mitigating the specific hazard. This hazard can occur heavily within the city or be part of a broad county wide initiative with other jurisdictions.



Press & Media Mitigation Releases
Partners: F-L EMA, Mayor & Council
Priority: Low
Lead Responsibility: Council and Mayor, Florence-Lauderdale EMA
Estimated Cost: No additional cost.
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous actions.
Future Actions: Identify funding sources to complete an existing needs assessment and site selection process for safe shelters in the county and incorporated areas.



School Age Education Programs
Partners: F-L EMA, Mayor & Council
Priority: Medium
Lead Responsibility: County Schools, F-L EMA
Estimated Cost: $10,000.0 to 15,000.00
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action.
Future Actions: Clarify partners and scope of educational program to be implemented within the school system. FEMA should be able to recommend specific school age programs for the Lauderdale County School District.



Flood Map Information Distribution
Partners: F-L EMA, Mayor & Council, FEMA, NFIP State Coordinator
Priority: High
Lead Responsibility: Mayor and Council, County Engineer
Estimated Cost: Undetermined
Funding Sources: A-EMA, ADECA, HUD
Mitigating Hazards: Floods
Prior Actions: No previous action.
Future Actions: Initiate discussion with NFIP Coordinator and A-EMA to acquire current methods of distributing flood map information to the general public. These methods should be evaluated for use in the Town of St. Florian and modified accordingly.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION



Watershed Management Programs
Partners: F-L EMA, Mayor & Council, County Engineer, TVA
Priority: Low
Lead Responsibility: Undetermined
Estimated Cost: Undetermined
Funding Sources: TVA
Mitigating Hazards: Flooding, Severe Storms, Hurricanes, Sinkholes, Landslides, Drought, Technical Hazards
Prior Actions: No previous actions.
Future Actions: Clarify need for expansion of local watershed management in St. Florian and potential for cooperating with a county wide initiative.



Open Space Easements and Acquisition
Partners: Mayor & Council, Urban Forestry
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: Undetermined
Funding Sources: Local and Regional Land Trusts
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Landslides, Sinkholes
Prior Actions: No previous action.
Future Actions: Establish open space and passive recreation as a priority within recreational planning as a hazard mitigation strategy. This strategy should be weighed against the available density requirements within the town.



Sediment & Erosion Control
Partners: Mayor & Council
Priority: High
Lead Responsibility: Planning Commission, County Engineer
Estimated Cost: No additional Cost
Funding Sources: n/a
Mitigating Hazards: Flooding & Landslides
Prior Actions: Subdivision Ordinance in place.
Future Actions: Clarify that additional erosion control methods should be put in place that go beyond the erosion caused by new construction.



Forest and Vegetation Management
Partners: Alabama Forest Commission (AFC), AL Cooperative Extension Service
Priority: Low
Lead Responsibility: Mayor and Council, Planning Commission
Estimated Cost: Not determined
Funding Sources: Not determined
Mitigating Hazards: Wildfires, Landslides, Sinkholes
Prior Actions: Ongoing support of the AFC
Future Actions: Continue to develop and promote best management practices for forests in conjunction with the AFC. This information needs to be further disseminated to local landowners by extension service providers.



Urban Forestry Planning Programs
Partners: Mayor & Council, County Engineer
Priority: Medium
Lead Responsibility: Planning Commission, Mayor and Council
Estimated *Cost*: Not determined at this time.
Funding Sources: Need to be clarified
Mitigating Hazards: Flooding, Drought, Heat and Wildfires
Prior Actions: No previous actions.
Future Actions: Clarification for future actions for mitigating specific natural hazards needs to be completed.



Stream / River Corridor Restoration
Partners: Mayor & Council. F-L EMA, Urban Forestry
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council, County Engineer
Estimated Cost: Not determined at this time
Funding Sources: ADEM, A-EMA, Local Funds, HUD, EPA
Mitigating Hazards: Flooding
Prior Actions: Municipal cleanup programs have occurred.
Future Actions: Evaluation of current stream and tributary inventory for future restoration.



Wetland Restoration and Preservation
Partners: Mayor & Council, County Engineer
Priority: Low
Lead Responsibility: Mayor and Council, Planning Commission
Estimated Cost: No additional cost
Funding Sources: A-EMA, ADECA, HMGP, PDM, FMA
Mitigating *Hazards*: Flooding
Prior Actions: No previous action.
Future Actions: Section 404 Permitting requires a permit from the Army Corps of Engineers when modifying a wetland area. Evaluation of existing wetlands within the city should be reevaluated and determined whether further action should be taken.



Media Mitigation Training Sessions
Partners: County Engineer, Mayor & Council, Planning Department
Priority: High
Lead Responsibility: F-L EMA, Mayor and Council
Estimated Cost: No additional cost
Funding Sources: n/a
Mitigating Hazards: May mitigate all hazards.
Prior Actions: No previous action.
Future Actions: Establish biannual training sessions for local and regional media to be briefed on hazard mitigation and natural disasters. Combining this event with other training sessions or adjacent EMA entities may be of benefit.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
NATURAL RESOURCE PROTECTION



Water Resource Conservation Programs
Partners: Mayor and Council, TVA, National Resource Conservation Service (NRCS),
Priority: Low
Lead Responsibility: Florence-Lauderdale EMA, Mayor and Council
Estimated Cost: Not determined at this time.
Funding Sources: NRCS, EPA, ADEM, FEMA
Mitigating Hazards: Flooding, Drought, Heat, Wildfires, Dam/Levee Failure, Landslides, Sinkholes, Technical Hazards.
Prior Actions: Land use and land planning strategies.
Future Actions: Host a roundtable discussion involving sustainable methods of development for the jurisdiction. This should include discussion on water resource protection headed by the NRCS.

TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
STRUCTURAL PROJECTS



Storm Water Flood Walls
Partners: Mayor & Council, F-L EMA
Priority: Low
Lead Responsibility: Mayor and Council, Planning Commission
Estimated Cost: Not determined at this time
Funding Sources: Not determined use on an emergency basis.
Mitigating Hazards: Flooding
Prior Actions: No previous action
Future Actions: Evaluate and identify specific areas that need storm water flood walls that will redirect storm water from undesirable areas until long term mitigation projects can be undertaken.



Storm Water Diversion Culverts
Partners: ALDOT, Mayor & Council
Priority: High
Lead Responsibility: County Engineer, Mayor and Council
Estimated Cost: Not determined at this time.
Funding Sources: Local Match, ADEM, A-EMA, FEMA
Mitigating Hazards: Flooding
Prior Actions: Continued efforts from previous plan update.
Future Actions: Identify and document specific areas needing storm water diversion culverts and those that are in need of repair. Each should be mapped for planning purposes and placed in a long range implementation list.



Seawalls
Partners: Mayor & Council, F-L EMA
Priority: Low
Lead Responsibility: Mayor and Council, County Engineer
Estimated Cost: Not determined at this time.
Funding Sources: Local, TVA
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: Identify and document specific areas needing seawalls. Each should be mapped for planning purposes and placed in a long range implementation list.



Retaining Walls
Partners: Mayor & Council
Priority: Low
Lead Responsibility: County Engineer, Mayor and Council
Estimated Cost: Not determined at this time
Funding Sources: Local Funds
Mitigating Hazards: Landslides, Technical Hazards
Prior Actions: No previous action.
Future Actions: Continue to identify maintenance areas and needed retaining walls as they arise.



Neighborhood & Community Safe Rooms
Partners: Mayor & Council, F-L EMA, Local Churches and Community Centers.
Priority: High
Lead Responsibility: F-L EMA, Mayor and Council, Planning Commission
Estimated Cost: Not determined at this time.
Funding Sources: A-EMA, PDM, ADECA, Local Funds
Mitigating Hazards: All hazards may be mitigated.
Prior Actions: Continued efforts from previous plan update.
Future Actions: Clarify any future needs for additional safe centers within the town and update existing safe centers. Attempt to use multi-use facilities that are occupied at other times than during storm periods. Rolling blackouts may be administered to the community, shelters will provide heat as a warming center.

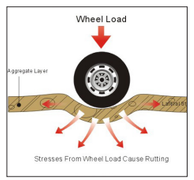
TOWN OF ST. FLORIAN MITIGATION STRATEGIES:
STRUCTURAL PROJECTS



Storm Sewer System Construction
Partners: Mayor & Council, County Engineer,
Priority: High
Lead Responsibility: Mayor and Council
Estimated Cost: Not determined at this time.
Funding Sources: ADECA, ADEM, PDM, A-EMA
Mitigating Hazards: Flooding, Landslides, Sinkhole, Technical Hazards
Prior Actions: No previous action.
Future Actions: Evaluate current repetitive flood areas and determine whether storm sewer improvements will assist in reducing the flood damage. This should be evaluated in conjunction with real-estate purchase programs as a cost benefit analysis.

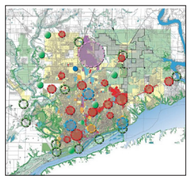


Reservoir Construction
Partners: TVA, F-L EMA, Mayor and Council
Priority: Low
Lead Responsibility: TVA, F-L EMA, Mayor and Council, Planning Commission
Estimated Cost: Not determined at this time.
Funding Sources: Local, FEMA, TVA
Mitigating Hazards: Flooding
Prior Actions: No previous actions.
Future Actions: On-going communication and coordination between partners to determine if reservoir construction is needed.

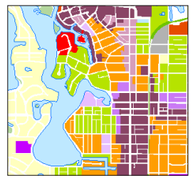


Ground Stabilization
Partners: Mayor & Council, F-L EMA
Priority: Medium
Lead Responsibility: Mayor and Council, County Engineer
Estimated Cost: Not determined at this time.
Funding Sources: Local,
Mitigating Hazards: Most all identified hazards.
Prior Actions: No previous actions.
Future Actions: Identify areas within the planning area where soils are unstable and not favorable to new construction without utilizing soil stabilization methods prior to construction.

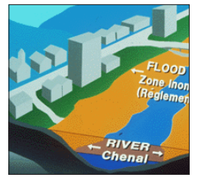
TOWN OF WATERLOO MITIGATION STRATEGIES:
PREVENTION



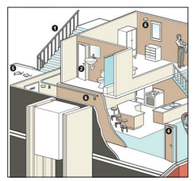
Comprehensive Planning
Partners: F-L EMA, NACOLG
Priority: Low
Lead Responsibility: Mayor & Council
Estimated Cost: $15,000.00 to $30,000.00
Funding Sources: Local Funds
Mitigating Hazards: Assists in mitigating all hazards
Prior Actions: Continued efforts from previous plan update.
Future Actions: Implement Town of Waterloo Comprehensive Plan, by Planning Commission action, to direct future growth and economic development.



Land Use Development Regulations
Partners: ADECA, NACOLG
Priority: Low
Lead Responsibility: Waterloo Planning Commission
Estimated Cost: No additional cost at this time
Funding Sources: Local Funds
Mitigating Hazards: Flooding, Hurricanes, Wildfires, Dam/Levee Failures, Technical Hazards
Prior Actions: The town currently uses land use development regulations.
Future Actions: Evaluate the existing regulations for mitigating risk in relation to identified hazards within the town. Adopt any needed updates to the regulations.



Flood Plain Management Programs
Partners: F-L EMA, ADEM, TVA, Mayor and Town Council, County Engineer
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Town Council
Estimated Cost: Undetermined
Funding Sources: A-EMA, Local Match, ADECA, HMGP, Pre-Disaster Mitigation (PDM), Flood Mitigation Ass. (FMA)
Mitigating Hazards: Flooding, Severe Storms, Dam/Levee Failures
Prior Actions: Participation in the NFIP program with good standing.
Future Actions: Continue support for NFIP program and implement program's goals and objectives.



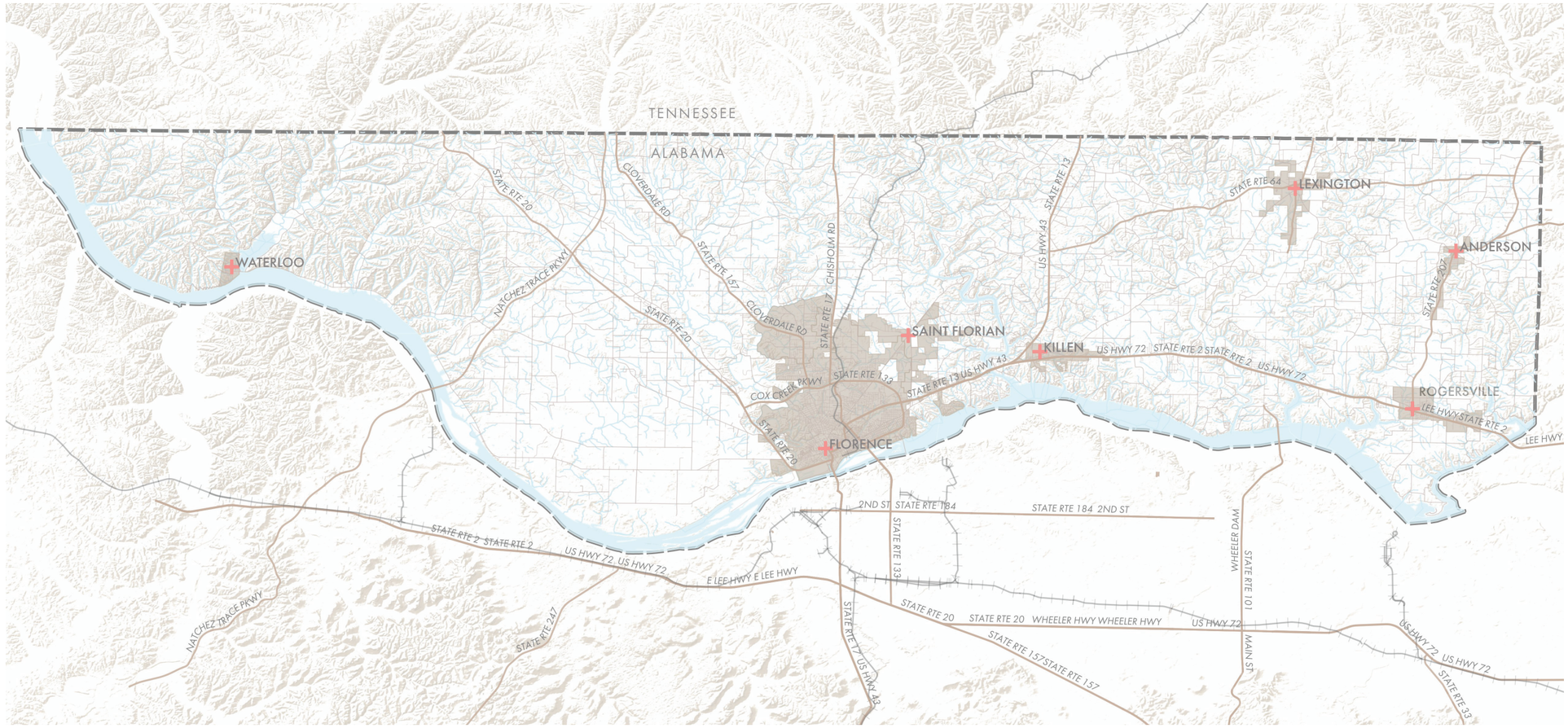
Building Codes & Construction Requirements
Partners: Mayor & Council, F-L EMA
Priority: Medium
Lead Responsibility: Waterloo Planning Commission, Mayor and Council, County Engineer
Estimated Cost: No Additional Cost
Funding Sources: n/a
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: No previous action..
Future Actions: Evaluate current building code for achieving identified mitigation strategies and identified risks within the risk assessment of this document.



Subdivision Regulations
Partners: Local Developers, NACOLG, ADECA
Priority: Low
Lead Responsibility: Planning Commission, Mayor and Council
Estimated Cost: No additional cost
Funding Sources: Not applicable
Mitigating Hazards: Assists in mitigating all hazards.
Prior Actions: Town currently uses subdivision regulations to reduce risk to citizens of the community.
Future Actions: Evaluate the need for updates to the subdivision regulations in regards to the risk assessment and the updated comprehensive plan.

[H] PLAN MAINTENANCE

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



44 CFR § 201.6 Local Mitigation Plans:
Local Mitigation Plans
(c) Plan content. The plan shall include the following:
(4) A plan maintenance process that includes:
(i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
(ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.
(iii) Discussion on how the community will continue public participation in the plan maintenance process.

PLAN MAINTENANCE
PM.1 PLAN MONITORING & IMPLEMENTATION
PM.2 ACTIVE PLANNING & MITIGATION INCORPORATION
PM.3 MULTI-JURISDICTIONAL PUBLIC INVOLVEMENT

7.1 Plan Monitoring and Implementation

This section outlines the continuous cycle for monitoring, evaluating and updating the Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan. It also outlines the process for incorporating mitigation strategies into other planning activities and methods for continuing public involvement. This process ensures an active and relevant hazard mitigation planning process.

The Policy Committee will oversee plan maintenance during the five-year framework. The Florence-Lauderdale EMA staff will continue to serve as the plan facilitator. The Florence-Lauderdale EMA is responsible for hosting quarterly scheduled meetings, assigning specific project tasks for implementing mitigation strategies and for monitoring and updating the mitigation efforts put forth by the policy committee members. The local EMA also serves as the Policy Committee's liaison to entities assigned implementation responsibilities. Additional Policy Committee members may be nominated by the Florence- Lauderdale EMA Director and then approved by the entire committee

With adoption of this plan, the Policy Committee, along with all participating jurisdictions and agencies, and led by the Florence-Lauderdale EMA, agree to:

- Policy Committee members will be contacted thirty days in advance for meeting notification. If unable to attend a meeting, committee members will be contacted by phone calls and personal visits necessary.
- In the event of an unexpected disaster emergency , the mitigation plan will be updated to include measures to address the event. Updates are the responsibility of the Florence-Lauderdale EMA.
- A list of active and completed mitigation projects will be reviewed at each meeting.
- Previous implemented mitigation actions will be evaluated for effectiveness.
- Any modifications and changes in land use patterns and new development trends will be addressed at the meeting and then updated in the planning document.
- Modifications to the risk assessment and/or the risk vulnerability will be identified and updated in the plan.
- Future mitigation activities should be discussed and any new projects will be adopted and signed by resolution by the policy committee.

The Florence-Lauderdale EMA will schedule policy committee meetings at a time and location convenient for its members. In the event that the quarterly reviews require modifications to the plan, the Policy Committee will oversee and approve all revisions to the planning document. The Policy Committee will then submit all revisions for adoption by each participating jurisdiction. A copy of the plan revisions will be posted on the EMA website as well as distributed to all participating jurisdictions for insertion into their mitigation document.

At the end of the five year planning cycle, the Policy Committee will oversee the update to the plan. This update must follow the local mitigation plan guidelines as defined in this document and within the Code of Federal Regulations. The updated document will then be submitted for review and approval by the A-EMA and FEMA.

7.2 Active Planning and Mitigation Incorporation

The Florence-Lauderdale Multi-Jurisdictional Hazard Mitigation Plan is adopted as a separate but equal document to the Lauderdale County Emergency Operations Plan. This plan is administered through the local EMA. Upon approval by A-EMA and FEMA, the plan will be adopted by each of the participating jurisdictions within the planning study area. This plan supplements the Lauderdale County Emergency Operations Plan as well as the Lauderdale County Transportation Plan for Hazardous Incident Response. Each governmental entity is responsible for implementing the identified mitigation strategies identified in the previous section. Implementation will be based on community priorities, available funding, staff capabilities and technical expertise. Integrating hazard mitigation into the jurisdiction's comprehensive or general plan is considered a best practice by both FEMA and the American Planning Association. The City of Florence Comprehensive Plan will work with the Planning Department to ensure that hazards data and mitigation goals and objectives inform the next Comprehensive Plan update.

7.3 Multi-Jurisdictional Public Involvement

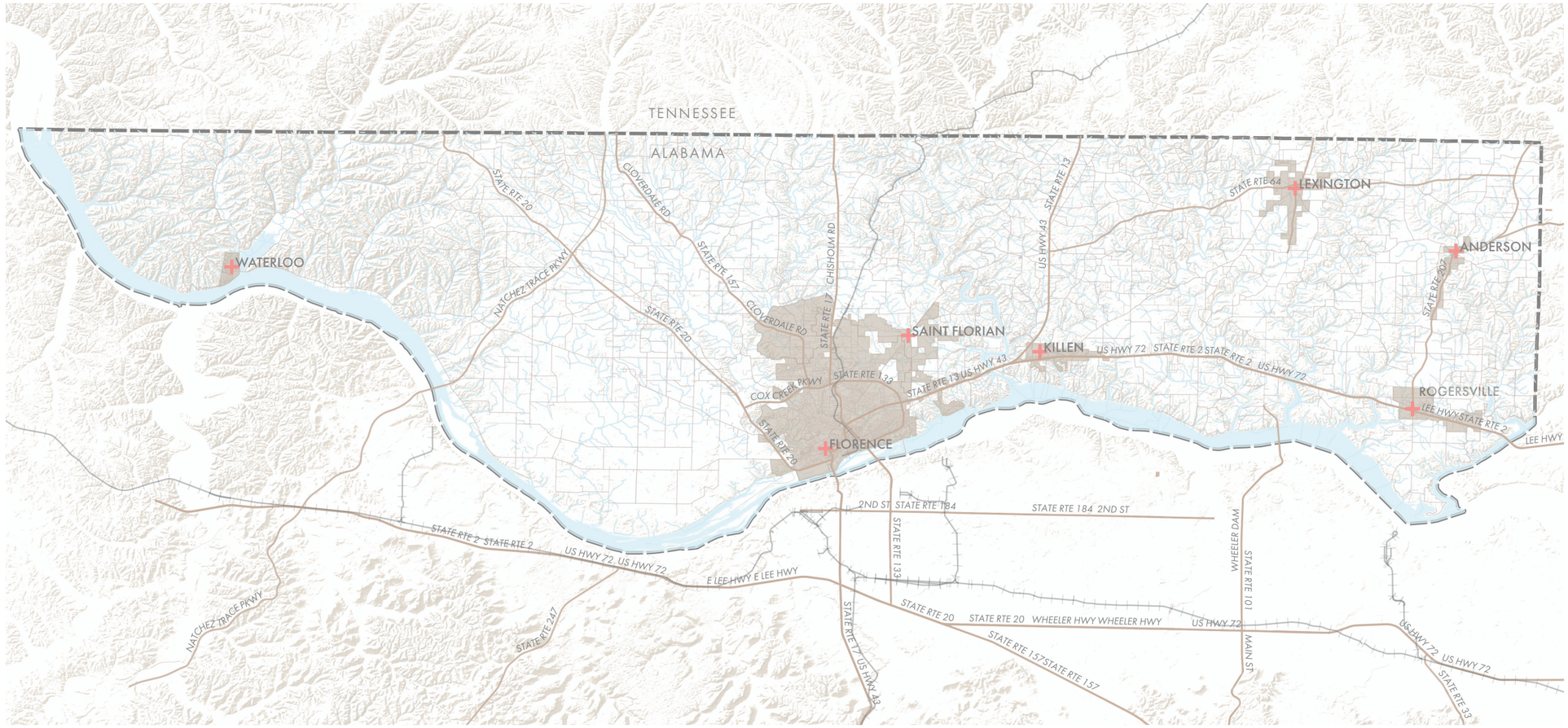
Continued public involvement is also imperative to the overall success of the Plan's implementation. This updated HMP will be posted on the county's website for reference and can be used to help inform the county's ongoing public education and outreach program, such as the completion of mitigation actions that reduce the community's vulnerability, can be shared with the public through the local EMA, public meetings, social media. This helps keep the concept of hazard mitigation alive and helps show the public that their government officials are working to keep them safe.

Ongoing public participation, review, and comment is a critical part of maintaining an effective and useful hazard mitigation plan. To ensure the success of the plan, there will be ongoing public outreach and comment periods within the five-year planning cycle. A hard copy of the plan will be available at appropriate entities as well as via individual request and on the web. Public meetings will be held when significant modifications to the plan are required or requested by the Policy Committee.

The update process provides an opportunity to publicize success stories from the Plan implementation and seek additional public comment. When the Planning Team reconvenes for the five-year plan update, they will coordinate with all stakeholders participating in the planning process—including those that joined the committee since the planning process began—to update and revise the plan. The plan maintenance and update process will include continued public and stakeholder involvement and input through participation in designated committee meetings, surveys, web postings, and press releases to local media.

I APPENDICES

2023 Florence- Lauderdale Multi-Hazard Mitigation Plan



POLICY COMMITTEE MEETING AND PUBLIC PARTICIPATION MEETING 03-09-2023, 4:00 PM

https://www.timesdaily.com/news/local/public-can-weigh-in-on-haz-mat-plan/article_ae3ab029-64fc-582e-854d-69764ea9c1bb.html

CENTERPIECE TOP STORY

Public can weigh in on haz-mat plan

By Bernie Delinski Staff Writer
Mar 9, 2023

FLORENCE — The public can learn information and ask questions Thursday regarding the upcoming Lauderdale County Multi-Hazard Mitigation Plan.

The event is at 4 p.m. in the Florence City Hall, said George Grabryan, director of the Lauderdale County Emergency Management Agency.

Ben Farmer, managing partner at Farmer Morgan, which is consulting on the plan, said the Federal Emergency Management Agency requires counties to form such a plan every five years.

Farmer said the plan goes beyond handling emergencies to include preparing for potential disasters before they happen.

He said, for example, having regulations and other means to handle flooding. In fact, flood-related matters are the most common when it comes to mitigation.

Other disasters and hazards also are in the plan.

Grabryan said Farmer has a good reputation in FEMA circles.

Terms

Newspaper Advertisement:
Stakeholder Meeting and Public Participation Meeting

2020 Lauderdale County Hazard Mitigation Plan
Committee Meeting
Sign-in Sheet

Name	Organization	Address	Phone	E-Mail
Benjamin Farmer	Farmer | Morgan	Huntsville, AL	334-444-2893	bfarmer@farmermorgan.com
GEORGE M. GRABRYAN II	FLO-Lauds EMA/911	110 W College ST Florence AL 35630	256-760-6363	ggrabryan@flolema911.org
Heath Bennett	FL/Lauderdale EMA	110 W College St. Florence, AL 35630	256-760-6363	hbennett@flolema911.org
John Rochester	FLO-Lauds EMA	110 W. College St. " "	256-760-6363	jrochester@flolema911.org
Tim Holt	FLOREMA AMATEUR RADIO EMERGENCY SVCS	181 PATSY DR FLORENCE AL 35633	256 762 8551	KE4QID@GMAIL.COM
Danny Pettus	Lauderdale Commission	603 CR 414 35645	256-810-0050	dannypettus@jdno.com
Andy Betterton	Florence MAYOR	PO BOX 98 35631	256-710-2129	ABetterton@FlorenceAL.org

Sign-In Sheet:
Stakeholder Meeting and Public Participation Meeting

STAKEHOLDER MEETING - 06-23-14
ELGIN FIRE DEPARTMENT

Florence-Lauderdale Multi-Hazard Mitigation Stakeholder Meeting Elgin, AL			
6/23/2014			
Name	**Entity/Agency**	**Phone**	**E-Mail**
Benjamin Farmer	Farmer-Morgan, LLC	334-444-2893	bfarmer@farmermorgan.com
Jesse Davis	Florence-Lauderdale EMA	256-710-9583	jdavis@florenceal.org
Joel Glover	Elgin Fire	256-349-9437	
[illegible]	Elgin Fire	256-710-7341	KWCantrell5@Prodigy.net
Wayne Davis	Elgin Fire	256-856-3424	
Melissa Davis	Elgin Fire	256-856-3119	b.gspeak6478@yahoo.com

Florence - Lauderdale
Emergency Management Agency Stake Holder Meeting Dates

Stake Holder Involvement meetings are being held throughout Lauderdale County in order to involve citizens, leadership, agencies, industry and non-profits in the identification of natural, technical and human made hazards. In addition, your input is needed in determining the best method for mitigating local hazards in your community. All meetings are held at 6:00 p.m.

Stake Holder Meeting Date & Location:

Elgin Fire Department:	6-23-14
Waterloo Senior Center:	6-24-14
Florence Municipal Auditorium:	6-25-14

NOTE: All Documentation is from 2015 Plan update since planned public engagement meetings could be held due to the ongoing pandemic.

FARMER | MORGAN, LLC.
P.O. Box 626
Huntsville, Alabama 35804

Planning · Design · Construction

Florence- Lauderdale Hazard Mitigation Planning Stakeholder Meeting

June 23, 2014
6:00 p.m. – 7:15 p.m.

Meeting called by Florence-Lauderdale EMA

Attendees: Citizens and Stakeholders with Lauderdale County and local government jurisdictions
Please read: The 2010 Multi-Jurisdictional Hazard Mitigation Plan
Please bring: N/A

6:00 p.m. – 6:05 p.m.	**Introduction & Review of Role of the Policy Committee.** Welcome: *Jesse Davis, F-L EMA* *Farmer	Morgan, LLC:* *Review of hazard Mitigation Policy Committee Role *Previously identified hazards in the community 2010 * Hazard identification worksheet *Priority of hazard mitigation issues	Elgin Fire Department
6:05 p.m. –6:20 p.m.	**Review of Florence-Lauderdale Multi-Hazard Mitigation Planning** *Farmer	Morgan, LLC:* *Components and requirements of plan update	Elgin Fire Department
6:20 p.m. – 6:50 p.m.	**Review of Planning Components for the 2010 Plan** *Farmer	Morgan, LLC /All Participants:* *Tables and chapters included in the 2010 plan * Additional critical facilities within Lauderdale County	Elgin Fire Department
6:50 p.m. – 7:15 p.m.	**Schedule of Plan Development and Citizen Input Meetings** *Farmer	Morgan, LLC / All Participants:* *Review of public input meeting locations and times	Elgin Fire Department

Additional Instructions:
Identified hazards include: Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flood, Hailstorm, Hurricane, Land Subsidence (sink hole), Severe Winter Storm Freeze, Tornado, Severe Storm, Wildfire, Windstorms and Manmade Hazards.

Nashville · Huntsville · Pikeville

Florence-Lauderdale Multi-Hazard Mitigation Plan

Stakeholder Hazard Identification

Name of Jurisdiction:_____

Name of Respondent: _____

Hazard Type	Possible	Most Likely
Avalanche		
Dam/Levee Failure		
Drought		
Earthquake		
Expansive Soils		
Extreme Heat		
Flood		
Hailstorm		
Hurricane		
Land Subsidence		
Severe Winter Storm Freeze		
Tornado/Severe Storm		
Wildfire		
Windstorm		
Other		
Other		
Other		
Other		

Florence-Lauderdale Multi-Hazard Mitigation Plan

Stakeholder Critical Facilities
Please Fill Out and Fax To:
480-393-5718 or email to bfarmer@farmermorgan.com

Name of Jurisdiction:_____

Name of Respondent: _____

Name of Building	Location	Estimated Cost	Building Function

Public Notice

This is a notice of Public Hearing for input into the Florence-Lauderdale Multi-Hazard Mitigation Plan for Lauderdale County. This plan is required by the Disaster Mitigation Act of 2000. The plan includes the identification of natural hazards, the probability of occurrence, the potential impact both economically and/or the potential for the loss of life, the methods to eliminate or reduce the impact, and methods to warn and respond to the incidents. The plan addresses the following natural hazards: flooding, severe storms, tornadoes, winter storms, wildfires, earthquakes, landslides, drought, and dam/levee failure. The public may provide input on June 23, 2014, between the hours of 6:00 to 8:00 p.m. at the Elgin Fire Department Community Room.

STAKE HOLDER MEETING - 06-24-14
WATERLOO SENIOR CENTER

Florence - Lauderdale
Emergency Management Agency Stake Holder Meeting Dates

Stake Holder Involvement meetings are being held throughout Lauderdale County in order to involve citizens, leadership, agencies, industry and non-profits in the identification of natural, technical and human made hazards. In addition, your input is needed in determining the best method for mitigating local hazards in your community. All meetings are held at 6:00 p.m.

Stake Holder Meeting Date & Location:

Elgin Fire Department:	6-23-14
Waterloo Senior Center:	6-24-14
Florence Municipal Auditorium:	6-25-14

Florence-Lauderdale Multi-Hazard Mitigation Stakeholder Meeting, Waterloo, AL

6/24/2014

Name	Entity/Agency	Phone	E-Mail
Benjamin Farmer	Farmer - Morgan LLC	334-444-2893	bfarmer@farmermorgan.com
Jesse Davis	Florence-Lauderdale EMA	256-710-4583	jdavis@florenceal.org
Melanie Caddell		256-760-0878	melaniejaycaddell@hotmail
Allen Caddell		256-[illegible]740-9910	acaddell@florenceal.org
Ted Kavich	Waterloo Fire Rescue	256-366-1099	tedkavich@yahoo.com
Wayne Lambert	Waterloo Fire	256.767.1155	Wayne Lambert
Jennelee Higgins	Mayor. Town of Waterloo	256-766-6249	mjhiggshiggins@gmail.com

FARMER | MORGAN, LLC.
P.O. BOX 626
HUNTSVILLE, ALABAMA 35804

PLANNING · DESIGN · CONSTRUCTION

Florence- Lauderdale Hazard Mitigation Planning Stakeholder Meeting

June 24, 2014
6:00 p.m. – 7:15 p.m.

Meeting called by Florence-Lauderdale EMA

Attendees: Citizens and Stakeholders with Lauderdale County and local government jurisdictions
Please read: The 2010 Multi-Jurisdictional Hazard Mitigation Plan
Please bring: N/A

6:00 p.m. – 6:05 p.m.	**Introduction & Review of Role of the Policy Committee.** Welcome: *Jesse Davis, F-L EMA* *Farmer	Morgan, LLC:* *Review of hazard Mitigation Policy Committee Role *Previously identified hazards in the community 2010 * Hazard identification worksheet *Priority of hazard mitigation issues	Waterloo Community Building
6:05 p.m. –6:20 p.m.	**Review of Florence-Lauderdale Multi-Hazard Mitigation Planning** *Farmer	Morgan, LLC:* *Components and requirements of plan update	Waterloo Community Building
6:20 p.m. – 6:50 p.m.	**Review of Planning Components for the 2010 Plan** *Farmer	Morgan, LLC /All Participants:* *Tables and chapters included in the 2010 plan * Additional critical facilities within Lauderdale County	Waterloo Community Building
6:50 p.m. – 7:15 p.m.	**Schedule of Plan Development and Citizen Input Meetings** *Farmer	Morgan, LLC / All Participants:* *Review of public input meeting locations and times	Waterloo Community Building

Additional Instructions:
Identified hazards include: Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flood, Hailstorm, Hurricane, Land Subsidence (sink hole), Severe Winter Storm Freeze, Tornado, Severe Storm, Wildfire, Windstorms and Manmade Hazards.

NASHVILLE · HUNTSVILLE · PIKEVILLE

FLORENCE-LAUDERDALE MULTI-HAZARD MITIGATION PLAN

STAKEHOLDER HAZARD IDENTIFICATION

NAME OF JURISDICTION:_____

NAME OF RESPONDENT: _____

Hazard Type	Possible	Most Likely
Avalanche		
Dam/Levee Failure		
Drought		
Earthquake		
Expansive Soils		
Extreme Heat		
Flood		
Hailstorm		
Hurricane		
Land Subsidence		
Severe Winter Storm Freeze		
Tornado/Severe Storm		
Wildfire		
Windstorm		
Other		
Other		
Other		
Other		

FLORENCE-LAUDERDALE MULTI-HAZARD MITIGATION PLAN
STAKEHOLDER CRITICAL FACILITIES
PLEASE FILL OUT AND FAX TO:
480-393-5718 OR EMAIL TO BFARMER@FARMERMORGAN.COM

NAME OF JURISDICTION:_____

NAME OF RESPONDENT: _____

Name of Building	Location	Estimated Cost	Building Function

NOTE: All Documentation is from 2015 Plan update since planned public engagement meetings could be held due to the ongoing pandemic.

STAKE HOLDER MEETING - 06-25-14
FLORENCE MUNICIPAL AUDITORIUM

Florence - Lauderdale
Emergency Management Agency Stake Holder Meeting Dates

Stake Holder Involvement meetings are being held throughout Lauderdale County in order to involve citizens, leadership, agencies, industry and non-profits in the identification of natural, technical and human made hazards. In addition, your input is needed in determining the best method for mitigating local hazards in your community. All meetings are held at 6:00 p.m.

Stake Holder Meeting Date & Location:

Elgin Fire Department:	6-23-14
Waterloo Senior Center:	6-24-14
Florence Municipal Auditorium:	6-25-14

NOTE: All Documentation is from 2015 Plan update since planned public engagement meetings could be held due to the ongoing pandemic.

Florence-Lauderdale Multi-Hazard Mitigation Stakeholder Meeting, Florence, AL
6/25/2014

Name	Entity/Agency	Phone	E-Mail
Benjamin B. Farmer	Farmer-Morgan, LLC	334-444-2593	bfarmer@farmermorgan.com
Rhonda McCarley	Parks & Rec.	256-760-6418	rmccarley@florenceal.org
Lindsey Balentine		256-443-1652	lanz1987@aol.com
Molly Hughes		256-443-2730	mhughes@una.edu
Grace Anne Coburn		256-762-1639	gacoburn@una.edu [redacted]
Tim Hoot	Fla Lau EmA - Volunteer	256-762-8551	THOOT@HWAAA.NET
Jesse Davis	Flo Lauderdale EMA	256-760-6363	jdavis@florenceal.org

FARMER | MORGAN, LLC.
P.O. Box 626
Huntsville, Alabama 35804

Planning · Design · Construction

Florence- Lauderdale Hazard Mitigation Planning Stakeholder Meeting
June 25, 2014
6:00 p.m. – 7:15 p.m.

Meeting called by Florence-Lauderdale EMA

Attendees: Citizens and Stakeholders with Lauderdale County and local government jurisdictions
Please read: The 2010 Multi-Jurisdictional Hazard Mitigation Plan
Please bring: N/A

6:00 p.m. – 6:05 p.m.	**Introduction & Review of Role of the Policy Committee.** Welcome: *Jesse Davis, F-L EMA* *Farmer	Morgan, LLC:* *Review of hazard Mitigation Policy Committee Role *Previously identified hazards in the community 2010 * Hazard identification worksheet *Priority of hazard mitigation issues	Broadway Recreation Center
6:05 p.m. –6:20 p.m.	**Review of Florence-Lauderdale Multi-Hazard Mitigation Planning** *Farmer	Morgan, LLC:* *Components and requirements of plan update	Broadway Recreation Center
6:20 p.m. – 6:50 p.m.	**Review of Planning Components for the 2010 Plan** *Farmer	Morgan, LLC /All Participants:* *Tables and chapters included in the 2010 plan * Additional critical facilities within Lauderdale County	Broadway Recreation Center
6:50 p.m. – 7:15 p.m.	**Schedule of Plan Development and Citizen Input Meetings** *Farmer	Morgan, LLC / All Participants:* *Review of public input meeting locations and times	Broadway Recreation Center

Additional Instructions:
Identified hazards include: Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flood, Hailstorm, Hurricane, Land Subsidence (sink hole), Severe Winter Storm Freeze, Tornado, Severe Storm, Wildfire, Windstorms and Manmade Hazards.

Nashville · Huntsville · Pikeville

Florence-Lauderdale Multi-Hazard Mitigation Plan
Stakeholder Hazard Identification

Name of Jurisdiction:_____

Name of Respondent: _____

Hazard Type	Possible	Most Likely
Avalanche		
Dam/Levee Failure		
Drought		
Earthquake		
Expansive Soils		
Extreme Heat		
Flood		
Hailstorm		
Hurricane		
Land Subsidence		
Severe Winter Storm Freeze		
Tornado/Severe Storm		
Wildfire		
Windstorm		
Other		
Other		
Other		
Other		

Florence-Lauderdale Multi-Hazard Mitigation Plan
Stakeholder Critical Facilities
Please Fill Out and Fax To:
480-393-5718 or email to bfarmer@farmermorgan.com

Name of Jurisdiction:_____

Name of Respondent: _____

Name of Building	Location	Estimated Cost	Building Function

STAKE HOLDER MEETING - 06-18-14 AND 7-17-14 EMA BOARD ROOM

rence-Lauderdale Multi-Hazard Mitigation Policy Committee Meeting No. 1			
6/18/2014			
Name	**Entity/Agency**	**Phone**	**E-Mail**
Benjamin B. Farmer	Farmer-Morgan, LLC	334-444-2893	bfarmer@farmermorgan.com
George N. Grabryan, Jr.	FLO-LAUD EMA/911	256-760-6363	GGRABRYAN@FLORENCEAL.ORG
Tim GREER	LAUDERDALE EMA	256 760 6363	tgreer@florenceal.org
BOB PASTULA	UNA	256 349 0632	R.PASTULA@ATT.NET
MELISSA HEARN	FLORENCE-LAUD 911	256-760-6363	MHEARN@FLORENCEAL.ORG
Tim Tubbs	Town of Killen	256-757-1246	timtubbs@bellsouth.net
John Mansell	Lauderdale County Schools	256-760-1328	john.mansell@lcschools.org
Melissa Bailey	City of Florence, AL	256.740.8809	mbailey@florenceal.org

FARMER | MORGAN, LLC.
P.O. BOX 626
HUNTSVILLE, ALABAMA 35804

PLANNING · DESIGN · CONSTRUCTION

Florence- Lauderdale Hazard Mitigation Planning Policy Committee

June 18, 2014
11:00 a.m. – 12:15 a.m.

Meeting called by Florence-Lauderdale EMA

Attendees: Policy committee members consist of mayors and administrators within Lauderdale County
Please read: The 2010 Multi-Jurisdictional Hazard Mitigation Plan
Please bring: Policy member copy of the 2010 Multi-Jurisdictional Hazard Mitigation Plan

11:00 a.m. – 11:05 a.m.	**Introduction & Review of Role of the Policy Committee.** Welcome: *George Grabryan, F-L EMA* *Farmer	Morgan, LLC:* *Review of hazard Mitigation Policy Committee Role *Previously identified hazards in the community 2010 * Hazard identification worksheet *Priority of hazard mitigation issues	EMA Board Room
11:05 a.m. –11:20 a.m.	**Review of Florence-Lauderdale Multi-Hazard Mitigation Planning** *Farmer	Morgan, LLC:* *Components and requirements of plan update	EMA Board Room
11:20 – 11:50 a.m.	**Review of Planning Components for the 2010 Plan** *Farmer	Morgan, LLC /All Participants:* *Tables and chapters included in the 2010 plan * Additional critical facilities within Lauderdale County	EMA Board Room
11:50 p.m. – 12:15 a.m.	**Schedule of Plan Development and Citizen Input Meetings** *Farmer	Morgan, LLC / All Participants:* *Review of public input meeting locations and times	EMA Board Room

Additional Instructions:
Identified hazards include: Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flood, Hailstorm, Hurricane, Land Subsidence (sink hole), Severe Winter Storm Freeze, Tornado, Severe Storm, Wildfire, Windstorms and Manmade Hazards.

NASHVILLE · HUNTSVILLE · PIKEVILLE

FARMER | MORGAN, LLC.
P.O. BOX 626
HUNTSVILLE, ALABAMA 35804

PLANNING · DESIGN · CONSTRUCTION

Florence- Lauderdale Hazard Mitigation Planning Policy Committee

July 17, 2014
4:00 p.m. – 5:00 p.m.

Meeting called by Florence-Lauderdale EMA

Attendees: Policy committee members consist of mayors and administrators within Lauderdale County
Please read: The 2010 Multi-Jurisdictional Hazard Mitigation Plan
Please bring: Policy member copy of the 2010 Multi-Jurisdictional Hazard Mitigation Plan

4:00 p.m. –4:05 p.m.	**Introduction & Review of Role of the Policy Committee.** Welcome: *George Grabryan, F-L EMA* *Farmer	Morgan, LLC:* *Review of hazard Mitigation Policy Committee Role *Previously identified hazards in the community 2010 * Hazard identification worksheet *Priority of hazard mitigation issues	EMA Board Room
4:05 p.m. –4:20 p.m.	**Review of Florence-Lauderdale Multi-Hazard Mitigation Planning** *Farmer	Morgan, LLC:* *Components and requirements of plan update	EMA Board Room
4:20p.m. – 4:50 p.m.	**Review of Planning Components for the 2010 Plan** *Farmer	Morgan, LLC /All Participants:* *Tables and chapters included in the 2010 plan * Additional critical facilities within Lauderdale County	EMA Board Room
4:50 p.m. – 5:00 p.m.	**Schedule of Plan Development and Citizen Input Meetings** *Farmer	Morgan, LLC / All Participants:* *Review of public input meeting locations and times	EMA Board Room

Additional Instructions:
Identified hazards include: Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flood, Hailstorm, Hurricane, Land Subsidence (sink hole), Severe Winter Storm Freeze, Tornado, Severe Storm, Wildfire, Windstorms and Manmade Hazards.

NASHVILLE · HUNTSVILLE · PIKEVILLE

FLORENCE-LAUDERDALE MULTI-HAZARD MITIGATION PLAN

STAKEHOLDER HAZARD IDENTIFICATION

NAME OF JURISDICTION:_____

NAME OF RESPONDENT: _____

Hazard Type	Possible	Most Likely
Avalanche		
Dam/Levee Failure		
Drought		
Earthquake		
Expansive Soils		
Extreme Heat		
Flood		
Hailstorm		
Hurricane		
Land Subsidence		
Severe Winter Storm Freeze		
Tornado/Severe Storm		
Wildfire		
Windstorm		
Other		
Other		
Other		
Other		

FLORENCE-LAUDERDALE MULTI-HAZARD MITIGATION PLAN

STAKEHOLDER CRITICAL FACILITIES

PLEASE FILL OUT AND FAX TO:
480-393-5718 OR EMAIL TO BFARMER@FARMERMORGAN.COM

NAME OF JURISDICTION:_____

NAME OF RESPONDENT: _____

Name of Building	Location	Estimated Cost	Building Function

NOTE: All Documentation is from 2015 Plan update since planned public engagement meetings could be held due to the ongoing pandemic.

MULTI-HAZARD MITIGATION STAKEHOLDER MEETING

June 23, 2014 | Florence-Lauderdale Multi-Hazard Mitigation Plan 2015

Agenda

- Introduction of Policy Committee Members & The Planning Team
- Role of the Policy Committee
- Working Lunch
- Basis for Hazard Mitigation Planning
- Review of Florence-Lauderdale Multi-Hazard Mitigation Planning (F-LMHMP) Components & Requirements
- Review of the 2010 Multi-Hazard Mitigation Plan
- Hazard Mitigation Survey & Questionnaire
- Additional Critical Facilities within Lauderdale County
- Schedule of Policy and Citizen Input Meetings

Introduction of Policy Committee & Planning Team

Basis for Hazard Mitigation Planning

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, Title 44 Code of Federal Regulations (CFR)
- What is Natural Hazard & Man Made Hazard Mitigation
- Sources for Mitigation Information

Robert T. Stafford Disaster Relief and Emergency Assistance Act, Title 44 Code of Federal Regulations (CFR)

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Title 44 CFR, requires that all states and local governments evaluate and mitigate all natural hazards as a condition of receiving Federal disaster assistance. **FEMA will not provide any assistance to any entities that do not have an approved Natural Hazard Mitigation Plan.**

What is Natural Hazard & Man Made Hazard Mitigation

Natural Hazard Mitigation Planning is the process of reducing or eliminating the loss of life and property damage resulting from natural hazards such as floods, tornadoes, earthquakes and other events. Man Made Hazard Mitigation is the process of reducing or eliminating the loss of life and property damage resulting from man made hazards.

Four Phases of Mitigation Planning

- Organization of Resources
- Assessing the Risks
- Developing a Mitigation Plan
- Implementation and Monitoring of the Plan

Sources for Successful Mitigation

From the beginning, a community should focus on the resources needed for a successful mitigation planning process. Identification and organization of interested members of the community, in conjunction with those with technical expertise, is critical to the success of the plan. The information gathered by the sources and the planning team will provide the tools necessary for a comprehensive plan.

Role of the F-L MHMPL Policy Committee

The policy committee is composed of local government leadership or their representative. A local government is defined "as any county, municipality, public authority, school district, special district . . . ." 44 CFR §201.2

The policy committee is to guide the planning, development and implementation of the F-L Multi-Hazard Mitigation Plan.

Images: Multi-Hazard Mitigation Stakeholder Meeting PowerPoint Presentation Slides
(Presentation, 2014: Multi-Hazard Mitigation Planning Team)

Plan Update Requirements

- A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within the five (5) years in order to continue to be eligible for mitigation project grant funding. 44 CFR §201.6(d)(3)

Project Grant Funds Affected by the Plan

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Severe Repetitive Loss (SRL)

Planning & the Policy Committee

- The policy committee should guide the planning process and the appropriate public and governmental involvement in order to develop and then achieve the plan.
- The policy committee should assist the planning team in development of the plans meeting schedule, public involvement and adoption by resolution of each jurisdiction.

Development & the Policy Committee

- The policy committee should guide the content and identification of potential and actual hazards. This includes identifying existing structures in hazardous areas, which include new development, redeveloped areas or structures located in annexed areas.
- Potential impacts of future land development, including areas that may be annexed in the future.

Implementation & the Policy Committee

- The policy committee should oversee the implementation of the plans goals to reduce long-term vulnerabilities to the identified hazards.
- This includes potential impacts of future land development, including areas that may be annexed in the future.
- Establishing & enforcing safety issues as well as structural inspections.

Implementation of the Plan Can Include

- Comprehensive Planning & Smart Growth
- Land Use Planning by Ordinance
- Five Year Capital Improvement Plans for Schools and Municipalities
- Subdivision Regulations
- Flood Plain Management Program
- Active Participation in the NFIP
- Public Right-Of-Way Maintenance Regulations
- Critical Facilities Assessments
- Update & Maintain GIS Systems
- Annually Inspect Public Buildings, Dams, and Bridges for Structural Safety

2014 Multi-Hazard Plan Components

The following components are required by FEMA as identified in the Local Multi-Hazard Mitigation Planning Guidance and the Local Mitigation Plan regulation found at 44 CFR Part 201.

Table of Contents for the Florence-Lauderdale Multi-Hazard Mitigation Plan

- Executive Summary
- Chapter 1, Introduction
- Chapter 2, Prerequisites
- Chapter 3, Community Profile
- Chapter 4, Planning Process
- Chapter 5, Risk Assessment
- Chapter 6, Mitigation Strategy
- Chapter 7, Plan Maintenance & Updates
- Appendices

Executive Summary

- This chapter summarizes the entire document and the planning process, public involvement as well as the overall risks from natural and manmade hazards.

Images:
Multi-Hazard Mitigation Stakeholder Meeting PowerPoint Presentation Slides (Presentation, 2014: Multi-Hazard Mitigation Planning Team)

Introduction

- Background
- Authority for Planning
- Funding for Development of Plan
- Eligibility of FEMA Hazard Mitigation Assistance Grants
- Florence-Lauderdale Multi-Hazard Mitigation Plan 2010 Review
- 2015 Florence-Lauderdale Multi-Hazard Mitigation Plan

Prerequisites

- Federal Prerequisites
- Plan Approval Required for Mitigation Grant Eligibility
- Multi-Jurisdictional Participation
- Mult-Jurisdictional Plan Adoption

Community Profiles

- Federal Advisory Guidance for Community Profiles
- Geographic Setting & History
- Government
- Demographics
- Economy
- Utilities
- Media
- Transportation
- Climate

Planning Process

- Federal Requirements for the Planning Process
- Summary of Plan Updates
- Opportunities for Public Comment on the Plan
- Opportunities for Involvement in the Planning Process
- Review & Incorporation of Applicable Plans & Documents
- How the Plan Was Developed
- Who Was Involved in the Planning Process
- How the Public Was Involved in the Planning Process
- The Plan Review and Update Process

Risk Assessment

- Federal Requirements for the Risk Assessment
- Identify & Prioritize Natural Hazards
- Identify & Prioritize Man Made Hazards
- Profile/Description of Each Hazard and its Elements
- Assessing Vulnerability: Overview
- Assessing Vulnerability: Identifying Structures
- Assessing Vulnerability: Addressing Repetitive Loss Properties
- Assessing Vulnerability: Estimating Potential Losses
- Assessing Vulnerability: Analyzing Development Trends
- NFIP & Repetitive Flood Damaged Properties
- Strategy for Community and Municipal Compliance with NFIP
- Integration of Community Rating System (CRS) in the Hazard Plan

Mitigation Strategy

- Federal Requirements for the Mitigation Strategy
- Summary of Plan Updates
- Goals for Hazard Mitigation
- Identification and Analysis of Mitigation Actions & Projects
- Participation & Compliance with the NFIP
- Implementation of Mitigation Actions
- Multi-Jurisdictional Community Mitigation Action Programs

Plan Maintenance & Updates

- Federal Requirements for the Plan Maintenance & Updates
- Summary of Plan Updates
- Monitoring, Evaluating and Updating the Mitigation Plan
- Incorporation of the Mitigation Plan into Other Planning Mechanisms
- Continuing Public Participation in the Plan Maintenance Process

Appendices

- Federal Requirements for Local Mitigation Plans
- Community Mitigation Capabilities
- 2015 Plan Implementation Status
- HMPC Hazard Identification and Ratings
- Hazard Profiles
- Alternative Mitigation Measures
- Committee Meeting Documentation
- Community Involvement Documentation
- Multi-Jurisdictional Participation Activities
- Adopting Resolutions

Types of Natural Hazards

- Atmospheric Hazards
- Geologic Hazards
- Hydrologic Hazards
- Seismic Hazards
- Other Natural Hazards
- Human Made Hazards
- Technological Hazards

Images: Multi-Hazard Mitigation Stakeholder Meeting PowerPoint Presentation Slides (Presentation, 2014: Multi-Hazard Mitigation Planning Team)

Atmospheric Hazards

- Tropical Cyclones
- Thunderstorms and Lightening
- Tornadoes
- Windstorms
- Hailstorms
- Snow Avalanches
- Severe Winter Storms
- Extreme Summer Weather

Geologic Hazards

- Landslides
- Land Subsidence
- Expansive Soils

Hydrologic Hazards

- Floods
- Storm Surges
- Coastal Erosion
- Droughts

Seismic Hazards

- Earthquakes
- Tsunami Events

Other Natural Hazards

- Volcanic Hazards
- Wildfire Hazards

Human Made Hazards

- Explosion
- Chemical
- Biological
- Radiological
- Hazardous Material Release

Technological Hazards

- Dam Failure
- Fire
- Hazardous Materials
- Nuclear Accidents



Mitigation Strategies

Multi-hazard mitigation strategies must account for a broad range of hazards. Major goals and objectives of multi-hazard mitigation strategies are to: protect structures, people, and ecological systems from hazard risks, manage land use and growth so as to guide development to safe locations; plan public expenditures to reinforce hazard mitigation goals; and provide public information on hazard locations, mitigation techniques and evacuation routes.

Images:
Multi-Hazard Mitigation Stakeholder Meeting PowerPoint Presentation Slides (Presentation, 2014: Multi-Hazard Mitigation Planning Team)

How Do We Mitigate Our Local Hazards

Mitigation Strategies 1 of 4

- Protect structures from hazards risks.
- Strengthen and configure buildings to resist hazards impact.
- Relocate or elevate buildings in hazards areas.
- Protect people from hazards risks.
- Provide safe havens and evacuation routes for at-risk populations

Mitigation Strategies Continued 2 of 4

- Design buildings and public spaces in accordance with security standards.
- Protect ecological systems from hazards risks.
- Conserve protective environmental features (e.g. vegetation, slopes).
- Protect food and water supplies from hazard threats.

Mitigation Strategies Continued 3 of 4

- Manage land use and growth for safe development practices.
- Use future land-use plans and growth management programs to guide growth to safe locations.
- Incorporate hazard mitigation standards in development and building regulations.
- Plan public expenditures to reinforce mitigation goals.

Mitigation Strategies Continued 4 of 4

- Design and locate infrastructure to be resilient to multi-hazards.
- Acquire hazard areas land for public open space.
- Provide public information on multi-hazard mitigation.
- Disseminate hazards maps and guidance on mitigation techniques.
- Publicize evacuation routes and shelter locations.

Compatibility of Mitigation Techniques

The compatibility of mitigation techniques must be assessed in light of local area and site conditions. Experience from past disasters can shed light on the effects of local conditions on potential effectiveness of various multi-hazards mitigation strategies.

Review of the 2010 Multi-Hazard Mitigation Plan

- Components of the 2010 Plan
- Risk Assessment of the 2010 Plan

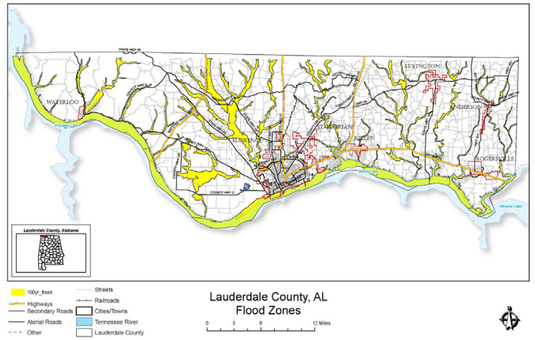
2010 Plan Components

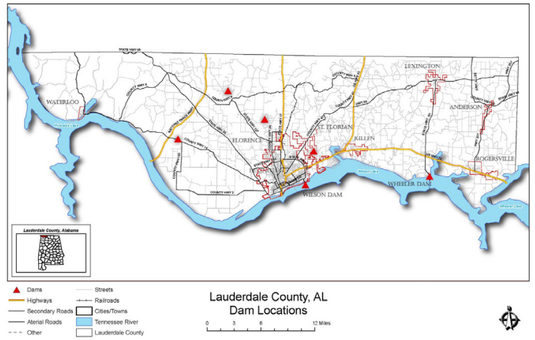
- General Review of the 2010 Planning Document

Risk Assessment of the 2010 Plan

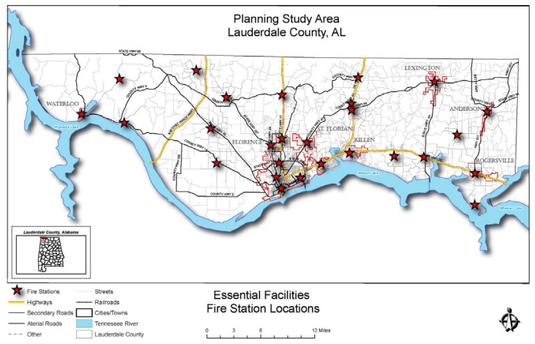
- Lauderdale County Flood Zones
- Lauderdale County Dams
- Essential Facilities: Law Enforcement Facilities
- Essential Facilities: Fire Stations
- Essential Facilities: National Guard
- Essential Facilities: Hospitals and Medical
- Lauderdale County Schools
- Lauderdale County Warning Signs
- Transportation Facilities
- Hazardous Materials Locations

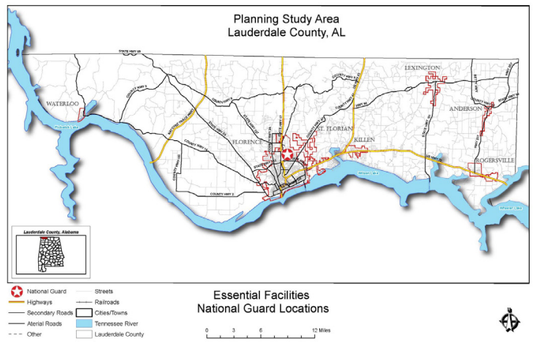
Images: Multi-Hazard Mitigation Stakeholder Meeting PowerPoint Presentation Slides (Presentation, 2014: Multi-Hazard Mitigation Planning Team)

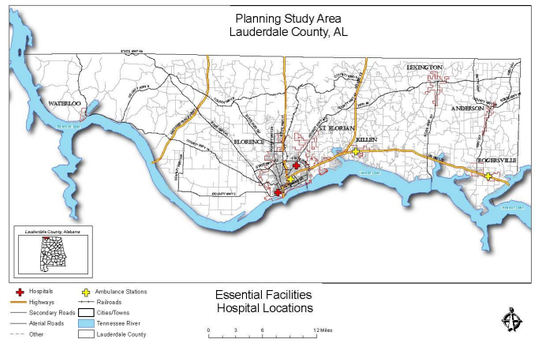


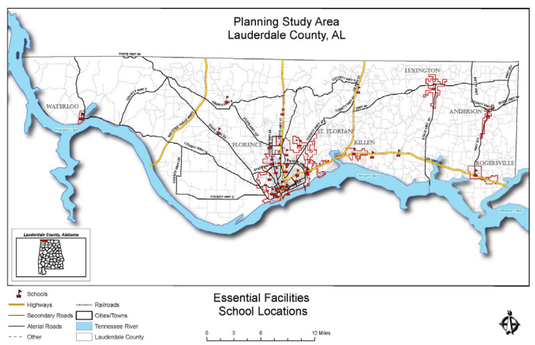


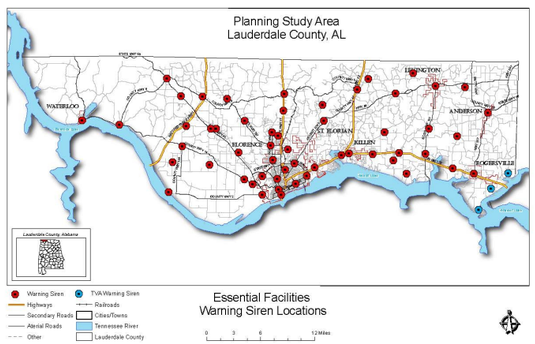






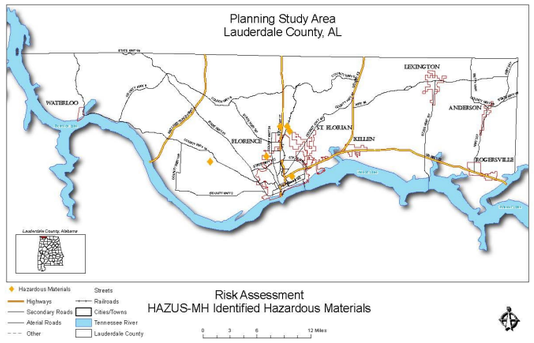








Images:
Multi-Hazard Mitigation Stakeholder Meeting PowerPoint Presentation Slides (Presentation, 2014: Multi-Hazard Mitigation Planning Team)



Hazard Mitigation Survey & Questionnaire

- Review of Possible Hazards & Hazards Survey

Additional Critical Facilities in Lauderdale County

- Review Handout for Florence-Lauderdale County Critical Facilities

Policy and Public Involvement Schedule

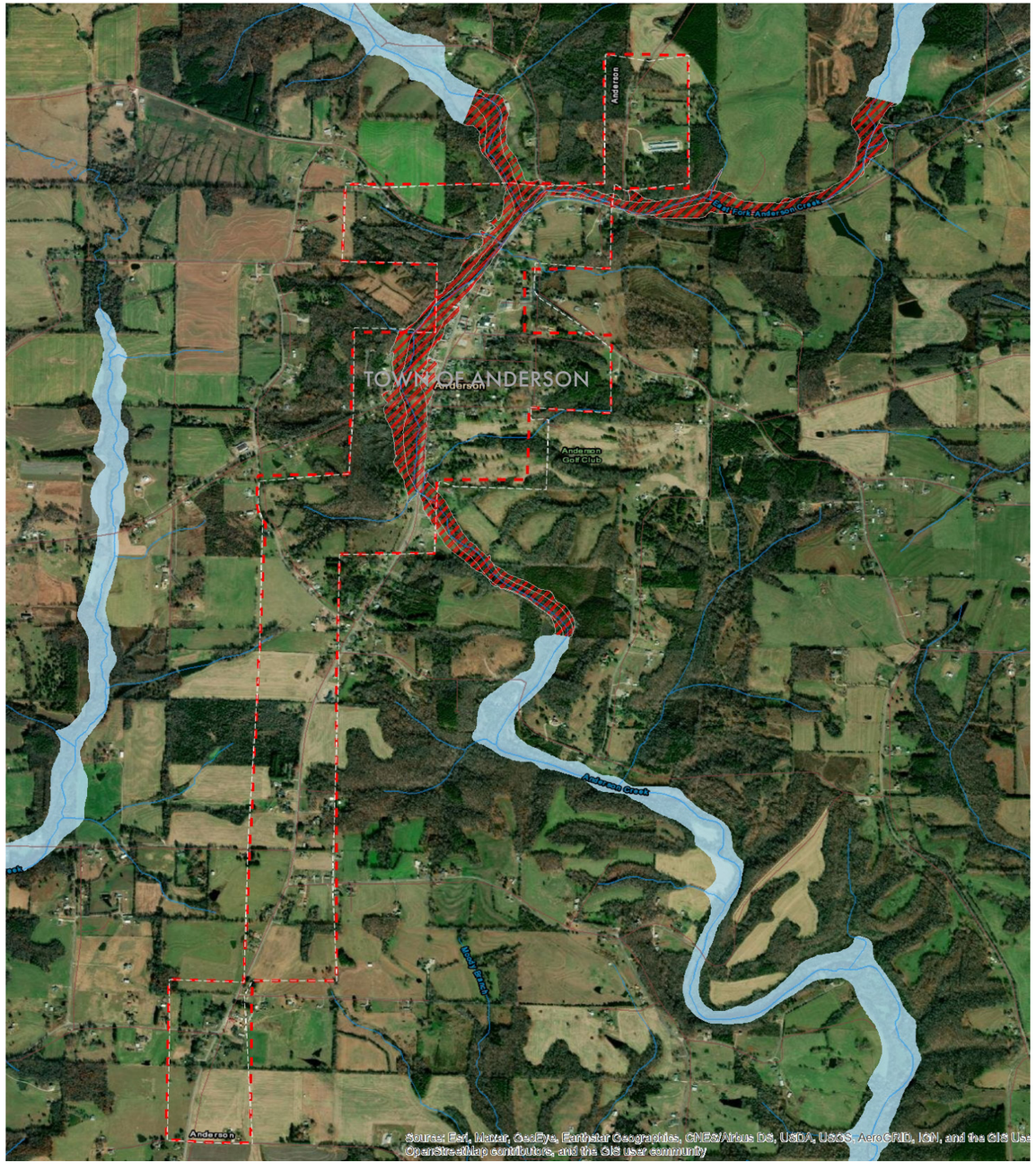
- June 18, 2014 Policy Committee Meets, 11:00 a.m.
- June 23, 2014 Elgin Area Public Involvement Meeting, 6:00 p.m.
- June 24, 2014 Waterloo Area Public Involvement Meeting, 6:00 p.m.
- June 25, 2014 Florence Area Public Involvement Meeting, 6:00 p.m.
- August 4, 2014 Policy Committee Meeting No. 2, 11:00 a.m.
- August 11, 2014 Receive final mitigation strategies sheet
- September 16, 2014 Draft Plan sent to Policy Committee by email.
- September 23, 2014 Policy Committee Meeting No. 3, 11:00 a.m.
- October 7, 2014 Citizen & Stakeholder distribution of draft plan to local gov.

Images: Multi-Hazard Mitigation Stakeholder Meeting PowerPoint Presentation Slides
(Presentation, 2014: Multi-Hazard Mitigation Planning Team)

Hazard Identification Survey Results	
Hazard	**Number of Respondents that Identified the Hazard as a Threat within the Planning Area**
Avalanche	4
Dam/Levee Failure	15
Drought	16
Earthquake	17
Expansive Soils	8
Extreme Heat	16
Flood	18
Hailstorm	18
Hurricane	12
Land Subsidence	12
Severe Winter Storm Freeze	18
Tornado/Severe Storm	18
Wildfire	18
Windstorm	17
Source: Responses from Meeting and Workshop Attendants	

Mitigation Strategies Survey Results	
Proposed Mitigation Strategy	**Number of Respondents that Identified their Jurisdiction as Using the Strategy or Would Use the Strategy in the Future**
Comprehensive Planning	8
Building Codes and Construction Requirements	7
Capital Improvements Programs	8
Open Space Preservation	5
Storm Water Management	7
Land Use Development Regulations	8
Subdivision Regulations	8
Floodplain Management Programs	6
Levee and Dam Management	4
Establishing Defensible Space within the Wildland Urban Interface	0
Burn Permits	8
Safe Shelter Requirements	9
Public Right-of-Way Maintenance Regulations	9
Critical Facilities Assessments	6
Geographic Information Systems	5
Planning Studies	5
Mitigation Planning Technology Support	7
Real Estate Flooding Acquisition and Building Relocations	3
Flood Prone Building Proofing and Retrofitting	2
Critical Facilities Protection	5
Freeboard Requirements for Building Elevations	2
Emergency Power Generation	8
Separate Sewer System Collection and Protection	4
Storm Shutter Programs and Installation	2
Building Retrofit and New Construction of Shatter Resistant Glass Structures	4
Outreach Projects	5
Real Estate Disclosure Requirements	7
Hazard Information Kiosk and Centers	5
School Age Education Programs	7
Adult and Community Education Programs	5
Hazard Mitigation Plan and Pamphlet Distribution	6
Flood Map Information Distribution	5
NOAA Weather Radio Programs	8
Press and Media Mitigation Releases and Training Sessions	7
Sediment and Erosion Control	6
Stream Corridor Restoration	4
Watershed Management	5
Forest and Vegetation Management	4
Wetland Restoration and Preservation	6
Open Space Easements and Acquisition	6
River/Stream Corridor Restoration and Protection	5
Urban Forestry Planning and Development Programs	5
Press and Media Mitigation Releases and Training Sessions	7
Water Resource Conservation Programs	6
Storm Water Diversion Culverts	6
Storm Water Flood Walls	4
Seawalls	4
Retaining Walls	7
Neighborhood and Community Safe Rooms	7
Dam Modifications	3
Storm Sewer System Construction	6
Ground Stabilization	5
Reservoir Construction	5
Source: Mitigation Strategies Online Public Survey Respondents	

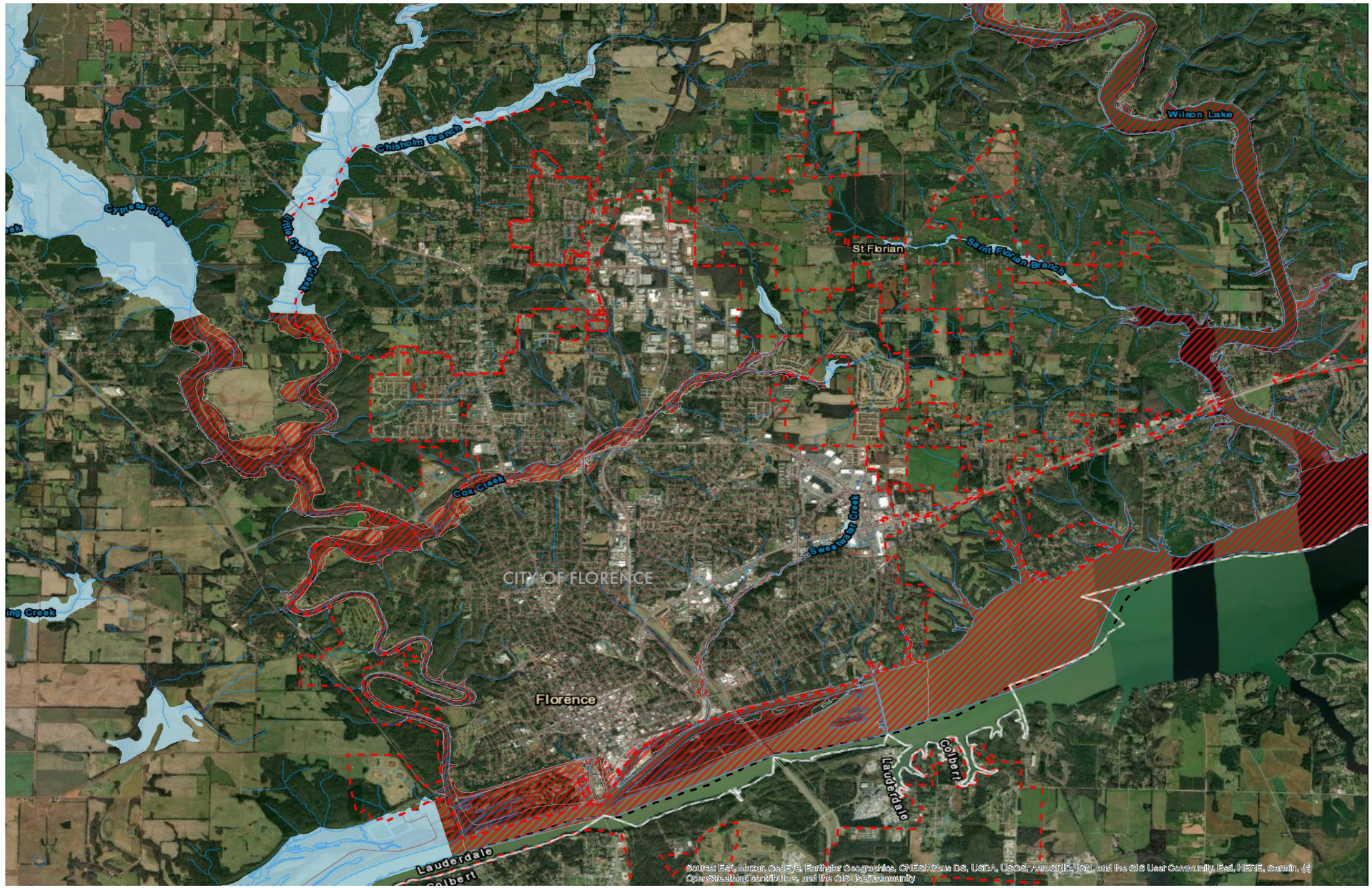
Images: Multi-Hazard Plan Mitigation Survey (Survey, 2015: Multi-Hazard Mitigation Planning Team)



Map:
Town of Anderson Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

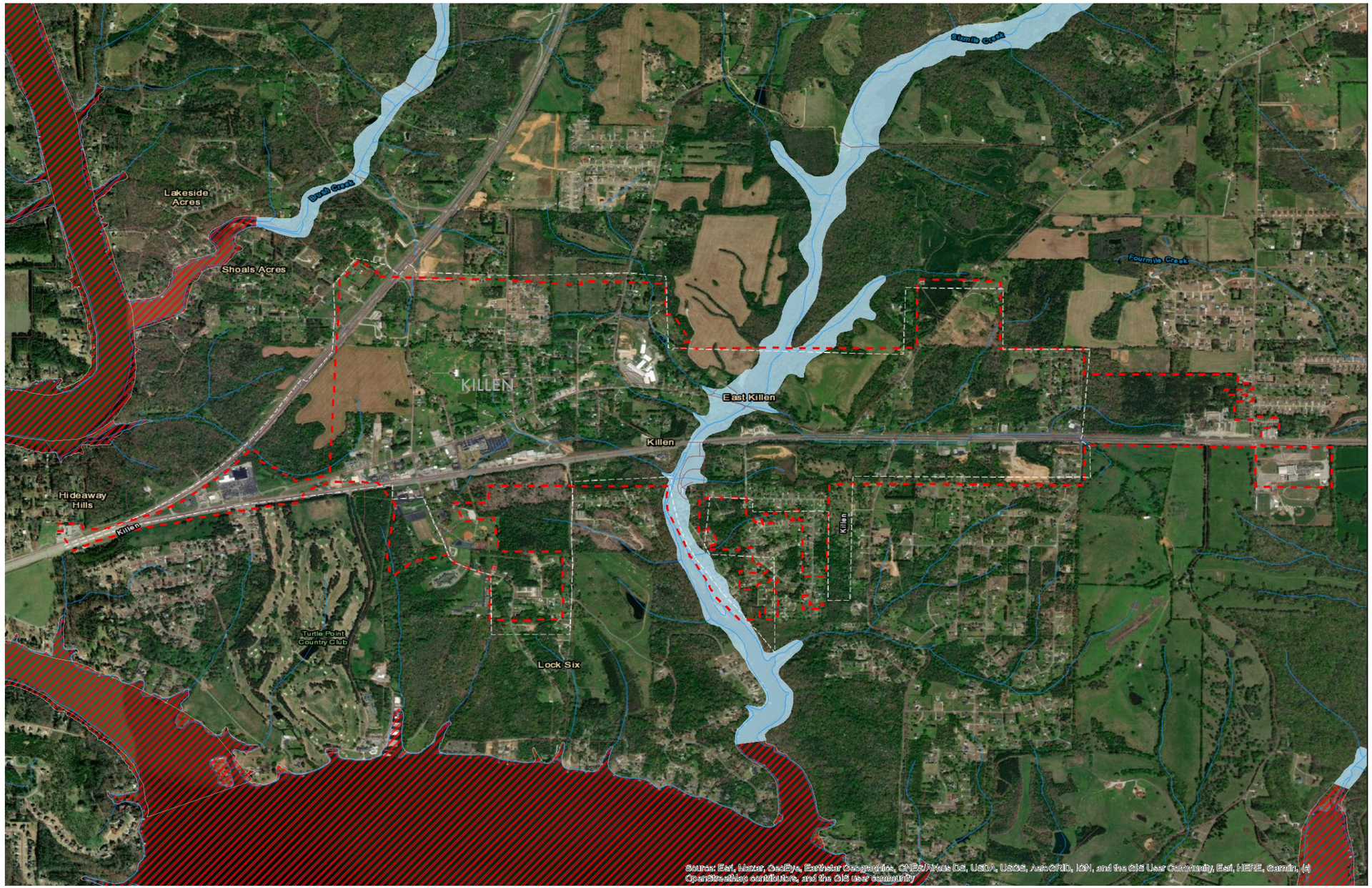
FEMA FLOOD ZONES
- ZONE A
- ZONE AE
- PRIMARY ROADS
- STREAMS
- WATER BODIES



Map:
City of Florence Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

FEMA FLOOD ZONES
- ZONE A
- ZONE AE
- PRIMARY ROADS
- STREAMS
- WATER BODIES



Map:
Town of Killen Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

FEMA FLOOD ZONES
- ZONE A
- ZONE AE
- PRIMARY ROADS
- STREAMS
- WATER BODIES



Map:
Lexington Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

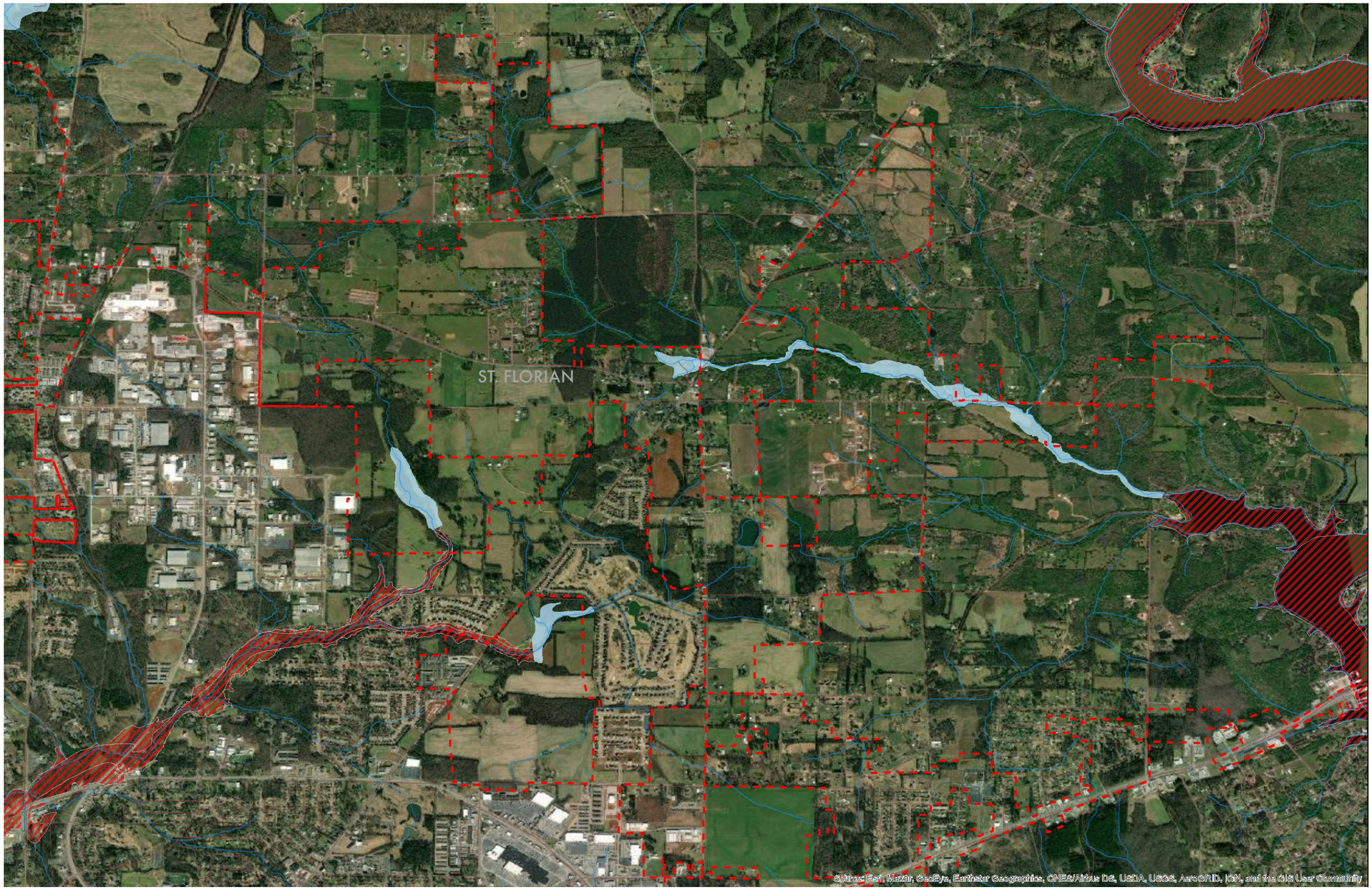
FEMA FLOOD ZONES
- ZONE A
- ZONE AE
- PRIMARY ROADS
- STREAMS
- WATER BODIES



Map:
Rogersville Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

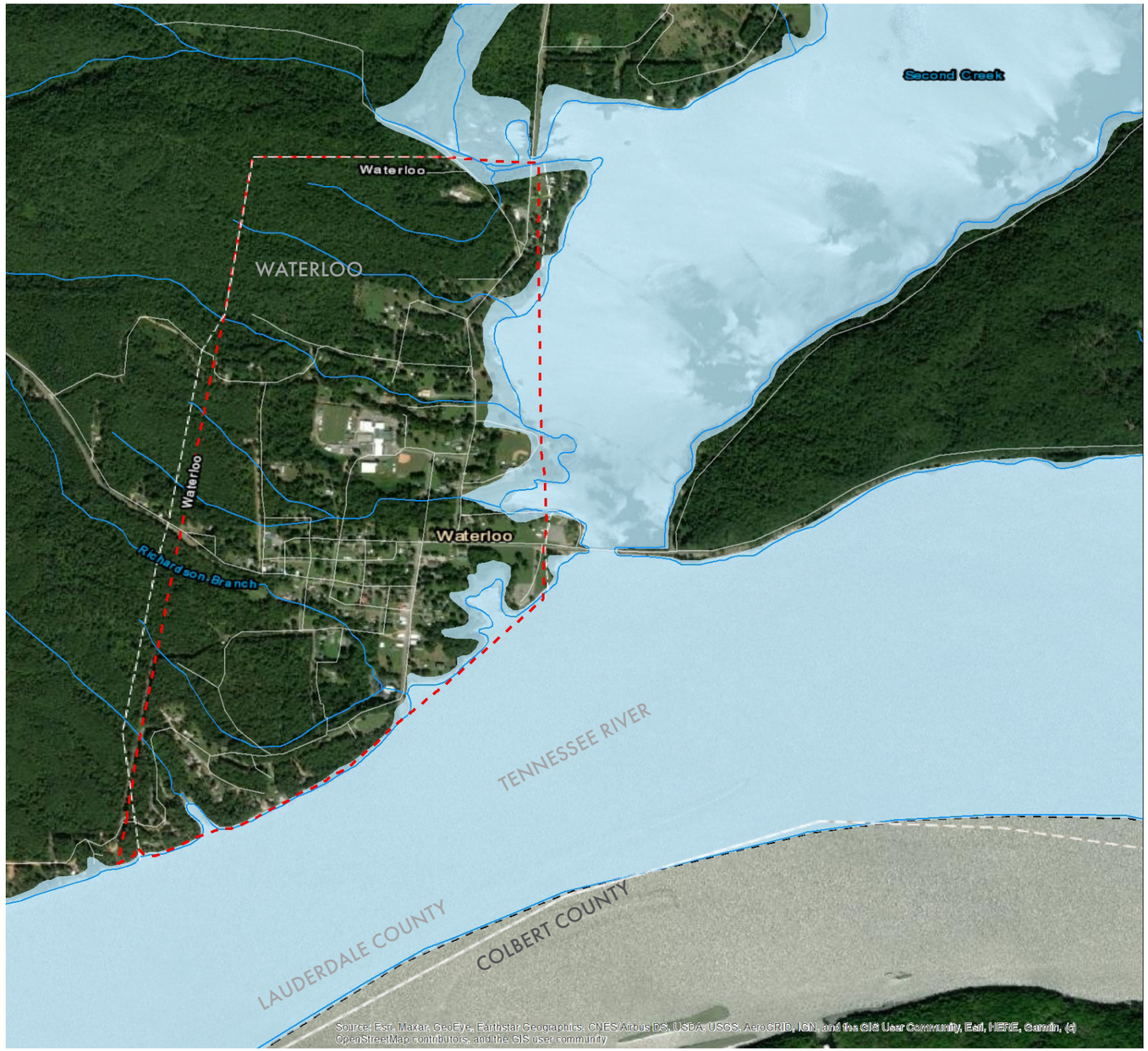
FEMA FLOOD ZONES
- ZONE A
- ZONE AE
- PRIMARY ROADS
- STREAMS
- WATER BODIES



Map:
St. Florian Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

FEMA FLOOD ZONES
ZONE A
ZONE AE
PRIMARY ROADS
STREAMS
WATER BODIES



Map:
Town of Waterloo Flood Zone Map
(Map, 2023: Multi-Hazard Mitigation Planning Team)

Legend:

FEMA FLOOD ZONES
- ZONE A
- ZONE AE
- PRIMARY ROADS
- STREAMS
- WATER BODIES

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
E.M.A./E-911 Director

Heath Bennett
E.M.A. Deputy Director

110 W. College St.
Room B25
Florence, AL 35630

Phone (256)760-6363
Fax (256) 766-0529

May 25, 2022

Mayor Sandra Burroughs
Town of Lexington
PO Box 457
Lexington, AL 35648

Mayor Burroughs,

A letter of interest for your town's community shelter has been filed, per our previous conversation.

I recommend that you contact Tiffany Boyd at NACOLG and contract with them for this project. She may be reached at 256-389-0564.

As for the project management, my recommendation is Mike Melton of Coldwater Consultants 256-335-8500.

The Lauderdale County Commission has worked with both of these entities for many of the county projects.

Should you have any questions, please contact Heath Barnett, EMA Deputy Director at 256-760-6363.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

GG:lb

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
E.M.A./E-911 Director

Heath Bennett
E.M.A. Deputy Director

110 W. College St.
Room B25
Florence, AL 35630

Phone (256)760-6363
Fax (256) 766-0529

May 25, 2022

Mayor Matthew Connolly
Town of St. Florian
4508 County Rd 47
Florence, AL 35634

Mayor Connolly,

A letter of interest for your town's community shelter has been filed, per our previous conversation.

I recommend that you contact Tiffany Boyd at NACOLG and contract with them for this project. She may be reached at 256-389-0564.

As for the project management, my recommendation is Mike Melton of Coldwater Consultants 256-335-8500.

The Lauderdale County Commission has worked with both of these entities for many of the county projects.

Should you have any questions, please contact Heath Barnett, EMA Deputy Director at 256-760-6363.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

GG:lb

Images: E-mail Correspondence regarding Shelters in different jurisdictions (2022-2023, Local EMA/911 Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
E.M.A./E-911 Director

Heath Bennett
E.M.A. Deputy Director

110 W. College St.
Room B25
Florence, AL 35630

Phone (256)760-6363
Fax (256) 766-0529

May 25, 2022

Mayor Jimmy Glass
Town of Anderson
PO Box 8
Anderson, AL 35610

Mayor Glass,

A letter of interest for your town's community shelter has been filed, per our previous conversation.

I recommend that you contact Tiffany Boyd at NACOLG and contract with them for this project. She may be reached at 256-389-0564.

As for the project management, my recommendation is Mike Melton of Coldwater Consultants 256-335-8500.

The Lauderdale County Commission has worked with both of these entities for many of the county projects.

Should you have any questions, please contact Heath Barnett, EMA Deputy Director at 256-760-6363.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

GG:lb

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
E.M.A./E-911 Director

Heath Bennett
E.M.A. Deputy Director

110 W. College St.
Room B25
Florence, AL 35630

Phone (256)760-6363
Fax (256) 766-0529

May 25, 2022

Mayor Tim Tubbs
Town of Killen
PO Box 27
Killen, AL 35645

Mayor Tubbs,

A letter of interest for your town's community shelter has been filed, per our previous conversation.

I recommend that you contact Tiffany Boyd at NACOLG and contract with them for this project. She may be reached at 256-389-0564.

As for the project management, my recommendation is Mike Melton of Coldwater Consultants 256-335-8500.

The Lauderdale County Commission has worked with both of these entities for many of the county projects.

Should you have any questions, please contact Heath Barnett, EMA Deputy Director at 256-760-6363.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

GG:lb

Images: E-mail Correspondence regarding Shelters in different jurisdictions (2022-2023, Local EMA/911 Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
E.M.A./E-911 Director

Heath Bennett
E.M.A. Deputy Director

110 W. College St.
Room B25
Florence, AL 35630

Phone (256)760-6363
Fax (256) 766-0529

May 25, 2022

Mayor Richard Herston
Town of Rogersville
PO Box 540
Rogersville, AL 35652

Mayor Herston,

A letter of interest for your town's community shelter has been filed, per our previous conversation.

I recommend that you contact Tiffany Boyd at NACOLG and contract with them for this project. She may be reached at 256-389-0564.

As for the project management, my recommendation is Mike Melton of Coldwater Consultants 256-335-8500.

The Lauderdale County Commission has worked with both of these entities for many of the county projects.

Should you have any questions, please contact Heath Barnett, EMA Deputy Director at 256-760-6363.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

GG:lb

Images: E-mail Correspondence regarding Shelters in different jurisdictions (2022-2023, Local EMA/911 Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mayor Jimmy Glass
Town of Anderson
P.O. Box 8
Anderson, AL 35610

Dear Mayor Glass,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.
- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.
- The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.
- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $133.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Jimmy Risner, Chairman
Chisholm Heights Water Authority
4401 County Road 24
Florence, AL 35634

Dear Mr. Risner,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $160.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mayor Steve Holt
City of Florence
102 S Court Street
Florence, AL 35630

Dear Mayor Holt,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.
- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.
- The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.
- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $13604.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mr. Thomas W. Howard, Chairman
East Lauderdale Water Authority
2943 Hwy 101
Rogersville, AL 35652

Dear Mr. Howard,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $261.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Dr. Jimmy Shaw
Florence City School Superintendent
102 S Court Street, 600
Florence, AL 35630

Dear Dr. Shaw,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.
- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.
- The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.
- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $3906.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mr. Hal Greer
Florence Port Authority
P.O. Box 1169
Florence, AL 35630

Dear Mr. Greer,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $260.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Greg Thompson, Manager
Greenhill Water and Fire Protection Authority
35496 County Rd 8
Florence, Al 35634

Dear Mr. Thompson,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $217.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mayor Tim Tubbs
Town of Killen
P.O. Box 27
Killen, AL 35645

Dear Mayor Tubbs,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.
- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.
- The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.
- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $588.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mr. Danny Pettus
Chairman, Lauderdale County Commission
P.O. Box 1059
Florence, AL 35631

Dear Mr. Pettus,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.
- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.
- The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.
- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $21358.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

l Correspondence regarding
2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mr. Jonathan Hatton, Superintendent
Lauderdale County School System
PO Box 278
Florence, AL 35630

Dear Mr. Hatton,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $5457.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mayor Sandra Burroughs
Town of Lexington
P.O. Box 457
Lexington, AL 35648

Dear Mayor Burroughs,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $408.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mayor Richard Herston
Town of Rogersville
P.O. Box 540
Rogersville, AL 35652

Dear Mayor Herston,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $237.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mayor Pam Stumpe
Town of St. Florian
4508 CR 47
Florence, AL 35634

Dear Mayor Stumpe,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- **A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.**
- **The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.**
- **The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.**
- **The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.**
- **The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.**
- **The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans**

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $621.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Kim Greenway
UNA Vice President of Student Affairs
UNA Box 5023
Florence, AL 35652

Dear Ms. Greenway,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.

- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.

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

- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.

- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $4296.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Ms. Linda Lack
West Lauderdale Water Authority
3353 County Road 200
Florence, AL 35633

Dear Ms. Lack,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.
- The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.
- The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
- The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.
- The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $402.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

Florence-Lauderdale Emergency Management Agency

George M. Grabryan, Jr.
EMA/E-911 Director

Tim Greer
EMA Deputy Director

110 W. College Street, Room B25
Florence, Alabama 35630

Phone (256) 760-6363
Fax (256) 766-0529
www.florencelauderdaleema.org

July 22, 2019

Mayor Joan Farneman
Town of Waterloo
P.O. Box 38
Waterloo, AL 35677

Dear Mayor Farneman,

The Florence-Lauderdale Emergency Management Agency is preparing to undertake the five (5) year Multi-Hazard Mitigation Plan. This plan involves the evaluation and stakeholder engagement for natural and manmade hazards within your city and throughout Lauderdale County. In preparation for this effort we wanted to reach out and discuss the Alabama Emergency Management Agency (AEMA) and the Federal Emergency Management Agency (FEMA) Multi-Hazard Mitigation Planning requirements. These requirements expand throughout each municipal jurisdiction within our county and serve to protect our neighbors and friends in prevention and action during a natural disaster.

FEMA requires that the Florence-Lauderdale Multi-jurisdictional Hazard Mitigation Plan be updated and adopted by each governmental jurisdiction within our County. In order to do this we have contracted with experienced and qualified consultants that have allowed our agency to implement our plan and manage our natural disasters without continued updates to our plan. This thorough process has allowed seamless reimbursement of natural disaster funds for reimbursement to the county and our local jurisdictions.

FEMA requires the following points be contained within our plan and that the Florence-Lauderdale EMA be responsible for assisting the local governments in implementing the five year plan.

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)

- **A local government must have a mitigation plan approved in order to apply for and receive mitigation project grants under all other mitigation grant programs.**

- **The plan must provide a current description of the jurisdiction to include a socioeconomic, historic, and geographic profile to provide a context for understanding the mitigation actions that will be implemented to reduce the jurisdiction's vulnerability.**

- **The plan must document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.**

- **The plan must include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. The risk assessment must include a description of the type of all natural hazards that can affect the jurisdiction and the mitigation actions to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include a description of the jurisdiction's vulnerability to the hazards. The description must include an overall summary of each hazard and its impact on the community.**

- **The plan must include a description and assessment of vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas. (This must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods). The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to prepare the estimate. This should include providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.**

- **The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. The Mitigation Strategies section must identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans**

approved by FEMA must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. The Mitigation Strategies section must include an action plan describing how the actions identified will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Sincerely,

George M. Grabryan, Jr.
EMA/911 Director

We look forward to your participation in the upcoming multi-jurisdictional Hazard Mitigation planning process. We have the opportunity to introduce you to the consultants who have assisted our communities over the past ten years. Please do not hesitate to contact me for further discussion and additional information about the importance of the upcoming planning process and its impact to protect our communities throughout Lauderdale County.

Below is the cost share developed to complete this project:

Entity / Agency	Cost Share Adj. Pop/Total Cost	% Share Adj. Cost Share/Total Cost
Anderson, Town of	$133.00	0.25%
Chisholm Heights Water Authority	$160.00	0.31%
Commission, Lauderdale County	$21,358.00	41.07%
East Lauderdale Water Authority	$261.00	0.01%
Florence City Schools	$3,906.00	7.51%
Florence, City of	$13,604.00	26.16%
Greenhill Water Authority	$217.00	0.42%
Killen, Town of	$588.00	1.13%
Lauderdale County Schools	$5,457.00	10.49%
Lexington, Town of	$408.00	0.79%
Port Authority, Florence-Lauderdale	$260.00	0.50%
Rogersville, Town of	$621.00	1.19%
St. Florian, Town of	$237.00	0.45%
University of North Alabama	$4,296.00	8.26%
Waterloo, Town on	$93.00	0.18%
West Lauderdale Water Authority	$402.00	0.77%
TOTAL	**$52,000.00**	**100%**

Your share in the amount of $93.00 is payable between October 1st and October 31st 2019.

Please complete the attached Letter of Agreement and return with payment to:

Lauderdale County Commission
ATTN: Brenda Bryant
PO Box 1059
Florence, AL 35631

Images: E-mail Correspondence regarding Cost Sharing (2019-2023, EMA Director)